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NO. 16, NOVEMBER 2015

SAVA NEWSFLASH

INTERVIEW: Dr. EVA MOLNAR,
Inland water transport provides triple win - for transport, environment and economy

- Implementation of the Framework Agreement: The view of Republic of Slovenia
- Sava GIS & Sava HIS become functional
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INTERNATIONAL SAVA RIVER BASIN COMMISSION

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Source of the river from the foot of the mountains

DEAR READERS,

In June 2015, we completed the first ten years of work of ISRBC. Following this significant jubilee of our organization, it was reasonable to take a look back and summarize main achievements and lessons learned in the implementation of *Framework Agreement on the Sava River Basin* (*FASRB*), and also consider future challenges and objectives.

I believe a majority of stakeholders would agree that the prevailing feeling about the outcomes of cooperation in the framework of ISRBC, so far, would be – pride.

ISRBC has well positioned itself inside the Sava River Basin, both on high political level, and on expert level. On political level, three ministerial meetings, held upon invitation of ISRBC in a period of 12 months, clearly showed, not only a good understanding of governments of the Parties for benefits of the cooperation coordinated by ISRBC, but also their high appreciation for the results achieved, and evident support for the upcoming activities. On expert level, numerous events were organized or co-organized by ISRBC, for consultation, capacity building and education of various groups of stakeholders from governmental, non-governmental, academic and business sectors, thus raising awareness of ISRBC, as the core of regional cooperation, to the higher level.

At the same time, good cooperation has been established with international and national organizations on a broader geographical scale – in the Danube, Europe, OSCE and UNECE regions, as well as on global scale. Through extensive communication and cooperation with UN organizations and their specialized agencies, EU institutions, international river commissions and financial institutions, as well as bilateral donors, and with their support to the implementation of ISRBC activities and the *FASRB*-related projects, a respectable position of ISRBC has also been established outside the Sava Basin. This was notable at events such as the 7th World Water Forum, the Europe INBO 2015 Conference, and the 7th Meeting of the Parties to the UNECE *Water Convention*, just to mention a few of them held in 2015.

Two crucial components for a successful water cooperation in the basin have experienced a considerable progress. The water management and inland navigation policy in the basin have been significantly improved, through harmonization of national regulation in line with the EU regulation, and development of additional protocols to the *FASRB*. During this year, one protocol has entered into force, while the ratification process has advanced for another two. Additionally, a solid platform for the information exchange – one of the basic principles of cooperation under the *FASRB* – has been established through development of Sava GIS, HIS and RIS. Most of these achievements are addressed in this issue of *Sava NewsFlash*.

However, this success brings us to the point where we have a 'better view' and we can better realize there is even more to be done in the future. Key challenges ahead of us include the upcoming implementation of the fundamental activities in the field of flood management – preparation of the first *Flood Risk Management Plan for the Sava River Basin* and development of the flood forecasting and warning system for the Sava Basin, as well as the urgent restoration of the Sava River waterway. We are certainly going to keep making our efforts toward further improvement of the efficiency of the *FASRB* implementation process, the inter-sectoral coordination and cooperation, the public participation and stakeholder involvement, possibly by amending the agreement, as well.

We all expect that the next ten years will show this first period was just a beginning!

I hope you will find this issue of *Sava Newsflash* interesting and informative, and I wish you an enjoyable reading.

Dr. Dejan Komatina,
Secretary of ISRBC

IMPRESSUM

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Sava NewsFlash is the official bulletin of the International Sava River Basin Commission (ISRBC), published twice per annum as a bilingual edition – in English and the chosen official language of the ISRBC for each edition. It is aimed to present the overview of the most important activities, projects and results achieved in the fields relating to the *Framework Agreement on the Sava River Basin*, to provide useful information and enable better communication of stakeholders and the wider public with the ISRBC, and thus promote the values and potentials of the Sava River Basin.

Sava NewsFlash is available on the web-site of the ISRBC at:
www.savacommission.org.

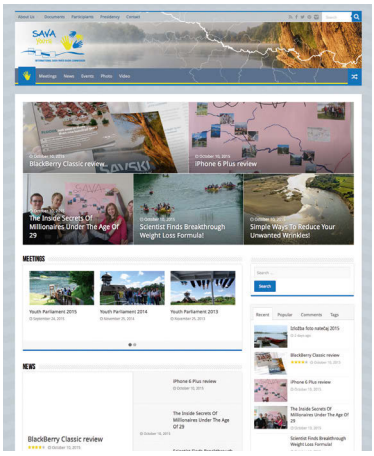
NEWS AND ANNOUNCEMENTS

Strengthening public participation through Sava Water Council and Youth Parliament

Sustainable water management under the *FASRB* and EU *WFD* requires an effective public participation of riparian countries at all appropriate levels.

ISRBC, with support of US Government, plans to facilitate broad stakeholder involvement towards providing advice on issues relevant for implementation of the *FASRB* through the Sava Water Council (SWC). More than 50 institutions/organizations, including universities/research institutes, protected areas, entity/regional or local authorities, water agencies, private sector and non-governmental organizations from the basin – future members of SWC – will gather at the constitutive meeting of SWC planned to be held in February 2016.

Building on success of the Youth Parliament from the Sava River Basin, the youth participation is planned to be further enhanced by developing a "youth corner" at the ISRBC web page. To this end, the young population is warmly invited to share information on their activities and projects, related to water use and protection, using this new tool of ISRBC!



ISRBC SIGNS THE PARIS PACT

Due to the centrality of water for climate change, the International Network of Basin Organizations (INBO), in cooperation with UNECE and other partners, have developed a document calling for action on climate change adaptation in basins – the *Paris Pact on Water and Adaptation to Climate Change in the Basins of Rivers, Lakes and Aquifers*. This non-binding document includes a description of the context and general principles for climate change adaptation in basins, a list of commitments and an annex with a template to present concrete projects in this field.

The *Pact* will be presented on 2 December 2015, at the 21st UN Conference of the Parties on Climate (COP 21) in Paris, which will include half a day on water and climate change adaptation.

So far, 292 governments, international organizations, donors, national and transboundary basin organizations, local authorities, the civil society and companies worldwide have signed the *Paris Pact*. The ISRBC joined this group by signing the document during the 7th Meeting of the Parties to the UNECE *Water Convention*, recently held in Budapest (17-19 November 2015).

UPCOMING ISRBC EVENTS

- 5th Conference on Sustainable Development of the Sava River Basin and Respective Climate Change Impacts (Zagreb, 3-4 Dec. 2015)
- Sava GIS Training (Zagreb, 9 Dec. 2015)
- Sava HIS Training (Zagreb, 10 Dec. 2015)
- 40th Session of the ISRBC (Zagreb, 14 Dec. 2015)
- 28th PEG FP Meeting (Zagreb, 15-16 Dec. 2015)
- 9th *Ad hoc* FIN EG Meeting (Zagreb, 17 Dec. 2015)
- 41st Session of the ISRBC (Belgrade, 16 Feb. 2016, tent.)
- Constitutive Meeting of the Sava Water Council (Belgrade, 17 Feb. 2016, tent.)

INTERACTING WITH STAKEHOLDERS

A number of events were organized or co-organized by the ISRBC in the previous 6 months, not only to provide opportunities for *consultation* with various groups of stakeholders, but also to continue an important component of the ISRBC mission – *capacity building* and *education*:

- Meeting on Implementation of the Flood Forecasting and Warning System for the Sava River Basin (Zagreb, 10 June 2015)
- Workshop on Stakeholders' Participation in the 2nd Sava RBM Planning Cycle (Zagreb, 18 June 2015)
- Workshop on Sediment Monitoring on the Sava River (Zagreb, 3-4 Sept. 2015)
- 6th Meeting on Implementation of the *Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube Basin* (Vienna, 10-11 Sept. 2015)
- 2nd Sava GIS Workshop (Zagreb, 21 Sept. 2015)
- 10th Meeting of Captains from Portmaster Offices from the Sava River (Sisak, 28-29 Oct. 2015)
- Workshop on Flood Risk Management Measures & Links to EU *WFD* (Zagreb, 11-12 Nov. 2015)

More information on the events is available at www.savacommission.org.

REGIONAL WATER COOPERATION DISCUSSED ON MINISTERIAL LEVEL

A year after the catastrophic floods in the basin, a meeting of ministers responsible for water and waterway transport issues, as well as other high officials of Bosnia and Herzegovina, Croatia, Serbia and Slovenia, was held in Brčko on 6 July 2015, at the invitation of the ISRBC, to discuss the cooperation in the fields covered by the *FASRB*.

By signing the *Protocol on Sediment Management to the FASRB* at the meeting, a solid legal basis was created for a joint work of the countries toward sustainable sediment management in the basin, including the preparation of a *Sediment Management Plan* and the regular exchange of information among the countries on the sediment dredging, as stipulated by the *Protocol*. The event was also used as an opportunity to sign a bilateral agreement between Bosnia and Herzegovina and Croatia on the use of water from public water supply systems crossed by the national border.

Further progress in the regional cooperation on flood management was considered at the meeting, with a special emphasis on the upcoming two joint activities to be implemented through the ISRBC – preparation of a *Flood Risk Management Plan* and development of a coordinated flood forecasting and warning system, for the whole Sava River Basin.

The commitment to taking an active part in the implementation of these activities, in order to bring them soon to a level where they can effectively reduce the risk and adverse consequences of floods in the future, was confirmed by the high representatives of the countries.

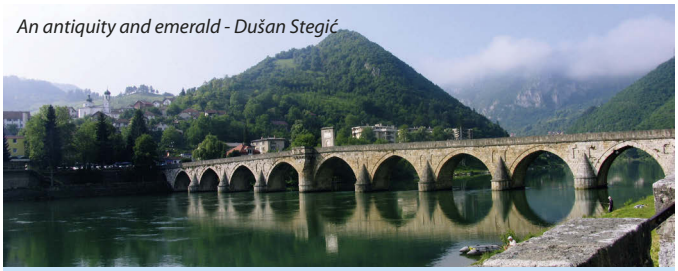
The meeting participants also reviewed the status of implementation of restoration and development of transport and navigation on the Sava River waterway, and considered further steps needed to achieve the agreed level of navigability on the Sava River in near future.

FLOOD PROTOCOL ENTERS INTO FORCE

Protocol on Flood Protection to the Framework Agreement on the Sava River Basin, as the core document for the strengthening of cooperation of the basin countries in the area of flood protection, enters into force on 27 November 2015.

Protocol on Flood Protection is aimed at regulation of sustainable flood protection issues in the Sava River Basin with the objective to prevent or limit hazards and reduce or eliminate negative effects of floods. The *Protocol* emphasizes the importance of coordination measures, works and activities aimed at decreasing the flood risk throughout the basin, and the implementation of these activities in accordance with the "no harm rule" principle. Therefore, in order to contribute to the decrease of harmful consequences of floods, in particular for human life and health, environment, cultural heritage, economic activities and infrastructure, the Parties have agreed to cooperate in the implementation of the above activities. The *Protocol* represents a firm legal foundation for the implementation of all activities agreed by the Sava countries, via their joint platform – the Sava Commission.

An antiquity and emerald - Dušan Stegić



Cooperation for preservation of the Mehmed-Paša Sokolović bridge in Višegrad

Protocol on Cooperation between the Government of the Republic of Serbia and the Council of Ministers of Bosnia and Herzegovina on the preservation of the Mehmed-Paša Sokolović bridge in Višegrad was signed on 4 November 2015 in Sarajevo. The cooperation will include the exchange of information between the two countries on the activities affecting the water levels that could threaten the stability of the Bridge, as well as the work of an established mixed group to propose measures for preservation of the stability. The *Protocol*, whose preparation was facilitated by the ISRBC, represents a step forward in the implementation of the *FASRB*, as well as the conclusions of the World Heritage Committee (UNESCO) related to this famous construction.

INTERVIEW Dr. EVA MOLNAR, DIRECTOR OF THE SUSTAINABLE TRANSPORT DIVISION OF THE UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

INLAND WATER TRANSPORT PROVIDES TRIPLE WIN SITUATIONS - FOR TRANSPORT, ENVIRONMENT AND ECONOMY

I am convinced that while competition is good to improve performance, it is time to focus on intermodal cooperation and take the best of each mode of transport


Eva Molnar: The Sava River has an important role

What is the main focus of the work of the UNECE in the field of inland navigation?
The UNECE Inland Transport Committee, through its Working Party on Inland Water Transport (SC.3), provides a forum for exchange of experiences and best practices in the inland water transport sector, promoting the coordinated development of inland waterway infrastructure, elaborating strategic recommendations for a common navigation regime on the pan-European level, reinforcing the institutional and regulatory framework of inland water transport, administering the relevant international conventions.

Western and South-Eastern Europe are blessed with excellent year-round navigable rivers, such as the Rhine and the Danube, but also the Rhone, the Sava or the Mosel. In Eastern Europe there are also big rivers such as the Dnepr and the Volga. However, even in this part of the world, inland water transport is underexploited and plays, with the exception of the Netherlands, a rather modest role. And this in spite of heavily congested and overloaded transport infrastructures, particularly along the main North-South road and rail corridors where the transport requirements of our modern economies collide more and more with the mobility needs of our people. Of course, Europe's inland navigation system is not as dense as our rail and road networks and, of course, it is not possible to take ships across the Alps. Inland water transport is thus not a panacea for all of our transport needs. But, I think it is evident that the predicted increase in European freight transport - in the order of 30 per cent within the next decade - even with the recent slow down - will not be possible without making maximum use of all existing land transport modes and infrastructures. Thus I see it as one of our main tasks to facilitate international cooperation among states that leads to more conducive business conditions for inland navigation.

There are big opportunities as inland water transport has a lot to offer here:

- Firstly, it offers untapped capacities - available 24 hours a day, 7 days a week. This, of course, does not always hold true for inland waterways in Northern and Eastern Europe where, due to harsh meteorological conditions, transport alternatives have to be provided for several months of the year.
- Secondly, inland water transport is a safe, versatile, reliable, and environmentally friendly mode of transport.

Then what is needed to look into these opportunities?
To do so, spare capacity and environment-friendliness is not enough. Shippers should be convinced that IWT offers them competitive services. Shipbuilders should be convinced that they have a market so that they can be innovative. River ports should be convinced that they can become the intermodal terminals of the future. Operators should become more aware of the economic and trade trends to be able to serve the new types of clients, and to follow the paradigm shift in the economies.

Governments have a very important role to make this happen and to provide for the re-

quired resources. But Governments, together with industry and civil society, also have to offer mechanisms for a holistic approach to sustainability in inland water transport: an approach that goes beyond individual and local interests and offers technical solutions that minimize local interventions in river beds or canals and maximize the overall sustainability of our transport system. I am convinced that inland water transport can provide such triple win (win-win-win) situations that are of benefit for transport, our health and environment, as well as our economy.

For many years there was a lot of talk about the need that some parts of goods should be transported with river boats instead of trucks. Was that option successful, and if yes, how much?

Modal split in Europe (today, 6% of all goods transported in the European Union are carried by inland navigation vessels and convoys, when road and rail carry 76% and 18%, respectively.), but also in many parts of the World is for concern and obviously there is a need to ensure a shift of cargo from roads to rail, inland water transport or short sea shipping and a shift from cars to the use of public transport. I am convinced that while competition is good to improve performance, it is time to focus on intermodal cooperation and take the best of each mode of transport. Inland water transport, e.g. offers several advantages such as safety, low environmental costs, time reliability, low infrastructure costs, high carrying capacity, the potential for intermodal transport.

It is important to note, however, that not all UNECE countries with inland waterways are EU Member States, therefore, it will be important to ensure that the standards adopted at the EU level are not different from those adopted by the UNECE member States. At present we are in consultations with the European Union to see how we can avoid duplication on the level of international harmonisation and how we can jointly ensure that pan-European collaboration continues and scarce public resources are utilised in the most efficient way.

Corridor VII, the Danube, is called the 'European lifeline'. How do you see the role of its tributary, the Sava River, in this regard?

The Sava River, having the largest discharge of water to the Danube of any tributary, has an important role to play in "feeding" the traffic to this main transport artery. To fulfil this role, both environmental and infrastructure aspects must be taken into account. Improving the navigability of the Sava River in the way that the Moselle, Main, Neckar provide traffic to the Rhine is essential and is also one of the policy recommendations mentioned in the UNECE Inland Transport Committee (ITC) *White Paper* on efficient and sustainable inland water transport in Europe.

On the environmental aspect, the *Joint Statement on Inland Navigation and Environmental Sustainability in the Danube River Basin* concluded in 2007 between the International Commission for the Protection of the Danube River, the Danube Commission and the International Sava River Basin Commission, as well as the Danube navigation dialogue which followed are a clear manifestation of Sava stakeholders' commitment in their responsibilities. We hope this dialogue will continue and serve as a basis for a fruitful cooperation on inland waterways discussions in the eastern European region.

How would you rate your cooperation with the Sava Commission?

The cooperation with the Sava Commission is of great value to us. Its representatives regularly participate in the ITC Working Party on Inland Water Transport meetings and in expert groups such as the *CEVNI* Expert Group and the Group of Volunteers on *Resolution No. 61* which provides recommendations on harmonized pan-European technical requirements for inland navigation vessels. The contribution of the Sava Commission is much appreciated and is of great importance in the work accomplished for the enhancement of the efficiency and sustainability of inland water transport in the UNECE region.

Marko Barišić

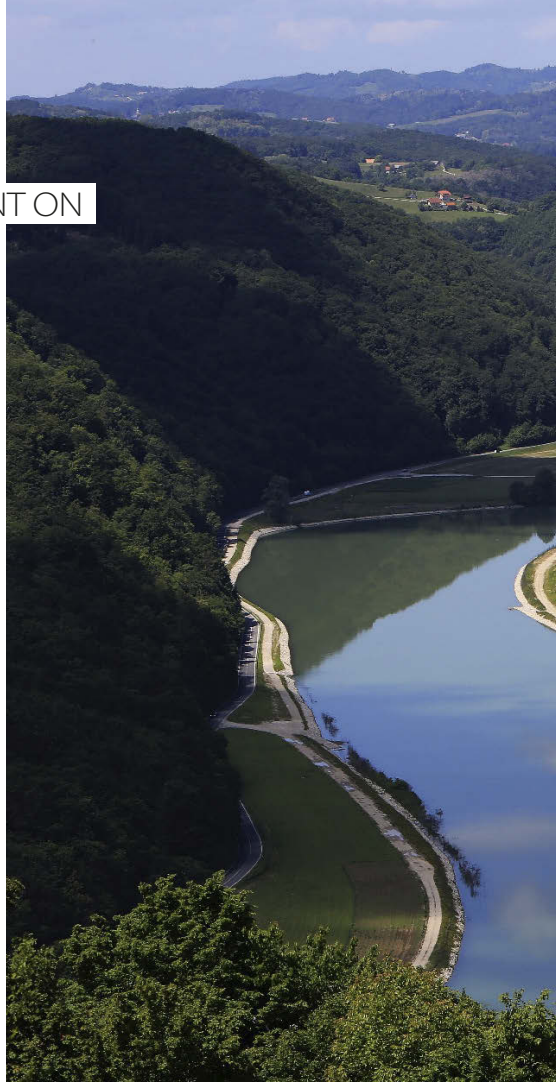
The contribution of the Sava Commission is much appreciated and is of great importance in the work accomplished for the enhancement of the efficiency and sustainability of inland water transport in the UNECE region

Loading of goods on the river docks - Krešimir Šapina

River transport is the most cost effective

STANCE IMPLEMENTATION OF THE FRAMEWORK AGREEMENT ON THE SAVA RIVER BASIN: THE VIEW OF REPUBLIC OF SLOVENIA

MODERN TOOLS FOR SUSTAINABLE SOLUTIONS IN THE SAVA RIVER BASIN



As of December 2015, the Geographic Information System for the Sava River Basin, complemented by the Hydrological Information System, which provides the planners with a modern basin-wide information platform, will be available to the Parties

As an upstream country in the Sava River Basin, Slovenia is aware of the significance, role and responsibility towards the proactive transboundary cooperation for sustainable water resources management. The reason is its hydro-geographic position at the junction of the Alps, Dinarides, Adriatic Sea and Pannonian Basin. In Slovenia, water regimes of four European ecoregions are combined.

Therefore, its transboundary cooperation in the water sector has been present in Slovenia for many years. A comprehensive planning scheme for effective adaptation to climate change in international river basins requires an in-depth transboundary cooperation for sustainable use of water resources. In this context, the implementation of the *Framework Agreement on the Sava River Basin* (*FASRB*) has a special place, role and importance.

Why does the implementation of *FASRB* have a special place?

1. Because it is an actual example and proof that in the area of former conflicts, an appropriate approach may establish a dialogue and fruitful transboundary cooperation towards a sustainable development of a common basin.
2. Because participation of the countries in the International Sava River Basin Commission (ISRBC) is beneficial for all Parties to the *FASRB* in the rehabilitation of navigation on the Sava River and its tributaries, in the reduction of flood risk, in the sustainable use of water resources and in the development of the Sava River Basin.

The above-mentioned conclusions result from the specific work completed in the first decade of operation of ISRBC (2005 – 2015). I am happy to observe that the jubilee year (2015), in particular, has brought new and important outcomes.

Among them, I would especially like to welcome concrete steps taken by Montenegro, in order to become a full member of ISRBC. Another remarkable achievement is the ratification of the *Protocol on Flood Protection to the FASRB*. It provides for a modern legal basis enabling the establishment of a transboundary early warning system and the consideration of flood risk reduction measures. Technical details for establishment of this system have already been harmonised by the ISRBC experts and funding for implementation of the project has been provided by WBIF. This is a highly tangible response to the catastrophic floods of 2014 in the Sava Basin. The international community has entrusted ISRBC with the management of this demanding project. The Red Cross and the Red Crescent B&H gave special thanks to the ISRBC for the assistance in this event.

