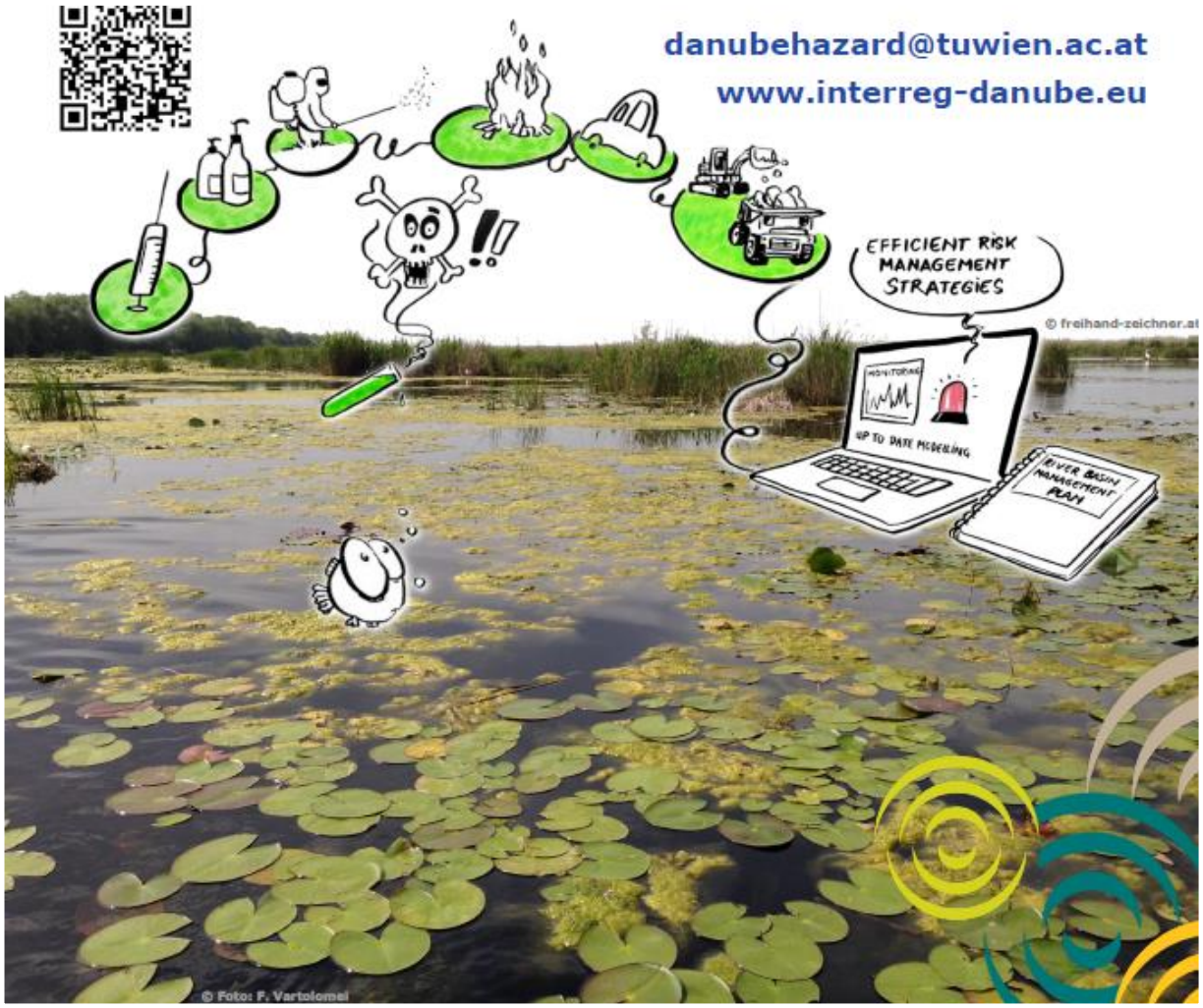
Interreg
Danube Transnational Programme
Danube Hazard m³c

Project Danube Hazard m³c:
National/regional trainings on monitoring and inventorying of hazardous substances pollution



Output T4.1

SYNTHESIS REPORT ON NATIONAL TRAINING EVENTS ON MONITORING AND INVENTORYING OF HAZARDOUS SUBSTANCES POLLUTION

October 2022

Project co-funded by European Union funds (ERDF, IPA, ENI) and National Funds of the participating countries

PROJECT TITLE: Tackling hazardous substances pollution in the Danube River Basin by Measuring, Modelling-based Management and Capacity building

ACRONYM: Danube Hazard m³c

DATE OF PREPARATION: 26.10.2022

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Executive summary

According to the EU Water Framework Directive, hazardous substances (HS) pollution is a significant water quality issue to be tackled in the Danube River Basin.

