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Nicolas Hayoz, Jens Herth & Julia Richers



PETER LANG

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VEDRAN DŽIHIĆ,  
MAGDALENA SOLSKA (eds)

**CRISIS GOVERNANCE IN  
BOSNIA AND HERZEGOVINA,  
CROATIA AND SERBIA**

The Study of Floods in 2014



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DAMIR KAPIDŽIĆ, DUŠAN PAVLOVIĆ AND GORDAN BOSANAC

## Appendix 1: Mapping an Unfolding Crisis: Key Developments during the Floods in Bosnia and Herzegovina, Croatia and Serbia

In 2014, April and the beginning of May were extremely rainy in the Balkans. Rainfall analysis for April 2014, compared to a multiyear average, showed, for example, that in the area of Slavonski Brod, a town in Croatia, there was 200% more rain than usual. The torrential rain of 3 May led to an increase in the water level in canals, streams and rivers, which resulted in partial flooding of several counties in Croatia. In Serbia, on 9 May the National Hydrometeorological Service had already issued a red alert, emphasizing that a critical amount of rain could be expected on 14–16 May. The flood crisis unfolded very quickly in Bosnia and Herzegovina (BiH), Croatia and Serbia in May 2014. The key events presented below were selected through media analysis and analysis of official documents related to the national and local government and specialized institutions involved in flood protection.

12 May 2014

In Serbia, the National Hydrometeorological Service warned that the Ljig and Tamnava rivers flowed into the Kolubara river and exceeded the critical water level. It forecast 40–60 l/m<sup>2</sup> of rain per 24 hours on 14–16 May. The Direction for Waters (for more information on responsible institutions see Appendix 2 in this volume) gave orders to Srbijavode and Beogradvode to implement the measures for flood protection in the critical areas (the city of Obrenovac included). The Sector for Emergency Situations ordered all municipal headquarters in the critical areas to stand by.

### 13 May 2014

In Bosnia and Herzegovina (BiH) media were covering stories of agricultural losses in recent flooding and announcing possible high intensity raining of more than 100 l/m<sup>2</sup>. In the evening heavy storms with hail were reported in Maglaj.

### 14 May 2014

In the morning, the media reported on high water levels of rivers and localized flooding, as well as the continuous rain in BiH. The most critical area was the Canton of Sarajevo with the rivers Bosna and Dobrinja overflowing their banks. Other areas in the Federation of BiH were deemed stable and the civil defence of Republika Srpska reported that there were no reasons to panic and that they were on standby. The river Miljacka (tributary of the Bosna river) was at its highest level in 10 years, so that some bridges had to be closed down later in the day. The water levels of these rivers were still rising and weather reports predicted that the rain would be falling in the next 5 days. Flooding was reported in the Canton of Sarajevo and the Canton of Tuzla and an extensive accumulation of rainwater was mentioned in some areas of the Bosna River. In Maglaj some underpasses were flooded during the night, which hindered traffic in the city as the continuous rainfall blocked all four access roads to the city. Many municipalities declared a state of emergency due to the rain and floods that caused mudslides and landslides. In the evening, because of the risks of further floods, the municipality of Bijeljina declared a state of emergency. Due to the water level of the River Bosna in Doboj (475 cm and rising), a state of emergency was also declared in this municipality.

In Serbia and Croatia, the intensity of rainfall increased. It was raining in the whole region for several days. The water level of all the rivers increased. The Serbian republic's headquarter for emergency situations held its first session headed by Prime Minister Vučić. Two villages in Serbia, Barić and Mala Moštanica, were evacuated.

### 15 May 2014

In BiH, rising water levels were reported at Vrbas in Banja Luka. Water levels were still going up in Maglaj and Doboj. In Doboj there was no electricity or running water. A state of emergency was declared in the Federation of Bosnia and Herzegovina (FBiH) and in 14 municipalities in the Republika Srpska (RS). The armed forces of Bosnia and Herzegovina were deployed to help the citizens in the flooded areas. Rafters from Konjic and Bihać were recruited to assist the population of Maglaj and Doboj, as well as special teams of EUFOR that were on standby to give helicopter support as soon as weather conditions permitted. In the evening, the Council of Ministers of BiH held a meeting where it decided to allocate 200 000 KM (convertible mark) for the costs of helicopters, as well as tasking the Ministry of Security of BiH to ask assistance from the EU. The Helicopter service of Republika Srpska was deployed to assist in the evacuation of citizens and the transfer of patients to Banja Luka.

