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

ACRONYM
SIMONA

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For further information on the project, partnership and the Danube Transnational Programme:
www.interreg-danube.eu/simona

FIND SIMONA PROTOCOLS ON THE WEBSITE!

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Consultation on the 1st draft of the Evaluation Protocol on sediment-quality

Additional letters

Letter from SIMONA WP4 leader:

Dear Kata and Gyozo,

The Evaluation protocol is very well written. Unfortunately, I am not an expert to give any valuable contribution to it. Only, we in SIMONA did 3 protocols, maybe we should connect them somehow together to emphasise significance of SIMONA project (see my comments). It is really just suggestion.

Kind regards,

Ajka

Letter from Evaluation WG member, RO-TUCN:

Dear Kata and Győző,

Thank you for the good work! The RO-TUCN team thoroughly analyzed the first draft version of the Evaluation protocol on sediment-quality, and we agreed upon its current form.
Evaluation protocol on sediment-quality is very well structured and prepared. It explains very well what it means fluvial sediment comprising:
- bottom sediment, (river bed sediment, bed load sediment)
- suspended sediment
- overbank sediment

Quality evaluation of the main types of fluvial sediments treated in separate chapters and includes: sampling, sample preparation, sample analysis, reporting followed by compare the HS concentration measured in the collected sediment sample to the soil QS limit value and
recommendation for transnational monitoring.
The final part of the document refers to the selection of hazardous substances for sediment quality evaluation

Our comments are inserted in red in the Evaluation Protocol attached to this message.

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However, we would like to be involved in all the future meetings to discuss and agree on how to take the potential comments into account.

Best wishes,

Damian Gheorghe

Letter from Evaluation WG member, AT-AIT:

Dear Kata,

thank you for your patience and for the tremendous work you have done! Really impressive!

Please find attached my (slightly modified) version. I have used track changes. You can choose to accept or not!

Congratulations for a wonderful document.

one more thing:

- most chapters, esp. chap 6 and 11, would benefit from more references
- make sure you have the copyright for the figures

Bye for now,

Sebastian

Letter from Evaluation WG member, SK-SGIDS:

Dear Kata and Gyozo,

first of all, we would like to thank you for your great work on this comprehensive document. This protocol is well made and understandable.

We have just small remarks and comments for further discussion:

- add a list of abbreviations

- add references to pictures when applicable

- it would be useful to prepare a Case study to demonstrate an application of this protocol (a part of WP8?)

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- we would like to support the discussion about standardized sediment calculation - prof. Marjanovic already mentioned at 2nd training event, that organic matter content and particle size distribution in sediments are crucial for any further processing of data and comparison of samples (we apply this method in Slovakia - attached)

Regards from SK-SGIDS

Jozef Kordik and Igor Stricek

SK Method:

The principle of evaluation according to the Slovakian Methodological Instruction no. 549/98-2 is based on the recalculation of the measured values into the so-called ***standardized sediment*** (general EQS Netherlands) and their comparison with limit values. **The *standardized sediment* is sediment containing 25 % of the fine fraction (i.e., silt/clay fraction with a particle size of less than 0.063 mm) and 10% organic matter after conversion.** Fine fraction of sediments is used because contaminants are preferentially associated with this fraction of sediment. For metals, the conversion of the natural composition of natural sediment into standardized sediment is done through the formula:

$$C_{\text{sed(št)}} = C_{\text{sed}} \cdot \frac{A+25B+10C}{A+B.L_{\text{sed}}+C.\text{OM}_{\text{sed}}}$$, where

$C_{sed(st)}$ - concentration of the relevant element in the analyzed sediment, recalculated on the sediment of the standardized composition ($mg.kg^{-1}$),

C_{sed} - concentration of the relevant element in the analyzed sediment ($mg.kg^{-1}$),

L - fine fraction (fraction <**0.063 mm**) in the analyzed sediment (%)

OM_{sed} - content of **organic matter** in analyzed sediment (%).

A, B, C - constants determined for the relevant metal.

constant	A	B	C
Sb	1	0	0
As	15	0,4	0,4
Ba	30	5	0
Be	0,3	0,033	0
Cd	0,4	0,007	0,021

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Cr	50	2	0
Co	2	0,28	0
Cu	15	0,6	0,6
Hg	0,2	0,0034	0,0017
Pb	50	1	1
Mo	1	0	0
Ni	10	1	0
Se	1	0	0
Tl	1	0	0
V	12	1,2	0
Zn	50	3	1,5

For specific organic substances, the conversion of the chemical composition of natural sediment into standardized sediment is carried out by means of the relationship:

$$C_{\text{sed(št)}} = 10.\frac{C_{\text{sed}}}{\text{OM}_{\text{sed}}}$$, where

$C_{sed(st)}$ - concentration of the relevant organic substance in the analyzed sediment, calculated on the standardized sediment ($mg.kg^{-1}$)

C_{sed} - concentration of relevant organic substance in analyzed sediment ($mg.kg^{-1}$)

OM_{sed} - organic matter content in analyzed sediment (%).

When converting to the sediment of the standardized composition, the value of the organic matter content (not the organic carbon) must always be substituted. The above formula is normalized to organic matter content in sediment at 2-30%. If the organic matter content is below 2% in the sediment, then the value of organic matter is fixed to 2.

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