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Zagreb, February 08, 2018

**39th Meeting of the Permanent Expert Group for Flood Protection
REPORT FROM THE MEETING**

Zagreb, 07-08 February 2019

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

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I. ATTENDANCE

The PEG members from Bosnia and Herzegovina, Croatia and Serbia as well as an expert from Slovenia attended the meeting. The Consultant representatives engaged for the development of Sava FRMP, a representative of the Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences, and the representatives of the Institute for Water of the Republic of Slovenia, also participated at the meeting at specific agenda items.

The list of participants is annexed to this report.

II. CHAIRMANSHIP

Ms. Dragana Milovanović chaired the meeting.

III. ADOPTED AGENDA

1. Opening of the meeting

- Welcome address
- Adoption of the Agenda
- Presentation on the countries' and ISRBC activities

2. Development of the Flood Risk Management Plan for the Sava River basin

- 2.1. *Approval of the deliverables for the WBIF Project Activity B - Establishing elements of the Sava Flood Risk Management Plan*
 - Final draft of Sava FRMP
 - Background documents
- 2.2. *Approval of the deliverables for the WBIF Project Activity C - Designing the FRMP database module and implementing it into SavaGIS*
 - Final draft of the FRM Geodatabase model
 - Final draft of the reports on implementation of FRM geodatabase model into Sava GIS
 - Final draft of manuals
- 2.3. *Approval of the deliverables for the WBIF Project Activity D - Public information and consultation process on the draft Sava FRMP*
 - Summary of the public participation activities
- 2.4. *Approval of the deliverables for the WBIF Project Activity E - Translation, design and print final Sava FRMP*
- 2.5. *Strategy for follow-up*
 - Presentation of the draft document
 - Discussion and conclusions

3. Related projects

- 3.1. *Sustainable Historic Environments holistic reconstruction through Technological Enhancement and community based Resilience – SHELTER*
- 3.2. *Danube regional multi-hazard, multi-risk model (EU H2020 Insurance Project)*
- 3.3. *Project proposals for the Third call for proposals of the Danube Transnational Programme*

4. Any other issues

IV. DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

AD.1. OPENING OF THE MEETING

Welcome and opening remarks by the PEG FP Chairman

Ms. Dragana Milovanović opened the meeting, welcomed the PEG FP members, the expert from Slovenia, the Sava FRMP project experts as well as external experts and informed the participants on some logistical issues.

Adoption of the Agenda

PEG FP adopted the proposed agenda of the 39th meeting (*Doc. Ref. No: 3-19-1/2-2*), with agenda items presented in Part III of this report. (Meeting document: *Ad.1. PEG FP_39th meeting_AdoptedAgenda*).

Presentation on the countries' and ISRBC activities

Ms. Milovanović informed the PEG FP on the most important activities and events after the 38th PEG FP meeting.

In addition Mr. Mirza Sarač, informed the PEG on ongoing activity of calibration of the Sava HEC-HMS hydrological model as a part of the further developments of Sava FFWS. It was stressed that activity is performing by members of the Sava FFWS Forecasting and Development Team, which are nominated in accordance with the proposal of Sava FFWS post-project organization currently in procedure of approval within development of the Memorandum of Understanding on cooperation on regular functioning and maintenance of Sava FFWS. The PEG was informed that the first web meeting (webinar) was held on January 30, 2019 when the model, manual for and technical references and the plan of calibration were discussed. The webinar was attended by 23 participants from all five Sava countries what includes representatives of seven from nine Sava FFWS User's organizations and a representative of the Secretariat which have agreed further steps, milestones and deadlines of the activity.

AD.2. DEVELOPMENT OF THE FLOOD RISK MANAGEMENT PLAN FOR THE SAVA RIVER BASIN

2.1 Approval of the deliverables for the WBIF Project Activity B - Establishing elements of the Sava Flood Risk Management Plan

Approval of the final draft of the Sava FRMP

Mr. Boris Ščekić presented the latest updates to the reference version (Croatian) of Sava FRMP. PEG FP confirmed that changes agreed during the 38th PEG FP meeting were integrated into the document. It was agreed that the Consultant will review the document further in order to make additional improvements, notably: standardize formats used for decimals/thousands, units/measures, acronyms, table formats, check footnotes and pagination, as well as to move the chapter: References from the annexes into the main text, as well as introduce several specific corrections identified during the meeting.

