

# First Flemish Sediment Management Concept of the River Basin Districts of Scheldt & Meuse – 2022-2027

## Coordination Commission Integrated Water Management (2020) Working Group Dredging & Clearance of Sediments

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**Introduction:** In the first Flemish sediment management concept (SMC) a first risk analysis has been made, based on the most recent data and models. For the whole Flanders a detailed estimation of the costs and possible benefits of the current sediment management and of a number of possible scenarios of future sediment management has been made.

**Methods:** An *overall analysis* of all sources of sediment, all sources of sediment pollution, of the sediment quantity and quality in the Flemish rivers and of the hydromorfology status of the Flemish rivers has been made.

Next to that a *desktop study* has been made *of all the types of actions* and how much and where in Flanders they are needed to tackle the biggest sediment problems found in the analysis. An estimation of the total cost of all the “needed” actions has been made. Where possible a first rough estimation of the benefits of each type of action has been made.

In a following step *different scenarios to implement the “required” actions* were studied. Based on the results of these scenarios a *“preferential strategy”* to implement all the “needed” actions between 2022 and 2051 has been formulated. For the period 2022-2027 a specific *“no regret” proposal* of actions has been made and integrated in the Flemish River Basin Management Plan (RBMP) 2022-2027.

**Results:** It is estimated that on average each year 650.000 ton (or 865.000 m<sup>3</sup>) of sediment ends up into the Flemish rivers, due to run off and erosion. With erosion control measures this could be potentially reduced by 38,5% (333.000 m<sup>3</sup> less per year). The yearly investment in maintenance cost for these measures is estimated to be between 7,5 and 9,6 million euro but the yearly reduction in dredging costs is estimated to be between 10 and 15 million euro.

PCB's, degradation products of DDT, Cu, Zn, Pb and Ni are the most prevalent pollutants, but also PAH's, Cr, As, TBT and many other pollutants are problematic in many Flemish sediment. Monitoring during the last 20 years shows a steady improvement of the water soil quality in general. The total cost of cleaning all water soils of the non-navigable rivers alone is estimated to be between 650 and 975 million euro. For the waterways no accurate estimation is available yet.

The historical dredging backlog is estimated to be between 296 and 426 million euro.

The scenarios show that a continuation of the current sediment management (the “zero”-scenario) is not a good option. Re-orientating the existing sediment related budgets in a smart way (the “adapted zero scenario”) is also not preferable. This scenario makes clear that without extra (yearly) budgets even in the most optimistic combination of different possible action schemes, it will probably take more than a century to reach all sediment related long term goals.

**Discussion:** As preferential strategy it is suggested that for the next 30 years every year on average 12,5 million euro of the current yearly dredging budget is re-oriented to different, more source related actions and every year on average 38 million extra sediment budget is foreseen for more source related actions. In this way the erosion in Flanders can be reduced with 38,5%, the most polluted water soils of the non-navigable rivers can be remediated and (a large part of) the historical dredging backlog in Flanders can be removed. Based on a simplified cost benefit analysis the return on investment period is roughly estimated to be 60 years.

A specific “no regret” proposal of actions is made in the SMC and in the Flemish RBMP 2022-2027 as a guidance for the period 2022-2027. The yearly needed extra budget of this proposal is 17 million euro. This would mean an elevation of the existing yearly sediment related budgets with 7%. Once the cost benefit ratio can be calculated more accurately based on extra experience on the field, extra studies, extra data and extra modelling, an adjusted proposal will be made in the SMC & RBMP 2028-2033.

### References:

<https://sgbp.integraalwaterbeleid.be/beheerplan/achtegronddocumenten/vlaams-sedimentbeheerconcept>