

Sava NewsFlash



**IMPLEMENTATION OF THE FASRB:
A VIEW OF BOSNIA AND HERZEGOVINA**



**TOWARDS SUSTAINABLE SEDIMENT
MANAGEMENT IN THE SAVA RIVER BASIN**



**OCCURENCES OF THE ICE COVER
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**CONNECTING THE BANKS OF THE SAVA
RIVER - NEW BRIDGE IN BELGRADE OVER
ADA CIGANLIJA ISLET**



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IMPRESSUM

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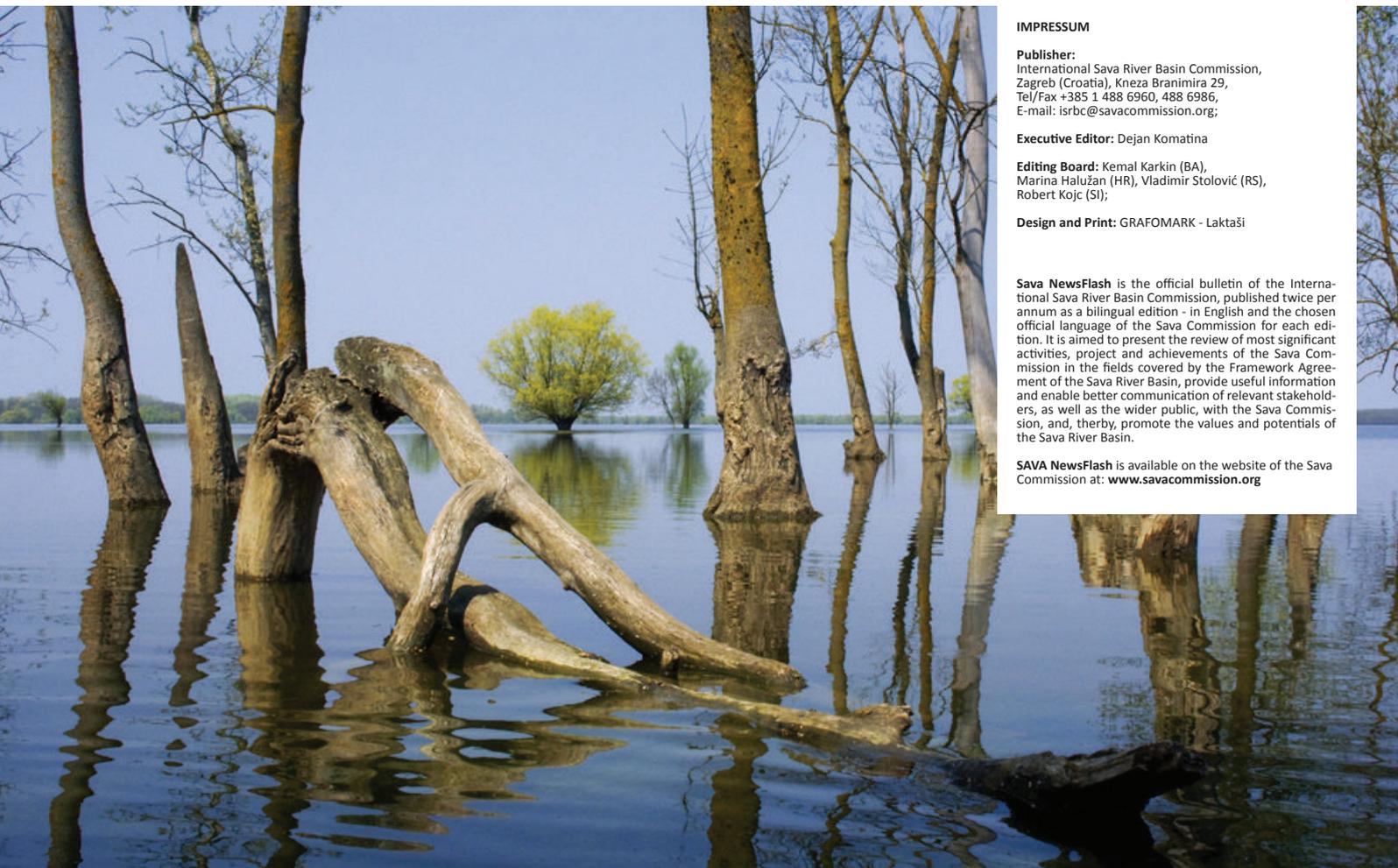
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SAVA NewsFlash is available on the website of the Sava Commission at: www.savacommission.org



DEAR READERS,

In front of you it is a new, ninth issue of the Sava NewsFlash, appearing four years after the first issue, just prior to the seventh anniversary of the ISRBC. During this time, the ISRBC has become a stable mechanism, identified in the Sava countries, and in a wider environment, as an effective organization, a reliable partner and the coordinator of activities of a growing number of the states' activities in the implementation of the Framework Agreement on the Sava River Basin.

Over the previous six-month period, since the release of the previous Sava NewsFlash, significant results were achieved in the implementation of the Framework Agreement, some of which are presented in this edition of the bulletin.

Preparation of the first draft of the Sava River Basin Management Plan was finished, while the public consultation process was conducted through the ISRBC website, in which stakeholders and the general public had the opportunity to provide observations and comments on the Plan draft. In accordance with the Framework Agreement, the final version of the document will be prepared taking into account the comments received, and distributed, as a proposal of the ISRBC, to the states for adoption that is planned to take place at the end of 2012.

The project of restoration and development of the waterway and navigation on the Sava river entered the final phase of planning, which should result in final design of the waterway and other technical documentation necessary for the execution of the works. Meanwhile, the ISRBC defined the direction and mode of action of the newly formed Committee for monitoring and coordination of the mentioned, which provided the possibility for involvement of all stakeholders in the work of the Committee, and thus an additional contribution to the transparency of the process and the quality of its results.

In recent months, significant attention was paid to the preparation and implementation of projects. In that period, two new regional projects were launched, which extend the scope of activities of the ISRBC. The first one, presented in this issue of the NewsFlash, addressed the issue of sediment management in the Sava basin, while the second one focused on the development of eco-tourism in the Sava basin. Development of eco-tourism is an activity that, in the best way, demonstrates an integrated approach of the ISRBC's to treat the development of economic activities and environment protection in a balanced way. All the same, a number of activities went on with the aim of ensuring resources for the implementation of the ISRBC priority projects in the framework of the EU Danube Strategy and other financial programs and mechanisms.

Possible new mechanisms for further involvement of stakeholders and the general public in the implementation of the Framework Agreement were considered in order to additionally strengthen the public participation in this process. First workshop on setting the connection between knowledge owners and decision makers in water management was held to further improve the communication between government and academic sectors. The circle of organizations and institutions with the observer status at the ISRBC was expanded with the inclusion of the Global Water Partnership - Regional Partnership for Central and Eastern Europe (GWP CEE).

In order to better inform the professional and general public, a couple of new documents were published, such as Album of bridges on the Sava River and its navigable tributaries, the first ever issued for the Sava River, and Indicator of kilometer marks for the Sava river, renewed after more than 50 years. This period was also characterized with the contribution to the publications of other organizations and publishers, such as the latest issue of Danube News, entirely dedicated to the Sava, as well as the recently published book Current water management issues, published by In-Tech, with a chapter dedicated to water resources management in the Sava basin.

In this issue, other topics of interest from the standpoint of the Framework Agreement implementation, as well as several notices and announcements, were presented, including a program of the Sava Day 2012 celebration, for which the intensive preparations are currently being conducted.

I hope this issue of the Sava NewsFlash will provide you with useful information, and you will spend time in a pleasant way reading it!

Dr. Dejan Komatina,
Secretary, Secretariat of the ISRBC

IMPLEMENTATION OF THE FASRB: A VIEW OF BOSNIA AND HERZEGOVINA

It has been seven years since the Framework Agreement on the Sava River Basin (FASRB) came into force and about the same period of activities of the International Sava River Basin Commission (ISRBC), which is the driving force for the implementation of the FASRB. It was a period long enough to raise the question of progress in implementing the goals of the FASRB. First, there is a question about the results, taking into account the objectives set for the establishment of an international regime of navigation, which was the main motive for the signing of the Agreement.

Unfortunately, the navigation on the Sava river is not as such as it used to be before the 1990-ies, primarily due to the poor condition of the waterway. Right from the beginning of its work, the ISRBC initiated activities to create conditions for the restoration of navigation on the Sava river. Nevertheless, it took three years to make the first step toward the rehabilitation of the Sava river waterway, i.e. for the preparation of a feasibility study, which was funded by the contributions from Bosnia and Herzegovina, Croatia and Serbia. That document raised the interest level of international financial institutions and other organizations to offer donations and credit funds for the implementation of the overall project. Thereafter, the ISRBC drew a number of conclusions and decisions with regard to specific activities and timelines for their implementation, which were binding on the Parties to the FASRB. Although all countries do not have the same approach, there is a very little lag in the dynamics of the implementation of these activities at this moment. Of course, it

is expected that Croatia and Serbia in particular, stress the greater importance of the activities on waterway regulation and navigation on the Danube river, which has much greater potential for the navigation than the Sava river. However, the fairway of the Sava river was not neglected.

Bosnia and Herzegovina is dedicated to the Sava river and emphasizes the great importance of the restoration of its waterway. Its initial activities started even before the establishment of the ISRBC. Thus, in 2003 Brčko District conducted a bathymetric survey of the Sava channel from Brčko to Belgrade. Unfortunately it was a long time until the negotiations with the World Bank took place in participation of the provision of affordable credit funds for the rehabilitation of the Sava river waterway. In the meantime, EU IPA funds in the amount of 5.6 million Euros were used for the preparation of design documentation, as well as for demining of Bosnia-Herzegovinian side of the waterway. In parallel with the activities that took place in Croatia, we secured funding for the preparation of the study and design documentation for the entire length of the waterway, from the mouth of the Sava river in Belgrade to town Sisak. According to the present state of activities, the dynamics determined by decisions of the ISRBC was delayed since the planned commencement of works in 2013 will probably be shifted to 2014, while they are expected to be finished in 2015 / 2016.

The ISRBC set up the basis for the provision of river information services on the Sava river waterway as well. So far, it developed necessary design and other documentation for this service.



Still, member countries are to provide the necessary financial resources and implement that information system. It is expected to be completed by the end of the rehabilitation of the waterway. With regard to the harmonization of regulations that apply to the navigation on the Sava river, the Commission set the necessary rules that member countries should incorporate into their legislations.

By the FASRB, the ISRBC got a mandate to take decisions in the field of navigation and its restoration, which are binding on member states, while in the field of water management the Commission may only propose recommendations to the Parties. Nevertheless, the recommendations of the ISRBC were received positively by the Parties. Most of the activities dealt with the preparation of studies related to water management in the basin. The most important objective of the

model of the Sava river was developed, along with the first georeferenced models ever made for the entire area. Advances in the exchange of hydrological and meteorological information and data within the Sava river basin have been made, too. The initial phase of the Sava GIS establishment is under way. A number of projects for the Sava basin, dealing with the current water management issues, such as the climate change assessment or sediment management, have been launched as well.

Finally, all subjects, in the areas the FASRB deals with, can make their judgment about the activities of the ISRBC in recent years. All the same, they can assess the success in implementing the FASRB. These activities can be seen as inadequate or ineffective from the point of view of users, such as boat masters, shipping companies and ports as direct beneficiaries, as well as from the point of view



FASRB is the preparation of the Sava River Basin Management Plan. With financial aid of EU donation funds, as well as the involvement of the ISRBC Secretariat and representatives of the Parties in the expert groups, preparation of the Plan is in its final stage, prior to adoption by the ISRBC, Parties to the FASRB, as well as Montenegro. The Protocol on Flood Protection to the FASRB has been developed and signed. Once the Protocol enters into force, it will provide a legal basis for cooperation of the Parties in line with the EU Flood Directive, including the preparation of the Flood Risk Management Plan for the Sava river basin. So far, first steps toward the Flood Risk Management Plan have been made. Preliminary hydrologic model of the Sava basin as well as hydraulic

of other entities in the economy as indirect beneficiaries of the river transport. Each year missed for water traffic utilization, can be assessed through increased transport costs due to use of more expensive transport modes and longer transport routes. However, the ISRBC and the Parties know best what a delicate path was to reach this stage of realization. Considering that, it should be noted that all Sava countries that participated in the previous meetings of the Parties to the FASRB at the ministerial level, positively evaluated the work of the ISRBC and gave it full support in further activities.

*Kemal Karkin, ISRBC member
from Bosnia and Herzegovina*

PARTNERSHIP WITH THE DANUBE COMMISSION DATES BACK TO THE ESTABLISHMENT OF THE ISRBC

Signing of the Memorandum of Understanding (MoU) on Cooperation between the Danube Commission and the ISRBC, on 29 January 2009 in Budapest, was a milestone in the history of relations between the two organisations. The subject of the MoU is a future cooperation between the two commissions for a better coordination of their activities in the field of navigation on the Danube and Sava Rivers. By this legal document, not only the commissions granted the observer status to each other, but they also decided to identify specific fields of common interest, as well as establish and stimulate a platform to promote, discuss and coordinate activities related to the fields of cooperation.

The Danube Commission stresses the importance of regular bilateral consultations between the two commissions. Therefore, aiming at implementing the provisions of the MoU, the first consultative meeting of the Secretariats of the two commissions was held on 3-4 October 2011 in Zagreb. Since the issues our organizations are dealing with are deeply inter-related, the discussion took place around present situation in the sector of inland navigation and future cooperation within European projects on navigation and environment for the Danube and Sava. The views on a wide range of topics were shared, including the perspectives of cargo transport development, safety of navigation, RIS application, comparison of the navigation rules on the Danube and Sava Rivers with corresponding international rules, organization of the education system for crew members, application of ADN and organization of the vessel waste collection on the two rivers.



Perspective areas of the cooperation are directly connected with the necessity to reconcile providing the navigation conditions on the Danube and Sava Rivers with maintaining the environmental aspects of these waterways. In this regard, Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube River Basin, launched on 11 March 2008 by the DC, ISRBC and ICPDR, provides guiding principles and criteria for planning and implementation of inland waterway projects that align interests of both navigation and environment. The next, 4th meeting of the DC, ISRBC and ICPDR on the implementation of the Joint Statement will be held on 17-18 September 2012, in Budapest. The objectives of the meeting are to discuss further development and application of the Joint Statement, to inform about the current status of IWT projects in the Danube basin, to inform and discuss new facts and perspectives of European inland waterway transport, as well as to consider mechanism of information exchange.



The Danube Commission's outlook is connected with the creation of the uniform navigation system applicable on the inland waterways in Europe. The priority areas of the Commission's activity are focused on harmonization and providing mutual recognition of the basic regulatory documents, required for navigation on the Danube and on the other sections of the inland waterways network, contributing to the improvement of navigation conditions and safety of navigation, creating requirements for the Danube integration into the European system as the significant transport corridor.

With a view to ensuring the said integration, the Commission aims to intensify cooperation with the relevant national authorities and international bodies, involved in different aspects of inland waterway transport, such as UNECE, European Commission, Central Commission for the Navigation of Rhine, ISRBC, and ICPDR.

Dr. Istvan Valkar,
*Director General of the Secretariat,
Danube Commission*

STAKEHOLDERS CONTRIBUTE TO DEVELOPMENT OF THE FIRST SAVA RIVER BASIN MANAGEMENT PLAN

According to the Framework Agreement on the Sava River Basin (FASRB) and EU Water Framework Directive (EU WFD), the public participation and involvement of stakeholders is an important part of the integrated river basin management. For instance, the Article 14 of the EU WFD states that active involvement of all interested parties from the very beginning of the implementation of the Directive shall be encouraged, and a three-phased public consultation process should be ensured in development of a river basin management (RBM) plan by allowing the public to participate in the drafting of the timetable and work program, allowing a period for comments in each phase, and changing the relevant documents taking into account the received comments. With this participatory approach, stakeholders are enabled to take an active role, exchange views and opinions, bring their local knowledge to the table in order to find the best available solutions for basin-wide problems.

The ISRBC has undertaken several activities in order to ensure public participation in the process of preparation of the first, integrated Sava RBM Plan, as follows:

- Relevant stakeholders from the Parties to the FASRB have been identified using a top – down approach.

organized structured participation of stakeholders in the management of water resources in the Sava river basin.

