

## Proposals for NORMAN Joint Programme of Activities 2022

<b>Title</b>	<b>Working Group on Marine environment</b>
<b>Type of activity</b>	Working Group
<b>Leader</b>	EI, NIVA, NILU, UBA, Marine Institute
<b>Topic / activities</b>	<p><b>Background / Justification for the proposed activity:</b></p> <p>WG8 on Marine environment has been proposed in 2021 and its activities in JPA 2021 voted as of high priority by 32 members of the NORMAN Association. Although the official kick-off meeting did not take place in 2021, various on-going initiatives can be identified as relevant activities for this new WG.</p> <p>Numerous published and proposed marine biota, water and sediment ecotoxicity threshold values have been uploaded in the NORMAN Ecotoxicology Database in 2021. Experts contributed new datasets obtained with the NORMAN NTS workflow to NORMAN Database System – EMPODAT and DSFP with the final goal of having critical mass of data for prioritisation of the CECs (and defining Sea Specific Contaminants) in support of activities of all four European Regional Sea Conventions and other scientific outcomes. LIFE APEX, OSPAR CONNECT and UBA-HELCOM projects, using the NORMAN NTS methodology, brought new datasets of biota in the North-East Atlantic and Baltic Sea.</p> <p>LIFE APEX Chemical Occurrence Database (<a href="https://www.norman-network.com/apex/lacod/">https://www.norman-network.com/apex/lacod/</a>), as a clone of the NORMAN EMPODAT, has been developed specifically to archive biota samples data together with the necessary QA/QC information, including those of marine mammals and their prey. UBA Germany started a procedure of transferring all biota data from their database into the LIFE APEX database. After the end of the project in autumn 2022, all of these (highly curated) data will be transferred into the NDS and IPCHEM.</p> <p>First attempts have been made to prioritise Sea Region Specific Contaminants using NORMAN Prioritisation Framework for the Black Sea (EMBLAS projects; sea water, sediments, biota), North-East Atlantic (OSPAR CONNECT; biota) and Baltic Sea (UBA-HELCOM; marine mammals) using an automated prioritisation tool developed specifically for the biota samples. A smaller scale prioritisation effort using the same approach took place in Montenegro (Adriatic Sea; biota, sea water). UBA Germany has proposed within the LIFE APEX a new concept for prioritisation of chemicals in top predators and their prey with focus on persistence and bio-accumulative properties of the detected contaminants. Reports of all these studies will be available at the NORMAN website in early 2022; publications in peer reviewed journals are on the way. OSPAR MIME agreed to share the CONNECT data publicly in April 2022.</p> <p>First NORMAN NTS (wide-scope/suspect) data have been obtained to start drawing a pollution baseline in the polar regions before the industrial activities and mass tourism will affect the ecosystems. Analyses of 14 Antarctica samples have been completed and uploaded in the NDS. Fh-IME contributed by analyses of mercury in 25 penguin eggs samples (final report to be published in early 2022). Additionally, a few Arctic biota samples have been collected and analysed, results to be made available in 2022. At the NORMAN General Assembly 2021, AMAP has expressed an interest to join NORMAN activities in the Arctic region, share the data and provide samples from remote areas.</p> <p>Discussion on the development of the 'Microplastics' module in the NDS in close cooperation with the activities of WG 4 (close cooperation with EUROQCHARM) and contributing data from passive sampling of sea water continued in 2021.</p> <p>NORMAN works in close collaboration with the 'Persistent, Emerging, and Organic Pollution in the Environment (PEOPLE) network (<a href="http://www.people-network.ca/">http://www.people-network.ca/</a>) in Canada whose members expressed interest to cooperate in this line of activities.</p> <p>In autumn 2021, the research vessel "Belgica" (a gift of Belgium Government to Ukraine) absolved The Cruise of the Three European Seas (North-East Atlantic, Mediterranean and the Black Sea), starting from Zeebrugge, Belgium to its new homeport in Odesa, Ukraine. During the ship's 8,600-km-long journey has been observed floating marine macrolitter, large volume samples of seawater and bottom sediments were collected (for the follow up analysis of target, wide-scope target and suspect screening of emerging contaminants) together with microplastics (three independent methods), environmental and microbial DNA (revealing the presence of antibiotic resistance genes). The sampling has been organized and financed by the EU/UNDP project "European Union for Improving Environmental Monitoring of the Black Sea" (EU4EMBLAS) and supported scientifically by the EC Joint Research Centre and University of Hamburg. The extracts of surface water samples and sediments are available for analyses in the laboratories of interested NORMAN partners.</p> <p>HELCOM Pre-EMPT has been launched in 2021 inspired by the OSPAR CONNECT project, aiming at collection and analysis of ca. 100 biota and sediment samples in the Baltic Sea by NORMAN NTS methodology. All obtained data will be uploaded into the NDS by the end of 2022.</p> <p>NIVA is involved in sample collection within the Viking Cruises in the Arctic and Antarctica regions. A microplastic sampler is installed, connected to a Ferry Box which continuously monitors different</p>