After discussion PEG FP concluded as follows:

- the final draft of Sava FRMP (Croatian and English versions) should be aligned with the Sava RBMP template and delivered to the Secretariat by February 18, 2019
- the Secretariat will distribute the final draft of Sava FRMP (Croatian and English versions) to the PEG FP members on February 22, with deadline for review and approval by March 15, 2019

- other language versions of the final draft of Sava FRMP, aligned with Croatian and English versions, will be delivered to the Secretariat by March 20 and distributed to the PEG FP members by March 22, with deadline for review and approval of translations by April 1, 2019
- the final draft of Sava FRMP (all language versions) will be sent to the Sava Commission by April 15, 2019 for endorsement as the official proposal.

Approval of the final draft of the background documents

- updated background documents in Croatian and English, as technical documents prepared by which will not be referenced directly in the Sava FRMP as its parts, will be delivered to the Secretariat by as soon as English translations are finished, but not later than March 15, 2019
- PEG FP members will review the background documents by April 15, 2019.

2.2 Approval of the deliverables for the WBIF Project Activity C - Designing the FRMP database module and implementing it into SavaGIS

Mr. Sarač presented the project activities related to Activity C – Designing the FRMP database module and implementing it into SavaGIS, as well as the manuals and other documentation delivered by the Consultant. It was noted that this activity of the project, which was closely coordinated with PEG GIS, was completed according to the expectations.

- PEG FP members approved deliverables of activity C.

2.3 Approval of the deliverables for the WBIF Project Activity D - Public information and consultation process on the draft Sava FRMP

The Consultant delivered the draft report on public consultations in Croatian and English, as well as a separate Excel table (also included in the document) with all the comments and replies received during the public consultations process and the stakeholder's forum. PEG FP requested a few changes (to adjust how decimals are presented in one of the figures), the document is considered ready for further processing by the Secretariat and publishing on the website.

- PEG FP members will review the final draft report on public consultations and send comments by February 15, 2019. In case no comments received it will be considered that the report is approved.

2.4 Approval of the deliverables for the WBIF Project Activity E - Translation, design and print final Sava FRMP

Based on the reference Sava FRMP version in Croatian, the Consultant has delivered translations in English, Slovenian, BiH-Bosnian, BiH-Serbian, Serbian, and Montenegrin.

It was agreed that the version in English should be further checked, aligned with the latest Croatian version, and delivered to the Secretariat by February 18, adjusted according to the Sava RBMP template. PEG FP members will then have until March 15, to comment on English and Croatian versions.

Apart from implementing changes from the Croatian version (as noted in the section above), certain changes specific to the English translation were requested (e.g. to add English translation to names of structural measures).

For other Sava FRMP translations, which will be distributed to the PEG FP members by March 22, PEG FP members will review the texts and send comments on their specific language versions by April 1, 2019. After that, these versions will be aligned with the final Croatian version of Sava FRMP and finalized.

Background documents are being translated to English, and will be delivered as soon as they are ready.

About the design and printing of Sava FRMP, the PEG FP members preliminary agreed on tentative distribution of 500 printed copies among the foreseen languages, as follows: Eng: 130, BIH-Bos: 60, BIH-Ser: 40, BIH-Cro: 20, Cro: 70, Slo: 70, Ser: 70, Mne: 40. The printing specifications have been given to the Consultant.

- The Consultant will analyze the bid item planned for the printing and propose to the Secretariat the number of copies, including printing of the Flood Maps Atlas (A3 format)
- The Consultant will also provide the design of Sava FRMP (e.g. the front page) and agree with the Secretariat before the documents are printed. It was agreed that Cambria font, size 12, will be used for the final copies of Sava FRMP.

2.5 Strategy for follow-up

Ms. Višnja Omerbegović presented the latest version of the Follow-up Strategy. The document was restructured and adjusted according to the comments from the 38th PEG FP meeting.

During the discussion, it was noted that further changes to the document are required, including: further elaboration of the SWOT analysis, reference to proposals for monitoring impacts of measures (e.g. FloRian), prioritization list for non-structural measures, as well as a table for monitoring the implementation status of structural measures.

After discussion PEG FP concluded as follows:

- The Consultant will update the document (based on comments received during the meeting) and delivered the new version to the Secretariat by February 27, 2019
- The Consultant and the Secretariat will work further on the document (written comments to be submitted by the Secretariat) and then deliver it to the PEG FP members by March 15, 2019
- PEG FP members will review the document by March 29, 2019.
- The Follow-up Strategy will also be translated to English, once the final version has been agreed on.

AD.3. RELATED PROJECTS

3.1 Sustainable Historic Environments holistic reconstruction through Technological Enhancement and community based Resilience – SHELTER

Following discussion from the 34th PEG FP meeting and information that the SHELTER project proposal has been supported by the Sava Commission, as one of 23 partners (the final list), Mr. Sarač informed the PEG that the proposal was evaluated as successful within the second stage of approval and has reached the stage of Grant Agreement preparation.