The project aims to achieve a durable and effective transnational control based on reduction of hazardous substances water pollution, by integrating and harmonizing available existing data of HS concentration levels and by modelling emissions at catchment scale in pilot regions.

This project tries to address substantial knowledge gaps and the lack of processes understanding as well as institutional capacity regarding hazardous substances emissions pathways and effective management options. A harmonised transnational water management approach is considered essential to reaching the goals of the WFD.

One of the most important activities of the Danube Hazard m³c project is represented by the Work Package 4 (WP T4)- Capacity building, which started in July 2021.

Within this WP it was planned to organise multiple knowledge transfer activities to capitalize the knowledge that has been gained during the project. This goal should be achieved through a dedicated program of training events at the national, regional and transnational levels, and a set of learning tools such as training material packages, synthesis reports of the courses (containing lessons learned and recommendations) and a technical guidance manual for stakeholders.

At the national level workshops for stakeholders, dealing with monitoring and inventorying of hazardous substances pollution were organized. Each Project Partner organized one national event, and ICPDR and CETI collaborated on the organization of a regional event for participants from Bosnia Herzegovina, Montenegro and Serbia.

It is important to emphasize that the relevant target groups are strongly involved in most of the project activities, being an integral part of the project, so the stakeholders have been identified since the beginning of the project.

Target Groups/stakeholders

The PPs identified relevant stakeholders from their countries (active in the pilot regions but not only) and invited them to participate in a national training course on the monitoring and inventory of hazardous substances (HS) pollution.

Experts have been selected considering their competence in the field of water quality monitoring and protection. Representatives of water users, sector agencies and relevant stakeholders (interest groups from industry, agriculture, environmental protection and researchers) also attended the national training course. National representatives of the ICPDR expert group: the Pressures and Measures Expert Group (PM EG), the Monitoring and Assessment Expert Group (MA EG) were also invited to these capacity-building activities.

These series of trainings in national languages have the role of effectively reaching these target groups, which tend to be underrepresented in international platforms.

Summary of the main key points and Lessons Learnt

During the WPT1 - Setup the inventory database and data collection activity, a number of problems were encountered. Establishing an inventory of emissions, discharges and losses is an obligation for most of the Danube countries, but the lack of specific information made this obligation partially fulfilled. In order to develop the inventory, a complex database and thorough statistical analysis are required to develop the inventory. This is crucial to make the database applicable to the basin-wide level and relevant and useful for more organizations outside of the partnership.

One challenge was to integrate and harmonize the available data on hazardous substances in the waters, to increase system understanding of sources and pathways of HS emissions and to develop a model applicable to support HS management on the river basin level. Within the Project, some targeted measurements have to be carried out to supplement the missing data for validating the modelling activity. It was necessary to establish common methods of sampling so that all partners proceed accordingly.

The process of data collection in the pilot areas was a real challenge because not all samples could be collected in the proper time and under the conditions specified by the established methodologies. Some samples have been postponed, pending periods of heavy rain. Identifying the pathways of pollution with hazardous substances was also challenging.

During the national and regional training events, the trainers had the main role to raise awareness of the target group on the importance of the topic.

The goal of trainers was:

- to show the participants what efforts are being made to remove hazardous substances from water
- to explain the difficulties in the process of monitoring and identifying pollution sources
- to show practical examples during the monitoring activity in the pilot zones
- to explain the importance of the data for the modelling process

Participants in the workshops received information that helped them understand and improve their knowledge of HS water pollution. They also understood the importance of harmonized databases, targeted and routine monitoring activities at the national and regional levels.

Some general lessons learnt from the training course were related to:

- Hazardous substances pollution and reducing their concentration to an acceptable level for human health and aquatic ecosystem is often difficult.
- a good collaboration with different institutions at national and regional levels on data collection and monitoring
- the involvement of stakeholders from the early stage is essential

- a harmonized format for data collection to be used by as many institutions as possible for bridging the data gaps and improving the data quality
- participants realized the importance of the accessibility and transparency of monitoring data
- all participants agreed that monitoring data is essential in the management of hazardous substances pollution and these data play an important role in supporting the dialogue between technical experts and local stakeholders to have a common point in determining specific measures

The activities at the pilot scale and Danube river catchment showed to the participants and to the project team that it is very important to have the same methodological approaches for tackling hazardous substances measurements and management in order to have unitary results and a harmonized evaluation at the sub-basin and basin levels.

From the perspective of management activities, improving the hazardous substances inventories, in particular for diffuse pathways and sources, is very important through setting and improving modelling tools and activities developing the project results, extending the application area and in general making use of lessons learned in the project.

The participants emphasized the strong need for information and knowledge sharing among institutions working in different fields (authorities, administrations, socio-economic sectors, research sec-tor, NGOs) as a basis for continuous and sustainable cooperation.

