# Abstract

CoastalFutures is 6-year project (01.12.2021 – 30.11.2024 first phase) funded by BMBF and is coordinated by Corinna Schurm (Institut für Küstensysteme - Analyse und Modellierung Helmholtz-Zentrum hereon GmbH (Hereon). It brings together 10 partners and 5 assistant partners.

   The DAM-SN- *CoastalFutures*- Subproject A: **Development of a national coastal model system and generation of future scenarios** provides substantial basic building blocks for the national coastal model system for the North Sea, the Baltic Sea and the adjacent coastal areas with the coastal model system GCOAST and the novel cross-scale end-to-end (E2E) model system and thus provides major contributions to a central development goal of the *CoastalFutures* project. The GCOAST coastal model system provides a framework for the cross-scale integration of regional climate and earth system modelling and coastal modelling and creates a virtual environment to study the impacts of climate change and anthropogenic use on ecosystems and (ii) to test different management measures. The project will further develop the GCOAST model system by integrating and providing interfaces together with partners into a national coastal model system. The project thus provides an innovative decision support tool for maritime system management and creates knowledge for action. The subproject will contribute to all management sectors in focus by the *CoastalFutures.* project: (i) offshore energy production, (ii) fisheries, (iii) coastal protection and sand management, and (iv) nutrient and pollutant inputs. This subproject will carry out the model development and especially the development of narratives and future scenarios for the coastal ocean in a transdisciplinary research approach in close cooperation with stakeholders from maritime management, industry stakeholders and non-governmental organizations. The development of scenarios in this context requires a regional and sectoral contextualization of the scenario action strands and an in-depth understanding of the societal, political and institutional contexts. This includes individual problem perceptions, beliefs and attitudes of stakeholders from different sectors, as well as conflicts and trade-offs between them. Together with decision-makers, effective protection and management options are then developed in a participatory approach and evaluated together with stakeholders.