

SAVA

NEWSFLASH

INTERVIEW: LEON DHAENE

We must avoid a situation where the younger generations, whose patience is running out, will take legal action to force politicians to take the necessary measures

- Implementation of the Framework Agreement: The view of the Republic of Croatia
- Public consultation for the 2nd Sava River Basin Management Plan
- Students and scientists on a mission against plastic pollution in rivers

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GEO PROJEKT SM – Low Water Season



DEAR READERS,

Every new edition of the Sava NewsFlash was, in the first place, published with great pleasure, mainly when the invested efforts resulted in visible results. Although with additional effort, it also happened in the previous two years when we learned to fight and function in the extraordinary circumstances of the coronavirus pandemic, which caused enormous health consequences worldwide with many deaths.

Our pleasure is clouded now because among those whom this wicked virus has taken away is a prominent member of the Secretariat of the Sava Commission. Unfortunately, Mr Željko Milković, our Deputy Secretary for Navigation of the Sava Commission, has left us. Until the last moment of his extraordinary life, he made an essential contribution to the development of navigation and the work of the Sava Commission. Therefore, this edition is mainly dedicated to his greatness and the work he left behind. However, we are sure that our greatest gratitude to him for what he has given us over the years would be to continue working on what he dedicated his life to.

We are living in a time when, as rarely in history, health and economic crises are intertwined with climate shocks and uncertainty in the supply of energy sources, which brings the issues of preserving economic resources, care for the environment and water protection to the fore, which was not the case before. With all this in mind, our firm determination remains the continuation of the work on securing a quality future for the Sava River Basin, its habitats, nature, economy, navigation, and the implementation of the Framework Agreement. The years of isolation during the pandemic strengthened our determination, and in a short time, we adapted to the new circumstances in a way that we successfully transferred most of the current tasks to the digital platform.

We did not give up even in the previous period when passenger navigation almost ceased to exist, which fortunately was not the case with the cargo transport on the Sava River. In addition, inland navigation on a global level encountered droughts and low water levels that reached a historic minimum. Namely, the river engineering works on the most critical sections of the waterway, carried out on time, gave positive results, so there was no suspension of navigation on the greater part of the waterway, which further affirmed the Sava River as an essential factor in the entire regional transport network.

When it comes to navigation, in this issue, you will have the opportunity to get acquainted with the work practices of the Department for Investigation of Water Transport Accidents in Serbia

and its safety recommendations to competent authorities and organizations of other interested countries that are taking appropriate measures in order to implement them.

Regarding the preparation of the 2nd Sava River Basin Management Plan (SRBMP), the Sava Commission has continuously ensured and encouraged public participation by creating a mechanism that facilitates the inclusion of all relevant stakeholders as required by the Framework Agreement and following the Water Framework Directive.

The WACOM project (Water Contingency Management in the Sava River Basin) is in the phase of full development, within which five headquarters exercises were held that showed the importance of exchanging information, experiences, plans and procedures in the disaster management cycle.

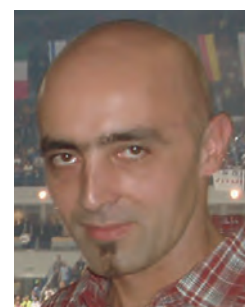
Furthermore, you can read an interview with Mr Leon Dhaene, Secretary of the International Commission for the Scheldt River Basin, which is hosting the traditional Meeting of the Secretaries of European commissions for river basins and lakes this year.

In this editorial, among other activities and events, we would like to draw your attention to the project "Plastic Pirates - Go Europe!" which brings together scientists and schools to research river pollution with waste and microplastics.

As a novelty, we launched a feuilleton of national nature parks in the Sava River Basin, and in this issue, we have a presentation of the Risnjak nature park, one of the most attractive karst places, with one of the deepest springs - the source of the Kupa River.

In addition to the already mentioned topics, many other important ones for implementing the Framework Agreement are also presented in this issue. We also expect with great optimism that the scope and variety of activities will increase in the coming period, as well as adequate media coverage and the transmission of key messages to the general public.

I hope you will find this issue of Sava NewsFlash interesting, and we wish you a pleasant reading.



Duško Isaković,
Sava NewsFlash Editor

IMPRESSUM

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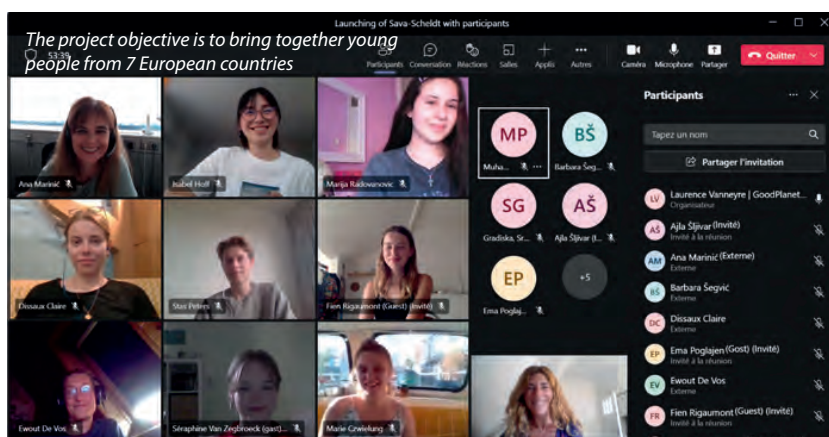
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Sava NewsFlash is the official bulletin of International Sava River Basin Commission (ISRBC), published twice per annum as a bilingual edition – in English and the chosen official language of ISRBC for each edition. It is aimed to present the overview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

Sava NewsFlash is available on ISRBC's web-site at:
www.savacommission.org.

NEWS AND ANNOUNCEMENTS



ERASMUS+ 'CAN YOU HEAR OUR RIVERS?'

COOPERATION OF YOUNG PEOPLE FROM THE SAVA AND THE SCHELDT RIVER BASINS

2 study trips have been planned within this project; the first one took place in September in Ghent, Belgium, while the second will be in April 2023 in Croatia

It is our great pleasure to announce that the Sava Youth Parliament and the Scheldt Youth Parliament have started cooperating on climate change in our river basins. We are very proud that our joint project "Can you hear our rivers? – Sava and Scheldt Youth Parliaments Cooperation" has been approved by ERASMUS+ Programme of the European Union.

The project objective is to bring together young people from 7 European countries (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Belgium, France and the Netherlands) to learn from each other, jointly research and

reflect on solutions to climate change-related issues. It is a 2-year project, with a budget of 60.000,00 EUR.

On May 18, 2022 we held an online kick-off meeting to discuss project activities and future steps. 2 study trips are planned to take place within this project.

The first one took place from the 6th to 12th of September, 2022 in Ghent, Belgium, and the second one will take place in April 2023 in Croatia, with ten participants, both from the Sava Youth Parliament and ten from the Scheldt Youth Parliament.

Following the exhaustive preparations for the Ghent trip, it included some exciting workshops, field trips and many other educational activities.

New EU funding for transnational cooperation

New EU funding opportunities for transnational cooperation in the 2021-2027 period are going to be available under the title "Danube Region Programme". The priorities for the new period are: 1. *A Smarter Danube Region*, 2. *A greener, low-carbon Danube Region*, 3. *A more social Danube Region*, 4. *Better cooperation governance in the Danube Region*. A Series of webinars were organized in May and June 2022 to introduce the Programme, focusing on the Programme's thematic objectives, upcoming calls for proposals and information for applicants.

The first call for proposals in the new Danube Region Programme 2021-2027 will be launched in September 2022.

A list of scheduled webinars and the link to register are available at: <https://www.interreg-danube.eu/about-dtp/new-funding-2021-2027/webinars>.



Ninth Meeting of the Parties will be held in December in Zagreb

Ninth Meeting of the Parties to the Framework Agreement on the Sava River Basin: Bosnia and Herzegovina, Republic of Croatia, Republic of Serbia and Republic of Slovenia will be held in December 2022 in Zagreb, Croatia.

The meeting is planned to be attended by the high-level delegations from the Parties to the Framework Agreement on the Sava River Basin and Montenegro, as well as representatives of the invited guests and partners from the international community

and the representative of the Youth Parliament of the Sava River Basin. The key objective of the meeting is to consider the status of the FASRB implementation since the 8th MoP held in Sarajevo in October 2019 and the key challenges ahead, particularly

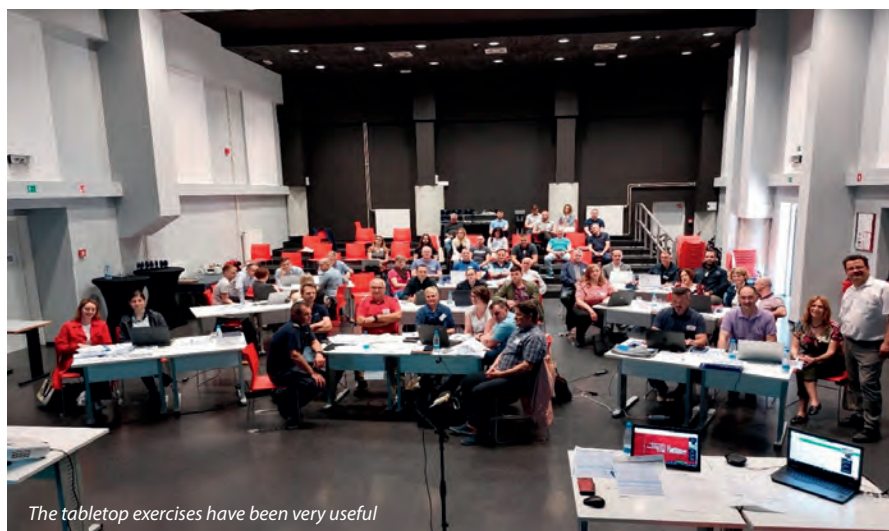


PROJECT WACOM

FIVE TABLETOP EXERCISES WERE HELD FOR MANAGING EMERGENCY SITUATIONS

In May 2022 five tabletop exercises (TTXs) were held in: Brežice (SI) on May 12, in Slavonski Brod (HR) on May 18 and 19, and in Brčko (BA) on May 23 and 24. The TTXs gathered institutions which lead and manage the response action in case of accidental pollution and floods. The existing procedures of exchange of information, the establishment of headquarters, activation of forces, command

system protocols, and transnational exchange of information were verified and supported by the new platform and tools the WACOM project would propose. The TTXs have been very useful for all those responsible for managing emergency situations, and they have shown the importance of exchanging information, experiences, plans and procedures in the disaster management cycle.



The tabletop exercises have been very useful

those related to the cooperation in the river basin management, flood risk management, rehabilitation of navigation and exchange of information relevant to the basin. The conclusion from the Ninth Meeting of the Parties will serve as

the guidance for future work within the framework of the International Sava River Basin Commission, aiming at strengthening the cooperation and the fundamentals for further advancement in the FASRB implementation in the following years.



10th Sava Youth Parliament in October in Belgrade

The Sava Commission will organize the 10th Sava Youth Parliament to be held from October 13 until October 15, 2022 in Belgrade (RS). The participants will be secondary school students and young people aged 19 to 25. The slogan of this year's Parliament is "Let's manage emergencies!" and refers to managing accidents that result in water pollution or flood management. It is closely related to the Water Contingency Management in the Sava Basin (WACOM) project, whose main goal is to reduce environmental risks in cases of accidental pollution of waters or floods. The participants will be selected according to the competition available on the website of the Sava Youth Parliament.



INTERVIEW LEON DHAENE, SECRETARY GENERAL
OF THE INTERNATIONAL SCHELDT COMMISSION

THE SCHELDT DISTRICT IS THE 'SAHARA OF WESTERN EUROPE'

The Scheldt district is sensitive to a rise in sea level and the accompanying progressive salinisation of the inland; the rise in average temperature causes drought, as well as flooding due to heavy precipitation, and a significant drop in groundwater

The International Scheldt Commission (ISC) is an intergovernmental organisation for the sustainable management of the International River Basin District of the Scheldt (including the affluents of the Scheldt, La Somme and Yser rivers, and the North Sea coastal line between Ault in France and Zierikzee in the Netherlands), and it includes an area ranging from the northeast of Paris to the southwest of Rotterdam.

The ISC was created in 1994 by the governments of the French Republic, the Kingdom of Belgium, the Walloon Region, the Flemish Region, the Brussels Capital Region and the Kingdom of the Netherlands, signing the Treaty of Charlesville Mezières on the protection of the Scheldt; and was expanded and obtained by the Treaty of Ghent (03/12/2022) the overview of the implementation of the European Water Framework Directive (2000), the Flood Directive (2007), and the operations of the Scheldt Warning and Alarm System. As such, the organisation is directly in charge of the water reserves and quality of nearly 15 million people.

As the Secretary general of the International Scheldt Commission, how do you assess the role of such an international body in the process of transboundary water management and planning?

The role of the Secretary General and the Secretariat of the International Scheldt Commission in particular, is to ensure

that the meetings between the various member states and the regional members are facilitated as efficiently as possible to reach a consensus on the decisions that need to be taken, and that progress is made towards achieving the common objectives, in particular those listed in the Water Framework Directive and the Flood Risk Directive.

The reality on the ground is that the different members have different agendas and priorities and that sometimes, for example, with the severe floods in Wallonia and Western Germany last summer, July 2021, reality takes over from planning in terms of priority. In addition, the International Scheldt Commission also manages the Warning and Alarm System for the Scheldt, which should allow the Member States and regions to communicate quickly and efficiently about calamitous pollution and what to do to contain it as efficiently as possible.

Considering the main task of the International Scheldt Commission, what are the major achievements so far in cooperation in the Scheldt Basin? What are currently the main activities of the Scheldt Commission and future plans?

As for most river commissions, we have worked hard during the last year to agree on the common parts of the management plan for the Water Framework Directive and the Flood Risk Directive, and to list a series of common initiatives to make progress in achieving the objectives in those Directives, the end date of which is the end of 2027. That is very soon! We also worked hard to develop



Leon Dhaene: Now the specter of inflation with an increase in costs hangs like a sword of Damocles over our budgets

the second generation of our alarm system: the current system is more than 12 years old.

Finally, as a result of severe soil, air, surface and groundwater pollution with Per- and polyfluoroalkyl substances (PFASs), a large class of thousands of synthetic chemicals that are widely used throughout society, which are very harmful to humans, including impairment or disruption of immunity, hormone imbalance and liver function, and under the impulse of the Netherlands and Flanders, we brought together experts to investigate this particularly heavy pollution with, in Flanders alone, 953 sites where the maximum limit of pollution was exceeded.

PFAS accumulate in the human body and are extremely slow to break down. These factors contribute to PFAS toxicity. We hope to be able to present a plan of action to drastically reduce the presence of PFAS in the environment fairly soon.

What are the main challenges you are facing in your work? How do you see the possibilities to turn the challenges in sustainable river basin management and planning to development opportunities?

Contrary to popular belief, the Scheldt district is the "Sahara of Western Europe", with sustainability levels for water management lower than even Nigeria. The impact of climate change is particularly hard on the Scheldt district: with a wide border with the North Sea, the Scheldt district is sensitive to a rise in sea level and the accompanying progressive salinisation of the inland, the rise

in average temperature causes drought, as well as flooding due to heavy precipitation, and a significant drop in groundwater. Due to low water, the pollution level of surface and groundwater is rising. Some of the most important ports in the Scheldt district (e.g. Antwerp and Ghent) are inland and a drop in the water level therefore has a direct impact on their economic activities.

The Scheldt Commission is dedicated to raise awareness among young generations about the importance of sustainable water management and established in this field, cooperation with the Sava Commission through the Sava Youth Parliament. What do you consider as possible youngsters' role in the future of transboundary river basin management and planning and the possible ways for strengthening their involvement? How will the ongoing joint project contribute to this goal?

It is particularly important to maintain and nurture an open dialogue with the younger generations, not only because they will have to implement and respect the measures in the future but also because they will directly suffer the consequences of a failed water policy. We must avoid a situation where the younger generations, whose patience is running out, will take legal action to force politicians to take the necessary measures. Already in the Netherlands and as a result of legal actions against an increase of CO₂, whole sectors came to a standstill in the last three years.

The challenges are such that we will run out of manpower to meet them, and it is better

that we work together rather than against each other to achieve the best results. Since its foundation, the Scheldt Youth Parliament has been an observer to the International Scheldt Commission, and the members of the International Scheldt Commission have recently decided to work more closely with young people. For more than 20 years, the International Scheldt Commission has been collaborating with the Universities of Antwerp, Ghent, and Lille in a training program called "Case River 21".

The aim of the programme is to acquire sustainability competencies through an interdisciplinary approach to water management, of the Scheldt in particular, from source to estuary, of the different aspects that affect various stakeholders in water management. In addition to water quality and quantity, the issues surrounding drinking water, navigation, agriculture, etc., are also examined.

This elective course aims to apply skills such as integrated systems thinking in water management, developing an integrated vision on water management, strategic and anticipatory competencies, managing cross-border issues, to identifying win-win situations for the stakeholders involved. Integrated Water Management and systems thinking, or eco-systems thinking, are the essential building blocks for better management of water bodies in the future.

Teaching competencies and skills to get started with these building blocks is therefore of prime importance for young

professionals. The Case River 21 program is unique in its kind and ideally suited to train students to take on one of the greatest challenges of the coming decades, which is to bring people and the environment back into harmony. The International Scheldt Commission, therefore fully supports this special initiative.

This year the Scheldt Commission is the host of the traditional meeting of the heads of the European river and lake commissions. How would you evaluate the cooperation of international commissions so far and the benefits of such meetings, and where do you see opportunities for future strengthening and improvement of cooperation?

It is particularly important to be able to learn from the other river commissions which measures work and, above all, which measures do not work and why, and that we can see the implementation of some of these measures in the field and evaluate their functioning. In addition, it is also interesting to hear what organizational and logistical problems the other secretariats have and how they have tackled them: especially in times of lockdown, video meetings, and absence due to illness, it was quite a challenge to optimize the operation of the secretariats. Now the specter of inflation with an increase in costs hangs like a sword of Damocles over our budgets.

The international river commissions can play a special role as stepping stones between the member states/regions and the European Commission to achieve the objectives in the directives, to exchange knowledge and to use the available resources as efficiently as possible. Without cooperation, we will get nowhere, we will dump the problems on the neighbour (especially those downstream), and we may even cause international tensions.

For example, recently heavy pollution of the Oder put a lot of pressure on relations between Germany and Poland. Cooperation between the different Member States, in river committees, is a necessary requirement to achieve sustainable water management, but the road there is still a "... long and winding road...".

