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Welcome

Dear Reader,

Welcome to the first NAPSEA Newsletter! It will keep you updated on NAPSEA activities and related news. Thank you for signing up!

Kind regards from the NAPSEA team (see most of us in the picture below!)



Main info to share

The NAPSEA project has been running for over a year, and is currently in full swing. Our progress so far includes the following activities and results:

Evaluation of management measures in progress

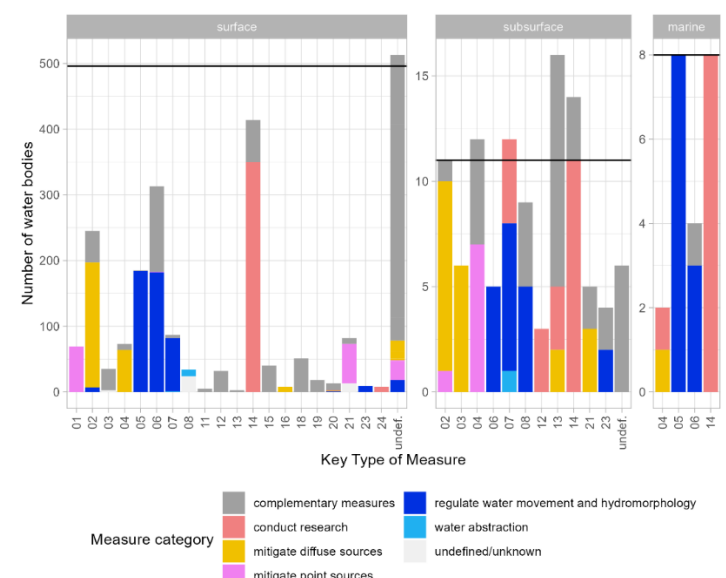
In this first phase of the project, we are eager to understand what hinders and enables measures that aim to reduce the concentration of nutrients in the Wadden Sea. For this, we developed an evaluation framework for policy instruments (D2.1 Feasibility Assessment Framework) across different governance levels and sectors. Here, we check how existing policies cover nutrient reduction goals and how coherent they are with each other.

Overview of the Feasibility Framework with its three main implementation steps.

STAGE	1) DATA COLLECTION	2) DATA ANALYSIS	3) DATA INTERPRETATION
ACTION	SCREENING PER POLICY INSTRUMENT FOR EACH GOVERNANCE CATEGORY: LEGAL GOVERNANCE RESOURCES IMPLEMENTATION MONITORING AND REPORTING	1) CREATING AN OVERVIEW 2) LEVEL OF INTEGRATION ACROSS GOVERNANCE LEVELS 3) LEVEL OF INTEGRATION ACROSS SECTORS	1) EVALUATING THE ENABLING ENVIRONMENT 2) JUDGING THE EFFECTIVENESS AND EFFICIENCY OF EXISTING NUTRIENT POLICY INSTRUMENTS
METHOD	filling in template + interviews	analysing per guidance question + collecting examples from the policy instruments	review through interviews + summarizing results

As a next step, we inventoried current Dutch and German planned measures on nutrient reduction and judged these regarding their feasibility by applying the above framework (D2.2. Feasibility of measures). The evaluation confirms the important role of agricultural measures for the reduction of nutrient inputs. The local and basin-wide potentials of measures to reduce nutrient inputs are highly variable. Various reports indicate that the planned measures are insufficient to achieve the environmental targets.

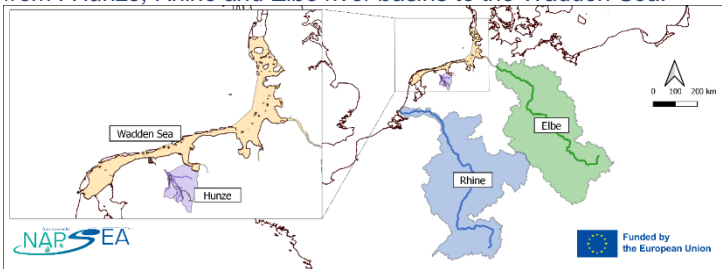
Water bodies with WFD measures planned until 2027 in the Dutch parts of river Rhine compared to the number of water bodies (horizontal line), separated by water-body type and main category.



Setting up a modelling framework on nutrient transport and fate

As a first step towards the modelling framework, we made a data overview listing all datasets required for running the models (D3.1 Data overview). The overview describes the data availability, data sources and spatiotemporal extent for all NAPSEA case studies draining into the Wadden Sea (Elbe, Rhine and Hunze). Data include climatic forcings, land use properties, soil types, point-sources (waste water treatment plants and their discharge), agricultural practices (use of manure, mineral fertilizer), measured stream discharges and nutrient (nitrogen and phosphorus) concentrations. Of course, all data sets are openly available.

Case studies of the NAPSEA project which link the sources in the from : Hunze, Rhine and Elbe river basins to the Wadden Sea.



One of the modelling challenges we face in our project is how to better include the Netherlands in the German modelling frameworks. For instance, in the Netherlands water flows are heavily regulated, so a model based on physics alone does not represent a realistic situation. We came up with a strategy to achieve a truly integrated modelling framework.

To improve the Deltares Wadden Sea model we included more realistic input on suspended matter concentrations, based on satellite data with 100 m spatial resolution.

Establishing safe ecological boundaries

To establish one of the safe ecological boundaries we derived a region-specific relationship between nutrient inputs and the habitat suitability for seagrass.

Also, we assessed how climate-related low discharges may impact the nitrogen retention in river catchments.

Advisory board and General Assembly

We established an advisory board and welcomed them at our first General Assembly, which meeting took place in Delft in October 2023.

Publications

You can find our publications on our website ([News / Publications – NAPSEA](#)) or by clicking the links below:

- [D2.1 Feasibility Assessment Framework](#)
- [D2.2 Feasibility of measures](#)
- [D3.1 Data overview](#)
- Low discharge intensifies nitrogen retention in rivers – A case study in the Elbe River. ([Schulz et al., 2023](#))

Upcoming events

Stakeholder workshops

Stay tuned for the upcoming stakeholder workshops! These will be held for each of the study cases! Goals of the workshops are (1) to share the objectives, approach and first results of the project, and (2) to collect input on priorities from stakeholders on nutrient reduction scenarios to be evaluated in the project.

EGU General Assembly 2024

NAPSEA will be present at the EGU2024 with several contributions. The conference will take place on 14-19 April in Vienna (Austria) but can also be joined online.