- At a later stage, a Stakeholder Forum was organized (Belgrade, November 9 – 10, 2011) to present the draft Sava RBM Plan and collect comments on its content from all related stakeholders, before starting the web-based consultation process.
- A four-month public participation web-based process for a wide range of stakeholders finished on April 21, 2012. During the entire process, all related information, from the preparation phase to the finalization of the Sava RBM Plan, has been available on the ISRBC web site – www.savacommission.org.
- The collected comments and suggestions have been studied and discussed with the RBM expert group of the ISRBC to facilitate the finalization of the Plan. Based upon the received comments, refinements of the draft Sava RBM Plan will be made and distributed to the Parties for adoption.

The adoption of the Sava RBM Plan, planned for December 2012, will represent a remarkable step toward the achievement of the main objectives of the FASRB and EU WFD. By implementing the



Workshop on the Programme of Measures (Sarajevo, June 28 – 30, 2011)



Workshop on the significant water management issues (Zagreb, September 27 – 28, 2010)

- Identified stakeholders were involved from the earliest possible stage of the process, by organizing the workshops to discuss the significant water management issues (Zagreb, September 27 – 28, 2010) and the Programme of Measures (Sarajevo, June 28 – 30, 2011) with the stakeholders.
- An additional workshop was organized by GWP Mediterranean and ISRBC (back to back with the above mentioned Sarajevo workshop) to validate the collected information on relevant stakeholders, to discuss the settings for their participation in the implementation of the Sava RBM Plan and to discuss on possible permanent mechanism of

Sava RBM Plan, the importance of the sustainable water management and the good ecological status/potential of waters will be promoted, for which a consensus of stakeholders is essential.

Samo Grošelj,
*Deputy Secretary for Protection
of Waters and Aquatic Eco-system,
Secretariat of the ISRBC*

Marko Pavlović,
*Expert Associate,
Secretariat of the ISRBC*

INITIATIVE FOR SUSTAINABLE TRANSBOUNDARY MULTISECTORAL SAVA RIVER MANAGEMENT ON THE SLOVENIAN-CROATIAN BORDER SECTION (THE KRŠKO-ZAGREB PILOT PROJECT)

Trends in CO₂ reduction, climate change effects like increased flood peaks or droughts, need for more energy and improved mobility also on waterways, lead administrative institutions and interdisciplinary group of experts in Slovenia to develop initiative for sustainable transboundary multisectoral Sava River management on the Slovenian-Croatian border section, based on sustainable hydropower utilisation and EU Danube Strategy – the Krško-Zagreb pilot project.



Blanca dam – fish pass, 2011, A. Bizjak

The initiative has been launched by the Office of the Government of the Republic of Slovenia for Regional Development and European Affairs, Ministry of Agriculture and Environment, Ministry of Traffic, Ministry of Economy, City Community of Ljubljana, Regional Development Agency Posavje and Institute for Water of the Republic of Slovenia with the coordinating role in the initial phase.

The goal of the initiative is merging of the existing infrastructure initiatives and projects in the Posavje Region in the direction of sustainable development of the cross-border region as low carbon emission, taking into account BATs, multifunctional solutions originating from multisectoral approach, environmental protection, cross-border reconciliation and measures, originating from climate energy package (e.g.



Krško dam – under construction, 2011, A. Bizjak

hydropower use, nuclear power, multimodal traffic schemes) as well as intensive stakeholder's participation. In this comprehensive initiative, all relevant EU directives (e.g. WFD, FD, RESD, HD and BD) shall be respected in their full sizes.

By further bilateral articulation of the proposed initiative, several positive effects can be achieved for both countries, like: the cooperation of both sides of the cross-border region can be loosened with contemporary spatial development; candidacy of both countries for the EU funds of the next financial perspective in the period 2014 – 2020 can be more efficient; gaps in first river basin management plans of both countries can be reconciled in a constructive and consensual bilateral manner as well as many other open questions in the border region can be arranged.

Involvement of all relevant stakeholders (in this particular case, not only environmental and energy stakeholders per party) from the beginning of the planning process is the baseline request for ensuring a modern water planning approach and sustainable water use, especially in long term projects. In addition, this is of particular importance as all new infrastructure projects shall be designed as multifunctional, e.g. to produce energy, to enable inland navigation, to decrease flood risk or ensure water quantities, to enable recreation, etc. Anticipating that the Krško-Zagreb pilot project will not be the only such project in the Sava River Basin in future, the ISRBC might serve as a platform for development of an articulated Sava River stakeholder's communication.

On the 24th of October 2011 in Zagreb, during the preparatory meeting of the Permanent Slovene-Croat Commission for Water Management, Slovenian delegation officially presented the Initiative to Croatian colleagues. Since then, the initiative is a permanent issue of bilateral communications among the countries what brings optimism for the realisation of the idea. The first challenge for bilaterally agreed consensual project would be to acquire letter(s) of recommendation of the EU DRS PA(s) in the so-called 'labeling process' on its way to the next EU financial perspective 2014-2020.

Dr. Aleš Bizjak,
*Institute for Water of the Republic of Slovenia,
Member of the ISRBC PEG RBM*

TOWARDS SUSTAINABLE SEDIMENT MANAGEMENT IN THE SAVA RIVER BASIN

One of the essential parts of the river system is sediment, which forms a variety of habitats and environments. Nevertheless, its important role has been somehow forgotten many times. Consequently, there are as yet no examples of the fully-fledged integration of sediment management into river basin management. This was a key driver for UNESCO's International Hydrological Programme (IHP) to establish the global International Sediment Initiative (ISI), and to – independent of, and complementary to, ISI – establish the European Sediment Network (SedNet). Both ISI and SedNet promote and provide ample arguments for sustainable sediment management (SSM).

On the other hand, within the implementation of the *Framework Agreement on the Sava River Basin (FASRB)*, the Sava countries have drafted the *Protocol on Sediment Management to the FASRB*, which will provide a legal basis for future cooperation of the countries on the development of the *Sediment Management Plan for the Sava River Basin (Sava SM Plan)*. The *Protocol* highlights comparable guiding principles to SSM as those endorsed by ISI and SedNet.

These 'shared' principles set an excellent condition for cooperation among the Sava countries that will implement the *Protocol*, and ISI and SedNet to support that implementation through the project entitled *Towards Practical Guidance for Sustainable Sediment Management using the Sava River as a Showcase*. The project will bring together the state-of-the-art in scientific as well as practical knowledge on SSM and make that knowledge available through a practical training course. Therefore, the ISRBC, ISI and SedNet teamed up to jointly look for funding to develop the course and to apply the practical SSM guidance – as trained in the course – in the Sava river basin as a showcase. It is expected that such an experience will inspire other river basins (globally) to apply the SSM guidance, as well.

A sponsorship has been kindly offered by IHP-Germany, SedNet, ISI, UNESCO Venice Office,



BRGM and Deltares, while the ISRBC offered an in kind support by assisting in the organization and execution of the planned activities. This combined offer covers the first two steps of the project. Thus, it was decided to start with the implementation in April 2012.

The first step includes the development and execution of the first part of the SSM course, as well as the drafting of the corresponding guidance document. It will address the sediment balance throughout the river system, sediment monitoring and sediment quality and quantity evaluation, i.e.



the first three elements of a SM plan, as foreseen by the *Protocol*. In the course, planned to be held in October 2012, experts assigned by ISI and SedNet will train the state-of-the-art related to these issues, while the participants – local experts from the Sava river basin, involved in sediment management – will transfer their learning experiences into the draft practical guidance. In the second step, starting just after the course, the local experts will apply that draft guidance to elaborate the first elements of the *Sava SM Plan*, under the coordination of the ISRBC.

All the parties involved are optimistic to find the remaining funding needed to develop the second part of the project, which will address measures, dredging, sediment disposal, treatment and use, as well as institutional arrangements, and then again apply the lessons learned in the Sava practice to facilitate further development of the *Sava SM Plan*.

Jos Brils, Deltares, SedNet Steering Group

*Anil Mishra, UNESCO Paris,
International Sediment Initiative*

*Dr. Dejan Komatina, Secretary,
Secretariat of the ISRBC*

OCCURENCES OF THE ICE COVER ON THE RIVERS IN THE SAVA BASIN

Introduction

Winter 2011/2012 will be remembered for very low air and water temperatures, high winds, low and extremely low water levels, as well as significant phenomena of ice flow and ice freeze-up. Very low temperatures that often dropped even below -20.0°C were registered at many meteorological stations in late January and in early February. Past winter reminded us again of the occurrences of ice flow and ice freeze-up with the imminent danger of ice jam floods on the rivers Drava, Danube, Sava, Kupa, Zrmanja and many other larger and smaller watercourses.



Figure 1. Breaking the ice on the Sava River near Sl. Brod on February 9, 2012 (www.tportal.hr)

Ice flood occurs during the periods without precipitations, when the air temperature is often below -20.0°C . Then, due to the absence of normal flow, certain profiles at critical sections of the river may be clogged with the river ice. One of the major ice jam floods in this part of Europe was a catastrophic glacial flood on the Danube in Budapest, which happened on February 26, 1876. The cause of the flood was the clogging of the flow profile in Bezdán that caused sudden rise of water upstream, up to Budapest. Distance from the clog



Figure 2. Irresponsible crossing of the frozen Sava river near Štitar, the village near Županja on February 12, 2012 (www.tportal.hr)

in Bezdán, which prevented the normal flow of water, to the location of glacial flood (Budapest) was 221 river kilometers. This fact indicates that glacial floods can occur over a wide area. Such

occurrences require synchronized protection against ice jam flooding that takes two, three or more states.

Ice Occurrences in the Sava River Basin in the Winter 2011/2012

Last winter, very low air and water temperatures, as well as low and extremely low water levels caused the appearance of the ice flow and ice freeze-up with the possibility of ice jam floods on the Sava River and its tributaries. Therefore, the governmental agency „Croatian waters“ declared preparatory and regular flood protection measures at some sections. On February 8, 2012, the ice cover spread over 70% of the Sava River at the sector Sl. Brod. Preparatory flood protection measures were declared at 9.00 pm, while regular flood protection measures were declared at 11.00 pm. All agencies, which participated in the defense against the ice on the river, were ready to take part in breaking possible ice clogs that might have caused ice jam flood. Ice occurrences were registered at the middle and lower sections of the Sava. It should be noted that this winter was characterized by low and extremely low water levels. Thus, the hydrological stations in Rugvica and Šamac registered water levels that were on the verge of the absolute lowest water level ever recorded. Ice freeze-up and breaking of the ice on the river Sava near Brod, Štitar and Brčko are shown in Figures 1, 2 and 3.



Figure 3. Croatian waters' boat breaks up ice on the Sava River near Brčko on February 11, 2012 (www.ostraluca.com)

We should recall the winter 1984/1985 that was harsh and long, and which resulted in significant occurrences of ice on most of our rivers, including periods of ice flow that lasted for 3-14 days and ice freeze-up (8-14 days) at several sections along the Sava, as well as on the rivers Kupa and Una (Figures 4 and 5).

Ice Jam Flood Protection

Main measures taken in protection against ice jam floods are river regulation measures, the use of icebreakers and use of explosives (underwater mines). In order to avoid clogging in the channel



Figure 4. Ship "Biokovo" on the Sava River near Rušćica (Sl. Brod) on January 17, 1985. (Thickness of the ice about 30 cm, water level - H = 173 cm, flow - Q = 637 m³s⁻¹, the lowest air temperature - 25.2°C)

and possible flooding, ice should be kept in motion (ice flow) or prevented from clogging, with an even distribution of ice on the surface of the river. In the first place, this is achieved by proper river engineering works, thus eliminating critical sections and ensuring favorable hydraulic - morphological conditions for the ice flow. Ice breakers serve as a complement to these measures with the task of breaking the ice floes, as well as preventing the ice aggregation and the creation of ice dams. Detail of the ice floe on the Danube near Zemun is shown in Figure 6. Explosive is used for breaking ice barriers.

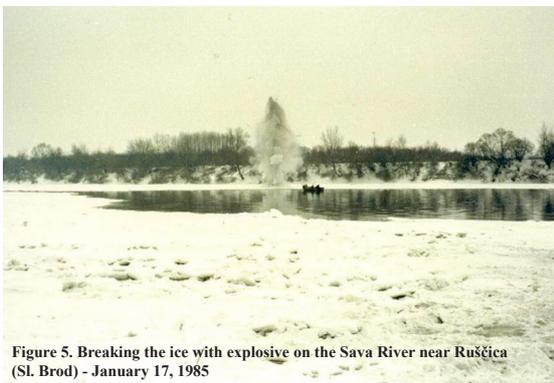


Figure 5. Breaking the ice with explosive on the Sava River near Rušćica (Sl. Brod) - January 17, 1985

Formation of ice clog causes a sudden backwater rise as well as increase in water levels upstream and water level decline downstream of the ice clog. Backwater rises very quickly and spills over defense system, resulting in glacial flood. Defensive systems are designed and constructed to the relevant high water resulting from precipitation and in most cases they can not provide protection against the ice jam floods.

Protection measures against ice jam floods include:

- Proper planning, development of studies and monitoring of water regime,
- Flood control measures,
- Preventive, preparatory activities,
- Immediate measures for regular and emergency flood protection,
- Mitigation measures activities after the cessation of flood protection defense.

The Croatian State plan for the flood control ("Official Gazette" No. 84/10) includes measures for the protection against the ice on the rivers. Flood control can be preventive, regular and emergency. In the context of the defense against the ice flood, as well as in accordance with the State plan, the preliminary protection measures are declared in



Figure 6. Ice floes on the Danube near Zemun on February 21, 2012 (Photo: AFP / PIXSELL, www.vecernji.hr)

conditions when the floating ice covers 25% of the water surface. Regular flood protection measures are declared with the occurrence of the ice freeze-up while the extraordinary flood protection measures are declared with the formation of the ice clog in the river channel.

Conclusion

Although the extreme ice occurrences are relatively rare, they must be paid adequate attention during the course of extreme event, as well as after that. The experience resulting from the ice jam flood on the Danube in Budapest in 1876, showed that ice occurrences and glacial floods should be considered in a broader view, pointing out the necessity for bilateral cooperation, as well as multilateral cooperation in case of the occurrence of the ice and possible ice jam flood.

*Dr. Dušan Trninić,
Scientific Adviser*

REDUCING TRANSBOUNDARY POLLUTION RISKS WITHIN THE DRINA RIVER BASIN

As the biggest tributary of the Sava River, the Drina River catchment area represents a valuable ecological reservoir. The main environmental challenges in the region are wastewater discharge without treatment and illegal landfills. Transboundary impacts exist in the form of altered flow rates due to hydropower operation, intensive and accidental pollution, and eutrophication from intensive agriculture in the lower river section. Considerable effort has been made in the past decade to develop a joint planning and decision-making process.

The Regional Environmental Center for Central and Eastern Europe (REC), in cooperation with municipalities and central governments of Bosnia and Herzegovina, Montenegro and Serbia, initiated the first cross-border dialogue process between local stakeholders concerning environmental problems in the Drina River Basin. The first Forum of Parties was organised in 2003, and evolved in 2006 into the Drina River Committee (DRC), an informal association of 19 municipalities. With constant support of the Norwegian Ministry of Foreign Affairs (MoFA), the DRC and its bodies identified several priority areas for immediate action, with waste and water management topping the agenda.

In 2009, a new grant was awarded for the implementation of a two-year project entitled: "Enhancing cross-border cooperation in the Drina River Basin to fight poverty and improve water management through the support to Drina River Committee". The project was tailored to foster cooperation among key water authorities and stakeholders in three countries, while taking into account the basic orientations of the Sava/Danube Basin Strategic Partnership. The project focused mainly on pending water management issues, solving waste problems in three pilot

municipalities and increasing environmental awareness among citizens. Also, the DRC expanded with new members and will continue to exist as a platform for cooperation and improving dialogue between municipalities.