(Duško Isaković)

The international river commissions can play a special role as stepping stones between the member states/regions and the European Commission... Without cooperation, we will get nowhere, we will dump the problems on the neighbour (especially those downstream), and we may even cause international tensions



We must avoid a situation where the younger generations, whose patience is running out, will take legal action to force politicians to take the necessary measures

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

REVITALIZATION OF THE SAVA WATERWAY IN ITS ENTIRE LENGTH IS AN ABSOLUTE PRIORITY FOR ALL OF US

The entire European inland navigation community and beyond has an ecological and economic interest in a responsible, innovative and coordinated approach to the Sava River and its entire river basin

When we are talking about the implementation of the Framework Agreement on the Sava River Basin, the unique international agreement that regulates water management, as well as navigation issues in the basin, one of the main milestones in the period since the setup of the Secretariat of the Sava Commission for all Member States including the Republic of Croatia, is undoubtedly the approval of the first Sava River Basin Management Plan in December 2014 and

the first Sava River Basin Risk Management Plan in October 2019.

The Framework Agreement itself is one of the most important multilateral agreements for the Republic of Croatia as far as the Sava River and its basin are concerned, and it is the basis for establishing and strengthening regional cooperation among the Member States of the Commission and beyond.

Furthermore, the entire European inland navigation community and beyond has an ecological and economic interest in a responsible, innovative and coordinated approach to the Sava River and its entire river basin, which is achieved through the work of the Sava Commission by implementing the Framework Agreement.

Consequently, the Sava Commission has, in the European context, the reputation of a

very successful international organization; it is the model role of work to other similar business entities throughout Europe, and I must indeed emphasize that the Republic of Croatia is honoured to be currently chairing such a professional and successful organization in the field of inland navigation.

As to the navigation, which is under the Ministry of the Sea, Transport and Infrastructure, particularly the Directorate for Inland Navigation - which is responsible for implementing international agreements, all decisions adopted by the Sava Commission are regularly implemented.

Particular importance is paid to the restoration and further development of inland navigation, evident through the support and cooperation that the Ministry of the Sea, Transport and Infrastructure, Inland Navigation Administration and the Sava



in terms of sustainable and green management.

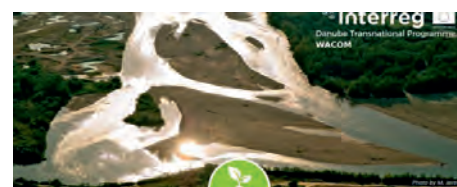
The already mentioned Flood Risk Management Plan for the Sava River Basin is of great significance. Floods occur on rare occasions and cannot be avoided. What can be done is to take preventive measures to mitigate the harmful effects of floods, i.e., reduce them to an acceptable level.

Flooding is the temporary coverage of those parts of the land with water that are usually not. Their causes can be different, and according to their occurrences, we distinguish natural floods from those caused by human factors; and we distinguish river floods, torrential floods from coastal and tidal floods.

Floods as such often result in enormous material damage, the devastation of plant and animal ecosystems, and the loss of human lives. In order to minimize such consequences in today's digital age, it is necessary to make the approach and focus on modern ways of flood protection while maintaining existing flood protection systems.

In order to commit themselves to fulfilling the ultimate goal, in line with the Sava River Basin Risk Management Plan, the signatory states to the Framework Agreement are currently working in concert on the project "Water Contingency Management in the Sava River Basin (Pollution and Floods) - WACOM".

Ministry of the Sea, Transport and infrastructure is a project partner within the mentioned project, together with the Sava Commission and seven other project partners. The EU INTERREG Danube Transnational Program approved the project. Priority specific objective is improving preparedness for pollution risk management and is co-financed by EU funds (ERDF and IPA II). The project commenced on July 1, 2020, and is expected to last by December 31, 2022.



WACOM

Water Contingency Management in the Sava River Basin

*Improved transboundary coping capacity
in the case of accidental pollution and floods
on water courses in Sava River Basin.*

Overall project budget: 1.570.581,00 €
ERDF contribution: 1.040.086,35 €
IPA contribution: 294.907,50 €

Project duration: 07/2020 – 12/2022

Lead partner:
University of Ljubljana
Contact: dr. Primož Banovec | primoz.banovec@fgg.uni-lj.si

Project partner:
International Sava River Basin Commission
Contact: Samo Grošelj | sgroselj@savacommission.org



The main goal of WACOM is the improvement of cross-border capacities for pollution and floods on watercourses in the Sava River Basin, improvement of the cooperation among the key actors (civil protection, water management and river navigation administrations) and joint development of procedures for activating accident management protocols in the basin.

The project aims to reduce environmental risk and improve efficiency through the joint response, upstream and downstream; connecting countries and sectors and involving target groups in improving the protection of water resources.

Through such projects, the joint cooperation, understanding, and implementation of the Framework Agreement are seen best; all signatory states act together to benefit the entire Sava River Basin.

The Sava Commission, particularly the Secretariat of the Sava Commission, proved that it was professional, responsible, innovative, and competent to deal with the challenges in the Sava River Basin and promote the Sava Commission at the interstate and international level.

Duška Kunštek, Ph.D.

Director of the Sector for Inland Navigation
in the Ministry of the Sea,
Transport and Infrastructure,
Chairperson - Member to the Sava
Commission from the Republic of Croatia

Commission have continuously provided for many years.

As a result, the Sava River waterway has been continuously restored and improved, which is our obligation and a priority when considering the Sava River's transport, tourism, and general economic potential in all signatory countries, not only in Croatia.

Comprehensive and adequate, in the identified places, necessary revitalization of the Sava waterway in its entire length is an absolute priority for all of us, especially

The Sava Commission has, in the European context, the reputation of a very successful international organization. I must indeed emphasize that the Republic of Croatia is honoured to be currently chairing such a professional and successful organization in the field of inland navigation

ACTIVITIES OUTLINE ON SEDIMENT MANAGEMENT PLAN FOR THE SAVA RIVER BASIN

THE DEVELOPMENT OF A SEDIMENT MANAGEMENT PLAN IS URGENTLY NEEDED



Robert Haim - The Sava River

The Sava River and its tributaries were subject to significant changes in sediment transport and water regime, with serious consequences for the river, groundwater, and bank stability

Since 2017, the Protocol on sediment management to the FASRB emphasizes the importance of sustainable sediment management in terms of quality and quantity for maintaining the water regime in the Sava River Basin.

The ISRBC accepted the Program for the Development of the Sediment Management Plan in the Sava River Basin, which contains a list of activities and actions required for the development of the Plan in accordance with the Protocol.

On the initiative of the UNESCO Venice Office and the International Sava River Basin Commission (ISRBC), international and national experts were commissioned to meet the above requirements and to prepare an Outline on sediment Management Plan for the Sava River Basin.

The Outline initially presents the national sediment management systems to understand the organisational and institutional framework and related activities

in the areas of water regime, monitoring network, dredging, reservoirs, erosion control, wetlands, retention areas and biodiversity of the ecosystems/areas. This was followed by a detailed overview of the existing sediment monitoring system and sediment quantity and quality data, and identification of monitoring and sampling gaps.

Through analysis of data uncertainty and requirements for other monitoring issues (erosion control, navigability, wetland and biodiversity conservation, reservoir siltation) suggestions were given for improving sediment monitoring system. General gaps in the existing sediment monitoring system include (a) poor density of monitoring stations, (b) limited availability of sediment monitoring data for reliable basin-wide sediment assessment, (c) lack of monitoring data on reservoir siltation, and (d) lack of appropriate storage and processing of datasets. The subsequent section addresses the sediment management problems and identifies the most important ones as (a) disruption of longitudinal continuity and hydrological alterations, (b) morphological alterations, (c) dredging and sediment excavation, and (d) soil erosion.

After discussions with all relevant stakeholders, a proposal for realistic sediment management improvements was presented. The final section provides a proposal for the development of a full-fledged Sediment

Management Plan suggesting its objectives, phases, methodological approach, and selection and evaluation of alternative management solutions.

It was concluded that the Sava River and its tributaries were subject to significant changes in sediment transport and water regime, with serious consequences for the river, groundwater, and bank stability.

The development of a sediment management plan is urgently needed to develop sustainable water management strategies and achieve good water status. Effective sediment management must be site-specific, act at the level of each significant pressure and understand the prevailing spatial and temporal processes operating by the pressures at the basin-wide scale.

In developing and implementing the Sava Sediment Management Plan, a phased approach is recommended that begins by filling information and knowledge gaps before developing sediment management measures and strategies.

The *Outline*¹ is available at the website of the Sava Commission.

Damir Bekić, Ph.D.,
Faculty of Civil Engineering,
University of Zagreb

¹ <https://www.savacommission.org/documents-and-publications/water-management-1957/outline-on-sedimen-management-plan-in-the-sava-river-basin/10538>

IN MEMORIAM

ŽELJKO MILKOVIĆ (1960 - 2021)*Deputy Secretary for navigation of the Sava Commission*

Every parting is difficult. It is even more difficult when we say farewell to the ones with whom we were close, worked together, and cooperated for many years. They left a mark in our lives, so some part of us goes with them too.

One of such people was Željko Milković, Deputy Secretary for Navigation of the Sava Commission, whose meaningful and prosperous life suddenly ended right before us on November 25, 2021, when our Captain, our boatman, left us. He went on his last voyage.

Although words cannot provide comfort or compensate for a great loss, by looking back on his career path, we are obliged to draw attention to his significance and above all, to remember his exceptional qualities as a man and a friend.

Željko was born in 1960 in Sisak, where he attended primary and secondary school. After that, he graduated from the Maritime Faculty in Rijeka. Apart

from a few years at the beginning of his career when he sailed the open seas, he devoted his entire professional career to the inland navigation.

He worked his way up from the captain on river ships to the general manager of the Danube Lloyd. After that, he performed the most responsible duties in the Directorate for Inland Navigation in the Ministry of the Sea, Tourism, Transport and Development of the Republic of Croatia.

After that, his professional and life path was inextricably linked to the Sava Commission, whose establishment and performance from the very beginning in 2006 made an indelible contribution we are exceedingly proud of. As a Deputy Secretary for Navigation, he approached every challenge and opportunity for the improvement and development of inland navigation in the Sava Basin with great enthusiasm.

His commitment, expertise and vast professional experience were highly

appreciated at the pan-European level, as evidenced by, among other things, the restoration of navigation on our Sava River, which undoubtedly owed much to his professional and human involvement.

Still, what is especially important to point out is that Željko Milković, with all his professional qualities, was above all a modest, moral and honest man who could be trusted without reservation.

We can testify to this the best: his colleagues from the Secretariat, with whom he shared good and other moments that always seemed easier along with his sense of humour and his always moderate, light and positive approach to sorting out the problems.

It was our pleasure and honour to work closely with Mr Milković all these years that now seem to have flown by instantly. However, many joint memories will still live in us.

Have a safe sailing, our Captain. We will miss you!

RULEBOOKS INVESTIGATION OF ACCIDENTS IN WATERBORNE TRAFFIC IN THE REPUBLIC OF SERBIA



Deformation of the bow of the hull of the ship Deligrad

AFTER EVERY SEVERE INLAND NAVIGATION ACCIDENT, A SAFETY INVESTIGATION MUST BE CONDUCTED

It is initiated and completed 17 (seventeen) safety investigations of serious inland navigation incidents and inland navigation incidents, 2 (two) of which occurred on the Sava River

The Center for Investigation of Accidents in Transport (the Center) is a particular organization consisting of the Sector for Investigation of Accidents in Waterborne Traffic, which is responsible for performing professional activities related to the investigation in waterborne traffic.

There is also a Sector for Investigation of Accidents in Air Traffic, a Sector for Investigation of Accidents in Railway Traffic and General Affairs Department within the Centre.

The Sector for Investigation of Accidents in Waterborne Traffic became operational

on June 1st, 2017. It is independent in its operation and independent of all other bodies and organizations responsible for waterborne traffic.

Professional activities related to accident investigation are independent of criminal investigations or other parallel investigations that determine responsibility or the degree of guilt.

Investigation and determining the causes of accidents are not aimed at establishing criminal, economic, misdemeanour, disciplinary, civil, or other responsibilities. Primary tasks of the Center, Sector for

Investigation of Accidents in Waterborne Traffic related to inland navigation are: Investigation of severe inland navigation incidents and inland navigation incidents, Drafting and publishing the Final Reports on conducted specific investigations containing safety recommendations to improve waterborne traffic safety.

A severe inland navigation incident on inland waters is an extraordinary event that occurred in the navigation or exploitation of an inland waterway vessel, waterway or safety facilities on it, which resulted in complete loss of the vessel, fatal injury or serious bodily injury or damage to the



The Sector for Investigation of Accidents in Waterborne Traffic became operational on June 1st, 2017

environment by spilling more than 50 tons of oil and petroleum derivatives.

Inland navigation incident on inland waters is an extraordinary event that occurred in the navigation or exploitation of an inland waterway vessel, waterway, or safety facilities, which caused material damage, environmental pollution, human casualties, or bodily injury.

Authorities and organizations, shipowners, shipping companies, the shipmaster or the person replacing him, other members of the vessel's crew, persons involved in a severe inland navigation incident and inland navigation incident, as well as all other legal or ordinary people aware of the issue, must notify the Center without delay.

After every severe inland navigation accident, a safety investigation must be conducted if it happens on the waterway of the Republic of Serbia, regardless of the flag whose ship is flying.

In case of inland navigation incidents, the Center, before deciding to initiate a safety investigation, conducts an assessment of the need to undertake a safety investigation, taking into account the severity of the incident, the type of vessel and cargo on it, as well as the possibility that the results of the safety investigations may influence the prevention of inland navigation incidents.

The safety investigation in waterborne traffic is performed in order to increase the safety of navigation, prevent pollution of the watercourses from vessels and reduce the risk of occurrence of severe inland navigation incidents and inland navigation incidents.

The Rulebook on the Manner of Conducting the Procedure for Investigating Maritime Accidents and Incidents prescribes the manner of conducting the procedure for severe inland navigation incidents and inland navigation incidents, as well as monitoring the implementation of safety recommendations.

For the need of investigating every severe navigation incident and navigation incident in inland navigation, the Main Investigator of the Center forms a Working Group, led by the Main Investigator in Waterborne Traffic.

After the safety investigation in waterborne traffic, the Center prepares and publishes an Investigation Report, which contains data on the vessel, data on navigation, data on navigation incidents in inland navigation, event description, analysis, conclusions and safety recommendations and attachments. The Report does not contain personal data. The Investigation Report can be Final Report and Interim Report.

The Center issues safety recommendations based on the analysis of data and the overall

results of the conducted investigation in waterborne traffic.

Safety recommendations are addressed to the parties to which they are issued, the competent authorities and organizations in the Republic of Serbia, and the competent authorities and organizations of interested states and international organizations.

Authorities and organizations to which safety recommendations have been addressed, except for the competent authorities and organizations of other interested states, are obliged to take appropriate measures to implement them and report to the Center at least once a year on measures taken or planned to be taken.

The Center initiated and completed 17 (seventeen) safety investigations of serious inland navigation incidents and inland navigation incidents on inland waterways of the Republic of Serbia, 2 (two) of which occurred on the Sava River.

The Center publishes the Final Report of a safety investigation in waterborne traffic on its official website: www.cins.gov.rs.

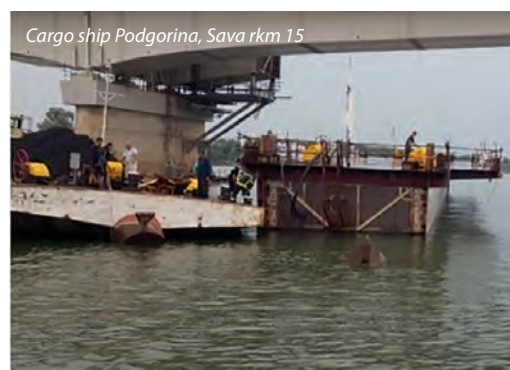
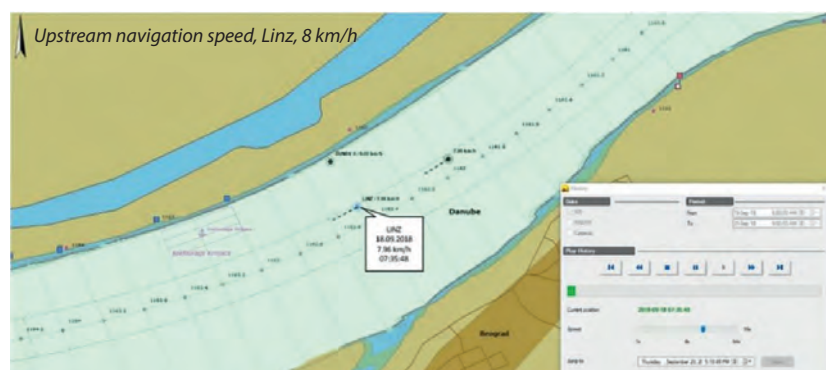
Prof. dr Nebojša Petrović,

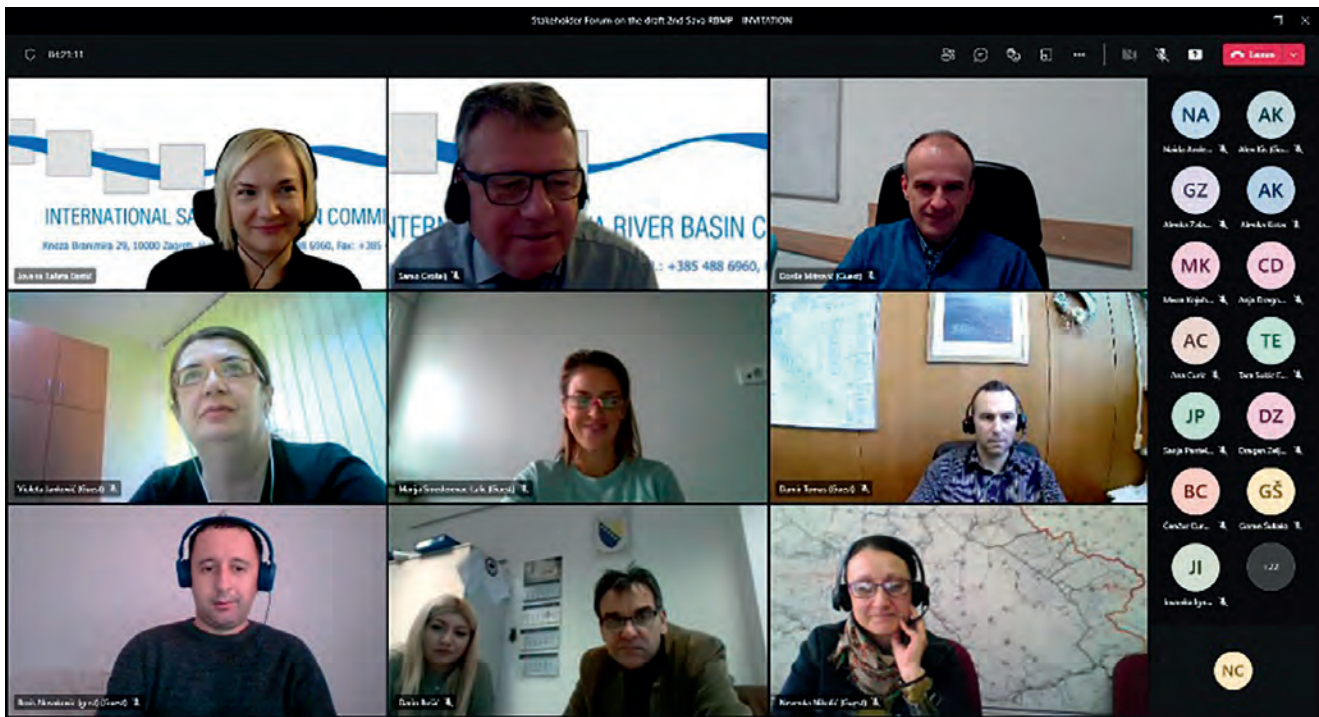
Main Investigator

Cap. Jovica Golubović, M.Sc.,

Assistant to the Main Investigator,

Main Investigator in Waterborne Traffic





CONDUCTED PUBLIC CONSULTATIONS

FINAL APPROVAL OF THE 2nd SAVA RIVER BASIN MANAGEMENT PLAN IS EXPECTED IN AUTUMN 2022

The document comprising all received comments will be published on the Sava Commission's official website in the following period

Considering the utmost importance of the broad stakeholder as well as wide public involvement in the river basin management and planning, Sava Commission continuously, throughout the development of the 2nd Sava RBMP ensure and encourage public participation and create a mechanism which can facilitate the involvement of all relevant stakeholders as it is required by the FASRB and as well in accordance with the WFD (2000/60/EC).

