

Proposals for NORMAN Joint Programme of Activities 2022

Title	Ocean sampling platform
Type of activity	Setting up a water sampling platform in polar ocean regions
Leader	NIVA /VU
Topic / activities	<p>Background / Justification for the proposed activity:</p> <p>Environmental observational research efforts in coastal and shelf-sea environments have their specific challenges. Coastal systems tend to have strong dynamic variability and require dense observing efforts in time and space. Chemical, and physical processes are often patchy in nature in coastal systems (and highly variable in time due to short-term environmental processes including upwelling and mixing events. Without a high level of spatial resolution and both high temporal resolution and length (i.e. time-series) in observations of the present state of the ocean a solid basis for management and mitigation measures to protect the ocean for adverse environmental and climate effect is missing. This is especially true for the pristine polar regions which are due to climate change under enormous pressures. One of the major shortcomings of (polar) research expeditions is that they last only a short period in the polar region and take only individual samples on different sites. One solution is to use 'ships of opportunity' including ferry's and cruise ships and equip them with sensors and sampling equipment. NIVA is working with two expedition/ cruise companies and have equipped two vessels with sensor technology and sampling equipment, two other vessels are under construction.</p> <p>Description of the proposed activity and expected outcomes for 2022:</p> <ul style="list-style-type: none"> • Microplastic sampling Antarctic Jan-March 2022 at 7 sites at under a 3 months period, additional water sampling possible. (Viking Polaris) • Microplastic sampling Arctic (Viking Polaris, Hurtigruten Roald Amundsen) summer 2022 at 5 sites and one trajectory. • Establish sampling platforms in the polar regions for WG8 Marine Environment through a network of cruise/expedition ships. This to enable NORMAN members to perform collaborative oceanographic research. • Workshop in connection to the NORMAN GA to evaluate the possibilities and plan sampling campaigns for 2023 within WG8 <p>Added value / Link with other NORMAN activities and / or other projects</p> <p>The establishment of a sampling network in pristine polar areas will facilitate several WG including WG2 bioassays and cross-sectional activities including the application of NTS and passive sampling in the polar regions. The first trials of the concept will be done in close collaboration with WG4 Nano-and micro scale particulate contaminants when microplastic samples are taken at several occasions at the same sampling sites in the Arctic and Antarctic.</p>
Participants	VU / CSIC (Environment Institute)
Proposed in-kind contribution	200 000 € (NIVA, installation and maintenance Ferry Box sampling equipment)
Contribution needed from NORMAN Association¹	15 000 € (Shipment and collection of samples, coordination samples for NORMAN members, start sampling periods on board Antarctic, Atlantic Cross over, Arctic)

¹ Please, provide here a transparent justification of the requested resources and of the in-kind contribution, thereby distinguishing between the costs associated with "person-months" for the organisation, the "travelling costs" for invited speakers and the costs for the logistics (e.g. meals, room rental etc.)