

Danube Transnational Programme  
Sediment-quality Information, Monitoring and Assessment System  
to support transnational cooperation for joint Danube Basin water management

## **D.M.2.2 Steering Committee meeting** 19<sup>th</sup> September 2018, Ljubljana, Slovenia

## 1. Invitation and Agenda

**Thursday, 11<sup>th</sup> April (closed session: SIMONA Project participants only)**

<b>09:00 – 12:00</b>	<b>SCOM meeting (chaired by Project Manager)</b>
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09:00-09:30 Project Manager presentation about status of the SIMONA PM and Comm tasks (reporting, promotional materials, comm plan, financial issues, reference laboratory, equipment)

09:30-10:00 Future steps of SIMONA, big overview of the project (inc. trainings, events)

**All partners give short minutes presentation on inventory in their countries (country reports).**

<b>10:00 – 10:05</b>	<b>AT</b>
<b>10:05 – 10:10</b>	<b>BG</b>
<b>10:10 – 10:15</b>	<b>HR</b>
<b>10:15 – 10:20</b>	<b>HU</b>
<b>10:20 – 10:25</b>	<b>RO</b>
<b>10:25 – 10:30</b>	<b>SK</b>
<b>10:30 – 10:35</b>	<b>SL</b>
<b>10:35 – 10:40</b>	<b>BH</b>
<b>10:40 – 10:45</b>	<b>MNE</b>
<b>10:45 – 10:50</b>	<b>SR</b>
<b>10:50 – 10:55</b>	<b>MD</b>
<b>10:55 – 11:00</b>	<b>UA</b>

**11:00-12:00** **Discuss Financial, reporting or other** problems (we wait discussing questions from PPs). If we need to vote, this is the time, and place.

**12:00 – 13:30** **Lunch**

**13:30 – 15:00** Sampling WG meeting (discuss the future tasks)

**13:30 – 15:00** Laboratory WG meeting (discuss the future tasks)

**15:00 – 15:30** WP4 leader's conclusions; workshop closure

## 2. Minutes

### Second Steering Committee meeting of the SIMONA Project

**Date:** Thursday, 11<sup>th</sup> April 2019 Vienna, Austria

**Place:** GEOLOGICAL SURVEY OF AUSTRIA  
Neulinggasse 38, 1030 Wien, Austria

#### Introduction

The second Steering Committee took place on the 11<sup>th</sup> April 2019, at the premises of Geological Survey of Austria in Vienna. There were 39 participants at the meeting from 17 different institutions. At the meeting, representatives of three of seventeen partners were missing, which was communicated to the Lead partner beforehand.

The SCOM is established based on Partnership Agreement, Article 4. At the first SCOM in Ljubljana the partner representatives were appointed. As agreed on the first SCOM, the SCOM oversees the effectiveness and quality of the implementation of the SIMONA, in accordance with the following provisions:

- it shall consider any relevant problem incurred during the implementation of the project and take decisions on how to solve these problems;
- it shall periodically review progress made towards achieving the specific targets of the project;
- it shall examine the results of implementation, particularly the achievement of the targets value (outputs/results) stated in the Application Form on the basis of partner reports and other documents produced by the partners, either on a regular or on ad-hoc basis;
- it may propose any revision or examination of the project likely to make possible the achievement of the project objectives or to improve its management, including its financial management (e.g. redistribution of activities and budget across the partnership);
- it approves major changes requested for the implementation of the project activities (e.g. expulsion/substitution/sanctions of a PP for underperformance, modification of activities and outputs, etc.).

## Minutes

Opening statement was given by Project manager dr. Jasminka Alijagić via teleconference call. The focus of the SCOM was on delayed project activities and related underspending. Partners are doing their best to catch up with the tasks and work, nevertheless it is not expected that the delays will have any impact on project deliverables and outputs.

After the project manager opening, financial manager Ms Barbara Simić took over. With a presentation a general overview of work package 1 – Management was made, and list of expected deliverables and Outputs was debated. Emphases was given to the underspending. Partners are aware about the delays and the reasons are known. Special attention will be given to the corrective measures.

Communication activities on work package 2 are on time. In the designing and making of the promotional material partners SI-GEOZS, HU-SZIE and RS-CI cooperated and coordinated the tasks. Partner RS-JCI was responsible for the production of the material, whereas the SI-GEOZS distributed the material among project partners and associated strategic partners. The promo T-shirt are to be used by project partner field team members on the trainings.

Discussion that followed was chaired by the Scientific coordinator, Mr Gyozo Jordan. The next steps on the project are to be coordinated among Working Groups. WG's leaders should use SIMONA Google-Drive for document sharing among the group. The emphasis is given on the WG's members, in case the project teams within project partners are changed, the main contact point of the partner is responsible to communicate the change to the WG leader.

The latest information from the Lead Partner was about the team members change. For additional support on the project dr. Sonja Cerar was appointed. On the other hand, Communication manager Ms Tina Stražar left on the maternity leave. For the time being, other team member of the Lead partner will take over the communication activities, but at a longer period a new communication manager must be appointed. The partners are informed and encouraged to propose their team member for this position. From the LP's point of view, it does not matter where the communication manager is positioned, lead partner will remain work package communication leader.

For the general overview of the project activities, each participating country gave 5 minute presentation on inventory in their country with emphasis on problems in obtaining the data. The countries that are missing will be invited to send the presentations via e-mails.

At the end of the 2<sup>nd</sup> SCOM the decisions were made by the Steering Committee members.

## Decisions

1. All project partners are to review the planned activities and adjust the financial plan accordingly. The adjusted budget is to be sent to financial manager till 30<sup>th</sup> April 2019.

The partnership is aware about the underspending, the challenge is not only to catch up with the project activities, but also with the planned budget. Most of the underspending is on budget category BL4 External Experts and services, since the activities (laboratory analyses) are postponed to third reporting period. The delay will have no impact on deliverables and results, but it will affect budget. Due to this, the Steering Committee expects minor underspending in the next period.

2. The field trips and trainings are to be conducted in project periods 3 and 4.

Initially the trainings were planned sooner in the project lifetime, after the intense discussion the decision was made, we will conduct the field trainings in the next two periods.

## Q/A

How these presentations of Inventory contribute to final report?

Each partner (country) should write the summary in two pages of Inventory in their country. And also the questionnaire should be fully completed.

## Presentations

<p>09:00 – 09:30</p>	<p>Overview of the SIMONA project status and finance</p> <p>The overall project status was presented by Project manager via teleconference. The overview of WP Management and financial status was given by Financial manager.</p> <p><i>Power Point presentation: 01_SIMONA 01_SIMONA Financial management presentation</i></p>	<p><i>Dr. Jasminka Alijagić via teleconference call</i></p>  <p><i>Barbara Simić, financial manager</i></p> <p><i>(both SI-GEOZS)</i></p> 
<p>09:30 – 10.00</p>	<p>Status of the SIMONA project</p> <p>Scientific coordinator Gyozo Jordan (HU-SZIE) overviewed the project and future steps with emphasis on the Working Groups.</p>	<p>Győző Jordán (HU-SZIE)</p> 
<p>10:00 – 11.00</p>	<p><b>Few minute presentations per counties</b></p> <p>AT: <i>Power Point presentation: 02_SIMONA WP3 Questionnaire – Austria (AT-AIT &amp; AT-GBA)</i></p> <p>She emphasis problems on getting the data about biota sampling. In their country is also the problem finding an appropriate law for sampling the soil, due to many laws relating to the soil.</p>	<p>Edith Haslinger (AT-AIT)</p> 

BG: Power Point presentation: 03\_SIMONA WP3 Monitoring and Hazardous Substances in Surface Water Sediments from the Danube River Basin in Bulgaria (BG-GI-BAS)

Milena Vetseva (BG-GI-BAS)



HR: Power Point presentation: 04\_SIMONA WP3 Inventory – Croatia, Republic of Srpska (HR-HGI-CGS)

Danijel Ivanišević (HR-HGI-CGS)



RO: Power Point presentation: 05\_SIMONA WP3 Inventory workshop – Romania (RO-TUCN & RO-IGR)

Daniel Nasui (RO-TUCN)



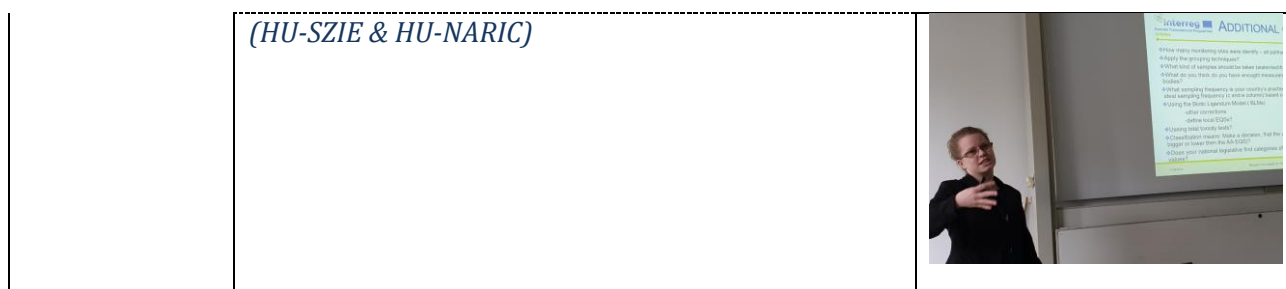
SK: Power Point presentation: 06\_SIMONA WP3 presentation – Slovakia (SK-SGIDS, SK-WRI & SK-SWE)

Jozef Kordik (SK-SGIDS)