Public participation activities in preparation of the 2nd Sava RBMP can be summarized into three main categories:

Active stakeholder involvement- Ensuring broad and active stakeholder involvement,

the overall process of the 2nd Sava RBMP preparation with the coordination of the Secretariat of the Sava Commission is led by the Permanent Expert Group for River Basin Management (PEG RBM). Certain issues touching upon the 2nd Sava RBMP have been subject to ad-hoc discussions of other expert groups (PEG GIS, PEG Flood Protection, PEG Hydrological and Meteorological Issues, PEG Navigation and PEG for Accident Prevention and Control) in accordance with their competence. Major stakeholders or stakeholder groups had an opportunity to actively participate in the process, as well as in all other activities of the Sava Commission, by gaining the Observer status.

Information sharing and awareness-raising- Information about the development process of the 2nd Sava RBMP in the different phases of the planning cycle (the updated Sava River Basin Analysis, or Interim Significant Water Management

Issues Report) were publicly accessible on the Sava Commission's official website. In addition, information on the 2nd Sava RBMPs preparation have been disseminated through the official bulletin of the Sava Commission–Sava Newsflash. Moreover, phases of the 2nd Sava RBMP development have been presented at meetings organized by the Sava Commission or/and other organizations/institutions (ICPDR, UNECE, EU, Danube Strategy, etc.).

Consultation activities- Aiming at collecting information and data, discussing issues relevant for the sustainable river basin management in the transboundary context, consultation with stakeholders and wider public have been organized during the process of 2nd Sava RBMP preparation.

Public consultation for the documents prepared in the process of the 2nd Sava RBMP development have been organised via the web. The Interim Overview of the Significant

Water Management issues in the Sava River Basin was available for comments from 29 July to 20 October 2016 while the draft 2nd Sava RBMP with the Programme of Measures from 23 November 2021 to 23 March 2022.

Public consultation campaign for the 2nd Sava RBMP

The motto for the 2nd Sava RBMP public consultation campaign was “Let’s jointly discuss!”

On the web page within the renovated official website of the Sava Commission, the draft 2nd Sava RBMP and Public Questionnaire specially developed to facilitate commenting were available for all interested.

To launch and promote public consultation campaign, following the previously established successful public participation and consultation practice in the river basin and flood risk management, the Sava Commission organised Sava Stakeholder Forum on 17 December 2021 as an online event.

The Sava Stakeholder Forum, attended by more than 80 participants, representatives of the Ministries, national authorities, public companies, NGOs, academia, scientific institutes, and private sectors, as well as international organizations and observers to the Sava Commission, was officially open by the Executive Secretary of the Sava Commission Mr Dragan Zeljko. The official opening was followed by the first public presentation of the results and key preliminary findings of the draft 2nd Sava RBMP.

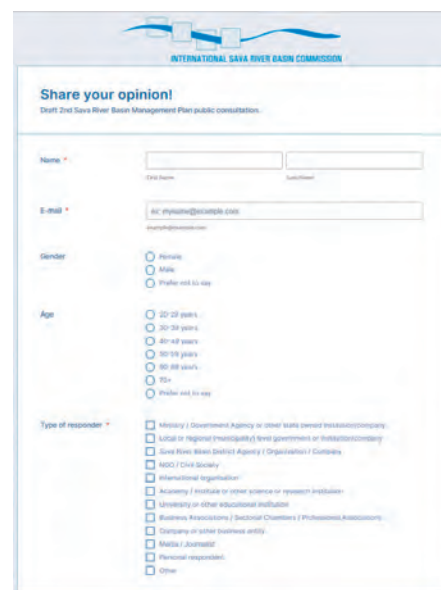
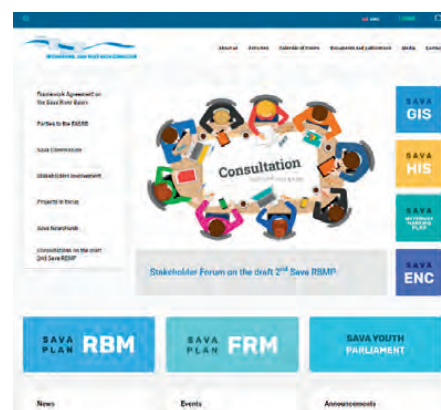
With aim of facilitating the involvement and encouraging the discussion among

participants, the Forum was organized through an online collaboration platform allowing participants to visualise feedback and ideas.

Participants had an opportunity to analyse the strength and weaknesses of the river basin management and planning in the Sava River Basin and to provide an opinion related to synergetic possibilities for the coordinated development of water management and other water dependent sectors, which can lead to enhanced sustainability and resilience of the whole Sava River Basin. Furthermore, discussion about climate change adaptation practices brought interesting ideas related to the implementation of nature-based solutions, water retention measures, comprehensive climate change modelling, aquifer recharge and development of biodiversity indicators of climate change. Furthermore, participants discussed the possibilities for financing the transboundary Programme of measures to define a sustainable, technologically based and economically sound way forward in transboundary river basin management and planning cooperation.

Great contribution and assistance in the successful Forum organization and facilitation of the work and reporting for the Forum group session were provided by the PEG RBM members Naida Andjelić and Violeta Janković from Bosnia and Herzegovina, Damir Tomas from Republic of Croatia and Nevenka Nikolić and Miodrag Milovanović from Republic of Serbia.

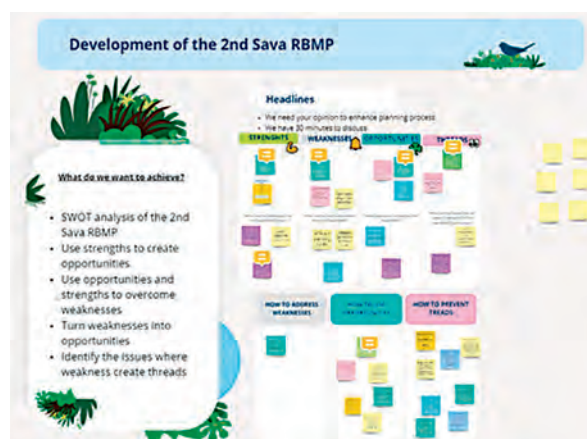
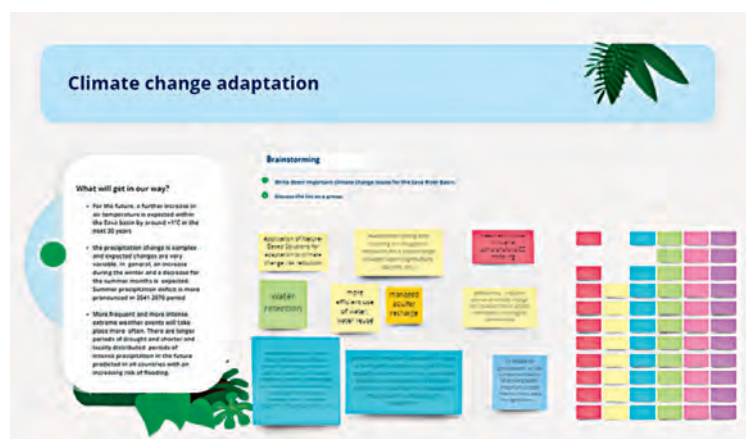
All comments and contributions received in the public consultation campaign were carefully considered and used to facilitate the revision and the finalization of the draft



2nd Sava RBMP. The document comprising all received comments providing the information related to the way comments were addressed will be published on the Sava Commission’s official website in the following period.

The final approval of the Sava RBMP is expected in Autumn 2022.

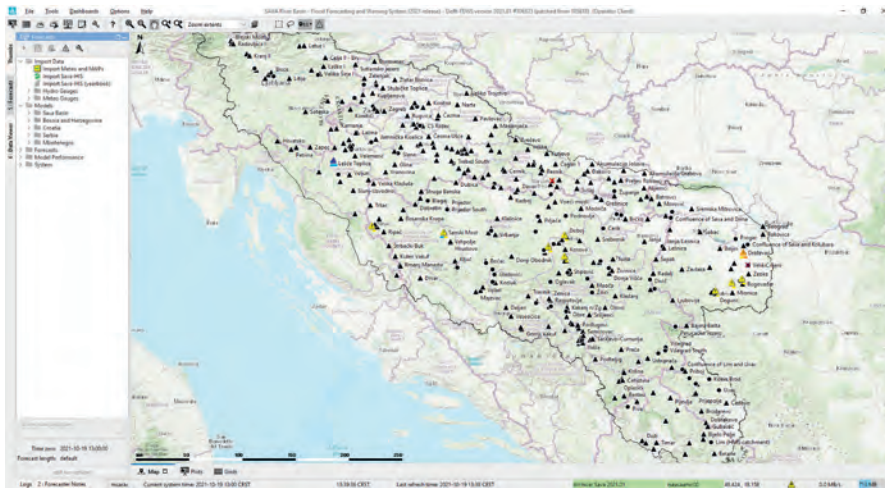
Jovana Rašeta Bastić,
Samo Grošelj,
ISRBC Secretariat



PLATFORM 'SAVA FFWS' HAS BEEN OPERATIONAL SINCE OCTOBER 2018

THE FLOOD FORECASTING AND WARNING SYSTEM HAS BEEN SUCCESSFULLY UPGRADED TO THE NEW SOFTWARE VERSION

Sava FFWS is regularly used by relevant national organizations from five countries, ten organizations currently, while the Sava Commission oversees its functionality



The Sava FFWS Operator Client – forecasting locations

Under the coordination of the Sava Commission, the Flood Forecasting and Warning System in the Sava River Basin (Sava FFWS) has been successfully implemented, and the system has been operational since October 2018.

Following its successful establishment, Sava FFWS is regularly used by relevant national organizations from five countries responsible for flood forecasting, ten national organizations currently, while the Sava Commission oversees its functionality.

The Sava FFWS platform consists of two main components: simulation models and a data integration platform. Both hydrological and hydraulic simulation models use software like HEC-HMS, HEC-RAS, Mike11, HBV, HBV-light and WFlow, while the data platform is based on Delft-FEWS.

The backend configuration is such that there is an operational version of the Sava FFWS, which is hosted at the Slovenian Environment Agency as the primary instance. At the same time, as a backup, there

are three instances in the Republic Hydrometeorological Service of Serbia, Sava River Watershed Agency in Bosnia and Herzegovina, Croatian Meteorological and Hydrological Service, and the instance at the Sava Commission, which serves as an archive and web component.

There is a continuous data synchronization among all five hosted instances. Next to the operating system is a separate development and testing instance of Sava FFWS, hosted at servers at the Republic Hydrometeorological Service of Serbia.

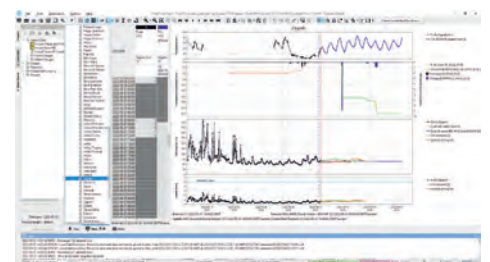
Sava countries, under the coordination of the Sava Commission, developed and signed in July 2020 the Memorandum of Understanding on cooperation toward the regular functioning and maintenance of the Sava FFWS in order to ensure the smooth operation of the system and its regular maintenance. Among all other issues, the Memorandum regulates the roles and responsibilities of the hosting organizations and the users of the system, and the third parties as well, including the technical support for the regular maintenance of the system.

As an activity of regular maintenance, Sava FFWS has recently been upgraded to the new system software version. The software upgrade was performed in the period July-September 2021, followed by another security update beginning of January 2022. The upgrade also included all necessary interventions on the servers' and database software.

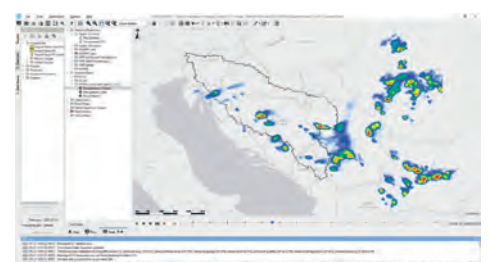
The original version of Delft-FEWS was 2016.02, while it was upgraded to version 2021.01. As a result, the client applications, in FEWS terminology called Operator Clients and Configuration Manager, that are running at the user's device, as well as the Administration Interface that are running at the backend, are now much more stable and efficient.

The upgrade was finalized by updating the documentation: the user manual and technical reference documents and the knowledge transfer performed through the international refresher exercise held in February 2022.

Mirza Sarač,
ISRBC Secretariat



The Sava FFWS Operator Client – time series data



The Sava FFWS Operator Client – remote sensing data



In the national park have been identified 1148 species and subspecies of vascular flora

NATURE IT IS AN IMPORTANT ECOLOGICAL CORRIDOR FOR PLANTS, AS WELL AS FOR LARGE CARNIVORES

RISNJAK NATIONAL PARK IS A NATURAL LINK BETWEEN THE ALPS AND THE DINARIC MOUNTAINS

The flora of the national park is a natural bouquet of the most spectacular colours. Schlosser's meadow below the top of Risnjak is literally sprinkled with flowers. In spring and summer, the visitors are rewarded with a wonderful experience of scattered variegation

Risnjak National Park is named after the Risnjak mountain massif, which was named after the lynx (*Lynx lynx*). Along with the brown bear (*Ursus arctos*) and the wolf (*Canis lupus*), the lynx is one of the three large beasts that naturally inhabit the Republic of Croatia. Along with the Risnjak mountain massif with the highest peak of 1528 meters, the Snježnik massif with the highest peak of 1506 meters also rises.

Risnjak massif was proclaimed a national park in 1953. However, due to the exceptional values of the Kupa River, in 1997, Risnjak National Park was extended to the source area of the river Kupa River. The total area of the national park is 6,340 ha.

Since the foundation rock of the national park is carbonate, rainwater flows underground, which means that the Risnjak National Park does not actually abound in much water. This is one of the additional

reasons why the value of the Kupa River has been recognized and why it is included in an integral part of the national park.

The beauty of the Kupa valley is immeasurable, and many will say that this river is the most beautiful in the Republic of Croatia, while the Kupa spring is undoubtedly one of the most attractive karst places. Beneath the 100-meter-high vertical rock, at an altitude of 321 meters, there is a small lake from which the firm and clean Kupa River starts its flow. According to research conducted so far, the water flows from a vertical grotto is 154 meters deep. This is also the reason for the cold water temperature, of only 7°C.

The Kupa valley is the only inhabited area of the national park with about twenty inhabitants. Therefore, it is worth preserving these sites due to their architectural and ethnographic heritage. Most of the national park is overgrown with

mixed beech and fir forests (*Abieti-Fagetum dinaricum*). It covers an altitude range of 600 to 1200 meters. Above that altitude, the fir is getting smaller. There are beeches, but of much smaller in size. It is already a belt of pre-mountain beech (*Homogino alpinae-Fagetum sylvaticae*).

In addition to these forest communities with altitude boundaries, there are other communities such as fir forest with milawa (*Calamagrosti Abietetum*) or popularly called in forestry circles - fir forest on stone blocks and fir forest with hard fern (*Blechno Abietetum*). Since forest management is not allowed in the national park, some trees are impressive in size and reach heights of up to 45 meters.

The flora of the national park is a natural bouquet of the most spectacular colours. Schlosser's meadow below the top of Risnjak is literally sprinkled with flowers. In spring and summer, the visitors are rewarded with a wonderful experience of scattered variegation. Here grows the star lily (*Lilium bulbiferum*) and edelweiss (*Leontopodium alpinum*), an extremely endangered plant and therefore strictly protected.

Risnjak National Park belongs to the Dinaric mountain system, which is a natural link between the Alps and the Dinaric Mountains. It is an important ecological corridor for plants, as well as for large carnivores. It is located in a karst area with particular geological, geomorphological and hydrological features. Limestones and dolomites predominate, forming permeable rocks, thus creating a large underground reservoir in the Risnjak and Snježnik massifs.

On the other hand, clay slates, sandstones, and quartz conglomerates are waterproof deposits. From a hydrological point of view, the Kupa River belongs to the Sava River Basin in the broad sense. The Sava River Basin area can be characterized as a relatively affluent area with a surface and underground hydrological network.

Daniel Springer,

Ministry of Economy and Sustainable Development, Head of Service for Protected Areas, Nature Protection Directorate

'PLASTIC PIRATES - GO EUROPE!'

STUDENTS AND SCIENTISTS ON A MISSION AGAINST PLASTIC POLLUTION IN RIVERS



Around seventy percent of the litter found along the riverbanks was plastic, half of which was single-use plastic

The Plastic Pirates - Go Europe project brings together scientists and schools to research river pollution with litter and microplastic hand-in-hand. The project has been implemented in Germany since 2016.

