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Zagreb, 19 March 2015

**26th Meeting of the Permanent Expert Group for Flood Protection
REPORT FROM THE MEETING**

Zagreb, 19 March 2015

Venue: Premises of the International Sava River Basin Commission, Kneza Branimira 29/II, Zagreb

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I. ATTENDANCE

Experts from Slovenia, Croatia, Bosnia and Herzegovina and Serbia attended the meeting. Additionally, an expert from the Slovenian Environment Agency, a representative of the U.S. Army Corps of Engineers, a representative of the COWI IPF Consortium, and a representative of the CIMA Research Foundation, also participated at the meeting at specific agenda items. The list of participants is annexed to this report.

II. CHAIRMANSHIP

Mr. Dragan Zeljko chaired the meeting.

III. ADOPTED AGENDA

1. **Opening of the meeting**
 - 1.1. *Welcome and opening remarks by the PEG FP Chairman*
 - 1.2. *Adoption of the Agenda*
2. **Overview of the activities between the two PEG FP meetings**
 - 2.1. *ISRBC*
 - General presentation on the ISRBC activities
 - Status of the Sava GIS & Sava HIS
 - 2.2. *Activities in the Parties to the FASRB*
 - Slovenia
 - Croatia
 - Bosnia and Herzegovina
 - Serbia
3. **Improvement of Joint Flood Management Action in the Sava River Basin (“WBIF project”)**
 - 3.1. *Information on the project status*
 - 3.2. *Project activities, implementing arrangements & timeline*
4. **USACE support – 2nd phase**
 - 4.1. *Hydrologic & Hydraulic modelling*
 - Introduction
 - Tasks, implementing arrangements & data needs
 - 4.2. *Lidar project proposal*
5. **Program for development of the FRMP in the Sava River Basin**
 - 5.1. *Introduction*
 - 5.2. *Preparation of the final draft*
6. **Joint ICPDR-ISRBC report on May 2014 flood**
 - 6.1. *Introduction*
 - 6.2. *Review of the current draft & Next steps*
7. **External projects**
 - 7.1. *WB_FLOODS*
 - 7.2. *IPA FLOODS*
 - 7.3. *FLOODIS*
8. **ISRBC Work Plan for FY 2015**
9. **Any other issues**

IV. DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

AD.1. OPENING OF THE MEETING

1.1. Welcome and opening remarks by the PEG FP Chairman

Mr. Dragan Zeljko opened the meeting and welcomed the participants. He introduced the new deputy member of the PEG, representing Croatia, Mr. Zoran Đuroković.

1.2. Adoption of the Agenda

The Group adopted the proposed agenda of the 26th meeting (*Doc.Ref.No: 3-15-2/2-2*), with agenda items presented in Part III of this report.

AD.2. ISRBC ACTIVITIES BETWEEN THE TWO PEG FP MEETINGS

2.1. ISRBC

General presentation on the ISRBC activities

The Secretary, Mr. Dejan Komatina, informed the PEG FP on the activities of the Sava Commission since the last, 25th PEG FP meeting. He informed the PEG FP on the most important meetings and events, status of the projects, activities and protocols, publications, and upcoming meetings and events.

He recalled that just Slovenia has not ratified the *Protocol* yet and added that countries that had previously ratified the agreement, as well as Slovenia, in accordance with the Protocol should nominate the competent bodies and contact persons for the implementation of the Protocol.

The Secretary informed the PEG that the 5th Meeting of the Parties to the FASRB were held on December 2, 2014, with following main points:

- The Parties adopted the report on implementation and the Declaration with guidelines for further implementation of the of the FASRB;
- The Sava River Basin Management Plan was approved;
- The next, 6th Meeting of the Parties to the FASRB will be held in 2016 in Republic of Serbia;

The Secretary also informed the PEG about 37th Sessions of the Sava Commission, which were held on February 24, 2015, with following main points:

- the ISRBC stressed the conclusion of the June 2014 Ministerial Meeting, regarding flood management issues, on the importance of further strengthening of the exchange of relevant information (on ongoing activities and projects) as a prerequisite for their successful implementation and also the conclusion of the 5th Meeting of the Parties on the importance of further strengthening of regional cooperation in the field of flood protection and the maximum use of mechanisms within the ISRBC framework in coordinating the regional activities in this field;
- The ISRBC considered the request of Bosnia and Herzegovina regarding the assessment of transboundary impact of heightening the levees on the Sava River in Bosnia and Herzegovina;
- The ISRBC considered the letter of the Ramsar Convention Secretariat related to the potential of natural water retention measures (NWRM) for mitigating the impacts of floods and droughts in the Sava river basin;

Mr. Komatina informed the PEG that the Annual meeting with directors of NHMSs from the Sava countries were held on February 10, 2015, when all joint activities were supported by directors.