In Doboj, where by 2 p.m. the water level of Bosna river was 670 cm, 20 soldiers of the armed forces of BiH and a heavy machine were engaged in assisting the citizens. Members of diving and kayak clubs from Banja Luka were sent to Doboj. In Maglaj, the Ministry of Interior of Zenica-Doboj Canton deployed water support teams to the city to evacuate citizens. The water level of the Bosna River in the morning was higher than 800 cm. Helicopters were deployed and the first one arrived at around 12.30 p.m. to assist with the evacuation of citizens. Other helicopters were bringing boats and members of rafting clubs into Maglaj. Water levels in Banja Luka were rising during the whole day; some roads had to be closed. At that stage, the levels of rainfall were the highest since 1892. The first victim of the floods was found in the area of Bratunac in eastern Bosnia and Herzegovina. During the night flooding, mudslides and landslides destroyed housing and took lives. In Posavina Canton the situation was getting increasingly complex, as the Sava River was rising quickly. Doboj was one of the cities that became completely flooded; there was a shortage of food and medication. The water level in Maglaj was decreasing whereas food, medicine and other supplies were brought by boats to the citizens.

In Croatia the Centre for Flooding Relief in Zagreb issued the first warning on the rise of water levels in the River Sava. Soon thereafter defensive measures for flood relief were called, local flood response

subcentres were activated and round-the-clock spots were dispatched to defend embankments. At the local level, all resources were mobilized. The army was mobilized at the national level.

Bosnia and Herzegovina, as well as Serbia, asked for assistance through the European mechanism for civil protection – the EU Centre for Emergency Interventions. Serbia asked for high yield pumps while BiH needed helicopters, rescue teams equipped with boats and financial aid. Based on the decision taken at the 157th conference-call session of the Croatian government, the first deputy PM Vesna Pusić offered assistance. Two helicopters from the Transport Helicopter Wing (Croatian Air Force) were dispatched, together with two helicopter crews and two search-and-rescue teams – altogether 15 Croatian armed forces members (including six members of the special forces battalion trained in airborne operations and water rescue). Another Croatian helicopter was engaged in the Zenica and Maglaj area and one more around Banja Luka and Doboj (in the BiH entity and the Republic of Srpska).

In Serbia, the water level of all rivers was also rapidly increasing. The Skrapež river flooded the bulk of Kosjerić municipality. The rivers Morava, Ljig, Kačer and Kozeljica overflowed their riverbeds. The Kolubara river flooded Valjevo, Lajkovac and Ub. The bridge connecting the cities of Šabac and Valjevo broke down. A state of emergency was declared in municipalities of Valjevo, Šabac, Lučani, Mionica, Loznica, Zaječar, Osečina, Koceljeva, Lajkovac, Ub, Ljig, Gornji Milanovac, Mali Zvornik, Požega, Vladimirci and Kosjerić. Later that day, the Serbian government declared a state of emergency in the whole territory of Serbia. Serbia's Prime Minister, Aleksandar Vučić, used a chopper to visit Koceljeva and personally delivered food and drinking water. Several ministers also visited other flooded areas.

## 16 May 2014

Rescue teams from Croatia and Slovenia capable of working at night arrived in BiH, which also meant more helicopter support. Despite extremely bad weather conditions, the helicopters of the armed forces of BiH were deployed, whereas the helicopters of the EUFOR were not. In

Maglaj, aid and rescue teams arrived; one helicopter of the armed forces as well as volunteers were working to save the citizens. The Republika Srpska's Prime Minister identified Doboj, Bijeljina and Šamac as the most vulnerable to the floods. The River Bosna entered the town of Šamac and there was a risk that the River Sava would overflow the levee.

In Croatia, based on the recommendation of the regional Office for protection and rescue in Vukovar, the head of the County Vukovarsko-srijemska, Božo Galić, asked the director of National Protection and Rescue Directorate (Državna uprava za zaštitu i spašavanje – DUZS) for the engagement of the Croatian Armed Forces. A state of emergency was proclaimed and the local police, firefighters, the Red Cross, the Croatian Mountain Rescue Service (Hrvatska gorska služba za spašavanje – HGSS) and civil protection were put on alert. During the afternoon the situation rapidly worsened, so all available forces (manpower and machinery) were engaged to reinforce the River Sava embankments. The water level of the river rose all the way from Slavonski Brod to the border with the Republic of Serbia. The overall length of defended riverbanks amounted to 210 km. From 16 May onwards there were firefighters engaged in the areas where a natural disaster was proclaimed. The Croatian Red Cross started collecting first aid. Croatia also sent 20 000 bags to BiH to be filled with sand and used for the reinforcement of levees. During the 24-hour period before the peak of the water wave was formed, on 16–17 May, the water level of the river Sava by Slavonski Brod rose to 2.6 m and by Županja to 4 m. This was a very intense rise in the water level, completely uncharacteristic of this part of the River Sava. The average flow volume for the River Sava by Županja is around 1000 to 1100 m<sup>3</sup>s, and on 16 May 2014 the volume of 5500 m<sup>3</sup>s was recorded at the official water gauge by Županja.