In addition, it was implemented in Germany, Slovenia and Portugal in 2021 as a joint action during our Trio Presidency, with financial support from the respective national ministries of science and education.

There was great interest from Slovenian high schools and elementary schools to participate in the project, and 100 schools were selected to participate in 2021. The scientists gave webinars for school mentors and provided the teaching material* and the project booklet* with the protocol for sampling litter and microplastic. The microplastic net was sent to each school.

Teachers worked to raise awareness about plastic pollution in our rivers, seas, and ocean, and students conducted the fieldwork (often on a river or stream near the school). Students, divided into four smaller working groups, sorted the litter into categories and took photographs, observed the floating litter, deployed the microplastic

net in the river for one hour and measured the flow velocity.

Finally, they uploaded the data and photographs to the project server (which were verified by researchers) and resent the microplastic net with the captured material back to our institute for analysis. About 1500 students and schoolchildren participated in 2021 in Slovenia.

In half samples analyzed so far, thirty-two rivers and streams were researched, and only six were not polluted with microplastics. The Sava River and its tributaries were sampled most frequently, and the highest concentration of microplastics was found in the accumulation lake between Brežice and Krško (1.2 particles/m³).

The most abundant material was polyethylene in the form of films, most likely derived from shopping bags, packaging films and agricultural films. Polystyrene was found near the towns, most likely from packaging and construction.

Around seventy percent of the litter found along the riverbanks was plastic, half of which was single-use plastic. Cigarette butts were the most common waste found, and

plastic waste, such as plastic bottles, was also the most common floating waste due to its physical properties.

We need to be aware of the connection with rivers - eight of the top ten most common litter items in rivers are also the most common items in the sea. The international Plastic Pirates Go Europe team is working to Europeanize the project. A first step is to expand to ten European countries, with priority given to those supported by their national ministries.

We hope to extend the project to the countries of the Sava River basin and further to the Danube River basin, where the Slovenian team could offer the knowledge and work in cooperation with the Sava Youth Parliament and national researchers, with the support from the national ministries involved (for science and/or environment and spatial planning).

The results of Plastic Pirates Go Europe show that riverine litter is a major environmental problem, and it finally should be recognized as one of the descriptors and as a relevant indicator of Good Environmental Status in the Water Framework Directive (WFD) as it is in the Marine Strategy Framework Directive (MSFD) as both are inevitably connected.

*both available for download at:

<https://www.plastic-pirates.eu/en>

Mateja Grego,

National Institute of Biology, Marine Biology Station Piran, Slovenia, head of Slovenian Plastic Pirates Go Europe



ENVIRONMENT A SLOGAN FOR THE 1ST OF JUNE 2022 – THE SAVA DAY

'PROTECT OUR RIVERS FROM PLASTIC AND MICROPLASTIC!'

The most common wastes on the banks of the Sava and Bosnia Rivers were plastic bags, bottles, bottle caps, fast food packaging, cigarette butts...

The Parties to the Framework Agreement on the Sava River basin have declared the 1st of June as a Sava Day. In the "normal" times, the Sava Day was celebrated on different occasions organized by the Sava Commission and by national institutions on the transboundary and national levels. Nevertheless, the Sava day events had to be organized as the web events because of the pandemic years. For example, last year, the focus was on raising awareness of floods. The high-level watermarks were simultaneously set at the Sava River's different locations and its tributaries. Then, the event was broadcasted on the web.

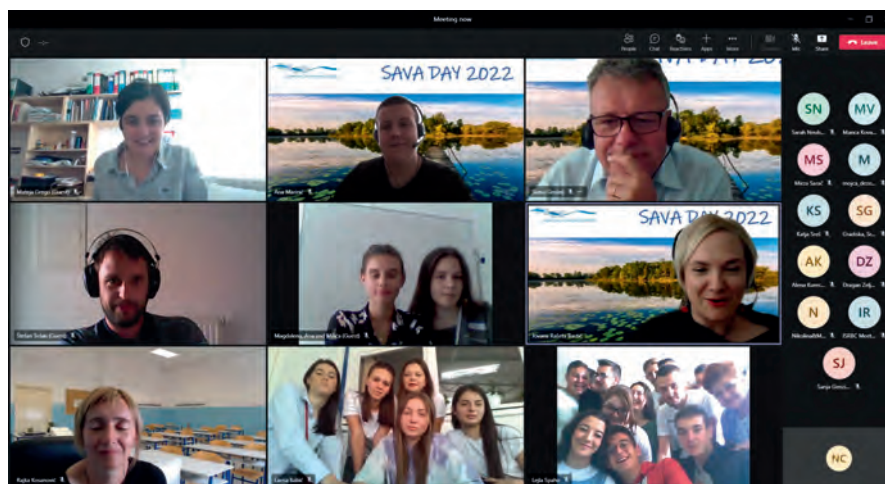
This year the Sava Commission has decided that it would be necessary to raise awareness of the sustainable use of plastic in everyday life, which ends in our rivers, lakes, and seas. Therefore, the slogan of Sava Day 2022 is "Protect our rivers from plastic and microplastic!". The round table was organised with the National Institute for Biology and the Institute for Waters from Slovenia. In addition, the schools that collaborate in the Sava Youth Parliament presented the monitoring campaign results on the selected locations along the Sava.

The following schools participated in the roundtable:

Mixed Middle School "Hazim Šabanović", Visoko and Vocational and Technical High School, Gradiška from Bosnia and Herzegovina, X. gimnazija "Ivan Supek" High School, Zagreb



Plastic waste predominates on the water surface



The roundtable participants: It is not enough to have a clean shore; we also need clean rivers

from Croatia, Biotechnical Education Center Ljubljana, Food school, Ljubljana from Slovenia and School of Applied Arts Šabac from Serbia.

Sampling from riverbanks was carried out in the spring of 2022 by the schools participating in the roundtable. The students used two different methodologies to obtain data on the amount, type, and composition of the main (macro) waste. As expected, this waste sampling campaign was also dominated by plastics, which accounted for 66% of total waste. In 51% of cases, these were disposable products. The most common wastes on the banks of the Sava and Bosnia Rivers were plastic bags, bottles, bottle caps, fast food packaging, cigarette butts, etc. When sampling floating debris, it was expected that plastic waste would predominate on the water surface, mainly due to buoyancy, mass, durability, compactness, and shape. Visual observation of floating waste revealed 45 pieces of waste, of which plastic bags (74%) and wet wipes (11%) predominated.

Microplastics (particles 1-5 mm in size) were found at Ljubljana, Gradiška and Šabac. Polyethylene in the form of films and fragments was mainly present in the Sava River samples. Considering the flows of the Sava River at gauging stations near the sampling point, it is estimated that the annual intake of microplastics across the Sava increases from Ljubljana to Belgrade. The Bosna River is also polluted with microplastics.

In the roundtable, which gathered more than 80 participants, the Executive Secretary of the Sava Commission, Mr Dragan Zeljko, emphasized that the participation of young people in the celebration of Sava Day lasted since 2008, when the Youth Parliament of the Sava River Basin was established, as a unique platform that allows young people's voices to be heard and encourages their involvement in water management.

Duška Kunštek, the Chair of the Sava Commission, stressed that the involvement of young people was essential for the sustainable development and preservation of the rich biodiversity and unique beauty of the Sava River Basin.

At the end of the Sava Day celebration event, the participants agree that plastic poses a significant threat to our environment. Therefore, every person in the world, especially young people, should contribute to minimising plastic use by changing behaviour, while the industry should use more environmental-friendly materials wherever possible, caring for the future of the new generations.

The roundtable participants agreed: "It is not enough to have a clean shore; we also need clean rivers."

Samo Grošelj,
ISRBC Secretariat



Sava Day

June 1, 2022

***Protect our rivers from plastics
and microplastics***



NACIONALNI INŠTITUT ZA BIOLOGIJO
NATIONAL INSTITUTE OF BIOLOGY

MORSKA BIOLOŠKA POSTAJA PIRAN
MARINE BIOLOGY STATION PIRAN



INŠTITUT
ZA VODE
REPUBLIKE
SLOVENIJE

*Institute
for Water of
the Republic
of Slovenia*



INTERNATIONAL SAVA RIVER BASIN COMMISSION

SAVSKI VJESNIK

INTERVJU: LEON DHAENE

Moramo izbjeći situaciju da mlađe generacije, čije je strpljenje pri kraju, poduzimaju pravne radnje kako bi prisilile političare da poduzmu neophodne mjere

- Implementacija Okvirnog sporazuma: Pogled Republike Hrvatske
- Javne konsultacije za drugi Plan upravljanja slivom rijeke Save
- Studenti i znanstvenici u misiji protiv onečišćenja rijeka plastikom

SADRŽAJ

3	Uvodnik
4	Vijesti i najave
6	Intervju - Leon Dhaene, Generalni sekretar Međunarodne komisije za reku Scheldt <i>Moramo izbjeći situaciju da mlađe generacije, čije je strpljenje pri kraju, poduzimaju pravne radnje kako bi prisilile političare da poduzmu neophodne mjere</i>
8	Implementacija Okvirnog sporazuma – pogled Republike Hrvatske: <i>Revitalizacija plovnog puta rijeke Save u njezinoj punoj duljini toka apsolutni je prioritet za sve nas</i>
10	Izrada Plana upravljanja nanosom
11	<i>In Memoriam: Željko Milković</i>
12	Istraga nesreća u vodnom prometu u Republici Srbiji
14	Javne konsultacije za drugi Plan upravljanja slivom rijeke Save
16	Sustav prognoze i upozorenja na poplave u slivu rijeke Save uspješno nadograđen na novu verziju softvera
17	Parkovi prirode u slivu rijeke Save – Nacionalni park Risnjak
18	Studenti i znanstvenici u misiji protiv onečišćenja rijeka plastikom
19	Okrugli stol na temu mikroplastike
20	Dan Save – Pirati plastike poster



GEO PROJEKT SM – Sezona niskih voda

DRAGI ČITATELJI,

Svako novo izdanje Savskog vjesnika uglavnom bi najavljivali s velikim zadovoljstvom, posebice kada bi uloženi trud rezultirao ostvarenim napretkom pa i vidljivim uspjesima. To se, iako uz dodatni napor, događalo i u prethodne dvije godine, kada smo se svi borili i funkcionirali u izvanrednim okolnostima pandemije koronavirusa koja je izazvala ogromne zdravstvene posljedice širom svijeta s velikim brojem smrtnih slučajeva.

Sada je, nažalost, to naše zadovoljstvo pomučeno jer je među onima koje nam je oteo ovaj opaki virus i istaknuti član Tajništva Savske komisije. Napustio nas je gosp. Željko Milković, naš Zamjenik tajnika za plovidbu Savske komisije. Do posljednjeg trenutka svog izuzetnog života davao je važan doprinos i razvoju plovidbe i radu Savske komisije. Stoga je ovo izdanje posebno posvećeno njegovoj veličini i djelu koje je ostavio iza sebe. Sigurni smo kako bi mu najveća zahvala za ono što nam je kroz godine davao, bila nastavak rada na onome čemu je posvetio svoj život.

Živimo u vremenu kada se, kao rijetko kad u povijesti, isprepleću zdravstvena i gospodarska kriza s klimatskim šokovima te neizvjesnošću u opskrbi energentima čime pitanja očuvanja ekonomskih resursa, brige za okoliš i zaštite voda izbijaju u prvi plan, što ranije nije bio slučaj. Imajući sve to u vidu, naše čvrsto opredjeljenje ostaje nastavak rada na osiguranju kvalitetne budućnosti za sliv rijeke Save, njegova staništa, prirodu, gospodarstvo, plovidbu kao i implementaciju Okvirnog sporazuma.

Godine izolacije tijekom pandemije pojačale su našu odlučnost te smo se u vrlo kratkom vremenu prilagodili novonastalim okolnostima tako da smo veći dio obavljanja tekućih zadataka uspješno prebacili na digitalnu platformu.

Nismo posustajali ni u prethodnom razdoblju kada je putnička plovidba skoro prestala postojati, što na sreću nije bio slučaj s teretnim transportom na rijeci Savi, a uz to se, unutar plovidba na globalnoj razini susrela sa sušama i niskim vodostajima koji dostižu povijesni minimum. Naime, na vrijeme provedeni radovi na uređenju najkritičnijih dionica plovnog puta dali su pozitivne rezultate tako da na većem dijelu vodnog puta nije bilo obustavljanja plovidbe, čime se rijeka Sava dodatno afirmirala kao bitan faktor u cjelokupnoj regionalnoj transportnoj mreži.

Kada je već riječ o plovidbi, u ovom broju imat ćete priliku upoznati se sa praksom rada Sektora za istraživanje nesreća u vodnom

prometu u Srbiji i njegovih sigurnosnih preporuka nadležnim tijelima i organizacijama drugih zainteresiranih država koje preuzimaju odgovarajuće mjere u cilju njihovoga provođenja. Što se tiče izrade 2. Plana upravljanja slivom rijeke Save (SRBMP), Savska komisija je neprekidno osiguravala i poticala sudjelovanje javnosti stvarajući mehanizam koji olakšava uključivanje svih relevantnih dionika kako to zahtijeva Okvirni sporazum i u skladu je s Okvirnom direktivom o vodama.

Projekt WACOM (Upravljanje izvanrednim situacijama u slivu rijeke Save) je u fazi punog razvoja, u okviru kojeg je održano pet stožernih vježbi koje su pokazale važnost razmjene informacija, iskustava, planova i postupaka u ciklusu upravljanja katastrofama.

Nadalje, možete pročitati intervju s gospodinom Leon Dhaene-om, tajnikom Međunarodne komisije za sliv rijeke Scheldt koja je ove godine domaćin tradicionalnog susreta tajnika europskih komisija za riječne slivove i jezera.

U ovom uvodniku, između ostalih aktivnosti i događaja želimo vam skrenuti pozornost na projekt "Plastic Pirates - Go Europe!" koji okuplja znanstvenike i škole u istraživanju onečišćenja rijeka otpadom i mikroplastikom.

Kao novitet, pokrenuli smo feljton nacionalnih parkova prirode u slivu rijeke Save i u ovom broju imamo prikaz parka prirode Risnjak, jednog od najatraktivnijih krških mjesta, s jednim od najdubljih vrela – izvorom rijeke Kupe.

U ovom broju uz već spomenute teme predstavljen je i niz drugih bitnih za implementaciju Okvirnog sporazuma, a također s optimizmom očekujemo da se u narednom razdoblju poveća opseg i raznovrsnost aktivnosti, kao i učinkovita medijska pokrivenost te prijenos ključnih poruka široj javnosti.

Nadam se da će Vam i ovaj broj Savskog vjesnika biti zanimljiv te Vam želimo ugodno čitanje.

Duško Isaković,

Urednik Savskog vjesnika

IMPRESSUM

Izdavač:

Međunarodna komisija za sliv rijeke Save; Zagreb, Kneza Branimira 29
Tel./Faks: +385 1 488 6960, 488 6986; E-pošta: isrbc@savacommission.org

Izvršni urednik: Duško Isaković

Pomoćnik urednika: Marko Barišić

Uređivački odbor: Meliha Lepara (BA), Ivana Plepel (HR),

Olivera Janković (RS), Barbara Potočnik (SI)

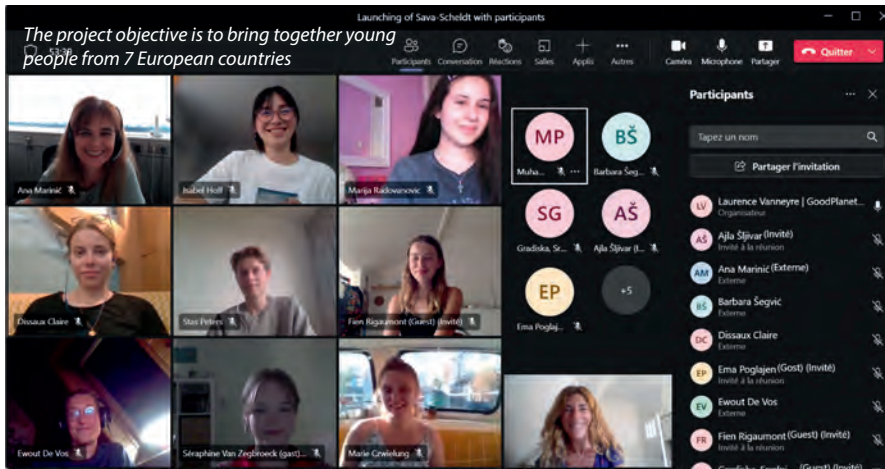
Dizajn i štampa: Optimum dizajn d.o.o.

Savski vjesnik je službeni bilten Međunarodne komisije za sliv rijeke Save (Savske komisije) koji se objavljuje dvaput godišnje u formi dvojezičnog izdanja – na engleskom jeziku i jednom od službenih jezika Savske komisije, za svako izdanje. Njegova svrha je prikaz najznačajnijih aktivnosti, projekata i rezultata postignutih u oblastima obuhvaćenim *Okvirnim sporazumom o slivu rijeke Save*, pružanje korisnih informacija i mogućnosti za bolju komunikaciju zainteresiranih strana i šire javnosti sa Savskom komisijom i, na taj način, promocija izuzetnih vrijednosti i potencijala sliva rijeke Save.

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



VIJESTI I NAJAVE



ERASMUS+ 'ČUJETE LI NAŠE RIJEKE?'

SURADNJA MLADIH SA SLIVOVA RIJEKE SAVE I RIJEKE SCHELDT

U sklopu ovog projekta održat će se 2 studijska putovanja; prvo je bilo u rujnu 2022. u Gentu, Belgija, a drugo će biti u travnju 2023. u Hrvatskoj

Veliko nam je zadovoljstvo objaviti da su Parlament mladih sa sliva rijeke Save i Parlament mladih sa sliva rijeke Scheldt započeli suradnju na temu klimatskih promjena u našim riječnim slivovima.

Izuzetno smo ponosni što je naš zajednički projekt „Čujete li naše rijeke? – Suradnja parlamenata mladih sa sliva rijeke Save i rijeke Scheldt“ odobren od strane programa ERASMUS+ Europske unije.

Cilj projekta je okupiti mlade iz 7 europskih zemalja (Slovenija, Hrvatska, Bosna i Hercegovina, Srbija, Belgija, Francuska i

Nizozemska) kako bi učili jedni od drugih, zajednički istraživali i razmišljali o rješenjima vezanim za klimatske promjene. Riječ je o dvogodišnjem projektu, s proračunom od 60.000,00 EUR.

18. svibnja 2022. održali smo online kick-off sastanak na kojem smo razgovarali o projektnim aktivnostima i budućim koracima. U sklopu ovog projekta planiraju se održati 2 studijska putovanja.