PEG FP on its 34th meeting and PEG GIS on its 18th meeting, supported to be actively involved in the project implementation.

Mr. Sarač repeated the overall objective of SHELTER to establish cross-scale, multidimensional, data driven and community based operational knowledge framework for heritage-led and conservation-friendly resilience enhancement and sustainable reconstruction of historic areas to cope with climate change and natural hazards. Sava River Basin is one of the case studies (five in total in Europe and different heritage's typologies) for which input data on the cultural-historical heritage from the relevant national institutions, with engagement of PEG FP and PEG GIS, will be collected and consolidated in a properly structured way for storing in the existing Sava GIS geodatabase. A state of the art GIS based layers will be prepared which will be used for the flood impact analyses on the

receptor of cultural-historical heritage within the flood risk management planning, as well as for many other analysis related to the climate change adaptation on the basin level, as well as for purposes of the countries. All the developments of the project will be also validated against floods worsened by climate change (increase of intense precipitation).

Also networking between different sectors (water/floods, cultural-historical heritage and emergency management) and the continuous exchange of knowledge, best practices and facilitate peer-learning processes to raise awareness will be performed. Several workshops, trainings and working meetings with experts are foreseen.

Mr. Sarač informed the PEG that one or a few the most vulnerable sites of cultural-historical heritage within the Areas of mutual interest for flood protection in the Sava River basin (AMIs), defined by the draft Sava FRMP and for which the data on cultural-historical heritage will manage to be collected, is going to be deeply analyzed, data on the flood depths as part of the flood maps will be required.

After discussion PEG FP concluded as follows:

- PEG FP supported performing analysis of the floods impact on the cultural-historical heritage within AMIs using the simplified methodology proposed in the draft Sava FRMP
- For the purpose of the mentioned analysis, PEG FP asked PEG GIS to deliver data on the flood depths as part of the flood maps on the AMIs, where available.

More information can be found in presentation (*Ad.3.1_ Presentation on the SHELTER project proposal*).

3.2 Danube regional multi-hazard, multi-risk model (EU H2020 Insurance Project)

Mr. Max Steinhausen, Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences, informed the PEG FP on current stats of implementation of the project Danube regional multi-hazard, multi-risk model (EU H2020 Insurance Project)

The Future Danube Model is a multi-hazard and risk model suite for the Danube region which has been developed in the OASIS project. The model comprises modules for estimating potential perils from heavy precipitation, heatwaves, floods, droughts, and damage risk considering hydro-climatic extremes under current and climate change conditions. Web-based open Geographic Information Systems (GIS) technology allows customers to graphically analyze and overlay perils and other spatial information such as population density or assets exposed. The novelty of approach implemented by the project, creating an added value e.g. as compared to existing work in the region, is that project will not only provide local hazard information under current conditions (where this information is often still not available in many especially downstream regions of the basin) but also to account for the future climate change impacts on these hazards and what this means for the insurance sector. The entire model suite is compliant with the OASIS LMF standard and has been readily implemented for the entire Danube basin and tested in the German and Hungarian parts of the catchment. The hazard modules for the entire Danube raised huge interest by the insurance, public and industrial sectors, and are currently extended by the financial/ risk module.

After presentation PEG FP members discussed about the functions and value of the "Future Danube Model" for flood risk management along the Sava River and talked about potential new data sources in the Sava basin to further improve models developed within the project.

After discussion PEG FP concluded as follows:

- PEG FP took note on the EU H2020 Insurance Project as well as the *Danube regional multi-hazard, multi-risk model* and supported proposal for the model improvements using the HM data available in Sava HIS, after the approval of the Sava HIS data providers

- PEG FP asked *Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences* to be regularly informed on the model improvements progress.

More information can be found in presentation (*Ad.3.2 H2020 insurance future Danube model-Sava*).

3.3 Project proposals for the Third call for proposals of the Danube Transnational Programme

Mr. Samo Grošelj informed the PEG FP on the 3rd call of the Danube Transnational Cooperation Programme which is open since 28th of January until Friday 8th of March 2019.

The PEG FP took note on two project proposals:

- *Inter-sectoral approach with hydropower and navigation sectors for operative flood prevention measures in Sava River Basin* aiming to develop a common approach of hydropower and navigation sectors in co-operation with all relevant stakeholders in the Sava River basin and to implement the operative flood prevention measures, based on good governance practices for efficient flood prevention in Sava River Basin. The lead partner is Institute for Water (SI) which presented the project proposal via electronic media, while the project partners are water, hydropower and navigation management institutions from the Sava Countries and the Sava Commission.
- *Water Contingency Management in the Sava River Basin-WACOM* which covers implementation of three protocols (Protocol on Emergency Situations, Prevention of Pollution Caused by Navigation and Flood Protection). The main objective of the WACOM is the reduction of the natural and artificially made risk related to emergency situations because of accidental release of polluting substances, floods and river navigation on Sava river basin. The lead partner is University of Ljubljana while the project partners are water managements and civil protection institutions from the Sava Countries and the Sava Commission.