Mr. Komatina also announced next meetings and emphasized Workshop on non-structural flood protection measures planned for 8-9th of September 2015, tentatively (to be held in Zagreb, organized by ISRBC, WMO and UNESCO Venice).

More information on other activities and events can be found in his presentation (*AD.2.1_Presentation_ISRBC_PEG FP 26.ppt*).

Status of the Sava GIS & Sava HIS

Mr. Zeljko briefly informed the PEG FP about chronology of the Sava GIS development in general, and about the status of the ongoing project *Establishment of the Sava GIS core functionalities*. The project, supported by the EU grant, comprises the following activities:

- purchase and installation of the required software;
- establishment of the Sava GIS core services.

The PEG FP was informed that the first workshop of the SavaGIS project was held in Zagreb on 12 March. The final workshop of the project is planned for June 30, 2015 and participation of the PEG members would be highly appreciated.

Mr. Samo Grošelj informed the PEG FP about the activities related to common hydrometeorological issues, including the status of Hydrological Yearbook development and information on agreed joint hydrometric measurements at border river sections. He presented progress of the Sava HIS project aiming to support the Sava countries in sharing and disseminating of hydrologic and meteorological data, information and knowledge on the water resources and to enable an effective common channel for exchanging and viewing the hydrologic and meteorological data and information in emergency situations, primarily those related to flood events. He emphasized that ToR is prepared and Service Contract with ICPDR signed. The next steps for Sava HIS development after engagement of the consultant, will be assessing the current data collection and storage systems in beneficiaries, also development and support to implementation of technical solutions for integration of the beneficiary systems with the central system (part of Sava GIS) as support to exchange of hydrometeorological data internationally and nationally.

Mr. Grošelj emphasized that implementing period of the Sava HIS project is April–October 2015 including workshop and training courses.

More information can be found in the following presentations: *AD.2.1. Sava GIS.ppt and AD.2.1. Presentation Sava HIS.pptx*.

2.2. Activities in the Parties to the FASRB

Slovenia

Mr. Luka Štravs informed PEG about the activities in the implementation of the EU Floods Directive in Slovenia and the current status in development of the Flood Risk Management Plan (Načrt zmanjševanja poplavne ogroženosti).

He informed PEG that Catalogue of the measures for achieving the FRM objectives is finalized with 24 measures and additional 2 for the Adriatic Sea catchment area.

Mr. Štravs emphasized that the focus is on the structural measures for which cost-benefit analysis is finalized and preparation of the long term program for construction measures is planned.

Mr. Štravs also informed PEG that bilateral coordination of the FRMP with neighbours is in progress. In SRB, Slovenia together with Croatia is involved in Cross Border Coordination program, for the Kupa-Sutla river basin. It is planned that in implementation period (2014-2022), among other activities, will be done: flood mapping, harmonisation of maps and data, hydrological analysis and studies, etc. For the Sava River, they expect that these issues will be done through the ISRBC activities and related projects.

He informed PEG that E-Water portal with Water Atlas is in establishment, where LiDAR for all territory of Slovenia will be available, up to July 2015.

PEG FP was informed by Mr. Štravs that Slovenia is in re-organization process of the water management institutions and establishment of the Water Directorate with reallocation of technical staff

from Institute for Water and ARSO. He emphasized that Government is already approved this initiative and the Water Directorate will start from September 2015, and budget from January,01 2016.

Croatia

Mr. Marijan Babić informed the PEG about the activities in the implementation of the EU Floods Directive in Croatia with main conclusion that development of the FRM plan is still in progress.