Prvo je održano u razdoblju 6.-12. rujna 2022. u Gentu, Belgija, a drugo će se održati u travnju 2023. u Hrvatskoj, svaki put s po 10 sudionika iz Parlamenta mladih sa sliva rijeke Save i 10 sudionika iz Parlamenta mladih sa sliva rijeke Scheldt.

Nakon opsežnih priprema, putovanje u Gent je uključivalo zanimljive radionice, izlete i mnoge druge edukativne aktivnosti.

Novo EU financiranje za transnacionalnu suradnju

Novo mogućnosti financiranja EU za transnacionalnu suradnju u razdoblju 2021. – 2027. bit će dostupne pod nazivom „Program Dunavske regije“. Prioriteti za novo razdoblje su: 1. Pametnija Dunavska regija, 2. Zelenija, niskougledna Dunavska regija, 3. Društenija Dunavska regija, 4. Bolje upravljanje suradnjom u Dunavskoj regiji. Niz webinara organiziran je u svibnju i lipnju 2022. kako bi se predstavio Program, s fokusom na tematske ciljeve Programa, nadolazeće pozive za dostavu prijedloga i informacije za prijavitelje.

Prvi poziv za dostavu prijedloga u novom Programu Dunavske regije 2021. – 2027. bit će objavljen u rujnu 2022.

Popis zakazanih webinara i poveznica za prijavu dostupni su na: <https://www.interreg-danube.eu/about-dtp/new-funding-2021-2027/webinars>.



Deveti sastanak Stranaka će se održati u prosincu u Zagrebu

Deveti sastanak Stranaka Okvirnog sporazuma o slivu rijeke Save: Bosne i Hercegovine, Republike Hrvatske, Republike Srbije i Republike Slovenije održat će se u prosincu 2022. u Zagrebu, Hrvatska.

Planirano je da sastanku nazoče visoka izaslanstva Stranaka Okvirnog sporazuma o slivu rijeke Save i Crne Gore, kao i predstavnici pozvanih gostiju i partnera iz međunarodne zajednice te predstavnik Parlamenta mladih

sa sliva rijeke Save. Ključni cilj sastanka je razmotriti status provedbe Okvirnog sporazuma nakon Osmog sastanka Stranaka održanog u Sarajevu u listopadu 2019. i ključne izazove koji dolaze, posebno one

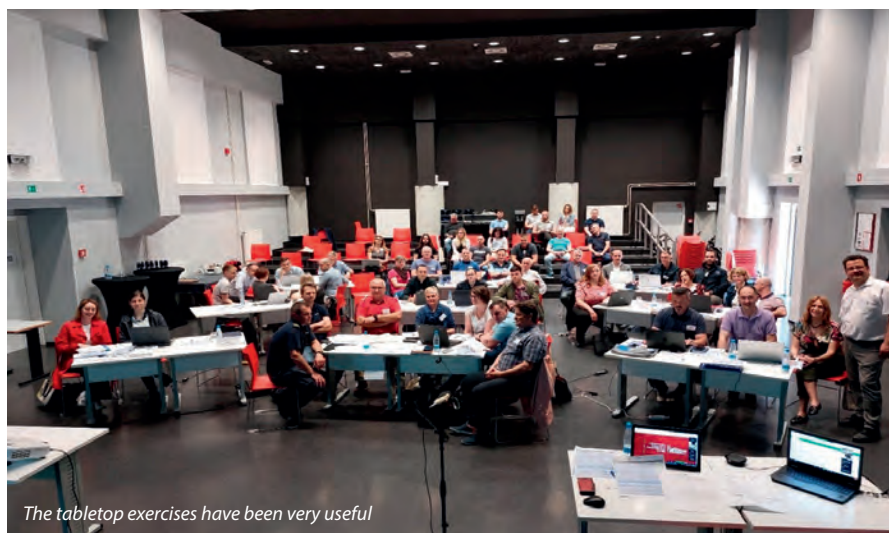


PROJEKT WACOM

ODRŽANO PET STOŽERNIH VJEŽBI ZA UPRAVLJANJE IZVANREDNIM SITUACIJAMA

U svibnju 2022. održano je pet stožernih vježbi: u Brežicama (SI) 12. svibnja, u Slavskom Brodu (HR) 18. i 19. svibnja te u Brčkom (BA) 23. i 24. svibnja. Stožerne vježbe su okupile institucije koje vode i upravljaju aktivnostima u slučaju akcidentnih onečišćenja i poplava. Postojeće procedure razmjene informacija, uspostave stožera, aktiviranja snaga, protokola sustava

zapovijedanja i transnacionalne razmjene informacija verificirane su i podržane novom platformom i alatima koje će projekt WACOM predložiti. Stožerne vježbe bile su vrlo korisne svima koji su odgovorni za upravljanje izvanrednim situacijama te su pokazale važnost razmjene informacija, iskustava, planova i postupaka u ciklusu upravljanja katastrofama.



The tabletop exercises have been very useful

koji se odnose na suradnju u upravljanju riječnim slivom, upravljanju rizicima od poplava, obnovi plovidbe i razmjeni informacija relevantnih za sliv. Zaključak s Devetog sastanka Stranaka poslužit

će kao smjernica za budući rad u okviru Međunarodne komisije za sliv rijeke Save, s ciljem jačanja suradnje i temelja za daljnji napredak u provedbi Okvirnog sporazuma u narednim godinama.



10. Parlament mladih sa sliva Save u listopadu u Beogradu

Savska komisija organizirat će 10. Parlament mladih sa sliva rijeke Save koji će se održati 13.-15. listopada 2022. u Beogradu (RS). Sudionici će biti srednjoškolci i mladi u dobi od 19 do 25 godina. Slogan ovogodišnjeg parlamenta mladih je "Upravljajmo hitnim situacijama!", a odnosi se na upravljanje nesrećama koje rezultiraju onečišćenjem vode ili na upravljanje poplavama. Usko je povezan s projektom Upravljanje izvanrednim situacijama u slivu rijeke Save (WACOM), čiji je glavni cilj smanjenje rizika za okoliš u slučaju akcidentnog onečišćenja voda ili poplava. Sudionici će biti odabrani na osnovi natječaja objavljenog na web stranici Parlamenta mladih sa sliva rijeke Save.



INTERVJU LEON DHAENE, GLAVNI TAJNIK
MEĐUNARODNE KOMISIJE ZA RIJEKU SHELDT

PODRUČJE RIJEKE SCHELDT JE 'SAHARA ZAPADNE EUROPE'

Područje Scheldt osjetljivo je na porast razine mora i popratnu progresivnu salinizaciju kopna, porast prosječne temperature uzrokuje sušu, kao i poplave zbog obilnih oborina, te značajan pad razine podzemnih voda

Međunarodna komisija za rijeku Scheldt (ISC) je međuvladina organizacija za održivo upravljanje područjem međunarodnog sliva rijeke Scheldt (uključujući pritoke rijeke Scheldt, La Somme i Yser te obalnu crtu Sjevernog mora između Aulta u Francuskoj i Zierikzeeja u Nizozemskoj), a obuhvaća područje od sjeveroistoka Pariza do jugozapada Rotterdama.

ISC je osnovana 1994. godine od strane vlada Francuske Republike, Kraljevine Belgije, Valonske regije, Flamanske regije, Regije glavnog grada Bruxellesa i Kraljevine Nizozemske potpisivanjem Ugovora iz Charlesville Mezières o zaštiti rijeke Scheldt; a proširen je i stavljen na snagu Ugovorom iz Genta (03/12/2022) općim pregledom provedbe Europske okvirne direktive o vodama (2000.), Direktive o poplavama (2007.), te funkcioniranjem Scheldt sustava upozorenja i alarmiranja. Kao takva, organizacija je izravno zadužena za količinu i kvalitetu vode za skoro 15 milijuna ljudi.

Kao glavni tajnik Međunarodne komisije za rijeku Scheldt, kako ocjenjujete ulogu takvog međunarodnog tijela u procesu upravljanja i planiranja prekograničnih voda?

Uloga glavnog tajnika i posebice tajništva Međunarodne komisije za rijeku Scheldt je osigurati da se sastanci između različitih država članica i regionalnih članova održavaju što učinkovitije kako bi se postigao konsenzus u odlukama koje je potrebno donijeti, te da je postignut napredak prema

postizanju zajedničkih ciljeva, posebice onih navedenih u Okvirnoj direktivi o vodama i Direktivi o poplavama.

Stvarnost na terenu je da različite članice imaju različite programe i prioritete i da ponekad, primjerice s katastrofalnim poplavama u Valoniji i zapadnoj Njemačkoj prošlog ljeta u srpnju 2021., stvarnost preuzima prioritet u odnosu na planiranje.

Osim toga, Međunarodna komisija za rijeku Scheldt također upravlja sustavom upozorenja i alarmiranja za rijeku Scheldt koji bi trebao omogućiti državama članicama i regijama da brzo i učinkovito komuniciraju u slučaju katastrofalnog onečišćenja i što poduzeti kako bi se što učinkovitije spriječilo njegovo širenje.

S obzirom na glavni zadatak Međunarodne komisije za rijeku Scheldt, koja su najveća postignuća u dosadašnjoj suradnji u slivu rijeke Scheldt? Koje su trenutno glavne aktivnosti Scheldt komisije i budući planovi?

Kao i kod većine riječnih komisija, marljivo smo radili tijekom prošle godine kako bismo se dogovorili o zajedničkim dijelovima plana upravljanja u skladu sa Okvirnom direktivom o vodama i Direktivom o poplavama, te kako bi napravili popis niza zajedničkih inicijativa za napredak u postizanju ciljeva definiranih tim Direktivama, za čije je izvršenje krajnji rok kraj 2027. To će biti vrlo brzo! Također smo naporno radili na razvoju druge generacije našeg alarmnog sustava: trenutni sustav je star više od 12 godina.



Leon Dhaene: Trenutačno bank inflacije s povećanjem troškova visi kao Damoklov mač nad našim proračunima

Konačno, kao rezultat ozbiljnog onečišćenja tla, zraka, površinskih i podzemnih voda per- i polifluoroalkilnim tvarima (PFAS), tisućama sintetičkih kemikalija koje se naširoko koriste u cijelom društvu, a koje su vrlo štetne za ljude, izazivajući oštećenje ili poremećaj imuniteta, neravnoteže hormona i rada jetre, a uz poticaj Nizozemske i Flandrije okupili smo stručnjake da istraže ovo posebno veliko onečišćenje, koje je samo u Flandriji, na 953 lokacije prekoračilo maksimalnu granicu onečišćenja.

PFAS se talože u ljudskom tijelu i izuzetno se sporo razgrađuju. Ovi čimbenici pridonose toksičnosti PFAS-a. Nadamo se da ćemo uskoro moći predstaviti akcijski plan za drastično smanjenje prisutnosti PFAS-a u okolišu.

Koji su glavni izazovi s kojima se susrećete u svom radu? Kako vidite mogućnosti da se izazovi u održivom upravljanju riječnim slivom i planiranju preokrenu u razvojne prilike?

Suprotno uvriježenom mišljenju, područje rijeke Scheldt je "Sahara zapadne Europe", s razinama održivosti upravljanja vodama nižima čak i od Nigerije. Utjecaj klimatskih promjena posebno je težak za područje Scheldt: sa širokom granicom sa Sjevernim morem, područje Scheldt osjetljivo je na porast razine mora i popratnu progresivnu salinizaciju kopna, porast prosječne temperature uzrokuje sušu kao i poplave zbog obilnih oborina te značajan pad razine podzemnih voda. Uslijed niskih voda raste razina onečišćenja površinskih i podzemnih voda. Neke od najvažnijih luka u području

Scheldt (npr. Antwerpen i Ghent) nalaze se u unutrašnjosti kopna i stoga pad razine vode izravno utječe na njihove gospodarske aktivnosti.

Scheldt komisija posvećena je podizanju svijesti mladih generacija o važnosti održivog upravljanja vodama, te je na tom polju uspostavila suradnju sa Savskom komisijom kroz Parlament mladih sa sliva rijeke Save. Što smatrate mogućom ulogom mladih u budućnosti prekograničnog upravljanja riječnim slivom i mogućim načinima za jačanje njihovog angažmana? Kako će zajednički projekt koji je u tijeku doprinijeti ovom cilju?

Posebno je važno održavati i njegovati otvoreni dijalog s mladim generacijama, ne samo zato što će one u budućnosti morati provoditi i poštovati mjere, već i zato što će izravno snositi posljedice neuspješne vodne politike. Moramo izbjeći situaciju da mlađe generacije, čije je strpljenje pri kraju, poduzimaju pravne radnje kako bi prisilile političare da poduzmu neophodne mjere.

U Nizozemskoj je već došlo do zastoja u čitavim sektorima u zadnje tri godine kao rezultat pravnih postupaka protiv povećanja CO2 emisija. Izazovi su takvi da će nam ponestati radne snage kako bi odgovorili na to i bolje je raditi zajedno, a ne jedni protiv drugih kako bismo postigli najbolje rezultate. Scheldt Parlament mladih je od svog osnutka promatrač Međunarodne komisije za rijeku Scheldt, a članovi Scheldt komisije nedavno su odlučili bliže surađivati s mladima.

Više od 20 godina Međunarodna komisija za rijeku Scheldt surađuje sa sveučilištima u Antwerpenu, Gentu i Lilleu u programu obuke pod nazivom "Case River 21". Cilj programa je stjecanje održivih kompetencija kroz interdisciplinarni pristup upravljanju vodama, posebice u slivu rijeke Scheldt od izvora do ušća, i to različitih aspekata koji utječu na različite dionike u upravljanju vodama. Uz kvalitetu i kvantitet vode, razmatraju se i pitanja vezana za pitku vodu, plovidbu, poljoprivredu itd.

Ovaj izborni tečaj ima za cilj primijeniti vještine kao što su razmišljanje o integriranom sustavu u upravljanju vodama, razvijanje integrirane vizije upravljanja vodama, strateške i anticipacijske kompetencije, upravljanje prekograničnim pitanjima za prepoznavanje situacija u kojima svi pobjeđuju za uključene dionike. Integrirano upravljanje vodama i razmišljanje o sustavima ili razmišljanje o ekosustavima ključni su elementi za bolje upravljanje vodnim tijelima u budućnosti. Podučavanje ovim kompetencijama i vještinama za početak kao gradivnim elementima, stoga je od primarne važnosti za mlade stručnjake.

Program Case River 21 jedinstven je svoje vrste i idealno prikladan za osposobljavanje studenata za prihvaćanje jednog od najvećih izazova nadolazećih desetljeća, a to je ponovno dovođenje ljudi i okoliša u uzajamni sklad. Međunarodna komisija za rijeku Scheldt stoga u potpunosti podržava ovu iznimnu inicijativu.

Scheldt komisija je ove godine domaćin tradicionalnog sastanka čelnika

europskih riječnih i jezerskih komisija. Kako biste ocijenili dosadašnju suradnju međunarodnih komisija i koristi ovakvih sastanaka, kao i gdje vidite mogućnosti budućeg jačanja i unaprjeđenja suradnje?

Posebno je važno da od ostalih riječnih komisija možemo saznati koje mjere ne funkcioniraju i, prije svega, koje mjere ne funkcioniraju i zašto, te da možemo na terenu vidjeti provedbu nekih od tih mjera i ocijeniti njihovo funkcioniranje. Pored toga, također je zanimljivo čuti i sa kakvim organizacijskim i logističkim problemima se susreću ostala tajništva i kako ih riješavaju: osobito u vrijeme karantene, videosastanaka i odsutnosti zbog bolesti. Bio je priličan izazov optimizirati rad tajništva. Trenutačno bauk inflacije s povećanjem troškova visi kao Damoklov mač nad našim proračunima.

Međunarodne riječne komisije mogu odigrati posebnu ulogu kao odskočne daske između država članica/regija i Europske komisije za postizanje ciljeva u direktivama, razmjeni znanja i što učinkovitijeg korištenja dostupnih resursa. Bez suradnje nećemo stići nikamo, svalit ćemo probleme na susjede (osobito one nizvodno), a možda ćemo izazvati i međunarodne tenzije.

Primjerice, nedavno veliko zagađenje Odre izazvalo je veliki pritisak na odnose između Njemačke i Poljske. Suradnja između različitih država članica u riječnim odborima, neophodan je uvjet za postizanje održivog upravljanja vodama, ali put do tamo još uvijek je "... dug i krivudav put...".

(Duško Isaković)

Međunarodne riječne komisije mogu odigrati posebnu ulogu kao odskočne daske između država članica/regija i Europske komisije... Bez suradnje nećemo stići nikamo, svalit ćemo probleme na susjede (osobito one nizvodno), a možda ćemo izazvati i međunarodne tenzije



Moramo izbjeći situaciju da mlađe generacije, čije je strpljenje pri kraju, poduzimaju pravne radnje kako bi prisilile političare da poduzmu neophodne mjere

STAJALIŠTE IMPLEMENTACIJA OKVIRNOG SPORAZUMA
O SLIVU RIJEKE SAVE: POGLED REPUBLIKE HRVATSKE

REVITALIZACIJA PLOVNOG PUTA RIJEKE SAVE U NJEZINOJ PUNOJ DULJINI TOKA APSOLUTNI JE PRIORITET ZA SVE NAS

Cijela europska zajednica unutarnje plovidbe, a i šire, ima kako ekološki tako i ekonomski interes od odgovornog, inovativnog i koordiniranog pristupa rijeci Savi i njezinom cijelom porječju

Kada govorimo o provedbi Okvirnog sporazuma o slivu rijeke Save, jedinstvenog međunarodnog sporazuma koji regulira upravljanje vodama ali i problemima plovidbe u slivu, u razdoblju nakon uspostave Tajništva Savske komisije za sve države članice pa tako i za Republiku Hrvatsku jedna od glavnih prekretnica je zasigurno odobranje prvog Plana upravljanja slivom rijeke Save u prosincu 2014. godine te prvog Plana upravljanja rizicima od poplava u slivu rijeke Save u listopadu 2019. godine.

Sam Okvirni sporazum predstavlja jedan od najvažnijih multilateralnih sporazuma za Republiku Hrvatsku što se rijeke Save i njezinog porječja tiče, a isti je i temelj za uspostavu i jačanje regionalne suradnje među državama članicama Komisije, a i šire.

Cijela europska zajednica unutarnje plovidbe, a i šire, ima kako ekološki tako i ekonomski interes od odgovornog, inovativnog i koordiniranog pristupa rijeci Savi i njezinom cijelom porječju a što se ostvaruje kroz rad Savske Komisije i to

upravo provedbom Okvirnog sporazuma. Slijedom navedenog, Savska komisija ima, u europskim okvirima, renome vrlo uspješne međunarodne organizacije; primjer je rada drugim sličnim poslovnim subjektima diljem Europe, te svakako moram naglasiti da je Republici Hrvatskoj čast biti trenutno predsjedavajuća jednoj takvoj profesionalnoj i uspješnoj organizaciji u području unutarnje plovidbe.