As of December 2015, the Geographic Information System for the Sava River Basin (Sava GIS), which provides the planners with a modern basin-wide information platform, will be available to the Parties. This system is complemented by the Hydrological Information System (Sava HIS) which, among other things, allows monitoring of the current (on-line) hydrological conditions in the basin, which is essential for planning and appropriate action-taking. It should be noted that the system is based on the use of the official data, including the monitoring of flow rate at the border sections between the countries. The Sava hydrologic-hydraulic models, which are being prepared with support of the U.S. Army Corps of Engineers, are also based on these data. Presentation of these tools to the users (ministries, agencies, institutes) in all *FASRB* Parties will be organized as soon as possible, in Slovenia already in December 2015.

These modern tools are based on the approach imposed on the Parties by the implementation of the EU acquis. The use of these tools is possible only to the extent that the countries provide the relevant information. The *FASRB* Parties managed to do so despite the fact that only two countries are EU member states. This success, not only provides encouragement for further steps, but also contributes to stability of the region.

The Sava River on its way through Slovenia

Powerful tools, such as Sava GIS, HIS and hydrologic-hydraulic models, have been developed successfully. This success, not only provides encouragement for further steps, but also contributes to stability of the region.

To improve the quality of life on the regional level – in the Danube River Basin – the implementation of the EU *Danube Strategy* (EU*SDR*) has been taking place since 2011. Parties to the *FASRB* (the first sub-regional agreement in the Danube Region) are actively involved in the implementation of EU*SDR* through ISRBC by presenting proposals for implementation of transboundary projects in sustainable water management, navigation and tourism. At the Sava Day celebration, ISRBC also organised the first cycling tour "Sava 2013" – from the source to the mouth of the Sava River, which has become a traditional event. This encouraged the Sava River local communities to set up cycle paths along the river and to draw up the first project proposal to acquire EU funds for this purpose.

The achievements of ISRBC, which include implementation of the *Sava River Basin Management Plan*, rehabilitation of navigation on the Sava River, establishment and use of modern tools for early warning, in order to reduce flood risk, and preparation of transboundary development projects, provide encouragement and inspiration to the Parties to further strengthen regional cooperation. This is now enabled by the development-oriented EU *Adriatic-Ionian Strategy* (EU*SAIR*). The countries involved in the EU*SAIR* process are Italy, Parties to the *FASRB*, Montenegro, Albania and Greece.

This is an exceptional new development opportunity of the *FASRB* Parties to expand their experience gained within EU*SDR* by participating in the EU*SAIR*. This was an important conclusion of the ministerial meeting of the *FASRB* Parties held in Brčko (July 2015). There is a natural reason for that – the Dinarides, a karst aquifer rich in water providing water supply and underground connection to the Sava River Basin and to the Adriatic Basin. Important expert groundwork has already been developed for this karstic region (DIKTAS project, etc.). The planned association of Montenegro as the new full member of the ISRBC gives additional significance to this proposal.

It should be noted that EU*SAIR* is development-based and is based on four pillars: Blue Growth, Connectivity/transport & energy, Environment and Sustainable tourism.

The objectives of the EU*SAIR* pillars coincide with those of the EU*SDR*, which is an additional reason and an opportunity to demonstrate innovative connections of transboundary and inter-regional cooperation with projects that take into account green and blue corridors and their ecosystem services to improve the quality of life, to improve accessibility and to create new jobs in the cities along rivers, coasts and seas. The Sava cycling routes project with innovative intermodal connections (bicycle, river, railway) calls for expansion and connection with the Adriatic Basin, thus opening up exceptional development opportunities in local environments.

The ISRBC achievements in terms of sustainable goals in the Sava River Basin are great references without any competition on the regional level. The experiences provide the advantage to the *FASRB* Parties in creating joint transboundary projects and connections, both within the EU*SDR* and the EU*SAIR*.

Within these new EU processes, innovation can be demonstrated which leads to development and improves the quality of life in the region. This is a great opportunity for the new generation which depends on the practices of the present generation.

At the end of the year, I would like to express my sincere thanks to all of you that have enabled the operation of ISRBC, to the *FASRB* Parties, international institutions, non-governmental organisations, dedicated individuals and to the ISRBC Secretariat. We look forward to our continued cooperation in 2016. Good luck!

Dr. Mitja Bricelj,
ISRBC Member from the Republic of Slovenia,
Chairman of the ISRBC

STAWA GOAL IS TO PROVIDE SOLUTION FOR SUCCESSFUL WATER MANAGEMENT

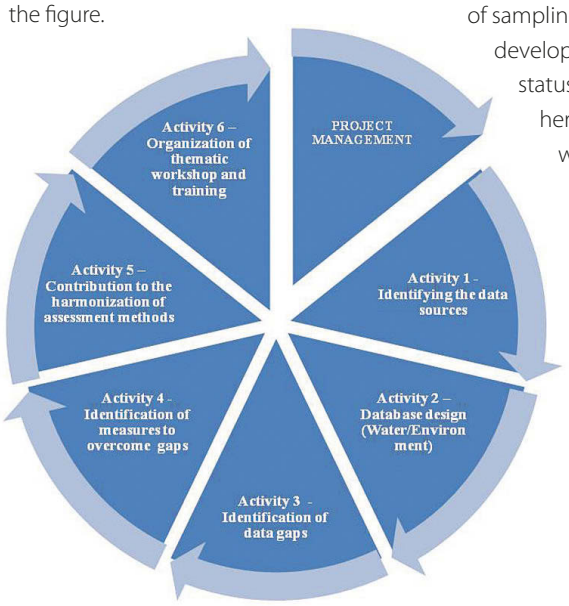
TOWARD ASSESSMENT OF ECOLOGICAL STATUS OF WATER BODIES

The richness of life in the Sava River

The long term vision of the STAWA project is to develop sustainable network for collection, exchange and providing availability of ecological data in the basin

Understanding of complex river system, such as the Sava River Basin, is an important task for its proper management. Natural and socio-economic heterogeneity contributes to complexity of the task. The availability of proper information and cooperation of institutions (governmental, research, educational and non-governmental) is the crucial goal to be achieved in order to provide solution for successful management of waters. This is the main objective of the project entitled *Towards the assessment of ecological status of water bodies in the Sava River Basin* supported under the START – Danube Region Project Fund (*http://www.danube-capacitycooperation.eu/pages/start-overview*). The *STAWA* project brings together six partners – Jožef Štefan Institute, Ljubljana (Slovenia), Elektroprojekt d.d., Zagreb (Croatia), Water Research Institute, Bratislava (Slovakia), Public Institution "Waters of Srpska" (Bosnia and Herzegovina), Institute for Biological Research "Siniša Stanković", University of Belgrade (Serbia) as a Leading Partner, as well as the International Sava River Basin Commission, with joint vision – to provide the basis for establishment of basin-wide actions for cooperation on data collection and effective sharing of information on ecological status in the basin.

The *STAWA* project started on the 1st of April 2015 and it is planned to be realized during one year. The main activities are presented in the figure.



The *STAWA* project has established a close cooperation with the *GLOBAQUA* project (implemented within the EU FP7 under the title *Managing the effects of multiple stressors on aquatic ecosystems under water scarcity*) aiming to employ joint capacities in development of the database and addressing of the problem of prioritization of the pollutants using the same data for modelling and predicting of the pollutants fate. The Sava Basin is one of the six target basins of the *GLOBAQUA* project. Two projects will jointly organize a workshop in Ljubljana in February 2016 aiming to bring together experts in the fields of water research and water management from the region in order to collect cumulative knowledge on the main topics addressed. In addition, a training focused on biological monitoring and use of biological quality elements in the status assessment will be organized.

The long term vision of the *STAWA* project is to develop sustainable network for collection, exchange and providing availability of ecological data in the basin. Also, the project will prepare a proposal for the future, more extensive project(s) addressing issues related to water and environment management within the basin, with focus on those recognized as priority topics – harmonization of monitoring methodology, evolving of sampling methodology for large rivers, development of procedures of ecological status assessment and creating of coherent database. The project results will contribute to development of more effective basis for preparation of water management and flood protection plans and programmes on basin wide and national levels. In that respect, participation of all interested stakeholders in this attempt would be appreciated!

Dr. Momir Paunović,
Institute for Biological Research "Siniša Stanković", Belgrade, Serbia

The project results will contribute to development of a more effective basis for preparation of water management and flood protection plans and programmes on basin wide and national levels

SEDIMENT NEED FOR FURTHER COOPERATION AMONG THE COUNTRIES

PROPOSAL FOR THE ESTABLISHMENT OF SEDIMENT MONITORING SYSTEM

For sustainable sediment management, it is necessary to establish a coordinated sediment monitoring system in the Sava River Basin

Having in mind that sediment is an essential, integral and dynamic part of the river system and forms a variety of habitats and environments, but also recognizing the need for efficient cooperation among the countries and promotion of sustainable sediment management solutions in the Sava River Basin, the Parties to the *Framework Agreement on the Sava River Basin* (*FASRB*) have developed the *Protocol on Sediment Management to the FASRB* and signed it on the ministerial meeting held in Brčko on 6 July 2015 (*http://www.savacommission.org/event_detail/0/0/336/2*).

A number of activities foreseen by the *Protocol* have already been performed by the International Sava River Basin Commission (ISRBC) through the project *Towards Practical Guidance for Sustainable Sediment Management using Sava River as a Showcase*, which has been implemented since 2012 in cooperation with, and with the financial support of, the UNESCO Venice Office, the European Sediment Network (SedNet) and the UNESCO-IHP International Sediment Initiative. The project outcomes include organizing a training course (*http://www.savacommission.org/event_detail/8/22/273/4*) and drafting a guidance on sustainable sediment management in the Sava River Basin, as well as estimating the sediment balance of the Sava River (*http://www.savacommission.org/project_detail/16/1*).

As the next step, an analysis of options for the future sediment monitoring system for the Sava River Basin has been made within the project, aiming to:

- Establish strategic goals and specific objectives of the sediment monitoring and data exchange system;
- Review existing sediment monitoring data;
- Review technical international standards and technics of monitoring and assess their application in the Sava River Basin, and
- Establish an on-line free database on sediment.

Regarding the revision of existing monitoring data, it is obvious that regular monitoring of suspended sediment is currently present only in Slovenia and Croatia, while bedload measurements are not implemented any more. It is also obvious that sediment sampling and measurement methodologies are different and data on reservoir sedimentation are not collected on regular basis. For sustainable sediment management, it is necessary to establish a coordinated sediment monitoring system in the Sava River Basin, as stipulated in Art.6 of the *Protocol on Sediment Management*.

According to the analysis, the future sediment monitoring system should include:

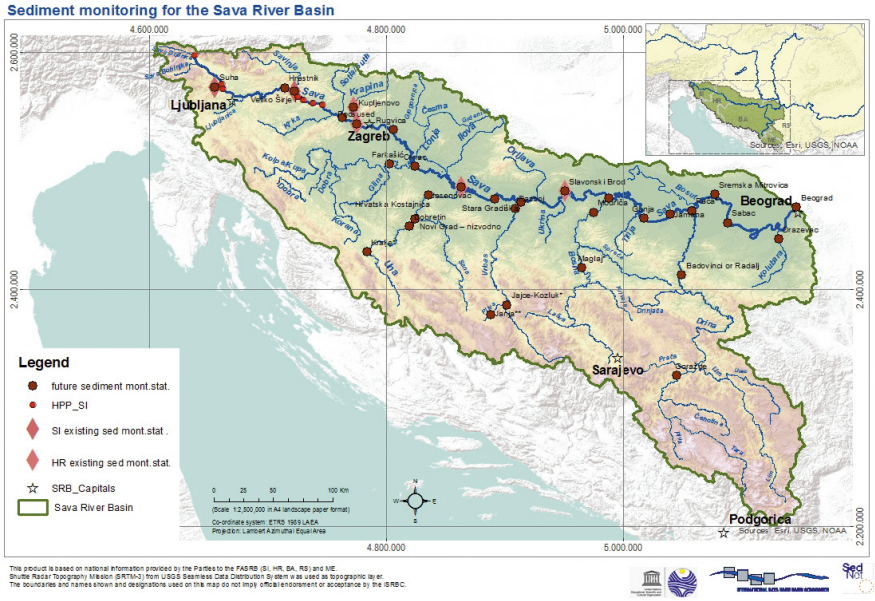
- Continuous suspended sediment monitoring (e.g. turbidity measurements and daily sampling of suspended sediment at specified point)
- Periodic suspended sediment monitoring (ADCP measurements of suspended sediment concentration from backscatter intensity, sampling of suspended sediment across the monitoring profile, determination of grain-size curve and bed material sampling)

- Periodic monitoring of reservoir sedimentation and river bed changes (survey of cross-sections within reservoirs and survey of river cross-sections, every 6 years).

The overview of locations of the existing and future monitoring stations is presented in the figure.

Data gathered on the future sediment monitoring network will be used for preparation and implementation of the *Sediment Management Plan* where further measures for sustainable sediment management will be defined to maintain the water regime in the Sava River and its tributaries.

Samo Grošelj,
Secretariat of the ISRBC



ACTIVITIES HOW TO REACH MORE EFFECTIVE FLOOD PROTECTION MEASURES

FLOOD RISK MANAGEMENT PLAN FOR SLOVENIA

Based on the results of the preliminary flood risk assessment and after a long and thorough public consultation process, 61 areas of potential significant flood risk were identified in Slovenia

Floods are mostly natural phenomena, which cannot be fully prevented. But the flood risk can be significantly reduced depending on the human, financial and other resources invested in the flood risk reduction activities and the overall effectiveness of the flood protection measures. In the year 2007, the *Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks* (the so called EU *Floods Directive*) was adopted with the aim of overall, more effective and more harmonised flood risk management in all EU member states. EU *Floods Directive* envisages a 6-year flood risk management planning cycle (the first one for years 2010(2009)–2015, the second one for years 2016(2015) –2021, etc.) with a special emphasis on transnational river basin management for international river basins like Sava River Basin.

Slovenian Preliminary Flood Risk Assessment[1] was adopted and made publicly available on December 22nd 2011. The two main components of the Slovenian Preliminary Flood Risk Assessment are a detailed listing of flood events (and their adverse consequences), which had occurred prior to year 2011 in Slovenia, and a classification of approximately 1200 identified flood risk areas into more and less significant ones according to the criteria of human health, economy, cultural heritage and environment at risk. Based on the results of the preliminary flood risk assessment and after a long and thorough public consultation process 61 areas of potential significant flood risk[2] were identified in Slovenia[3].

By the end of 2013, flood hazard and flood risk mapping was done for the areas of potential significant flood risk. For the purposes of flood hazard mapping, the 10-year flood (high probability scenario), 100-year flood (medium probability scenario) and 500-year flood (low probability scenario) were chosen as relevant for Slovenia. All of the Slovenian flood hazard and flood risk maps are publicly accessible and downloadable via the eWater[4] web portal or Slovenian *Water Management Atlas*[5] or the ministry's homepage[6].

Flood Risk Management Plan for Slovenia (the final step of the 6-year flood risk management programming cycle) addresses the flood risk at 61 areas of potential significant flood risk, which were grouped in 17 river basin districts (11 of those are in the Sava River

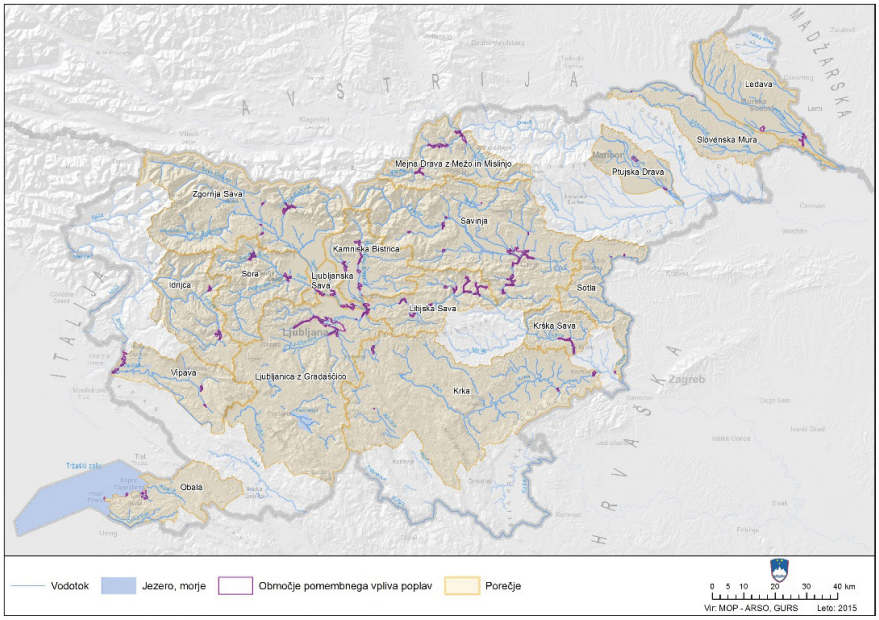


FIGURE 1: Grouping of 61 areas of potential significant flood risk into 17 river basin districts (11 out of these are in the Sava River Basin district) for which Slovenian flood risk management plan was done.

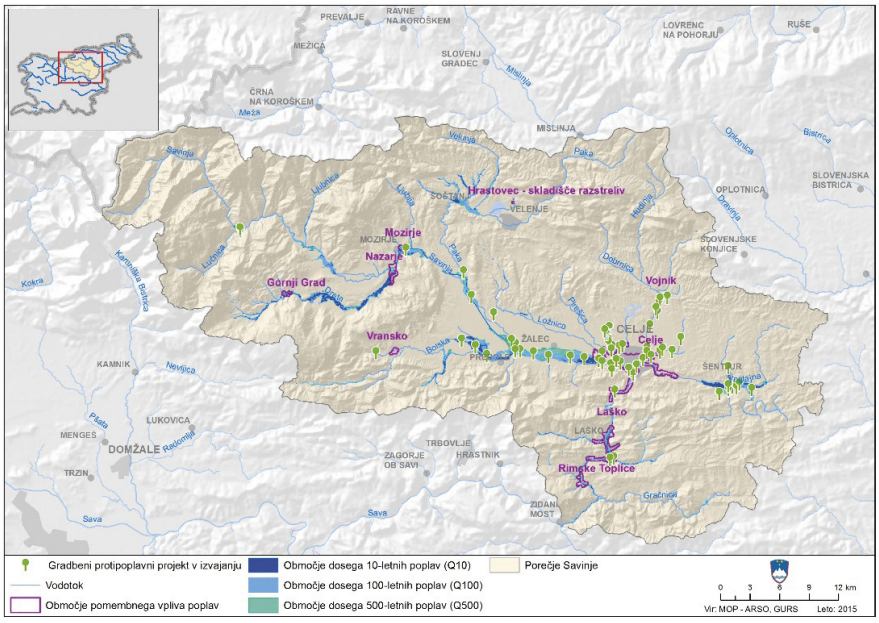


FIGURE 2: The Savinja River Basin and the location of the structural flood protection measures (FP measure U7).

TABLE 1: A list of 20 Slovenian flood protection measures (from the Slovenian catalog of measures) and their relation to the goals of the WFD.

Measure	Relation of the measure with the WFD goals		
	SYNERGY	POTENTIAL CONFLICT (has to be dealt with at the level of detailed planning)	(IRRELEVANT)
U1 Flood hazard and flood risk mapping	x		
U2 Natural water retention measures	x		
U3 River basin wide land use adaptation	x		
U4 Hydrological and meteorological monitoring	x		
U5 Flood risk related databases	x		
U6 Raising awareness about flood risk	x		
U7 Structural flood protection measures		x	
U8 Individual flood protection measures	x		
U9 Continuous efficiency control of the flood protection measures			x
U10 Water infrastructure maintenance works		x	
U11 River basin control	x		
U12 Proper management of flood, water, hydropower and other infrastructure		x	
U13 Providing enough financial resources for maintenance works			x
U14 Contingency planning		x	
U15 Flood forecasting			x
U16 Flood warning			x
U17 Flood intervention activities		x	
U18 Flood damage assessment			x
U19 Post flood event analysis			x
U20 Financial, system, international river basin coordination and other measures		x	

Unfortunately the non-implemented flood protection measures, which look good on the paper, but remain in the form of paper only, are not actually reducing the flood risk and helping anyone

Basin). Slovenia's flood risk management plan therefore includes 17 flood risk management plans (*Figure 1*) which are logically (inter) connected and include a detailed identification and prioritisation of the necessary flood protection measures that have already been going on or still have to be put in place in particular river basin (*Figure 2*). The flood protection measures were chosen from Slovenia's catalogue of flood protection measures, which consists of 20 such measures (*Table 1*). Furthermore, the flood protection measures are divided into flood protection projects. Coordination of the flood protection measures with the goals of the *Water Framework Directive* (*WFD*)[7] was done by classifying the flood protection measures from Slovenia's catalogue of flood protection measures into three groups; measures in synergy with the *WFD* goals, measures which are irrelevant for the *WFD* goals and measures that could potentially be in conflict with the *WFD* goals. The activities of the International Sava River Basin Commission definitely present a big added value in the form of winning additional resources for the better, more effective and transnationally coordinated flood risk management in the Sava River Basin. The flood risk management plan for the international Sava River Basin should focus its flood reduction activities to the areas of common interest in the Sava River Basin like the borderline rivers (for example, Kolpa/Kupa or Sotla/Sutla rivers) or the (administrative) border areas around the Sava River's main watercourse. The *Sava River Basin Flood Risk Management Plan* should also include a wide range non-structural flood risk reduction measures and consensually prepared studies and analyses which would lead to easier and (among all the countries sharing the international Sava River Basin) better coordinated, harmonised and commonly agreed solutions. One of such good, commonly agreed practices at the level of the river basin is the preparation of the common Sava River Basin flood forecasting system, which is already in the process of development.

The *Sava River Basin Flood Risk Management Plan* which would include real, easy to implement, cost-effective, sustainable and transnationally (and at the level of the Sava River Basin) harmonised flood reduction measures and projects for the areas of common interest would make a really good complementary addition to the already established national flood risk management plans and would help the countries to win additional financial resources for the purposes of actually implementing the flood risk reduction measures in the Sava River Basin. Unfortunately the non-implemented flood protection measures, which look good on the paper[8], but remain in the form of paper only, are not actually reducing the flood risk and helping anyone.