In Serbia, the Ljig river overflowed its riverbed and flooded several villages in its vicinity. The whole area was cut from electricity, drinking water and the cell network. Twenty thousand people in Loznica, Svilajnac, Kučevo and Lepenica were internally displaced. Kolubara flooded Obrenovac in the early morning. By noon, the whole city was under water. Siniša Mali, at that time mayor of Belgrade (to whose jurisdiction Obrenovac belongs) called on Obrenovac inhabitants not to leave their homes. Later in the afternoon, the evacuation of Obrenovac was ordered. Rescuing teams had difficulty evacuating all the people from their homes. At the same time, on the decision of the Prime Minister, several thousand volunteers were sent to Šabac; however the town was never flooded in the end. This

unfortunate action distracted attention from the endangered Obrenovac. In the night, the evacuation of Obrenovac had to be temporarily terminated because the rescuing teams did not have enough hand lamps.

### 17 May 2014

The town of Šamac in BiH was totally flooded in the morning with water being 2 m high in some areas. Some 100 people were evacuated. However, there was a need for boats. Evacuation was performed by the helicopter service of Republika Srpska and the armed forces of Slovenia and Croatia. The water was slowly withdrawing in Maglaj but there was some mud and landslides. The mayor gave a statement saying that the main activities were to pump water out of important infrastructure, such as the hospital and that there would be a lot to do to clean up the town. The Ministry of Defence deployed its helicopters in the area of Maglaj and soldiers were engaged on ground in multiple areas as Maglaj, Doboj, Bijeljina, Banja Luka and others. To assist the local rescuers, teams of the mountain rescue service from Croatia and two helicopters from Croatia participated in saving the population of the areas of Maglaj, Doboj, Vukosavlje and Šamac. The Ministry of Security of Bosnia and Herzegovina asked for international assistance, with Croatia, Slovenia, Austria, Turkey, the United States, Macedonia, France and Montenegro offering help.

The apex of the catastrophe in Croatia was 17 May. In the early morning, the maximum water levels of the Sava River were recorded. At the hydrographical station Slavonski Šamac a level of 891 cm was measured (until then the maximum level ever recorded had been 762 cm measured on 21 March 1981), while at the corresponding station Županja 1168 cm was recorded (the previous maximum was 1046 cm on 19 January 1970) and at station Gunja 1173 cm was measured (the previous maximum was 938 cm recorded on 9 April 2013). In the afternoon, the main embankments on the river Sava were broken – at 2:55 p.m. in the vicinity of Rajevo selo and at 3.12 p.m. near Račinovci. The settlements of Gunja, Đurići, Strošinci, Posavski Podgajci, Račinovci and Rajevo Selo were flooded. Two inhabitants of Rajevo Selo died as a result of injuries from the water wave. Some of the inhabitants refused to be evacuated and

took shelter in higher parts of their houses. During the night of 17–18 May the county emergency “112-centre” in Vukovar took around 200 calls for help from people who ended up blocked in attics and on the roofs of their houses. Before the state of emergency was proclaimed, the heritage museum “Stjepan Gruber” in Županja evacuated its most valuable exhibits to the City museums in Vukovar and Vinkovci with help of local civil protection and with the assent of the county and city headquarters for the flood defence in Županja. The Croatian government held an emergency session and decided on the deployment of firefighting and civil protection units to a mission intended to provide emergency assistance in flooded areas of the neighbouring Republic of Serbia. As a result of a government decision, a DUZS national intervention unit for civil protection was sent (five members, two vehicles, two boats with additional equipment), as well as a DUZS national firefighting intervention unit consisting of ten members with three vehicles. The Ministry of Internal Affairs in Serbia also announced that Croatia had sent a team of water purification experts to neighbouring Serbia and a team with high-capacity pumps (based on a request for assistance on 15 May). In the area of Obrenovac, in the Republic of Serbia, a unit of seven divers was employed – they were members of special police units from Osijek and Rijeka, as well as from the Lučko antiterrorist unit. In the same session, the engagement period for two military helicopters (Croatian air force, with corresponding crews and some other members of the CAF) in Bosnia and Herzegovina was extended until 19 May at 7 p.m.