It is also necessary to avoid work duplication, to create a harmonized format for data collection, and to be used by as many institutions as possible for bridging the data gaps and improving the data quality.

Introduction

At the EU level, a lot of problems are caused by hazardous substances emissions in water resources. Many of these compounds are persistent, ubiquitous and bioaccumulative and their presence in water resources can lead to a risk to human and wildlife health.

These issues raised the necessity to fight against hazardous substances water pollution and to identify the main anthropic sources of pollution but the knowledge on pollution levels is very poor. Countries mainly have information about HS concentrations in the water matrix and some information about point sources of pollution, but not about diffuse sources or other environmental compartments.

In addition to those mentioned, another aspect is represented by the lack of knowledge and institutional capacity regarding approaches to monitor HS pollution, model emissions and select and implement effective measures.

According to the Water Framework Directive (WFD), all MS have to implement the necessary measures for progressively reducing of the priority substances pollution and ceasing or phasing out emissions, discharges and losses of priority hazardous substances. In this context, it is necessary to monitor the occurrence and level of HS in surface waters and establish an inventory of emissions, discharges and losses.

Danube Hazard m³c addresses this challenge by greatly improving understanding of HS water pollution and emissions, by enhancing the capacity of measuring, modelling and managing HS emissions and by providing recommendations for transboundary management of HS which consider specific territorial needs. National authorities and international institutions responsible for the development of river basin management plans will have, after the completion of the project, increased knowledge and specific tools to facilitate their effective planning.

Achieving long-lasting competent management, control and reduction of HS water pollution is therefore another target of the project, pursued through a tailor-made program of trainings, a final workshop and a set of tools that will be available.

Besides these improvements, the progress in the harmonization of data and methods among all DRB countries will be very important.

So, a first step to improve the capacity of efficiently measuring and inventorying HS pollution at the DBR level, was based on the results of the first two activities: WPT1 - Setup the inventory database and data collection and T2 - Modelling and evaluation of scenarios in the pilot regions and was also based on the organization of eight national training courses and one regional training course.

For the purpose of the training course the project partners developed jointly a learning package that covered the following five topics:

- Topic 1. Hazardous substances aspects of water quality monitoring and inventorying of pollution sources and pathways
- Topic 2. Monitoring of the hazardous substances
- Topic 3. Technical aspects of HSs sampling and measuring
- Topic 4. Contribution of the results of our DHm3c monitoring to the inventory of hazardous substance pollution
- Topic 5. Modelling of Hazardous Substances

All materials were translated into national languages and their content was adapted to specific territorial needs so that the national training courses suited best the current state-of-art in the partner countries and provided high added value for the participating audience.

The trainings took place in:

- Austria,Vienna, 31st May – 1st June 2022
- Bulgaria, Ribaritsa, 23-24th June 2022
- Croatia, Zagreb, 2-3rd June 2022
- Hungary, Balatonszárszó, 1-2nd June 2022
- Moldova-Colibita, Romania, 7-8 July 2022
- Romania-Colibita, 7-8 July 2022
- Slovenia-Ljubljana, 21-22 May 2022
- Slovakia- Bratislava, 12-13th September 2022
- and for the regional course, in Podgorica, Montenegro for Bosnia Herzegovina, Montenegro, Serbia with support of ICPDR, 8th and 9th of June 2022.

The main purpose of the courses was to improve the knowledge and skills of experts working in the field of water management, in particular regarding established and innovative smart monitoring strategies for the effective assessment of concentrations and loads through different emissions pathways and in rivers, as well as for assessment of the chemical status of water bodies. A further objective was to improve the understanding of the concepts, approaches and methodologies for the development of harmonized HS emissions inventories, according to the requirements of the WFD, including relevance for HS modelling.

Last but not least, the improvement of educational outcomes and relevant skills and competencies in the Danube region was targeted, as learning outcomes are relevant for employment and innovation, i.e. with relevance for HS modelling.

The main target groups were identified by each partner in their countries and invited to the specific national training event.

The single national training courses are described in the following chapters.

The main purposes of the national training courses are:

- to improve the knowledge and skills of experts working in the field of water management,

- to improve knowledge of established and innovative smart monitoring strategies for the effective assessment of concentrations and loads through different emissions pathways and in rivers,

-assessment of the chemical status of water bodies and development of harmonized inventories for HS emissions, according to the Water Framework Directive (WFD) requirements.

1. National training in Austria

In the framework of the Danube Hazard m3c project, the first national training on inventorying and monitoring of hazardous pollution related to surface water bodies was organized by **Austria** in Vienna on 31.05.-01.06.2022. The lead partner TU Wien organized the training in close collaboration with the project partner UBA (Environment Agency Austria).

