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Project iFOODis: Robotic assessment of ecosystems iFOODis plans robotic measuring network in the Schlei region

17.05.2023/Kiel. Agriculture faces the challenge of feeding a growing world population. At the same time, however, it also contributes to ecological stress on land and in the ocean. This is where the Helmholtz project “Improving the sustainability of food cycles through (robotic) systems” (iFOODis) comes in. Five research institutions, including GEOMAR Helmholtz Centre for Ocean Research Kiel, are involved. iFOODis aims to continuously assess the state of ecosystems on land and in surface waters using a robotic measurement network. The project has now started with a kick-off workshop at GEOMAR.

The five-year project “Improving the sustainability of food cycles through (robotic) systems” (iFOODis) aims to record the environmental impact of nutrients such as phosphorus and nitrogen on land and in water bodies. To generate data, a robotic measuring network is set up that continuously examines and evaluates the ecosystems concerned. The project was launched at a kick-off workshop at GEOMAR Helmholtz Centre for Ocean Research Kiel with all project participants. The project is coordinated at the German Aerospace Center (DLR). In addition to GEOMAR, the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), the Constructor University Bremen and the Munich School for Data Science (MUDS) are involved. Further partners are the Institute for Ecosystem Research (das Institut für Ökosystemforschung, IÖF) and the Institute for Electrical Engineering and Information Technology (Institut für Elektrotechnik und Informationstechnik, ET&IT) at the technical faculty of Kiel University (Christian-Albrechts-Universität zu Kiel, CAU).

“We are pleased about the great interest in our project. In particular, the Schlei region right on our doorstep is markedly characterised by agriculture. The establishment of an environmental monitoring system in this region was the central topic at the kick-off workshop – this is also where we will start”, say Dr. Sascha Flögel and Dr. Stefan Sommer, heads of project activities at GEOMAR. “We are in contact with the farmers in the region, the State Office for the Environment and the Ministry for Energy Transition, Climate Protection, Environment and Nature in Schleswig Holstein. In addition, we are in contact with the Schlei Nature Park and look forward to working with everyone involved.”

Background to the project: Schlei region will be the first operational area

The Schlei is highly polluted with nutrients such as nitrogen and phosphorus due to many years of municipal and industrial wastewater discharges as well as very high inputs from intensively farmed areas. The inner Schlei is particularly affected, as almost two thirds of the entire catchment area of the Schlei drains into it. The planned measuring network consists of satellite-based remote sensing methods, robot and sensor networks in the air, on the ground and in the water. Simultaneously, agricultural activities, nutrients and other environmental parameters will be measured on land and in surface waters. In addition, observations of the weather will be made. Together with Kiel University, the data will be evaluated and recommendations for action for authorities and political decision-makers will be derived.

Expansion to other regions planned

“We are striving to ensure that the iFOODis project can also be transferred cost-effectively to other regions in the future,” explains Dr. Flögel. The long-term goal: a sustainable food cycle through less nutrient pollution. With the project, the iFOODis network is oriented towards the 17 Sustainable Development Goals (SDGs) of the United Nations as well as the specifications of international marine conservation bodies and pursues an open access data policy. iFOODis is funded by the Helmholtz Association as one of three projects within the Helmholtz Sustainability Challenge (1st Call). The Helmholtz Sustainability Challenge funds collaborative projects with transdisciplinary research:ing teams on the topic of sustainable value networks.

Links:

<https://www.dlr.de/rm/desktopdefault.aspx/tabid-18808> iFOODis

<https://www.geomar.de/en> GEOMAR Helmholtz Centre for Ocean Research Kiel

Images:

Images are available for download at <http://www.geomar.de/n8960-e>

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