He emphasized that during 2014, Croatia completed flood hazard and risk maps, published on web: <http://korp.voda.hr/> (together with PFRA) in December 2014 and reported to the EC on January 14, 2015 (for all 2976 APFSR). Flood hazard maps for three scenarios of probability (high: 25-year floods; medium: 100 -year floods; low: 1000 or defense system failure) are based mostly on models and studies developed over the years (plus expert judgement). He noted that new modeling is being done for six river (sub-basins). May 2014 floods are also included into flood hazard maps development as an event that caused levee breaches and defense system failure. Improvements to the flood hazard and risk maps, including collection of better data and development of modeling-based maps, will be included in the programme of measures to be implemented during the 1st cycle.

Mr. Babić also informed the PEG about finalized study “Economic aspects of estimation of potential flood damages“ which proposed a methodology and damage functions for most of the direct damage categories using NACER tool (GIS based) for estimation of direct damages for a particular scenario in a particular area.

The process of the maps analysis and working on the FRM plan is currently in progress. Primary intention is to complete the first draft of the FRM plan by March 2015 will not be met. He emphasized that two type of measures for achieving the objectives of the FRM are considered. First type are existing FRM measures for prevention, protection and preparedness, according to: Water Act, National Flood Defense Plan and Annual Maintenance Programme of Regulation and Flood Protection Systems. Second type are planned FRM measures which includes:

- improvement of the existing measures;
- additional non-structural measures;
- structural measures (construction and reconstruction of flood protection infrastructure).

Structural measures are defined by two documents: Water Management Strategy and Multiannual Programme for Construction of Water Regulation and Protection Facilities and Amelioration Facilities (MAP).

Bosnia and Herzegovina

Ms. Aida Bezdrob informed the PEG about the activities in the implementation of the EU Floods Directive in Bosnia and Herzegovina. Action program for flood protection is finalized and approved in which, among other issues, restoration of the HM gauging station network is planned and also LiDAR survey for floodplain areas.

Ms. Bezdrob emphasized that in Federation of B&H, identification of the APSFR is finalized and development of the flood H&R maps is in progress (first category of the river mainly finished, focus is on the second category). Activities on heightening of the Sava levees are in progress.

Mr. David Latinović informed the PEG FP that in Republika Srpska certain important activities are in progress such as heightening of the Sava and Drina levees and restoration of the pumping stations, after destruction in May 2014 flood event. He emphasized that the entity government expects the approval of funds from international financial sources for FRM plan development.

Serbia

Ms. Radovanka Pavlović informed the PEG about the activities in the implementation of the EU Floods Directive in Serbia. Methodology for assessments of flood risk and development of flood hazard maps for 23 APSFR is in preparation and modelling of the protected areas, what is one of main obstacles, is planned to be done for probability 100 and 1000. Levee breaching will be also analyzed. Along with that development of the flood H&R maps for Belgrade is planned in 2015, by Ministry of

Agriculture and Environmental Protection. Flood Risk Management Plan for Sava River Basin shall be prepared using the elements from Danube Plan with a note that all H&R maps will not be prepared.

Ms. Pavlović emphasized SOFPAS II project through which LiDAR survey is planned.

The PEG was also informed that a reconstruction of the Drina and Sava levees is in preparation process, together with B&H, through IPA regional fund.

AD.3. IMPROVEMENT OF JOINT FLOOD MANAGEMENT ACTIONS IN THE SAVA RIVER BASIN (“WBIF PROJECT”)

Mr. Mirza Sarač, at the beginning of the project status presentation, reminded the PEG about the basic information of the project, as follows:

- The project was officially approved in June 2014;
- It comprises of the two components: Sava FRM Plan (0.2 mil EUR) and Sava FFW System (1.8 mil EUR);
- Implementation period: 2014-2017;
- The preparatory mission: completed (Sep 29 - Oct 3, 2014);
- Aide Memoire: finalized and delivered to the beneficiaries (Nov 26, 2014);
- ToR preparation: in progress.

He also informed the PEG about development of the ToR, which is being prepared by World Bank and initially reviewed by ISRBC. ToR is distributed to the beneficiaries and ISRBC expert groups on February 17, 2015, after which 6 institutions from 5 countries submitted the comments. The PEG briefly reviewed the table of comments and agreed that deadline for providing comments shall be extended until March 26, 2015. A meeting with members from related expert groups (PEG FP and Ah HMI EG) regarding the ToR shall be organized in mid-April 2015, tentatively.

