



WFD CIS SCG

To attention of Dr. Claudia Olazabal
Chair WFD CIS SCG
European Commission, DG ENV

Topic: SedNet considerations and recommendations regarding EQS sediment implementation

9 June 2023

Dear Dr. Olazabal,

SedNet wants to raise some concerns and recommendations regarding the intention to set EQS in sediments such as currently proposed for TBT.

As you know, SedNet is the European, multi-stakeholder Sediment Network aimed at incorporating sediment issues and knowledge into European strategies to support the achievement of a good environmental status and to develop new tools for sediment management. Our focus is on all sediment quality and quantity issues on a river basin scale, ranging from freshwater to estuarine and marine sediments. SedNet brings together experts from science, administration and industry. It interacts with the various networks in Europe that operate at a national or international level or that focus on specific fields (such as science, policy making, sediment management, industry, education).

The setting and application of EQS in water is important for describing (and monitoring of) the WFD chemical status of water. Since chemical quality of (suspended) sediments reflects the water quality, reaching a good chemical status in water will also improve the chemical quality of sediments. However, in most European rivers, water quality in the past has been far away from a good status. Subsequently, the sediments that were deposited in this period sorbed and thus contain many contaminants.

It may also seem attractive to set EQS in sediment, for example if monitoring and assessing this environmental compartment proves advantageous over alternative matrices. SedNet, however, wants to express some concerns here and wants to recommend a way forward to deal with these concerns.

As stated in the WFD CIS document "*Integrated sediment management Guidelines and good practices in the context of the Water Framework Directive*"¹, **exceedance of an EQS indicates a potential hazard and not yet an actual impact on ecology**. A total concentration of contaminants in sediment does not necessarily mean that this total amount of contaminants is mobile and bioavailable for ecology. The relationship between the presence of a contaminant and its bioavailability is more complex in sediments than in water. Thus, **EQS exceedance should not be used as a stand-alone trigger for deciding upon remediation, but rather be a trigger for further, site-specific risk-assessment**. Such a site specific assessment can help to clarify to which extend the measured contaminants (e.g. TBT) are bioavailable and actually impact ecology.

Different approaches and tools can be used to find out if there are actual impacts in the field, such as the Triad approach which combines physical-chemical analyses, bioassays and (site specific) field inventories. Additional use of Effect Directed Analyses may reveal a clear relationship between cause (e.g. TBT) and impact (e.g. a by exposure to TBT impacted benthic community). This helps to reveal, and prioritise sediment contaminated hot spots that may require action, and helps to identify appropriate remediation measures. There is a lot of experience available to execute such a risk assessment approach. However, this approach may be unfeasible in case of a high incidence of EQS exceedance and consequently numerous sites must be assessed.

¹ https://environment.ec.europa.eu/system/files/2022-09/CISdocumentsedimentfinalTO_BE_PUBLISHED_1430554724.pdf

If the risk assessment reveals clear and severe ecotoxicological and/or mobilisation/spreading risks, it may be desired to remediate contaminated sediments.

Several remediation options are available which can basically be divided into *in situ* and *ex situ* remediation. See the WFD CIS sediment guidance document for further details. As sediment is a key element of any aquatic system – without sediment no habitat for ecology – *in situ* treatment is preferred as in this way sediment remains in the system. *Ex situ* treatment has a negative impact on the sediment balance of rivers and can result in a potential loss of habitats.

Regarding *in situ* remediation, basically two techniques are possible: capping of the contaminated hot spot with a clean layer of sediment or bioremediation. Obviously both options should only be considered after a good chemical status of the water has been reached. In general, sediments are already getting scarce worldwide. Thus, capping may not be feasible if large areas of contaminated sediments must be capped as it may be a true challenge to find and transport enough uncontaminated sediment to cap the hot spots. Bioremediation can provide an interesting option as it occurs naturally and there may be options to enhance this capacity. Thus, we speak in this case of (enhanced) natural attenuation of the contamination and hence of a nature based solution. But there is not much experience yet with large scale *in situ* remediation of (e.g. TBT) contaminated sediment.

Several techniques are available for *Ex situ* remediation of contaminated sediment, ranging from confined disposal to thermal treatment (see the WFD CIS sediment guidance document). These methods always imply that sediment – and thus habitat – will be removed from the system and treated at another location, mostly on land in accordance with the Waste Framework Directive and the Landfill Directive. A complicating factor is that sediment reuse as a resource within a circular economy is regulated by the national implementation of end of waste criteria within the Waste Framework Directive. It is disruptive regarding sediment management strategies having to meet criteria from two frameworks with different goals and potential harmful for other functions of sediments within a water body.

In general, the use of any remediation method is an elaborate task and society/governments will be responsible for the costs that arise from decision making on large-scale remediation measures. Therefore, it is important to design remediation measures that maximize the environmental benefit.

In this context, **SedNet recommends reconsidering the introduction of EQS in sediments supported by risk assessment, also used to gain experience in the form of a learning-by-doing approach:** In experimental settings knowledge and experience can be enhanced on how to cost-effectively manage large areas of contaminated sediment and thus inform an effective Program of Measures. In such a way also relevant site specific aspects can be addressed to make sure that the problem can be tackled by means of a tailor made (nature based) solution.

SedNet also recommends raising this need for experimentation at EC DG R&I and suggest them to include it under upcoming call(s) for proposals under the Horizon Europe program.

SedNet would be pleased if you would be willing **to pass on our letter to those currently involved in the ongoing discussions regarding the introduction of an EQS in sediment.**

We sincerely thank you in advance for this.

Kind regards,
On behalf of the SedNet Steer Group,

Marc Eisma, SedNet chairman