<p>SL: <i>Power Point presentation: 07_SIMONA Inventory questionnaire of Slovenia (SI-GEOZS)</i></p>	<p>Sonja Cerar (SI-GEOZS)</p> 
<p>BH: <i>Power Point presentation: 08_SIMONA WP3 presentation – Republic of Srpska (Bosnia and Herzegovina (PI “Waters of Srpska))</i></p>	<p>Jelena Vićanović (PI “Waters of Srpska)</p> 
<p>MNE: <i>Power Point presentation: 09_SIMONA Inventory – Country report – ME (ME-GSM)</i></p>	<p>Neda Dević (ME-GSM)</p> 
<p>RS: Without presentation</p> <p>The representatives of Serbia stressed that that the fulfillment of the questionnaire was not a problem from them.</p>	<p>Dragica Vulić &amp; Tatjana Mitrović (RS-JCI)</p> 
<p>HU: <i>Power Point presentation: 10_SIMONA Hungary</i></p>	<p>Zsófia Kovács (General directorate of water management in Hungary)</p>





## List of 2<sup>nd</sup> SCOM participants

Second SCOM meeting of the SIMONA Project 11 April 2019 Vienna, Austria

No	Project Partner	Appointed member	Contact information
1	SI-GEOZS – Chair	On behalf of Dr. Jasminka Alijagić: Dr. Sonja Cerar	<a href="mailto:sonja.cerar@geo-zs.si">sonja.cerar@geo-zs.si</a> +386 1 2809 790
2	AT-AIT	Edith Haslinger	<a href="mailto:Edith.haslinger@ait.ac.at">Edith.haslinger@ait.ac.at</a> +43 505503608
3	AT-GBA	On behalf of Tanja Knoll: Sebastian Pfleiderer	<a href="mailto:Sebastian.pfleiderer@geologie.ac.at">Sebastian.pfleiderer@geologie.ac.at</a> +43 1 7125674 326
4	BG-GI-BAS	On behalf of Irena Peytcheva: Milena Vetseva	<a href="mailto:Milena_vetseva@abv.bg">Milena_vetseva@abv.bg</a> +359 883317633
5	HR-HGI-CGS	On behalf of Josip Halamić: Danijel Ivanišević	<a href="mailto:divanisevic@hgi-cgs.hr">divanisevic@hgi-cgs.hr</a> +385 1 6160 708
6	HU-SZIE	Győző Jordán	<a href="mailto:gyozojordan@gmail.com">gyozojordan@gmail.com</a> +3630 7284060

No	Project Partner	Appointed member	Contact information
7	HU-NARIC	On behalf of András Szekás: Maria Mörtl	<a href="mailto:Mortl.maria@akk.naik.hu">Mortl.maria@akk.naik.hu</a>
8	HU-BME	Barbara Kéri	<a href="mailto:Keri.barbara@epito.bme.hu">Keri.barbara@epito.bme.hu</a> +3630 2752655
9	RO-TUCN	Damian Gheorghe Stefan	<a href="mailto:damego@cunbm.utcluj.ro">damego@cunbm.utcluj.ro</a> +407 41940088
10	RO-IGR	Anca-Marina Vijdea	<a href="mailto:Anca.vijdea@igr.ro">Anca.vijdea@igr.ro</a> +407 24824715
11	SK-SGIDS	Igor Stríček	<a href="mailto:Igor.stricek@geology.sk">Igor.stricek@geology.sk</a> +421 259375245
12	BA-FZG	Not participating: Ismir Hajdarević	<a href="mailto:Ismir.hajdarevic@fzg.gov.ba">Ismir.hajdarevic@fzg.gov.ba</a> +387 33625208
13	ME-GSM	On behalf of Slobodan Radusinović: Neda Dević	<a href="mailto:Devic.n@geozavod.co.me">Devic.n@geozavod.co.me</a> +382 20 245 438
14	RS-UB-FMG	On behalf of Vladica Cvetković: Kristina Šarić	<a href="mailto:kristina.saric@rgf.bg.ac.rs">kristina.saric@rgf.bg.ac.rs</a>
15	RS-JCI	On behalf of Prvoslav Marjanović: Dragica Vulić	<a href="mailto:Prvoslav.marjanovic@jcerni.rs">Prvoslav.marjanovic@jcerni.rs</a> +381 628013376
16	MD-IGS-ASM	Not participating: Oleg Bogdevich	<a href="mailto:bogdevicholeg@yahoo.com">bogdevicholeg@yahoo.com</a> +373 79051898
17	UA-UGC	Not participating: Klos Volodymyr	<a href="mailto:v.klos@ukrgeol.com">v.klos@ukrgeol.com</a> +380 503513612

## Presentations

Power point presentation: 01\_SIMONA Financial management presentation

## SIMONA WP 1 – Financial management presentation

Barbara Simić, Geological Survey of Slovenia

Inventory Workshop of the project, Austria  
10 – 11 April 2019

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## Presentation overview

- Overview of Management activities and deliverables  
Output quality assurance
- Reporting activities:  
Information about period 1  
Information about period 2  
Project Progress Report
- Finances
- Final remarks

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Inventory workshop, 10-11.4.2019, Austria

## A.M.1 Project coordination

No.	Title	Description	Target value	Delivery date
D.M.1.1	Project Progress Reports	Project Progress Reports	6 1 ✓	05.2021
D.M.1.2	Project Kick-off meeting	Project Kick-off meeting (agenda, minutes, list of participants, ppts)	1 ✓	10.2018
D.M.1.3	Mid-term Project Meeting	Mid-term Project Meeting (agenda, minutes, list of participants, ppts)	1	04.2020
D.M.1.4	Final Project Meeting	Final Project Meeting (agenda, minutes, list of participants, ppts)	1	05.2021

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Inventory workshop, 10-11.4.2019, Austria

## A.M.2 Steering, decision making, quality management and internal communication

No.	Title	Description	Target value	Delivery date
D.M.2.1	Advisory Board meetings	Organisation Advisory Board meetings (next: at Mid-term meeting)	3 1 ✓	05.2021
D.M.2.2	SCOM meetings	Organisation of SCOM meetings (next: at Mid-term meeting)	6 1 ✓	05.2021
D.M.2.3	QMB meetings	Organisation of QMB meetings (next: at Mid-term meeting)	3 1 ✓	05.2021
D.M.2.4	Quality reports	Quality reports	17	05.2021

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## Quality Assurance Management Board

### Quality management Board

- Assembled at the Kick-off meeting
- Main task: to review and validate all the project outputs, and provide feedback to the project partnership
- Board: one member per each partner and ASP
- Quality Assurance manager: **dr. Eszter Takács**

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Inventory workshop, 10-11.4.2019, Austria

## Quality Assurance Management Board

### Outputs quality review process

- Partner provides the Output and Annex 2.b Output factsheet one month before the deadline to QM
- QM reviews the output using Annex 2.a and sends it to LP
- Output with necessary documents are submitted to JS/MA together with Project Progress Report

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Inventory workshop, 10-11.4.2019, Austria

**Period 2 : Outputs with 04 /2019 deadline**

Project main output	Target value	Delivery date
<b>T1 WP3 – Inventory and case studies</b>		
T1.1 Inventory of DRB's sediment monitoring activity	1	04.2019
T1.2 40 experts trained at Inventory workshop	1	04.2019

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Inventory workshop, 10-11.4.2019, Austria

**Reporting timetable**

REPORTING PERIODS	DURATION	PP submit report to FLC	FLC issues the Certificate	LP submits Progress Report & AfR
Period 1	01/06/2018 – 31/10/2018	15.11.2018	15.01.2019	01.02.2019 ✓
Period 2	01/11/2018 – 30/04/2019	15.05.2019	15.07.2019	01.08.2019
Period 3	01/05/2019 – 31/10/2019	15.11.2019	15.01.2020	01.02.2020
Period 4	01/11/2019 – 30/04/2020	15.05.2020	15.07.2020	01.08.2020
Period 5	01/05/2020 – 31/10/2020	15.11.2020	15.01.2021	01.02.2021
Period 6	01/11/2020 – 31/05/2021	15.06.2021	15.08.2021	01.09.2021

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Inventory workshop, 10-11.4.2019, Austria

**Progress Report & AfR**

Two rounds of clarifications:

- 1st round – deadline 25.03.2019 ✓
- 2nd round – deadline 12.04.2019

Input from partners:

**Please justify the reasons in detail how the partnership will be able to catch up with periodic targets.**

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Inventory workshop, 10-11.4.2019, Austria

**Second reporting period  
15th May 2019**

No.	Title	Target value	Delivery date
D.M.1.1	Project Progress Reports (provides LP)	1 / 6	05.2021
D.M.2.1	SCOM meetings	1 / 6	05.2021
D.M.2.4	Quality Reports (for 2 outputs)	2 / 17	05.2021
D.T1.1.1	Countries' Maps and Metadata Report is reviewing the existing information in DTP Countries for protocol development	1	02.2019
D.T1.1.2	Inventory workshop report is collecting the questions and their answers from the workshop	1	02.2019

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Inventory workshop, 10-11.4.2019, Austria

**Second reporting period  
15th May 2019**

No.	Title	Target value	Delivery date
D.T2.1.1	Qualitative review report describing the sediment sampling methods' current status and problems in the DTP Countries	1	03.2019
D.T2.1.2	Meeting minutes of Sampling WG's meeting at Vienna in the 9th month, contains the main decisions for protocol development	1	03.2019
D.T2.1.3	Qualitative review report describing the sediment laboratory methods' current status and problems in the DTP Countries	1	03.2019
D.T2.1.4	Meeting minutes of Laboratory WG's meeting at Vienna in the 9th month, contains the main decisions for protocol development	1	03.2019
D.C.2.4	Promotional materials (T-shirts, pens, notes)	3	04.2019
D.C.2.5	Promotional publications (brochures & leaflets – in 12 national languages + English)	2	04.2019