Mr. Sarač also informed the PEG that the Request for Expression of Interest, which is prepared by World Bank, initially reviewed by ISRBC and checked by the beneficiaries (without comments), will be published soon. He also emphasized that a tentative timeline from Aide Memoire document, where the signing of contract with the service provider has been planned for June 15, is to be extended.

After that Mr. Zeljko presented the next steps and announce a meeting Beneficiaries-World Bank-ISRBC, which shall be organized on Apr 20 or 21, 2015 (tentative), with the main topics as follows:

- ToR approval;
- Organizational structure of the project;
- ‘Indirect’ beneficiaries (SI and HR) involvement;
- ISRBC role and involvement;
- Locations of two host data Centers (client-server and back-up).

More information can be found in the presentation (*AD.3 WBIF Project.ppt*).

AD.4. USACE SUPPORT – 2ND PHASE

Mr. Zeljko briefly presented and reminded the PEG on the conclusions from 25th meeting, about 2nd phase of the USACE support, as follows:

- reconsider the scope of work regarding the Sava River basin hydrologic (HEC-HMS) model development, taking into account the model developed in the frame of WATCAP project (which was submitted to the USACE representatives after the 25th meeting);
- possibility of additional modelling the Bosna River basin and/or the Una River (depending on available resources, as well as national plans of Croatia and B&H), with addition of initial flood forecasting capabilities;

- necessity for hydraulic modelling/analysis (HEC-RAS) of levee breaches along the Sava River, on the actual locations of breaches occurred in May 2014;
- reconsider that the flood impact analysis (FIA) should not be the part of the 2nd phase of cooperation;
- reconsider deadlines and set realistic dates pursuant to the obligation to submit data from individual institutions of the countries;

He noted that for successful implementation of the tasks, the countries committed to provide the following data:

- data on May 2014 levees breaches: exact locations; modes of breaches; dimensions, flooded area etc.;
- available terrain data for the floodplains;
- available hydrologic and hydraulic models with original data, especially those for Bosna (and Una) River;
- other data as requested by the ToR.

He also informed the PEG about the LiDAR survey project which is proposed for financing to the US Authorities. Project proposal is concentrated on the Sava River, in order to support the above actions required by the PEG, especially further enhancement of the Sava hydraulic model, with prioritization as follows:

- 1st priority zone: Sava „levee-to-levee” section from Čatež to Belgrade, including flooded area due to levee breach in HR;
- 2nd priority zone: flood control storage areas along the Sava River.

Mr. Zeljko pointed out that decision of the project approval will be made after collecting the informative offers of the regional companies and estimated funds.

PEG FP took note on the information and supported further actions leading to approval of the project.

After that Mr. Zeljko gave the floor to Mr. Brantley Thames, U.S. Army Corps of Engineers. Mr. Thames presented to the PEG FP current task items, as follows:

1. Calibrate a flood event-based Sava river basin hydrologic model (HEC-HMS);
2. Improve upon the latest mainstream Sava river hydraulic model (HEC-RAS);
3. Improve upon inundation mapping capability (HEC-RAS);
4. Other tasks:
 - Develop hydraulic modeling on specific tributaries using existing models;
 - Using new tributary hydraulic modeling in combination with the updated HMS model to develop a flood forecasting platform (Bosna and/or Una river);
 - Develop a pilot area where the new 2-dimensional capability in HEC-RAS could be implemented such as a levee breach scenario.

He concluded that all of above tasks, except HEC-HMS, depend on acquiring or developing a better terrain data.

After that Mr. Thames presented planned steps for development of the 1st task item - Sava river basin hydrologic model (HEC-HMS) using existing model, firstly prepared by USACE (1st Phase), and updated by COWI (WATCAP project).

He emphasized critical data needs:

- Precipitation input;
- Observed streamflow data for specific calibration events;
- Temperature gage information for snowmelt simulation;
- Definition of the historical calibration events, with the following proposal:
 - December 2009 – Have streamflow from 1st Phase;
 - September 2010 – Have streamflow from 1st Phase;
 - May 2014;
 - Additional calibration periods, as needed.

He concluded that most of the basin is covered with only daily recording precipitation gauges (exception is Slovenia) and presented OPERA Gridded Radar Precipitation, which provides hourly

precipitation totals at a resolution of 4 km². OPERA covering entire Sava Basin, which would eliminate the issue with daily recording gages most prevalent in the basin.

