

## *First Stakeholder Workshop*

within the EU Horizon 2020 project:

**Sustainable Historic Environments hoListic reconstruction through  
Technological Enhancement and community based Resilience - SHELTER**

**Zagreb (Croatia), 02 October 2019**

Workshop Venue:

**Premises of the International Sava River Basin Commission**  
Kneza Branimira 29/II floor, Zagreb

### **BACKGROUND**

Over the last decades, as a consequence of the effects of climate change, cultural heritage has been impacted by an increasing number of climate related hazards, posing new challenges to conservators and heritage managers. **SHELTER aims at developing a data driven and community based knowledge framework** that will bring together the scientific community and heritage managers with the objective of increasing resilience, reducing vulnerability and promoting better and safer reconstruction in historic areas. The first step to enhance resilience is associated to the improvement in understanding the direct and indirect impacts of climatic and environmental changes and natural hazards on historic sites and buildings, by linking concepts commonly used in disaster risk management and climate change adaptation with cultural heritage management, in order to provide inclusive and informed decision-making. Comprehensive disaster risk management plans need to be drawn up, based on the specific characteristics of cultural heritage and the nature of the hazards within a regional context, taking into account the diverse heritage typologies as well as the specific socioeconomic conditions, since this directly affect the vulnerability of such systems. By a deep understanding of the hazard, the exposure and the vulnerability of the historic area, the local dynamics and the provision of innovative governance and community based models, it is possible to provide useful methodologies, tools and strategies to enhance resilience and secure sustainable reconstruction.

Due to the information complexity and the diverse data sources, SHELTER framework will be implemented in multiscale and multisource data driven platform, able to provide the necessary information for planning and adaptive governance. All the developments of the project will be validated in 5 open labs, representative of main climatic and environmental challenges in Europe and different heritage's typologies. One of open-labs is the Sava River basin, severely hit by extreme flooding events. The latest major floods in 2010, 2013, 2014 and 2015 affected hundreds of thousands of people, causing extensive damage and a high casualty toll. The effects of the May 2014 flood event in the Sava River basin have been so widespread and evident in cultural and historical heritage as well.

## THE SHELTER PROJECT AND SAVA OPEN LAB

The overall goal of the SHELTER project is 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. The project results are expected to contribute to:

- Enhanced resilience and reduced vulnerability of historic areas to climate change and other natural hazards, also accounting for their synergistic impact
- Improved reconstruction and economic and social recovery of historic areas by local authorities and communities through the use of new knowledge and tools.

All the developments of the project will be validated in following 5 open labs:

- Open lab 1: Area of Santa Croce in Ravenna (Italy) - earthquake and subsidence causing floods worsened by climate change (increase of intense precipitation)
- **Open lab 2: Sava River Basin (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro and Albania) - floods worsened by climate change (increase of intense precipitation)**
- Open lab 3: Baixa Limia-Serra Do Xurés Natural Park in Galicia (Spain) - fire events worsened by climate change (droughts and temperature increase)
- Open lab 4: Dordrecht (The Netherlands) - floods and storms worsened by climate change (Sea-level rise and increase in precipitation)
- Open lab 5: Seferihisar district (Turkey) - earthquake and extreme heat waves as a result of temperature increase.

Lack and need for the GIS format based spatial data on cultural-historical heritage in the Sava River basin, is recognized within the development of the *Flood Risk Management Plan for the Sava River Basin* (ref. 2) which was coordinated by the Sava Commission. For definition of the flood risk and potential adverse consequences, for all flood receptors, there were enough available input data in the expected spatial format, except for the data on cultural-historical heritage. Therefore the SHELTER project will aim to collect all input data on the cultural-historical heritage from the relevant national institutions within the Sava River basin. The collected data will be checked, refined and consolidated in a properly structured way for storing in the *Geographical Information System of the Sava River Basin* (ref. 1) for the purpose of processing and managing by the Sava Geoportal and related web-based tools to be able to create and support services-based data exchange. A state of the art GIS based layers will be prepared within the project 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.

Given that the flood risk management is primarily a national responsibility, a comprehensive analysis of current procedures related to the cultural-historical heritage protection in each of the five Sava River basin countries will be also performed as a first step towards the possible upgrade of the national procedures. Also, 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 Sava FRMP, is going to be deeply analyzed. For this analysis, previously collected data on cultural-historical heritage and data on flood depths (flood maps) will be used.