Luka Štravs,
Ministry of the Environment and Spatial Planning of Republic of Slovenia,
luka.stravs@gov.si[9]

[1] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/predhodna_ocena_poplavne_ogrozenosti.pdf*
[2] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/porocilo_OPVP.pdf*
[3] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/karta_obmocij_OPVP.pdf*
[4] *http://evode.arso.gov.si/*
[5] *http://gis.arso.gov.si/evode/profile.aspx?id=atlas_voda@Arso*
[6] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/opvp/OPOPO.xls*
[7] *Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.*
[8] *White infrastructure*
[9] Author of the paper would like to thank Maja Kregar, Špela Petelin, Barbara Potočnik and Bojan Jakopič.

FLOOD FORECASTING KEY NON-STRUCTURAL MEASURE OF FLOOD RISK MANAGEMENT

CROATIAN FLOOD FORECASTING SYSTEM IN THE SAVA RIVER BASIN

Mathematical models for hydrological forecasting, with appropriate meteorological forecasting inputs, can significantly improve the quality of flood forecasting

Improvement of systems for flood forecasting has been recognized as a key non-structural measure of flood risk management in European, international and national legal, strategic and planning framework (e.g. *2007-60-EC Directive on the assessment and management of flood risks*, the *Protocol on Flood Protection to the Framework Agreement on the Sava River Basin*, the draft *River Basin Management Plan*, which includes the first Flood Risk Management Plan (*http://www.voda.hr/hr/plan-upravljanja-vodnim-podrucjima-2016-2021*), etc.).

Following their legal and statutory obligations, Croatian Waters and Meteorological and Hydrological Service (MHS) are responsible for the development and implementation of systems for flood forecasting, which in the Republic of Croatia (HR) were not based on modern methodology (mathematical modeling) and have not been satisfactory. Mathematical models for hydrological forecasting (with appropriate meteorological forecasting inputs) can significantly improve the quality of flood forecasting, which can provide a significant reduction in the risk of flooding and more efficient operative flood defense.

Croatian Waters and MHS have begun joint development and implementation of operative systems for flood forecasting in HR based on mathematical modeling (hydrological-hydraulic simulations of forecasted flow and water levels in rivers based on the predicted temperature and precipitation derived from metheorological forecasting). The ultimate goal is to establish a system for flood forecasting in the entire territory of HR, which is planned to be achieved in the period of five years through a series of nationally and internationally funded projects.

As a first step towards the establishment of operative systems for flood forecasting in HR, through a contract with a consortium of companies Proning-DHI d.o.o. Zagreb and Danish Hydraulic Institute (DHI) from Denmark, a system for flood forecasting for the Sava and the Kupa Rivers from the border with the Repubic of Slovenia (SI) to Sisak (system "Sava and Kupa to Sisak") was developed from September 2014 to September 2015, with appropriate institutional capacity building in Croatian Waters and MHS through a process of applied training in the form of six one-week workshops. In the aspect of hydraulic modeling, the existing mathematical models of the Central Posavlje and the Central Pokuplje, which have over the years been developed by the consulting company VPB d.d. for the needs of Croatian Waters, were incorporated into the forecasting model with certain adjustments.

The Croatian flood forecasting model "Sava and Kupa to Sisak" builds on the Slovenian forecasting models developed by the Agency of the Republic of Slovenia for the Environment (ARSO) as part of the EU-funded project *Better Observation for Better Environmental Response* (*BOBER*). These cross-border connected models provide for the operative flood forecasting in the crucial part of the Sava River Basin in the Republic of Croatia, which in recent years has been frequently affected by floods (Karlovac, Velika Gorica, Sisak).

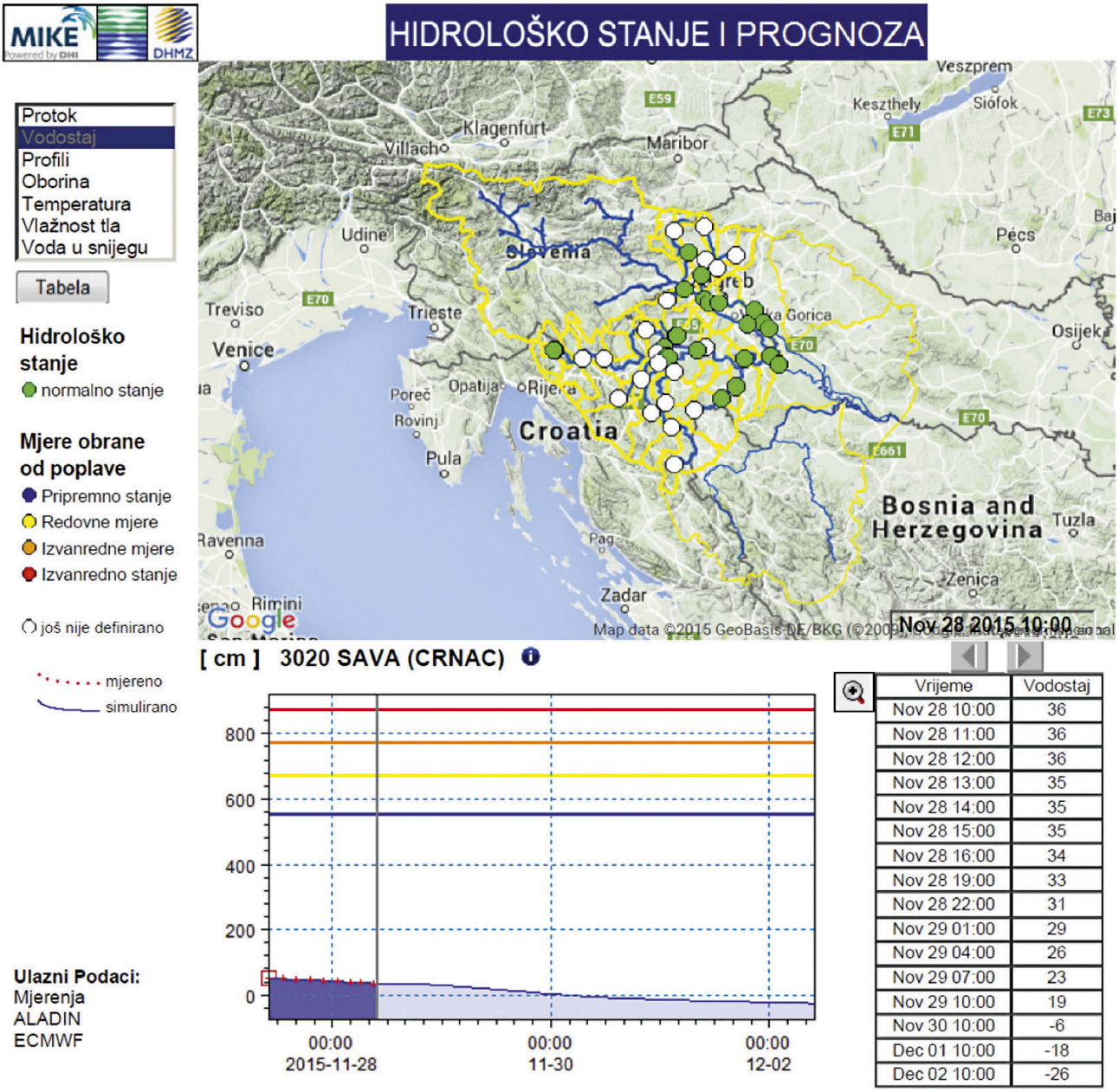
The overall goal is to establish a system of operational flow and water level forecasts at all stations listed in the *State Flood Protection Plan* (*Official Gazette 84/10*) and implementation plans related to this plan, because water levels at these stations are the basis for declaring the degree of flood protection measures (preparatory, normal, extraordinary or emergency measures).

As is the Slovenian forecasting system, the Croatian forecasting system was created using the MIKE11 software (for one-dimensional unsteady hydrological-hydraulic modeling of surface waters) with the module FF (for data assimilation and forecasting of floods).

The operative hydrological forecasting system has been developed on the basis of the existing data and based on the existing network of meteorological and hydrological stations. It should be noted that it is not expected that the completion of the activities on this first project would result in a perfect system of flood forecasting in the area concerned, and that further improvements of

The ultimate goal is to establish a system for flood forecasting in the entire territory of Croatia, which is planned to be achieved in the period of five years

Riverbed before flooding



Forecasted water levels on November 28, 2015 from the Croatian flood forecasting model "Sava and Kupa to Sisak"

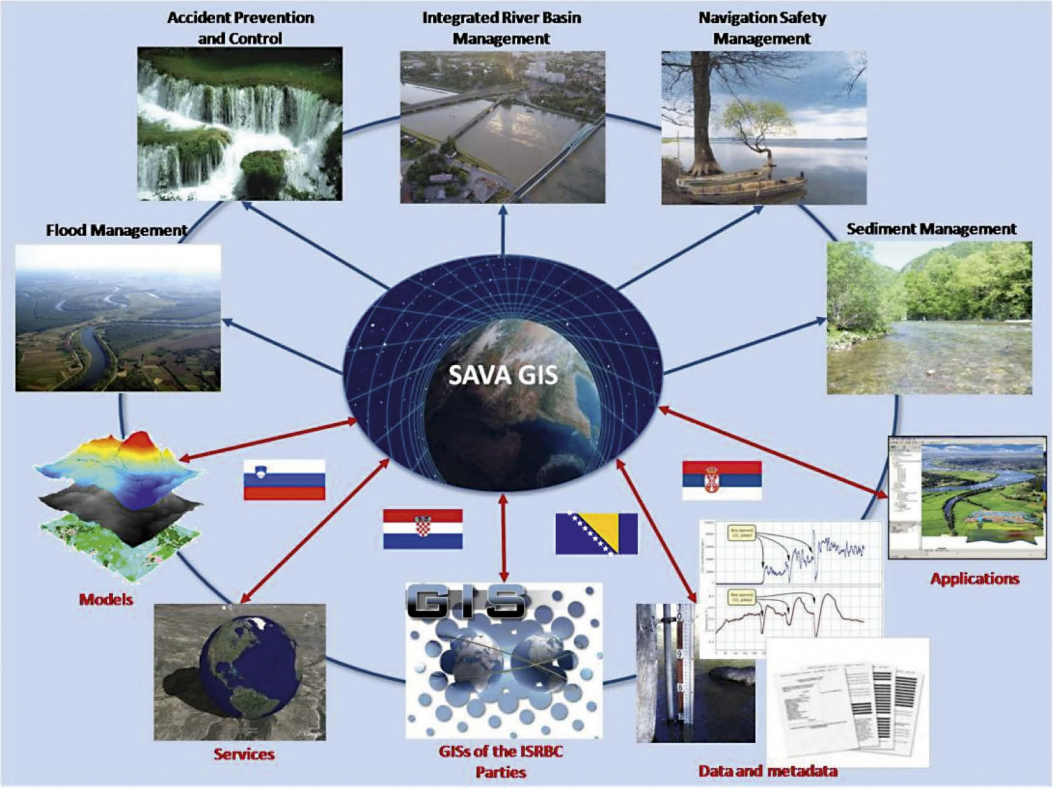
the system will be a continuous process. The establishment of the first operative system for hydrological forecasting in the area concerned, even with imperfections that can occur due to the unsatisfactory density of input data, has made a great improvement over the previous situation. It is expected that this will result in significant benefits in the management of flood risks in this particularly vulnerable area, and these benefits will continuously increase in the future by further developing and improving the system.

Following the project *Sava and Kupa to Sisak*, there is a need for further development of hydrological models and of the flood forecasting system for the Sava River Basin in HR. The next planned step is the development of hydrological models for the rest of the Sava River Basin in the territory of HR and the establishment of a preliminary operative system for flood forecasting in the Sava River Basin to the border with the Republic of Serbia (RS). In addition to the Sava River left tributaries with catchment areas in the territory of the Republic of Croatia, in the section of the Sava River between Sisak and the border with the RS, there are inflows from the Sava River right tributaries from the territory of HR and Bosnia and Herzegovina (BA). In order to establish a preliminary operative system for flood forecasting in the Sava River to the border with RS in the shortest possible time, in cooperation with the relevant institutions of BA, preliminary forecasting models of the right tributaries downstream from Sisak will be developed and installed. These models will be improved in the future through appropriate national, bilateral and/or international projects, including the international project *Improving joint activities on flood management in the Sava River Basin*. This project will be funded from the WBIF fund and will be implemented under the coordination of the ISRBC. The key result of this project will be a platform that will integrate the existing national models and future additional models, and which will, inter alia, incorporate the existing and future Croatian forecasting models presented in this article.

Dr. Marijan Babić,
Croatian Waters

SAVA GIS COMMUNICATION CHANNELS FOR THE WHOLE BASIN

SAVA GIS BECOMES FUNCTIONAL



Web application allows users to view, visualize, share, edit, load and retrieve geographic information and datasets on the whole basin

The overall objective of the Sava GIS is to provide good communication channels for the ISRBC community in order to share and disseminate information and knowledge about protection of the water resources and water management activities in the Sava River Basin. This will strongly support the basin countries in further approximation to the EU environmental acquis in the field of water management. The specific objectives of the Sava GIS implementation are to provide support and assistance to the ISRBC and the basin countries in implementing the first *Sava River Basin Management* (RBM) *Plan* and all joint activities targeted for subsequent RBM cycles, as well as specific activities in flood risk management planning, by developing necessary capacities and information base - Sava Geoportal.

According to the *Sava GIS Strategy*, adopted by the ISRBC in 2008, development of the Sava GIS in three phases has been planned: setup of the core functionalities (Phase 1), development and implementation of the advanced tools, mapping and reporting services (Phase 2), and development and implementation of the advanced dynamic tools and services (Phase 3).

Implementation of Phase 1, currently under finalization, has been financially supported by the European Commission. It started in 2012, as a support to the preparation of the first *Sava RBM Plan*, while the remaining activities were implemented in 2014 and 2015.

Hardware for the Sava GIS (data and application servers) has been purchased, and software (operating system software, relational database management system software, and GIS and Web GIS application software) has been purchased, installed and tested within Phase 1.

For establishment of the Sava GIS core functionalities, two database models – River Basin Management and Flood Risk Management – were designed and structured in accordance with related EU directives, as well as the *WFD Reporting Guidance 2016 v4.9*, the *Flood Directive Reporting Guidance 2013*, *INSPIRE Directive* and professional requirements. It is planned to expand this component, in future, for other areas of work of the ISRBC (see figure).

Web application for editing, loading and retrieving data and metadata is established and allows to registered users viewing, visualizing, sharing and retrieving geographic information and datasets stored in the database for the whole basin. It includes a user management part for data and metadata editing and loading, and will also support multilingual use (ISRBC official languages).

Sava GIS Geoportal with its functionalities is established as a scalable and flexible tool, which implements open source technologies. The focus of the Sava Geoportal is spatial and alphanumerical data visualization and management, as well as open web services like WFS and WMS. Once the system is fully functional, interested parties (general public, private entities, government institutions, etc.) will be able to overview available datasets through the usage of the Sava Geoportal and its submodules (metadata catalogue, Sava HIS). The Sava GIS Geoportal can be reached at: *http://savagis.org/*.

For efficient and effective implementation of the Sava GIS, all the activities have been performed in the framework of the ISRBC expert groups, with involvement of main stakeholders through consultation workshops (organized in March and September 2015), and in communication with the ICPDR, in order to ensure compatibility with the Danube GIS and avoid duplication of work.

Mirza Sarač,
Secretariat of the ISRBC

ADVANCES NEW PLATFORM FOR IMPROVED INFORMATION EXCHANGE

HYDROLOGICAL INFORMATION SYSTEM FOR THE SAVA RIVER BASIN

The Sava HIS presents a step forward by integrating previously developed tools for the hydrological and meteorological data exchange at the Sava River Basin level

In May 2014, disastrous floods occurred in the Sava River Basin, leading to substantial damages and life losses. Such damages clearly demonstrated the need for improved flood management, both through structural and non-structural measures.

In order to further improve flow of information on the hydrological situation in the basin. The International Sava River Basin Commission (ISRBC), with the financial support from the International Commission for Protection of Danube River (ICPDR) and Finish Hydro-meteorological Institute, has initiated the development of the Sava Hydrological Information System (Sava HIS) as a tool for collecting, storing, analysing and reporting a sufficiently high quality data (precipitation and air temperature measurements, river water level recordings, discharge measurements and water temperature measurements). The Sava HIS presents a step forward by integrating previously developed tools for the hydrological and meteorological data exchange at the Sava River Basin level (e.g. *Hydrological Yearbooks for the Sava River Basin* available in pdf at *http://savacommission.org/publication*).

The main goals of the Sava HIS are:

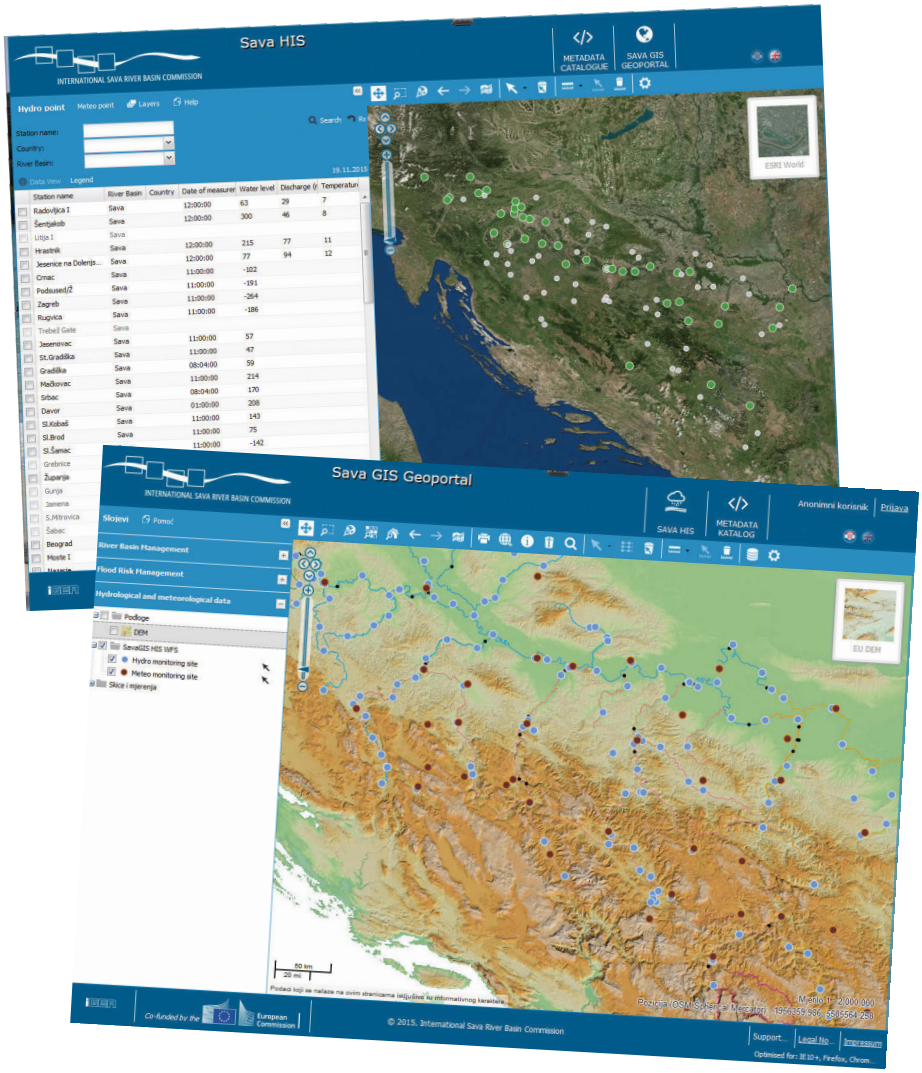
- To support the Sava countries (Slovenia, Croatia, Bosnia and Herzegovina, Serbia and Montenegro) in sharing and disseminating of hydrologic and meteorological data, information and knowledge about the water resources in the Sava River Basin;
- To enable an effective common channel for exchanging and viewing the hydrologic and meteorological data and information in emergency situations, primarily those related to flood events.

The legal background has already been established by the *Framework Agreement on the Sava River Basin* (*FASRB*) and *Protocol on Flood Protection to the FASRB*. In addition, in July 2014, the *Policy on the Exchange of Hydrological and Meteorological Data and Information in the Sava River Basin* was signed by the six national/entities hydro-meteorological services and two water agencies, as a framework for exchanging meteorological and hydrological data and information.

The Sava HIS implementation included assessment of the current hydrological and meteorological data collection and storage systems in the Sava countries, as well as current ISRBC's Sava GIS, then establishment of Sava HIS geodatabase as a part of Sava GIS database that enables storing hourly, daily and monthly time series from raw 24 hours data for 30 days, establishment of Sava HIS web-based application for real time data management, establishment of Sava HIS web-based application for processed data and metadata management, establishment of data export service via web application for further using and analyzing hydrologic and meteorological data in HydroDesktop tool and capacity building and knowledge transfer to the users (e.g. ministries, water agencies and hydro-meteorological services). Data are publicly available at http://www.savahis.org and http://www.savagis.org.

Data and information managed through Sava HIS will be used in decision-making system in all aspects of water resources management, especially in flood risk management.

Samo Grošelj,
Secretariat of the ISRBC



FIFTH EDITION EUROPEAN CODE FOR INLAND WATERWAYS

ADDITIONAL RULES FOR HIGHER NAVIGATION SAFETY

These rules apply not only to freight vessels but also to passenger vessels, ferry-boats, barges, convoys, and pleasure crafts

The task of unifying rules at a pan-European level in order to create efficient and sustainable inland water transport in Europe is a priority of the Working Party on Inland Water Transport of the UNECE Inland Transport Committee (SC.3). When SC.3 was created in 1956, it was acknowledged that in order to facilitate traffic and ensure safety on inland waterways harmonised navigation rules were essential. The work began with the formation of a special group of experts on the Standardization of *Rules of the Road and Signs and Signals in Inland Waterways* in 1960, which led to the creation and adoption two years later of the *European Code for Inland Waterways* (*CEVNI*). Since that time SC.3 has acted as the guardian of these rules through the activities of a dedicated Group of Experts.

