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## Findings and Recommendations

### BOSNIA and HERZEGOVINA

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ADMINISTRATION



## 1. Legal and Institutional Framework for Flood Risk Management

The institutional setting of BiH is defined in the *Constitution of Bosnia and Herzegovina*. The State consists of two Entities and one District: Federation of Bosnia and Herzegovina (FBiH), Republic of Srpska (RS), and Brcko District (BD). The Entities and Brcko District are the main administrative units.

### **Water management:**

The Law on Ministries and Other Bodies of Administration in BiH (Official Gazette of BiH, n. 5/03, 42/03, 26/04, 42/04, 45/06, 88/07, 35/09, 59/09, 103/09) regulates the competencies of the Ministry of Foreign Trade and Economic Relations (MoFTER): *“This Ministry shall be responsible for carrying out tasks and discharging duties which are within the competence of BiH and relate to defining policy, basic principles, coordinating activities and harmonizing plans of the Entity authorities and bodies at the international level in the fields of: agriculture, energy, protection of the environment, development and use of natural resources and tourism.”* Therefore, MoFTER (state level) has the overall coordination at a state level and international cooperation regarding water related issues.

In accordance with the Constitution of BiH and the constitutions of the Federation of BiH and Republic of Srpska and the Arbitrary Decision of the Brcko District, the responsibility for water management is on the Entities and the Brcko District. Therefore, legislation on water management and the harmful effects of waters (which covers flood management) is organized at entity level resulting in the adoption of different approaches.

At the moment of drafting of this findings and recommendation, FBiH and RS have their water law, together with a set of bylaws needed for the implementation of the law, while in BD a new water law is in the designing phase.

Federation of BiH: the Law on Waters (Official Gazette of FBiH”, n. 70/06) was passed in FBiH together with a set of bylaws needed for the implementation of the Law. This Law regulates the issue of integral water management in FBiH including the protection of waters, use of waters, protection from harmful effects of waters and development of watercourses and other waters. The law is coherent with the EUWFD and EUFD.

Republic of Srpska: the Law on Waters (Official Gazette of RS”, n. 50/06, 92/09 and 121/12) alongside a set of bylaws required for the implementation of the law was passed on the level of RS. This Law regulates the issue of integral water management on the territory of the RS including the protection of waters, use of waters, protection from harmful effects of waters and

development of watercourses and other water bodies. The law is coherent with the EUWFD and EUFD.

Brcko District: the Law on Waters (Official Gazette of RS, n. 10/98) and a set of bylaws needed for the implementation of the law are in force in BD. A new Law on Waters in BD is in the design phase: it is drafted to be compliant with the EU Directives (WFD and FD) and coherent with the legislation of Entities.

A Directive-specific implementation plan for EUFD has been drafted under the IPA funded project “Strengthening of BiH’s Environmental Institutions and Preparation for Pre-accession Funds”.

Action Plan for Flood Protection and Water Management for BiH 2014-2017, was adopted by the Council of Ministers of BiH in January 2014, as well as by both entity and BD governments. Action Plan is demonstrating harmonized and coordinated approach to the issues of the Flood Protection and Water Management throughout the country.

### **Early Warning:**

**Hydro-meteorological services** in BiH are carried out by the Republic Hydro-meteorological Service of the RS and Federal Hydro-Meteorological Service of the FBiH. According to the Law on Ministries of BiH, article 15, Ministry of Civil Affairs of BiH is responsible for the coordination between the two services.

### **Civil protection:**

Civil Protection Sector was established within the Ministry of Security in 2004 (Civil Protection Sector transformed into Protection and Rescue Sector in 2008, following Framework Law on Protection and Rescue in BiH). Ministry of Security is authorized for implementing international commitments and cooperation in carrying out civil protection, coordinating activities of the Entity Civil Protections in BiH, coordinating the plans of the Entity Civil Protections in the event of natural or other disasters that affect the territory of BiH, and passing programs and plans for protection and rescue. The Framework Law for protection and rescuing people and material goods from natural and other accidents was adopted in 2008. On the basis of this Law, preparation of the Assessment of Bosnia and Herzegovina from natural and other disasters was completed in March 2011.

At the level of Entities and BD, which have full responsibility for **protection and rescuing** at the territory of FBiH, RS and BD, the following institutions are in charge of managing flood related issues:

Federal Civil Protection Administration of the FBiH, Republic Administration of Civil Protection of the RS and the Department of Public Safety of the Brcko District of BiH.