The PEG supported OPERA using but reacted on Mr. Thames conclusion and explained that meteorological station map used for analysis isn't updated, because there is a lot more hourly recording precipitation gauges in entire basin.

PEG FP asked the Secretariat to provide, in cooperation with Ad HM EG, the newest meteorological stations map with hourly recording precipitation gauges and thereafter collect and deliver necessary data to USACE.

Mr. Thames also informed the PEG about plans for hydraulic modeling – the 2nd task item, with note that the current HEC-RAS model needs better cross sectional geometry, and better location and elevation of levees along the Sava River. He concluded that LiDAR would help to solve both of these issues among others. In addition to LiDAR, he emphasized some other critical needs to improve the hydraulic modeling, such as, in first place, observed stage hydrographs for specific calibration events and gate operations for the offline flood control structures for the specific calibration events.

The PEG supported these activities.

About the 3rd task item - inundation mapping, Mr. Thames stressed that improved DEM based on new LiDAR would virtually solve the inundation mapping issue especially along the mainstream and within the offline flood protection storage areas, what the PEG supported.

For the 4th task items - additional tributary hydraulic modeling and flood forecasting platform (Bosna and/or Una river), Mr. Thames concluded that it should begin requesting necessary information in preparation for the future task, because the DEM will probably make this as difficult as it has for mainstream of the Sava River. He proposed to use the updated hydrologic model from the 1st task and to develop the hydraulic modeling in HEC-RAS using existing modeling, connecting the HEC-HMS and HEC-RAS models using DSS format. After these models are connected, a process can be developed to utilize the OPERA gridded precipitation to simulate an event up to the forecast time and for the future period of interest, he proposed to determine a way to use the ALADIN forecasted meteorological data.

The proposal of Mr. Thames was supported by the PEG, with conclusion that additional tributary hydraulic modeling and flood forecasting platform has to be done just for the Bosna River. Mr. Zeljko also explained that for the Bosna River already exists hydrologic model, developed with the HBV-Light software (made by Slovenian institutions), additional to the HEC-HMS, and also exists steady hydraulic model (from source to mouth), developed with the HEC-RAS (made by Water Agencies).

About the 4th task item – 2D hydraulic modeling pilot, Mr. Thames explained that 2D is a new capability in HEC-RAS and is still in beta testing. Mr. Zeljko proposed to use this capability on a levee breach scenario considering the failures that occurred during the May 2014 event, and Mr. Thames concluded again that a better DEM will be necessary to attempt modeling of this complexity.

The PEG supported continuation of this activity.

Mr. Thames informed the PEG about the flood forecasting issues in the US, about responsible institutions and data which are using. He also presented some information about structure of the Corps Water Management System (CWMS). CWMS is a shell software that leverages many of the common modeling software programs developed by USACE (HEC-HMS, HEC-ResSIM, HEC-RAS, and HEC-FIA), using for flood forecasting issues, with note that flood forecasting is more than just a compilation of models. In this case it includes network of database servers that house an Oracle database of all observed gage information across USACE, users across 35 districts, upward reporting to divisions and headquarters, multiple implementation strategies, etc.

Details can be seen in his presentation (*AD.4.1. Hydrologic & Hydraulic modelling.ppt*).

At the end of this task the PEG again agreed to support activities of USACE and committed to supply all necessary data. In addition, Mr. Zeljko repeated conclusion from 25th PEG meeting that the institutions of the countries should nominate the responsible persons for the project implementation.

AD.5. PROGRAM FOR DEVELOPMENT OF THE FRMP IN THE SAVA RIVER BASIN

Mr. Sarač briefly informed the PEG FP about small interventions that have been made on the latest draft. PEG discussed the next steps, with conclusion that the Program has to include activities which are planning to be developed through the WBIF project, Component 1 - Sava FRM Plan, as follows:

- Catalogue of measures relevant for the basin as a whole, including structural and non-structural measures;
- Environmental Impact Assessment Study for the proposed measures;
- Modalities for transboundary cooperation of the Sava countries in the flood defense emergency situations;
- Organization of public participation events;

Taking into account the status of the Protocol ratification and the requirement that the Program should be adopted by the ISRBC within 6 months after entry into force of the Protocol, the Secretariat shall make additional adjustments in the Program and the final draft will be forwarded to PEG FP members up to May 05, 2015 and deadline for the PEG final comments is June 01, 2015.