CEVNI contains the rules applicable to the traffic on inland waterways. These rules apply not only to freight vessels but also to passenger vessels, ferry-boats, barges, convoys, and pleasure crafts.

The *CEVNI* rules detail in particular the marks for the vessels identification, visual signs such as flags and lights, sound signals and radiotelephony for communication on waterways, signs and markings on waterway infrastructure such as bridges and banks, rules of the road on meeting, crossing and overtaking, berthing rules, signalling and reporting requirements, and prevention of pollution of water and disposal of waste. It also contains several annexes which illustrate markings, signs and other dispositions concerning waterway navigation.

In the more than 50 years since its inception, the *CEVNI* has been constantly updated to meet newly presented challenges (for example, with the introduction of Chapter 9 – Regional and National Special Requirements in 2009), while making sure that these updates are harmonised with the *European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway*.

The provisions of *CEVNI* are not binding; however, provisions of the previous, fourth edition of *CEVNI* have been introduced into the national legislation of at least 14 European countries and its use is spreading across the UNECE region. The latest edition of the *Code* was adopted in its fifth revision at the fifty-eighth session of SC.3 in November 2014. In this revision, the Working Party and its expert group on *CEVNI* have taken into account best practices from the existing traffic regulations of the river commissions and UNECE Member States. In particular, this revision updates several articles in relation to small craft, radiotelephony, Inland Automatic Identification System (AIS), prevention of pollution of water and introduces an annex on safety checklist for bunkering fuel.

The *CEVNI* Rules are traditionally based on the relevant regulations of the River Commissions for the Rhine and the Danube, adjusted to the pan-European scope of the code.

The Working Party will continue to monitor the implementation of the fifth revised edition of *CEVNI* among UNECE Member States and River Commissions, and for this purpose a revised questionnaire and a status document are proposed for discussion at the fifty-ninth session of SC.3. In addition, to complement the work on *CEVNI*, it has been suggested that the Working Party considers preparing a database of all relevant signs and markings across Member States to increase their international recognition and understanding.

Victoria Ivanova,
Secretary of the UNECE
Inland Transport Committee,
Working on Inland Water Transport (SC.3)

WE INTRODUCE **ZASAVICA** SUCCESSFUL INVESTMENT OF THE VAHALI COMPANY

RIVER CRUISERS ARE BUILT IN SERBIA

Luxurious ships are built in the shipyard, as well

All ships are built exclusively for foreign clients, and the goal is to have them completely finished at Zasavica

Vahali company has successfully worked in the Netherlands for more than 90 years, as well as for 10 years in Serbia. Thanks to decades of experience of the Dutch parent company, Vahali has managed to make a very good team of experts for shipbuilding during the 10 years of operation in Serbia. In this context, the shipbuilder now have experienced employees in all areas covered by the company, such as design, procurement, cutting, work with steel, painting, equipment, logistics and more. Employees of the company are highly respected, so the great efforts are constantly made to provide the best possible conditions for their work, safety and good working environment. Their motivation, good organization of work, and compliance with deadlines provide the quality that is the basis for customers` satisfaction.

The production of Vahali company is primarily focused on the needs of river tourism traffic, so the geographical position of Serbia, qualified labor force and tradition in shipbuilding were recognized as the key potential for its further development.

Since taking over the shipyard "Sava" in 2013, Vahali has fully restored old shipyard in line with the latest trends in technology and design. The first hall became operational in 15 days since the new owner of the shipyard moved in. Step by step, within a year, all existing and new halls were fully equipped and operational.

Production has been established and now ships leave from Zasavica to Holland with fully equipped machine room, set pipelines, insulation, windows and pro-chrome pleated bulkheads. Thus, various domestic companies have been able to participate in projects of Vahali company. All the same, on the launched ships were installed air conditioning and ventilation systems, cable tracks, as well as set partitions walls in hotel facilities of the ships.

All ships are made exclusively for foreign clients. Unfortunately, there is no market for new ship building in Serbia yet, primarily because the financing of such projects is not recognized and developed enough.

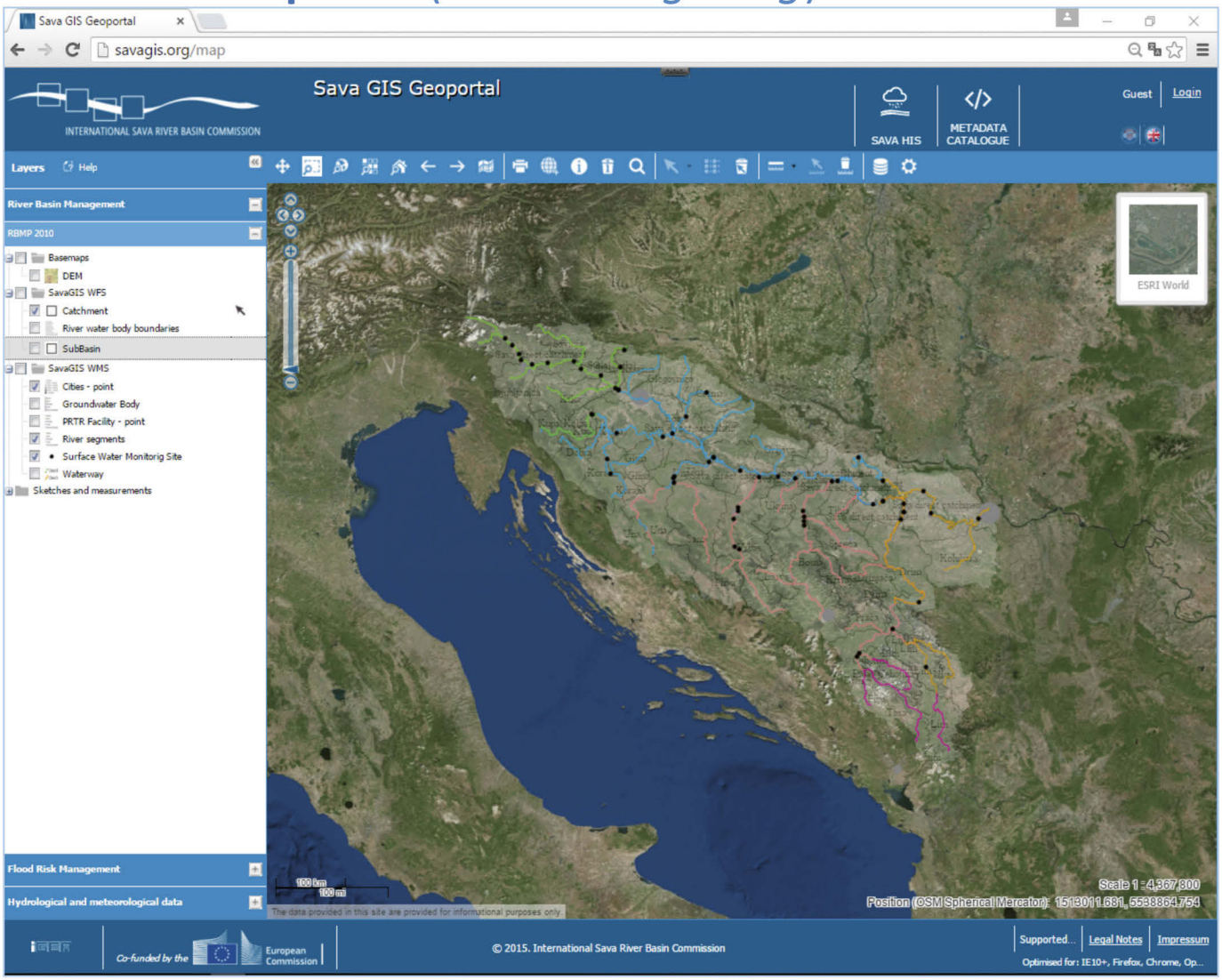
However, the company is able to offer certain services, such as inspection checks and repair of the ships and other vessels, to meet needs of the domestic market.

The aim of the shipyard Vahali is to increase the level of ship equipment so they could be completely finished in Serbia in a due time. An important goal is the education of young generation in the shipbuilding industry, bearing in mind the lack of the appropriate staff in this field. Therefore, the plan is to set up its own training center in Mačvanska Mitrovica and that project is currently under development. The company's goal is to successfully meet requirements of the most demanding customers through training of young people and the constant improvement of the production process.

Kristina Anđelković, manager
Vahali Production Services Ltd.,
Zasavica, Serbia

Shipyard 'Zasavica' in Mačvanska Mitrovica

Sava GIS Geoportal (*www.savagis.org*)

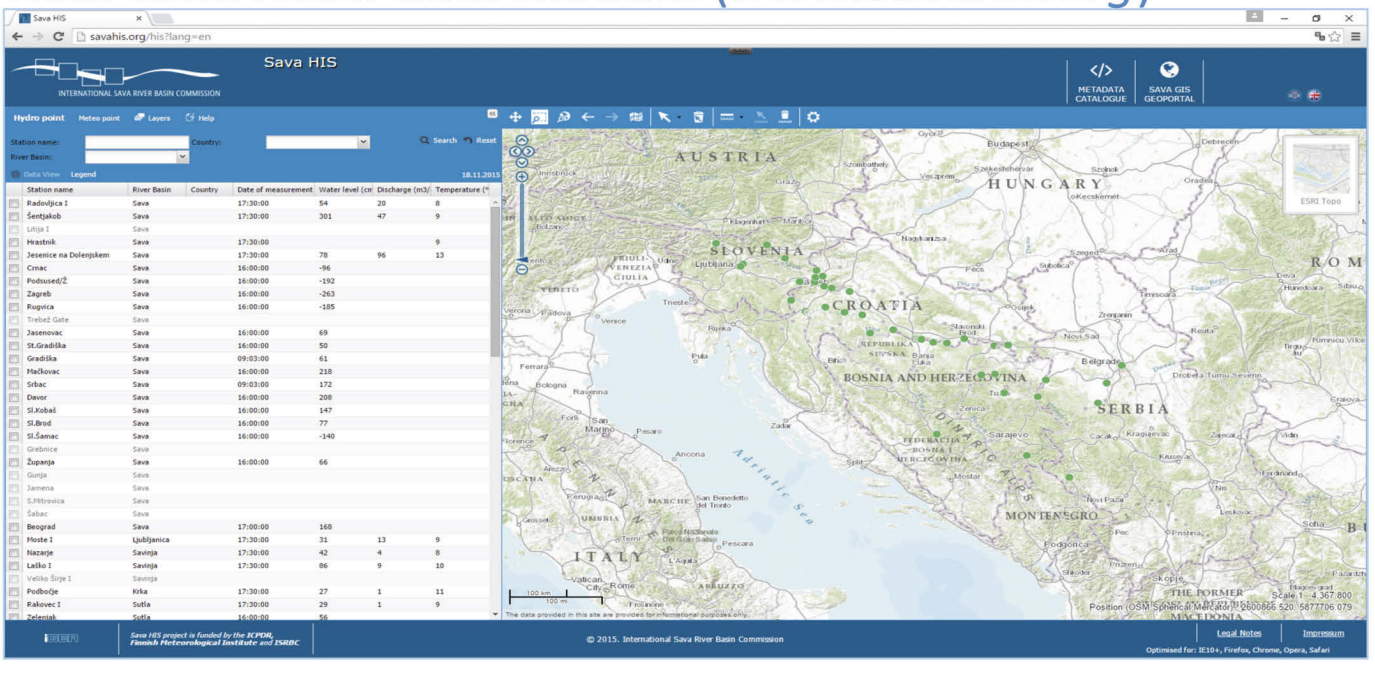


Sava Geoportal is a gateway to geospatial resources (data, information, repository that host data and information). It enables discovering, viewing and accessing geospatial information and services to be made available to the user as a matter of routine. Sava Geoportal facilitates sharing, integration, and use of geographic information across the ISRBC member countries, stakeholders and general public.

Public users can perform overview of public spatial data, viewing attributes and features, filtering by attributes or spatial data, and exporting areas of map to PDF or PNG formats.

Registered users can perform all actions as public users with the additional option of data upload and download.

Real-time H&M data module (*www.savahis.org*)



River Basin Management data

Surface waters
Ground waters
Protected areas
Significant water management issues
Monitoring
...

Flood Risk Management data

Preliminary flood risk assessment
Areas with potentially singnificant flood risk
Flood hazard and risk maps
Historical floods
Flood protection structures

Hydrological data (processed)

Water stage
River discharge
Water temperature
Suspended sediment discharge
Ice condition

Meteorological data (processed)

Precipitation
Air temperature
Snow depth
Relative humidity
Wind (speed and direction)
Evaporation
Solar radiation
Sunshine
Atmospheric pressure

Hydrological data (real-time)

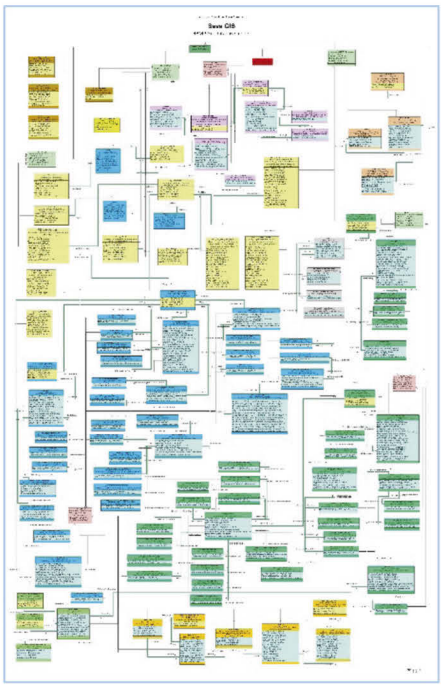
Water stage
River discharge
Water temperature

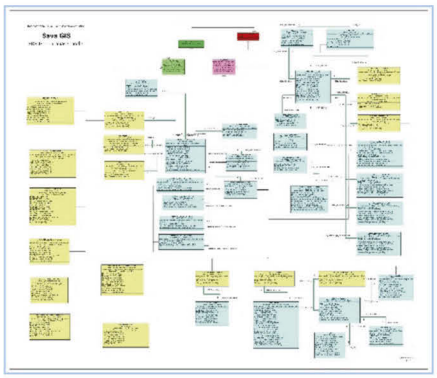
Meteorological data (real-time)

Precipitation
Air temperature

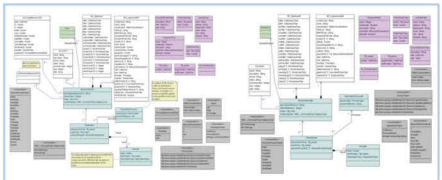
Web-application for hydrological and meteorological data in near real-time, as a part of the Sava GIS Geoportal, has the purpose to enable an effective common channel for exchanging and viewing, filtering and analyzing the hydrological and meteorological data and information in normal and emergency situations, primarily those related to flood events.

Sava GIS databases



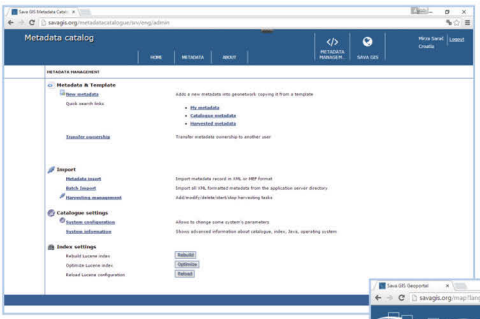


Database models for River Basin Management and Flood Risk Management are created based on the *WFD Reporting Guidance 2016 v.4.9*, the *FD Reporting Guidance 2013*, the *INSPIRE Directive* and professional requirements. The RBM database contains 2 feature datasets and 28 feature classes, 92 tables. The FRM database contains 1 feature dataset and 17 feature classes, 26 tables.



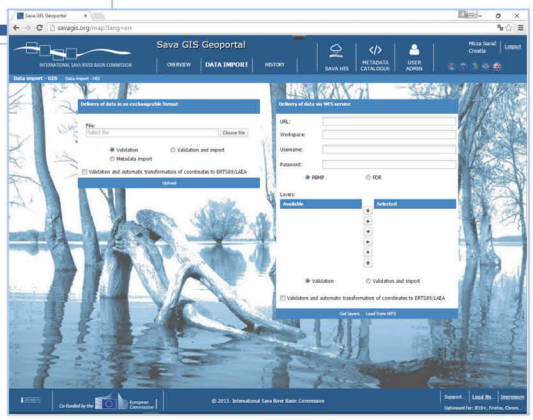
Database model for Hydrological and Meteorological Data Management is created based on the *INSPIRE Directive* and professional requirements, and is compliant with Water ML 2.0 part 1: Time series model implementation.

Sava GIS data and metadata management



Sava GIS web application for data and metadata management allows users to view, visualize, share, edit, load and retrieve geographic information and datasets on the whole basin.

Data sharing/reporting is supported via upload of FGDB format or via WFS of GML formats.



Medata catalogue is based on Geo Network. It allows search of spatial datasets and services based on their metadata records.

Metadata sharing/reporting is supported manually via editor, via web services registration, or via importing from external resource as XML file or harvesting.

Administration module is implemented for user authentication, authorization and management of entire Sava GIS and allows/disallows access to any function of each module separately. Administration module is based on Geo Fence authentication/ authorization engine for Geo Server which includes advanced capabilities for accessing and restricting data available over OGC services.

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INTERNATIONAL SAVA RIVER BASIN COMMISSION
isrbc@savacommission.org
www.savacommission.org

URADNO GLASILO ISRBC
ŠT. 16, NOVEMBER 2015

SAVSKI VESTNIK

INTERVJU: Dr. EVA MOLNAR,
Promet po celinskih vodah pomeni trojno zmago - za promet, okolje in gospodarstvo

- Izvajanje Okvirnega sporazuma o Savskem bazenu: Pogled Republike Slovenije
- Sava GIS & Sava HIS sta funkcionalna
- Izboljšave pri obvladovanju poplavne ogroženosti

INTERNATIONAL SAVA RIVER BASIN COMMISSION

KAZALO

Nizek vodostaj reke

SPOŠTOVANE BRALKE IN BRALCI,

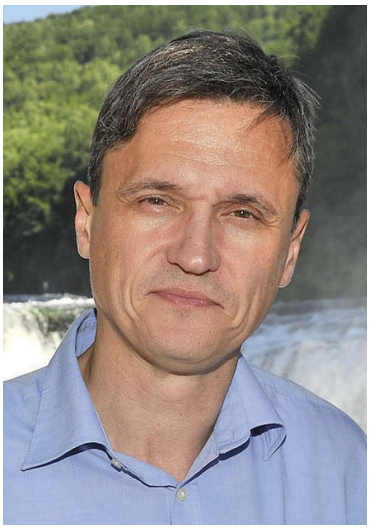
V juniju 2015 je Mednarodna komisija za Savski bazen (ISRBC) praznovala 10. obletnico svojega delovanja. Smiselno je, da se po tem pomembnem jubileju naše organizacije zazremo nazaj in povzamemo glavne dosežke in spoznanja, pridobljena pri izvajanju *Okvirnega sporazuma o Savskem bazenu (OSSB)*, ter preučimo prihodnje izzive in cilje.

Menim, da bi se večina deležnikov strinjala, da je prevladujoč občutek v zvezi z dosedanjimi rezultati sodelovanja v okviru ISRBC ponos.

ISRBC je dosegla dober položaj v Savskem bazenu, tako na visoki politični, kot na strokovni ravni. Na politični ravni so tri ministrska zasedanja, ki so potekala na povabilo ISRBC v obdobju 12 mesecev, jasno pokazala razumevanje vlad iz držav pogodbenic za koristi sodelovanja, ki ga usklajuje ISRBC, njihovo veliko spoštovanje do doseženih rezultatov ter očitno podporo za prihajajoče dejavnosti. Na strokovni ravni je ISRBC organizirala in soorganizirala številne dogodke, z namenom posvetovanja, krepitve zmogljivosti ter izobraževanja različnih skupin deležnikov iz vladnega, nevladnega, akademskega in poslovnega sektorja. S tem se je dvignila raven ozaveščenosti o ISRBC, kot o jedru regionalnega sodelovanja.

Hkrati je bilo vzpostavljeno tudi dobro sodelovanje z mednarodnimi in državnimi organizacijami v širšem geografskem merilu – na ravni donavske, evropske, OVSE in UNECE regije ter na svetovni ravni. Z obsežno komunikacijo in sodelovanjem z organizacijami Združenih narodov in njihovimi specializiranimi agencijami, institucijami EU, mednarodnimi rečnimi komisijami in finančnimi institucijami, kakor tudi bilateralnimi donatorji ter z njihovo podporo pri izvajanju dejavnosti ISRBC in projektov, povezanih z *OSSB*, je ISRBC dobila ugleden položaj tudi izven Savskega bazena. To je bilo opaziti na dogodkih, kot so 7. svetovni forum o vodi, konferenca Europe INBO 2015 in 7. zasedanje pogodbenic Konvencije o varstvu in rabi čezmejnih vodotokov in mednarodnih jezer UNECE, če jih omenimo le nekaj iz leta 2015.

Precejšen napredek je bil dosežen na področju dveh elementov, ki sta ključna za uspešno sodelovanje na področju voda v porečju. Z uskladitvijo nacionalnih predpisov s predpisi EU in z razvojem dodatnih protokolov k *OSSB*, se je bistveno izboljšalo upravljanje voda in pravilnik o notranji plovbi. V tem letu je začel veljati en protokol, za dva druga protokola pa je bil dosežen napredek v postopku ratifikacije. Poleg tega je bila z razvojem GIS, HIS in RIS za Savo vzpostavljena dobra podlaga za izmenjavo informacij, kar je eno od osnovnih načel sodelovanja v okviru *OSSB*. Večina teh dosežkov je obravnavana v tej izdaji Savskega vestnika.