According to what mentioned above, it is recommended to:

- *Ensure the full implementation of the Action Plan for Flood Protection and River Management for BiH;*
- *Finalize legislation related to Flood risk management in BD;*
- *Work on further legislative developments for the enforcement of the legislation and creating the necessary linkages with regulations of other fields. In particular, it is recommended to create clear linkages between water management, civil protection and rescue, land use and local regulations;*
- *Since fragmentation of the institutions involved in flood risk management is a critical point influencing the efficiency of it, it is recommended to establish a mechanism of institutional coordination among all the actors involved in Flood Risk Management (with a special focus on civil protection and water management). They should cooperate in close contact in continuity in order to share data, to draft omogeneous action plans, and not to create overlapping of responsibilities and documents;*
- *Promote the development of omogeneous regulations, sublaws and procedures for the implementation of FRM for both the entities and BD in order to have a consistent approach throughout the Country.*

## 2. Units of Management

Federation of BiH: the basic unit for water management in FBiH is the river basin district (RB-District), (FBiH Law on Water 2006 – Law on Water of Federation). In particular, the FBiH is divided into two river basin districts: the one of the Sava River and the one of the Adriatic Sea. The boundaries of these two river basin districts and of all the river basins have been established by the *Decision on the border river basins and river basin districts in the territory of the Federation of Bosnia and Herzegovina since 30.05.2007*.

- River basin of River Sava is part of international river basin district of the Danube River (part of the international sub-basin / sub-basin of Sava) in the FBiH.

- River basin of the Adriatic Sea includes parts of international river basins of Neretva with Trebisnjica, Cetina and Krka in the territory of BiH and FBiH.

Based on the Law on Water of Federation, the Agencies for water management for the river basin districts (River basin of River Sava and River basin of the Adriatic Sea) were established, with headquarters in Sarajevo and Mostar: "Sava River Watershed Agency" Sarajevo and "Adriatic Sea Watershed Agency" Mostar.

Republic of Srpska: the basic unit for water management in the RS is a river basin district (RB-District), (Law on Water RS, 2006 - Law on Water of Republic Srpska). In particular, the RS is divided into two river basin districts: the one of the Sava River and the one of the Trebisnjica River. The boundaries of these two river basin districts and of all the river basins have been established by the "Decision on Establishing the boundaries of river basin districts (districts) and the river basins on the territory of the Republic Srpska" as of 22.09.2006.

Based Law on Water of Republic of Srpska (Official Gazette of Republic of Srpska 50/06), agencies for water management in these river basins, based in Bijeljina and Trebinje were established.

RS Government in January 2013 transformed water management institutions, compared to the already adopted Water Act RS (O.G.of RS 50/06), and established public institution " Water of Srpska" (Public Institution "Vode Srpske" Bjeljina), by which are connected the Water Agency of River District Sava Basin and Water Agency Trebišnjica River Basin.

*According to what mentioned above, it is recommended to:*

- *Define the basic unit for water management in BD;*
- *Ensure the coordination between UoM belonging to the same river basin district, but not to the same administrative unit (for example, belonging to the two entities).*

### 3. International River Basins

In the case of BiH the platform of international co-operation has been established through the International Sava River Basin Commission (ISRBC) that puts all countries within the Sava River Basin on the same platform and provides high quality assistance for international co-operation in the field of navigation, water and flood management.

The Flood Experts Group of ISRBC has prepared a Protocol on Flood Protection that supplements the **Framework Agreement on the Sava River Basin** for its implementation. The Protocol has been ratified

by all Parties and explicitly refer to the approximating to the EU Flood Directive setting 6 areas of activities:

- a. Preparation of the Flood Risk Management Plan of Sava River
- b. Undertake Preliminary Risk Assessment
- c. Preparation of Flood Maps
- d. Development of Flood Risk Management Plan in the Sava River Basin
- e. Establishment of the Flood Forecasting, Warning and Alert system in the Sava river Basin
- f. Exchange of information significant for sustainable flood protection
- g. Implementation of all measures and activities originating from planning documents

The Protocol refers to the EUFD for PFRA, FRMP and Flood Maps and it specifies that the Sava Commission will coordinate the development of a joint methodology for flood mapping to be applied in the entire river basin.

*According to what mentioned above, it is recommended to:*

- *Promote the full implementation of the Protocol on flood protection.*

#### 4. Preliminary Flood Risk Assessment

Federation of BiH has already finished the PFRA in all its territory in 2014 (prior to the 2014 severe flood). FBiH has an official document (*Preliminarna procjena poplavnog rizika na vodotocima 1. kategorije u FBiH, April 2013*) regarding the methodology used to conduct the APSFR and the methodology used to identify the area at PSFR. For the Sava river basin 68 APSRF have been identified, while 14 for the Adriatic Sea basin. APSFRs has been determined on the basis of historical flood data and available impending floods data (buduće poplave). The preliminary assessment was made before the catastrophic floods of May 2014 and is not (yet) officially confirmed.

Republic of Srpska has completed the PFRA in 2015, however the assessment does not cover the entire territory but only major part of the RS territory belonging to Sava and Danube (because of the obligations from the Framework Agreement on the Sava River Basin) and not part of the territory belonging to the Trebisnjica River basin. Moreover, RS has used a different methodology to conduct the PFRA from the one used by FBiH, although the two methodologies are characterized by a really



similar approach. Data and information on May 2014 flood were included into the already existing assessment.

Brcko District has not conducted PFRA yet.