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Inventory workshop, 10-11.4.2019, Austria

**Finances**

**We are dealing with major underspending!**

REPORTING PERIODS	DURATION	Spending forecast EUR	Reported
Period 1	01/06/2018 – 31/10/2018	257.789,18	79.499,06 -178.290,12
Period 2	01/11/2018 – 30/04/2019	199.528,50	377.818,62 ?
Period 3	01/05/2019 – 31/10/2019	258.404,51	
Period 4	01/11/2019 – 30/04/2020	426.006,60	
Period 5	01/05/2020 – 31/10/2020	401.879,84	
Period 6	01/11/2020 – 31/05/2021	205.543,75	

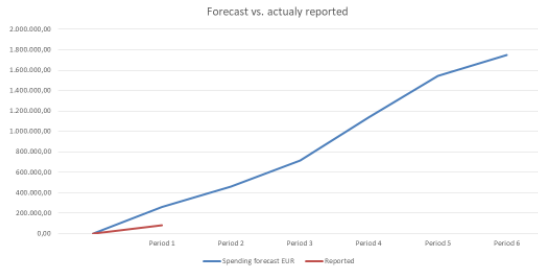
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**Finances**

**We are dealing with major underspending!**



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**Final remarks**

- Minor budget tranferes
- Bank account data
- Partner Report
- Deviations
- News from the management team
- Return the badges 😊

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**Contacts**

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*02\_SIMONA WP3 Questionnaire – Austria*



**WP 3 Questionnaire Inventory - Austria**

Sebastian Pfeleiderer and Tanja Knoll, Geological Survey of Austria  
Edith Haslinger and Paul Kinner, AIT Austrian Institute of Technology GmbH,  
Center for Energy

Vienna meeting  
10 – 11 April 2019

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**Contributing institutions**

- Geological Survey of Austria
- AIT Austrian Institute of Technology
- Federal Environment Agency (consulted on 28<sup>th</sup> Jan. 2019)

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SIMONA

**Legislative framework in Austria**

No	Title (in national language)	Title (in English)	Link	Country
1	Wasser-rahmenrichtlinie	Water Framework Directive	<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0039&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0039&amp;from=EN</a>	EU
2	Grundwasser-richtlinie	Groundwater Directive	<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006L0188&amp;rid=8">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006L0188&amp;rid=8</a>	EU
3	Wasserrechtsgesetz	Water Rights Act	<a href="https://www.bmnt.gvat/dam/jcr:5614b40b-dc4b-42c-a03d-3676537b7d4e/WRG%201959%20zgp%20BGBl.%20H%20N%2061%2018.pdf">https://www.bmnt.gvat/dam/jcr:5614b40b-dc4b-42c-a03d-3676537b7d4e/WRG%201959%20zgp%20BGBl.%20H%20N%2061%2018.pdf</a>	AT
4	Qualitätszielverordnung Chemie Grundwasser + Oberflächen-gewässer + Ökologie Oberflächen-gewässer	Quality Ordinance for the Chemistry of Groundwater and the Chemistry and Ecology of Surface Water	<a href="https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2016_II_363.pdf">https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2016_II_363.pdf</a>	AT

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Vienna Meeting, 10.-11. April, 2019

**Legislative framework in Austria**

No	Title (in national language)	Title (in English)	Link	Country
5	Trinkwasser-verordnung	Quality Ordinance for Drinking water	<a href="https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2017_II_362.pdf">https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2017_II_362.pdf</a>	AT
6	Abwasser-emissions-verordnung	Ordinance for Emission of Sewage water	<a href="https://www.ris.bka.gvat/GeltendeFassung/Bundesnormen/10010977/AAE%3C%3D20fassung%20vom%2005.11.2018.pdf">https://www.ris.bka.gvat/GeltendeFassung/Bundesnormen/10010977/AAE%3C%3D20fassung%20vom%2005.11.2018.pdf</a>	AT
7	Immissions-schutzgesetz – Luft	Air Pollution Control Act	<a href="http://www.ris.bka.gvat/GeltendeFassung/Bundesnormen/10011027/IG-142%20Fassung%20vom%2008.1.2018.pdf">http://www.ris.bka.gvat/GeltendeFassung/Bundesnormen/10011027/IG-142%20Fassung%20vom%2008.1.2018.pdf</a>	AT
8	Gewässer-zustands-überwachungs-verordnung		<a href="https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2006_II_479/BGBLA_2006_II_479.pdf">https://www.ris.bka.gvat/Dokumente/BgblAuth/BGBLA_2006_II_479/BGBLA_2006_II_479.pdf</a>	AT
9	Industrie-emissions-Richtlinie		<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&amp;from=EN</a>	EU

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**Sampling by institutions**

- Geological Survey of Austria
  - Stream bed and floodplain sediments (project-related)
- AIT Austrian Institute of Technology
  - Thermal/mineral water (customer or research projects)
- Federal Environment Agency
  - National chemical monitoring of water (groundwater, surface water bodies); special monitoring in special projects, e.g. for pesticides
  - Sediment sampling (bottom, suspended) only in framework of projects

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Vienna Meeting, 10.-11. April, 2019

**Finalized/ongoing projects related to geochemistry of water, soils and sediments**

No	Project title (national language, if available)	Project Title (EN)	Year	Country	Project coordinators, Partners	
1	Geochemischer Atlas von Österreich	Geochemical Atlas of Austria	2015	AT	Prinz, H., Scheidl, A. & Pfeleiderer, S.	1 – finalized national project on stream sediment quality
2	Hydrochemie und Hydrogeologie der Österreichischen Grundwässer und deren natürliche Metall- und Nährstoffgehalte (Update Geofort 2018)	Hydrochemistry and hydrogeology of Austrian groundwaters and their natural metal and nutrient content	2018	AT	Philippitsch, R. & Humer, F.	2 – finalized national project on groundwater quality
3	Referenzwerte für Schwermetalle in Oberböden	Guideline values for heavy metals in top soils	2004	AT	Schwarz, S. & Freudenstuch, A.	3 – finalized national project on soil quality
4	EUWI+East	European Water Initiative for Eastern Partnership	2020	EU		4 – ongoing EU project for sustainable management of water resources

Project co-funded by the European Union  
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Vienna Meeting, 10.-11. April, 2019

**Inventory of sampling methods**

- **Water:**
  - Water sampling, transport and conservation are standardized by the Austrian norm ÖNORM EN ISO 5667.
  - Sampling by the Federal Environment Agency Austria (UBA) follows a fixed design of location and number of sampling sites. Sampling frequency of groundwater at risk is 3 -4 times per year. Surface water sampling frequency is 1 time per month, additional sampling is carried out sporadically depending on governmental contract or running projects.

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Vienna Meeting, 10.-11. April, 2019

**Inventory of sampling methods**

- **Sediments:**
  - Sampling of stream sediments is standardized by the Austrian norm ÖNORM G 1031.
  - Geological Survey of Austria: bottom and floodplain.
  - Environment Agency Austria: bottom, floodplain and suspended
  - One sampling site per 10 km<sup>2</sup>, at least on site per catchment (up to highest order) no mayor rivers except downstream of emitters (settlements, industrial sites, treatment plants etc.), only sites with active sediment (for river beds), double sampling for quality control every 50th sample

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Vienna Meeting, 10.-11. April, 2019


**Inventory of sampling methods**  
 Danube Transnational Programme  
 SIMONA

• **Biota:**

- Biota are not sampled by the Geological Survey of Austria. The Environment Agency Austria collects biota samples according to the National chemical monitoring of water-monitoring network.
- Detailed information on sampling/measuring/analysing is not available.

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Vienna Meeting, 10-11. April, 2019

*03\_SIMONA WP3 Monitoring and Hazardous Substances in Surface Water Sediments from the Danube River Basin in Bulgaria (BG-GI-BAS)*


**Interreg**   
 Danube Transnational Programme  
 SIMONA

**DTP2-093-2.1 SIMONA**

**Monitoring of Hazardous Substances in Surface Water Sediments from the Danube River Basin in Bulgaria**

Milena Vetseva, Irena Peytcheva, Atanas Hikov, Zlatka Milakovska, Petyo Filipov,  
Geological Institute, Bulgarian Academy of Sciences

Inventory Workshop Meeting,  
Vienna, Austria  
April 10-11th, 2019

Project co-funded by the European Union  
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**Interreg**   
 Danube Transnational Programme  
 SIMONA

**HSs Monitoring in Bulgaria Responsible Institutions**

**Ministry of Regional Development and Public Works**

MRDPW through the Territorial Cooperation Management Directorate is the National Authority and National Contact Point for the INTERREG DTP.

**National Institute of Meteorology and Hydrology**

NIMH at Bulgarian Academy of Sciences - participates in Action 2.1 with two projects: Danube River Basin Enhanced Flood Forecasting Cooperation (DAREFFORT) and Danube Sediment Management - Restoration of the Sediment Balance in the Danube River (DANUBE SEDIMENT).

**National Institute of Geophysics, Geodesy and Geography**

NIGGG - partner of GI-BAS in the RoBuHaz project ("Romanian-Bulgarian cross-border joint natural and technological hazards assessment in the Danube floodplain. The Calafat-Vidin – Turnu Măgurele-Nikopol sector") finalized in 2013.