AD.6. JOINT ICPDR-ISRBC REPORT ON MAY 2014 FLOOD

Mr. Sarač briefly presented drafting procedure of the Report to the PEG and comments provided by Ah HM EG members. He also informed the PEG about participation at the 27th meeting of the ICPDR FP EG, when the draft Report was presented with only one comment, provided by Mr. Almir Prljača, member from Bosnia and Herzegovina. Mr. Prljača recommended to put into the report conclusions the outcomes of the EC Regional Conference which was held in November 2014.

Mr. Sarač informed the PEG that efforts will be made to publish the Report before June 2015, with intention that the Report be ready for submission on the International Sava Day ceremony. He emphasized that tendency was supported by ICPDR, who will cover the printing costs.

The PEG agreed on the next steps as follows:

- ISRBC Secretariat has to make final adjustments of the draft Report;
- The final draft Report will be delivered to the PEG members by the end of March 2015;
- Deadline for final comments is 15 April 2015;
- ISRBC Secretariat will make proofreading and prepare the Final Report by early May 2015;
- Publishing of the Report by ICPDR - mid-May 2015;

AD.7. EXTERNAL PROJECTS

7.1. WB FLOODS

Gap analysis and needs assessment in the context of implementing EU Floods Directive in the Western Balkans – WBIF IPF4

Mr. Attila Fürstand, representative of consultant - the COWI IPF Consortium, presented information about the project (project code: WB FLOODS) to the PEG, with following features:

- covers the entire Western Balkan Region;
- aims to assist the Directorate General for Neighbourhood Policy and Enlargement Negotiations (DG NEAR) in decision making;
- concerns numerous projects and initiatives;
- deals with measures that are not necessarily only of “hard” infrastructure (i.e. “structural” measures) but also organisational and other “non-structural” interventions.

The general objective of the Project is to enhance the capacity of the Western Balkan Countries in flood risk management and flood prevention and facilitate of the compliance with the pertinent EC legislation particularly Floods Directive.

The activities commence on January 19, 2015 with preparatory activities and mobilisation; the formal commencement date is January 26, 2015. Results of data collection to be presented: from mid to end of April (country visits). Country and regional reports to be presented on end of May.

The planned donors’ conference in late-May – early-June is a major milestone during the project.

To comply with this strict deadline, EC assistance and facilitation for coordination with countries is vital. Completion of assignment is planned for the middle of June 2015.

Details can be seen in document and presentation (*AD.7.1. WB FLOOD_MEET_Assignment_Gap Analysis_Intro_ISRBC_01.docx and AD.7.1. WB FLOODS_Gap Analysis_ISRBC_190315.pptx*).

PEG FP took note on the project and asked to be regularly informed on its progress.

7.2. IPA FLOODS

Programme for Prevention, Preparedness and Response to Floods in the Western Balkans and Turkey – EU IPA FLOODS

Mr. Marco Massabo, the representative of Consultant - the CIMA Research Foundation (Member of the Implementing Consortium of the Programme, leader for Component 2), presented the project. Scope of the Programme is to increase Flood Risk Management capacities in the beneficiaries (Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Serbia, KOSOVO under UNSCR 1244/99, and Turkey) at national, regional and EU level.

Target groups of the Programme are disaster management authorities and agencies or institutions in charge for water management and flood risk prevention in the beneficiaries.

Specific objectives of the Programme are to increase Beneficiaries' capability to develop effective national civil protection systems and collaborate in a coherent manner in dealing with floods at regional/European level (prevention, preparedness and response) and to support beneficiaries in becoming better prepared to cope with the challenges posed by approximation to/implementation of the EU Floods Directive.

Implementing Consortium of the Programme is as follows:

- Italian Civil Protection Department (DPC);
- Croatian National Protection and Rescue Directorate (NPRD);
- Administration of the Republic of Slovenia for
- Civil Protection and Disaster Relief (URSZR);
- German Federal Agency for Technical Relief (THW);
- Swedish Civil Contingencies Agency (MSB);
- CIMA Research Foundation, Italy (CIMA);
- Studiare Sviluppo S.r.l, Italy (StuSvi).