THE DRINA RIVER

Length: 346 km
Major tributaries: Čehotina, Lim, Uvac, Rzav, Jadar, Sutjeska, Prača and Drinjača
Size of basin: 20,320 km²
Countries: Bosnia and Herzegovina, Montenegro and Serbia
No. of inhabitants: approx. 650,000

Inventory of significant pressures and impacts. One of the main project outcomes is the development of a basin-wide inventory of pollution sources that pose a significant threat to water resources. The data illustrating current conditions in relevant sectors and industries were provided by national and local authorities, municipalities and operators. The identification, data collection and ranking of risk sites was based on the general approach and methodology developed within the framework of the International Commission for the Protection of the Danube River (ICPDR) and adapted to local needs and circumstances.

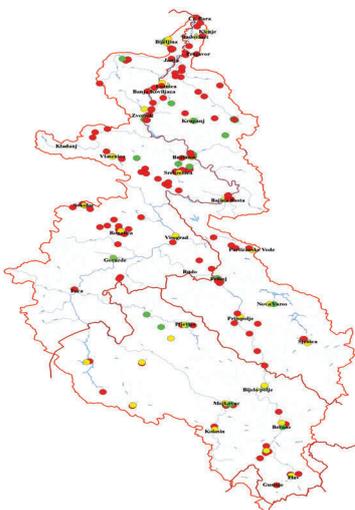
Capacity building and networking to the existing Danube/Sava Accident Emergency Warning System (AEWS). Riparian states require support to improve levels of accident prevention, emergency preparedness and rapid response measures at both regional and local levels. To this end, ICPDR methodology was introduced, and the adopted guidance mechanism was followed up with assistance from ICPDR and ISRBC experts. Three AEWS offices were established, equipped and staffed with trained personnel in Bjeljina (B&H), Berane (MNE) and Loznica (SRB). This initiative provides a foundation for taking further steps towards adequate accident prevention and control at regional and national levels.

Despite the projects many positive results, further assistance is needed to facilitate cooperation processes at local, national and cross-border levels.

*Jovanka Ignjatović,
Senior Expert Water Management
Topic Area Leader,*

*Imola Koszta,
Administration and Project Officer,*

*The Regional Environmental Center
for Central and Eastern Europe (REC)*



CONNECTING THE BANKS OF THE SAVA RIVER – NEW BRIDGE IN BELGRADE OVER ADA CIGANLIJA ISLET

The bridge over Ada is a road and railway bridge that connects the municipalities of New Belgrade and Cukarica. It is the longest single-pylon cable-stayed bridge in the world.

The construction of the bridge with total length of 964 m and width of 45 m, with a main span over the river of 376 meters, began in 2008 and completed in late 2011. The bridge is supported by 8 columns while the main pylon on Ada, 200 m high with a diameter 34.54 m in the basis, holds 80 stays strung from the pylon top thus supporting the main cantilever over the Sava.



Considering the main span as well as the height (lower edge of the bridge structure is 16 m above the high navigable level), the bridge does not pose a threat to the safe water transport on the Sava River.

The idea of building such an important facility dates back to 1923 when Belgrade began to acquire the features of European cities, and when futuristic oriented planners predicted some sections of the road, now known as the Inner trunk route circle. That year architect George Kovaljevski did the first sketch of urban Belgrade with the bridge over Ada Ciganlija.

However, the construction of the bridge remained shelved until 2004 when the Slovenian company "Ponting" won the competition for the conceptual design. The designers of the bridge were constructing engineer Viktor Markelj and architect Peter Gabrijelčič.

The preliminary design of the bridge with access roads, along with all necessary studies, was finished in 2006 and the firm Louis Berger was selected as the consulting agency in early 2007.

In April 2008, the engineering and construction of the bridge was awarded to a consortium of three companies – "PORR Technobau und Umwelt AG" from Austria, "SCT dd" from Slovenia and "DSD Bruckenbau GmbH" from Germany.

Drilling the first test pile on the right bank of the Sava river, on December 1, 2008, marked the official commencement of the constructing.

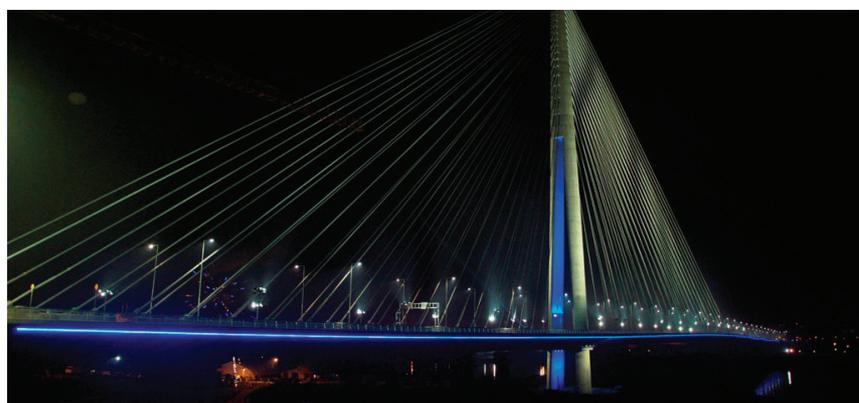
During 2009, temporary ramps were set for launching precast concrete bridge elements, along with the construction of the access roads. Work on the reclamation and stabilization of the site on Ada islet was finished to the required level for the latter driving of permanent piles on which would the bridge pylon rest on.

In 2010, the section on Cukarica's side, a concrete structure 200 m long, weighing 20,000 tons, was completed and connected to the main pylon on Ada.

At the same time, the construction of a main span of the bridge over the Sava river began. Pre-assembly of 24 steel segments was carried out on site, which were carried on the barges to their position under construction. A special crane erected them at a height of 20 m.

In parallel with their rise, setting of stays took place. Thus, the bridge began hanging over the Sava, while stays kept a perfect balance of construction parts.

Along with the work on the main cantilever, the construction of access ramps necessary for putting the bridge into operation started in 2011. Main pylon was completed and the connection of the bridge construction was fully completed in early August.



Afterwards, the work on completion all the necessary elements on the bridge continued, so the first vehicles could cross the new bridge by the end of the year.

On the New Year's Eve, December 31, 2011, the bridge was officially opened with fireworks at midnight.

As one of the most impressive constructions built in the world recently, Ada Bridge was featured in the fifth episode, season nine of the Discovery Channel documentary television series Build It Bigger.

*Duško Isaković,
Advisor for Technical Issues of Navigation,
Secretariat of the ISRBC*

SUCCESSFUL IMPLEMENTATION OF THE NEWADA PROJECT



NEWADA, a project on which 12 waterway administrations from 8 Danube riparian countries are cooperating, is co-funded under the **EU South East Europe Transnational Cooperation Programme** (www.southeast-europe.net). It was approved within the 1st call for proposals of this programme, and ranked 6th among 40 approved project. Its implementation started in April 2009 and was finalised in April 2012. NEWADA is the acronym for „*Network of Danube Waterway Administrations*“.

NEWADA aims to improve **the efficiency of using the Danube River**, as a Pan-European Transport Corridor VII, through **intensifying cooperation between Danube administrations** in promoting inland navigation as a rational and environmentally friendly mode of transport. **Cooperation in several thematic areas**, that are important for inland navigation, has been covered within the NEWADA project. These areas are hydrography and hydrology, inland waterway maintenance, and application of information and communication technologies on inland waterways. **Strategic documents**, such

Within the NEWADA project, an international **FIS portal** for the Danube river, that will contain all information relevant to inland navigation (electronic navigation charts, notices to skippers, data on critical sectors, water levels, ice and the infrastructure), has been created. At the same time, **WLAN access points** (in ports and locks) have been set up at 10 locations along the Danube River. At these locations, inland waterway users can access current data on navigation conditions, free of charge.

Cooperation between NEWADA partners have been developed at several levels. **Board of Directors** has been established as the highest body with aim to define strategic guidelines and monitor project activities. **Expert exchange programme** in the area of hydrography, hydrology, inland waterway maintenance and ecology has been established too. This way, through the exchange of experience and identification of best practice cases, the quality of human resources has been improved significantly.

The importance of this transnational project has been recognised in the text of the **EU Strategy for the Danube Region** - adopted at the end of 2010, where NEWADA is quoted as an example of good practice. NEWADA is of strategic importance because through the implementation of identified activities of international importance, partners have the opportunity to **share a common vision** on improvement of infrastructure accessibility on the Danube River and raise the level of services available to waterway users. First steps have been undertaken with NEWADA, while the follow-up of started activities and implementation of new activities are planned through the **NEWADA duo (data and user orientation)** project, nominated for funding within the fourth call for proposals of the EU South East Europe Transnational Cooperation Programme.

More information at www.newada.eu.

*Ivan Mitrovic, M.Sc., Project Coordinator
Directorate for inland waterways,
Republic of Serbia*



as plans for improving cross-border cooperation in the area of hydrographic survey activities, plans for optimisation of inland waterway maintenance processes, and harmonised Danube waterway administrations' Strategies for the period 2011-2020, have been prepared within the project.

EVENTS - REPORTS AND ANNOUNCEMENTS

TRAINING WORKSHOP ON CONNECTING POLICY AND SCIENCE FOR AN IMPROVED MANAGEMENT OF THE SAVA RIVER BASIN (ZAGREB, 30 NOV. – 2 DEC. 2011)

The workshop was organized by the ISRBC and the UNESCO Venice Office, in collaboration with the Global Water Partnership Mediterranean and with the support of the EU FP7 “PSI-Connect” project. The aim of the workshop was to build capacity of the science and policy communities

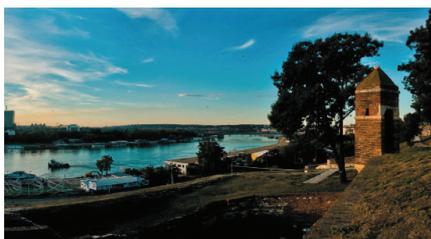


expected to be involved, directly or indirectly, in the preparation and/or implementation of the Sava RBM Plan, to share all available (scientific, local and procedural) knowledge related to a river basin and integrate it in the planning process. Around 25 representatives of both groups of stakeholders (water and environmental ministries and agencies as „policy makers“; universities, institutes, and hydro-meteorological services as „knowledge owners“) from all five countries of the Sava basin, including several representatives of international organizations (UNESCO, ICPDR, SedNet), participated in the workshop. The workshop is perceived as a trigger of the process, and a series of meetings, aiming to further integrate the scientific community in the activities related to the Sava river basin management in future.

CONNECTIVITY WITHIN THE CULTURAL SPHERE IN THE SAVA BASIN – „SAVA SUITE“ CD RELEASED

The project “The river’s dream band” was created within the promotion of the UNESCO International Year for the Rapprochement of Culture organized in 2010. On the one hand, for the promotion of such activities, the UN chose the river as a symbol of natural beauty, the geographical form that, as such, does not recognize boundaries, as well as natural routes of cultural exchange and, on the other hand, the music, as a vector of social heritage of one nation followed by mutual respect.

The River's Dream Band



SAVA SUITE

In the process of the accession of new countries to the European Union, “The river’s dream band” as a musical expression, seeks to promote states’ traditional folk music as a means of a cross-border, transnational and regional cooperation. So, in 2011 was launched the UNESCO „Sava Suite“, focused on the geographic area of the Sava River Basin. It includes compositions, composed and arranged particularly for the transfer of the original notes made in the basin. “The river’s dream band”, consisting of musicians from Italy, Austria, Slovenia and Croatia, had a premiere of its musical repertoire “Sava Suite” before the high government officials during the Third Meeting of the Parties to the Framework Agreement on the Sava River Basin, organized by the Sava Commission on May 31 and 1 June, 2011 at Brdo near Kranj. The next performance of the band was held in Fontanadreda (Italy) in August 2011, as part of local activities for the promotion of water. The project continues in 2012, with a concert within the fifth traditional exhibition “The challenges of economic development in 2012” in Ljubljana.

STUDY VISIT OF THE SKADAR LAKE COMMISSION TO THE ISRBC

The visit took place on April 23-24, 2012, as a part of a broader program, organized by the Global Water Partnership – Mediterranean (GWP-Med), which also included the visits of the Skadar Commission to the ICPDR and Neusiedl Lake in Austria. The delegation consisted of eight representatives of Albania and Montenegro, the countries sharing the Skadar Lake, and a representative of GWP-Med. The guests were provided with broad information on various topics related to the FASRB and the process of

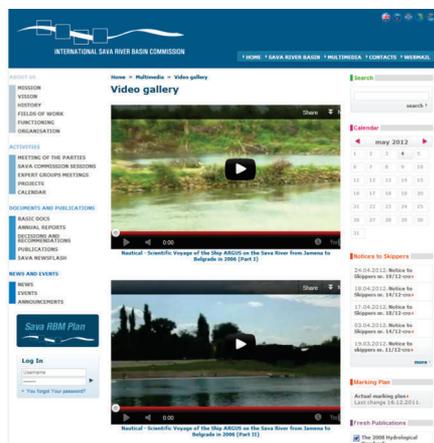
its implementation. Special attention was paid to the activities of the ISRBC in different fields of its work, and to the lessons learned from the FASRB implementation process – the aspirations, achievements, shortcomings and difficulties in coordinating the transboundary cooperation. At the last part of the visit, the delegation of the Skadar Lake Commission attended the meeting of the RBM expert group of the ISRBC, to get a closer look in a working mechanism of the ISRBC.

IN APRIL OF 2012, MULTIMEDIA APPLICATION WAS PUT INTO USE ON THE WEB SITE OF THE SAVA COMMISSION

On the website, visitors will be able to see the relevant video clips and photos from the Sava River Basin, which illustrate the extraordinary natural resources and economic potential of the basin, as well as the activities of the countries and the Sava Commission related to the use of these resources while preserving the existing values.

The application will be open for the display of a wide range of material made by admirers of the Sava river, as well as by notable experts engaged in the field of media, particularly in video and photo creations.

The application can be accessed through the link MULTIMEDIA in the main menu of the web site.

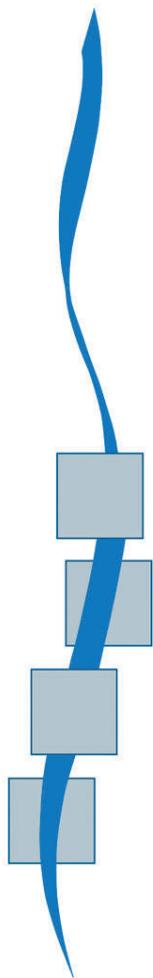


UPCOMING ISRBC EVENTS AND MEETINGS

- Preparatory meeting related to the adoption of the Sava RBM Plan (Zagreb, 29 May 2012)
- 2nd Meeting of the Committee for monitoring and coordination of the project Rehabilitation and development of transport and navigation on the Sava river waterway (Zagreb, 31 May 2012)
- Regional workshop within the project Promoting eco-tourism development in the Sava river basin (Slavonski Brod, 20-21 June 2012)
- 15th Meeting of the Permanent Expert Group for Navigation (Zagreb, 27-28 June 2012)
- 2nd Consultation Workshop on preparation of the Program for Development of the Flood Risk Management Plan for the Sava River Basin (Zagreb, June 2012, tentatively)
- 20th Meeting of the Permanent Expert Group for Flood Prevention (Zagreb, June 2012, tentatively)
- 7th Meeting of the *Ad-hoc* Expert Group for Hydrological and Meteorological Issues (Zagreb, June 2012, tentatively)
- 29th Session of the ISRBC (10 July 2012)
- 4th Meeting on implementation of the Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube Basin (Budapest, 17-18 Sep. 2012)
- Regional conference within the project Promoting eco-tourism development in the Sava river basin (Sep. 2012, tentatively)