The training was well attended by the main target groups of this activity, namely by representatives of national and regional governmental authorities in the field of water quality management.

Specifically, the event was attended by participants from two national authorities: Federal Ministry of Agriculture, Regions and Tourism which is responsible for water quality management and the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology. Beside these, the event had attendees from five regional governmental authorities (Upper Austria, Lower Austria, Burgenland, Carinthia and Styria). Representatives of LP TU Wien and PP Environment Agency Austria actively contributed to the presentations and the discussions.

The one-day-long event was designed to stimulate and guide the dialogue between the main actors responsible for the development and for implementation of inventorying and monitoring of hazardous substances in the field of water quality in Austria. Therefore, a series of presentations were held by the LP, the project partner UBA and upon invitation by the Federal Ministry of Agriculture, Regions and Tourism, which is responsible for water quality

management. Each presentation had the twofold objective of highlighting results or innovative approaches applied and tested in the project and stimulating the discussion by asking questions and explicitly focusing on open issues, problems and challenges identified by the partnership. After every presentation, the dedicated open discussion sessions were alternatively moderated by Ottavia Zoboli and Matthias Zessner (TU Wien).

The first block of presentations and discussions was dedicated to the legislative and policy framework. The focus of the discussion in this block was mainly related to two issues: i) the expected changes related to priority substances and environmental quality standards in the forthcoming revision of the EU legislation and ii) the need for harmonization of policies, their implementations at Danube River Basin level and the role of Austrian institutions in this process.

The rest of the first day was dedicated to different specific aspects of monitoring and inventorying. Some important topics were also discussed such as the status and structure of data collection in Austria, the type of monitoring currently implemented and its limitations in view of generating a sound inventory for the quantification and validation of emissions. In fact, the currently applied monitoring in Austria was conceived as a tool to assess the quality status of surface water bodies and it is very efficient in fulfilling this role. However, effective protection of water bodies from hazardous substances shall also foresee the identification and reduction of emissions and the current data basis generated by the monitoring in Austria allows this only to a limited extent.

The second day was dedicated to presenting and discussing modelling approaches to quantify emissions of hazardous substances into water bodies at the catchment level and to identify critical gaps in the data basis to perform a more reliable and robust estimation than what was done in the past modelling effort in support to the development of the last national river basin management plan.

Figure 1: National training in Austria

This event succeeded in raising awareness among different institutions at the national and regional level on critical aspects of data collection, data management and monitoring which shall be improved in the future to go beyond the assessment of the quality status of water bodies and to allow a reliable and robust assessment of emissions and of their potential reduction. The actual improvement is expected to be a continuous process in which each different institution can play a different but important role, from planning to allocating financial resources for monitoring dedicated to a broader scope and to implementing and carrying out the sampling or the management of data in an extended/optimized way. In this context, this event played an important role in launching the dialogue focusing on different goals and perspectives related to monitoring and inventorying.

2. National training in Hungary

Hungary organized the national training on monitoring and inventorying of hazardous substances (HS) pollution on the 1st and 2nd of June in Balatonszárszó. Several institutions were invited by the BME as the organizer, among others the central administration, regional directorates, research institutions etc.

58 participants attended the training. They were delegated from 23 institutions: Ministry of Interior, River Basin Management and Water Protection Department; General Directorate

of Water Management, 11 regional water management directorates, 3 regional environmental laboratories of the Government Offices, 2 universities and research institutions.

The two-day training was organized together with a half-day excursion in the "Kaps pilot area", which was the location of the field trip.

In the 1st day morning session Adrienne Clement, the manager of the Danube Hazard project team welcomed the participants and gave the first presentation to introduce the framework and the scope of the training. This was followed by the presentation of Máté Kardos, on the topic of hazardous substances monitoring. After both presentations, the floor was open for questions and discussion. Some questions were arising about the monitoring in general, and the selection of the substances.

Zsolt Jolánkai introduced the next topic, monitoring activities performed in the frame of the DH project. The audience was very interested in the technical details. For this purpose, a trip to the pilot catchment was organized. The monitoring working groups of the regional water directorates tested their onsite water quality sensors. This special program was fitted well with the topic of the training. Samples were taken from the Lake Balaton. Results were compared to each other to demonstrate the inter-calibration process. At Törökkoppány station the participants get an impression of how energy supply can be solved with solar panels and wind generators in places far from electric power.

On the 2nd day, the presented topics were related to emission inventory and modelling of HS. In this section data availability was the focus of the interest of the participants.

Figure 2: Presentations and discussions in the conference room

Figure 3: Field trip to Koppány pilot stations

Figure 4: Water quality monitoring exercise in Balatonszárszó (beach of lake Balaton)

At the end of the training, session participants were asked to fill in a questionnaire about the training by scoring and the possibility of sharing their impressions and suggestions. All registered participants received their personal certificates.