The 17 May was also catastrophic in Serbia. About 32 000 Obrenovac inhabitants were evacuated. The Kolubara River breached yet another dam near the power plant “Nikola Tesla”. The production of electricity at this plant became dangerous. The price of bottled mineral water tripled in stores.

### 18 May–20 May 2014

By 18 May EUROFOR had conducted more than 800 rescue actions, including transporting equipment and manpower in BiH. Together with the helicopters of the armed forces of Bosnia and Herzegovina and

helicopters from Slovenia and Croatia, they continued their engagement in the areas of Odžak, Orašje, Bijeljina, Šamac and Zenica. The following days were the beginning of the relief and recovery period. The helicopters, previously used to evacuate the population in the flooded areas, were then deployed to bring humanitarian aid to the affected population. On 20 May 2014 the water level of Bosna river in Doboј was measured at 210 cm and efforts to pump out water in the city were made. There was a need for food and there was no electricity. In Šamac, activities to clean the flooded areas were conducted.

After embankments were breached in Croatia, the evacuation of the inhabitants who remained in the settlements of Gunja, Račinovci and Rajevo Selo was carried out. The Headquarters for Protection and Rescue in Vukovarsko-srijemska county decided to establish the second line of flood defence (running along the lines Drenovci-Gunja, Drenovci-Đurići, Strošinci-Soljani, Podravski Podgajci-Drenovci and from the settlement of Vrbanja towards the Spačva forest) in order to redirect the flood waters to the Spačva basin. The public company Croatian Roads (Hrvatske ceste) was engaged in securing the traffic during the interventions, as well as in other protection and rescue activities such as filling up the destroyed road parts, disposal of waste and the collection and disposal of dead animals under the supervision of the veterinary services. Prime Minister Zoran Milanović, Minister of Internal Affairs Ranko Ostojić and Minister of Economy Ivan Vrdoljak, together with the national head of police Vlado Dominić and the director of the DUZS Jadran Perinić all visited the primary school in Cerna, where the evacuated population from Gunja was housed. They also visited the township of Vrbanja, where the evacuated inhabitants from Rajevo Selo and Račinovci were brought. On 17–20 May more than 13 000 inhabitants in Croatia were evacuated (including some settlements in communities that were not flooded, but where the evacuation was carried out pre-emptively), as well as more than 9000 animals. Most of the people evacuated were taken care of in public and private facilities in the area of county Vukovarsko-srijemska. A smaller number of them was transported to other counties, while some of them were placed in Bosnia and Herzegovina (Brčko) and in other countries.

## 21–22 May 2014

The mayor of Maglaj issued an order that all citizens of Maglaj capable of work were to make themselves available to the municipal civil defence and partake in cleaning up the town from the consequences of the natural disaster. The firefighter association of Sarajevo Canton also assisted in this task. Students from the University of Banja Luka participated in cleaning away flooded objects in Doboј, Modriča, Prijedor and Banja Luka.

The Croatian Ministry of Health passed a decision on proclaiming a state of emergency due to an epidemic of infectious diseases in the counties of Vukovarsko-srijemska and Brodsko-posavska. Because of the officially proclaimed state of emergency due to the risk of epidemics, the Croatian Mountain Rescue Service (HGSS) was just allowed to work from their boats, as their members were not adequately equipped to enter the polluted water. At the very start of the session of the Croatian Parliament, a new issue was added to its agenda – a report on the state and circumstances of the flooding in the Republic of Croatia, presented by Vice Prime Minister and Minister of Internal Affairs Ranko Ostojić.

## 23 May 2014

Police checkpoints were positioned at the entries to all flooded localities in Croatia – only military and authorized personnel were allowed to pass. The engagement of the Croatian Armed Forces (CAF) in neighbouring BiH was brought to an end. During the humanitarian efforts in BiH, the CAF units made 200 helicopter flights (80 flight hours), saved 310 people and transported 100 tons of various kinds of cargo. The first meeting of a regional expert team was held in Spačva in order to determine the consequences of flooding in areas that were presumably mined. This regional expert team was established by the Croatian Mine Action Centre, the BiH Mine Action Centre and the Mine Action Centre of the Republic of Serbia. Two additional meetings of this body were conducted in BiH and Serbia.

The death toll from the May floods in 2014 amounted to 23 people in BiH, two in Croatia and 57 in Serbia. However, the floods in May 2014

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.

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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 km<sup>2</sup> 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.<sup>1</sup> 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

<sup>1</sup> See [http://ec.europa.eu/environment/water/flood\\_risk/pdf/flooding\\_bestpractice.pdf](http://ec.europa.eu/environment/water/flood_risk/pdf/flooding_bestpractice.pdf).