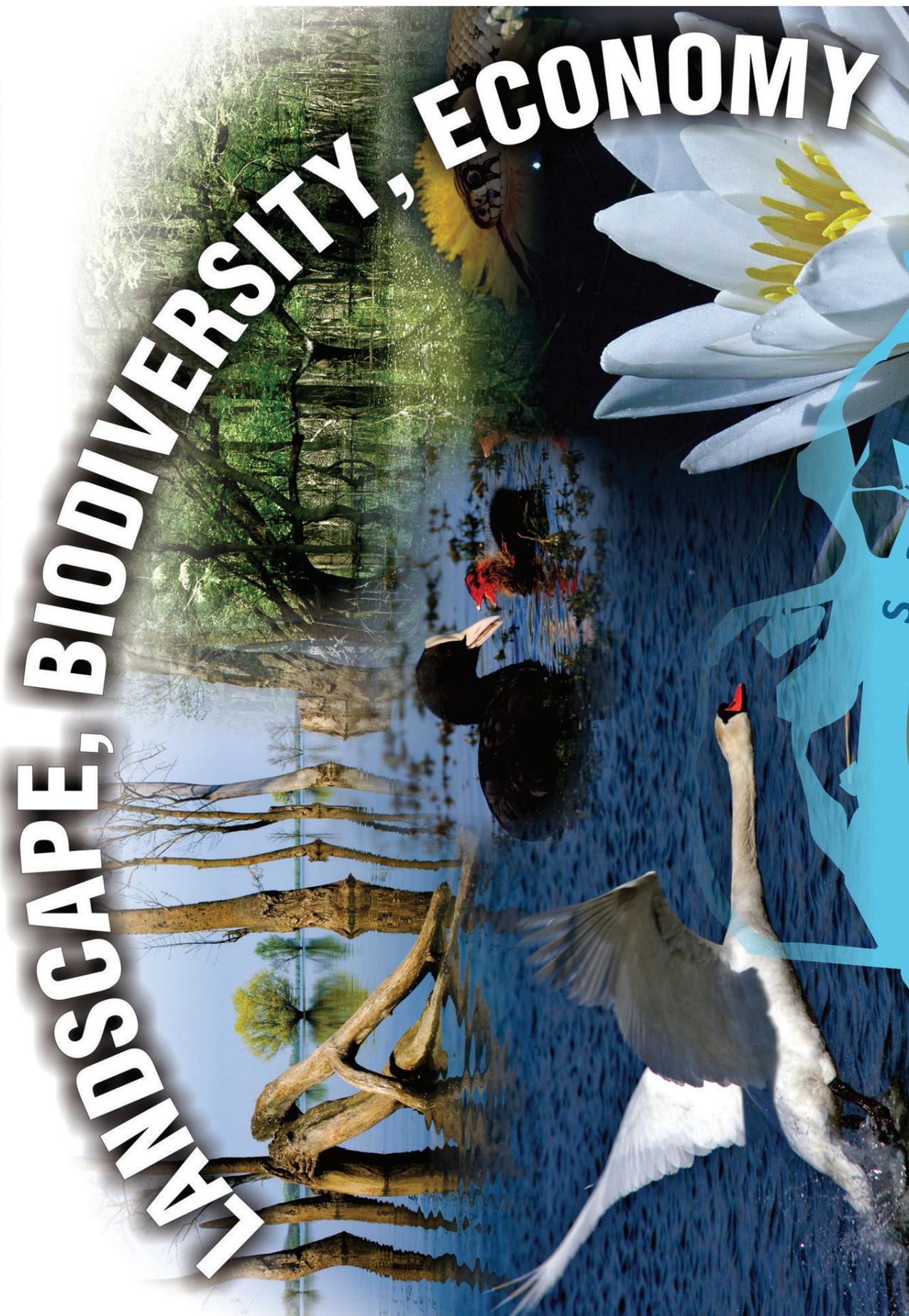
EVENTS FOR PROMOTION AND CELEBRATION OF THE SAVA DAY 2012

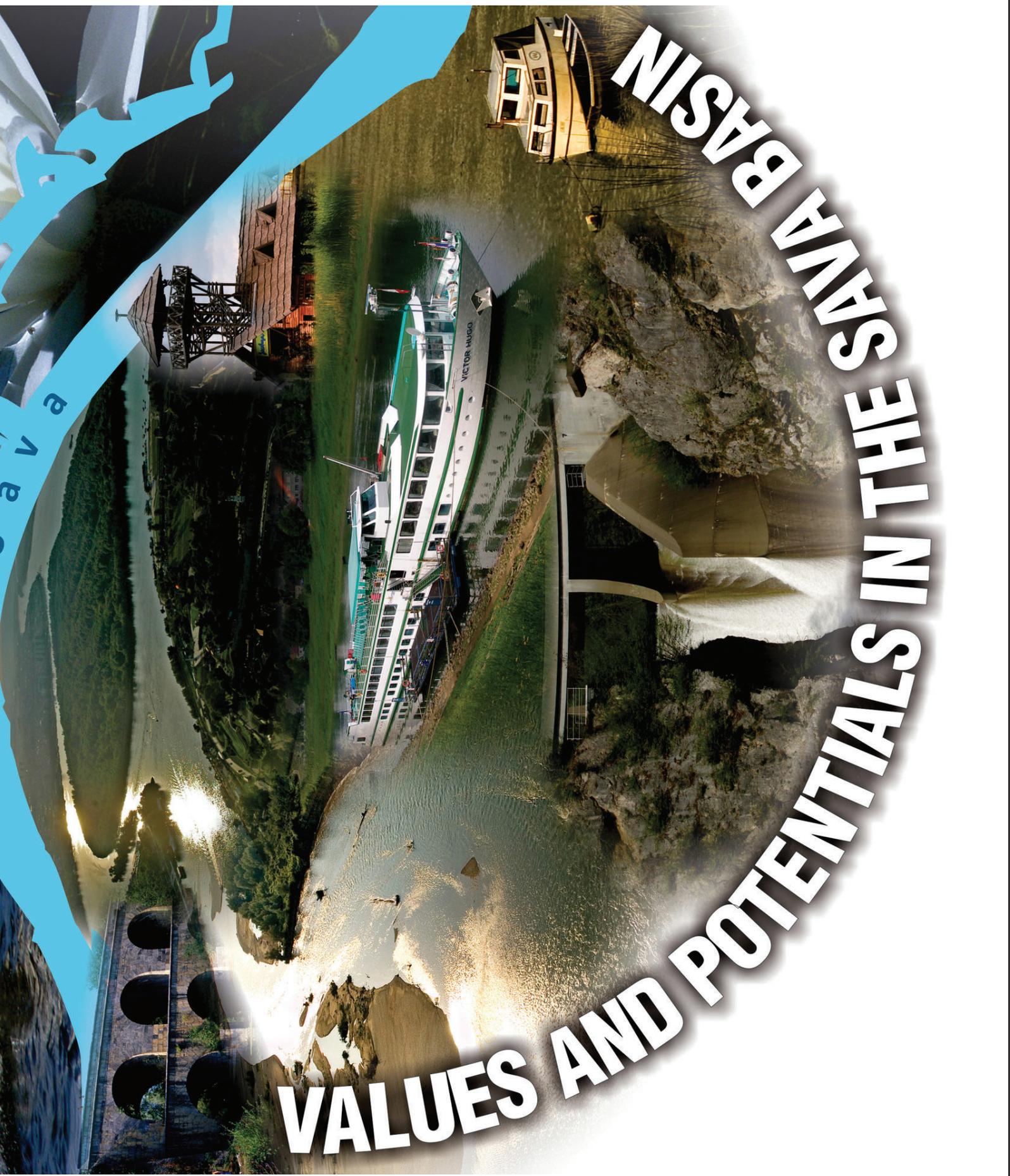
May 23 – 26, 2012	Osijek (Croatia)	The 3rd International Congress on Rural Tourism „Rural Tourism - Engine of Sustainable Development“, http://www.kongres-seoskog-turizma.org/
May 24 – 25, 2012	Ljubljana (Slovenia)	International Conference „Challenges of Economic Development - Innovation in the Sava River Basin“, http://www.ozljubljana.si/
May 27 – 29, 2012	Beograd (Serbia)	The 3rd International Conference „Geosciences and Environment“, http://www.agserbia.com/
May 30, 2012	Ljubljana (Slovenia)	Final event within the project “Moja reka si”, www.mojareka.si
May 30 – June 10, 2012	Valjevo, Obrenovac, Šabac, Beograd, Sremska Mitrovica (Serbia)	Events within the Sava Day celebration in Serbia, milica.milenkovic@minpolj.gov.rs
June 1 – 2, 2012	Lonjsko Polje Nature Park (Croatia)	Youth Parliament “Youth Today for the Sava Tomorrow” http://www.savacommission.org/
June 1 – 19, 2012 (tentatively)	Sarajevo (Bosnia and Herzegovina) – to be confirmed (tentatively)	Exhibition of the photos from the ISRBC photo-contest „Sava River – Nature, People and Culture“
June 1 – 30, 2012	Ljubljana (Slovenia)	Exhibition of the photos from the ISRBC photo-contest „Sava River – Nature, People and Culture“, http://www.mko.gov.si/
June 2 – July 6, 2012	Zagreb, Sisak, Županja, Slavonski Brod (Croatia)	Sava fairs within the project „Our Beautiful Sava“, http://www.lijepanasasava.hr/
June 3, 2012	Special Nature Reserve Zasavica (Serbia)	Main celebration of the Sava Day in Serbia, milica.milenkovic@minpolj.gov.rs
June 20 – 21, 2012	Slavonski Brod (Croatia)	Workshop on eco-tourism in the Sava river basin, http://www.savacommission.org/
June 28 – July 1, 2012	Gornji Vakuf/Uskoplje, Bugojno, Donji Vakuf, Jajce, Banja Luka, Laktaši (Bosnia and Herzegovina)	Rafting eco regatta



INTERNATIONAL SAVA RIVER BASIN COMMISSION

LANDSCAPE, BIODIVERSITY, ECONOMY





VALUES AND POTENTIALS IN THE SAVANNA BASIN

a v a

Savski Vjesnik

 **IMPLEMENTACIJA OKVIRNOG SPORAZUMA
O SLIVU RIJEKE SAVE:
POGLED BOSNE I HERCEGOVINE**

 **U PRAVCU ODRŽIVOG UPRAVLJANJA
NANOSOM U SLIVU RIJEKE SAVE**

 **POJAVE LEDA NA VODOTOCIMA
U SLIVU RIJEKE SAVE**

 **NOVI MOST NA RIJECI SAVI U BEOGRADU**



SADRŽAJ

- Sadržaj

- Najava

- Implementacija Okvirnog sporazuma o slivu rijeke Save: pogled Bosne i Hercegovine

- Partnerstvo sa Dunavskom komisijom datira od osnivanja Međunarodne komisije za sliv rijeke Save

- Doprinos zainteresiranih strana razvoju prvog plana upravljanja slivom rijeke Save

- Inicijativa za održivo, prekogranično, višenamjensko upravljanje rijekom Savom na graničnom sektoru Slovenije i Hrvatske (pilot projekat Krško-Zagreb)

- U pravcu održivog upravljanja nanosom u slivu rijeke Save

- Pojave leda na vodotocima u slivu rijeke Save

- Smanjenje rizika prekograničnog zagađenja u slivu rijeke Drine

- Novi most na rijeci Savi u Beogradu

- Uspješna implementacija projekta NEWADA

- Događaji - izvještaji i najave



IMPRESUM

Izdavač:
Međunarodna komisija za sliv rijeke Save,
Zagreb (Hrvatska), Kneza Branimira 29,
Tel/Fax +385 1 488 6960, 488 6986,
E-mail: isrbc@savacommission.org;

Izvršni urednik: dr. Dejan Komatina

Uređivački odbor: Kemal Karkin (BA),
Marina Halužan (HR), Vladimir Stolović (RS),
Robert Kojc (SI);

Dizajn i štampa: GRAFOMARK - Laktaši

Savski vjesnik je službeni bilten Međunarodne komisije za sliv rijeke Save koji se objavljuje dvaput godišnje u formi dvojezičnog izdanja – na engleskom jeziku i jednom od službenih jezika Savske komisije, za svako izdanje. Njegova svrha je da se predstavi pregled najznačajnijih aktivnosti, projekata i postignuća Savske komisije u područjima koje pokriva Okvirni sporazum o slivu rijeke Save, da se daju korisne informacije i obezbijedi bolja komunikacija svih relevantnih interesnih grupa, kao i šire javnosti sa Savskom komisijom i na taj način promovira vrijednosti i potencijali rijeke Save.

Savski vjesnik je dostupan i na internet stranici Savske komisije, www.savacommission.org

DRAGI ČITATELJI,

Pred Vama je novi, deveti broj Savskog vjesnika, koji se pojavljuje četiri godine nakon izlaska prvog broja i uoči sedme godišnjice rada Savske komisije. Za to vrijeme, Savska komisija je postala stabilan mehanizam, prepoznat i u savskim državama i u širem okruženju kao efikasna organizacija, pouzdan partner i uspješan koordinator sve većeg broja aktivnosti država u okviru implementacije Okvirnog sporazuma o slivu rijeke Save.

I u prethodnom šestomjesečnom periodu, od vremena izdavanja prethodnog broja Savskog vjesnika, postignuti su značajni rezultati u implementaciji Okvirnog sporazuma, od kojih su neki predstavljeni u ovom izdanju biltena.

Završena je izrada nacrtu prvog Plana upravljanja slivom rijeke Save i, na internet stranici Savske komisije, proveden proces konsultacija javnosti, u okviru kojeg su zainteresirane strane i široka javnost imali mogućnost davanja primjedbi i komentara na nacrt Plana. Završna verzija dokumenta, koja će biti pripremljena imajući u vidu pristigle komentare, u skladu s Okvirnim sporazumom će, kao prijedlog Savske komisije, biti distribuirana državama radi usvajanja, planiranog za kraj 2012. godine.

Projekat obnove i razvoja plovnog puta i plovidbe na rijeci Savi ulazi u završnu fazu planiranja, koja treba da rezultira glavnim projektima plovnog puta i drugom dokumentacijom neophodnom za izvođenje radova. U međuvremenu, Savska komisija je definirala pravac i način djelovanja novoformiranog Odbora za praćenje i koordinaciju projekta obnove plovidbe, kojim se otvara mogućnost za uključivanje svih zainteresiranih strana u rad ovog Odbora, a time i dodatni doprinos transparentnosti procesa i kvaliteti njegovih rezultata.

Velika pažnja tokom prethodnih mjeseci bila je posvećena pripremi i implementaciji projekata. U tom periodu su pokrenuta dva nova regionalna projekta, kojima se proširuje opseg aktivnosti Savske komisije – jedan na temu upravljanja riječnim nanosom u slivu Save, predstavljen u ovom broju Vjesnika, i drugi, usmjeren na razvoj eko-turizma u slivu Save. Razvoj eko-turizma je aktivnost kroz koju se na najbolji način može demonstrirati integralni pristup Savske komisije, zasnovan na težnji da se razvoj privrednih aktivnosti i očuvanje okoliša tretiraju na uravnotežen način. Nastavljene su i brojne aktivnosti na osiguravanju sredstava za implementaciju prioriternih projekata Savske komisije kroz okvir Dunavske strategije Evropske unije i druge finansijske programe i mehanizme.

Radi dodatnog jačanja učešća javnosti u procesu implementacije Okvirnog sporazuma, razmatraju se mogući novi mehanizmi za dalje uključivanje zainteresovanih strana i široke javnosti u ovaj proces. Sa ciljem daljeg unaprijeđenja komunikacije vladinog i akademskog sektora, održana je prva radionica na temu povezivanja nosilaca znanja i donosilaca odluka u upravljanju vodama. Krug organizacija i institucija sa statusom posmatrača u Savskoj komisiji proširen je davanjem tog statusa Globalnom partnerstvu za vode – Regionalnom partnerstvu za centralnu i istočnu Evropu (GWP CEE).

Radi boljeg informiranja stručne i šire javnosti, publicirani su Album mostova na rijeci Savi i njenim plovnim pritokama, prvi ikada izdat za rijeku Savu, i Daljinar rijeke Save, izdat prvi put poslije više od 50 godina. Ovaj period obilježio je i doprinos publikacijama drugih organizacija i izdavača, kao što je posljednji broj časopisa Danube News, u potpunosti posvećen Savi, i nedavno izdana knjiga Aktuelna pitanja upravljanja vodama, izdavača In-Tech, sa poglavljem posvećenim upravljanju vodnim resursima u slivu Save.

U ovom broju predstavljamo i druge teme, interesantne sa stanovišta implementacije Okvirnog sporazuma, kao i nekoliko obavještenja i najava, uključujući i program Dana Save 2012, za čije se obilježavanje trenutno odvijaju intenzivne pripreme.

Nadam se da će Vam ovaj broj Savskog vjesnika pružiti korisne informacije i da ćete, čitajući ga, vrijeme provesti na prijatan način!