3. National training in Slovenia

National workshop on monitoring and inventorying of HS pollution in **Slovenia** took place on June 21st and 22nd, 2022 on the premises of the Department of Environmental Sciences, Jožef Stefan Institute (JSI), Ljubljana. 50 participants attended the event, 20 in person and 30 online. Of them, 28 were external participants from 14 organizations, agencies and national laboratories conducting monitoring (Slovenian National Building and Civil Engineering Institute; Eurofins Erico Slovenija; Wastewater Treatment Plant Domžale-Kamnik; National Laboratory of Health, Environment and Food Maribor; National Laboratory of Health, Environment and Food Novo mesto; National Laboratory of Health, Environment and Food Koper; Hydropower Plant on the Lower Sava, Brežice; Waste Management Service Novo mesto; National Institute of Biology; Holding Slovenian Power Plants; Public company water supply, sewerage waste management, Ljubljana; Slovenian Environment Agency; Geological Survey of Slovenia; Ministry of the Environment and Spatial Planning).

After the lectures, an intense and interesting discussion developed on the topic presented. There were questions about micro and nano plastics in wastewaters and sewage sludge, available analytical methods for these new emerging pollutants, how to use the collected data for modelling of pollutants at WWTPs in Slovenia, what are future challenges in WWTPs for even more effective cleaning of wastewaters, why acidification and freezing of water samples is necessary to ensure at least two months stability of potentially toxic elements, how to overcome the problems of sample storage and sample stability of organic pollutants. All participants completed the questionnaire and all of them rated the workshop as very successful.



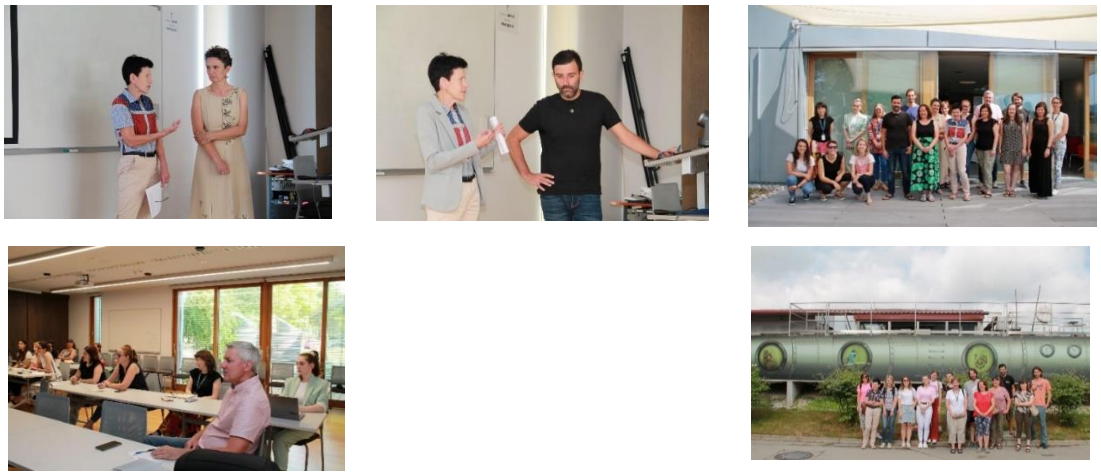

Figure 5: National training in Slovenia

4. National training in Croatia

On June 2 and 3, 2022, the workshop "National training on monitoring and inventorying of HS pollution " was held in **Croatia** as part of the Interreg project "Danube "Hazard m3c". The workshop was organized by the project partner, the Faculty of Chemical Engineering and Technology, in cooperation with the associated project partner, the Ministry of Economy and Sustainable Development of the Republic of Croatia and Croatian Waters, and the Croatian Society of Chemical Engineers (HDKI).

The main objective of the workshop was to familiarize the participants with the Danube hazard m3c project and the current legislation related to water monitoring in the Republic of Croatia, to introduce them to the methods of sampling water, soil and sediment and to present the results of the project so far.

Three cycles of presentations and discussions took place during the workshop. Participants also visited the laboratory for Croatian Waters, where they had the opportunity to learn about the method of sample preparation for analysis and the analyses themselves.

About 40 participants from different educational institutions, Croatian Meteorological and Hydrological Service DHMZ, Institute for Medical Research and Occupational Health, Faculty of Chemical Engineering and Technology University of Croatia, Institut IGH, Croatian Waters and other institutions took part in the workshop.

