



River basin sediment management of the transboundary rivers, Meuse and Scheldt – NL/FR/BE

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

2. Key Approaches

- Integration
- Knowledge-based
- Ecosystems based approach

3. Experiences that can be exchanged

Co-operation between regions and countries sharing a river system to harmonise approaches needed for successful implementation of the Water Framework Directive.

4. Overview of the case

France, Belgium and the Netherlands worked together to reach agreement on various aspects of the management of contaminated sediments of the rivers Meuse and Scheldt.

5. Context and Objectives

a) Context

The International Commissions for the Protection of the Meuse (ICPM) and the Scheldt (ICPS) play an important role in drawing up international agreements for improving the quality of water and sediments in the catchments of the two rivers. However, important differences exist between the respective countries in the management of contaminated sediments. The methods for assessment, legal aspects, regulation and possible destinations have been developed at the national/regional level. These differences hamper the implementation of a river basin approach, as laid down in the EC Water Framework Directive.

Four regions/countries were involved: Flanders and Wallonia (Belgium), France and The Netherlands. One of the first steps that need to be taken in the making of a common river basin management is to reach an agreement on the present state of the river system. Therefore, ICPM and ICPS took the initiative to list the differences and similarities in the management of contaminated sediments between various countries/regions. Insight into these differences and similarities will result in an improved understanding between the countries that can serve as a starting point for further harmonisation of the policy of the different countries.

b) Objectives

The objective is to develop a common methodology for the monitoring, assessment and possible destination of contaminated sediments taking into account the differences in national policy, legal aspects and regulations.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The Institute for Inland Water Management and Waste Water Treatment (RIZA - Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling) is the research and advisory body of the Directorate-General for Public Works and Water Management (Rijkswaterstaat) for inland waters in The Netherlands. The institute is a leading international centre of knowledge for integrated water management. During this initiative, RIZA cooperated with the Ministry of the Environment of the Flemish Region (BE) and the Water Agency of the Picardie-Artois' Region (FR).

b) ICZM tools

The project was divided into the four areas of activity:

1. Legal aspects and regulation of contaminated sediments.
2. Methods for monitoring and assessment of contaminated sediments.
3. Field testing of the common methodology.
4. Destination of dredged contaminated sediments (treatment and re-use).

The innovative nature of this initiative lay within the development of a common methodology for monitoring and assessment of contaminated river sediments. Scientific insights regarding the optimisation of costly sampling and the determination of appropriate indicators for eco-toxicological effects that exist in the participating countries were combined to draw out a joint view on the matter of contaminated sediments. Scientists from similar kinds of institutes in different geographical regions undertook an effort to develop a common method instead of continuing in a more or less isolated fashion. A common monitoring system and common standards could then be used to define the objective of "good ecological status" in the Water Framework Directive and to prepare an inventory of the status of sediments in different river basins.

Some other results and conclusions were:

Legal aspects and regulations differ considerably between France, Flanders, Walloon region and the Netherlands. These differences are related to the method for sampling (grab sampler versus corer in situ versus ex situ), assessment criteria and necessity of dredging (nautical and ecological reasons). The countries involved are often not aware of these differences. Unification of the regulations for contaminated sediments could be possible but will require a long term assessment and involve a lot of parties. The common method for the assessment of sediments is based on a triad approach. Triad entails that, not only physical and chemical assessment of sediments but also bio-assays and field assessment should take place. There is a broad agreement on the parameters for physico-chemical analysis. A team of specialists agreed upon a proposal for both the eco-toxicological and biological assessment methods. However, more data are still needed in order to come to definite conclusions and to establish reliable common standards.

The draft common method was applied in four locations in the Meuse and Scheldt. Results of the chemical assessment show that the four locations have moderate to heavily polluted sediments. Bio-assays indicate that significant effects could be observed. Field tests resulted in moderate effects. Obviously the four locations show different results: in order to better assess the common method, bio-assays on additional locations should be performed. It is important to agree upon a common method for the assessment of sediments in the future. A model has been developed for destinations of contaminated dredged sediments and a decision-support system has been designed. Information from the countries/regions involved as well as from the United States and Canada has been taken into account. The model includes information on: characterisation of sediments, possible destinations, dredging techniques, transport and treatment technologies. Based on the physical/chemical properties of the dredged sediments, the most suitable treatment technique can subsequently be determined.

7. Cost and resources

The total budget was €250,714.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The regulatory systems of, on the one hand, Flanders and the Netherlands and, on the other hand, France and Wallonia present significant differences when it comes to their approaches to contaminated sediment. The results will act as an input to

the new action programmes of the Meuse and Scheldt commissions

9. Success and Fail factors

The atmosphere of enthusiasm and confidence in which the participants worked together. A common knowledge base of divergent and convergent trends is important both because it offers a basis for further cooperation and because it provides a more thorough understanding of why the negotiating positions of the participating countries/regions differ. The divergent trends can be of assistance in identifying topics that might be less fruitful as a focus for seeking co-operation. Those issues that confront each of the four countries/regions with similar practical problems as well as those issues identified as common concerns, probably offer the most fruitful elements for further co-operation through a step-by-step approach.

10. Unforeseen outcomes

An issue that merits further attention, and that could be the first subject of the step-by-step approach, is the nature of the standards used to monitor and classify sediment. This is a topic that can be addressed through co-operation at the technical and scientific level. One topic that requires consideration, in the short term, is the relationship between upstream and downstream locations. The Water Framework Directive requires a river basin management approach. This implies that policies for contaminated sediment and dredging for those sediments in upstream locations would have to take into account the effects on downstream locations, including downstream locations in another country/region.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- Towards river basin sediment management for Meuse and Scheldt (undated) LIFE99 ENV/NL/000263 Layman's report



Management of contaminated sediments (344.06 KB) 

14. Relevance for cross-border management of transitional waters

The case illustrates a step-wise integration approach for the management of a complex hydrological system where an estuary is integrated into a coherent tetra-lateral monitoring and management system of the transboundary rivers. Hence, the relevance of this study for the cross-border management of the transitional waters.