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**HSs Monitoring in Bulgaria Responsible Institutions**

**1. Responsible National Institutions for the monitoring of HSs in river sediments in Bulgaria**

1.1 Ministry of Environment and Waters through Directorate of Water Management

**Functions: responsible for the policy on water management on national level**

MoEW develops and implements the state policy on environmental protection; establishes and develops a legal and strategic framework, EU objectives and national environmental priorities; implements the environmental sectoral policies; monitors the current state of ecosystems; provides access to up-to-date information on the state of the environment and the ongoing environmental policy

1.2 Danube Region Basin Directorate

**Functions: performs management, regulatory, information and control functions**

The management functions of the Directorate consist mainly of the elaboration of a River Basin Management Plan and a Plan for the management of flood risks

1.3 Executive Environment Agency

**Functions: management, coordination and information functions**

designs and manages the National System for Environmental Monitoring and information on the state of environmental components and factors on the complete territory of the country; National Reference Centre within the European Environment Agency (EEA)

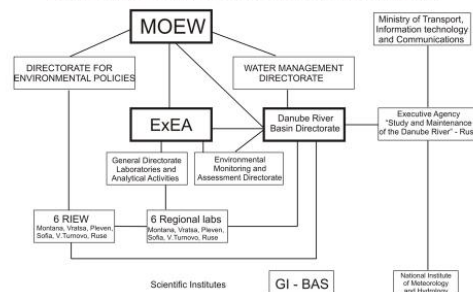

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**HSs Monitoring in Bulgaria Responsible Institutions**


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**HSs Monitoring in Bulgaria Responsible Institutions**

Government authorities / agencies concerned with monitoring the Danube River



**HSs Monitoring in Bulgaria  
Legal framework**

2. **Main European and National documents, applied in the development of the national program for the monitoring of sediment in surface waters:**
- Water Framework Directive 2013/39/EC (2000/60/EO, 82/176/EIO, 83/513/EIO, 84/156/EIO, 84/491/EIO, 86/280/EIO, 2008/105/EO)
  - Guidance document 19 – on surface water chemical monitoring under the WFD;
  - Guidance document 25 – on chemical monitoring of sediment and biota under the WFD;
  - National Water Law;
  - National Regulation for characteristics of the surface waters;
  - National Regulation for water monitoring;
  - National Regulation for quality standards for priority substances and other hazardous substances in the environment;
  - National laws and regulation regarding the quality, monitoring, and maximum allowable concentrations of hazardous substances in soils;
  - Project "Survey and assessment of surface water chemical status", 2014-2017, MOEW, "AKBA-ENV" Consortium;

**HSs Monitoring in Bulgaria  
Current Status**

3. **Type of sediments sampled for measuring HSs in surface waters sediments**
- bottom sediments only
4. **Sediment Sampling Strategy**
- River Basin Management Plans (2016-2021)
- Monitoring locations – 35 sites for the Danube River Basin in Bulgaria
- Frequency of sediment sampling – 1 per 3 years

**Sediment Monitoring sites  
Danube river basin, Bulgaria**

No	Point code	Point name	River basin	Water body name	Monitoring type
1	BG1DU00039MS050	The Danube at Baikal	Danube	Danube	TNMN
2	BG1DU00119MS010R	The Danube at Novo selo, right bank	Danube	Danube	S,TNMN
3	BG1DU00999MS100R	The Danube, Silistra port, right bank	Danube	Danube	S,TNMN
4	BG1S000119MS020	Iskar at Orehovitsa	Iskar	Iskar	S,TNMN
5	BG1S00031MS090	Iskar at Rebarkovo	Iskar	Iskar	O
6	BG1S00039MS120	Iskar at Novi Iskar	Iskar	Iskar	O
7	BG1S00021MS050	Malak Iskar at Roman	Iskar	Malak Iskar	S
8	BG1S00061MS150	Lesnovska before entering Iskar	Iskar	Stari Iskar	O
9	BG1S00038MS110	Batuliska before entering Iskar at Batulija village	Iskar	Batuliska	S
10	BG1S00016MS040	Zlatna Panega before entering Iskar at Cherven bryag	Iskar	Zlatna Panega	S
11	BG1NV00093MS020	Nishava at Kalotina	Nishava	Nishava	S
12	BG1ER00033MS020	Erma at Tran	Erma	Erma	S
13	BG1OG00001MS010	Ogosta before entering the Danube at Oryahovo	Ogosta	Ogosta	S

**Sediment Monitoring sites  
Danube river basin, Bulgaria**

No	Point code	Point name	River basin	Water body name	Monitoring type
14	BG1OG00739MS031	Dam „Ogosta“	Ogosta	Ogosta Dam	S
15	BG1OG00211MS020	Skat, after Misisa	Ogosta	Skat	S
16	BG1OG00611MS090	Botunya before entering Ogosta, Ohrid	Ogosta	Botunya	S
17	BG1W000014MS140	Timok at Bregovo	Rivers W of Ogosta	Timok	O
18	BG1W00061MS030	Lom before Lom town	Rivers W of Ogosta	Lom	S
19	BG1W00081MS010	Tsibritsa at Dolni Tsibar	Rivers W of Ogosta	Tsibritsa	O
20	BG1W00003MS090	Vidbol after Dunavtsi, before entering the Danube	Rivers W of Ogosta	Vidbol	O
21	BG1W000413MS070	Archar at Archar village	Rivers W of Ogosta	Archar	S
22	BG1W00021MS120	Topolovets at Vidin, before entering the Danube	Rivers W of Ogosta	Topolovets	S
23	BG1OS00037MS010	Osam at Cherkovitsa	Osam	Osam	S
24	BG1OS00799MS060	Osam after Troyan	Osam	Osam	O
25	BG1VT00011MS010	Vit after Gulyantsi	Vit	Vit	S

**Sediment Monitoring sites  
Danube river basin, Bulgaria**

No	Point code	Point name	River basin	Water body name	Monitoring type
26	BG1VT99111MS060	Vit, after Teteven	Vit	Bell Vit	S
27	BG1VT00055MS040	Vit, after Sadovets	Vit	Vit	S
28	BG1RL00001MS020	Rusenski Lom at Basarbovo	Rusenski Lom	Rusenski Lom	O,TNMN
29	BG1RL09391MS100	Bell Lom after Razgrad	Rusenski Lom	Bell Lom	O
30	BG1YN00001MS010	Yantra - Novograd	Yantra	Yantra	S
31	BG1YN08319MS1010	Yantra at Dolna Studena bridge	Yantra	Yantra	O
32	BG1YN04111MS050	Rositsa before entering Yantra - Polikraishte	Yantra	Rositsa	O
33	BG1YN00061MS140	Lefedga before entering Yantra - Bryagovitsa	Yantra	Lefedga	S
34	BG1YN00319MS030	Yantra at Karantsi	Yantra	Yantra	S,TNMN
35	BG1YN43199MS021	Dam "Alexander Stamboliiski"	Yantra	"AL Stamboliiski" Dam	S

**HSs Monitoring in Bulgaria  
HSs measured in sediments**

5. **Analyzed hazardous substances in sediments from surface waters in Bulgaria**
- № 2, 5, 6, 7, 12, 15, 16, 17, 18, 20, 21, 26, 28 и 30 from the priority substances list of the WFD
- EU2 - Anthracene
  - EU5 - Brominated diphenylethers
  - EU6 - Cadmium and its compounds
  - EU7 - C10-13 Chloroalkanes
  - EU12 - Di(2-ethylhexyl)- Phthalate (DEHP)
  - EU15 - Fluoranthene
  - EU16 - Hexachloro-benzene
  - EU17 - Hexachloro-butadiene
  - EU18 - Hexachloro-cyclohexane
  - EU20 - Lead and its compounds
  - EU21 - Mercury and its compounds
  - EU26 - Pentachlorobenzene
  - EU28 - Polycyclic aromatic hydrocarbons (PAH)
  - EU30 - Tributyltin compounds (Tributyltin cation)
- № 34, 35, 36, 37, 43 and 44 – added from 2019
- + TOC content; 0,063 mm grain fraction content
6. **Quality Standards for hazardous and/or priority substances in sediments from surface waters – not regulated in Bulgaria**





**HSs Monitoring in River Sediments  
Current Status in Bulgaria**

8. National and international guides of techniques on the design of sampling, transport, storage, and sample preparation
- БДC ISO 5667-12:2017 – Water quality. Sampling – bottom sediments from rivers, lakes, and estuary zones
  - БДC EN ISO 15009:2016 – Soil quality. Gas-chromatographic determination of volatile aromatic HCs, naphthalene and volatile halogenated HCs
  - БДC EN 16171:2016 – Sediments, processed bio-wastes, and soils. ICP-MS elements determinations.
  - ISO 18287:2006 – Soil quality. Determination of polycyclic aromatic hydrocarbons (PAH). Gas chromatographic method with mass spectrometric detection (GC-MS);
  - ISO 11277:2009 – Soil quality. Determination of particle size distribution in mineral soil material. Method by sieving and sedimentation;
  - БДC ISO 14235:2002 – Soil quality. Organic carbon determination by sulphochromic oxidation;
  - ILM 4006/2010 – Organochlorine pesticides and polychlorinated biphenyls determination in soils, sediments, and sludge;



**Positive Practices and Problems**

9. Positive practices and problems in the HSs monitoring in surface waters sediments in Bulgaria
- Lack of participation by national responsible or academic institutions in previous European projects with similar objectives
  - Minor experience in surface waters sediment sampling and monitoring
  - Minor contact of national authorities to geological institutions - traditionally surface water problems are studied by other institutions unfortunately with minor experience in sediments; missing Geological Survey in Bulgaria
  - National institutions – willing to collaborate and interested in the Simona Project and its results;
  - Generally well-developed and continuously updating national monitoring regulation;
  - Following WFD and relevant documents recommendations and guidelines;
  - Using standardized documents for sampling, transport, storage, and laboratory analysis;
  - Assigning projects related to HSs monitoring to specialized subcontractors aiming improved and effective environmental monitoring providing reliable results;
  - National experts with long term experience in environmental monitoring willing to participate the trainings and workshops of the SIMONA project, etc.