Dosedanji uspeh nas je privedel do točke, ki nam zagotavlja boljši pregled in nam pomaga pri spoznanju, da nas v prihodnosti čaka še veliko dela. Ključni izzivi, ki so pred nami, vključujejo prihajajoče izvajanje bistvenih dejavnosti na področju obvladovanja poplav – pripravo prvega *Načrta za obvladovanje poplavne ogroženosti za Savski bazen* in razvoj sistema za napovedovanje poplav in opozarjanje pred poplavami za Savski bazen ter nujno obnovo vodnih poti reke Save. Zagotovo bomo nadaljevali s prizadevanji v smeri nadaljnjega izboljšanja učinkovitosti postopka izvajanja *OSSB*, medsektorskega usklajevanja in sodelovanja, sodelovanja javnosti in udeležbe deležnikov, morda tudi s spremembo sporazuma.

Pričakujemo da se bo v prihodnjih desetih letih izkazalo, da je bilo to prvo obdobje zgolj začetek!

Upam, da se vam bo zdela ta izdaja Savskega vestnika zanimiva in poučna. Prijetno branje vam želim!

Dr. Dejan Komatina,
Sekretar Savske komisije

KOLOFON

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Mednarodna komisija za Savski bazen; Zagreb (Hrvaška), Kneza Branimira 29
Tel./Fax: +385 1 488 6960, 488 6986; E-mail: isrbc@savacommission.org
Odgovorni urednik: Dr. Dejan Komatina
Pomočnik urednika: Marko Barišić
Uredniški odbor: Meliha Lepara (BA), Ivana Plepel (HR), Dragana Milovanović (RS), Barbara Potočnik (SI)
Oblikovanje in tisk: Optimum Dizajn d.o.o.
Foto na naslovni strani: *Srebrni gozd - Uroš Kojić*

Savski Vestnik je uradno glasilo Mednarodne komisije za Savski bazen (Savka komisija). Glasilo izhaja dvakrat letno v dvojezični obliki – v angleščini in v enem izmed uradnih jezikov Savske komisije v vsakem izvodu. Namen glasila je predstavitev najzanimivejših zadev vezanih na izvajanje Okvirnega sporazuma o Savskem bazenu ter seznanitev s koristnimi informacijami, kar omogoča boljšo komunikacijo med deležniki, širšo javnostjo in Savsko komisijo, s čimer se promovirajo vrednote in potenciali Savskega bazena.

Savski Vestnik je dostopen na spletni strani Savske komisije:
www.savacommission.org.

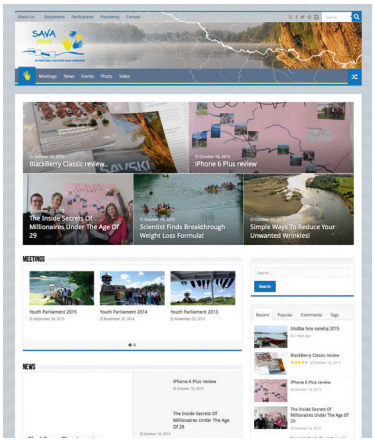
NOVICE IN OBVESTILA

Krepitev sodelovanja javnosti preko Savskega sveta za vode in Parlamenta mladih

Trajnostno upravljanje voda v skladu z *OSSB* in EU *ODV* zahteva učinkovito sodelovanje javnosti iz obrežnih držav na vseh ustreznih ravneh.

Ob podpori ameriške vlade, načrtuje Savska komisija pospeševati široko udeležbo deležnikov v smeri zagotavljanja svetovanja o vprašanjih, pomembnih za izvajanje *OSSB*, preko Savskega sveta za vode (SSV). Več kot 50 institucij/organizacij, vključno z univerzami/raziskovalnimi inštituti, zavarovanimi območji, entitetnimi/regionalnimi ali lokalnimi oblastmi, vodnimi agencijami, zasebnim sektorjem in nevladnimi organizacijami iz porečja – bodočimi člani SSV – se bo zbralo na ustanovnem sestanku SSV, načrtovanem v februarju 2016.

Glede na uspeh Parlamenta mladih iz Savskega bazena, se načrtuje krepitev udeležbe mladih z razvojem "mladinskega kotička" na spletni strani Savske komisije. V ta namen vabimo mlado populacijo, da uporabi to novo orodje Savske komisije za izmenjavo informacij o svojih dejavnostih in projektih, povezanih z rabo in varstvom voda.



SAVSKA KOMISIJA JE PODPISALA PARIŠKI PAKT

Glede na osrednji pomen vode za klimatske spremembe je Mednarodna mreža organizacij za povodja (INBO), v sodelovanju z UNECE in drugimi partnerji, pripravila dokument, ki poziva k ukrepanju na področju prilagajanja podnebnim spremembam v porečjih – *Pariški pakt za vodo in za prilagajanje podnebnim spremembam v povodjih rek, jezer in vodonosnikov*. Ta nezavezujoči dokument vsebuje opis konteksta in splošnih načel za prilagajanje podnebnim spremembam v povodjih, seznam obveznosti in prilogo s predlogo za predstavitev konkretnih projektov na tem področju.

Pakt bo predstavljen 2. decembra na 21. zasedanju Konference pogodbenic (COP 21) Okvirne konvencije Združenih narodov o podnebju v Parizu, na katerem bo pol dneva namenjenega vodi in prilagajanju podnebnim spremembam.

Do sedaj je bil *Pariški pakt* podpisan s strani 279 vlad, mednarodnih organizacij, donatorjev, nacionalnih in čezmejnih organizacij za povodja, lokalnih oblasti, civilnih družb in podjetij iz vsega sveta. Savska komisija se je tej skupini pridružila s podpisom dokumenta na 7. zasedanju pogodbenic *Konvencije o varstvu in rabi čezmejnih vodotokov in mednarodnih jezer UNECE*, ki je potekalo v Budimpešti (17.-19. november 2015).

PRIHAJAJOČI DOGODKI SAVSKE KOMISIJE

- 5. konferenca o trajnostnem razvoju Savskega bazena in o vplivu podnebnih sprememb (Zagreb, 3.- 4. dec. 2015)
- Tečaj Sava GIS (Zagreb, 9. dec. 2015)
- Tečaj Sava HIS (Zagreb, 10. dec. 2015)
- 40. zasedanje Savske komisije (Zagreb, 14. dec. 2015)
- 28. sestanek SSS za poplave (Zagreb, 15.-16. dec. 2015)
- 9. sestanek *Ad hoc* SS za finančne zadeve (Zagreb, 17. dec. 2015)
- 41. zasedanje Savske komisije (Beograd, 16. feb. 2016, okvirno)
- Ustanovni sestanek Savskega sveta za vode (Beograd, 17. feb. 2016, okvirno)

INTERAKCIJA Z DELEŽNIKI

Savska komisija je v preteklih šestih mesecih organizirala in soorganizirala številne dogodke, ne le zaradi zagotavljanja možnosti *posvetovanja* z različnimi skupinami deležnikov, ampak tudi, da bi nadaljevala s pomembnima elementoma misije ISRBC – *s krepitvijo zmogljivosti in izobraževanjem:*

- Sestanek o implementaciji sistema za napovedovanje poplav in opozarjanje pred poplavami v Savskem bazenu (Zagreb, 10. junij 2015)
- Delavnica o udeležbi deležnikov v 2. ciklu načrtovanja NUV za Savo (Zagreb, 18. junij 2015)
- Delavnica o monitoringu sedimenta v reki Savi (Zagreb, 3.- 4. sept. 2015)
- 6. sestanek o izvajanju *Skupne izjave o vodilnih načelih za razvoj plovbe po celinskih vodah in zaščite okolja v Donavskem bazenu* (Dunaj, 10.-11. sept. 2015)
- 2. delavnica o GIS za Savo (Zagreb, 21. sept. 2015)
- 10. sestanek kapitanov pristaniških kapitanij reke Save (Sisak, 28.-29. okt. 2015)
- Delavnica o ukrepih za obvladovanje poplavne ogroženosti in povezave z *EU ODV* (Zagreb, 11.-12. nov. 2015)

Več informacij o dogodkih si lahko ogledate na spletni strani www.savacommission.org.

MINISTRSKA RAZPRAVA O REGIONALNEM SODELOVANJU NA PODROČJU VODA

Leto dni po katastrofalnih poplavah v porečju, je 6. julija 2015 v Brčkem, na povabilo ISRBC, potekalo srečanje ministrov, pristojnih za vprašanja s področja voda in plovbe po celinskih vodah, ter drugih funkcionarjev iz Bosne in Hercegovine, Hrvaške, Srbije in Slovenije, na katerem so razpravljali o sodelovanju na področjih, ki jih zajema *Okvirni sporazum o Savskem bazenu* (*OSSB*).

Na sestanku je bil podpisan *Protokol k OSSB o upravljanju s sedimentom*, ki predstavlja trdno pravno podlago za skupno delo držav v smeri trajnostnega upravljanja s sedimentom v porečju, vključno s pripravo *Načrta za upravljanje s sedimentom* in redno izmenjavo informacij med državami na področju odstranjevanja sedimenta z rečnega dna, kot določa *protokol*. Dogodek je bil izkoriščen tudi kot priložnost za podpis dvostranskega sporazuma med Bosno in Hercegovino ter Hrvaško o uporabi vode iz javnih vodovodnih sistemov, ki prečkajo državno mejo.

Na sestanku je bil obravnavan tudi nadaljnji napredek pri regionalnem sodelovanju na področju obvladovanja poplav, s posebnim poudarkom na dveh prihajajočih skupnih dejavnostih, ki se bosta izvajali preko ISRBC – priprava *Načrta za obvladovanje poplavne ogroženosti* in razvoj usklajenega sistema za napovedovanje poplav in opozarjanje pred poplavami za celoten Savski bazen.

Visoki predstavniki držav so potrdili zavezo, da bodo aktivno sodelovali pri izvajanju navedenih dejavnosti, da bi čimprej dosegli učinkovito zmanjšanje tveganja in škodljivih posledic poplav v prihodnosti.

Udeleženci sestanka so proučili tudi stanje izvajanja obnove in razvoja prometa ter plovbe po reki Savi in obravnavali nadaljnje korake, ki so potrebni, da bi dosegli dogovorjeno raven plovnosti reke Save v bližnji prihodnosti.

ZAČETEK VELJAVNOSTI PROTOKOLA O POPLAVAH

Protokol k Okvirnemu sporazumu o Savskem bazenu o varstvu pred poplavami, ki predstavlja temeljni dokument za krepitev sodelovanja držav iz porečja na področju varstva pred poplavami, začne veljati 27. novembra 2015.

Protokol o varstvu pred poplavami je namenjen urejanju vprašanj v zvezi s trajnostnim varstvom pred poplavami v Savskem bazenu, s ciljem, da se prepreči oz. omeji nevarnost ter zmanjšajo oz. odpravijo negativne posledice poplav. *Protokol* poudarja pomen usklajevalnih ukrepov ter dela in dejavnosti, katerih cilj je zmanjšanje poplavne ogroženosti v celotnem porečju, in izvajanje teh dejavnosti v skladu z načelom "pravila o neškodovanju". Da bi prispevali k zmanjšanju škodljivih posledic poplav, predvsem za življenje in zdravje ljudi, okolje, kulturno dediščino, gospodarske dejavnosti in infrastrukturo, so se podpisnice dogovorile, da bodo sodelovale pri izvajanju zgoraj navedenih dejavnosti. *Protokol* predstavlja trdno pravno podlago za izvajanje vseh dejavnosti, o katerih so se dogovorile savske države, preko njihove skupne platforme – Mednarodne komisije za Savski bazen.

Starina in smaragd - Dušan Stegić

Sodelovanje za ohranitev mostu Mehmed-Paša Sokolovića v Višegradu

Protokol o sodelovanju med Vlado Republike Srbije in Svetom ministrov Bosne in Hercegovine o ohranitvi mostu Mehmed-Paša Sokolovića v Višegradu je bil podpisan 4. novembra 2015 v Sarajevu. Sodelovanje bo vključevalo izmenjavo informacij med državama o dejavnostih, ki vplivajo na vodostaje, ki bi lahko ogrozili stabilnost mostu, ter delo ustanovljene mešane skupine, ki bo predlagala ukrepe za ohranitev stabilnosti. *Protokol*, katerega pripravo je omogočila ISRBC, predstavlja korak naprej pri izvajanju *OSSB* ter sklepe Odbora za svetovno dediščino (UNESCO) v zvezi s to znamenito konstrukcijo.

INTERVJU Dr. EVA MOLNAR, DIREKTORICA ODDELKA
ZA TRAJNOSTNI PROMET PRI EKONOMSKI KOMISIJI ZDRUŽENIH NARODOV ZA EVROPO

PROMET PO CELINSKIH PLOVNIH POTEH POMENI TROJNO ZMAGO - ZA PROMET, OKOLJE IN GOSPODARSTVO

Prepričana sem, da je kljub dejstvu, da je konkurenca dobra za storilnost, čas za osredotočanje na intermodalno sodelovanje in uporabo najboljših vidikov posameznih načinov prevoza


Eva Molnar: Pomembna vloga reke Save

Kaj je ključni vidik dela UNECE na področju plovbe po celinskih vodah?

Odbor za notranji promet UNECE preko svoje Delovne skupine za prevoz po celinskih vodah (SC.3) zagotavlja forum za izmenjavo izkušenj in najboljših praks v sektorju za notranji promet in spodbuja usklajen razvoj infrastrukture celinskih plovnih poti, opredeljuje strateška priporočila za skupni režim plovbe na vseevropski ravni in krepi institucionalni in zakonodajni okvir prevoza po celinskih vodah z uporabo ustreznih mednarodnih konvencij.

Zahodna in jugovzhodna Evropa sta bogati z rekami, ki so plovne celo leto, npr. Ren in Donava, pa tudi reke Rona, Sava in Mozela. Tudi vzhodna Evropa se ponaša z velikimi rekami, kot sta Dneper in Volga. Vendar pa je tudi v tem delu sveta promet po celinskih vodah premalo izkoriščen in igra, razen na Nizozemskem, precej skromno vlogo, kljub močno obremenjenim in preobremenjenim prometnim infrastrukturam, zlasti glavne cestne povezave sever-jug in železniških koridorjev, kjer se prevozne potrebe naših sodobnih gospodarstev vse bolj krešejo s potrebami po mobilnosti prebivalstva. Seveda drži, da sistem notranje plovbe v Evropi ni tako gost kot cestno in železniško omrežje, in da z ladjo ni mogoče pripluti čez Alpe, zato torej prevoz po celinskih vodah ni vsestranska rešitev za vse naše prevozne potrebe. Menim pa, da je očitno, da napovedano povečanje evropskega tovornega prometa - 30 odstotkov v naslednjem desetletju - kljub nedavni upočasnitvi - ne bo mogoče brez maksimalne izrabe vseh obstoječih načinov kopenskega prevoza in infrastruktur. Kot eno naših glavnih nalog zato vidim spodbujanje mednarodnega sodelovanja med državami, ki bi privedlo do ugodnejših poslovnih pogojev za plovbo po celinskih vodah.

Nakladanje blaga na rečnih dokih - Krešimir Šapina


Rečni promet je stroškovno učinkovit

Na voljo so velike priložnosti, saj ima prevoz po celinskih vodah veliko ponuditi:

- Kot prvo, nudi neizkoriščene zmogljivosti, ki so na voljo 24 ur na dan, 7 dni v tednu. To seveda ne drži vedno za celinske plovne poti v severni in vzhodni Evropi, kjer je več mesecev v letu zaradi ostrih vremenskih razmer potrebno zagotoviti alternativne možnosti prevoza.
- Kot drugo, pa je prevoz po celinskih vodah varen, prilagodljiv, zanesljiv in okolju prijazen način prevoza.

Kaj je torej potrebno, da bi se raziskale te priložnosti?

Neizkoriščene zmogljivosti in prijaznost do okolja niso dovolj. Ladijski prevozniki morajo biti prepričani, da jim prevoz po celinskih vodah zagotavlja konkurenčne storitve. Ladjedelci morajo biti prepričani, da imajo trg, in da lahko postanejo inovativni. Rečna pristanišča morajo biti prepričana, da lahko postanejo intermodalni terminali prihodnosti. Operaterji bi se morali začeti bolj zavedati gospodarskih in trgovinskih trendov, da bi lahko ponudili storitve novi vrsti strank in slediti spremembi paradigme v gospodarstvu.

Vlade imajo pri omogočanju tega zelo pomembno vlogo, zagotoviti pa morajo tudi potrebna sredstva. Poleg tega morajo vlade, skupaj z industrijo in civilno družbo, ponuditi mehanizme za celostni pristop k trajnostnemu prevozu po celinskih vodah: pristop, ki presega interese posameznikov in lokalne interese ter ponuja tehnične rešitve, ki zmanjšujejo lokalne posege v rečne struge in kanale in povečujejo splošno trajnostnost našega prevoznega sistema. Prepričana sem, da lahko prevoz po celinskih vodah pomeni trojno zmago, saj prinaša koristi za promet, naše zdravje in okolje, kakor tudi za naše gospodarstvo.

Vrsto let se je veliko govorilo o potrebi po prevozu nekaterih delov blaga z rečnimi ladjami, namesto s tovornjaki. Je bila ta možnost uspešna? In če je bila, do kakšne mere?

Modalna porazdelitev v Evropi (danes se 6% prevoza vsega blaga v Evropski uniji izvaja z rečnimi plovili in konvoji, medtem ko cestni promet pokriva 76% in železniški 18%) in v mnogih drugih delih sveta je zaskrbljujoča in očitno je, da obstaja potreba po prenosu tovora s cest na železnico, celinske vode ali na kratke prevoze po morju, ter na prehod z uporabe avtomobilov na uporabo javnega prevoza. Prepričana sem, da je kljub dejstvu, da je konkurenca dobra za storilnost, čas za osredotočenje na intermodalno sodelovanje in uporabo najboljšega vidika posameznih načinov prevoza. Promet po celinskih vodah na primer ponuja številne prednosti, kot so varnost, nizki okoljski stroški, časovna zanesljivost, nizki infrastrukturni stroški, visoka zmogljivost in možnost za intermodalni prevoz.

Opozoriti pa velja, da niso vse države UNECE s celinskimi plovnimi potmi države članice Evropske unije, zato je potrebno zagotoviti skladnost standardov, sprejetih na ravni EU, s tistimi, sprejetimi v državah članicah UNECE. Trenutno se z Evropsko unijo posvetujemo o tem, kako bi se lahko izognili podvajanju na ravni mednarodnega usklajevanja, in kako bi lahko skupaj zagotovili nadaljevanje vseevropskega sodelovanja in učinkovito rabo skromnih javnih sredstev.

Koridor VII, Donava se imenuje "evropska rešilna bilka". Kako v tem smislu vidite vlogo njenega pritoka – reke Save?

Reka Sava, ki je pritok Donave z največjim pretokom vode, igra pomembno vlogo pri "dovajanju" prometa na to glavno prometno arterijo. Za izpolnitev te vloge je potrebno upoštevati tako okoljske kot infrastrukturne vidike. Izboljšanje plovnosti reke Save na način, kot reke Mozela, Maina in Neckar zagotavljajo promet reki Ren, je bistvenega pomena, in je tudi ena od političnih priporočil, navedenih v *Beli knjigi* UNECE komite Odbor za notranji promet (ITC) o učinkovitem in trajnostnem prometu po celinskih vodah v Evropi.

Kar se tiče okoljskega vidika, *Skupna izjava o plovbi po celinskih vodah in okoljski trajnosti v Donavskem bazenu*, ki so jo leta 2007 sklenile Mednarodna komisija za varstvo reke Donave, Donavska komisija kakor tudi Mednarodna komisija za Savski bazen, ter dialog o plovbi po reki Donavi, ki ji je sledil, jasno odražata zavezanost deležnikov iz Savskega bazena k njihovim odgovornostim. Upamo, da se bo ta dialog nadaljeval in bo služil kot osnova za plodno sodelovanje pri razpravah o celinskih plovnih poteh v vzhodnoevropski regiji.

Kako bi ocenili svoje sodelovanje s Savsko komisijo?

Sodelovanje s Savsko komisijo ima za nas velik pomen. Njeni predstavniki redno sodelujejo na sestankih Delovne skupine za prevoz po celinskih vodah Odbora za notranji promet (ITC) ter v strokovnih skupinah, kot sta skupina strokovnjakov *CEVNI* in skupina prostovoljcev za *Resolucijo št. 61*, ki zagotavlja priporočila o usklajenih vseevropskih tehničnih zahtevah za plovila v celinski plovbi. Prispevek Savske komisije je zelo cenjen in je izjemnega pomena pri delu za izboljšanje učinkovitosti in trajnosti prometa po celinskih plovnih poteh v regiji UNECE.

Marko Barišić

Prispevek Savske komisije je zelo cenjen in je izjemnega pomena pri delu za izboljšanje učinkovitosti in trajnosti prometa po celinskih plovnih poteh v regiji UNECE.

Dolga tradicija rečnega prometa po Savi - Krešimir Šapina

STALIŠČE IZVAJANJE OKVIRNEGA SPORAZUMA O SAVSKEM BAZENU: POGLED REPUBLIKE SLOVENIJE

SODOBNA ORODJA ZA TRAJNOSTNE REŠITVE V POREČJU SAVE

Od decembra 2015 bo Geografski informacijski sistem porečja Save, dopolnjen s hidrološkim informacijskim sistemom, ki načrtovalcem nudi sodobno informacijsko podlago o porečju Save, na razpolago pogodbenicam.

Zelenci, vir Save Dolinke pri Kranjski Gori

Slovenija se kot povirna država v porečju Save zaveda pomena, vloge in odgovornosti do proaktivnega čezmejnega sodelovanja na področju trajnostnega upravljanja z vodnimi viri. Razlog je hidrogeografski položaj Slovenije na stiku Alp, Dinaridov, Jadrana in Panonije. Na območju Slovenije se namreč prepletajo vodni režimi kar štirih ekoregij Evrope.

Čezmejno sodelovanje na področju voda ima zato dolgoletno tradicijo. Celovito načrtovanje ureditev za učinkovito prilagajanje podnebnim spremembam v mednarodnih povodjih terja poglobljeno čezmejnem sodelovanju za trajnostno rabo vodnih virov. Izvajanje *Okvirnega sporazuma o Savskem bazenu/OSSB* ima pri tem prav posebno mesto, vlogo in pomen.