After the opening of the workshop, the following professional lectures were held:

- "Monitoring of water quality and sources of pollution" (Associate Professor Šime Ukić, Ph.D., Faculty of Chemical Engineering and Technology, University of Zagreb, Department of Analytical Chemistry),

- "Monitoring of hazardous substances in water" (Assoc. Prof. Dajana Kučić Grgić, Ph.D., Faculty of Chemical Engineering and Technology, University of Zagreb, Department of Industrial Ecology),

- "Technical Aspects of Sampling and Measurement of Hazardous Substances" (Marinko Markić, M.Sc., Faculty of Chemical Engineering and Technology, University of Zagreb, Institute for Measurement and Automatic Process Control, CWT) and

- "Research results in the framework of DH m3C monitoring of pollution by hazardous substances" (Matija Cvetnić, Ph.D., Faculty of Chemical Engineering and Technology, University of Zagreb, Department of Analytical Chemistry).

In the survey, participants gave the workshop very high marks and praised the quality of the instructor's presentation.

Figure 6: National training in Slovenia

5. Regional training in Montenegro

The regional training on hazardous substances monitoring was organized in **Montenegro** on 08.-09.06.2022. The training was organized by the International Commission for the Protection of the Danube River (ICPDR) and the Center for Ecotoxicological Research Podgorica (CETI). The training was extremely well attended. Participants of the regional training were invited experts from various institutions from Serbia, Bosnia and Herzegovina and Montenegro (Institut Jaroslav Černi, Federal Institute of Geology, Sava River Basin District Agency, Lead and zinc mine Gross doo Sase Srebrenica, Geological Survey of Republika Srpska, Geological Survey of Montenegro, Institut for Public Health, Institut of Hydrometeorology and Seismology, Directorate for Food Safety, Veterinary and Phytosanitary Affairs, Directorate for Inspection Affairs, Ministry of Agriculture, Forestry and Water Management, Faculty of Biology, CETI, Water Directorate).

The two-day training event had two parts, a seminar and a technical excursion. The excursion started with visiting the CETI laboratory to get familiar with the various lab technologies used for sample analysis taken from different environmental media. Afterward, a field trip was organized on Lake Shkodra to demonstrate sampling methods in the field. It was an opportunity for the participants to get acquainted with the practical implementation of water and sediment sampling using different sampling techniques (conventional sampling, sampling using passive samplers, sediment sampling using grab samplers, etc.). The participants were extremely interested in the sampling since they had not encountered certain sampling techniques before. All presentations during the seminar were accompanied by a broad discussion and exchange of experiences ranging from transposition to implementation of legislation, interpretation of results, to professional and technical capacity to implement obligations from the WFD.

Figure 7: National training in Montenegro

6. National training in Slovakia

Slovakia organized the National training course on current approaches in the monitoring of hazardous substances on 19-20 September 2022 at Water Research Institute in Bratislava.

The training was well attended by all important actors responsible for monitoring, inventorying and management of chemical pollution and status of waters. All together 84 participants were presented among organization covering sector of Ministry of the Environment such as Slovak Water management Enterprise, Slovak Hydro-Meteorological Institute, Slovak Geological Survey, Slovak Environmental Agency, six regional offices of the Slovak Environmental Inspection, Water Sector of the Ministry of Environment and Water Research Institute.

Programme was prepared in line with the Danube Hazard m3c project recommendations and additional presentations were added on top of the originally planned in the program. Altogether 11 presentations have been presented by 8 experts from Water Research Institute. The training was split in two parts: one of them was dedicated to the presentation of the Danube Hazard m3c project, monitoring from the point of view of WFD, the current Frame programme of water monitoring of Slovakia but also from the point of view of data generation for the purpose of modelling. Also, current legislation valid within EU, Slovakia and its comparison to other project countries was presented. Analytical and sampling techniques used for different environmental matrices, various approaches of inventorying and examples of current inventories from Slovakia were presented. The second part of the training started with an excursion to the analytical laboratories of the Slovak National Water Reference Laboratory for presentation of different techniques of analysis of hazardous sub-

stances with emphasis on laboratory throughput, overall cost of analysis and green approaches of analysis. Later presentations were dedicated to modelling as a tool to bridge knowledge gaps, importance of data availability and possible improvement of hazardous substances inventory was explained. Also, the example of the current Slovak inventory was presented.

This event provided a platform for discussions between experts covering different areas of hazardous substances management connected to various types of waters and various stages of their management. The event has been a unique opportunity to explain the importance of monitoring, optimization and efficiency of monitoring but also the importance of data sharing among institutions involved in the area of surface waters quality. In the field of inventorying awareness of experts, working in close fields of monitoring and assessments was improved.

Generally based on the outputs of participants the National training course has been evaluated as very good and good.