**Contacts**

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04\_SIMONA WP3 Inventory – Croatia, Republic of Srpska



**WP3 Inventory – Croatia, Republic of Srpska**

Project Team: Ajka Šoriša, Ana Čalić Janković, Ivan Mišur & Danijel Ivanšević  
Croatian Geological Survey

**Inventory Workshop at the Geological Survey of Austria, Vienna**  
10/11 of April, 2019

Project co-funded by the European Union  
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**Inventory**



- Inventory:
- in collaboration with ASPs
- inventory -> answers to questionnaire + monitoring stations locations

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Inventory Workshop, 10/11 April, 2019, Vienna



- follow EU legislation -> EU WFD (translated documents)
- still no law on sediment quality analysis

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Inventory Workshop, 10/11 April, 2019, Vienna



### Inventory - Croatia

- EU legislation
  - WFD and other directives
  - sediment monitoring not yet implemented, but it is planned to be soon
  - water and biota monitoring are ongoing according to the guidelines of the WFD
- HS -> as prescribed by WFD (incl. thresholds)
- methodology follows ISO norms
- geology

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Inventory Workshop, 10/11 April, 2019, Vienna



- EU legislation
  - WFD
  - water and biota monitoring is ongoing (but not sediment)
- HS -> as prescribed by WFD (incl. thresholds)
- methodology follows ISO and EPA norms
- problems -> lack of financial resources, inadequate laboratory capacities and lack of appropriate laboratory equipment and devices

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Questions?

Thank You for Your Attention

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Inventory Workshop, 10/11 April, 2019, Vienna

### 05\_SIMONA WP3 Inventory workshop - Romania



### Inventory Workshop of the SIMONA Project

### Romanian partners progress of activities

10-11.04.2019, Vienna, Austria



### I. LEGISLATIVE FRAMEWORK

Summary

- I.1 – finalized
- I.2 – soil data completed (4 quality classes depending on soil type use), for drinking water there's only one set of values (maximum admissible concentrations), for sediments there's also only one set of values (there is no specific legislation, but there are included in environment protection legislation), biota (there is no specific legislation, only in the fishing legislation, and it's monitored in the case of water quality assessment)
- I.3 – finalized. Regarding river water 4 quality classes exist.
- I.4 – For all parameters included in the national legislation regarding pollution (air, river waters, drinking water, soils, sediments and biota) there are ISO or EPA analytical standards. Those are listed in the final version of the national questionnaire.
- I.5 – The national legislation does not include toxicity tests, only in the case of aquatic environments, but within various projects, those tests are being performed in biology institutes laboratories.
- I.6 – completed (ISO standards)

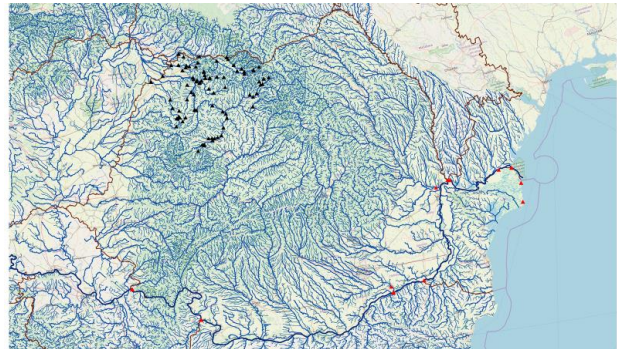
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## II. PRACTICES, EXPERIENCES

### Summary

- II.1 – 28 national and international projects on Danube River and tributaries.
- II.2 – 137 papers (we included a selected list of 137 papers – some of them in English language – regarding hazardous substances, from a database of over 5.000 scientific works regarding Danube River).
- II.3 – finalized for Upper Tisa Catchment and Danube River
- II.4 – only EEA data and metadata; complete list for Tisa Catchment economic agents. The list with all the Romanian economic agents is publicly available. Further more, The National Water Administration publishes (since 2010) annual reports regarding the main river polluters and water bodies quality.
- II.5 – imposed by legislation, but not specific measures indicated.



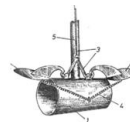
## III. INVENTORY OF SAMPLING METHODOLOGIES

### Summary

- Regarding water, soils, sediments and partially biota, the questionnaire includes ISO analytical guides regarding sampling, transport, storage and in situ preservation standards.
- Regarding in situ analysis and in situ equipment there is only a partial list (about to be finalized).

## III. INVENTORY OF SAMPLING METHODOLOGIES

### Suspended sediments

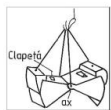


The cylinder (1) is inserted at the point of collection with the flaps (2) raised and reinforced by a simple arming-tripping system (3). By the trigger, the flaps close suddenly, pulled by the springs (4).



## III. INVENTORY OF SAMPLING METHODOLOGIES

### River bed sediments



Dragged sediments: frequently used devices: trap Nansen bottle (ISCH type) and sieve Nansen bottle.

River bed sediments: Sampling from the river bed (under water) is done with GRAIFER, CAROTIER, and from the floodplain (dry sampling) with an ordinary shovel.



## IV. INVENTORY OF LABORATORY METHODOLOGIES

### Summary

- There is a list with analytical equipment regarding metals, ions, organic molecular compounds analysis, together with corresponding analytical standards (ISO and EPA), detection limit and methods accuracy.
- There are national accredited laboratories which perform all these analyses. In RO-IGR and RO-TUCN only metals are analyzed, including new and very new generation equipment, but the laboratories are not certified. Those labs work under ISO standards and can participate to laboratories comparison (especially for Total Hg analysis).

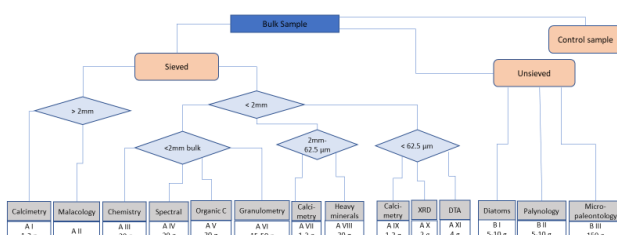


## V. INVENTORY OF EVALUATION METHODS

### Summary

There are only partial responses on all the points, we are still working on it and the partial conclusions are:

- The quality standard values are established in the national legislation.
- The natural environment and water hardness are not taken into account when establishing pollution thresholds.
- The national legislation includes the monitoring of metals and their toxic compounds
- Bioconcentration is not included in the national legislation
- The national legislation does not include remedial measures.



This is a scheme that was used in the 90's for Danube River sample preparation for analysis



Thank you!

06\_SIMONA WP3 presentation - Slovakia



**SIMONA WP 3 presentation**

Jozef Kordik, Igor Striček, Jarmila Nováková, Ľudmila Tokarčíková, SGIDS  
Pavel Hucko, Vladimír Roško, WRI  
Zuzana Hiklová, SWE

Inventory Workshop , Vienna, Austria  
10 – 11 April 2019

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• **SLOVAK QUESTIONNAIRE FOR EXISTING SAMPLING, LABORATORY AND EVALUATION METHODS**

- State geological institute of Dionýz Štúr
- Water research institute
- Slovak water enterprise

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**LEGISLATIVE FRAMEWORK**

No	Title (in national language)	Title (in English)	Link	Country
1	Smernica MZP SR č. 4/1999-3 na zostavenie a vydávanie Geochemickej mapy riečnych sedimentov v mierke 1:50 000	Directive of the Ministry of Environment of the Slovak Republic: no. 4 / 1999-3 for the compilation and issue of a geochemical map of river sediments at a scale of 1:50 000		SK
2	Riadenie MZP SR č. 531/1994 o najvyšších prípustných hodnotách škodlivých látok v pôde	Decision no. 531/1994 on maximum levels of harmful substances in soil		SK
3	Metodický pokyn MZP SR č. 549/98-2 na hodnotenie rizík zo znečistených sedimentov tokov a vodných nádrží	Methodological Instruction of the Ministry of Environment of the Slovak Republic: no. 549 / 98-2 for the risk assessment from contaminated sediments of streams and water reservoirs		SK
4	Smernica MZP SR č. 1/2015-7 na vypracovanie analýzy rizika znečisteného územia	Directive of the Ministry of Environment of the Slovak Republic: no. 1 / 2015-7 to develop a risk analysis of the contaminated area		SK
10	Zákon č. 188/2003 Z.z. z 23. apríla 2003 o aplikácii ustanoveníah zákona o škodlivých látках v pôde	Act no. 188/2003 Coll. on the application of dudge and bottom sediments to soil	<a href="http://www.zbierka.zk">www.zbierka.zk</a>	SK
11	Výhlaska MZP SR č. 283/2001 o vykonávaní určitých ustanovení zákona o odpádkoch	Decree of the Ministry of Environment of the Slovak Republic: no. 283/2001 on the implementation of certain provisions of the Act on Waste	<a href="http://www.zbierka.zk">www.zbierka.zk</a>	SK
12	Rámcová smernica o odpádkoch	Waste Framework Directive	<a href="http://www.europa.eu">http://www.europa.eu</a>	SK; EU
13	Zákon č. 255/2011 Z.z. ktorým sa mení a doplňa zákon č. 514/2008 Z.z. o valikácii a odpadoch z riadeného prírodného	Act no. 255/2011 Coll., Amending Act no. 514/2008 Coll. management of waste from the mining industry	<a href="http://www.zbierka.zk">www.zbierka.zk</a>	SK
14	Výhlaska Ministerstva životného prostredia SR č. 332/2015 z 28. júla 2015 o skladovaní odpadkov a dočasnom ukladaní kovových ťel	Decree of the Ministry of Environment of the Slovak Republic: no. 332/2015 of 28 July 2015 on the landfill of waste and the temporary storage of metallic mercury	<a href="http://www.zbierka.zk">www.zbierka.zk</a>	SK