The outcomes of the analysis will be documented in a report that would serve as basis for preparation of a common strategy for the improved and regionally harmonized flood risk procedures related to the cultural-historical heritage protection under the responsibility of the national flood planning and emergency management services in all five riparian countries, including recommendations for the enhancement of the flood risk management planning within Sava FRMP and forecasting and warning processes within the *Flood Forecasting and Warning System in the Sava River Basin* (ref.3).

Knowledge transfer and capacity building on the flood related GIS products, services and procedures related to cultural-historical heritage protection in the Sava River basin will be also performed within the project period. Several workshops will be organized in the development phase to exchange best practices between the Sava open lab and wider, supporting the development of a common strategy for the improved and regionally harmonized flood procedures related to the cultural-historical heritage protection. Experts from the relevant institutions from the cultural-historical heritage protection sector will be highly involved in this activity. In addition, trainings for operational use and promotion of new tools and products and for the end users will be organized in the implementation phase.

UNESCO will be involved in the Sava open lab activities with its Regional Bureau from Venice and the Culture Sector for Emergency Preparedness and Response Unit from Paris Headquarters. On the basis of the Sendai framework on Disaster Risk Reduction (DRR) and the UNESCO Strategy on Disaster Risk Reduction for World Heritage properties, project stakeholders will be able to identify the major issues area to invest upon in relation to DRR. In particular they will be offered the opportunity to adopt common strategy and methodology around the priority areas of the Sendai Framework, and mobilize further efforts in:

- Understanding Disaster Risks to heritage
- Strengthening Disaster Risk governance of heritage sector
- Investing in DRR for heritage
- Enhancing disaster preparedness for effective response and to “Build Back better” in recovery, rehabilitation and reconstruction of heritage.

## SPECIFIC OBJECTIVES OF THE WORKSHOP

Specific objectives of the workshop are to:

- Present the SHELTER project, discuss its expected outcomes and collect inputs from the stakeholders regarding the objectives, criteria, indicators and data & information that should be included in the project implementation.
- Discuss the possible process and settings for stakeholders participating in the project implementation; in addition, provide input that will assist to define the level and means of participation for the different stakeholders.
- Raise awareness and understanding among relevant stakeholders at a regional and transboundary level, especially those from cultural heritage authorities, of the potentialities offered by the common use of integrated systems and tools for monitoring, forecasting, alerting and reporting in the entire flood risk management cycle.

The workshop intends to bring together cultural heritage experts, flood management operators and emergency responders from the Sava River basin, and major stakeholders of the beneficiary countries in consultation with the Sava Commission.

The workshop will be highly participatory and participants are kindly invited to prepare in advance a short statement and/or presentation highlighting flood risk reduction measures related to the cultural and historical heritage in place at a country basis. Emphasis will be put on the local/country level communication flows, preparedness, monitoring, early warning system and response to flood risk on the cultural and historical heritage. These will be presented and shared in the introductory plenary sessions for mutual knowledge and understanding.

The conclusive part will be in the form of a debriefing/brainstorming session in order to collectively identify recommendations for the coordination of flood risk on the cultural and historical heritage planning in the Sava River basin. The recommendations will have the aim of assisting the Sava Commission in its efforts to strengthen a cooperative regime of communication within the SHELTER project.

## TARGET AUDIENCE

- Representatives of relevant authorities from both local and central levels from the Sava River basin (Bosnia Herzegovina, Croatia, Montenegro, Serbia and Slovenia):
  - relevant cultural heritage authorities
  - river basin / flood management authorities
  - emergency responders / civil protection agencies
- Targeted stakeholders responsible for the UNESCO's cultural heritage sites within the Sava River basin
- Professional volunteers representatives.

## DATES AND VENUE

The workshop will take place at 02 October 2019, in premises of the International Sava River Basin Commission in Zagreb.

## CONTACT PERSONS

Ms. Ana Marinić, Secretariat of the Sava Commission; Email: [isrbc@savacommission.org](mailto:isrbc@savacommission.org); Tel.: +385 1 488 6960.