Što se tiče plovidbe, koja je u nadležnosti Ministarstva mora, prometa i infrastrukture, posebice Uprave unutarnje plovidbe - u čijoj je ingerenciji provedba međunarodnih ugovora, sve odluke Savske komisije redovno se implementiraju.



Posebno se važnost pridaje obnovi ali i daljnjem razvoju unutarnje plovidbe, što je i vidljivo kroz potporu i suradnju koju Ministarstvo mora, prometa i infrastrukture, Uprava unutarnje plovidbe i Savska komisija kontinuirano ostvaruju već duži niz godina.

Plovni put rijeke Save se kontinuirano obnavlja i unapređuje, što je naša obveza ali i prioritet kada sagledamo činjenicu

koji transportni, turistički i općenito gospodarski potencijal rijeka Sava ima, i to u svim državama potpisnicama Okvirnog sporazuma, a ne samo u Republici Hrvatskoj.

Sveobuhvatna i adekvatna, na identificiranim mjestima potrebna, revitalizacija plovnog puta rijeke Save u njezinoj punoj duljini toka, apsolutni je prioritet za sve nas, posebno u smislu održivog i zelenog gospodarjenja.

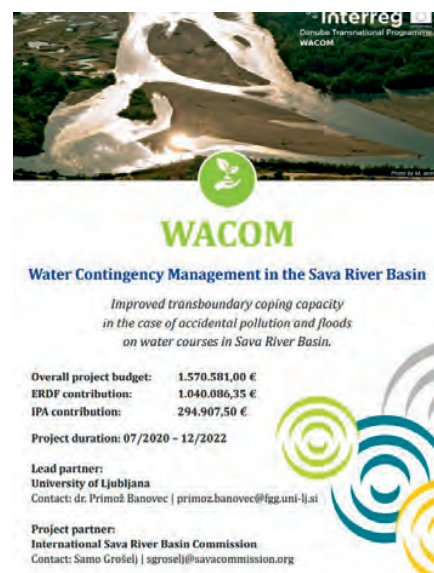
Već spomenuti Plan upravljanja rizicima od poplava u slivu rijeke Save od izuzetnog je značaja. Poplave se rijetko pojavljuju i ne mogu se izbjeći. Ono što se može napraviti jest poduzeti preventivne mjere kako bi se štetne posljedice poplava svele tj. smanjile na prihvatljivu razinu.

Poplava jest privremena pokrivenost onih dijelova zemljišta vodom, a koji to inače nisu. Njezini uzroci mogu biti različiti te prema nastanku razlikujemo prirodne poplave od onih nastalih djelovanjem ljudskog faktora; a razlikujemo riječne poplave, bujične poplave od obalnih i plimnih poplava.

Poplave kao takve često rezultiraju velikim materijalnim štetama, devastacijom biljnog i životinjskog ekosustava, gubicima ljudskih života. Kako bi se takve posljedice svele na minimum, u današnjem digitalnom dobu, valja pristupiti i usmjeriti se na moderne načine obrane od poplava uz održavanje postojećih sustava obrane od poplava.

Kako bi se posvetili konačnom cilju, a u skladu s Planom upravljanja rizicima od poplava u slivu rijeke Save, države potpisnice Okvirnog sporazuma trenutno zajednički rade na projektu "Upravljanje izvanrednim situacijama u slivu rijeke Save (onečišćenja i poplave) – WACOM".

Ministarstvo mora, prometa i infrastrukture projektni je partner u okviru navedenog projekta, zajedno sa Savskom komisijom i još 7 drugih projektnih partnera. Projekt je odobren od strane EU INTERREG Danube Transnational Programme, prioritetni



specifični cilj Poboljšanje pripremenosti za upravljanje rizikom onečišćenja okoliša, a sufinancira se sredstvima EU (ERDF i IPA II). Projekt je započeo 01. srpnja 2020. godine, dok je predviđeno trajanje projekta 31. prosinac 2022. godine.

Glavni cilj WACOM-a je poboljšati prekogranične kapacitete za slučajeve onečišćenja i poplava na vodotocima u slivu rijeke Save, unaprijediti suradnju između ključnih aktera (civilne zaštite, administracije za upravljanje vodama i riječnu plovidbu) i zajedničko razvijanje procedura za aktivaciju protokola upravljanja nesrećama u slivu.

Projekt ima za zadatak smanjiti rizik za okoliš, poboljšanje učinkovitosti zajedničkim reagiranjem, uzvodno i nizvodno; povezivanje država i sektora te uključivanje ciljnih skupina u poboljšanje zaštite vodnih resursa.

Upravo kroz ovakve projekte se najbolje vidi zajednička suradnja, razumijevanje i implementacija Okvirnog sporazuma; sve države potpisnice zajedno nastupaju za dobrobit čitavog sliva rijeke Save.

Savska komisija, posebice Tajništvo Savske komisije, dokazalo je kako je profesionalno, odgovorno, inovativno i nadasve kompetentno nositi se s izazovima u slivu rijeke Save i promovirati Savsku komisiju na međudržavnoj i međunarodnoj razini.

Dr. Duška Kunštek,

Ravnateljica Uprave unutarnje plovidbe u Ministarstvu mora, prometa i infrastrukture, Predsjedavajuća - Članica Savske komisije iz Republike Hrvatske

Savska komisija ima, u europskim okvirima, renome vrlo uspješne međunarodne organizacije. Republici Hrvatskoj je čast biti trenutno predsjedavajuća jednoj takvoj profesionalnoj i uspješnoj organizaciji u području unutarnje plovidbe

AKTIVNOSTI NACRT PLANA UPRAVLJANJA NANOSOM ZA SLIV RIJEKE SAVE

HITNO JE POTREBAN RAZVOJ PLANA UPRAVLJANJA NANOSOM



Robert Haim - Rijeka Sava

Rijeka Sava i njezine pritoke podvrgnute su značajnim promjenama u transportu nanosa i u vodnom režimu, s ozbiljnim posljedicama na stabilnost rijeke, podzemnih voda i obala

O d 2017. godine Protokol o upravljanju nanosom uz Okvirni sporazum naglašava važnost održivog gospodarenja nanosom u smislu kvalitete i količine za održavanje vodnog režima u slivu rijeke Save.

Savska komisija je prihvatila Program izrade Plana upravljanja nanosom u slivu rijeke Save koji sadrži popis aktivnosti i radnji potrebnih za izradu Plana u skladu s Protokolom.

Na inicijativu Ureda UNESCO-a u Veneciji i Međunarodne komisije za sliv rijeke Save, međunarodni i domaći stručnjaci su angažirani da ispune navedene zahtjeve i pripreme Nacrt plana upravljanja nanosom za sliv rijeke Save.

Nacrt inicijalno predstavlja nacionalne sustave upravljanja sedimentom kako bi se razumio organizacijski i institucionalni okvir i povezane aktivnosti u područjima vodnog režima, mreže za praćenje, jaružanja, akumulacija, kontrole erozije, vlažnih staništa, zona retencija i biološke raznolikosti ekosustava/područja.

Nakon njega slijedio je detaljan pregled postojećeg sustava praćenja nanosa i podataka

o količini i kvaliteti nanosa, te utvrđivanje nedostataka u praćenju i uzorkovanju. Analizom točnosti podataka i zahtjeva za praćenje drugih pitanja (kontrola erozije, plovnost, očuvanje vlažnih staništa i bioraznolikosti, zasipanje akumulacija) dani su prijedlozi za poboljšanje sustava praćenja nanosa.

Opći nedostaci u postojećem sustavu praćenja nanosa uključuju (a) slabu gustoću stanica za praćenje, (b) ograničenu dostupnost podataka za praćenje nanosa za pouzdanu procjenu nanosa u cijelom slivu, (c) nedostatak podataka o praćenju nanosa u akumulacijama i (d) nedostatak odgovarajuće pohrane i obrade skupova podataka. Sljedeći dio bavi se problemima upravljanja nanosom i identificira one najvažnije kao što su (a) poremećaj uzdužnog kontinuiteta i hidrološke promjene, (b) morfološke promjene, (c) jaružanje i vađenje nanosa i (d) erozija tla.

Nakon rasprava provedenih sa svim relevantnim dionicima, predstavljen je prijedlog realnih poboljšanja upravljanja nanosom. Posljednji paragraf daje prijedlog za izradu cjelovitog Plana upravljanja

nanosom sa sugestijama za definiranje ciljeva, faza, metodološki pristup, te odabir i evaluaciju alternativnih rješenja upravljanja.

Zaključeno je da su rijeka Sava i njezine pritoke podvrgnute značajnim promjenama u transportu nanosa i u vodnom režimu, s ozbiljnim posljedicama na stabilnost rijeke, podzemnih voda i obala. Hitno je potreban razvoj plana upravljanja nanosom kako bi se razvile strategije održivog upravljanja vodama i ostvarilo dobro stanje voda.

Učinkovito upravljanje nanosom mora biti lokacijski specifično, mora djelovati na razini svakog značajnog pritiska i pojmiti pretežne prostorne i vremenske procese koji djeluju pod pritiskom na razini cijelog sliva.

U razvoju i provedbi Plana upravljanja nanosom za sliv rijeke Save preporučuje se fazni pristup koji počinje popunjavanjem praznina u informacijama i znanju prije razvoja mjera i strategija upravljanja nanosom.

*Nacrt*¹ je dostupan na Internetskoj stranici Savske komisije.

Dr. Damir Bekić,
Građevinski fakultet,
Sveučilište u Zagrebu

¹ <https://www.savacommission.org/documents-and-publications/water-management-1957/outline-on-sedimen-management-plan-in-the-sava-river-basin/10538>

IN MEMORIAM

ŽELJKO MILKOVIĆ (1960.-2021.)*Zamjenik tajnika za plovidbu Savske komisije*

Svaki rastanak je težak, a još je teži kada se opraštamo od onih s kojima smo bili bliski, zajedno s njima radili, surađivali kroz mnoge godine. Ostavili su trag u našim životima pa zajedno s njima odlazi i dio nas.

Jedan od takvih bio je Željko Milković, Zamjenik tajnika za plovidbu Savske komisije, čiji se sadržajan i bogat život iznenada ugasio pred nama 25. studenoga 2021. godine. Tada nas je napustio naš Kapetan, naš lađar, otišao je na posljednju plovidbu.

Iako riječi ne mogu pružiti utjehu, niti nadoknaditi veliki gubitak, osvrćući se na njegov profesionalni put dužni smo prenijeti značaj koji je imao i nadalje, prisjetiti se njegovih izuzetnih osobina kao čovjeka i prijatelja.

Željko je rođen 1960. godine u Sisku gdje je pohađao osnovnu i srednju školu. Nakon toga završio je Pomorski fakultet u Rijeci. Osim nekoliko godina na početku svoje karijere kada je plovio

morskim prostranstvima, čitavu je svoju profesionalnu karijeru posvetio unutarnjoj plovidbi.

Prošao je put od kapetana na riječnim brodovima do generalnog direktora Dunavskog Lloydja, a nakon toga i do obnašanja najodgovornijih dužnosti u Upravi za unutarnju plovidbu u tadašnjem Ministarstvu mora, turizma, prometa i razvitka RH.

Nakon toga, njegov profesionalni i životni put neraskidivo je vezan za Savsku komisiju, u čije je osnivanje i djelovanje od samih početaka 2006. godine ugradio neizbrisiv doprinos, čime se izuzetno ponosimo. Kao Zamjenik tajnika za plovidbu, s velikim je entuzijazmom pristupao svakom izazovu i prilici za unaprjeđenje i razvoj unutarnje plovidbe u slivu Save.

Njegova predanost, stručnost i ogromno profesionalno iskustvo bili su visoko cijenjeni i na paneuropskoj razini o čemu, između ostalog, svjedoči i

obnova plovidbe na našoj rijeci Savi, koja neupitno mnogo duguje njegovom profesionalnom i ljudskom angažmanu.

Međutim, ono što je posebno važno istaknuti je da je Željko Milković, uz sve svoje profesionalne kvalitete, bio nadalje skroman, moralan i pošten čovjek, čovjek kojem se bezrezervno moglo vjerovati.

O tome najbolje možemo posvjedočiti mi, njegove kolegice i kolege iz Tajništva, s kojima je do zadnjeg dana dijelio i dobre i one druge trenutke koji su se uvijek činili lakši uz njegov smisao za humor i uvijek umjereni, lagani i pozitivni pristup rješavanju problema.

Bilo nam je zadovoljstvo i čast blisko surađivati s gosp. Milkovićem svih ovih godina za koje se sada čini da su proletjele u trenu. Brojne zajedničke uspomene i dalje će živjeti u nama.

Neka ti je mirna plovidba naš Kapetane, nedostajat ćeš nam!

PRAVILNICI ISTRAGA NESREĆA U VODNOM PROMETU U REPUBLICI SRBIJI

Deformacija pramca trupa broda Deligrad

POSILIJE SVAKE OZBILJNE PLOVIDBENE NEZGODE MORA SE PROVESTI SIGURNOSNA ISTRAGA

Pokrenuto je i zaključeno sedamnaest sigurnosnih istraga ozbiljnih plovibnenih nezgoda i plovibnenih nezgoda, od kojih su se dvije dogodile na rijeci Savi

Centar za istraživanje nesreća u prometu (Centar) je posebna organizacija u čijem je sastavu Sektor za istraživanje nesreća u vodnom prometu, koji je odgovoran za obavljanje stručnih poslova u vezi s istraživanjem nesreća u vodnom prometu.

Pored tog sektora, tu su i Sektor za istraživanje nesreća u zračnom prometu, Sektor za istraživanje u željezničkom prometu, kao i Odjeljenje za opće poslove u okviru Centra.

Sektor za istraživanje nesreća u vodnom prometu postao je operativan 1. lipnja 2017. Neovisan je u obavljanju svojih aktivnosti i neovisan o svim drugim tijelima i organizacijama nadležnima za vodni promet.

Profesionalne aktivnosti vezane uz istragu nesreća neovisne su o kaznenim istragama ili drugim paralelnim istragama kojima se utvrđuje odgovornost ili stupanj krivnje. Istraga i utvrđivanje uzroka nesreća nemaju za cilj utvrđivanje kaznene, gospodarske, prekršajne, stegovne, građanske ili druge odgovornosti.

Osnovni zadaci Centra, Sektora za istraživanje nesreća u vodnom prometu koji se odnose na unutarnju plovidbu su:

Istraga ozbiljnih plovibnenih nezgoda i plovibnenih nezgoda na unutarnjim vodama, Izrada i objava Završnih izvješća o provedenim specifičnim istraživanjima koja sadrže sigurnosne preporuke za poboljšanje sigurnosti u vodenom prometu.

Ozbiljna plovibnena nezgoda na unutarnjim vodama je izvanredni događaj,



Sektor za istraživanje nesreća u vodnom prometu postao je operativan 1. lipnja 2017.

nastao u plovidbi ili korištenju broda unutarnje plovidbe, vodnog puta ili objekata sigurnosti plovidbe na njemu, pri kojem je došlo do potpunog gubitka broda, smrti ili teške tjelesne povrede ili štete na okolišu izlivanjem više od 50t nafte i naftnih derivata.

Plovidbena nezgoda na unutarnjim vodama je izvanredni događaj, nastao u plovidbi ili korištenju broda unutarnje plovidbe, vodnog puta ili objekata sigurnosti plovidbe na njemu, pri kojem je došlo do materijalne štete, onečišćenja okoliša, ljudskih žrtava ili tjelesne povrede.

Tijela i organizacije, brodari, brodarske tvrtke, zapovjednik broda ili osoba koja ga mijenja, drugi članovi posade broda, osoba koja su sudjelovala u ozbiljnoj plovidbenoj nezgodi i plovidbenoj nezgodi, kao i sve druge pravne i fizičke osobe koje imaju saznanja, moraju o tome bez odlaganja izvijestiti Centar.

Poslije svake ozbiljne plovidbene nezgode u unutarnjoj plovidbi mora se provesti sigurnosna istraga, ako se dogodi na vodnom prometu Republike Srbije, bez obzira na zastavu čiju brod vije.

U slučaju plovidbenih nezgoda Centar, prije donošenja odluke o pokretanju sigurnosne istrage, obavlja procjenu o potrebi poduzimanja sigurnosne istrage pri čemu uzima u obzir težinu plovidbene nezgode, vrstu broda i tereta na njemu, kao

i mogućnost da rezultati sigurnosne istrage mogu utjecati na sprječavanje plovidbenih nezgoda.

Sigurnosna istraga u vodnom prometu provodi se u cilju povećanja sigurnosti plovidbe, sprječavanja onečišćenja vodotoka s broda i smanjenja opasnosti od nastanka ozbiljne plovidbene nezgode i plovidbene nezgode.

Pravilnikom o načinu provođenja postupka istraživanja nesreća i nezgoda u pomorskoj plovidbi propisuje se način provođenja postupka istraživanja, kao i postupka istraživanja ozbiljnih plovidbenih nezgoda i plovidbenih nezgoda u unutarnjoj plovidbi, kao i način praćenja provedbe sigurnosnih preporuka.

Za potrebe istrage svake ozbiljne plovidbene nezgode i plovidbene nezgode u unutarnjoj plovidbi Direktor Centra uspostavlja radnu skupinu koju vodi Glavni istražitelj u vodnom prometu.

Nakon sigurnosne istrage u vodnom prometu Centar sačinjava i objavljuje izvješće o istrazi koje naročito sadrži podatke o brodu, podatke o plovidbi, podatke o plovidbenim nezgodama u unutarnjoj plovidbi, opis događaja, analizu, zaključke i sigurnosne preporuke i priloge. Izvješće ne sadrži osobne podatke. Izvješće o istrazi može biti: konačno izvješće i privremeno izvješće.

Centar izdaje sigurnosne preporuke na temelju analize podataka i ukupnih rezultata provedene istrage u vodnom prometu. Sigurnosne preporuke se upućuju stranama za koje su izdane, nadležnim tijelima i organizacijama u Republici Srbiji, kao i nadležnim tijelima i organizacijama zainteresiranih država i međunarodnih organizacija.

Tijela i organizacije kojima su upućene sigurnosne preporuke, osim nadležnih tijela i organizacija drugih zainteresiranih država, dužne su preuzeti odgovarajuće mjere u cilju njihovoga provođenja, te da najmanje jednom godišnje podnesu izvješće Centru o poduzetim mjerama ili planiranim da se poduzmu.