*dr. Dejan Komatina,
Sekretar, Sekretarijat Savske komisije*

IMPLEMENTACIJA OKVIRNOG SPORAZUMA O SLIVU RIJEKE SAVE: POGLED BOSNE I HERCEGOVINE

Prošlo je već sedam godina od kako je na snagu stupio Okvirni sporazum o slivu rijeke Save, a približno toliko godina djeluje i Međunarodna komisija za sliv rijeke Save koja je glavni pokretač aktivnosti na njegovoj implementaciji. Sedam godina je dovoljno dug period da se postavi pitanje progressa u implementaciji ciljeva Okvirnog sporazuma o slivu rijeke Save. Prvo, kakvi su rezultati u kontekstu postavljenog cilja za uspostavu međunarodnog režima plovidbe, koji je bio i osnovni motiv za zaključivanje Okvirnog sporazuma?

Nažalost, plovidba rijekom Savom još uvijek nije moguća na način kakva je bila prije 90-tih godina, prvenstveno zbog lošeg stanja plovnog puta. Savska komisija je odmah na početku svog rada pokrenula aktivnosti na stvaranju uslova za uspostavu plovidbe rijekom Savom. I pored toga, trebalo je proći 3 godine da se napravi prvi korak u pravcu rehabilitacije plovnog puta rijeke Save, a to je izrada Studije opravdanosti koja je financirana kontribucijom Bosne i Hercegovine, Hrvatske i Srbije. Taj dokument je zainteresirao međunarodne financijske institucije i druge organizacije da ponude donatorska i kreditna sredstva za realizaciju kompletnog projekta. Nakon toga, Savska komisija je donjela veći broj zaključaka i odluka koje se tiču konkretnih aktivnosti i rokova za njihovu realizaciju i koje su bile obvezujuće za zemlje članice Okvirnog sporazuma. U realizaciji tih aktivnosti, iako sve zemlje nemaju isti pristup, ipak se u ovom trenutku može reći da nema velikog

zaostajanja u dinamici. Naravno, za očekivati je da Hrvatska, a posebno Srbija veći značaj pridaju aktivnostima na uređenju plovnog puta i plovidbe rijekom Dunav koji ima mnogo veći potencijal za plovidbu od rijeke Save. Međutim, nije zanemaren ni plovni put rijeke Save.

Bosna i Hercegovina je posvećena rijeci Savi i daje veliki značaj obnovi njenog plovnog puta. Prve aktivnosti su krenule još i prije nego što je uspostavljena Savska komisija. Tako je 2003. godine Brčko distrikt pokrenuo batimetrijsko snimanje korita rijeke Save od Brčkog do Beograda. Nažalost prošlo je dosta vremena dok nisu započeti pregovori sa Svjetskom bankom o njihovom učešću u davanju povoljnih kreditnih sredstava za rehabilitaciju plovnog puta rijeke Save. U međuvremenu, iskorišteni su IPA fondovi Evropske unije u iznosu od 5,6 mil. eura za izradu potrebne projektne dokumentacije i za deminiranje bosansko-hercegovačke strane plovnog puta. Uz paralelne aktivnosti koje su se odvijale u Republici Hrvatskoj sada imamo osigurano financiranje za izradu studijske i projektne dokumentacije za čitavu dužinu plovnog puta, od ušća Save u Dunav kod Beograda pa sve do Siska. Prema sadašnjem stanju aktivnosti, dinamika utvrđena odlukama Savske komisije je u kašnjenju jer planirani početak radova u 2013. biće najvjerojatnije pomjeren na 2014, te njihov završetak u 2015/2016.

Savska komisija je stvorila i pretpostavke za uređenje riječnih informacijskih usluga na plovnom putu rijeke Save tako što je uradila

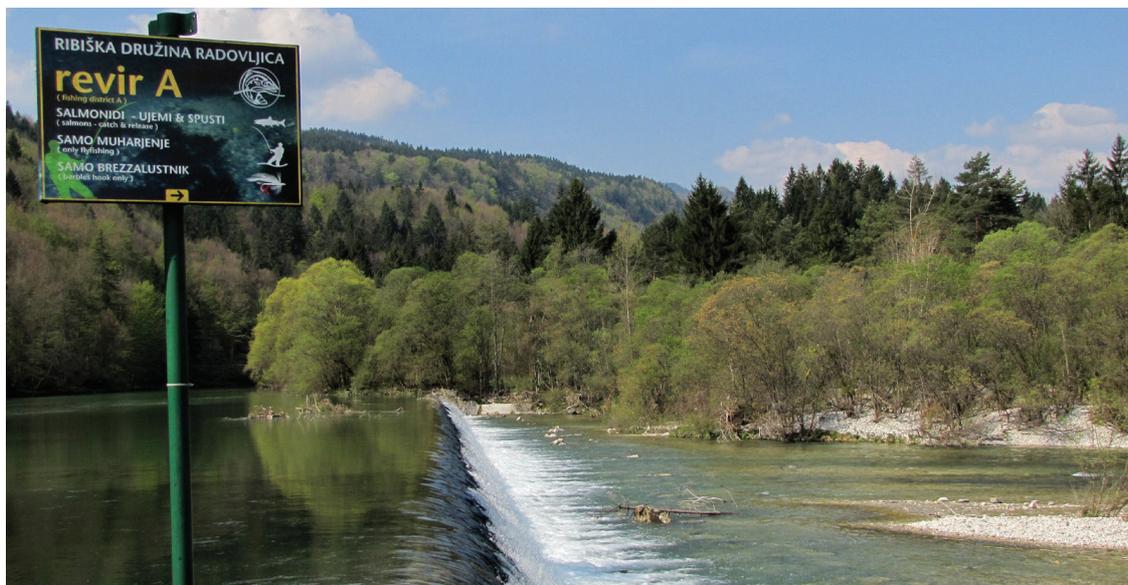


potrebnu projektnu i drugu dokumentaciju za te usluge. Na zemljama ostaje da obezbijede potrebna finansijska sredstva i implementiraju taj informacijski sustav. Za očekivati je da to bude kompletirano do završetka rehabilitacije plovnog puta. U odnosu na usaglašavanje regulative koja se tiče plovidbe rijekom Savom, Savska komisija je donjela potrebna pravila koje zemlje članice trebaju da ozvaniče u svoje zakonodavstvo.

Za razliku od plovidbe gdje je Okvirnim sporazumom Savskoj komisiji dat mandat da donosi odluke koje su obvezujuće za zemlje članice, u oblasti upravljanja vodama Savska komisija može donositi zaključke koji prema zemljama članicama imaju snagu preporuka. I pored toga, donjete preporuke Savske komisije su pozitivno prihvaćene od strane zemalja članica. Najveći dio aktivnosti se odnosio na izradu studija koje se tiču upravljanja vodama u

Razvijeni su preliminarni hidrološki model sliva rijeke Save i hidraulički model rijeke Save, prvi georeferencirani modeli ikad izrađeni za čitavo područje. Učinjen je napredak u razmjeni hidroloških i meteoroloških informacija i podataka u slivu Save. U toku je prva faza uspostave geografskog informacionog sistema za sliv. Započet je niz projekata za cijeli sliv Save, koji se bave aktuelnim pitanjima, kao što su utjecaj klimatskih promjena ili upravljanje riječnim nanosom.

Na kraju, svi subjekti u oblastima koje su predmet Okvirnog sporazuma mogu donjeti svoj sud o aktivnostima Savske komisije u proteklom periodu i uspješnosti u provedbi Okvirnog sporazuma. Te aktivnosti mogu se ocjeniti kao nedovoljne ili neefikasne ako se gledaju sa stajališta korisnika, kao što su, na primjer, brodari i luke kao neposredni korisnici, kao i drugi subjekti u privredi kao indirektni



slivu. Kao najvažniji cilj Okvirnog sporazuma postavljeno je donošenje Plana upravljanja slivom rijeke Save. Uz pomoć donatorskih sredstava Evropske komisije, te angažmanom Sekretarijata Savske komisije i predstavnika zemalja članica u ekspertnim grupama, u završnoj fazi je utvrđivanje tog Plana od strane Savske komisije i njegovo usvajanje od strane zemalja strana Okvirnog sporazuma i Crne Gore. Izrađen je i potpisan Protokol o zaštiti od poplava uz Okvirni sporazum, koji će, kada stupi na snagu, predstavljati pravni osnov za suradnju država u skladu sa Direktivom EU o poplavama, uključujući i izradu Plana upravljanja rizikom od poplava za sliv rijeke Save. Realizirane su i prve aktivnosti u pravcu izrade Plana upravljanja rizikom od poplava.

korisnici riječnog vida transporta. Jer, svaka propuštena godina korištenja tog plovnog puta može se vrednovati i povećanim transportnim troškovima zbog korištenja skupljeg vida transporta i dužih relacija transporta. Međutim, Savska komisija i zemlje strane Okvirnog sporazuma najbolje znaju kakav je delikatan put prevaljen da bi se došlo u ovu fazu realizacije. S tim u vezi treba istaći da su sve savske zemlje na do sada održanim sastancima strana Okvirnog sporazuma na ministarskom nivou, rad Savske komisije ocijenili pozitivno i dali joj punu podršku u daljim aktivnostima.

Kemal Karkin,
član Savske komisije iz BiH

PARTNERSTVO SA DUNAVSKOM KOMISIJOM DATIRA OD OSNIVANJA MEĐUNARODNE KOMISIJE ZA SLIV RIJEKE SAVE

Potpisivanje Memoranduma o razumijevanju na suradnji između Dunavske i Savske komisije, 29. januara 2009. u Budimpešti, bilo je prekretnica u historiji odnosa između ove dvije organizacije. Predmet Memoranduma je buduća suradnja komisija u cilju bolje koordinacije njihovih aktivnosti u oblasti plovidbe na Dunavu i Savi. Pored toga što su ovim pravnim aktom obje strane dodijelile jedna drugoj status posmatrača, takođe su donijele i odluku o identifikaciji oblasti od zajedničkog interesa, kao i o uspostavljanju i stimuliranju platforme za promoviranje, diskusiju i koordiniranje aktivnosti u oblastima zajedničke suradnje

Dunavska komisija naglašava važnost redovnih bilateralnih konsultacija između dvije komisije. Shodno tome, u cilju provođenja odredbi predviđenih Memorandumom, prvi konsultativni sastanak sekretarijata dvije komisije održan je 3. – 4. oktobra 2011. u Zagrebu. Budući da su pitanja, kojima se naše organizacije bave široko međupovezana, održana je rasprava po pitanju sadašnje situacije u sektoru unutrašnje plovidbe i buduće suradnje u okviru evropskih projekata u oblasti plovidbe i zaštite okoliša na Dunavu i Savi. Utvrđena su zajednička gledišta po pitanju širokog spektra tema, uključujući perspektive razvoja teretnog prometa, sigurnost plovidbe, primjenu RIS-a, poređenje pravila plovidbe na Dunavu i Savi sa odgovarajućim međunarodnim pravilima, organizaciju obrazovnog sistema za članove posade, primjenu ADN-a i organiziranje prikupljanja brodskog otpada na obje rijeke.

Potencijalna polja suradnje direktno su povezana sa potrebom da se pomire interesi osiguranja uvjeta za plovidbu na Dunavu i

Savi sa održanjem ekoloških karakteristika ovih vodnih puteva. U tom smislu, Zajednička izjava o vodećim principima za razvoj unutrašnje plovidbe i zaštitu okoliša u slivu rijeke Dunav, pokrenuta 11. marta 2008. od strane Dunavske komisije, Savske komisije i Međunarodne komisije za zaštitu rijeke Dunav, obezbjeđuje smjernice i kriterije za planiranje i implementaciju projekata na unutrašnjim vodnim putevima, koji usklađuju



interese plovidbe i zaštite okoliša. Naredni, 4. sastanak Dunavske komisije, Savske komisije i Međunarodne komisije za zaštitu rijeke Dunav, posvećen implementaciji Zajedničke izjave, biti će održan od 17. do 18. septembra 2012. u Budimpešti. Teme sastanka su razmatranje daljeg razvoja i primjena Zajedničke izjave, informiranje o trenutnom stanju projekata na unutrašnjim vodnim putevima u dunavskom slivu, informiranje i konsultacije o novim činjenicama i perspektivama vodnog prometa u Evropi, kao i razmatranje mehanizama razmjene informacija.

Gledište Dunavske komisije je povezano sa stvaranjem jedinstvenog sistema za plovidbu koji bi se primjenjivao na unutrašnjim vodnim putevima u Evropi. Prioritetne oblasti djelovanja Komisije su usmjerene na harmonizaciju i osiguravanje uzajamnog priznavanja osnovnih regulatornih dokumenata, neophodnih za plovidbu na Dunavu i drugim dijelovima mreže unutrašnjih vodnih puteva, na taj način doprinoseći poboljšanju uvjeta i sigurnosti plovidbe, stvarajući uvjete za integraciju Dunava, kao značajnog transportnog koridora, u evropski sistem.

Sa ciljem da se osigura integracija navedenog, Komisija ima za cilj da intenzivira suradnju sa relevantnim nacionalnim institucijama i međunarodnim tijelima koja su uključena u različite aspekte unutrašnjeg vodnog transporta, kao što su Ekonomska komisija UN za Evropu, Evropska komisija, Centralna komisija za plovidbu rijekom Rajnom, Savska komisija i Međunarodna komisija za zaštitu rijeke Dunav.

*dr. Istvan Valkar,
Generalni direktor Sekretarijata,
Dunavska komisija*



DOPRINOS ZAJNTERESIRANIH STRANA RAZVOJU PRVOG PLANA UPRAVLJANJA SLIVOM RIJEKE SAVE

Prema Okvirnom sporazumu o slivu rijeke Save (Okvirni sporazum) i Okvirnoj direktivi o vodama Evropske unije (ODV), učešće javnosti i uključivanje zainteresiranih strana predstavlja važan dio integralnog upravljanja riječnim slivom. Član 14. ODV navodi neophodnost podsticanja aktivnog učešća svih zainteresiranih strana od samog početka primjene Okvirne direktive o vodama. U postupku razvoja plana upravljanja potrebno je osigurati trofazni proces javnih konsultacija. Ovim se procesom, javnosti omogućava sudjelovanje u izradi rasporeda i radnog programa, omogućava se period za komentare u svakoj fazi, kao i promjena relevantnih dokumenata uzimajući u obzir primljene komentare. Ovakvim participativnim pristupom, zainteresirane strane su u mogućnosti da preuzmu aktivnu ulogu, razmjene poglede i mišljenja, prezentiraju svoje lokalno znanje, kako bi pronašli najbolja raspoloživa rješenja za probleme cijelog sliva.

Shodno tome, Savska komisija je poduzela niz aktivnosti kako bi se osiguralo učešće javnosti u procesu izrade prvog, integralnog plana upravljanja slivom rijeke Save, kao što su:

- Organiziranje foruma zainteresiranih strana (Beograd, 9 – 10 novembar 2011) kako bi se predstavio nacrt plana upravljanja slivom rijeke Save i prikupili komentari na njegov sadržaj od svih zainteresiranih strana, prije pokretanja procesa javnih konsultacija na web stranici Savske komisije.



- Omogućavanje četvoromjesečnog perioda za učešće šireg spektra aktera završenog 21. aprila 2012. Tokom cjelokupnog procesa, sve informacije vezane za izradu plana upravljanja, od pripreme faze do postupka finalizacije, bile su javno dostupne na web stranici Savske komisije: www.savacommission.org.

- Prikupljanje komentara i sugestija, te analiza u okviru stručnih grupa Savske komisije kako bi se omogućila finalizacija izrade plana. Na osnovu dobijenih komentara, izvršice se poboljšanje nacrta plana upravljanja slivom



- Identificiranje relevantnih zainteresiranih strana potpisnica Okvirnog sporazuma, pomoću pristupa „od gore ka dole (top – down)“;
- Uključivanje identificiranih učesnika u najranijoj mogućoj fazi pripremnog procesa, organiziranjem radionica o značajnim pitanjima upravljanja vodama (Zagreb, 27 – 28 septembar 2010) i Programu mjera (Sarajevo, 28 – 30 jun 2011) sa zainteresiranim stranama.
- Organiziranje dodatne radionice suradnjom GWP za Mediteran i Savske komisije (uz pomenutu radionicu u Sarajevu, 2011. godine). Ova radionica je poslužila za provjeru prikupljenih informacija o relevantnim zainteresiranim stranama i razgovaru o daljim koracima u procesu implementacije plana. Dodatno, diskutirano je i o mogućnostima uspostavljanja stalnog mehanizma učešća zainteresiranih strana u upravljanju vodnim resursima u slivu rijeke Save.

rijeke Sava. Ovako poboljšan plan biti će distribuiran stranama potpisnicama Okvirnog sporazuma na usvajanje.