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Inventory Workshop, Vienna, Austria, 10 – 11 April 2019



**LEGISLATIVE FRAMEWORK**

Indicator	Methodological instruction of the MoE No. 549/98-2 (mg.kg <sup>-1</sup> )				Methodological instruction of the MoE No. 549/98-2 – water solution (mg.l <sup>-1</sup> )			Decision No. 531/94-540 (mg.kg <sup>-1</sup> )		
	TV	MPC	TVd	IV	TV	MPC	A	B	C	
arsenic	29	55	55	55	0,8	28	29	30	50	
barium	160	500	-	-	73	230	500	1000	2000	
beryllium	1,1	1,2	-	-	0,02	0,2	3	20	30	
cadmium	0,8	12	7,5	12	0,08	0,4	0,8	5	20	
cobalt	9	19	-	-	0,2	2,8	20	50	200	
chromium	100	380	380	380	0,2	8,7	130	250	800	
copper	36	73	90	190	0,4	1,5	36	100	500	
mercury	0,3	10	1,6	10	0,01	0,2	0,3	2	10	
total mercury	0,3	1,4	-	-	0,01	0,02	-	-	-	
nickel	3	200	-	-	2,9	290	1	40	200	
nickel	35	44	45	210	3,3	5,1	35	100	500	
lead	85	550	550	550	0,2	11	85	150	600	
antimony	3	14	-	-	0,3	6,5	-	-	-	
selenium	0,7	2,9	-	-	0,05	5,3	0,8	5	20	
tin	-	-	-	-	0,2	18	20	50	300	
thallium	1	2,6	-	-	0,04	1,6	-	-	-	
vanadium	42	56	-	-	0,8	4,3	120	200	500	
zinc	1	2,6	-	-	0,2	1,6	140	500	3000	
P total	140	620	720	720	2,8	9,4	140	500	3000	
F total	-	-	-	-	-	-	500	1000	2000	
S substitute	-	-	-	-	-	-	2	20	200	
Br total	-	-	-	-	-	-	20	50	300	

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### Analytical standards

- Most accessible methods
  - Atomic Absorption Spectrometry (AAS),
  - Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP - AES),
  - Inductively Coupled Plasma – Mass Spectrometry (ICP - MS),
  - X-ray Fluorescence Spectrometry (XRF)
- Identification of minerals in sediments
  - electron microscopy (SEM, transmissive - TEM) and electron microanalysis or X-ray powder diffraction analysis
- Mobility of the elements
  - colony or batch experiments, one-step extraction methods and sequential extraction methods

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### Projects

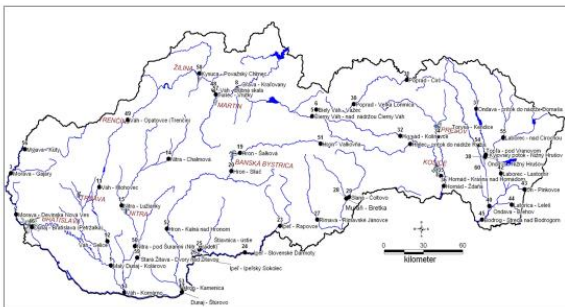
No.	Project Title (EN)	Year	Project coordinators/Partners
1	Monitoring of river sediments within the Partial Monitoring System of geological factors	1996-ongoing	State geological institute of Dionýz Štur (SGIDS)
2	Evaluation of sediment quality in rivers and water reservoirs	2000-2004	Slovak hydrometeorological institute (SHMI)
3	Geochemical atlas of stream sediments	1991-1999	SGIDS
4	Construction of geochemical maps of river sediments as part of the compilation of maps of geological factors of the environment	1991-2010	SGIDS, private sector
5	Monitoring the impact of the Gabčíkovo water works on the quality of surface waters and sediments	1992- ongoing	WaterWork Company, state enterprise, Bratislava
6	The impact of anthropogenic activity in Zemplínska šírava on the quality of accumulated sediments	1997-2003	Water research institute (WRI)
7	Monitoring of physicochemical and biological elements of water quality in the year 2008	The project was completed in 2008	*SWME, s. e. - realized by its own capacities
10	Monitoring of physicochemical and biological elements of water quality in the year 2015	The project was completed in 2015	*SWME, s. e. - realized by its own capacities
11	Monitoring of physicochemical and biological elements of water quality in the years 2016- 2020	2016 – 2020. The project is still being implemented	*SWME, s. e. - realized by its own capacities
12	DanubeSediment „Danube Sediment Management Restoration of the Sediment Balance in the Danube River“	1.1.2017- 30.6.2019	*LP – BME, HUNGARY, PP – many, ASP – many
13	FramWat „Framework for improving water balance and nutrient mitigation by applying small water retention measures“	1.7.2017– 30.6.2020	*LP – BME, HUNGARY, PP – many, ASP – many
14	Monitoring and assessment of water status –Phase III.	1.7.2015 – 31.12.2020	WRI

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### Waterbodies and sampling sites



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### Sampling methodologies

- Geochemical Atlas of Europe – FOREGS
  - Surface water
  - Stream and bottom sediments
  - Floodplain sediments
- Water Research Institute
  - Bottom sediments
- SGIDS
  - Stream sediments

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### Laboratory methodologies

- SGIDS (Spišská Nová Ves)
  - accredited
  - sediments, water, soils, rock environment

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### Future tasks

- Some information in the questionnaire missing – fill in soon (biota, inventory of evaluation methods)
- Ready for discussion to finalize protocols, sampling and laboratory methodology (location, measuring compounds and matrices...)

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## Inventory questionnaire of Slovenia

Dr. Sonja Cerar, Geological Survey of Slovenia

Inventory Workshop, Austria  
10 – 11 April 2019

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- In Slovenia, monitoring of water, sediments and biota is carried out in accordance with the WFD.
- **Monitoring and assessment of water status** are regulated by the *Rules on the monitoring of surface waters (Official Gazette of the RS, 10/2009, 81/2011)*
- The **criteria and method of water status assessment** are determined by the *Decree on the Status of Surface Waters (Official Gazette of the RS, 14/2009, 98/2010, 96/2013, 24/2016)*
- Programs for monitoring are prepared by the **Slovenian Environment Agency**, which is also responsible for their implementation, data control and assessment.

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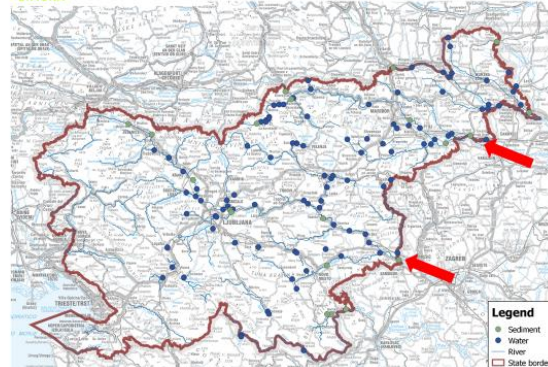
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- The monitoring program of the water chemical status for the period 2016 - 2021 has been prepared in accordance with **national and European legislations (WFD)** and in accordance with **international conventions and interstate agreements with neighboring countries**.
- Slovenia is involved in the **Transnational Monitoring Network (TNMN)** on the Danube tributaries, on the Sava and the Drava Rivers. These are the locations on the border profiles with Croatia, which are also included in the national program and in the bilateral monitoring with Croatia.

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- Surface water monitoring includes **45 priority substances** of which **21 are priority hazardous substances** (eg. cadmium, mercury, endosulfan, nonylphenol, etc.)
- For these substances a uniform Environmental quality standards (EQS) are set up for water and organisms (fish).
- Monitoring of water is performed at least monthly and for organisms yearly.

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- For long-term trend assessment of chemical parameters in waters, monitoring of sediments in fraction < 63 µm is also carried out.
- Chemical parameters for sediments are:  
Anthracene, Cadmium and its compounds, Brominated diphenyl ether, Chloroalkanes C10-C13, DEHP, Fluoranthene, Hexachloro-benzene, Hexachloro-butadiene, Hexachloro-cyclohexane, Lead and its compounds, Mercury and its compounds, Pentachloro-benzene, PAH, Tributyltin compounds, Dicofof, PFOS, Quinoxifyfen, Dioxins and dioxin-like compounds, HBCDD, Heptachlor and heptachlor epoxide
- Sediments are monitored due to trends every 3 years

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**MONITORING – sampling and transport**

**WATER:**

**Sampling:** SIST ISO 5667-6: 2015; Water quality - Sampling - Part 6: Guidance on sampling of rivers and streams

**Transport and storage:** SIST EN ISO 5667-3: 2013; Water quality - Sampling - Part 3: Preservation and handling of water samples (ISO 5667-3:2012)

**SEDIMENT:**

**Sampling:** SIST ISO 5667 – 12:1996; Water quality -- Sampling -- Part 12: Guidance on sampling of bottom sediment

**Transport and storage:** SIST ISO 5667 – 15: 2010; Water quality - Sampling - Part 15: Guidance on the preservation and handling of sludge and sediment samples (ISO 5667-15:2009)

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**MONITORING – chemical analysis**

- Sampling and *most of the analyzes* are performed by external laboratory, the Slovenian Environment Agency (ARSO) only carries out analyzes of *metals* in water.
- External laboratory has accreditation for sampling and most of the analytical methods, all in accordance with ISO 17025.
- ARSO has ISO 17025 accreditation to analyse metals in water.
- Analytical methods:
  - Metals = ICP-MS
  - Organic compounds = LC-MS, GC-MS, HPCC, etc.