Figure 8: National training in Slovakia

7. National training in Bulgaria

Another national training on the monitoring and inventorying of HS pollution took place on June 22nd and 23rd, 2022 in **Bulgaria**. The Ribaritsa village was chosen because it is located in the pilot basin of Vit River thus allowing BWA to attract more local experts and to make a demonstration. The training was attended by over 30 experts from various institutions, e.g. the regional inspectorates for environment and water, the water basin directorates, municipalities, water supply and sanitation (WSS) utilities and others.

The three lecturers: Galina Dimova, Radoslav Tonev and Irina Ribarova presented the topics of the course. The audience was acquainted with the scope and objectives of the project, the EU and national regulatory policies concerning the management of hazardous substances in water, the key aspects of the inventory of pollution sources and pathways; the monitoring of the hazardous substances as well as the technical aspects of sampling and analytical measuring; the contribution of the results of our Danube Hazard m3c monitoring to the inventory of hazardous substance pollution and last but not least the modeling of the hazardous substances as an innovative approach for a better understanding of their occurrence in waters. There was an interesting discussion with the audience concerning the monitoring practices, the difficulties of the on-line sampling and the inventory of hazardous substances.

The participants also visited the monitoring point at Teteven, Beli Vit River, which is within the Vit River pilot basin and observed a demonstration of the sampling procedure and the operation of the installed online sensors for water level, turbidity and temperature. Eng. Tonev gave very interesting information concerning the on-line measurement and the data transfer in real-time to BWA's platform and the data archiving on a physical server. There were several questions regarding the possibility for additional parameters that can be measured, as well as the continuity of the data transfer which BWA's team answered on the spot.

As a direct outcome of the training, an article was published in BWA's website shortly after the event with more pictures and all presentations. The attended experts were unanimous that the quality of the information was at top level and more people that couldn't be on the spot would benefit from the shared materials.

Figure 9: National training in Bulgaria

8. National training in Romania

The national training on Monitoring and inventorying of HS pollution was organized in **Romania** on 07-08.07.2022, in Colibița, Bistrița-Năsăud county. The training was organized by the National Administration "Romanian Waters" (NARW) and different stakeholders (from the monitoring units in the pilot regions and other Water Basin Administrations, Mures Water Basin Administration, Baia Mare Management Water System, Satu Mare Management Water System, regional laboratories, Maramures Environmental Protection Agency, Cluj Environmental Protection Agency, Cluj Water Company, representatives from the Phytosanitary Office, local public authorities, representatives from the Mining industry, NGO's, representatives from University level and also experts from **the Republic of Moldova**) were invited to attend. Altogether, 30 participants were registered. Experts from the Republic of Moldova could not physically attend the meeting, so they participated online.

Each topic was followed by a questions and answers session. Experts from the Republic of Moldova have expressed interest in how monitoring is carried out in Romania and which institution assesses the ecological status. Other participants tried to find out how the samples were stored and what challenges were encountered in this activity. Diffuse sources were recognized as very difficult to identify and quantify in the inventory activity and some additional modelling information was also requested.

A field trip was organized to the sampling sites of hazardous substances on Colibița Lake (at the dam and middle of the lake). The questionnaires completed by the participants indicate that the training course was highly appreciated and the information presented very useful.

NARW distributed the Danube Hazard project link to the participants and everyone was encouraged to access it to find out the results of the project. The leaflets of the Danube Hazard project and the 4th newsletter for additional information were also disseminated to the participants.

After the training, an article and many pictures were published on the NARW website and Facebook page.