Mr. Massabo's presentation was focused mainly on Component 2: Capacity building for approximation to/implementation of EU Floods Directive.

The PEG discussed the issue and concluded that planned activities by Component 2 of the Programme are mainly already finished within the ISRBC Parties, and noted that only Montenegro, within the Sava River Basin, can be interested for such activities. However, PEG requested to be regularly informed on the project progress.

Details can be seen in documents (*AD.7.2. IPA_FLOODS_ISRBC_Short.pdf and AD.7.2. IPA FLOODS_FACTSHEET_LOT 1_Comp_EUFD.pdf*).

7.3. FLOODIS

On the basis of a request for support to get evolution of FLOODIS II project, funded through the European Commission's Horizon2020 programme (submission deadline 8th April 2015), the GeoWille Group contacted ISRBC Secretariat for potential role to the proclamation of requirements, consideration for integration in the working environment and public relations efforts.

On behalf of the GeoWille, whose representatives were unable to participate in the meeting, Mr. Sarač presented the main objectives of previous phase of the project, application description, as well as planned activities in the FLOODIS II initiative.

Details can be seen in documents and presentation (*AD.7.3. FLOODIS_I_flyer_final.pdf ; AD.7.3. FLOODIS II_Description_for_Users.pdf and AD.7.3. FLOODIS_Short.ppt*).

PEG FP took note on the project and asked to be further informed, if the GeoWille Group is selected to develop FLOODIS II.

AD.8. ISRBC WORK PLAN FOR FY 2015

Mr. Zeljko briefly presented ISRBC Work Plan for 2015, as well as activities within flood management issues and also ANNEX III of the Work Plan, which is related to activities and operational tasks of the PEG FP.

PEG FP took note on the Plan and Programme of Work.

Details can be seen in document (*AD.8. Work Plan for FY 2015_FINAL.pdf*).

AD.9. ANY OTHER ISSUES

The next **27th meeting of PEG FP** shall be jointly held with Ah HM EG in early September, 2015 (September 10 tent.) in Zagreb, back to back with the **Workshop on Nonstructural measures for Flood Mitigation and Control**, which will be organized by ISRBC, WMO and UNESCO Venice.

Final workshop on Sava GIS establishment will be held on the June 30, 2015 and Mr. Zeljko invited the PEG FP to attend, especially for review of the flood management geodatabase which is being developed.

ANNEX I. LIST OF PARTICIPANTS

Full Name	Country/Company/Organization	Tel/ E-Mail	Attendance
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ANNEX II. LIST OF DOCUMENTS

Agenda item	Document	ENG	HRV	SLO	BIH-BOS	BIH-HRV	BIH-SRP	SRP
1.2	AD.1.2. PEG FP_26th meeting_Adopted_Agenda.pdf	↓						
2.1.	AD.2.1. Presentation_ISRBC_PEG FP 26.ppt	↓						
2.1.	AD.2.1. Sava GIS.ppt		↓					
2.1.	AD.2.1. Sava HIS.pptx	↓						
3.	AD.3. WBIF Project.ppt	↓						
3.	AD.3. Sava Basin Flood Forecasting & Warning_Draft ToR.docx	↓						
3.	AD.3 Comments on Draft ToR.doc	↓						
4.	AD.4. USACE support – 2nd phase_ISRBC.ppt	↓						
4.1.	AD.4.1. Hydrologic & Hydraulic modelling.pptx	↓						
4.2.	AD.4.2. Lidar project proposal.pdf	↓						
5.	AD.5. WBIF Project_ Component 1_SRBMP.pptx	↓						
5.	AD.5. Program_SFRMP_2015_19_03.docx	↓						
6.	AD.6. Joint Report on May 2014 Floods.ppt	↓						
6.	AD.6. ICPDR-ISRBC_May2014flood.rar	↓						
6.	AD.6. Joint Report on Floods 2014_180315_Komentari na Nacrt Izvjestaja.doc	↓						
7.1.	AD.7.1. WB FLOODS_Gap Analysis_ISRBC_190315.pptx	↓						
7.1.	AD.7.1. WB FLOOD_MEET_Assisgnment_Gap Analysis_Intro_ISRBC_01.docx	↓						
7.2.	AD.7.2. IPA_FLOODS_ISRBC_Short.pdf	↓						
7.2.	AD.7.2. IPA FLOODS_FACTSHEET_LOT 1_Comp_EUFD.pdf	↓						
7.3.	AD.7.3. FLOODIS_Short.ppt	↓						
7.3.	AD.7.3. FLOODIS_I_flyer_final.pdf	↓						
7.3.	AD.7.3. FLOODIS II_Description_for_Users.pdf	↓						
8.	AD.8. Work Plan for FY 2015_FINAL.pdf	↓						