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**MONITORING – assessment**

- EQS are defined for water and biota in accordance with WFD
- EQS are generally fixed. Some metals also consider the natural background (Cd, B, Hg, Cu, Zn, Co, Sb) and bioaccumulation (Ni and Pb).
- For some elements such as Cd, Cu, Zn EQS vary depending on the water hardness.
- Evaluation of the ecological status and definition of categories is done according to WFD and Decree on the status of surface waters.
- The results of monitoring are available in the web site of Slovenian Environment Agency <http://www.arso.gov.si/en/>. The original data (concentrations) are available in MS Excel files also in the web site: [http://www.arso.gov.si/vode/podatki/arhiv/kakovost\\_arhiv2018.html](http://www.arso.gov.si/vode/podatki/arhiv/kakovost_arhiv2018.html)

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**Contacts**

**Thank you for your attention!**

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**08\_SIMONA WP3 presentation – Republic of Srpska (Bosnia and Herzegovina)**

**SIMONA WP 3 presentation**

Jelena Vicanović & Aleksandra Kovacevic,  
Public Institution "Vode Srpske"  
Bijeljina

Inventory Workshop  
10<sup>th</sup> – 11<sup>th</sup> April 2019, Wien

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**QUESTIONNAIRE FOR EXISTING SAMPLING, LABORATORY AND EVALUATION METHODS**

**I.1 Enumeration of entity's or European legislation (laws, governmental orders, emergency ordinances) that regulates the concentrations of dangerous substances posing a risk to the health of the population or aquatic life and surface waters, in soils, drinking water, river sediments, marine sediments, sewage, therapeutic sludge, air and biota.**

No	Title (in national language)	Title (in English)	Link
1	Zakon o vodama (Službeni glasnik Republike Srpske broj 30/06, 32/09, 12/13, 24/13)	Law on water (Official Gazette of Republic of Srpska 30/06, 32/09, 12/13, 24/13)	<a href="http://www.vodets.org/images/stories/zakon_o_vodama_glasnik.pdf">http://www.vodets.org/images/stories/zakon_o_vodama_glasnik.pdf</a>
2	Zakon o zaštiti vodstva (Službeni glasnik Republike Srpske broj 124/11, 46/13)	Law on air (Official Gazette of Republic of Srpska 124/11, 46/13)	<a href="http://www.narodnaskupstinars.net/?id=4&amp;id1=slovensko-zakon">http://www.narodnaskupstinars.net/?id=4&amp;id1=slovensko-zakon</a>
3	Zakon o zaštiti životne sredine (Službeni glasnik Republike Srpske broj 71/12, 29/13)	Law on environment (Official Gazette of Republic of Srpska 71/12, 29/13)	<a href="http://www.narodnaskupstinars.net/?id=4&amp;id1=slovensko-zakon">http://www.narodnaskupstinars.net/?id=4&amp;id1=slovensko-zakon</a>
4	Uredba o klasifikaciji voda i kategorijaciji vodotoka (Službeni glasnik Republike Srpske broj 41/01)	Regulation on water classification and categorization of water courses (Official Gazette of Republic of Srpska 41/01)	<a href="http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf">http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf</a>
5	Službeni glasnik Republike Srpske broj 44/01	Rulebook on conditions for discharging wastewater into surface waters ("Official Gazette of RS", No. 44/01)	<a href="http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf">http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf</a>
6	Pravilnik o uslovima za ispuštanje otpadnih voda u javnu kanalizaciju (Službeni glasnik Republike Srpske broj 44/01)	Regulations on the terms of release wastewater into the public sewerage system ("Official Gazette of RS", No. 44/01)	<a href="http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf">http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf</a>
7	Pravilnik o tretmanu i odvođenju otpadnih voda sa područja gradova i naselja gdje nema javne kanalizacije (Službeni glasnik Republike Srpske broj 08/01)	Regulations on treatment and waste water disposal in the cities and towns where there is no public sewerage system ("Official Gazette of RS", 08/01)	<a href="http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf">http://www.vodets.org/images/stories/zakon/zakon_regulacija.pdf</a>
8	Pravilnik o zdravstvenoj ispravnosti vode namijenjene za ljudsku potrošnju (Službeni glasnik Republike Srpske broj 08/13)	Ordinance on drinking water health quality for human use ("Official Gazette of Republic of Srpska", no 08/13)	<a href="http://www.ministarstvo-zdravlja.gov.rs">http://www.ministarstvo-zdravlja.gov.rs</a>

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**I.2 List of dangerous (hazardous) substances**

**I.2 List of dangerous (hazardous) substances (metals, non-metals, PAHs, PCBs) concentration levels, their significance in waters, solids or biota, in accordance with the national legislative framework**

Standard quality concentrations for surface water in Republika Srpska (from Directive 2008/105/EC)

Name of substance	Annual average for inland surface waters EQS (µg/L)	Name of substance	Annual average for inland surface waters EQS (µg/L)
Alachlor	0.3	Hexachlorbenzena	0.01
Ambrosene	0.3	Hexachlorocikloheksana	0.3
Atrazine	0.6	gamma isomer, Lindane	0.02
Benzene	10	Isopteroton	0.3
Cadmium and its compounds	≤ 0.08 (category 1)	Lead	7.2
	0.08 (category 2)	Mercury	0.05
	0.09 (category 3)	Naphthalene	2.4
	0.15 (category 4)	Nickel	20
	0.25 (category 5)	Nonilphenols	0.3
Chlorfenofosfos	0.1	Octilphenol	0.3
Chlorpyrifos	0.03	Pentachlorobenzena	0.07
Dieldrin	Σ<=0.005	Pentachlorophenol	0.4
Endrin	0.025	PAHs	0.05
DDT total	0.01	Benzo(a)pirenena	20.03
Para-para-DDT	10	Benzo(b)fluorantarena	20.03
1,2-dichloroethane	20	Benzo(k)fluorantarena	20.03
Dichloromethane	1.3	Indeno(1,2,3-cd)pirenena	20.002
Di(2-ethylhexil)ftalata	0.2	Simazina	1
Duron	0.005	Trichlorometana	2.5
Endosulfan	0.1	Trifluralin	0.03
Fluorometana			

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**I.4 Listing of analytical standards**

**I.4 Listing of analytical standards recommended in documents for chemical, physical analyzes of samples**

Specific substances of contamination with method of determination

Name of substance	Analytical Standards
Arsenik	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Koper	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Chromum	BAS ISO 5674
Dis	Standard Methods 3113 & APHA-AWWA-WEF, 2005

List of priority substances with method of determination

Name of substance	Analytical Standards
Alachlor	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Ambrosene	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Atrazine	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Benzene	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Cadmium	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Chlorfenofosfos	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Chlorpyrifos	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Dieldrin	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Endrin	Standard Methods 10300 & APHA-AWWA-WEF, 2005
DDT total	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Para-para-DDT	Standard Methods 10300 & APHA-AWWA-WEF, 2005
1,2-dichloroethane	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Dichloromethane	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Di(2-ethylhexil)ftalata	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Duron	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Endosulfan	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Fluorometana	Standard Methods 10300 & APHA-AWWA-WEF, 2005
Hexachlorbenzena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Hexachlorocikloheksana	Standard Methods 3113 & APHA-AWWA-WEF, 2005
gamma isomer, Lindane	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Isopteroton	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Lead	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Mercury	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Naphthalene	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Nickel	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Nonilphenols	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Octilphenol	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Pentachlorobenzena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Pentachlorophenol	Standard Methods 3113 & APHA-AWWA-WEF, 2005
PAHs	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Benzo(a)pirenena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Benzo(b)fluorantarena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Benzo(k)fluorantarena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Indeno(1,2,3-cd)pirenena	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Simazina	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Trichlorometana	Standard Methods 3113 & APHA-AWWA-WEF, 2005
Trifluralin	Standard Methods 3113 & APHA-AWWA-WEF, 2005

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**I.4 Listing of analytical standards**

**General physico-chemical parameters of water quality for rivers and methods of their determination**

Element	Analytical standards
Water temperature *	Standard Methods 1905 & published from: APHA-AWWA-WEF, 2005
Dissolved matter	BAS ISO 13323:2003
Standard oxygen	BAS ISO 15893:2003
pH of water*	BAS ISO 10523:2003
Dissolved oxygen	BAS ISO 15893:2003
Acidity	BAS FN 1889-1:2003
DOES	BAS FN 1889-2:2003
CO <sub>2</sub>	Standard Methods 5220, published by APHA-AWWA-WEF, 2005
Determination of alkalinity	Standard Methods 2550
Determination of Ca and Mg ion	BAS FN ISO 9969-1:2000
Determination of ammonium ion	BAS ISO 1350-1:2004
Determination of nitrate	BAS FN ISO 13504-1:2010
Determination of nitrite	BAS FN ISO 14777:2003
Determination of Kjeldahl nitrogen	BAS FN 15669:2000
Total nitrogen	Standard Methods 4500
Determination of chloride	BAS FN ISO 10304-1:2010
Determination of phosphate	BAS ISO 4878:2003
Determination of orthophosphate	BAS ISO 4878:2003
Determination of dissolved phosphate	BAS ISO 4878:2003
Determination of calcium	Standard Methods 3500, published by APHA-AWWA-WEF, 2005
Determination of magnesium	Calculation
Determination of % oxygen saturation	Electrochemical
Determination of chemical oxygen demand (permanganat)	Standard Methods for Chemical Safety Testing, 3222, Belg ade 1990

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**II PRACTICES, EXPERIENCES**

**I.6 List of national and international guides of techniques on the design of sampling, transport, storage, samples preparation recommended in documents**

Sampling design, sampling, transport, storage	Sediment	Water
		BAS FN 5667-1:2008 BAS ISO 5667-3:2005 BAS ISO 5667-6:2000

**II.2. Significant papers, books, related to geochemistry of waters, soils, sediments in the Danube basin**

Paper title	Title	Year	Country	Authors
	CONSIDERATIONS ON RESERVOIR SEDIMENTATION AND HEAVY METALS CONTENT WITHIN THE DRENOVA RESERVOIR (B&H)	2013	B&H Republika Srpska	Radislav TOŠIĆ, Slavoljub DRAGIČEVIĆ, Snežana BELANOVIĆ, Bilja BRČESKI & Novica LOVRIC

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**II PRACTICES, EXPERIENCES**

**II.3 Existent waterbodies and sampling sites and current quality monitoring stations of the Danube River Basin**



Danube River Basin Monitoring Stations in Republika Srpska

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**III. INVENTORY OF SAMPLING METHODOLOGIES**

**III.1. Water**

**III.1.2. Parameters of water quality/quantity measured *in situ***  
 Temperature, dissolved oxygen, pH and electroconductivity.