According to what mentioned above, it is recommended to:

- Although the two methodologies used for conducting the PFRA by the FBiH and the one used by the RS seem to be really similar, it is recommended to compare them in order to underline the differences, to integrate them and, if necessary, to define a better unique method to be used in the whole Country by the Entities and the District. In defining this shared methodology, the “Guidelines for the implementation of EU Floods Directive and MSs Good practices” developed by IPA Floods Programme could be used as reference;
- Review and finalise the PFRA using the defined unique reliable methodology (mentioned above) all over the Country in order to identify the APSFR, which are the base to start the elaboration of hazard and risk maps.
- Finalise PFRA in RS and conduct PFRA in BD as envisaged by the Action Plan;
- Review PFRA in the FBiH, as it may have been changed after the 2014 severe flood;
- Systematize the collection of data regarding past floods using a unique platform at national level and taking into account the “User Guide to the floods reporting schemas” provided by the EC. The Flood Risk Information system based on FloodCat and proposed under the IPA FLOODS project could be used for addressing this recommendation;
- it is further recommended to implement a training program dedicated to the institutions that have the mandate for conducting PFRA. It would be appropriate to organize a joined training between Entities and BD.

## 5. Flood Hazard and Flood Risk Mapping

In BiH, neither the Entities nor the District have already produced flood hazard and flood risk maps basing on the results of PFRA. The Federation of Bosnia and Herzegovina has prepared the methodology for producing flood hazard and flood risk maps. (Metodologija izrade mapa rizika in mapa opasnosti od poplava na vodotocima 1. kategorije u FBiH – Institut za hidrotehniku Građevinskog fakulteta u Sarajevu, December, 2013). The methodology establish a procedure which divides the flood areas into 4 categories based on the hydraulic analysis of the examined area:

negligible hazard, hazard for some (opasnost po neke), a threat to the majority (opasnost po većinu) and general danger (opasnost po sve). Flood risk is then determined by including data on population, economic activities, protected areas (zaštićena područja), cultural and historical monuments, IPPC facilities (infrastructure, which might cause pollution). The Methodology mentions criteria frequency of high water occurrence (Q20, Q100 and Q500) as a starting point.

BiH has applied for a project funded by the WBIF: *Preparation of flood hazard maps, flood risk maps and support to PMU of the flood risk management project*. Implementation of the Project is about to start in first quarter of 2016.

*According to what mentioned above, it is recommended to:*

- *Define a unique method to conduct the flood hazard/risk mapping to be used in the whole Country by the Entities and the District and to be used in future projects, such as the mentioned project funded by the WBIF. The "Guidelines for the implementation of EU Floods Directive and MSs Good practices" developed by IPA Floods Programme and the existing methodology of FiH (Metodologija izrade mapa rizika in mapa opasnosti od poplava na vodotocima 1. kategorije u FBiH – Institut za hidrotehniku Građevinskog fakulteta u Sarajevu, December, 2013) should be used as reference. The methodology should also address: resolution of digital terrain model, hydrological and hydraulic modelling, climate change effects and flood risk assessment for land use planning as well as contingency planning.*
- *Apply the developed and adopted methodology for preparing Flood Hazard and Flood Risk Mapping for all APSFR the territory of Bosnia and Herzegovina.*
- *it is further recommended to implement a training program dedicated to the institutions that have the mandate for conducting FHM and FRM. It would be appropriate to organize a joined training between Entities and BD.*

## 6. Flood Risk Management Plans

As planned and clearly defined in the "Action plan for Flood Protection and Water Management in BiH 2014-2017", FRMPs will be drawn up throughout the Country in the next years. The elaboration of these FRMPs is not already started because BiH is now working on the finalization of the previous phases (PFRA and FHM/FRM).

*According to what mentioned above, it is recommended to:*

- *Coordinate the elaboration of FRMPs of the Entities and of BD.*



- *Develop FRMPs at RB-District level and to ensure an harmonization within the River Basin Management Plans as required by the EUWFD and the EUFD, with particular attention to transboundary issues connected with operational FRMPs.*
- *establish a mechanism for the effective implementation of the FRMPs.*
- *promote a close cooperation between water management institution and civil protection institutions in order to ensure operational value of FRMP, which has to be focused on prevention, protection, preparedness, response and recovery and in order to make the FRMP useful also for land use planning activities.*
- *Strengthen the existing hydro-met services and ensure data exchange between the two. Using of a unique platform to share data in real (and no-real) time would be highly recommended.*
- *Identify structural and non structural measures and define a unique method to prioritise them to be used all over the Country. Define an adequate programme of measures for preventing the material damages and the human victims as well as for creating an adequate preconditions for economic and social development of local communities.*
- *Use the reporting sheet of the EC to collect and provide information and data.*

## 7. Data Sharing and Data Information Systems

Data and Information exchange among institution and agencies seems to be not fully developed in BiH.

*It is recommended to develop and adopt a data sharing policy framework among national and international institutions, organizations and general stakeholders to access flood risk data and maps.*

*It is further recommended to adopt standards for geospatial data in line with WISE system and INSPIRE Directive.*

*It is recommended to develop an integrated data information system for collecting, recording and sharing flood risk information and maps for Preliminary Risk Assessment and Hazard and Risk Mapping. The system should allow the recording of historical floods in line with the guidance document of the EUFD. The Flood Risk Information System, developed under IPA FLOODS, should be used as an asset for addressing this recommendation.*