	<p>oceanographic parameters. There is an offer to the WG to provide such samples to interested laboratories.</p> <p>A Ukrainian icebreaker Noosphaera is offering to NORMAN to provide samples of deep ocean sediments (down to 8 km) from the Antarctica region and Mediterranean Sea for follow up analyses by interested laboratories.</p> <p>Despite all of the on-going activities, there was no common agreement of the interested members in the WG, on which tasks should be followed as a priority by the network. Therefore, it is suggested to organise the WG meeting in early 2022 and <b>agree on the mandate for tasks to be carried out in 2022. A list of proposed activities – subject to the approval by the members of the WG, is proposed below:</b></p> <p><b>Description of the proposed activity and expected outcomes for 2022 (and beyond):</b></p> <p><b>Task 1. Virtual kick-off meeting of the WG (all)</b> A virtual meeting of NORMAN members interested in this activity will take place in February - March 2022. A contribution by each involved/interested member in the tasks agreed by the group will be detailed.</p> <p><b>Task 2: Systematic sharing of published and proposed marine biota, water and sediment ecotoxicity threshold values for inclusion in the NORMAN Ecotoxicology Database (EI, UBA, all).</b> All interested members will be invited to provide their national, regional EQS/PNEC values on marine environment matrices into NORMAN Ecotoxicology Database. The provided information (expected in the form of various documents in national languages) will be converted by EI into the harmonised Data Collection Template (DCT), sent back for verification and uploaded into the database. The values will be then critically considered in comparison to all available EQS/PNEC values by a team of NORMAN ecotoxicology experts led by UBA. They will vote, which key studies are most suitable for derivation of the final 'one' Lowest PNEC. Ecotoxicology experts from members of the WG will be invited to participate.</p> <p><b>Task 3: Sharing of existing passive sampling data (NIVA, RECETOX, Marine Institute, all)</b> Sharing the data by all interested members of the WG.</p> <p><b>Task 4: Sharing of wide-scope target and suspect screening data (all)</b> Systematic contribution of new datasets obtained with the NORMAN NTS workflow to the NDS EMPODAT and DSFP modules with the final goal of having critical mass of data for prioritisation of the CECs (and defining Sea Specific Contaminants) in support of activities of all four European Regional Sea Conventions and other scientific outcomes. Upload of suspect screening data into EMPODAT – SUSPECT database.</p> <p><b>Task 5. Prioritisation of marine specific CECs in European sea water, biota and sediments using (updated for NTS) NORMAN Prioritisation Framework (EI, INERIS, UBA, all)</b> Annual prioritisation exercise in support of the MSFD implementation using all available marine environment data in the NDS in 2021 - 2022. All members will be asked to contribute existing raw monitoring data (with relevant metadata) on emerging substances from their database systems to the NDS – EMPODAT. A list of candidate Sea Specific Contaminants based on the data available in the NDS will be provided for each RSC.</p> <p><b>Task 6. Chemicals in polar regions (NKUA, EI, UBA, NILU, NIVA, all)</b> Establishing a pollution baseline in the polar regions. Members of the WG will be asked to provide all available raw monitoring data on CECs from polar regions to the NORMAN EMPODAT and DSFP in harmonised formats. WG will provide opinion/guidance on the related QA/QC issues at sampling/storage of the samples, required information/metadata, Standard Operational Procedures and guidelines for assessing the quality of samples to be analysed. The NORMAN Database Team will curate the data and convert them into inter-comparable DCTs for future use in any European database system (incl. IPCHEM and ICES).</p> <p><b>Task 7. Microplastics (NIVA, all)</b> Development of the 'Microplastics' module in the NDS in close cooperation with the activities of WG 4.</p> <p><b>Added value / Link with other NORMAN activities and / or other projects</b></p> <p>The proposed tasks will require close cooperation with WG1, WG2, WG3, WG4, CWG-NTS and CWG-PS.</p>
<b>Participants</b>	EI, UBA, NIVA, NILU, Marine Institute, NKUA, all interested members
<b>Proposed in-kind contribution</b>	<p>EU4EMBLAS project – ca. 300,000 EUR for collection of samples during The Cruise of the Three European Seas</p> <p>All – contribution of existing data</p> <p>EI – overall coordination</p> <p>NKUA/EI – 25,000 EUR for analyses of samples collected during The Cruise of the Three European Seas by LC-HRMS and GC-HRMS</p>

<b>Contribution needed from NORMAN Association<sup>1</sup></b>	<p>Task 2: EI, UBA: 3,000 €</p> <ul style="list-style-type: none"> <li>- Collection of ecotoxicology thresholds data, conversion into DCTs, curation and upload into the NDS, first assessment of their quality using CRED and PNEC derivation modules.</li> </ul> <p>Task 6: NKUA, EI, other interested laboratories: 12,000 €</p> <ul style="list-style-type: none"> <li>- Costs for transport of samples and sample extracts by courier, sample preparation and analysis of 20 samples obtained within The Cruise of the Three European Seas by LC- and GC-HRMS, upload of results into the NDS.</li> </ul>
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<sup>1</sup> 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.)