ANNEX III. MAIN CONCLUSIONS, OBLIGATIONS AND DEADLINES

Agenda Item	Description/Conclusion	Obligation	Deadline
1.	Opening of the meeting		
2.	Overview of the activities between the two PEG FP meetings		
2.1.	ISRBC		
2.2.	<i>Activities in the Parties to the FASRB</i>		
	<i>Bosnia and Herzegovina – Republika Srpska</i> Delivering AFSPRs after improving of the PFRA, which is in progress	D. Latinović, PEG FP member	asp
3.	Improvement of Joint Flood Management Actions in the Sava River Basin (“WBIF” project)		
	Additional comments and responses on the ToR	PEG FP	March 26, 2015
	ISRBC expert groups members meeting for the ToR finalization (PEG FP, Ah HM EG)	ISRBC	April 8, 2015 (tent.)
	Beneficiaries-World Bank-ISRBC meeting	ISRBC	April 20 or 21, 2015 (tent.)
4.	USACE support – 2nd phase		
	Delivering of the available terrain data for the Sava River floodplains	PEG FP	asp
	Delivering of the available hydrologic and hydraulic models for Bosna River basin	A. Bezdrob, PEG FP member	asp
	Delivering of the other necessary data	PEG FP	if appropriate
	Calibrate a flood event-based hydrologic model (HEC-HMS)	USACE	July 01, 2015
	Improve upon the latest mainstream Sava river hydraulic model (HEC-RAS). Depends on acquiring LiDAR or developing a better DEM	USACE	September 11, 2015
	Improve upon inundation mapping capability (HEC-RAS). Depends on acquiring LiDAR or developing a better DEM	USACE	September 11, 2015
	Develop hydraulic modelling on specific tributaries using existing models and in combination with the updated HMS model to develop a flood forecasting platform (Bosna River basin)	USACE	December 04, 2015
	Develop a pilot area where the new 2D capability in HEC-RAS could be implemented such as a levee breach scenario. Depends on acquiring updated DTM from Croatia	USACE	January 11, 2016
5.	Program for development of the FRMP in the Sava River Basin		
	Include to the Program consulting services from Component 1 of the WBIF project and forward to the PEG FP the new draft of the Program	ISRBC	May 05, 2015
	Final comments on the Program	PEG FP	June 01, 2015
6.	Joint ICPDR-ISRBC report on May 2014 flood		
	Adjustment of the draft Report according to comments from Ah HM EG and ICPDR FP EG	ISRBC	asp

Agenda Item	Description/Conclusion	Obligation	Deadline
	The final Draft of the Report forward to PEG FP members	ISRBC	03 April 2015
	Deadline for final comments and approval	PEG FP	15 April 2015
	Proofreading and the Final Report	ISRBC	01 May
	Publishing	ICPDR	20 May
7.	External projects		
7.1.	<i>WB_FLOODS</i>		
	PEG FP supported the project and asked to be regularly informed on the project progress	ISRBC	
7.2.	<i>IPA FLOODS</i>		
	PEG FP asked to be regularly informed on the project progress	ISRBC	
7.3.	<i>FLOODIS II</i>		
	PEG FP took note on the project and asked to be further informed, if the consultant company is been selected to develop FLOODIS II	ISRBC	
8.	ISRBC Work Plan for FY 2015		
	PEG FP took note		
9.	Any other issue		
	Final workshop on Sava GIS establishment	ISRBC	June 30, 2015
	Workshop on Nonstructural measures for Flood Mitigation and Control	ISRBC	Sept. 8-9, 2015 (tent.)
	27th meeting of PEG FP jointly with Ah HM EG	ISRBC	Sept. 10, 2015 (tent.)