Zakaj ima izvajanje *OSSB* prav posebno mesto?

1. Zato ker je konkreten primer in dokaz, da se na območju nekdanjih konfliktov lahko s primernim pristopom vzpostavi dialog in kakovostno čezmejno sodelovanje za trajnostni razvoj ob skupni reki.
2. Zato ker sodelovanje držav v okviru *Mednarodne komisije za Savski bazen/* MKSB koristi vsem pogodbenicam *OSSB* pri obnovi plovbe po Savi in pritokih, zmanjševanju poplavne ogroženosti kot trajnostni rabi vodnih virov in razvoju v porečju Save.

Za nami je prvo desetletje delovanja MKSB (2005 – 2015) s konkretnimi izdelki na podlagi katerih temeljijo navedene ugotovitve. Ob tem z veseljem ugotavljam, da je jubilejno leto 2015 prav posebej bogato z novimi, pomembnimi dosežki.

Med njimi gre posebej pozdraviti konkretne korake Črne gore za pridobitev statusa polnopravne članice MKSB. Izjemen dosežek je tudi ratifikacija *Protokola o varstvu pred poplavami k OSSB*. Gre za sodobno pravno podlago, ki omogoča vzpostavitev čezmejnega sistema za zgodnje opozarjanje in ukrepanje za zmanjšanje poplavne ogroženosti. Za vzpostavitev tega sistema so strokovnjaki MKSB že uskladili tehnične podrobnosti, sredstva WBIF za izvedbo projekta so zagotovljena. To je zelo konkreten odziv na katastrofalne poplave v letu 2014 v Savskem bazenu. Mednarodna skupnost je zaupala vodenje tega zahtevnega projekta MKSB. Rdeči križ in polmesec BIH je MKSB izročil posebno zahvalo za izkazano pomoč ob tem dogodku.
Za države pogodbenice OSSB bo od decembra letos na razpolago Geografski informacijski sistem porečja Save (Sava GIS), ki načrtovalcem nudi sodobno informacijsko podlago o porečju Save. Ta sistem dopolnjuje še Hidrološki informacijski sistem (Sava HIS), ki med drugim, omogoča spremljanje aktualnih (on line) hidroloških razmer v porečju kar je ključnega pomena za načrtovanje in ustrezno ukrepanje. Pri tem je potrebno poudariti, da sistem deluje na uporabi uradnih podatkov, vključno z spremljanjem količin pretokov na mejnih profilih med državami. Na teh podatkih so zasnovani tudi hidrološko-hidravlični modeli za porečje Save, ki ga pripravljajo pripadniki ameriške vojske. Predstavitev navedenih orodij uporabnikom, predstavnikom nacionalnih ustanov (ministrstvom, agencijam, zavodom) v vseh državah pogodbeni-

Izliv Kamniške Bistrice in Ljubljanice v Savo

Močna orodja, kot so GIS, HIS in hidrološko-hidravlični modeli za Savo, se uspešno razvijajo. Ta uspeh ni samo spodbuda za prihodnje korake, temveč tudi prispeva k stabilnosti v regiji.

cah *OSSB* je predviden v najkrajšem času, v Sloveniji že decembra letos.

Navedena sodobna orodja temeljijo na pristopu, ki jih nalaga državam članicam izvajanje EU pravnega reda. Uporaba teh orodij pa je mogoče le v kolikor države zagotovijo ustrezne podatke. To je pogodbenicam OSSB uspelo, četudi sta le dve državi članici EU. Ta uspeh ni samo spodbuda za nove korake, temveč tudi prispeva k stabilnosti v regiji.

Za izboljšanje kakovosti življenja na regionalni ravni – v porečju Donave - od leta 2011 poteka izvajanje *EU Podonavske strategije* (*EU Danube Strategy/EUSDR*). Države pogodbenice OSSB (prvi sub-regionalni sporazum v Podonavju) se dejavno vključujejo v izvajanje *EUSDR* preko MKSB s predlogi za izvedbo čezmejnih projektov s področja trajnostnega upravljanja z vodami, plovbo in turizmom. MKSB je ob Dnevu Save organizirala tudi prvo Kolesarsko turo "Sava 2013" – od izvira do izliva Save, ki je postala tradicionalna prireditev. To je spodbudilo lokalne skupnosti ob Savi k urejanju kolesarskih poti ob reki in pripravi prvega projektnega predloga za pridobitev EU sredstev za ta namen.

Dosežki MKSB so uveljavljanje *Načrta upravljanja voda v Savskem bazenu*, izvajanje projekta obnove plovbe po Savi, izdelava in uporaba sodobnih orodij za zgodnje obveščanje za zmanjševanje ogroženosti pred poplavami ter priprava čezmejnih razvojnih projektov so spodbuda in navdih pogodbenicam OSSB za nadaljnjo krepitve regionalnega sodelovanja. To zdaj omogoča razvojno naravnana *EU Jadransko-jonske strategije* (*EUSAIR*). Države, ki so vključene v proces *EUSAIR*, so Italija, države pogodbenice OSSB, Črna gora, Albanija in Grčija.

Gre torej za novo izjemno razvojno priložnost držav pogodbenic *OSSB*, da pridobljene izkušnje v okviru *EUSDR* nadgradijo še z sodelovanjem v *EUSAIR*. To je tudi pomemben zaključek zasedanja držav pogodbenic *OSSB* v Brčkem (julij, 2015). Za to obstaja naravni razlog – Dinaridi, izjemno vodnat kraški vodonosnik, ki z vodo napaja in podzemno povezuje tako Savski bazen kot jadransko povodje. Za to kraško območje so bile že izdelane pomembne strokovne podlage (DIKTAS projekt idr.). Z načrtovano pridružitvijo Črne gore kot nove polnopravne članice MKSB dobi ta predlog še dodatni pomen.

Pri tem je potrebno poudariti, da je *EUSAIR* zasnovana razvojno in temelji na štirih stebrih: Modra rast (Blue Growth), Izboljšava povezav (Conectivity/transport &energy), Kakovost okolja (Environment) in Trajnostni turizem (Sustainable turism).

Cilji navedenih stebrov *EUSAIR* sovpadajo s cilji *EUSDR*, kar je dodatni razlog in priložnost za demonstriranje inovativnih povezav čezmejnega in med-regionalnega sodelovanja s projekti, ki upoštevajo zelene in modre koridorje ter njihove ekosistemske storitve za večjo kakovost življenja ljudi, izboljšano dostopnostjo in novimi delovnimi mesti ob rekah, obalah in morju. Projekt Savske kolesarske poti z inovativnimi intermodalnimi povezavami (kolo, reka, železnica) kliče k nadgradnji in povezavami z Jadranskim povodjem kar odpira izjemne razvojne priložnosti v lokalnih okoljih.

Dosežki MKSB za doseganje trajnostnih ciljev v porečju Save so reference, ki nimajo konkurence na regionalni ravni. Gre za izkušnje in s tem prednost pogodbenice *OSSB* pri snovanju skupnih čezmejnih projektov in povezav, tako z *EUSDR* kot povezav z *EUSAIR*.

V okviru teh novih EU procesov je mogoče demonstrirati inovativnost, ki vodi k razvoju in večji kakovosti življenja v regiji. To je velika priložnost za novo generacijo, ki je odvisna od ravnanj obstoječe.

Ob koncu leta le še iskrena zahvala vsem, ki omogočate delovanje MKSB, pogodbenicam *OSSB*, mednarodnim ustanovam, nevladnim organizacijam, predanim posameznikom in Sekretariatu MKSB. Nadaljevanje našega sodelovanja se veselimo tudi v 2016. Srečno !

Dr. Mitja Bricelj,
Član Savske komisije iz Republike Slovenije,
Predsedujući Savske komisije

STAWA CILJ JE PRIDOBITEV REŠITEV ZA USPEŠNO UPRAVLJANJE Z VODAMI

PROTI DOLOČITVI EKOLOŠKEGA STANJA VODNIH TELES

Bogastvo življenja v čistih rekah

Rezultati projekta bodo prispevali k razvoju bolj učinkovite podlage za pripravo načrtov in programov upravljanja z vodami ter načrtov za obvladovanje poplav na nivoju porečja in na nacionalnem nivoju

Dolgoročni cilj projekta STAWA je razvoj trajnostnega sistema za zbiranje, izmenjavo in dostopnost ekoloških podatkov v bazenu

Razumevanje zapletenega rečnega sistema, kot je Savski bazen, je izjemno pomembno za ustrezno upravljanje, zaradi družbeno-gospodarske heterogenosti pa je zahtevnost te naloge še toliko večja. Razpoložljivost ustreznih informacij in sodelovanje institucij (vladnih, raziskovalnih, izobraževalnih in nevladnih) je ključni cilj, ki ga je potrebno doseči pri zagotavljanju rešitve za uspešno upravljanje voda. To je glavni cilj projekta z naslovom *Proti določitvi ekološkega stanja vodnih teles v Savskem bazenu*, ki ga podpira Sklad za projekte Podonavske regije START (*http://www.danube-capacityco-operation.eu/pages/start-overview*).

Projekt *STAWA* združuje šest partnerjev – Inštitut Jožef Štefan, Ljubljana (Slovenija), Elektroprojekt d.d., Zagreb (Hrvaška), Inštitut za raziskavo voda, Bratislava (Slovaška), Javno ustanovo "Vode Srpske" (Bosna in Hercegovina), Inštitut za biološke raziskave "Siniša Stanković", Univerza v Beogradu (Srbija), ki nastopa kot vodilni partner, ter Mednarodno komisijo za Savski bazen, s skupno vizijo – zagotoviti podlago za vzpostavitev ukrepov na ravni celotnega porečja, za sodelovanje pri zbiranju podatkov in učinkovito izmenjavo informacij o ekološkem stanju v Savskem bazenu.

Projekt STAWA se je začel 1. aprila 2015 in bo predvidoma izveden v roku enega leta. Glavne dejavnosti so predstavljene na sliki.

Vzpostavljeno je bilo tesno sodelovanje med projektoma *STAWA* in *GLOBAQUA* (izvaja se v okviru EU FP7 pod naslovom *Upravljanje učinkov različnih stresorjev na vodne ekosisteme na podlagi pomanjkanja vode*), katerega cilj je uporaba skupnih zmogljivosti pri razvoju podatkovne baze in reševanje težav prednostne opredelitve onesnaževal, z uporabo istih podatkov za modeliranje in napovedovanje vpliva onesnaževal. Savski bazen je eden izmed šestih ciljnih porečij projekta *GLOBAQUA*. V okviru obeh projektov bo v februarju 2016 v Ljubljani organizirana skupna delavnica z namenom združitve strokovnjakov na področju raziskav in upravljanja voda iz regije, ki bodo združili znanje in razpravljali o obravnavanih temah. Poleg tega bo organizirano tudi usposabljanje s poudarkom na biološkem spremljanju in uporabi bioloških elementov kakovosti pri oceni stanja.

Dolgoročna vizija projekta *STAWA* je razvoj trajnostnega sistema za zbiranje, izmenjavo in zagotavljanje razpoložljivosti ekoloških podatkov v bazenu. V okviru projekta bo pripravljen tudi predlog za prihodnost, bolj obsežen projekt oz. projekte, ki bodo obravnavali vprašanja, povezana z upravljanjem voda in okolja v SB, s poudarkom na tistih temah, ki so priznane kot prednostne – uskladitev metodologije spremljanja, razvoj metodologije vzorčenja za velike reke, razvoj postopkov za oceno ekološkega stanja in vzpostavitev usklajene baze podatkov. Rezultati projekta bodo prispevali k razvoju učinkovitejše podlage za pripravo načrtov in programov upravljanja voda in varstva pred poplavami na ravni porečja in na nacionalni ravni. V zvezi s tem je sodelovanje vseh zainteresiranih strani zelo zaželjeno!

Dr. Momir Paunović,
Institut za biološke raziskave
"Siniša Stanković", Beograd, Srbija

SEDIMENT POTREBA PO NADALJNJEM SODELOVANJU MED DRŽAVAMI

PREDLOG VZPOSTAVE MONITORINGA SEDIMENTA

Za trajnostno upravljanje s sedimentom je potrebno vzpostaviti koordinirani sistem monitoringa v Savskem bazenu

Ob upoštevanju dejstva, da je sediment pomemben sestavni in dinamični del rečnega sistema in je osnova za različnost habitatov in okolij, ter ob priznavanju potrebe po učinkovitem sodelovanju med državami in spodbujanju trajnostnih rešitev za ravnanje s sedimentom v Savskem bazenu, so pogodbenice *Okvirnega sporazuma o Savskem bazenu* (*OSSB*) razvile *Protokol k OSSB o upravljanju s sedimentom*, ki je bil podpisan na ministrskem sestanku v Brčkem, 6. julija 2015 (*http://www.savacommission.org/event_detail/0/0/336/2*).

Številne dejavnosti, ki jih predvideva *protokol*, Mednarodna komisija za Savski bazen že izvaja preko projekta *K praktičnim smernicam za trajnostno upravljanje s sedimentom z uporabo Savskega bazena kot vzorčni primer*, ki se izvaja od leta 2012 v sodelovanju in ob finančni podpori Unescovega urada v Benetkah, Evropske mreže za ravnanje s sedimenti (SedNet) in UNESCO-IHP mednarodne pobude za sedimente. Rezultati projekta vključujejo organizacijo usposabljanja (*http://www.savacommission.org/event_detail/8/22/273/4*) in pripravo osnutka smernic o trajnostnem upravljanju s sedimenti v Savskem bazenu ter oceno bilance sedimentov za reko Savo (*http://www.savacommission.org/project_detail/16/1*).

Kot naslednji korak je bila v okviru projekta izvedena analiza možnosti za bodoči sistem monitoringa sedimenta v Savskem bazenu, z namenom:

- Vzpostavitve strateških in specifičnih ciljev monitoringa sedimenta in sistema za izmenjavo podatkov;
- Pregleda obstoječih podatkov o monitoringu sedimenta;
- Pregleda tehničnih mednarodnih standardov in tehnik monitoringa ter ocene njihove uporabe v Savskem bazenu; in
- Vzpostavitve prosto dostopne spletne baze podatkov o sedimentu.

Ob pregledu obstoječih podatkov o monitoringu je bilo jasno ugotovljeno, da je redni monitoring lebdečih plavin trenutno prisoten samo v Sloveniji in na Hrvaškem, medtem ko se meritve rinjenih plavin ne izvajajo več. Prav tako je očitno, da so metodologije vzorčenja in meritev sedimenta različne, in da se podatki o sedimentaciji v zbiralnikih ne zbirajo redno. Za trajnostno upravljanje s sedimentom je potrebno vzpostaviti usklajen sistem za monitoring sedimenta v Savskem bazenu, kot je določeno v 6. členu *Protokola o upravljanju s sedimentom*.

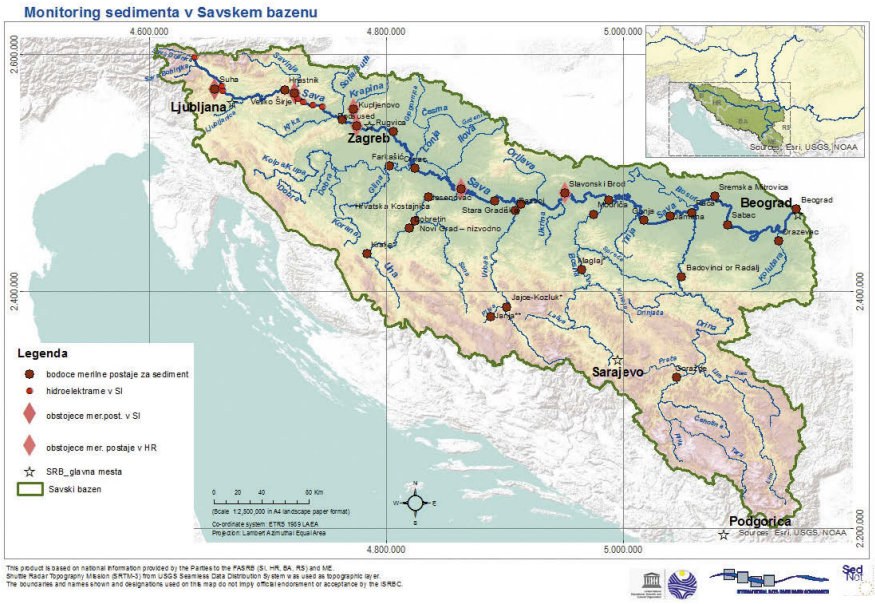
Glede na analizo, bi moral bodoči sistem za monitoring sedimenta vključevati:

- Stalni monitoring lebdečih plavin (npr. meritve motnosti in dnevno vzorčenje lebdečih plavin na določeni točki)
- Redni monitoring lebdečih plavin (ADCP meritve koncentracije lebdečih plavin iz povratne jakosti, vzorčenje lebdečih plavin po profilu, določanje krivulje velikost zrna in vzorčenje plavin v dnu)
- Redni monitoring sedimentacije v zbiralnikih in sprememb rečnega korita (pregled prečnih prerezov v zbiralnikih in pregled prečnih prerezov reke, vsakih 6 let).

Pregled lokacij obstoječih in prihodnjih merilnih postaj je prikazan na sliki.

Podatki, zbrani na bodočem omrežju za monitoring sedimenta, bodo uporabljeni za pripravo in izvajanje *Načrta za upravljanje s sedimentom*, v katerem bodo opredeljeni nadaljnji ukrepi za trajnostno upravljanje s sedimentom za ohranitev vodnega režima reke Save in njenih pritokov.

Samo Grošelj,
Sekretariat Savske komisije



DEJAVNOSTI KAKO DOSEČI UČINKOVITEJŠE UKREPE ZAŠČITE PRED POPLAVAMI

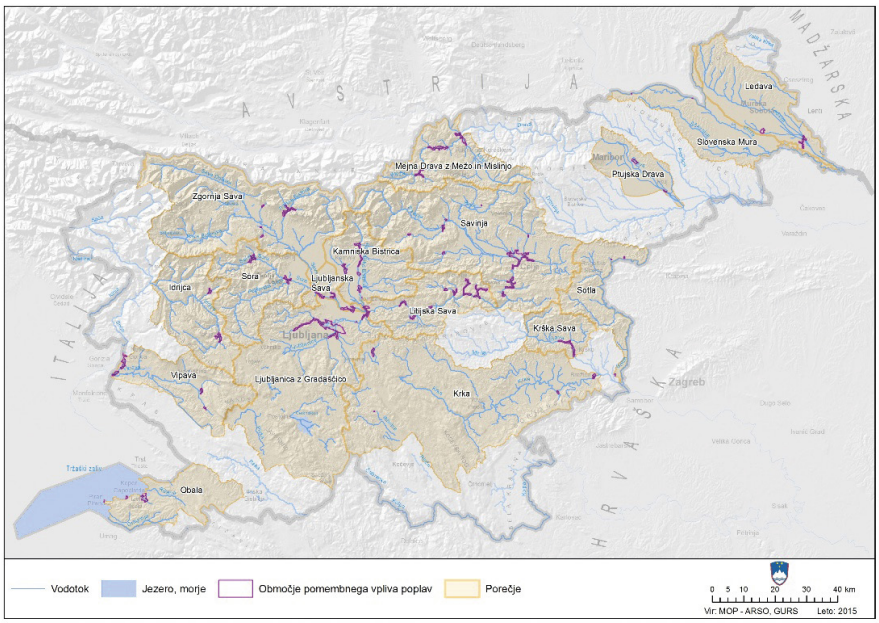
PRIPRAVA NAČRTA ZMANJŠEVANJA POPLAVNE OGROŽENOSTI V SLOVENIJI

Na podlagi predhodne ocene poplavne ogroženosti in po dolgi javni razpravi je bilo v Sloveniji identificiranih 61 območij pomembnega vpliva poplav

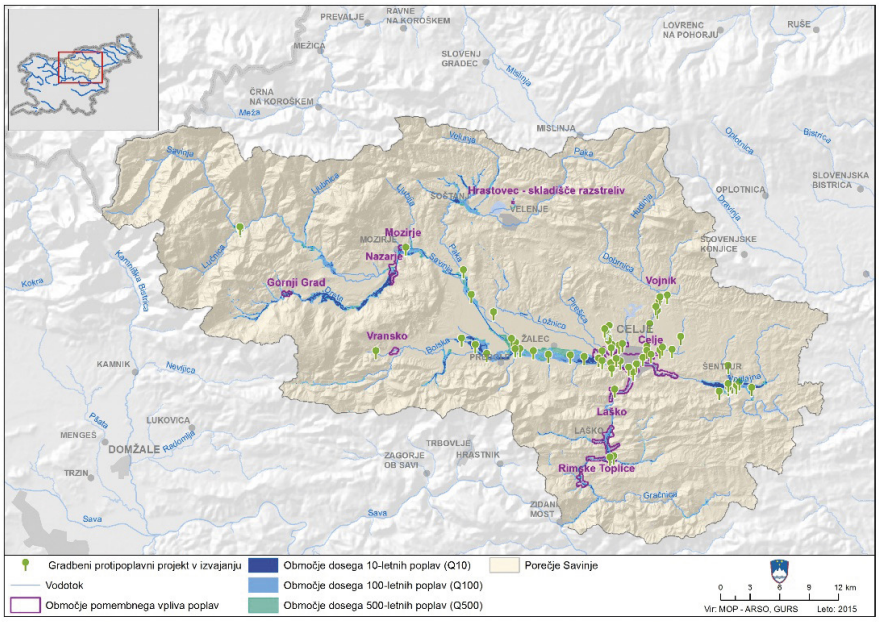
Poplave so (večinoma) naravni pojav in se jih ne da preprečiti. Lahko pa v odvisnosti od vložene energije, finančnih sredstev in učinkovitosti izvedenih negradbenih in gradbenih protipoplavnih ukrepov posledice poplav omilimo. S ciljem zmanjševanja škodljivih posledic poplav na zdravje ljudi, gospodarstvo, kulturno dediščino in okolje in z namenom, da se čim bolj poenoti pristop obvladovanja poplavne ogroženosti v okviru celotne EU, je bila v letu 2007 sprejeta in uveljavljena t. i. *EU poplavna direktiva*[1], ki za obdobje 6-letnega cikla načrtovanja določa korake oz. aktivnosti, ki jih morajo države članice izvajati, da bi lahko bolj učinkovito obvladovale oz. zmanjševale poplavno ogroženost, tako v okviru pretežno nacionalnih porečij kot tudi v primerih čezmejnih porečij (npr. reka Sava). Prvi 6-letni cikel v okviru EU območja teče oz. je potekal do konca leta 2015, drugi 6-letni cikel pa se začne z letom 2016 (2015) in zaključi z letom 2021.