Mr. Mirza Sarač, Secretariat of the Sava Commission; Email: [msarac@savacommission.org](mailto:msarac@savacommission.org)

## REFERENCES

The SHELTER project initiative at the Sava Open Lab scope of work is developing upon a consolidated and pre-existing collaborative frameworks at the Sava River basin level:

- 1. Geographical Information System of the Sava River Basin (Sava GIS)** – <http://www.savagis.org/> – seamless, independent geo-information system of the Sava Commission for timely and open access to integrated data, products, information, services and tools with sufficient accuracy and precision in order to address important water management issues in the Sava River Basin. Sava GIS is driven by open and service oriented architecture, interoperability standards and common data specification that enables sharing of geospatial information, metadata cataloguing and harvesting, server side tool components that enable mapping services, visualisation and reporting under the Sava Commission coordination.
- 2. Flood Risk Management Plan in the Sava River Basin (Sava FRMP)** – [link to the official proposal](#) – set up common objectives of managing flood risks at the basin level in order to contribute to the decrease of harmful consequences of floods, in particular for human life and health, environment, cultural-historical heritage, economic activities and infrastructure, i.e. flood receptors recognized by the EU Floods Directive. Sava FRMP elaborates a joint summary of measures (structural and non-structural) relevant for the entire river basin and recognizes the cultural and historical heritage as one of flood risk receptors. Sava FRMP is already developed in the first cycle of planning, in coordination by the Sava Commission, and it is currently under approval.
- 3. Flood Forecasting and Warning System in the Sava River Basin (Sava FFWS)** – represents a joint flood forecasting and system of the Sava countries. Sava FFWS is already implemented, in coordination by the Sava Commission, as an open shell platform for managing the data handling and forecasting process, allowing a wide range of external data and models to be integrated. Sava FFWS integrates Sava HIS (part of Sava GIS), as a data hub for the collection of real-time hydrological and meteorological data, as well as various Numerical Weather Prediction models, available weather radar and satellite imagery, outputs of the existing national forecasting systems, different meteorological, hydrological and hydraulic models that are ‘plugged’ into a common platform. The system enables the five countries involved to take the right management decisions and implement operational measures to prevent and mitigate severe flood situations on the basis of reliable forecasts of water levels and discharges with a long lead time within area of an entire river basin.

## AGENDA

Accommodation at the Hotel Academia Zagreb (Tkalčićeva 88)

<http://www.hotelacademia.hr/en/>

Workshop venue at premises of the International Sava River Basin Commission (Kneza Branimira 29/II floor)

<http://savacommission.org/location>

02 October 2019	
<b>08:30</b>	<b>Registration</b>
09:00	Welcome address <ul style="list-style-type: none"> <li>International Sava River Basin Commission</li> <li>UNESCO Regional Office in Venice</li> </ul>
09:15 – 11:00	<b>Introduction to the SHELTER project</b> <ul style="list-style-type: none"> <li>Background to the project and objectives of the workshop</li> <li>Proposed scope of the Sava open lab study</li> </ul> <i>Questions &amp; Answers session</i>
<b>11:00</b>	<b>Break</b>
11:30 – 12:30	<b>Flood risk management in the Sava River basin</b> <ul style="list-style-type: none"> <li>Geographical Information System of the Sava River Basin – Sava GIS</li> <li>Flood Risk Management Plan for the Sava River Basin – Sava FRMP</li> <li>Flood Forecasting and Warning System in the Sava River Basin – Sava FFWS</li> </ul> <i>Questions &amp; Answers session</i>
12:30 – 13:15	<b>Cultural and historical heritage and floods issues in the Sava River basin</b> <ul style="list-style-type: none"> <li>Data used in the national flood risk management planning</li> <li>Indicators of the cultural and historical heritage</li> </ul> <i>Questions &amp; Answers session</i>
<b>13:15</b>	<b>Lunch Break &amp; Group Photo</b>

	<b>Data and information needs for the SHELTER project</b>
14:15 – 14:45	<ul style="list-style-type: none"> <li>• Inventory of data and information</li> <li>• Data collection procedures and further activities</li> </ul> <p><i>Questions &amp; Answers session</i></p>
	<b>SHELTER’s stakeholder/user platform</b>
14:45 – 16:15	<ul style="list-style-type: none"> <li>• Analyzing the characteristics of stakeholders and identification of core/extended groups</li> <li>• Linking stakeholders with the main issues</li> <li>• Requirements of stakeholders/users</li> <li>• Local knowledge extraction from stakeholders/users</li> </ul> <p><i>Questions &amp; Answers session</i></p>
<b>16:15</b>	<b>Break</b>
	<b>Debriefing and Conclusions</b>
16:30 – 17:00	<ul style="list-style-type: none"> <li>• Conclusions and way forward</li> <li>• Next steps of the Sava open lab</li> </ul>
<b>17:00</b>	<b>Workshop closure</b> - Departure of participants