**III.1.3. Instruments used for *in situ* measurements**  
 WTW

**III.1.4. Methodology for *in situ* measurements**  
 Temperature- Standard Methods 2550 APHA-AWWA-WEF, 2005  
 Dissolved oxygen- EN ISO 25814:2014  
 pH- BAS ISO 10523:2013  
 Electroconductivity- EN 27888:2002.

**III.1.5. Tools used for collecting samples for laboratory measurements**

**III.1.6. Sample preservation**

**III.1.7. Methodology for collecting samples and further procedures**  
 ISO 5667

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### III. INVENTORY OF SAMPLING METHODOLOGIES

#### IV.3 Inventory of national laboratories

Analytical control of all parameters according to ISO 17 025.  
Laboratory checked according to EN ISO/IEC 17043.

V.1. Setting threshold values for HSs in each type of media (sediment, water, biota)

Threshold values for HSs are set only for water samples in Regulation on water classification and categorization of water courses (Official Gazette of Republika Srpska 41/01) which is available at <http://www.vodars.org/propisi-i-obrasci/pravna-regulativa/>.

V.2. Threshold values for HSs are fixed.

All the answers are supported with references (national legislative documents and/or web links)

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### II PRACTICES, EXPERIENCES

#### Instead conclusions

#### II.5. Problems of current monitoring procedures

- The lack of financial resources, inadequate laboratory capacities and lack of appropriate laboratory equipment and devices.

- Republika Srpska does not have regulations or criteria for including/excluding parameters from monitoring programme for priority substances, which would allow more efficient way to use budget resources.

- There are no systematic investigations of priority substances concentrations in samples of biota and sediment.

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Thank you for your attention



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## 09\_SIMONA WP3 Inventory – Country report – ME



### SIMONA\_Inventory\_Country reports for GSM-ME

Neda Dević, Geological survey of Montenegro, GSM-ME

Inventory workshop,  
Geological survey of Austria, Wien  
11 April 2019

Project co-funded by the European Union  
<http://www.interreg-danube.eu/approved-projects/simona>



### Inventory\_Country reports for GSM-ME

- I. LEGISLATIVE FRAMEWORK
- The Montenegro has legislation (laws, governmental orders, emergency ordinances) that regulates the concentrations of dangerous substances posing a risk to the health of the population or aquatic life, in soils, surface waters and drinking water.
- A regulation for the maximum allowable concentration of pollutants in sediment in Montenegro does not exist. Also does not have laws, regulation or any other official directives for mentioned sample media, except the obligation to implement EU WFD in the next years.

#### II PRACTICES, EXPERIENCES

- Research of mineral resources in Montenegro\_1976\_UN&GSM
- Basic geochemical map of Montenegro\_2009\_GSM
- Strengthening Capacities for Implementation of the EU Water Framework Directive in Montenegro on going\_Water Directorate of Montenegro, Ministry of agriculture and Rural Development.

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Inventory Workshop, 11/04/2019, Wien

**Interreg**   
 Danube Transnational Programme **Inventory\_Country reports for GSM-ME**  
**SIMONA**

- III.3 Existing waterbodies (rivers in Montenegro) and sampling sites(Ramsar,Natura2000 etc.) and current quality monitoring stations of the Danube River Danube River Quality Monitoring Stations (site on rivers)\_22 places.
- **III.INVENTORY OF SAMPLING METHODOLOGIES**
- **III.1.Water\_ Institute of Hydrometeorology and seismology of Montenegro**
- **III.2 Sediment**
- Collection of geochemical samples and their systematization
- All samples are taken from those streams that are visible on the topographic map 1: 200 000. The samples were taken from the smallest fractions of the coating, cleansed of large pieces and organic matter. The sample is packed in plastic bags with the inscription of the sample. The data on the sample were recorded in a form containing: sample mark, line II, stream name, topographic sheet 1:25 000, petrographic composition of the sample, the edges of the surrounding rocks.
- Table for samples of stream sediments has 9 columns:
- 1. regular sample number
- 2. sample designation
- 3. name of the stream from which it was taken
- 4. x coordinates
- 5. y coordinate
- 6. angle (read from topographic map 1:25 000)
- 7. macroscopic provision of currences
- 8. possible origin of the material
- 9. Possible pollutants

Project co-funded by the European Union  
<http://www.interreg-danube.eu/approved-projects/simona>

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 Danube Transnational Programme **Inventory\_Country reports for ME-GSM**  
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- **III.3. Biota\_Expert staff of the Agency for the Protection of Nature and Environment implements a biodiversity monitoring program from 2013, the locations of the monitoring program are different each year.**
- **Important laboratory**
- **1. Institute of Hydrometeorology and seismology of Montenegro, <http://www.meteo.co.me/ekologija/Akreditacija.pdf>**
- **2. Institute for Public Health from Podgorica,**
- **3. Center for Eco-Toxicology Research from Podgorica, [http://eng.ceti.me/?page\\_id=3610](http://eng.ceti.me/?page_id=3610)**

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**10\_SIMONA Hungary**



**SIMONA - HU**

INVENTORY WORKSHOP, VIENNA  
 10-11 APRIL 2019

GYOZO JORDAN, HU-SZIE  
 KATALIN MARIA DUDÁS, HU-NARIC

PRESENTER:  
 ZSOFIA KOVÁCS

REPRESENTING GENERAL DIRECTORATE OF WATER MANAGEMENT IN HUNGARY



**HU - QUESTIONNAIRE FOR EXISTING SAMPLING, LABORATORY AND EVALUATION METHODS**

Data filled: NARIC, Hungary  
 OVI (General Directorate of Water Management), and Kata Dudás

The main (related) EU directives, what we adapted: 2000/60/EC, 2008/105/EC and 2013/39/EU and 2009/90/EC  
**WATER**

•Hungary Law: 10/2010. (VIII. 18.) Environmental quality standards and other thresholds for Surface waters and the usage of these limit values)

•We use EQSs for waters. 2013/39/EU, we use these limit values- EQS (We have a methodological document with 250 pages, in Hungarian. So many specific problem has to be solve, **grouping of parameters**, bioavailability, LOQ is higher then EQS/3, data aggregation in time and space.)

•Analytical standard: ISO 5667-12:1995, MSZ 21470-1:1998, MSZ EN 14899:2006

**SEDIMENT:** We have no official, accredited sediment monitoring yet.

•ISO 5667-12:1995 standard: The main flow line of the river and in sediment deposits along vertical sections at 10 cm intervals

**BIOTA:**

fish -We are investigating monitoring program now, to find the best sampling sites for long-term biota monitoring

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**HU - QUESTIONNAIRE FOR EXISTING SAMPLING, LABORATORY AND EVALUATION METHODS**

Danube River Quality Monitoring Stations

KTI	Name	Sampling location	EQV_X	EQV_Y
101179039	Duna	Budapest, upstream	25227	64740
101179139	Duna	Budapest, downstream	24864	65213
101849862	Duna	Göd	25978	65572
101179194	Duna	Soob, looby	27440	63598
101179131	Duna	Moson-Szapolyi	27314	56543
101179162	Duna	1806,2 river km	2	1
101179162	Duna	Rakapolyi station, 1848,8 km	3	5
101179210	Duna	Solt	16102	66129
101179232	Duna	Herczegkőhát	62700	63189
101179807	Duna	Soob	27408	63586
101180545	Duna	Komárom, Végváros, 3766,8 km	26789	58851
			1	9

These are the main sites (surveillance monitoring network).



**RIVER BASIN MANAGEMENT PLAN (VGT2 2009-2015)**  
[www.vizeink.hu](http://www.vizeink.hu)

•In-situ measurement: pH (MSZ 1484-22:2009, illetve MSZ EN ISO 10523:2012), conductivity (MSZ EN ISO 27888:1998) temperature (MSZ 448-2:1967

•Government - 7 Accredited Laboratory - use standards



**ADDITIONAL QUESTIONS**

- How many monitoring sites were identify – all partners?
- Apply the grouping techniques?
- What kind of samples should be taken (water/sed/biota)?
- What do you think do you have enough measurements to well-describe the chemical status of the water bodies?
- What sampling frequency is your country's practice (b and d column), and what do you think what is the ideal sampling frequency (c and e column) based on your expertise, for the following sampling matrices?
- Using the Biotic Ligandum Model (BLMs)
  - other corrections
  - define local EQSs?
- Using total toxicity tests?
- Classification means: Make a decision, that the water body is good or bad (the average concentration is bigger or lower then the AA-EQS)?
- Does your national legislative find categories of environment quality based on deviations from threshold values?

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**THANK YOU FOR ATTENTION!**