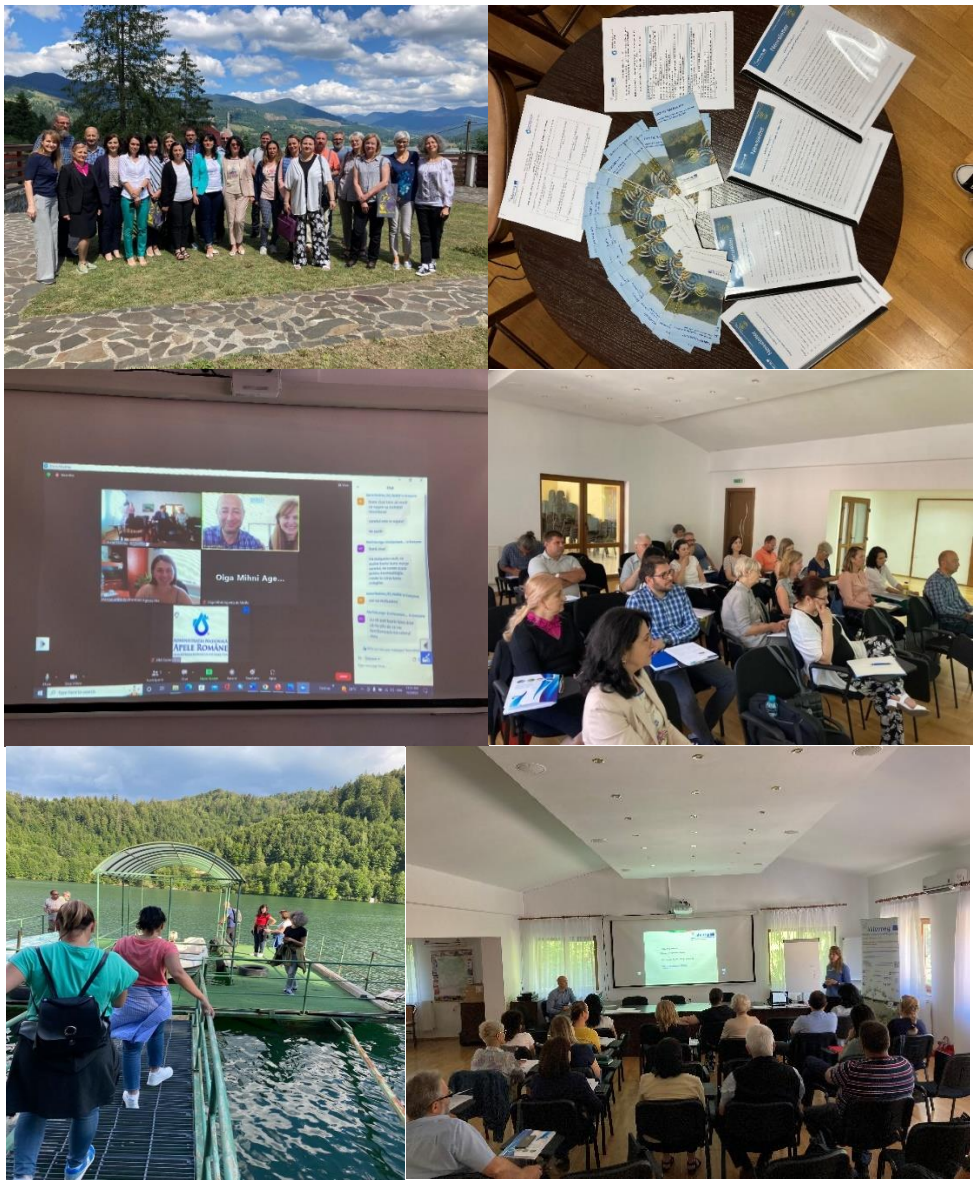

Figure 10: National training in Romania

9. Overall training evaluation

At the end of the training courses the participants were asked to fill in an evaluation questionnaire. Based on the responses given, the events can be considered a success and the participants were generally satisfied with the organization, the presentations and the trainers, too. The majority of the participants wrote that the training was useful, they got new information, and they will be able to utilize the training material in their work.

The following observations were made by the project partners organising the events, based also on their exchange with the participants:

- The large number of participants (around 400) in these events shows the interest of different experts for the presented topics.
- No country has a complete inventory in accordance with EU requirements, so support is certainly needed to establish adequate information systems.
- Modelling issue is a new approach very modestly implemented in the countries participating in the training. Support was given to the introduction of modelling, especially since these tools can best assist the implementation of a combined approach to EQS and emission limit values, which is in line with the WFD.
- In order to have comparable results and a harmonized evaluation at the basin levels, common methodological approaches for tackling hazardous substances measurements, modelling, and management are necessary.
- The need for close cooperation, the exchange of information and knowledge-sharing among institutions working in different fields (authorities, administrations, socio-economic sectors, research sector, NGOs) at national and regional levels, as well as the need to strengthen technical and professional capacities, were highlighted in these training events.
- It is necessary to avoid work duplication, to create a harmonized format for data collection and be used by as many institutions as possible for bridging the data gaps and improving the data quality.
- Improving the hazardous substances inventories and scenarios, in particular for diffuse pathways and sources, is very important through setting and improving modelling tools and activities developing the project results, extending the application area and in general making use of lessons learned in the project.
- It was recognized that there exists need to consolidate the technical and professional capacities of institutions and their staff having in view a better knowledge of hazardous sub-stances challenges and the appropriate way to solve and manage them in a

sustainable way for reaching and maintaining the water bodies' good chemical status and for cleaner and healthier waters.

- By raising awareness among different institutions at national and regional level on critical aspects of data collection, data management and monitoring, the dialogue focusing on different goals and perspectives related to monitoring and inventorying should to be continued in the future to allow a reliable and robust assessment of emissions and of their potential reduction.
- There is a need to harmonize policies, to implement them at the Danube River Basin level.
- Given the particularly complex task of tackling the problem of emerging persistent pollutants, only transnational coordination, harmonization and cooperation can lead to successful management.