The PEG FP members were asked to actively participate at the project proposal development and later in their implementation as project partners or at least at the strategic associated partners.

AD.4. ANY OTHER ISSUES

The next 40th meeting of PEG FP will be held in autumn 2019, and exact date will be determined later.

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* by the web link

ANNEX II. LIST OF DOCUMENTS

Agenda item	Document	ENG	HRV	SLO	BIH-BOS	BIH-HRV	BIH-SRP	SRP	CG
1.	AD.1. PEG FP_39th meeting_AdoptedAgenda.docx	↓							
2.1.	AD.2.1.1_B_SavaFRMP_Finalni nacrt_hrv.docx		↓						
	AD.2.1.2_B2_SavaFRMP_PFRA_Finalni nacrt_hrv.docx		↓						
	AD.2.1.3_B3_SavaFRMP_FHRM_Finalni nacrt_hrv.docx		↓						
	AD.2.1.4_B3_SavaFRMP_FRHM-Atlas_Finalni nacrt_eng.docx	↓							
	AD.2.1.5_B4_SavaFRMP_Ciljevi_Finalni nacrt_hrv.docx		↓						
	AD.2.1.6_B5_SavaFRMP_Katalog_mjera_Finalni nacrt_hrv.docx		↓						
	AD.2.1.7_B5_SavaFRMP_Pregled_mjera_Finalni nacrt_hrv.docx		↓						
	AD.2.1.8_B5_SavaFRMP_Postojece i potencijalne retencije_Finalni nacrt_hrv.docx		↓						
	AD.2.1.9_B5_SavaFRMP_CBA_Finalni nacrt_hrv.docx		↓						
	AD.2.1.10_B5_SavaFRMP_CBA_model_Finalni nacrt_hrv.xlsx		↓						
	AD.2.1.11_B6_SavaFRMP_EIA+ODV_Finalni nacrt_hrv.docx		↓						
	AD.2.1.12_B6_SavaFRMP_Klimatske promjene_Finalni nacrt_hrv.docx		↓						
	AD.2.1.13_B7_SavaFRMP_Mehanizmi_koordinacije i nacela_suradnje_Finalni nacrt_hrv.docx		↓						
2.2.	AD.2.2.1-C_FRM_Geodatabase_model_v5.0.docx	↓							
	AD.2.2.1-C_FRM_Geodatabase_model_v5.0_LayersAndTables.jpg	↓							
	AD.2.2.1-C_FRM_Geodatabase_model_v5.0_Domains.jpg	↓							
	AD.2.2.2-C_FRM_Geodatabase_model_v5.0_Help.zip	↓							
	AD.2.2.3-C_FRM_Geodatabase_model_Implementation in SavaGIS_Activity Report.docx	↓							
	AD.2.2.4-C_FRM_Geodatabase_model_Implementation in SavaGIS_Testing Report.docx	↓							
	AD.2.2.5-C_FRM_Geodatabase_model_Implementation in SavaGIS_Registered User Manual.pdf	↓							

2.3.	AD.2.3.1-D_Sazetak postupka sudjelovanja javnosti_Izvjesce_eng.docx		↓						
	AD.2.3.1-D_Sazetak postupka sudjelovanja javnosti_Izvjesce_hrv.docx		↓						
2.4.	AD.2.4.1_E_SavaFRMP_Finalni nacrt_eng.docx	↓							
	AD.2.4.2_E_SavaFRMP_Finalni nacrt_BiH_bos.docx				↓				
	AD.2.4.3_E_SavaFRMP_Finalni nacrt_BiH_srp.docx					↓			
	AD.2.4.4_E_SavaFRMP_Finalni nacrt_cg.docx								↓
	AD.2.4.5_E_SavaFRMP_Finalni nacrt_srb.docx							↓	
	AD.2.4.6_E_SavaFRMP_Finalni nacrt_slo.docx			↓					
2.5.	AD.2.5.1_F_SavaFRMP_Strategy for follow-up_hrv.docx		↓						
3.1.	AD.3.1_Presentation on the SHELTER project proposal.ppt	↓							
3.2.	AD.3.2_H2020_insurance_future_danube_model_Sava.pptx	↓							

Documents are available at the PEG's ftp site.