Predhodna ocena poplavne ogroženosti Republike Slovenije[2] je bila pripravljena in javno objavljena 22. 12. 2011. V okviru Predhodne ocene poplavne ogroženosti sta ključni vsebini predvsem prikaz oz. spisek poplavnih dogodkov, ki so se v Sloveniji zgodili pred 2011, in razvrstitev identificiranih cca. 1200 poplavno ogroženih območij v Sloveniji glede na kriterije ogroženosti zdravja ljudi, gospodarskih dejavnosti, kulturne dediščine, okolja in občutljivih objektov. Na podlagi Predhodne ocene poplavne ogroženosti in po dolgi javni razpravi so bila v Sloveniji identificirana območja pomembnega vpliva poplav.[3] Kot takih je bilo v Sloveniji določenih 61 območij.[4]

Za območja pomembnega vpliva poplav je bilo treba do konca leta 2013 izdelati karte poplavne nevarnosti za tri scenarije nastopa poplavnega dogodka, in sicer, za scenarij majhne verjetnosti oz. 500-letne poplave, scenarij srednje verjetnosti oz. 100-letne poplave in scenarij velike verjetnosti oz. 10-letne poplave. Prav tako je (bilo) treba za vsak scenarij izdelati karte



SLIKA 1: Prikaz združevanja 61 območij pomembnega vpliva poplav (označena so z vijolično barvo) v 17 porečij (11 od teh porečij pripada porečju Save).



SLIKA 2: Prikaz porečja Savinje z lokacijami obstoječih in že potekajočih gradbenih protipoplavnih ukrepov (ukrep U7).

poplavne ogroženosti. Vse karte poplavne nevarnosti in karte poplavne ogroženosti za območja pomembnega vpliva poplav so javno objavljene v okviru portala eVode[5] na spletnem pregledovalniku *Atlas voda*[6] ali preko preglednice na spletni strani Ministrstva za okolje in prostor Republike Slovenije.[7]

Priprava *načrta zmanjševanja poplavne ogroženosti* v letih 2014 in 2015 pa temelji na dejstvu,

TABELA 1: Nabor 20 protipoplavnih ukrepov in njihova relacija s cilji po EU vodni direktivi (WFD).

Ukrep	Relacija ukrepa z EU vodno direktivo		
	ukrep, ki podpira cilje vodne direktive **(sinergija)**	ukrep, ki lahko v okviru detajlnega izvajanja povzroči ciljno navzkrižje z vodno direktivo **(potencialen konflikt)**	ukrep, ki ni pomemben za doseganje ciljev vodne direktive **(irelevantno)**
U1 Določevanje in upoštevanje poplavnih območij	x		
U2 Identifikacija, vzpostavitev in ohranitev razlivnih površin visokih voda	x		
U3 Prilagoditev rabe zemljišč v porečjih	x		
U4 Izvajanje hidrološkega in meteorološkega monitoringa	x		
U5 Vzpostavitev in vodenje evidenc s področja poplavne ogroženosti	x		
U6 Izobraževanje in ozaveščanje o poplavni ogroženosti	x		
U7 Načrtovanje in gradnja gradbenih protipoplavnih ukrepov		x	
U8 Izvajanje individualnih (samozaščitnih) protipoplavnih ukrepov	x		
U9 Redno preverjanje učinkovitosti obstoječih (gradbenih) protipoplavnih ureditev			x
U10 Redno vzdrževanje vodotokov, vodnih objektov ter vodnih in priobalnih zemljišč		x	
U11 Izvajanje rečnega nadzora	x		
U12 Protipoplavno upravljanje vodnih objektov		x	
U13 Zagotavljanje finančnih resursov za izvajanje gospodarske javne službe urejanja voda			x
U14 Priprava načrtov zaščite in reševanja ob poplavah		x	
U15 Napovedovanje poplav			x
U16 Opozarjanje v primeru poplav			x
U17 Interventno ukrepanje ob poplavah		x	
U18 Ocenjevanje škode in izvajanje sanacij po poplavah			x
U19 Dokumentiranje in analiza poplavnih dogodkov			x
U20 Sistemski, normativni, finančni in drugi ukrepi		x	

da je treba v okviru porečij z ukrepanjem nasloviti poplavno ogroženost na identificiranih 61 območjih pomembnega vpliva poplav. V Sloveniji so bila tako območja pomembnega vpliva poplav logično in na podlagi upoštevanja predvsem različnih nivojev delitev Slovenije na (pod)porečja združena v 17 porečij (11 od teh 17 porečij je del porečja Save), za katere se samostojno izdela 17 t. i. mini načrtov zmanjševanja poplavne ogroženosti, ki se jih na koncu tudi logično poveže. Načrt zmanjševanja poplavne ogroženosti tako predstavlja skupek 17 manjših načrtov zmanjševanja poplavne ogroženosti, ki vključujejo vseh 61 identificiranih območij pomembnega vpliva poplav (SLIKA 1).

Za vsako izmed 17 porečij (SLIKA 2) je bil tako poleg drugih vsebin pripravljen povzetek nabora protipoplavnih ukrepov, ki jih je treba izvajati za doseganje ciljev zmanjševanja ugotovljene poplavne ogroženosti na posameznem porečju. V Sloveniji nabor (katalog) protipoplavnih ukrepov vsebuje 20 ukrepov (TABELA 1). Za vsakega izmed teh 20 ukrepov na vsakem izmed 17 porečij je bila tako opredeljena njegova stopnja prioritetnosti (visoka, srednja ali nizka), opis ali je ukrep že v izvajanju, in njegov (potencialni) izvajalec. Ukrepi pa se potem konkretizirajo oz. manifestirajo v konkretnih projektih, ki so že v izvajanju ali pa jih je treba začeti čim prej začeti izvajati. Za identifikacijo relacije med ukrepi *EU poplavne* in *EU vodne direktive*[8] so bili vsi ukrepi razvrščeni v tri skupine glede na njihov vpliv na doseganje ciljev *EU vodne direktive*[9].

Aktivnosti Mednarodne komisije za Savski bazen predstavljajo visoko dodano vrednost v smislu pridobivanja finančnih sredstev za konsenzualno dogovorjene protipoplavne ukrepe in aktivnosti na nivoju celotnega porečja reke Save. *Načrt zmanjševanja poplavne ogroženosti* za (celotno transnacionalno) porečje Save, ki je v pripravi na sekretariatu Mednarodne komisije za Savski bazen in bo moral rezultirati predvsem v konsenzualno in transnacionalno dogovorjenem naboru konkretnih protipoplavnih aktivnosti, pa bi se moral s svojimi ukrepi oz. aktivnostmi osredotočiti predvsem na poplavno problematiko na območjih skupnega interesa (npr. na vodotoke, ki potekajo po mejah držav v okviru Savskega bazena in na območja glavnega toka Save ob mejah držav) in predvsem na negradbene protipoplavne aktivnosti, ki brez usklajenega (so)delovanja vseh držav v okviru Savskega bazena, ne omogočajo pozitivnega učinka za vse vključene države. Primer takega pozitivnega projekta je projekt razvoja prognostičnega sistema za celotno porečje Save, kjer dolvodne države brez npr. aktivnega sodelovanja in vključevanja Slovenije težko resno pripravljajo prognoze za svoje poplavno ogrožene dele porečja Save.

Načrt zmanjševanja poplavne ogroženosti za porečje Save, ki bi vključeval predvsem nabor konkretnih, izvedljivih in transnacionalno usklajenih ukrepov (in projektov) na območjih skupnega interesa, bi predstavljal komplementarno komponento k nacionalnim načrtom in omogočal aktivno pridobivanje sredstev iz raznih transnacionalnih (EU in drugih) finančnih mehanizmov za usklajeno izvedbo le teh, kar pa tudi je in zmeraj mora biti ključni cilj vsega (protipoplavnega) načrtovanja in usklajevanja. Ukrepi zgolj na papirju[10] (oz. neizvedeni ukrepi) za poplavno ogrožene subjekte na območju celotnega porečja Save namreč pomenijo povsem enak učinek, kot če jih na tem papirju sploh ne bi bilo.

Mag. Luka Štravs,
Ministrstvo za okolje in prostor
Republike Slovenije, luka.stravs@gov.si)[11]

[1] *Direktiva 2007/60/ES Evropskega parlamenta in Sveta z dne 23. oktobra 2007 o oceni in obvladovanju poplavne ogroženosti.*
[2] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/predhodna_ocena_poplavne_ogrozenosti.pdf*
[3] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/porocilo_OPVP.pdf*
[4] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/karta_obmocij_OPVP.pdf*
[5] *http://evode.arso.gov.si/*
[6] *http://gis.arso.gov.si/evode/profile.aspx?id=atlas_voda@Arso*
[7] *http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/voda/opvp/OPOPO.xls*
[8] *Direktiva Evropskega parlamenta in Sveta 2000/60/ES z dne 23. oktobra 2000 o določitvi okvira za ukrepe Skupnosti na področju vodne politike.*
[9] *Protipoplavni ukrepi so iz naslova usklajenosti* s cilji EU vodne direktive lahko sinergični, povsem irelevantni ali pa je treba v okviru detajlne presoje ugotoviti njegov konkreten vpliv.
[10] *Bela infrastruktura*
[11] Avtor se zahvaljuje Maji Kregar, Špeli Petelin, Barbari Potočnik in Bojanu Jakopiču za vso pomoč in nasvete pri pripravi članka.

NAPOVEDOVANJE POPLAV KLJUČNI NESTRUKTURNI UKREP OBVLADOVANJA POPLAVNE OGROŽENOSTI

HRVAŠKI SISTEM NAPOVEDOVANJA POPLAV V SAVSKEM BAZENU

Matematični modeli za hidrološko napovedovanje, z ustreznimi vnosi meteoroloških napovedi, lahko bistveno izboljšajo kakovost napovedovanja poplav

Izboljšanje sistemov za napovedovanje poplav je bilo prepoznano kot ključni nestrukturni ukrep za obvladovanje poplavne ogroženosti na evropski, mednarodni in nacionalni ravni v pravnih, strateških in načrtovalnih okvirih (npr. *Direktiva 2007/60/EU o oceni in obvladovanju poplavne ogroženosti, Protokol Savske komisije o varstvu pred poplavami, osnutek Načrta upravljanja voda v Savskem bazenu*, ki vključuje prvi *Načrt za obvladovanje poplavne ogroženosti* (*http://www.voda.hr/hr/plan-upravljanja-vodnim-podrucjima-2016-2021*), itd.).

Podjetje Hrvaške vode ter Državni hidrometeorološki zavod (DHMZ) sta v skladu s svojimi pravnimi in zakonskimi obveznostmi odgovorna za razvoj in izvajanje sistema za napovedovanje poplav. V Republiki Hrvaški te dejavnosti niso potekale v skladu s sodobno metodologijo (matematično modeliranje) in zato niso bile zadovoljive. Matematični modeli za hidrološko napovedovanje (z ustreznimi vnosi meteoroloških napovedi), lahko bistveno izboljšajo kakovost napovedovanja poplav in posledično prispevajo k precejšnjemu zmanjšanju poplavne ogroženosti in k učinkovitejši obrambi pred poplavami.

Podjetje Hrvaške vode in DHMZ sta pričela s skupnim razvojem in izvajanjem operativnih sistemov za napovedovanje poplav na Hrvaškem, ki temeljijo na matematičnem modeliranju (hidrološko-hidravlične simulacije napovedanega pretoka in vodostaja v rekah na podlagi predvidene temperature in padavin iz meteoroloških napovedi). Končni cilj je vzpostavitev sistema za napovedovanje poplav na celotnem ozemlju Hrvaške, ki naj bi bil v skladu z načrti dosežen v obdobju petih let, z vrsto projektov financiranih na nacionalni in mednarodni ravni.

Kot prvi korak k vzpostavitvi operativnega sistema za napovedovanje poplav na Hrvaškem je bil preko pogodbe s konzorcijem podjetij Proning-DHI d.o.o. Zagreb in Danskega hidravličnega inštituta (DHI), v času od septembra 2014 do septembra 2015, razvit sistem za napovedovanje poplav za reko Savo in reko Kolpo, od meje z Republiko Slovenijo (SI) do Siska (sistem "Sava in Kolpa do Siska"), z ustrezno izgradnjo institucionalne zmogljivosti v Hrvaških vodah in DHMZ ter z izvedbo uporabnega usposabljanja v obliki šestih enotedenskih delavnic. Z vidika hidravličnega modeliranja so bili v prognostični model vključeni prilagojeni obstoječi matematični modeli osrednjega Posavja in osrednjega Pokolpja, ki jih je tekom let razvilo svetovalno podjetje VPB d.d. za potrebe podjetja Hrvaške vode.

Hrvaški model za napovedovanje poplav "Sava in Kolpa do Siska" temelji na slovenskih modelih za napovedovanje, ki jih je razvila Agencija Republike Slovenije za okolje (ARSO), kot del projekta *Boljše opazovanje za boljše ekološke rešitve* (*BOBER*), financiranega s strani EU. Ti čezmejno povezani modeli zagotavljajo operativno napovedovanje poplav v ključnem delu Savskega bazena v Republiki Hrvaški, ki so ga v zadnjih letih pogosto prizadele poplave (Karlovac, Velika Gorica, Sisak).

Skupni cilj je vzpostavitev sistema operativnega napovedovanja pretoka in vodostajev na vseh postajah, ki so navedene v *Državnem načrtu za varstvo pred poplavami (Uradni list 84/10)*, ter izvajanje načrtov v zvezi s tem načrtom, saj so vodostaji na teh postajah osnova za razglasitev stopnje ukrepov varstva pred poplavami (pripravljalnih, običajnih, izrednih ali nujnih ukrepov).

Tako kot slovenski sistem napovedovanja, je bil tudi hrvaški sistem narejen z uporabo programske opreme MIKE11 (za enodimenzionalno, spremenljivo hidrološko-hidravlično modeliranje površinskih voda) z modulom FF (za asimilacijo podatkov in napovedovanje poplav).

Operativni sistem hidrološkega napovedovanja je bil razvit na podlagi obstoječih podatkov in temelji na obstoječi mreži meteoroloških in hidroloških postaj. Omeniti velja, da ne gre pričakovati, da bi dokončanje dejavnosti tega prvega projekta zagotovilo popolni sistem napovedovanja poplav na obravnavanem območju. Nadaljnje izboljšave sistema bodo predstavljale neprekinjen

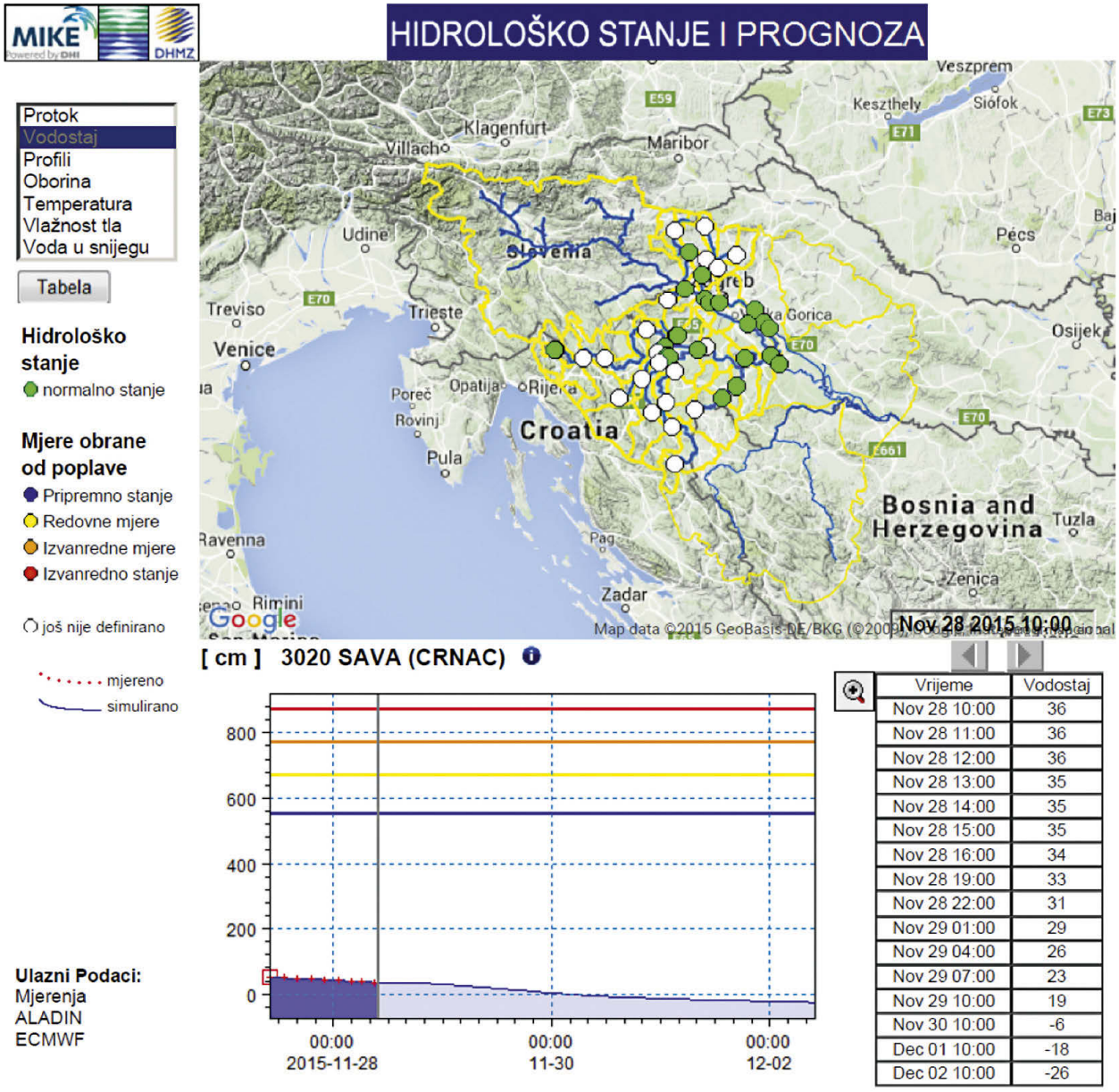
Končni cilj je vzpostavitev sistema za napovedovanje poplav na celotnem ozemlju Hrvaške, ki naj bi bil v skladu z načrti dosežen v obdobju petih let

Rečna struga pred poplavo

proces. Vzpostavitev prvega operativnega sistema za hidrološko napovedovanje na obravnavanem območju je kljub pomanjkljivostim, ki se lahko pojavijo zaradi nezadovoljive gostote vhodnih podatkov, prinesla velik napredek glede na prejšnje stanje. Pričakuje se, da bodo rezultat tega precejšnje prednosti pri obvladovanju poplavne ogroženosti na tem posebno ranljivem območju, in da se bodo te prednosti nenehno izboljševale z nadaljnjim razvojem in izboljšavami sistema.

modelov za preostali del Savskega bazena na območju Republike Hrvaške in vzpostavitev predhodnega operativnega sistema za napovedovanje poplav v Savskem bazenu do meje z Republiko Srbijo (RS). Poleg levih pritokov reke Save, s prispevnimi površinami na ozemlju Republike Hrvaške, so na odseku reke Save med Siskom in mejo z Republiko Srbijo prilivi iz desnih pritokov reke Save z ozemlja Republike Hrvaške in Bosne iz Hercegovine (BA). Da bi v najkrajšem možnem času vzpostavili predhodni

pritoke dolvodno od Siska. Izboljšava teh modelov bo v prihodnosti potekala preko ustreznih nacionalnih, dvostranskih in/ali mednarodnih projektov, vključno z mednarodnim projektom *Izboljšanje skupnih dejavnosti za obvladovanje poplav v Savskem bazenu*. Ta projekt bo financiran iz sklada WBIF (investicijski okvir za Zahodni Balkan), usklajevala pa ga bo ISRBC. Glavni rezultat projekta bo platforma, ki bo povezovala obstoječe nacionalne modele in prihodnje dodatne modele, in ki bo med drugim



Vrijeme	Vodostaj
Nov 28 10:00	36
Nov 28 11:00	36
Nov 28 12:00	36
Nov 28 13:00	35
Nov 28 14:00	35
Nov 28 15:00	35
Nov 28 16:00	34
Nov 28 19:00	33
Nov 28 22:00	31
Nov 29 01:00	29
Nov 29 04:00	26
Nov 29 07:00	23
Nov 29 10:00	19
Nov 30 10:00	-6
Dec 01 10:00	-18
Dec 02 10:00	-26

Napovedani vodostaji za 28.november s hrvaškim modelom "Sava in Kolpa do Siska"

Po projektu *Sava in Kolpa do Siska* je potreben nadaljnji razvoj hidroloških modelov in sistemov za napovedovanje poplav za Savski bazen v Republiki Hrvaški. Naslednji načrtovani korak je razvoj hidroloških

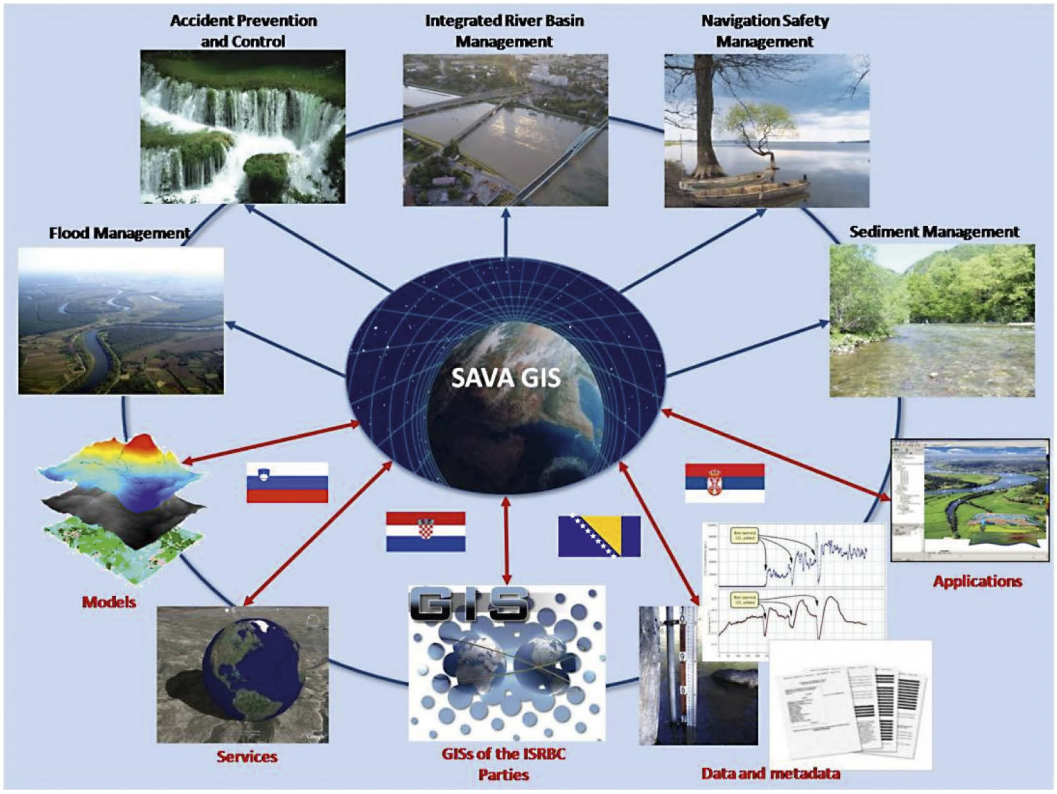
operativni sistem za napovedovanje poplav na reki Savi do meje z Republiko Srbijo, bo v sodelovanju z ustreznimi institucijami iz Bosne in Hercegovine razvit in nameščen prehodni model napovedovanja za desne

vključevala obstoječe in prihodnje hrvaške modele napovedovanja, predstavljene v tem članku.

