

„Future-oriented contributions of small ports to increasing climate resilience in coastal regions- the example of recreational boat harbours“

Content

Aim	2
Reason and structure	2
Working Steps	3
Expected results	3
Project information	3

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Aim

The aim of the pilot project is to develop an integrative concept against increasing sedimentation in small harbours, such as recreational boat harbours, along the tidal river Weser and, based on this, to develop building blocks for increasing climate resilience in the coastal region of Lower Saxony. This pilot project is to be carried out within the framework of the Ecological Strategy for Sediment Management of the State of Lower Saxony.

Furthermore, it is planned to prepare the achieved results for transferability to other smaller harbours along the Wadden Sea coast.

The result will be the exemplary development of a recycling concept for the raw material "silt" from smaller harbours using the example of marinas.

Reason and structure

The starting point of this pilot project is the increasing silt load in the small ports (e.g. marinas) along the tidal river Weser. Currently, as well as in the past years, these harbours are making great efforts to be able to pursue their activities adequately and safely along the sailing area Weser. In particular, the accessibility of these harbours becomes more and more difficult over the course of the year due to the (increasing) siltation of the access roads or is considerably restricted (in terms of time).

Up to now, the silt has been removed from the ports on the port operators' own initiative using various methods and returned to the tidal waters of the Weser. This task has to be repeated every year due to the amount of silt produced and with which a valuable raw material "silt" is lost.

With this project for the development of building blocks to increase the climate resilience of the coastal region, we would like to make a double contribution. On the one hand, the problem of the annual siltation of the small harbours, using the example of the recreational boat harbours, is to be solved. On the other hand, the further utilization of the dredged sediment (raw material "silt") for other forms of use ("users" or "buyers") is to be investigated. The raw material "silt" extracted from the river system could thus play a beneficial role in increasing climate resilience in the coastal region. Therefore, the focus is on the identification of land-based forms of application of the raw material "silt".

The first part of this project deals with the analysis of the upcoming sediment and the stakeholders to be involved as well as the further utilization possibilities of the raw material "silt" to be derived from this (identification of potential "buyers"). This is followed by the development of a dialogue process and a utilization concept. Prospectively, we see synergy effects resulting from the monitoring of the dredging already applied for in some sports boat harbours along the Weser in accordance with the "Guideline on the granting of subsidies for the promotion of dredging in sports and leisure harbours" (Nds. MBl. 15/2022). It is planned to collect existing knowledge and experience of projects already carried out both in Germany and abroad. The knowledge gained there is also to be incorporated into the guidelines to be drafted for the development of solutions to the problem of siltation in small harbours.

Working Steps

1. Analysis and system understanding: sediment properties, potential uses.
 - a. Is the sediment contaminated? If so, in what form and with what? Suggest an adapted sampling design to ensure representative sediment sampling.
 - b. Could it still be used for certain purposes?
 - c. Do sediment characteristics meet defined conditions for reuse? Consider geochemical and physical suitability for subsequent purposes.
2. Analysis of stakeholders and dialogue process
 - a. Who is to be addressed or involved as a stakeholder or potential user ("provider" and "buyer")?
 - b. What rules, laws, and conditions must be met?
 - c. How do the supply and demand of the commodity match?
 - d. How should a possible extraction and distribution process be organized in the long term?
 - e. Compilation of the state of knowledge and exchange with experiences in other estuaries, e.g. Ems and from other countries, e.g. the Netherlands.

Expected results

The results of the "system understanding" and "stakeholder" analysis steps described above, together with existing findings from previous projects and schemes, both domestic and international, will be incorporated into a guide for dealing with the issue of siltation in small ports.

Project information

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Niedersachsen