Usvajanje plana upravljanja slivom rijeke Save, planirano za decembar 2012. godine, predstavlja izuzetan korak ka ostvarivanju glavnih ciljeva Okvirnog sporazuma i ODV.

Na kraju, neophodan je konsenzus različitih zainteresiranih strana kako bi se omogućila implementacija odredbi iz plana i promovirao značaj održivog upravljanja vodama i dobrog ekološkog statusa odnosno potencijala voda.

Samo Grošelj,
Zamjenik sekretara za zaštitu
voda i vodnog ekosistema,

Marko Pavlović,
Stručni suradnik,
Sekretarijat Savske komisije

INICIJATIVA ZA ODRŽIVO, PREKOGRANIČNO, VIŠENAMJENSKO UPRAVLJANJE RIJEKOM SAVOM NA GRANIČNOM SEKTORU SLOVENIJE I HRVATSKE (PILOT PROJEKAT KRŠKO-ZAGREB)

Trendovi u smanjenju emisija CO₂, veće poplave i pojave suša kao posljedice klimatskih promjena, kao i potrebe za dodatnom energijom i većom mobilnošću kroz unaprijeđenje svih vidova transporta uključujući i vodni transport, navele su institucije i multidisciplinarnu grupu stručnjaka u Sloveniji da pokrenu inicijativu za održivo, prekogranično, višenamjensko upravljanje rijekom Savom na graničnom slovenačko-hrvatskom sektoru, zasnovanu na održivom korištenju vodnih snaga, kao i Strategiji Evropske unije za podunavlje – odnosno, pilot projekat Krško-Zagreb.



Brana Blanca – riblja staza, 2011. A. Bizjak

Ovu inicijativu pokrenuli su Vladina kancelarija Republike Slovenije za regionalni razvoj i evropske poslove, Ministarstvo okoliša i prostornog planiranja, Ministarstvo prometa, Ministarstvo privrede, Grad Ljubljana, Agencija za regionalni razvoj Posavje i Institut za vode Republike Slovenije, kao koordinator početne faze.

Cilj inicijative je povezivanje postojećih infrastrukturnih inicijativa i projekata na području Posavja, orijentiranih na održivi razvoj ovog graničnog područja, koji se odnose na teme kao što su niska emisija CO₂, primjena najboljih dostupnih tehnologija, višenamjenska rješenja proizašla iz multisektorskog pristupa, zaštita okoliša, prekogranična rješenja i mjere, proizašle iz klimatsko-energetskog paketa (npr. korištenje vodnih



Brana Krško – u izgradnji, 2011. A. Bizjak

snaga, nuklearne snage, multimodalne prometne sheme), kao i aktivno učešće zainteresiranih strana. U okviru ove sveobuhvatne inicijative, u punoj mjeri će se poštovati sve relevantne direktive Evropske unije (npr. Okvirna direktiva o vodama, direktive o poplavama, obnovljivim izvorima energije, staništima i pticama).

Dalja bilateralna artikulacija predložene inicijative može osigurati niz koristi za obe uključene države – na primjer, unaprijeđenje njihove suradnje kroz suvremeni prostorni razvoj, efikasnije konkuriranje obje zemlje za fondove EU za period 2014-2020, mogućnost otklanjanja nedostataka prvih planova upravljanja slivom obje države na konstruktivan i obostrano prihvaćeni način, a takođe se može riješiti i niz drugih otvorenih pitanja u predmetnom graničnom području.

Uključenje svih relevantnih interesnih grupa (u ovom konkretnom slučaju, ne samo iz ekološkog i energetskog sektora obje države) od početka procesa planiranja predstavlja osnovni preduvjet za primjenu modernog pristupa vodnom planiranju i održivom korištenju voda, posebno u dugoročnim projektima. To je od značaja, posebno, imajući u vidu da će svi novi infrastrukturni projekti težiti tome da budu višenamjenski, npr. imati za cilj proizvodnju energije, razvoj plovidbe, smanjenje rizika od poplava, osiguranje potrebnih količina voda, razvoj rekreacije itd. Polazeći od pretpostavke da projekat Krško-Zagreb neće biti jedini projekat te vrste u slivu Save u budućnosti, Savska komisija bi mogla da posluži kao platforma za razvoj artikulisane komunikacije interesnih grupa u slivu Save.

Tokom pripremnog sastanka Stalne slovenačko-hrvatske komisije za upravljanje vodama, održanog 24.10. 2011. godine u Zagrebu, delegacija Slovenije zvanično je predstavila ovu inicijativu kolegama iz Hrvatske. Od tada, ova inicijativa je stalna tema bilateralnih komunikacija država, što unosi optimizam u pogledu realizacije ideje. Prvi izazov za pripremu i implementaciju bilateralnog projekta biće dobijanje pis(a)ma preporuke u okviru odgovarajućih prioritarnih oblasti Dunavske strategije, radi obezbjeđivanja sredstava u sljedećem finansijskom ciklusu EU, 2014-2020.

*dr. Aleš Bizjak,
Institut za vode Republike Slovenije,
Član Stalne stručne grupe Savske komisije
za upravljanjem riječnim slivom*

U PRAVCU ODRŽIVOG UPRAVLJANJA NANOSOM U SLIVU RIJEKE SAVE

Jedan od ključnih elemenata riječnog sistema je nanos, koji formira raznovrsna staništa i okruženja. I pored toga, njegova značajna uloga do sada je često bila zanemarivana, usljed čega, u praksi, još uvijek ne postoje primjeri potpune integracije upravljanja nanosom u upravljanje riječnim slivom. Ova činjenica bila je jedan od glavnih pokretača za osnivanje globalne Međunarodne inicijative za nanos (ISI) u okviru UNESCO-ovog Međunarodnog hidrološkog programa (IHP), kao i komplementarne Evropske mreže za nanos (SedNet), koja je nezavisna u odnosu na ISI. Obje inicijative (ISI i SedNet) promoviraju održivo upravljanje nanosom, uz obilje argumenata u prilog primjeni tog pristupa.

Sa druge strane, u okviru implementacije Okvirnog sporazuma o slivu rijeke Save (Okvirni sporazum), savske države izradile su nacrt Protokola o upravljanju nanosom uz Okvirni sporazum, koji će, kada stupi na snagu, pružiti pravnu osnovu za buduću saradnju država na izradi Plana upravljanja nanosom za sliv rijeke Save. Protokol je zasnovan na principima održivog upravljanja nanosom, sličnim onima koje zastupaju inicijative ISI i SedNet.

Ovi 'zajednički' principi predstavljaju dobru osnovu za suradnju savskih država koje će implementirati Protokol, i inicijativa ISI i SedNet, kroz realizaciju projekta pod nazivom U pravcu praktičnog vodiča za održivo upravljanje nanosom koristeći rijeku Savu kao ugledni primjer, čiji rezultati državama mogu koristiti pri implementaciji Protokola. Namjera je da se, u okviru projekta, suvremena naučna i praktična znanja iz oblasti održivog upravljanja nanosom prikupe i učine dostupnim kroz praktičnu obuku. Imajući to u vidu, Savska komisija, ISI i SedNet zajednički su pokrenuli aktivnosti na nalaženju sredstava za razvoj kursa i praktičnu primjenu načela održivog upravljanja nanosom u slivu rijeke Save, koji će, u okviru projekta, poslužiti kao ugledni primjer. Očekuje se da takvo iskustvo izazove interes za primjenu ovog pristupa i u drugim riječnim slivovima širom svijeta.

Podršku realizaciji ovog projekta do sada je ponudio veći broj partnera (njemački ogranak

IHP-a, SedNet, ISI, kancelarija UNESCO-a u Veneciji, francuski BRGM i holandski Deltares), dok će doprinos Savske komisije biti usmjeren



na podršku organizaciji i realizaciji planiranih aktivnosti. Obzirom da su ponudeni vidovi podrške dovoljni za realizaciju prve dvije faze projekta, u aprilu 2012. godine započela je implementacija projekta.

Prva faza projekta obuhvata razvoj i realizaciju prvog dijela kursa o održivom upravljanju nanosom i izradu nacrtu odgovarajućeg dijela Vodiča. Ovaj dio kursa i Vodiča obuhvatiće pitanja bilansa, monitoringa, kao i analize kvaliteta i količina nanosa – prva tri elementa Plana upravljanja nanosom, predviđena Protokolom. Na kursu, planiranom za oktobar 2012. godine, eksperti određeni od strane ISI i SedNet-a vršiće obuku po navedenim temama, a zatim će učesnici – stručnjaci za upravljanje nanosom sa sliva Save, koristeći iskustva sa obuke, izraditi nacrt Vodiča. Faza koja slijedi nakon obuke, obuhvatiće rad lokalnih stručnjaka na pomenuta tri elementa Plana upravljanja nanosom za sliv Save, na osnovu prethodno izrađenog Vodiča i uz koordinaciju Savske komisije.

Sve partnerske institucije i organizacije sa optimizmom gledaju na nalaženje sredstava za implementaciju drugog dijela projekta – razvoj kursa i izradu Vodiča, posvećenih pitanjima mjera, bagerovanja, odlaganja, tretmana i korišćenja nanosa, kao i institucionalnih aranžmana, a zatim primjenu naučenih lekcija u savskoj praksi, kao pomoć u izradi Plana upravljanja nanosom za sliv rijeke Save.

Jos Brils, Deltares, Upravni odbor SedNet-a

Anil Mishra, UNESCO Pariz, Međunarodna inicijativa za nanos

dr. Dejan Komatina, sekretar, Sekretarijat Savske komisije



POJAVE LEDA NA VODOTOCIMA U SLIVU RIJEKE SAVE

Uvod

Zima 2011./2012. ostaće zapamćena po vrlo niskim temperaturama zraka i vode, jakim vjetrovima, malim i ekstremno malim vodama, te po značajnim pojavama ledohoda i ledostaja. Na mnogim meteorološkim stanicama krajem januara i početkom februara registrirane su vrlo niske temperature zraka koje su se često spuštale i ispod -20.0 oC. Protekla zima je ponovo podsjetila na značajne pojave ledohoda i ledostaja s mogućom opasnošću na pojavu ledenih poplava na Dravi, Dunavu, Savi, Kupi, Zrmanji i mnogim drugim većim i manjim vodotocima.



Slika 1. Razbijanje leda na rijeci Savi kod Sl. Broda – 9. II 2012. (www.tportal.hr)

Ledene poplave nastaju kada nema nikakvih oborina i kada je temperatura zraka često ispod -20.0 oC. Tada na kritičnim dionicama vodotoka može doći do začepljenja proticajnog profila sa santama leda i nemogućnosti normalnog protoka vode. Jedna od najvećih ledenih poplava u ovom dijelu Evrope bila je katastrofalna ledena poplava Dunava kod Budimpešte, 26. februara 1876. Uzrok te poplave bilo je zatvaranje proticajnog profila santama leda kod Bezdana (Batine) koje



Slika 2. Neodgovorni prelazak preko zaledene rijeke Save kod Štitara, sela nedaleko Županje – 12. II 2012. (www.tportal.hr)

je uzrokovalo naglo dizanje vode uzvodno, sve do Budimpešte. Udaljenost od čepa kod Bezdana (Batine) koji je onemogućio normalni protok vode do mjesta pojave ledene poplave (Budimpešta)

iznosila je 221 riječni km. Ova činjenica ukazuje da se ledene poplave mogu pojaviti na širokom prostoru i da je često potrebna sinhronizirana odbrana od ledenih poplava između dvije, tri ili više država.

Pojave leda na slivu rijeke Save u zimi 2011./2012.

Protekle zime, vrlo niske temperature zraka i vode, te male i ekstremno male vode uzrokovale su pojave ledohoda i ledostaja s mogućnošću pojave ledenih poplava na rijeci Savi i pritokama. Zbog toga su Hrvatske vode na nekim dionicama proglasile mjere pripremnog stanja te redovne mjere odbrane od poplava. Na primjer, 8. februara 2012. na Savi kod Sl. Broda led je prekrrio 70 % površine rijeke te je u 09.00 sati proglašeno pripreмно stanje odbrane od poplava a u 11.00 sati i redovne mjere odbrane od poplava. Sve službe, koje su sudjelovale u odbrani od leda, bile su spremne za razbijanje mogućih ledenih čepova koji uzrokuju ledene poplave. Pojave leda registrirane su na području srednje i donje Save. Ovdje treba naglasiti da su ovu zimu obilježili niski i ekstremno niski vodostaji. Tako su na hidrološkim stanicama u Rugvici i Sl. Šamcu registrirani vodostaji koji su bili na granici apsolutno najnižih do sada opaženih vodostaja. Pojave i razbijanje leda na rijeci Savi kod Sl. Broda, Štitara i Brčkog prikazane su na slikama 1, 2 i 3.



Slika 3. Brod Hrvatskih voda razbija led na rijeci Savi kod Brčkog – 11. II 2012. (www.ostraluka.com)

Ovdje se treba podsjetiti i na zimu 1984./1985. koja je bila oštra i dugotrajna i koja je imala za posljedicu značajne pojave leda na većini naših rijeka, uključujući periode ledohoda u trajanju od 3 – 14 dana i ledostaja (8 – 14 dana) na više sektora duž Save, te na Kupi i Uni (slike 4 i 5).

Odbrana od ledenih poplava

Osnovne mjere koje se poduzimaju u odbrani od ledenih poplava su: regulacione mjere, upotreba ledolomaca i upotreba eksploziva (podvodne mine). Da ne bi došlo do začepljenja u



Slika 4. Brod "Briokovo" u ledu na Savi kod Rušćice (Sl. Brod) – 17. I 1985. (debljina leda oko 30 cm, vodostaj – H = 173 cm, protok – Q = 637 m³s⁻¹, najniža temperatura zraka kod Sl. Broda -25,2 oC, 12. I 1985.)

koritu i mogućih ledenih poplava, treba održavati led u pokretu (ledohod) ili ga zaustaviti bez stvaranja čepova, uz ravnomjeran raspored leda na površini rijeke. To se postiže u prvom redu, i najsigurnije, regulacijom korita rijeke. Tako se eliminiraju kritična mjesta i osiguravaju povoljni hidrauličko-morfološki uvjeti za propuštanje leda. Kao dopuna tim mjerama služe ledolomci koji imaju zadatak razbijati ledene sante i spriječavati zagušenje ledom kao i formiranje ledenih barijera. Detalj santi leda na Dunavu kod Zemuna prikazan je na slici 6. Eksplozivom se razbijaju ledene barijere.



Slika 5. Razbijanje leda eksplozivom na Savi kod Rušćice (Sl. Brod) – 17. I 1985.

Stvaranje ledenog čepa izaziva nagli uspor vode i porast vodostaja uzvodno kao i opadanje vodostaja nizvodno od čepa. Usporene vode rastu vrlo brzo i prelijevaju se preko odbrambenih sistema te nastaju ledene poplave. Odbrambeni sistemi su projektirani i građeni na mjerodavne velike vode od oborina i u većini slučajeva ne mogu pružiti zaštitu od ledenih poplava.

Mjere odbrane od poplava su:

- mjere planiranja, studijskih poslova i praćenje vodnog režima,
- mjere uređenja voda,
- preventivne pripremne radnje,
- neposredne mjere redovne i vanredne odbrane od poplava,
- radnje nakon prestanka odbrane od poplava.

Državni plan odbrane od poplava u Hrvatskoj ("Narodne novine" broj 84/10) sadrži i mjere za odbranu od leda na vodotocima. Odbrana od poplava može biti preventivna, redovna i vanredna. U kontekstu odbrane od ledenih poplava, prema



Slika 6. Sante leda na Dunavu kod Zemuna – 21. II 2012. (foto: AFP/PIXSELL, www.vecernji.hr)

Državnom planu, pripremno stanje po dionicama proglašava se pri pojavi plovećeg leda na 25 % vodene površine, redovna odbrana od poplava, pri pojavi ledostaja, a vanredna odbrana od poplava, pri formiranju ledenog čepa u koritu vodotoka.