Dr. Marijan Babić,
Hrvaške vode

SAVA GIS KOMUNIKACIJSKI KANAL ZA CELOTEN BAZEN

SAVA GIS JE FUNKCIONALEN



V prihodnosti se načrtuje razširitev te komponente tudi na druga področja dela Savske komisije (glej sliko).

Vzpostavljena je spletna aplikacija za urejanje, nalaganje in pridobivanje podatkov in metapodatkov, ki omogoča registriranim uporabnikom ogled, vizualizacijo, izmenjavo in pridobivanje geografskih podatkov in podatkovnih nizov, shranjenih v podatkovni bazi za celotno porečje. Aplikacija vključuje uporabniško upravljanje za urejanje in nalaganje podatkov in metapodatkov, podpirala pa bo tudi večjezično uporabo (v uradnih jezikih Savske komisije).

Spletna aplikacija omogoča uporabnikom, da pogledajo, prikažejo, izmenjavajo, urejajo, nalagajo ter prevzemajo geografske informacije in podatke za celoten bazen

Splošni cilj Sava GIS je zagotoviti dobre komunikacijske kanale za skupnost Savske komisije, z namenom izmenjave in razširjanja informacij in znanja o zaščiti vodnih virov in o dejavnostih upravljanja voda v Savskem bazenu. To predstavlja močno podporo za države Savskega bazena pri nadaljnjem približevanju okoljskemu pravnemu redu EU na področju upravljanja voda. Posebni cilji izvajanja Sava GIS vključujejo zagotavljanje podpore in pomoči Savski komisiji in državam Savskega bazena pri izvajanju prvega *Načrta upravljanja voda v Savskem bazenu* (*NUV*) in vseh skupnih dejavnosti za nadaljnje cikluse *NUV* ter posebne dejavnosti v načrtovanju obvladovanja poplavne ogroženosti, z razvojem potrebnih zmogljivosti in informacijske baze – Sava Geoportal.

V sladu s *Strategijo Sava GIS*, ki jo je Savska komisija sprejela leta 2008, je razvoj Sava GIS načrtovan v treh fazah: vzpostavitev osrednjih funkcij (1. faza), razvoj in izvedba naprednih orodij, kartiranja in storitev poročanja (2. faza) ter razvoj in izvedba naprednih dinamičnih orodij in storitev (3. faza).

Izvedbo 1. faze, ki se trenutno zaključuje, je finančno podprla Evropska komisija. Izvajati se je začela v letu 2012, kot podpora pri pripravi prvega *NUV za Savo*, ostale dejavnosti pa so bile izvedene v letih 2014 in 2015.

1. faza je vključevala nakup strojne opreme za GIS (podatkovni in aplikacijski strežniki) ter nakup, namestitev in preizkušanje programske opreme (operacijski sistem programske opreme, programska oprema sistema za upravljanje relacijske podatkovne baze, aplikativna programska oprema za GIS in spletni GIS).

Za vzpostavitev glavnih funkcij Sava GIS sta bila zasnovana in strukturirana dva modela podatkovnih baz – upravljanje voda in obvladovanje poplavne ogroženosti – v skladu z ustreznimi evropskimi direktivami ter navodili za poročanje *ODV 2016 v4.9*, z navodili za poročanje *Direktive o poplavah 2013, z Direktivo INSPIRE* in s strokovnimi zahtevami.

Geoportal Sava GIS in njegove funkcionalnosti so zasnovane kot razširljivo in prilagodljivo orodje, ki izvaja odprtokodne tehnologije. Poudarek Sava Geoportala je na prostorski in alfanumerični vizualizaciji in upravljanju ter na odprtih spletnih storitvah, kot sta WFS in WMS. Ko bo sistem popolnoma funkcionalen, bodo lahko zainteresirane strani (širša javnost, zasebni subjekti, vladne ustanove, itd.) pregledovale razpoložljive nize podatkov preko uporabe Sava Geoportala in njegovih podmodulov (katalog metapodatkov, HIS za Savo). Geoportal Sava GIS je na voljo na spletni strani: *http://savagis.org/*.

Z namenom uspešnega in učinkovitega izvajanja Sava GIS so bile vse dejavnosti izvedene v okviru strokovnih skupin Savske komisije, z vključitvijo glavnih deležnikov preko posvetovalnih delavnic (v marcu in septembru 2015), ter v sodelovanju z Mednarodno komisijo za zaščito reke Donave (ICPDR), da bi zagotovili združljivost z GIS za Donavo in se izognili podvajanju dela.

Mirza Sarač,
Sekretariat Savske komisije

NAPREDEK NOVA PLATFORMA ZA IZBOLJŠAVO IZMENJAVE INFORMACIJ

HIDROLOŠKI INFORMACIJSKI SISTEM ZA SAVSKI BAZEN

Sava HIS predstavlja korak k integraciji že razvitih orodij za izmenjavo hidroloških in meteoroloških podatkov na nivoju Savskega bazena

V maju 2014 so Savski bazen prizadele katastrofalne poplave, ki so povzročile veliko škodo in terjale več smrtnih žrtev. Ti dogodki jasno dokazujejo, da je potrebno izboljšati obvladovanje poplav s strukturnimi in nestrukturnimi ukrepi.

Da bi izboljšali pretok informacij glede hidroloških razmer v porečju, je Mednarodna komisija za Savski bazen, ob finančni podpori Mednarodne komisije za varstvo reke Donave (ICPDR) in finskega hidrometeorološkega inštituta, začela razvijati hidrološki informacijski sistem za Reko Savo (Sava HIS). Ta sistem predstavlja orodje za zbiranje, shranjevanje, analizo in poročanje kakovostnih podatkov (meritve padavin in temperature zraka, meritve rečnih vodostajev, meritve pretoka in meritve temperature vode). Sava HIS predstavlja korak naprej z vključevanjem že razvitih orodij za izmenjavo hidroloških in meteoroloških podatkov na ravni Savskega bazen (npr. *Hidroloških letopisov za Savski bazen*, ki so v PDF obliki na voljo na spletni strani *http://savacommission.org/publication*).

Glavna cilja Sava HIS sta:

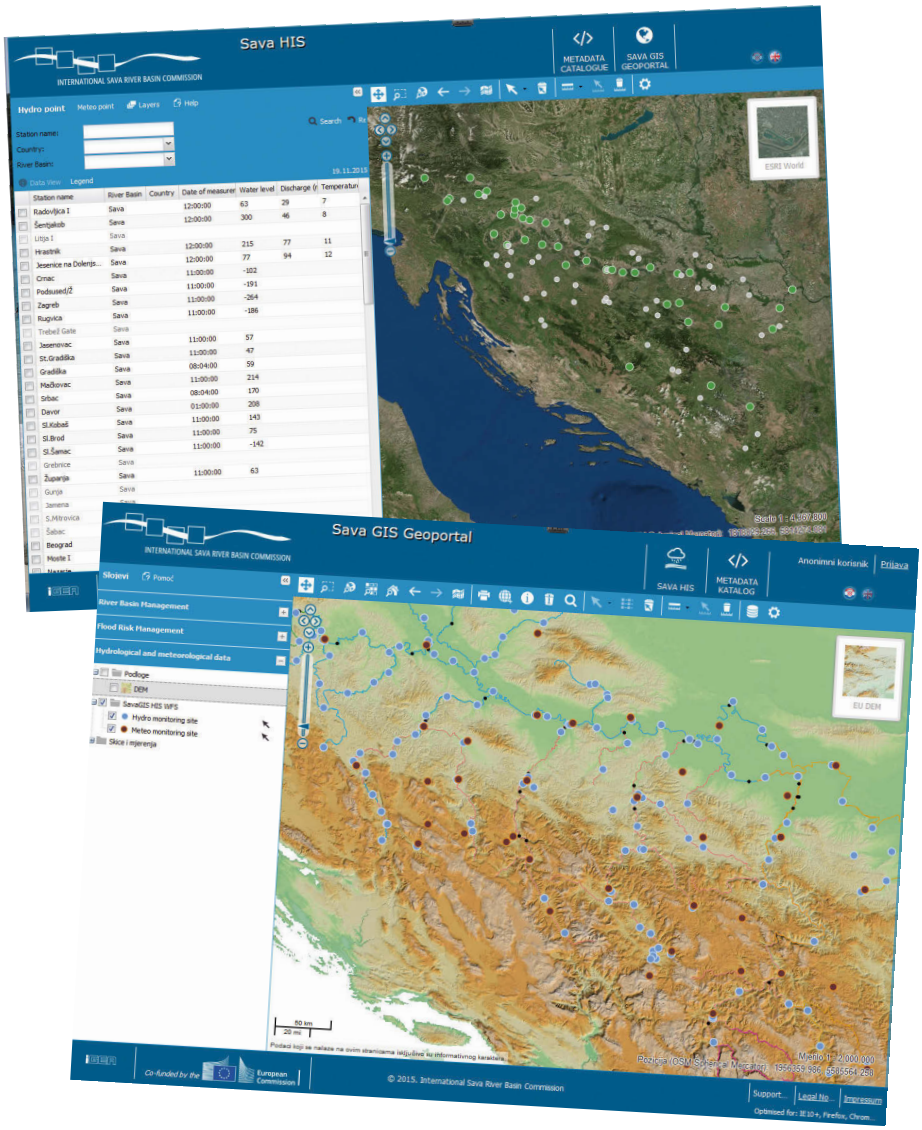
- Podpora savskim državam (Slovenija, Hrvaška, Bosna in Hercegovina, Srbija in Črna gora) pri izmenjavi in razširjanju hidroloških in meteoroloških podatkov, informacij in znanja o vodnih virih v Savskem bazenu;
- Omogočanje učinkovitega skupnega kanala za izmenjavo in pregled hidroloških in meteoroloških podatkov in informacij v izrednih razmerah, še zlasti v zvezi s poplavami.

Pravni okvir je že bil vzpostavljen z *Okvirnim sporazumom o Savskem bazenu* (*OSSB*) in s *Protokolom k OSSB o varstvu pred poplavami*. Poleg tega je v juliju 2014 šest nacionalnih/entitetnih hidrometeoroloških služb in dve vodni agenciji podpisalo *Pravilnik o izmenjavi hidroloških in meteoroloških podatkov in informacij v Savskem bazenu*, kot okvir za izmenjavo meteoroloških in hidroloških podatkov in informacij.

Izvajanje Sava HIS je vključevalo oceno trenutnih sistemov za zbiranje in shranjevanje hidroloških in meteoroloških podatkov v savskih državah in GIS za Savo, vzpostavitev geopodatkovne baze Sava HIS, kot del podatkovne baze Sava GIS, ki omogoča shranjevanje podatkov v urnih, dnevnih in mesečnih časovnih intervalih iz neobdelanih 24-urnih podatkov za 30 dni, vzpostavitev spletne aplikacije Sava HIS za upravljanje podatkov v realnem času, vzpostavitev spletne aplikacije Sava HIS za upravljanje obdelanih podatkov in metapodatkov, vzpostavitev storitve za izvoz podatkov preko spletne aplikacije za nadaljnjo uporabo in analizo hidroloških in meteoroloških podatkov z orodjem HydroDesktop, ter za izgradnjo zmogljivosti in prenosa znanja do uporabnikov (npr. ministrstev, vodnih agencij in hidrometeoroloških služb). Podatki so javno dostopni na spletnih straneh http://www.savahis.org in http://www.savagis.org.

Podatki in informacije, ki se upravljajo preko Sava HIS, bodo uporabljeni v sistemu odločanja pri vseh vidikih upravljanja voda in še zlasti na področju obvladovanja poplavnega tveganja.

Samo Grošelj,
Sekretariat Savske komisije



PETA IZDAJA EVROPSKI KODEKS ZA CELINSKE PLOVNE POTI

DODATNA PRAVILA ZA VARNEJŠO PLOVBO

Ta pravila ne veljajo le za tovorna plovila, temveč tudi za potniške ladje, trajekte, barže, konvoje ter za plovila za šport in prosti čas

Naloga poenotenja pravil na vseevropski ravni, z namenom vzpostavitve učinkovitega in trajnostnega prometa po celinskih vodah v Evropi, je prednostna naloga Delovne skupine za prevoz po celinskih vodah Odbora za notranji promet UNECE (SC.3). Ko je bil leta 1956 ustanovljen SC.3 je bilo ugotovljeno, da so za pospeševanje prometa in za zagotavljanje varnosti na celinskih plovnih poteh bistvenega pomena usklajena pravila plovbe. Delo na tem področju se je pričelo z ustanovitvijo posebne skupine strokovnjakov za standardizacijo pravil glede poti, znakov in prometne signalizacije na celinskih vodah v letu 1960, kar je dve leti kasneje privedlo do oblikovanja in sprejetja Evropskega kodeksa za celinske plovne poti (*CEVNI*). Od takrat dalje, z dejavnostmi temu namenjene skupine strokovnjakov, SC.3 deluje kot skrbnik teh pravil.

CEVNI vsebuje pravila, ki veljajo za promet po celinskih plovnih poteh. Ta pravila ne veljajo le za tovorna plovila, temveč tudi za potniške ladje, trajekte, barže, konvoje ter za plovila za šport in prosti čas.

CEVNI ureja podrobnosti, še zlasti oznake za identifikacijo plovil, vidne znake, kot so zastave in luči, zvočne signale in radiotelefonijo za komunikacijo o plovnih poteh, znake in oznake infrastrukture plovnih poti, kot so mostovi in bregovi, pravila poti v zvezi s sre-čanjem, prečkanjem in prehitevanjem plovil, pravila o pristajanju, zahteve za signalizacijo in poročanje ter pravila o preprečevanju onesnaževanja vode in odlaganju odpadkov. Vsebuje tudi več prilog, ki prikazujejo oznake, znake in druge ukrepe v zvezi s plovbo po celinskih plovnih poteh.

V več kot 50 letih od njegovih začetkov, se je *CEVNI* stalno posodabljal in usklajeval z novimi izzivi (npr. z uvedbo 9. poglavja – Posebne regionalne in nacionalne zahteve v letu 2009). Te posodobitve se vedno usklajujejo z evropskimi predpisi v zvezi z mednarodnim prevozom nevarnega blaga po celinskih plovnih poteh.

Določbe *CEVNI* niso zavezujoče, vendar pa so bile določbe iz prejšnje, četrte izdaje *CEVNI* uvedene v nacionalno zakonodajo vsaj 14 evropskih držav, njegova uporaba pa se širi po vsej UNECE regiji. Zadnja izdaja kodeksa je bila sprejeta v peti popravljeni različici na 58. zasedanju SC.3 v novembru 2014. V tej izdaji sta Delovna skupina in njena skupina strokovnjakov za *CEVNI* upoštevali najboljše prakse iz obstoječih prometnih predpisov rečnih komisij in držav članic UNECE. Ta izdaja vsebuje posodobitve členov v zvezi z majhnimi plovili, radiotelefonijo, celinskim sistemom samodejnega prepoznavanja (AIS) in s preprečevanjem onesnaževanja vode, dodana pa je bila tudi priloga o varnostnem kontrolnem seznamu oskrbe z gorivom.

Pravila *CEVNI* običajno temeljijo na ustreznih predpisih rečnih komisij za reki Ren in Donavo, prilagojena pa so vseevropskemu obsegu kodeksa.

Delovna skupina bo še naprej spremljala izvajanje pete revidirane izdaje *CEVNI* v državah članicah UNECE in v rečnih komisijah. V ta namen sta v razpravo na 59. zasedanju SC.3 predlagana popravljen vprašalnik in dokument o statusu. Poleg tega je bilo kot dopolnitev dela v zvezi s *CEVNI* predlagano, da Delovna skupina razmisli o pripravi baze podatkov vseh pomembnih znakov in oznak v državah članicah, da bi izboljšali njihovo mednarodno prepoznavnost in razumevanje.

Victoria Ivanova,
Sekretarka odbora UNECE za notranji promet,
Področje prevoza po celinskih vodah (SC.3)


Ladjedelnica "Zasavica" v Mačvanski Mitrovici

PREDSTAVLJAMO

ZASAVICA USPEŠNA NALOŽBA PODJETJA VAHALI

V SRBIJI SE GRADIJO REČNE KRIŽARKE

Vse ladje se gradijo izključno za tuje naročnike - s ciljem, da se v Zasavici v celoti dokončajo

Podjetje Vahali na Nizozemskem uspešno deluje že 90 let, v Srbiji pa zadnjih 10 let. Zahvaljujoč desetletjem izkušenj nizozemskega matičnega podjetja, je podjetju Vahali v 10 letih delovanja v Srbiji uspelo sestaviti dobro ekipo strokovnjakov za ladjedelništvo. Ladjedelnica se lahko pohvali z izkušenimi zaposlenimi na vseh področjih, s katerimi se podjetje ukvarja, npr. na področju oblikovanja, nabave, razreza, obdelave jekla, barvanja, opreme, logistike, itd. Zaposleni v podjetju so zelo cenjeni, zato si podjetje nenehno prizadeva, da jim zagotavlja najboljše možne pogoje za delo, varnost ter dobro delovno okolje. Njihova motivacija, dobra organizacija dela in izpolnjevanje časovnih rokov zagotavljajo kakovost, ki je osnova za zadovoljstvo kupcev.

Proizvodnja podjetja Vahali se primarno osredotoča na prevozne potrebe na področju rečnega turizma, zato so bile geografska lega Srbije, usposobljena delovna sila in tradicija v ladjedelništvu prepoznane kot ključni potencial za nadaljnji razvoj.

Po prevzemu ladjedelnice Sava v letu 2013, je podjetje Vahali v celoti obnovilo staro ladjedelnico v skladu z najnovejšimi tehnološkimi in oblikovnimi trendi. Prva hala je bila pripravljena za delovanje 15 dni po prihodu novega lastnika ladjedelnice. Postopoma so bile vse obstoječe in nove hale v celoti opremljene in pripravljene za delovanje.

Proizvodnja je bila vzpostavljena in ladje, ki odhajajo iz Zasavice na Nizozemsko, imajo v celoti opremljeno strojnico, cevovode, izolacijo, okna in kromirane pregrade. V projektih podjetja Vahali tako sodelujejo različna domača podjetja. Na vseh splavljenih ladjah so nameščene tudi klimatske naprave in sistemi za prezračevanje, vodila za kable ter pregradne stene v hotelskem delu ladij.

Vse ladje so narejene izključno za tuje naročnike. Na žalost v Srbiji še ni prisoten trg, ki bi zahteval gradnjo novih ladij, predvsem zato, ker financiranje takšnih projektov ni priznano in se še ne razvija.

Podjetje pa kljub temu lahko ponudi določene storitve, kot so inšpekcijski pregledi ter popravila ladij in drugih plovil, s katerimi zadovoljuje potrebe domačega trga.

Cilj ladjedelnice Vahali je povečanje nivoja ladijske opreme, da bi lahko bila plovila pravočasno in v celoti končana v Srbiji. Ob upoštevanju pomanjkanja ustreznega osebja na področju ladjedelništva, je pomemben cilj izobraževanje mlade generacije. Trenutno je v pripravi projekt, s katerim načrtujemo ustanovitev lastnega izobraževalnega središča v Mačvanski Mitrovici. Cilj podjetja je uspešno izpolnjevanje zahtev najzahtevnejših kupcev, z usposabljanjem mladih in s stalnim izboljševanjem proizvodnega procesa.

Kristina Anđelković, direktorica
Vahali Production Services d.o.o.,
Zasavica, Srbija


V ladjedelnici gradijo tudi razkošne ladje