Centar je pokrenuo i zaključio sedamnaest sigurnosnih istraga ozbiljnih plovidbenih nezgoda i plovidbenih nezgoda na unutarnjim plovim putovima Republike Srbije, od kojih su se dvije dogodile na rijeci Savi.

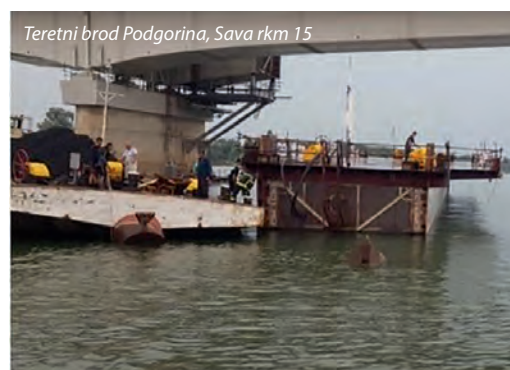
Završno izvješće o sigurnosnoj istrazi u vodnom prometu Centar objavljuje na svojoj službenoj internetskoj stranici: www.cins.gov.rs.

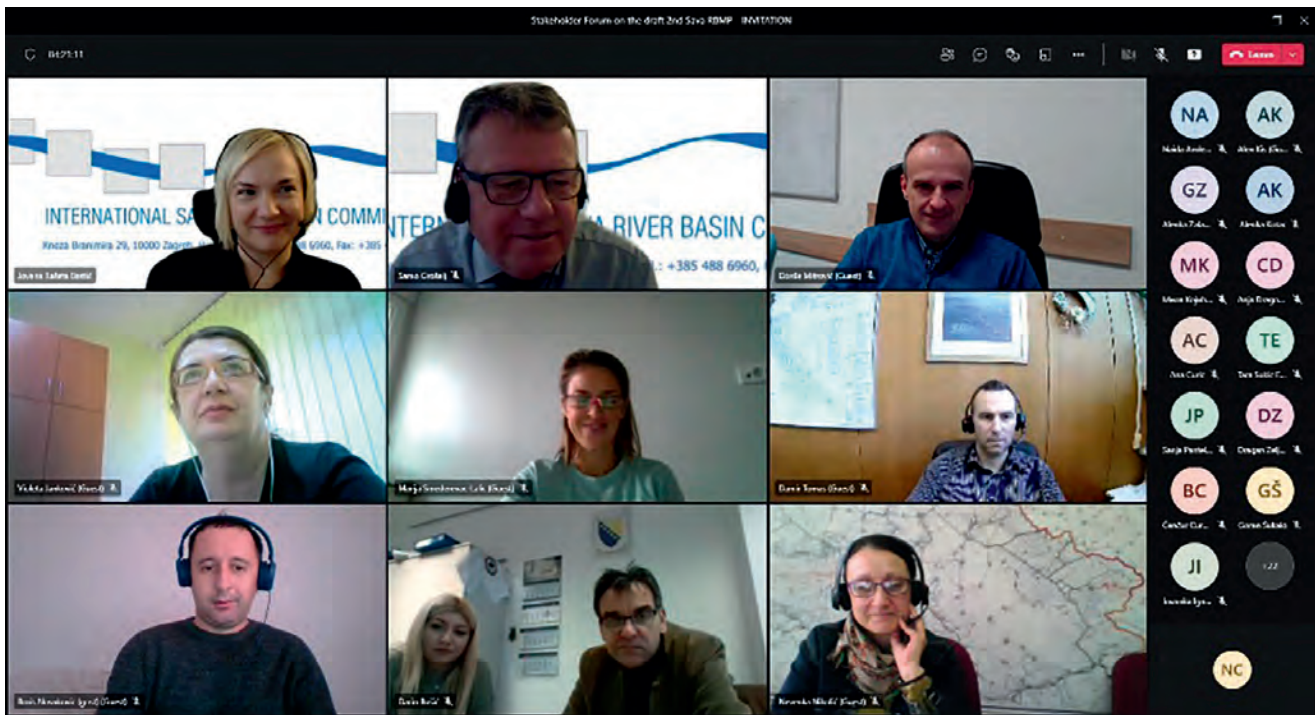
Prof. dr. Nebojša Petrović,

Glavni istražitelj

Kap. Jovica Golubović, mr. sc.,

Pomoćnik glavnog istražitelja,
Glavni istražitelj u vodnom prometu





PROVEDENE JAVNE KONZULTACIJE

KONAČNO USVAJANJE 2. PLANA UPRAVLJANJA SLIVOM RIJEKE SAVE OČEKUJE SE U JESEN 2022.

**Dokument koji sadrži sve
zaprimljene komentare bit
će objavljen na službenoj
internet stranici Savske
komisije u narednom periodu**

Uzimajući u obzir iznimnu važnost uključivanja širokog spektra dionika i javnosti u proces upravljanja i planiranja riječnim slivom, Savska komisija je kontinuirano, tijekom izrade 2. Plana upravljanja slivom rijeke Save (2. Sava RBMP), osiguravala i poticala sudjelovanje javnosti kreirajući mehanizam koji olakšava uključivanje svih relevantnih dionika kako to zahtijeva Okvirni sporazum i u skladu je s Okvirnom direktivom o vodama (WFD 2000/60/EZ).

Aktivno sudjelovanje javnosti u pripremi 2. Sava RBMP-a može se sažeti u tri glavne kategorije:

Aktivno uključivanje dionika -

Osiguravajući široku i aktivnu uključenost

dionika, cjelokupni proces izrade 2. Sava RBMP-a uz koordinaciju Tajništva Savske komisije vodi Stalna stručna skupina za upravljanje riječnim slivom (PEG RBM). Određena pitanja koja pokriva 2. Sava RBMP-a bila su predmet ad-hoc diskusija drugih stručnih skupina (za GIS, za zaštitu od poplava, za hidrološka i meteorološka pitanja, za plovidbu i za sprečavanje i kontrolu akcidenata) u skladu s njihovim nadležnostima. Glavni dionici ili skupine dionika imali su priliku aktivno sudjelovati u procesu, kao i u svim ostalim aktivnostima Savske komisije, stjecanjem statusa promatrača.

Razmjena informacija i podizanje

razine svijesti - Informacije o procesu izrade 2. Sava RBMP-a u različitim fazama ciklusa planiranja (ažurirana Analiza sliva rijeke Save ili Privremeni pregled značajnih vodnogospodarskih pitanja) bile su javno dostupne na službenoj internet stranici Savske komisije. Informacije o pripremi

2. Sava RBMP-a distribuirane su putem službenog biltena Savske komisije – Savskog vjesnika. Štoviše, faze razvoja predstavljene su na sastancima koje je organizirala Savska komisija ili/i druge organizacije/institucije (ICPDR, UNECE, EU, Dunavska strategija, itd.).

Konzultacijske aktivnosti - S ciljem prikupljanja informacija i podataka, tijekom procesa pripreme 2. Sava RBMP-a, organizirane su diskusije o pitanjima relevantnim za održivo upravljanje riječnim slivom u prekograničnom kontekstu, kao i konzultacije s dionicima i širom javnošću. Javne konzultacije za dokumente pripremljene u procesu izrade 2. Plana organizirane su preko interneta. Privremeni pregled značajnih vodnogospodarskih pitanja u slivu rijeke Save bio je dostupan za dostavljanje komentara od 29. srpnja do 20. listopada 2016., a Nacr 2. Sava RBMP-a s Programom mjera od 23. studenog 2021. do 23. ožujka 2022. godine.

Kampanja javnih konzultacija za 2. Sava RBMP

Moto kampanje javnih konzultacija za 2. Sava RBMP bio je "Hajdemo zajedno diskutirati!"

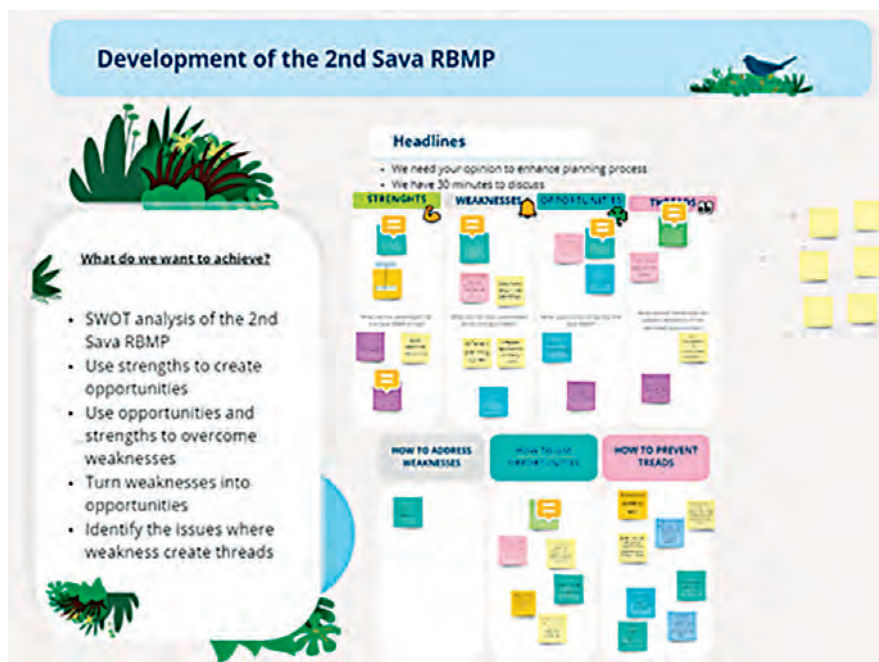
Na internet stranici u okviru obnovljene službene internet stranice Savske komisije, svim zainteresiranima bili su dostupni nacrt 2. Sava RBMP-a i Javni upitnik izrađen upravo za potrebe lakšeg komentiranja.

Kako bi pokrenula i promovirala kampanju javnih konzultacija, slijedeći prethodno uspostavljenu uspješnu praksu sudjelovanja javnosti i savjetovanja u upravljanju i planiranju riječnim slivovima i rizicima od poplava, Savska komisija je 17. prosinca 2021. organizirala Savski Forum Dionika kao online događaj.

Savski Forum Dionika, na kojem je prisustvovalo više od 80 sudionika, predstavnika ministarstava, državnih tijela, javnih poduzeća, nevladinih organizacija, akademske zajednice, znanstvenih instituta i privatnog sektora, kao i međunarodnih organizacija i promatrača Savske komisije, službeno je otvorio izvršni tajnik Savske komisije g. Dragan Zeljko. Nakon službenog otvaranja uslijedilo je prvo javno predstavljanje rezultata i ključnih preliminarnih zaključaka nacra 2. Sava RBMP-a.

S ciljem olakšavanja uključivanja i poticanja rasprave među sudionicima, forum je organiziran putem platforme za online suradnju koja je omogućila sudionicima da vizualiziraju povratne informacije i ideje.

Sudionici su imali priliku analizirati prednosti i nedostatke upravljanja i planiranja u slivu



rijeke Save te dati mišljenje o sinergijskim mogućnostima za koordiniran razvoj upravljanja vodama i drugih sektora ovisnih o vodama, što može dovesti do poboljšanja održivosti i otpornosti cijelog sliva rijeke Save. Rasprava na temu praksi prilagodbe klimatskim promjenama donijela je zanimljive ideje vezane uz implementaciju rješenja temeljenih na prirodnim mjerama, mjerama za zadržavanje vode, sveobuhvatno modeliranje klimatskih promjena, prihranjivanje akvifera vodom i razvoj indikatora klimatskih promjena zasnovanih na biološkoj raznolikosti. Nadalje, sudionici su diskutirali o mogućnostima financiranja prekograničnog Programa mjera za definiranje održivog, tehnološki utemeljenog i ekonomski opravdanog puta ka upravljanju prekograničnim riječnim slivovima i suradnji u planiranju.

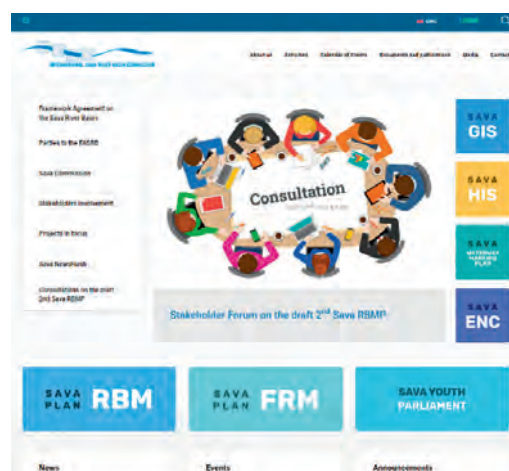
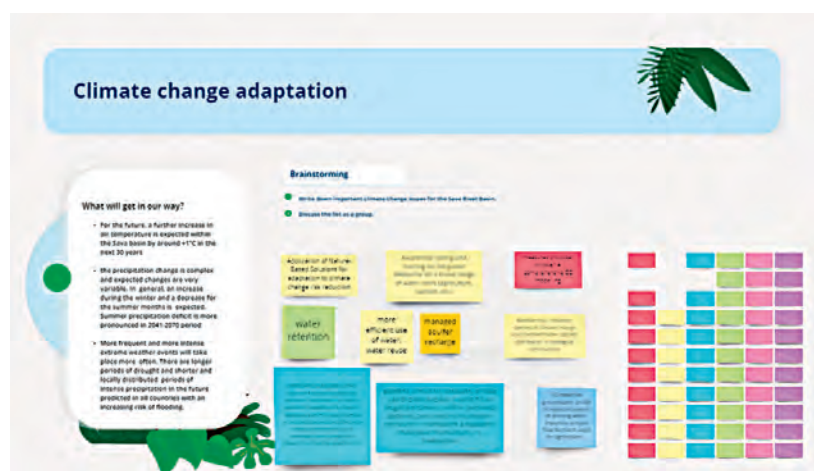
Veliki doprinos i pomoć u uspješnoj organizaciji Foruma i omogućivanju rada i

izvještavanju sa grupnih sesija Foruma dali su članovi Stalne stručne skupine za upravljanje riječnim slivom Naida Anđelić i Violeta Janković iz Bosne i Hercegovine, Damir Tomas iz Republike Hrvatske te Nevenka Nikolić i Miodrag Milovanović iz Republike Srbije.

Svi komentari i doprinosi zaprimljeni u kampanji javnih konzultacija pažljivo su razmotreni i korišteni kako bi se olakšala revizija i finalizacija nacra 2. Sava RBMP-a. Dokument koji sadrži sve zaprimljene komentare s informacijama o načinu na koji su komentari adresirani bit će objavljen na službenoj internet stranici Savske komisije u narednom periodu.

Konačno usvajanje 2. Sava RBMP-a očekuje se u jesen 2022. godine.

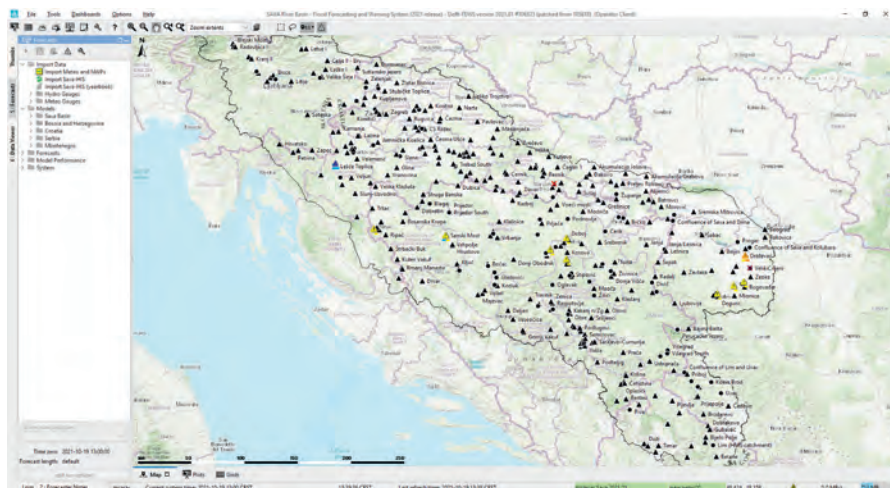
Jovana Rašeta Bastić,
Samo Grošelj,
Tajništvo Savske komisije



PLATFORMA 'SAVA FFWS' U FUNKCIJI JE OD LISTOPADA 2018.

SUSTAV PROGNOZE I UPOZORENJA NA POPLAVE USPJEŠNO NADOGRAĐEN NA NOVU VERZIJU SOFTVERA

Sustav redovito koriste nacionalne organizacije iz pet zemalja, trenutno deset organizacija, dok Savska komisija nadzire njezinu funkcionalnost



Sava FFWS Klijent Operater – lokacije predviđanja

Pod koordinacijom Savske komisije uspješno je implementiran Sustav prognoze i upozorenja na poplave u slivu rijeke Save (Sava FFWS), a sustav je u funkciji od listopada 2018.

Nakon uspješnog uspostavljanja, Sava FFWS redovito koriste relevantne nacionalne organizacije iz pet zemalja odgovorne za prognozu poplava, trenutno deset nacionalnih organizacija, dok Savska komisija nadzire njezinu funkcionalnost.

Sava FFWS platforma sastoji se od dvije glavne komponente: simulacijskih modela i platforme za integraciju podataka. I hidrološki i hidraulički simulacijski modeli koriste softver poput HEC-HMS, HEC-RAS, Mike11, HBV, HBV-light i WFlow, dok se podatkovna platforma temelji na Delft-FEWS. Pozadinska (back-end) konfiguracija je takva da postoji operativna verzija Sava FFWS-a, koja se kao primarna instanca nalazi u Slovenskoj agenciji za okoliš.

Istovremeno, kao rezerva, postoje tri instance u Republičkom hidrometeorološkom zavodu Srbije, Agenciji za slivno područje rijeke Save u Bosni i Hercegovini, Hrvatskom meteorološko-hidrološkom zavodu, dok instanca u Savskoj

komisiji služi kao arhiv i web komponenta. Postoji kontinuirana sinkronizacija podataka između svih pet hostiranih instanci. Uz operativni sustav nalazi se zasebna razvojna i testna instanca Sava FFWS-a, koja se nalazi na serverima u Republičkom hidrometeorološkom zavodu Srbije.

Savske države, pod koordinacijom Savske komisije, razvile su i potpisale u srpnju 2020. Memorandum o razumijevanju o suradnji na redovitom funkcioniranju i održavanju Savskog FFWS-a kako bi se osigurao nesmetan rad sustava i njegovo redovno održavanje. Među svim ostalim pitanjima, Memorandum uređuje uloge i odgovornosti hosting organizacija i korisnika sustava, ali i trećih stranaka, uključujući tehničku podršku za redovno održavanje sustava.