Zaključak

Iako se ekstremne pojave leda javljaju relativno rijetko, o njima moramo voditi računa prije, za vrijeme ekstremnog događaja i nakon što on prođe. Iskustva proistekla iz ledene poplave na Dunavu kod Budimpešte, 1876. godine, pokazala su kako pojave leda i ledene poplave treba promatrati u vrlo širokom prostoru kao i potrebu bilateralne i multilateralne suradnje kod pojava leda i mogućih ledenih poplava.

dr. Dušan Trninić,
naučni savjetnik

SMANJENJE RIZIKA PREKOGRANIČNOG ZAGAĐENJA U SLIVU RIJEKE DRINE

Kao najveća pritoka rijeke Save, rijeka Drina sa svojim slivom predstavlja riznicu ekoloških vrijednosti. Glavni izazovi očuvanju okoliša u regionu predstavljaju otpadne vode koje se ne prečišćavaju, kao i divlje deponije. Prekogranični uticaji su prisutni u vidu modificiranih protoka nastalih radom hidroelektrana, u vidu intenzivnih akcidentnih zagađenja, kao i usled eutrofikacije nastale intenzivnom poljoprivrednom proizvodnjom u donjem dijelu riječnog toka. U protekloj deceniji je uložena značajna napor da se razvije proces zajedničkog planiranja i donošenja odluka.

Regionalni centar zaštite okoliša za Centralnu i Istočnu Evropu (REC), u suradnji sa općinama i državnim vlastima Bosne i Hercegovine, Crne Gore i Srbije, inicirao je prvi prekogranični dijalog između lokalnih aktera po pitanju problema koji se odnose na zaštitu okoliša u slivu rijeke Drine. Prvi forum strana organiziran je u 2003. godini i evoluirao je 2006. godine u Komisija za rijeku Drinu (DRC), neformalne asocijacije koju čini 19 općina. Uz stalnu podršku Norveškog ministarstva vanjskih poslova, Komisija za rijeku Drinu i njegova tijela identificirali su nekoliko prioritarnih oblasti u kojima treba provesti hitnu akciju, gdje je upravljanje otpadom i vodnim resursima na vrhu agende.

Godine 2009, dobijena je nova donacija za provođenje dvogodišnjeg projekta pod nazivom: "Unaprijeđenje prekogranične suradnje u slivu rijeke Drine u borbi protiv siromaštva i radi unaprijeđenja vodoprivrede kroz podršku Komisija za rijeku Drinu". Projekat je prilagođen u cilju podsticanja suradnje među ključnim vodoprivrednim organima i zainteresiranim stranama u tri države, uzimajući u obzir osnovne smjernice strateškog partnerstva u slivu Save

i Dunava. Projekat je fokusiran uglavnom na tekuće vodoprivredne probleme, rješavanje problema otpada u tri pilot općine, kao na i podizanje ekološke svijesti građana. Takođe, Komisija za rijeku Drinu je proširena novim članovima i nastaviće da egzistira kao platforma za suradnju i unaprijeđivanje dijaloga među općinama.

RIJEKA DRINA

Dužina: 346 km
Glavne pritoke: Čehotina, Lim, Uvac, Rzav, Jadar Sutjeska, Prača i Drinjača
Veličina sliva: 20,320 km²
Države: Bosna i Hercegovina, Crna Gora i Srbija
Broj stanovnika: približno 650,000

Inventar značajnih pritisaka i uticaja.

Jedan od glavnih rezultata projekta je razvoj inventara zagađenja izvorišta na nivou cijelog sliva koji predstavljaju značajnu prijetnju vodnim resursima. Podaci koji ilustriraju sadašnje uvjete u relevantnim sektorima i industrijskim granama su osigurani od strane nacionalnih i lokalnih vlasti, općina i rukovodilaca. Identificiranje, prikupljanje podataka i rangiranje rizika bazirano je na osnovu općeg pristupa i metodologije razvijene u okviru Međunarodne komisije za zaštitu rijeke Dunav (ICPDR) i prilagođen je lokalnim potrebama i okolnostima.

Izgradnja kapaciteta i umrežavanje sa postojećim sistemom upozoravanja u slučaju akcidentnih situacija na Savi i Dunavu (AEWS). Priobalne države zahtijevaju podršku radi poboljšanja nivoa spijječavanja akcidenata, pripravnosti za hitne intervencije kao i brzu reakciju praćenu odgovarajućim mjerama na regionalnom i na lokalnom nivou. U tom cilju, uvedena je ICPDR metodologija, i usvojeni mehanizam smjernica je sproveden uz pomoć stručnjaka iz ICPDR-a i Savske komisije. Uspostavljene su tri AEVS kancelarije, opremljene i sa obučanim osobljem u Bijeljini (BiH), Beranama (CG) i Loznici (SRB). Ova inicijativa pruža osnovu za poduzimanje daljih koraka ka adekvatnom spriječavanju i kontroli akcidenata na regionalnom i nacionalnom nivou.

Uprkos mnogim pozitivnim rezultatima projekta, dalja pomoć je neophodna radi unaprijeđenja procesa suradnje na lokalnom, nacionalnom i prekograničnom nivou.

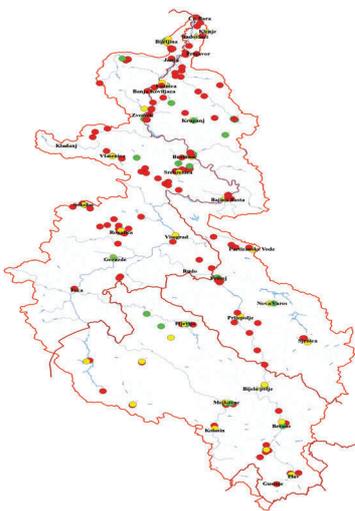
Jovanka Ignjatović,

Visoki stručnjak, Regionalni rukovodilac u oblasti vodoprivrede,

Imola Koszta,

Službenik za administraciju i projekte,

Regionalni centar zaštite okoliša za centralnu i Istočnu Evropu (REC).



NOVI MOST NA RIJECI SAVI U BEOGRADU

Most preko Ade Ciganlije je cestovni i šinski most koji povezuje općine Novi Beograd i Čukarica. To je najduži most sa kosim zategama sa jednim pilonom u svijetu.

Izgradnja mosta ukupne dužine 964 m i širine 45, sa glavnim rasponom preko rijeke od 376 m, počela je 2008. i završena je krajem 2011. Konstrukcija mosta leži na 8 stubova, a glavni pylon na špicu Ade, visok 200 m i prečnika 34,54 m u osnovi, sa kojeg se pruža 80 zatega, drži dio konstrukcije preko Save.



Obzirom na glavni raspon i visinu (donji rub konstrukcije 16 m iznad visokog plovidbenog nivoa) most ne predstavlja prepreku bezbjednosti vodnog saobraćaja na rijeci Savi.

Ideja o izgradnji ovog značajnog objekta datira od 1923. godine, u vrijeme kada je Beograd počeo da poprima obilježja evropskih metopola i kada su futuristički orijentirani planeri predvidjeli pojedine dionice saobraćajnice, danas poznate kao Unutrašnji magistralni poluprsten. Te godine je arhitekta Đorđe Kovaljevski uradio prvu urbanističku skicu Beograda sa mostom preko Ade Ciganlije.

Izgradnja mosta preko Ade je ostala samo ideja sve do 2004. godine kada je raspisan konkurs za idejno rješenje, na kome je pobijedila slovenačka firma „Ponting“. Projektanti mosta su konstruktor Viktor Markelj i arhitekta Peter Gabrijelčič.

2006. godine je uređen idejni projekat mosta i pristupnih saobraćajnica sa svim pratećim studijama, a za konsultanta je početkom 2007. godine izabrana firma Luis Berger.

Ugovor za projektovanje i izgradnju mosta potpisan je u aprilu 2008. godine sa konzorcijumom u sastavu „PORR Technobau und Umwelt AG“ iz Austrije, „SCT dd“ iz Slovenije i „DSD Brückenbau GmbH“ iz Njemačke.

Bušanjem prvog probnog šipa na desnoj obali Save, 1. decembra 2008. godine, ozvaničen je početak radova na izgradnji.

Tokom 2009. godine postavljene su privremene rampe za lansiranje betonskih elemenata mosta, kao i izrada saobraćajnih priključaka. Na špicu Ade završeni su radovi na nasipanju i stabilizaciji

terena do potrebne kote, odakle je planirano pobijanje stalnih šipova na koje će se oslanjati pylon mosta.

Tokom 2010. godine završen je zadnji raspon na čukaričkoj strani, betonskom konstrukcijom dužine 200 m, težine 20.000 t, spojenom sa pilonom na špicu Ade.

Istovremeno, započeta je i izgradnja glavnog raspona mosta preko rijeke Save. Predmontaža njegova 24 čelična segmenta odvijala se na samom gradilištu, a čelični elementi dovoženi su baržom na svoju poziciju ispod konstrukcije i posebnim kranom podizani na visinu od 20 m.

Paralelno sa podizanjem elemenata glavnog raspona, odvijalo se i postavljanje kosih kablova, čime je most počeo da visi iznad rijeke Save, a kablovi su održavali savršen balans dijelova konstrukcije.

U toku 2011. godine, zajedno sa izgradnjom glavne konstrukcije mosta, tekla je i izgradnja pristupnih rampi neophodnih za stavljanje mosta u funkciju. Završen je glavni pylon, a početkom avgusta izvršeno potpuno spajanje mostovske konstrukcije.

Nakon toga nastavljeni su radovi na izradi svih neophodnih elemenata na samom mostu, kako bi se do kraja godine omogućilo prvim vozilima da pređu preko novog mosta.



U novogodišnjoj noći 31. decembra 2011. godine svečano je otvoren Most preko Ade, uz vatromet u ponoć.

Radovi na pristupnim saobraćajnicama se nastavljaju u 2012. godini, kao i radovi na izgradnji šinskog sistema za koji je predviđen prostor na sredini mosta.

Kao jedan od najimpozantnijih objekata građenih u svijetu u posljednje vrijeme, još tokom izgradnje most je prikazan u dokumentarnom serijalu „Build it Bigger“ na TV kanalu Discovery.

Duško Isaković,
Savjetnik za tehnička pitanja plovidbe,
Sekretarijat Savske komisije

USPJEŠNA IMPLEMENTACIJA PROJEKTA NEWADA



Projekt NEWADA, na kome surađuje 12 administracija za plovne puteve iz 8 podunavskih zemalja, kofinansiran je u okviru EU Programa transnacionalne suradnje „Jugoistočna Evropa“. Projekt je odobren u okviru prvog poziva ovog programa, a rangiran na šesto mjesto od 40 odobrenih projekata. Realizacija je započela u aprilu 2009. godine, a završena je krajem aprila 2012. godine. NEWADA je akronim od naziva projekta na engleskom jeziku (*Network of Danube Waterway Administrations*), što znači Mreža dunavskih administracija za plovne puteve.

Projekt NEWADA ima za cilj **unaprijeđenje efikasnosti korištenja Dunava**, kao panevropskog transportnog Koridora VII, **kroz intenziviranje suradnje između dunavskih administracija** na promociji unutrašnje plovidbe, kao racionalnog i ekološki prihvatljivog vida transporta. Projektom NEWADA pokrivena je **suradnja u nekoliko tematskih oblasti** koje su značajne za unutrašnju plovidbu. Radi se o hidrografiji i hidrologiji, održavanju unutrašnjih plovnih puteva, kao i primjeni informacionih i komunikacionih tehnologija na unutrašnjim plovnim putevima.

U okviru projekta NEWADA, uspostavljen je međunarodni **FIS portal** za rijeku Dunav koji će sadržavati sve informacije relevantne za unutrašnju plovidbu (elektronske navigacione karte, saopćenja brodarstvima, podatke o kritičnim sektorima, vodostajima, ledu, infrastrukturi). U isto vrijeme, na 10 tačaka duž Dunava uspostavljene su **pristupne tačke bežičnom internetu** (u lukama i na prevodnicama). Na ovim mjestima, bez ikakve naknade, korisnici plovnih puteva mogu jednostavno da preuzmu aktuelne podatke o plovidbenim uvjetima.

Suradnja između partnera na projektu NEWADA realizirana je na nekoliko nivoa. Uspostavljen je **savjet direktora**, kao najviše tijelo, koje ima za cilj definiranje strateških smjernica i kontrolu realizacije projektnih aktivnosti. Takođe, uspostavljen je **program razmjene stručnjaka** u oblasti hidrografije, hidrologije, održavanja unutrašnjih plovnih puteva i ekologije. Na taj način, omogućeno je unaprijeđenje kvaliteta ljudskih resursa kroz razmjenu iskustava i definisanje primjera najbolje prakse.

Kvalitet ovog transnacionalnog projekta prepoznat je i u tekstu **EU Strategije za dunavski region**, usvojene krajem 2010. godine, gdje se projekt NEWADA navodi kao primjer dobre prakse. NEWADA ima strateški značaj jer kroz implementaciju identificiranih aktivnosti od međunarodnog značaja partneri imaju priliku da **dijele zajedničku viziju** o unaprijeđenju pristupačnosti infrastrukturi na Dunavu i podizanju nivoa usluga dostupnih korisnicima plovnog puta. Kroz projekt NEWADA napravljeni su prvi koraci, a nastavak započetih i implementacija novih aktivnosti predviđeni su kroz projekt **NEWADA duo (data and user orientation)**, kandidiran za finansiranje u okviru četvrtog poziva EU Programa transnacionalne suradnje „Jugoistočna Evropa“.

Više informacija na www.newada.eu.

mr. Ivan Mitrović,
koordinatorski direktor projekta NEWADA
Direkcija za vodne puteve, Republika Srbija

Kroz projekt su pripremljeni **strateški dokumenti**, poput planova za unaprijeđenje prekogranične suradnje u oblasti hidrografskih mjerenja, planova za optimizaciju procesa održavanja unutrašnjih plovnih puteva, kao i usuglašenih strategija dunavskih administracija za plovne puteve za period 2011-2020.

DOGAĐAJI - IZVJEŠTAJI I NAJAVE

RADIONICA NA TEMU POVEZIVANJA DONOSILACA ODLUKA I NOSILACA ZNANJA RADI BOLJEG UPRAVLJANJA SLIVOM RIJEKE SAVE (ZAGREB, 30.11. – 2.12.2011.)

Radionicu su zajednički organizirale Savska komisija i kancelarija UNESCO-a u Veneciji, u saradnji sa Globalnim partnerstvom za Mediteran (GWP-Med) i uz podršku EU FP7 projekta "PSI-Connect". Glavni cilj Radionice bio je jačanje



kapaciteta interesnih grupa iz akademskog i vladinog sektora, za koje se očekuje da će, neposredno ili posredno, biti uključeni u izradu i implementaciju Plana upravljanja slivom rijeke Save, da razmjenjuju i uključe sve raspoložive informacije i znanje u proces planiranja upravljanja slivom. Na skupu je učestvovalo oko 25 predstavnika obje grupe zainteresiranih strana (ministarstva nadležna za vode i životnu sredinu i agencije za vode, kao „donosioci odluka“ i univerziteti, instituti i hidrometeorološki zavodi, kao „nosioci znanja“) iz svih pet država u slivu Save, uz predstavnike međunarodnih organizacija (UNESCO, ICPDR, SedNet). Ovom radionicom pokrenut je proces, i niz sastanaka, koji imaju za cilj da se naučna zajednica dalje integrira u buduće aktivnosti, vezane za upravljanje vodama na slivu rijeke Save.

POVEZIVANJE U SLIVU SAVE U SFERI KULTURE – OBJAVLJEN CD SAVA SUITE

U okviru promocije Međunarodne godine približavanja kultura, organizirane od strane Ujedinjenih nacija, 2010. godine je nastao je projekat „The river's dream band“. Za promociju ove aktivnosti, UN je, sa jedne strane, odabrao rijeku, kao simbol prirodne ljepote, geografskog oblika koji ne poznaje granice, prirodne rute kulturne razmjene i, sa druge strane, muziku, kao vektor društvenog naslijeđa jedne nacije i međusobnog poštovanja. U okviru procesa pridruživanja novih država Evropskoj uniji,

„The river's dream band“, kao muzički izraz, nastoji da promovira tradicionalnu narodnu muziku zemlje kao sredstvo prekogranične, međudržavne i regionalne suradnje. Tako je 2011. godine pokrenut projekat UNESCO-a Sava Suite, koji je fokusiran na geografsko područje sliva rijeke Save, a obuhvata kompozicije, posebno komponirane i aranžirane da bi prenijele izvorne note nastale u slivu Save.

