



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat



System dynamic sediment plan

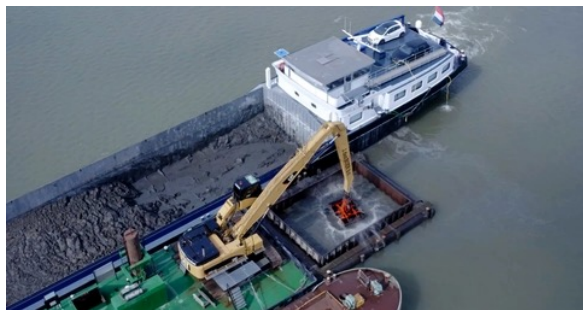
A comparison framework
and decision model for the
competent authority

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Why is there a need from Rijkswaterstaat to use a system dynamics model?

- From the interests of contractors it becomes clear that the sediments released are not always used in the most sustainable way
- The use of valuable sediments as landfill and comparable unsustainable use
- Much more sediment is sent to landfill than necessary
- The transportation of sediment can be very inefficient, sometimes a unsustainable solution





Background of the model

- The system dynamics model has been developed to give materials released from works the most sustainable possible reuse.
- Normally released materials from civil works are reused in civil works or disposed of as waste. Reuse is therefore not a new phenomenon.
- The model therefore helps to realize a more complete and improved reuse.



Important Success Factors

- You need to facilitate the possibility of intermediate storage of materials to accommodate planning differences
- In order for the model to function fully, it is necessary to prepare the competent authorities for the options offered by the model.
- The competent authority is used to approving or rejecting 1 plan, with the model a ranking takes place from which to choose.
- The outcome of the model is decision support you always need approval of the competent authority



How does the model work

- To be able to make a good comparison the sediment must be examined from an environmental, geotechnical and agricultural perspective. In this area we are investigating the most optimal investigation parameters. There is no standard for this yet.
- In addition, you must have a complete overview of all requesting parties in the vicinity of the work.
- With this you can run the model by Copernicos www.copernicos.com and will give you all the possible opportunities for reuse of the sediment
- Note that the outcome is a decision support



What does it deliver

- In any case, it provides a good insight into the most sustainable reuse of sediment.
- These results can be discussed with the competent authority in order to select the most favorable possible redevelopment variant based on environmental efficiency.



Examples of using the model





The outcome of the model

- The model showed that a dike reinforcement project is being prepared within a distance of 200 meters where this material is very useful in a civil engineering sense
- talks are currently being held and there are planning differences that can be bridged and consultations about the intended application are being held with the competent authorities
- Other projects where the model successfully is used are
 - Motorway A58 filling station Kloosters aprox 10000 cubic meter
 - Uiterwaarden Wamel Dreumel Heerewaarden 1 000 000 cubic meter
 - In progress: VIJM,KRW Ijsselmeer & HWBP 2.000.000 cubic meter

VIJM/KRW/HWBP