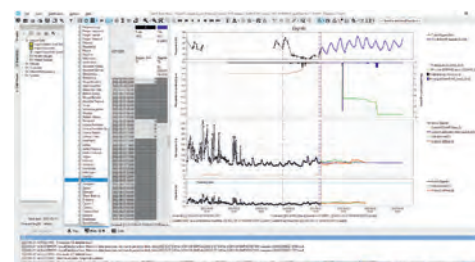
Kroz djelatnost redovnog održavanja, Sava FFWS nedavno je nadograđen na novu verziju softvera sustava. Nadogradnja softvera obavljena je u razdoblju od srpnja do rujna 2021. godine, nakon čega je uslijedilo još jedno sigurnosno ažuriranje početkom siječnja 2022. Nadogradnja je također uključila sve potrebne intervencije na softveru servera i baze podataka.

Originalna verzija Delft-FEWS-a bila je 2016.02, dok je nadograđena na verziju 2021.01. Kao rezultat toga, klijentske aplikacije, u terminologiji FEWS-a Operator Clients i Configuration Manager koje rade na korisničkom sučelju, kao i sučelje administracije koje radi na pozadinskoj (back-end) konfiguraciji, sada su mnogo stabilnije i učinkovitije.

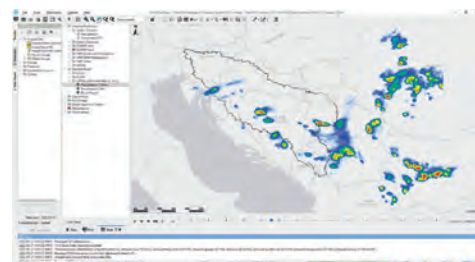
Nadogradnja je završena ažuriranjem dokumentacije: korisničkog priručnika i dokumenata sa tehničkim referencama, te prijenosom znanja provedenim kroz međunarodnu vježbu osvježavanja znanja koja je održana u veljači 2022. godine.

Mirza Sarač,

Tajništvo Savske komisije



Sava FFWS Klijent Operater – podaci vremenske serije



Sava FFWS Klijent Operater – podaci daljinskog istraživanja



Administrativno sučelje Sava FFWS

PRIRODA VAŽAN JE EKOLOŠKI KORIDOR ZA BILJKE KAO I ZA VELIKE ZVIJERI



U Nacionalnom parku utvrđeno je 1148 vrsta i podvrsta vaskularne flore

NACIONALNI PARK 'RISNJAK' JE PRIRODNA VEZA IZMEĐU ALPA I DINARSKIH PLANINA

Flora nacionalnog parka pravi je buket najspektakularnijih boja. Schloserova livada pod vrhom Risnjaka doslovno je posuta cvijećem. Dolazak u proljeće i ljeto nagrađuje posjetitelja čudesnim doživljajem rasutog šarenila

Nacionalni park „Risnjak“ nosi ime po planinskom masivu Risnjak koji je pak dobio ime po životinji ris (*Lynx lynx*). Ris je uz smeđeg medvjeda (*Ursus arctos*) i vuka (*Canis lupus*), jedna od tri velike zvijeri koja prirodno obitava u Republici Hrvatskoj. Uz planinski masiv Risnjaka s najvišim vrhom od 1528 metara tu se izdiže i masiv Snježnik s najvišim vrhom od 1506 metara.

Nacionalni park „Risnjak“ proglašen je 1953. godine. Ali zbog iznimnih vrijednosti rijeke Kupe, 1997. godine odlučeno je da se Nacionalni park proširi te da obuhvati izvor i početak toka rijeke. Površina Nacionalnog parka danas iznosi 6.340 ha.

S obzirom da je geološka podloga Nacionalnog parka karbonatna, oborinska voda otječe u podzemlje čime Nacionalni park „Risnjak“ ustvari nema mnogo vode. Upravo je i to jedan od dodatnih razloga zašto je prepoznata vrijednost rijeke Kupe i zbog čega je uključena u sastavni dio Nacionalnog parka.

Ljepota Kupe i kupske doline je nemjerljiva i mnogi će reći da je upravo ta rijeka najljepša u Republici Hrvatskoj. Vrelo Kupe zasigurno je jedno od najatraktivnijih krških mjesta i još neodgonetnuta zagonetka krša kao jedno od najdubljih hrvatskih vrela. Ispod 100 metara

visoke okomite stijene, na nadmorskoj visini od 321 metra, nalazi se malo jezero iz kojeg kreće snažna i čista rijeka Kupa.

Površinski sloj vode na izvoru je gotovo miran. Voda dotječe iz okomitog grotla koje je prema dosad provedenim istraživanjima duboko 154 metra, a vjeruje se da je još i dublje. Razlog je to i hladnoći vode, od svega 7°C. Kupska je dolina jedini naseljeni prostor Nacionalnog parka.

Dvadesetak stanovnika živi u naseljima Dolari, Podgrič, Razloški Okrug, Donji Okrug, Gornji Okrug, Gornja Krašičevica i Razloge. Vrijednost je sačuvati te lokalitete zbog graditeljske i etnografske baštine.

Najveći dio Nacionalnog parka obrastao je mješovitom šumom bukve i jele (*Abieti-Fagetum dinaricum*). Obuhvaća visinski pojas od 600 do 1200 metara. Iznad te visine jele je sve manje, bukve ima, ali znatno manjih dimenzija. To je već pojas pretplaninske bukve (*Homogino alpinae-Fagetum sylvaticae*). To je po zauzetoj površini druga šumska zajednica u Nacionalnom parku.

Uz ove, visinskim granicama određene šumske zajednice, postoje još neke zajednice kao što su npr. šuma jele s milavom (*Calamagrosti Abietetum*) ili popularno zvana u šumarskim krugovima - šuma jele na kamenim blokovima

te šuma jele s rebračom (*Blechno Abietetum*). S obzirom da u Nacionalnom parku nije dozvoljeno gospodarenje šumama, pojedina stabla su impresivnih dimenzija, a dosežu visine i do 45 metara.

Flora Nacionalnog parka pravi je buket najspektakularnijih boja. Schloserova livada pod vrhom Risnjaka doslovno je posuta cvijećem. Dolazak u proljeće i ljeto nagrađuje posjetitelja čudesnim doživljajem rasutog šarenila. Ovdje raste i zvjezdasti ljiljan (*Lilium bulbiferum*) i runolist (*Leontopodium alpinum*) – biljka koja je iznimno ugrožena pa stoga i strogo zaštićena.

U Nacionalnom parku utvrđeno je 1148 vrsta i podvrsta vaskularne flore. Kako je prostor necjelovito istražen, zasigurno je brojka i puno veća. Zabilježeno je i 114 vrsta ptica od kojih se u parku gnijezdi 78 vrsta. Važna je i fauna vodenih staništa, speleofauna te entomofauna s čak 89 vrsta danjih leptira.

Nacionalni park Risnjak pripada dinarskom planinskom sustavu koji je prirodna veza između Alpa i dinarskih planina. Važan je ekološki koridor za biljke kao i za velike zvijeri. Nalazi se na krškom području s vrlo specifičnim geološkim, geomorfološkim i hidrološkim osobinama. Prevladavaju vapnenci i dolomiti koji čine vodopropusne stijene pa tako u risnjačkom i snježničkom masivu tvore veliki podzemni spremnik.

S druge strane, tu se nalaze glineni škriljanci, pješčenjaci i kvarcni konglomerati kao vodonepropusne naslage. S hidrološkog pak stajališta ako se gleda šire, rijeka Kupa pripada slivu rijeke Save. Prostor sliva rijeke Save se može okarakterizirati kao relativno bogat prostor površinskom i podzemnom hidrološkom mrežom.

Okosnica crnomorskog sliva na prostoru Dinarskih planina je tok rijeke Save koji je nisko položen te mu dotiču svi veći dinarski riječni tokovi kao što je sama rijeka Kupa te Krka (Dolenjska) (SLO), Una (RH/BiH), Vrbas (BiH), Ukrina (BiH), Bosna (BiH), Drina (BiH/SRB) i rijeka Kolubara (SRB).

Daniel Springer,

Ministarstvo gospodarstva i održivog razvoja, Voditelj službe za zaštićena područja, Uprava za zaštitu prirode

'PLASTIC PIRATES - GO EUROPE!'

STUDENTI I ZNANSTVENICI U MISIJI PROTIV ONEČIŠĆENJA RIJEKA PLASTIKOM

Mladi pirati plastike u akciji



Oko sedamdeset posto otpada pronađenog uz obale rijeka je plastično, od čega je polovica plastika za jednokratnu uporabu

Projekt "Plastic Pirates - Go Europe!" okuplja ruku pod ruku znanstvenike i škole u istraživanju onečišćenja rijeka otpadom i mikroplastikom.

Projekt se u Njemačkoj provodi od 2016. godine, a 2021. implementiran je u Njemačkoj, Sloveniji i Portugalu kao zajednička akcija tijekom našeg trojnog predsjedanja, uz financijsku potporu relevantnih nacionalnih ministarstava znanosti i obrazovanja.

Za sudjelovanje u projektu vladao je velik interes slovenskih srednjih i osnovnih škola te je odabrano 100 škola za sudjelovanje u 2021. godini. Znanstvenici su organizirali webinare za školske mentore te osigurali nastavni materijal* i projektnu brošuru* s protokolom uzorkovanja otpada i mikroplastike. Svim školama poslana su mikroplastične mreže.

Učitelji su radili na podizanju svijesti o onečišćenju plastikom u našim rijekama, morima i oceanima, a učenici su provodili terensku nastavu (često na rijeci ili potoku u blizini škole). Učenici, podijeljeni u četiri manje radne skupine, razvrstali su otpad po kategorijama i fotografirali, promatrali

plutajući otpad, postavili mikroplastičnu mrežu u rijeku na sat vremena i mjerili brzinu toka.

Naposlijetku, unijeli su podatke i fotografije na projektni server (koje su verificirali istraživači) i mikroplastičnu mrežu s uhvaćenim materijalom vratili natrag u naš institut na analizu. U Sloveniji je 2021. godine sudjelovalo oko 1500 studenata i školaraca.

U polovini dosad analiziranih uzoraka istražene su 32 rijeke i potoka, a samo njih 6 nije onečišćeno mikroplastikom. Najčešće je uzorkovana rijeka Sava i njezini pritoci, a najveća koncentracija mikroplastike pronađena je u akumulacijskom jezeru između Brežica i Krškog (1,2 čestice/m³).

Najzastupljeniji materijal bio je polietilen u obliku folija, najvjerojatnije dobivenih iz vrećica za kupovinu, folija za pakiranje i poljoprivrednih folija. U blizini gradova pronađen je polistiren, najvjerojatnije od ambalaže i s gradilišta.

Oko sedamdeset posto otpada pronađenog uz obale rijeka je plastično, od čega je polovica plastika za jednokratnu uporabu. Opušci su bili najčešći pronađeni otpad, a plastični otpad, poput plastičnih boca, bio

je i najčešći plutajući otpad zbog svojih fizičkih svojstava.

Moramo biti svjesni povezanosti s rijekama – osam od deset najzastupljenijih otpadaka u rijekama ujedno su i najčešći predmeti u moru. Međunarodni tim "Plastic Pirates – Go Europe!" radi na europeiziranju projekta. Prvi korak je proširenje na 10 europskih zemalja, pri čemu se prioritet daje onima koje imaju podršku svojih nacionalnih ministarstava.

Nadamo se da ćemo projekt proširiti na zemlje iz sliva rijeke Save i dalje na sliv rijeke Dunav, gdje bi slovenski tim mogao ponuditi znanje i rad u suradnji s Parlamentom mladih sa sliva rijeke Save i nacionalnim istraživačima, uz podršku involviranih nacionalnih ministarstava (za znanost i/ili okoliš i prostorno planiranje).

Rezultati projekta "Plastic Pirates – Go Europe!" pokazuju da je riječni otpad veliki problem zaštite okoliša i da bi ga konačno trebalo prepoznati kao jedan od deskriptora i kao relevantan pokazatelj dobrog stanja okoliša u Okvirnoj direktivi o vodama (WFD), kao što je to u Okvirnoj direktivi o pomorskoj strategiji (MSFD) jer su obje neizbježno povezane.

*oba dostupna za preuzimanje na: <https://www.plastic-pirates.eu/en>

Mateja Grego,

Nacionalni institut za biologiju, Morska biološkopostaja Piran, Slovenija, voditeljica projekta "Plastic Pirates – Go Europe!" za Sloveniju



Postavljanje mikroplastične mreže

OKOLIŠ SLOGAN ZA 1. LIPNJA 2022. - DAN SAVE

'ZAŠTITIMO NAŠE RIJEKE OD PLASTIKE I MIKROPLASTIKE!'

Najčešći otpad na obalama rijeka Save i Bosne bile su plastične vrećice, boce, čepovi za boce, ambalaža brze hrane, opušci...

S tranke Okvirnog sporazuma o slivu rijeke Save proglasile su 1. lipnja Danom Save. U "normalnim" vremenima, u različitim prigodama, Dan Save obilježavao se u organizaciji Savske komisije i nacionalnih institucija, na prekograničnoj i nacionalnoj razini. Ipak, tijekom godina pandemije, događaji vezani za Dan Save morali su biti organizirani kao web događaji. Primjerice, prošle godine fokus je bio na podizanju svijesti o poplavama. Oznake visokih voda u isto vrijeme su postavljene na različitim lokacijama rijeke Save i njezinih pritoka. Istovremeno, taj je događaj emitiran i online putem web servisa.

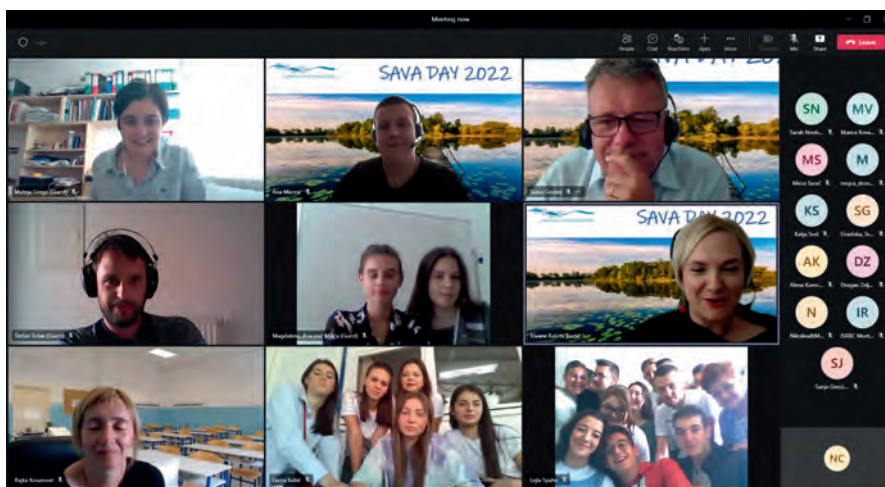
Ove godine Savska komisija je procijenila da je potrebno podići svijest o održivoj svakodnevnoj upotrebi plastike koja završava u našim rijekama, jezerima i morima. Stoga je slogan Dana Save za 2022. godinu "Zaštitimo naše rijeke od plastike i mikroplastike!". Okrugli stol je organiziran u suradnji s Nacionalnim institutom za biologiju i Institutom za vode iz Slovenije na kojem su, između ostalog, škole koje surađuju u Parlamentu mladih sa sliva rijeke Save predstavile rezultate kampanje monitoringa na odabranim lokacijama duž Save.

Na okruglom stolu su sudjelovale sljedeće škole:

Mješovita srednja škola "Hazim Šabanović" iz Visokog i Tehnička škola iz Gradiške u Bosni i Hercegovini, X. gimnazija "Ivan Supek" iz



Plastični otpad prevladava na površini vode



Sudionici okruglog stola: Nije dovoljno imati čistu obalu; trebaju nam također i čiste rijeke

Zagreba u Hrvatskoj, Biotehnički edukativni centar - Živilska škola iz Ljubljane u Sloveniji i Škola primjenjenih umjetnosti iz Šapca u Srbiji.

Uzorkovanje s obala rijeka provedeno je u proljeće 2022. od strane škola koje su sudjelovale na okruglom stolu. Učenici su koristili dvije različite metodologije za dobivanje podataka o količini, vrsti i sastavu glavnog (makro) otpada. Kao što je očekivano, u ovoj kampanji uzorkovanja otpada također je dominirala plastika, koja je činila 66% ukupnog otpada. U 51% slučajeva radilo se o proizvodima za jednokratnu upotrebu. Najčešći otpad na obalama rijeka Save i Bosne bile su plastične vrećice, boce, čepovi za boce, ambalaža brze hrane, opušci itd. Prilikom uzorkovanja plutajućeg otpada očekivalo se da će plastični otpad prevladavati na površini vode, uglavnom zbog uzgona, mase, dugotrajnosti, kompaktnosti i oblika. Vizualnim promatranjem plutajućeg otpada otkriveno je 45 komada otpada, od čega su prevladavale plastične vrećice (74%) i vlažne maramice (11%).

Mikroplastika (čestice veličine 1-5 mm) je pronađena u Ljubljani, Gradišci i Šapcu. U uzorcima rijeke Save uglavnom je bio prisutan polietilen u vidu filmova i fragmenata. S obzirom na strujanja rijeke Save na mjernim postajama u blizini mjesta uzorkovanja, procjenjuje se da se godišnji

unos mikroplastike duž Save povećava od Ljubljane do Beograda. Osim toga, rijeka Bosna je također zagađena mikroplastikom. Za okruglim stolom, koji je okupio više od 80 sudionika, tajnik Savske komisije, g. Dragan Zeljko, istaknuo je kako sudjelovanje mladih u obilježavanju Dana Save traje od 2008. godine kada je osnovan Parlament mladih sa sliva rijeke Save, kao jedinstvena platforma koja omogućuje mladim ljudima da se čuje njihov glas i potiče njihovo uključivanje u upravljanje vodama.

Duška Kunštek, predsjedavajuća Savske komisije, napomenula je kako je uključivanje mladih ključno za održivi razvoj i očuvanje bogate biološke raznolikosti i jedinstvene ljepote sliva rijeke Save.

Na kraju proslave Dana Save, sudionici su se složili da plastika predstavlja značajnu prijetnju našem okolišu. Stoga bi svaki čovjek na svijetu, a posebno mladi, trebali doprinijeti smanjenju upotrebe plastike promjenom ponašanja, dok bi industrija trebala koristiti ekološki prihvatljivije materijale gdje god je to moguće, vodeći računa o budućnosti novih generacija.

Sudionici okruglog stola su se složili: „Nije dovoljno imati čistu obalu; trebaju nam također i čiste rijeke.“

Samo Grošelj,
Tajništvo Savske komisije