„The river's dream band“, sastavljen od muzičara iz Italije, Austrije, Slovenije i Hrvatske, imao je premijerno izvođenje muzičkog repertoara „Sava Suite“ za visoke državne zvaničnike tokom Trećeg sastanka Strana Okvirnog sporazuma o slivu rijeke Save, koji je Savska komisija organizirala 31. maja i 1. juna 2011. godine na Brdu kod Kranja. Naredno izvođenje bend je imao u Fontanadredi (Italija) u avgustu 2011. godine, u okviru lokalne aktivnosti na promociji voda, a projekat se nastavlja i tokom 2012. godine, koncertom u okviru pete, tradicionalne izložbe „Izazovi ekonomskog razvoja 2012“ u Ljubljani.



POSJETA DELEGACIJE SKADARSKE KOMISIJE SEKRETARIJATU SAVSKE KOMISIJE

Delegacija Skadarske komisije posjetila je, 23.-24. aprila 2012. godine, sjedište Savske komisije, u okviru šireg programa, organiziranog od strane Globalnog partnerstva za vode – regionalnog partnerstva za Mediteran (GWP-Med), koji je obuhvatio i kasnije posjete ICPDR-u i jezeru Neusiedl u Austriji.

Delegaciji, sastavljenoj od osam predstavnika Albanije i Crne Gore, država koje dijele Skadarsko jezero, kao i jednog predstavnika GWP-Med, predstavljena je informacija o svim temama relevantnim sa stanovišta implementacije Okvirnog

sporazuma o slivu rijeke Save. Posebna pažnja posvećena je aktivnostima Savske komisije u raznim poljima njenog djelovanja, kao i iskustvima, stečenim iz dosadašnje implementacije Okvirnog sporazuma – ambicijama, dostignućima, nedostacima i teškoćama u koordinaciji prekogranične suradnje.

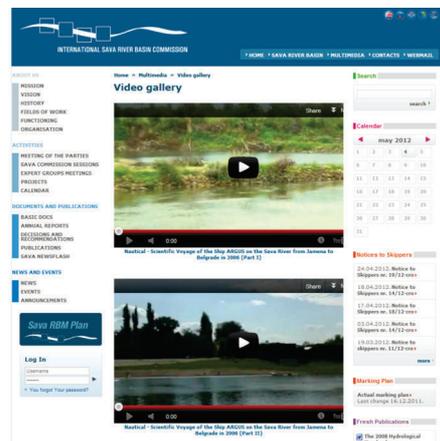
U završnom dijelu posjete, delegacija Skadarske komisije prisustvovala je dijelu sastanka Stalne stručne grupe Savke komisije za upravljanje riječnim slivom, kako bi stekla još bolji uvid u jedan od mehanizama rada Savske komisije.

PUŠTENA U RAD MULTIMEDIJALNA APLIKACIJA NA INTERNET STRANICI SAVSKE KOMISIJE

Aprila 2012. godine na internet stranici Savske komisije je stavljena u funkciju multimedijalna aplikacija. Na njoj će posjetioi stranice moći da vide relevantne video zapise, kao i fotografije sa sliva rijeke Save, kojima se ilustriraju izuzetne prirodne vrijednosti i privredni potencijali sliva, kao i aktivnosti država i Savske komisije na korištenju tih potencijala uz istovremeno očuvanje postojećih vrijednosti.

Aplikacija će biti otvorena za prikaz materijala šireg spektra ljubitelja rijeke Save, kao i stručnjaka iz oblasti video i foto stvaralaštva, afirmiranih u svijetu medija.

Aplikaciji se može pristupiti preko linka MULTIMEDIJA u glavnom izborniku internet stranice.



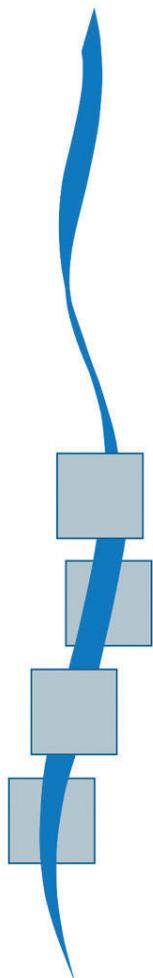
PLANIRANI SKUPOVI I SASTANCI

- Pripremni sastanak u vezi sa usvajanjem Plana upravljanja slivom rijeke Save (Zagreb, 29.5.2012.)
- Drugi sastanak Odbora za praćenje i koordinaciju projekta Obnova i razvoj transporta i plovidbe na plovnom putu rijeke Save (Zagreb, 31.5.2012.)
- Regionalna radionica u okviru projekta Podsticanje razvoja eko-turizma u slivu rijeke Save (Slavonski Brod, 20-21.6.2012.)
- 15. sastanak Stalne stručne grupe za plovidbu (Zagreb, 27-28.6.2012.)
- Druga konsultativna radionica o pripremi Programa za izradu Plana upravljanja rizikom od poplava za sliv rijeke Save (Zagreb, jun 2012., okvirno)

- 20. sastanak Stalne stručne grupe za prevenciju poplava (Zagreb, jun 2012., okvirno)
- 7. sastanak *ad-hoc* stručne grupe za hidrološka i meteorološka pitanja (Zagreb, jun 2012., okvirno)
- 29. sednica Savske komisije (10.7.2012.)
- 4. sastanak o implementaciji Zajedničke izjave o vodećim principima razvoja unutrašnje plovidbe i zaštite životne sredine u slivu Dunava (Budimpešta, 17-18.9.2012.)
- Regionalna konferencija u okviru projekta Podsticanje razvoja eko-turizma u slivu rijeke Save (Brčko, septembar 2012., okvirno)

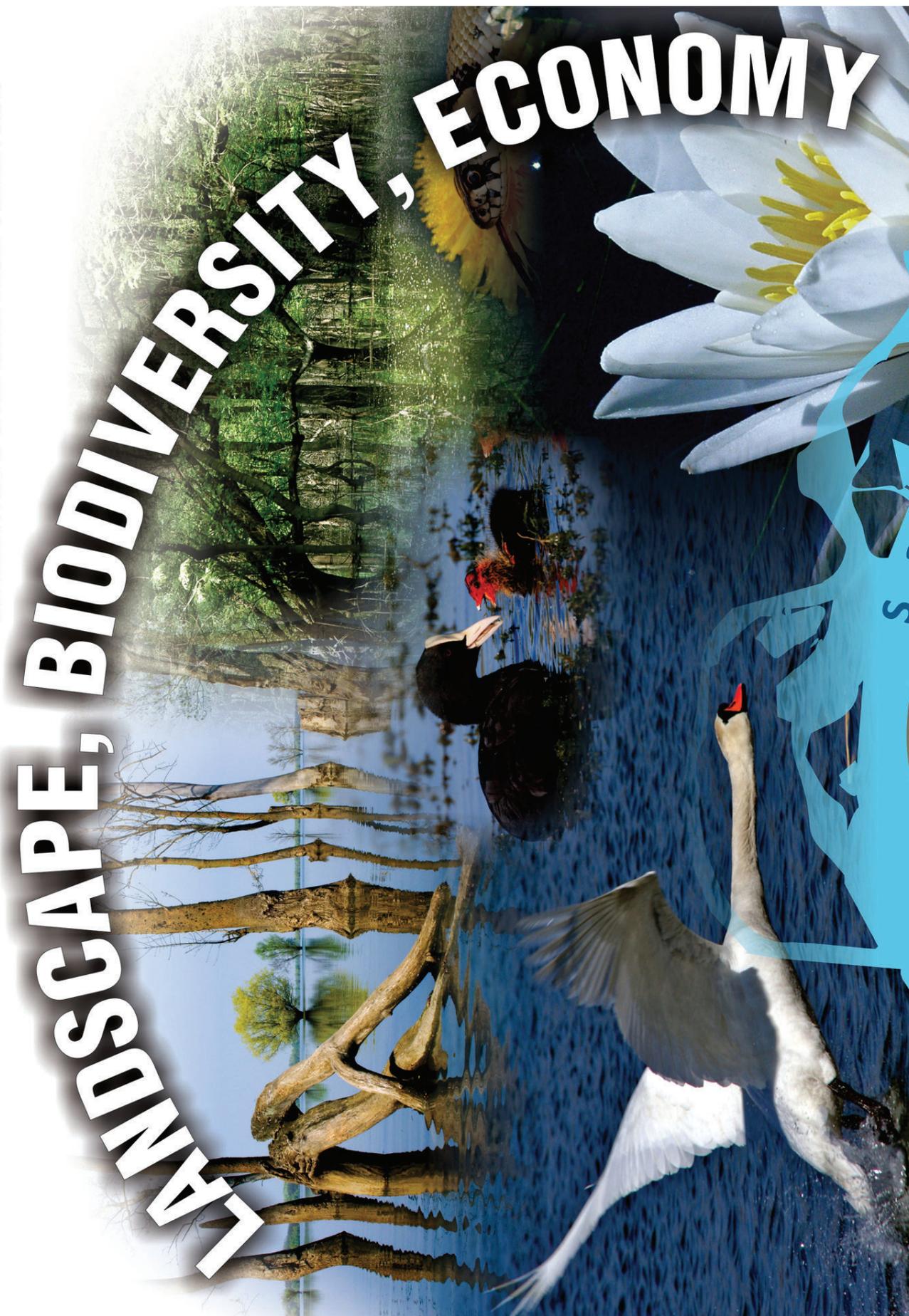
SPISAK DOGAĐAJA U OKVIRU PROMOCIJE I PROSLAVE DANA RIJEKE SAVE 2012.

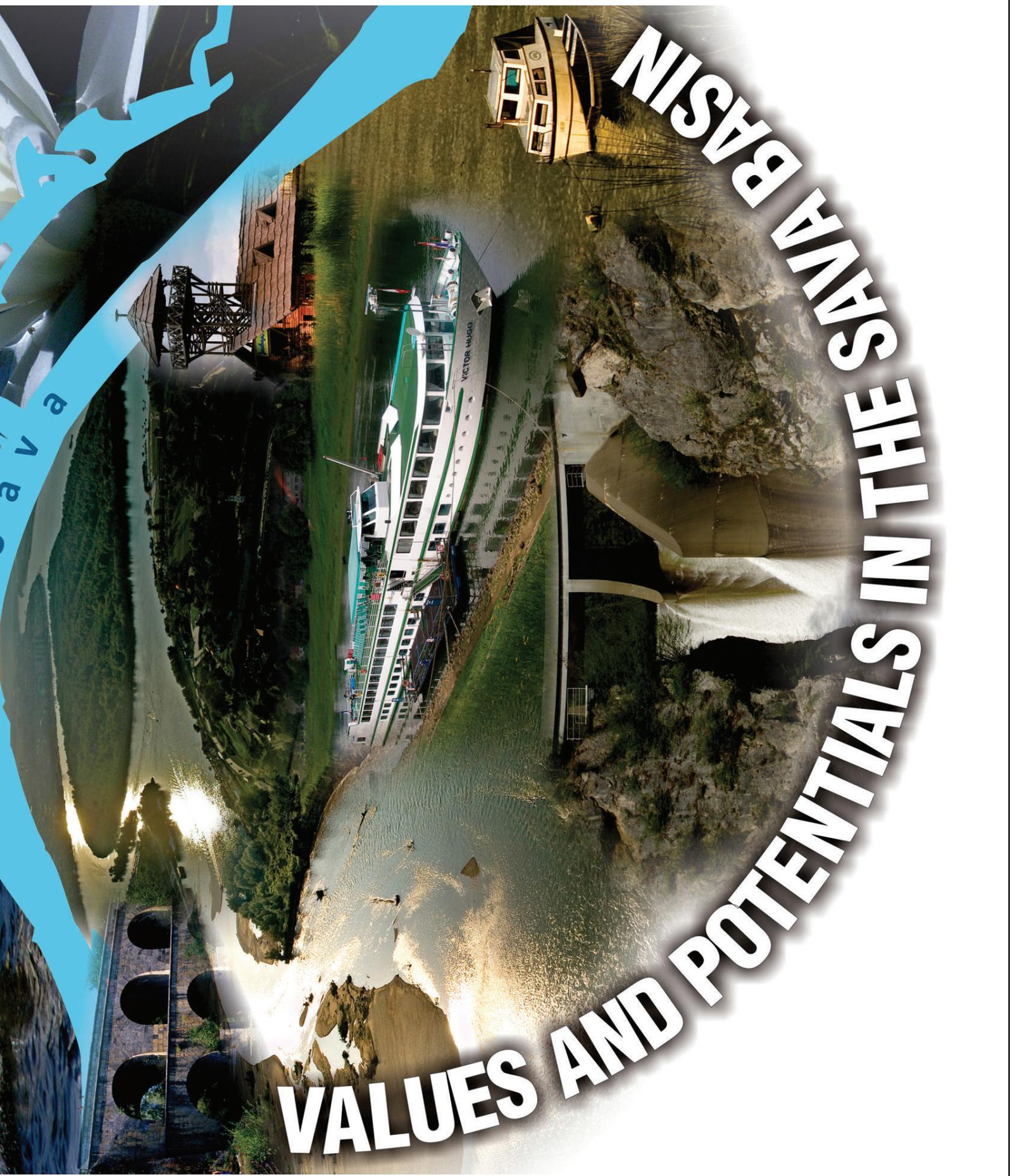
23 - 26.5.2012.	Osijek, Republika Hrvatska	Treći međunarodni kongres o ruralnom turizmu „Ruralni turizam kao pokretač održivog razvoja“ http://www.kongres-seoskog-turizma.org/
24 - 25.5.2012.	Ljubljana, Republika Slovenija	Međunarodni skup „Izazovi privrednog razvoja - inovativnost u slivu Save“ http://www.ozljubljana.si/
27 - 29.5.2012.	Beograd, Republika Srbija	Treća međunarodna konferencija „Geosciences and Environment“ http://www.agserbia.com/
30.5.2012.	Ljubljana, Republika Slovenija	Završna svečanost u okviru projekta „Moja reka si“ www.mojareka.si
30.5. - 10.6.2012.	Valjevo, Obrenovac, Šabac, Beograd, Sremska Mitrovica,	Događaji u okviru proslave Dana rijeke Save u Republici Srbiji milica.milenkovic@minpolj.gov.rs
1 - 2.6.2012.	Park prirode Lonjsko polje, Republika Hrvatska	Parlament mladih „Mladi danas za Savu sutra“ http://www.savacommission.org/
1 - 19.6.2012.	Sarajevo, Bosna i Hercegovina (nepotvrđeno)	(okvirno) Izložba fotografija sa foto-konkursa Savske komisije „Rijeka Sava – priroda, ljudi i kultura“
1 - 30.6.2012.	Ljubljana, Republika Slovenija	Izložba fotografija sa foto-konkursa Savske komisije „Rijeka Sava – priroda, ljudi i kultura“ http://www.mko.gov.si/
2.6 - 6.7.2012.	Zagreb, Sisak, Županja, Slavonski Brod, Republika Hrvatska	Savski sajmovi u okviru projekta „Lijepa naša Sava“ http://www.lijepanasasava.hr/
3.6.2012.	Specijalni rezervat prirode Zasavica, Republika Srbija	Centralna proslava Dana rijeke Save u Republici Srbiji milica.milenkovic@minpolj.gov.rs
20 - 21.6.2012.	Slavonski Brod, Republika Hrvatska	Radionica o eko-turizmu u slivu rijeke Save http://www.savacommission.org/
28.06 - 1.7.2012.	Gornji Vakuf/Uskoplje, Bugojno, Donji Vakuf, Jajce, Banja Luka, Laktaši Bosna i Hercegovina	Rafting eko regata



INTERNATIONAL SAVA RIVER BASIN COMMISSION

LANDSCAPE, BIODIVERSITY, ECONOMY





VALUES AND POTENTIALS IN THE SAVA BASIN