

4. NORWEGIAN PUBLIC FUNDING AGENCIES: NIVA AND NORAD

Summary of role and work: NIVA is conducting fundamental and applied research on marine and freshwaters. NIVA is looking at the effects of microplastics on agricultural systems and power environments. NORAD is the Norwegian Agency for Development Cooperation. NORAD is in charge of the Norwegian Development Programme to Combat Marine Litter.

Keywords/research fields: Norwegian Institute for Water Research; NIVA; IMPASSE project; measuring microplastics in blue mussels; soils dumps for microplastics of urban origin; microplastics in the marine environment

4.1 NIVA

4.1.1 Background and aim

The Norwegian Institute for Water Research (NIVA) is conducting fundamental and applied research on marine and freshwaters. Specific areas of research under NIVA include, inter alia, environmental chemistry and technology, oceanography, ecotoxicology and risk assessment, freshwater ecology, marine biology, environmental contaminants, and catchment biogeochemistry. (For more details, see: <https://www.niva.no/en/research>.) Relating to plastics, NIVA is looking at the effects of microplastics on agricultural systems and power environments (see IMPASSE project: <https://www.niva.no/en/research/environmental-chemistry-and-technology> and <http://www.waterjpi.eu/joint-calls/joint-call-2016-waterworks-2015/impasse>).

4.1.2 Activities and projects

NIVA has published a number of research papers relating to microplastics:

- Measuring microplastics in blue mussels, 2017: <https://www.niva.no/en/reports/measuring-microplastics-in-blue-mussels>.
- Are Agricultural Soils Dumps for Microplastics of Urban Origin, 2016: <https://www.niva.no/en/news/microplastics-in-agricultural-soils-a-reason-to-worry>.
- Microplastics in the marine environment, 2015: <https://www.niva.no/en/reports/95-of-fulmars-in-the-north-sea-had-plastic-in-their-stomachs>.

NIVA has contributed to projects in more than 70 countries, including China (where it opened its NIVA China office in 2017: <https://nivachina.com/>) and the ASEAN. Relating to plastic, NIVA is implementing the ASEAN-Norwegian Cooperation Project on Local Capacity Building for Reducing Plastic Pollution in the ASEAN Region (ASEANO), which was launched on 5 December 2019. This is a regional capacity building project in collaboration with PEMSEA and the ASEAN Secretariat, funded by the Norwegian Development Programme to Combat Marine Litter and Microplastics for the period 2019–2022 (<https://www.niva.no/en/projectweb/aseano>).

4.2 NORAD

4.2.1 Background and aim

Norway announced in November 2018 that it has set aside \$200 million for the next four-year period to assist developing countries in combating marine litter, through the Norwegian Agency for Development Cooperation (NORAD) and the Norwegian Development Programme to Combat Marine Litter and Microplastics. The main objective of the Programme is to prevent and greatly reduce the extent of marine litter from large sources in developing countries. The focus of the programme is on populous and economically fast-growing countries in Asia with long coastlines (as this is where the problem of marine litter is the most serious). In addition, countries with rapidly-growing economies in Africa and small developing island states also receive support.

4.2.2 Activities and projects

Many projects have received funding from this programme, a number of which are being implemented in Asia. These include:

- *Ocean Plastic Turned into an Opportunity in Circular Economy (OPTOCE)*: launched in 2019, the Project is led by SINTEFF in China, India, Thailand, Myanmar and Vietnam to involve local energy-intensive industry, such as cement manufacturing, in using non-recyclable plastic waste as a coal substitute in their production (<https://optoce.no/>).
- *No Plastic in Nature*: a WWF campaign launched in 2019 to achieve no plastic in nature by 2030, with projects in cities in China, the Philippines, Indonesia, Malaysia, Vietnam, Thailand, and Hong Kong.
- *Clean Oceans through Clean Communities*: launched in 2019 in Indonesia (other possible Asian countries include Vietnam, Cambodia and India), the Project is led by Avfall Norway to reduce emissions of plastics to the ocean through improved waste management through: (i) training programmes focused on system understanding and waste management plans; (ii) support with the preparation and implementation of locally adapted waste management plans; (iii) start-up support for projects working to increase the use of collected waste to its highest possible value; (iv) networking for participants from different geographical areas; and (v) other relevant actors.
- *STOP Marine Plastic (Project STOP)*: launched in 2017 by Borealis and SYSTEMIQ, Project STOP aims to help a city design and then implement a low-cost waste management system in which all households and institutions benefit from collection, and plastics are kept out of the environment. The first city partnership of the project is with Muncar, Indonesia (<https://www.stopoceanplastics.com/>).
- *Bali Partnership on Marine Debris Action*: launched in 2019, the Bali Partnership aims to stop ocean plastics pollution through circular waste management solutions and contribute to Indonesia's National Action Plan on Marine Plastic Debris, a commitment to reduce ocean plastics by 70% by 2025. Its participants include the Bali Governor's Waste

Management Task Force, the Norwegian Ministry of Foreign Affairs, the Environmental Agency of Bali Province, the University of Udayana, the University of Leeds, the International Solid Waste Association (ISWA), and SYSTEMIQ. So far, the Bali Partnership published a report revealing that just over 48% of waste generated in Bali is managed responsibly, either through recycling or landfill, while the rest is burned or pollutes land, waterways and the ocean. The next phase will be a pilot project using a multi-stakeholder approach in one of the highest leakage sub-districts to ensure comprehensive waste management and stop ocean plastics pollution (<https://www.systemiq.earth/bali-governor-announces-initiative-to-end-ocean-plastic-pollution/>).

- *ASEAN-Norwegian Capacity Building Project for Reducing Plastic Pollution in the ASEAN Region (ASEANO)*: launched in December 2019, the Project is led by NIVA and the Centre for Southeast Asian Studies (CSEAS) of Indonesia to build capacity to tackle plastic pollution from key sources in the ASEAN region through improved knowledge on sources, releases, transport, and fate of plastic pollution (<https://www.niva.no/en/projectweb/aseano>)
- *Scaling Up a Socialised Model of Domestic Waste and Plastic Management in Five Cities*: launched in September 2019, the Project is implemented by UNDP Vietnam to develop integrated models to improve domestic waste and plastic management in five cities of Vietnam (i.e. Ha Long, Qui Nhon, Mui Ne, Da Lat and Binh Duong).

Besides the above, NORAD has also provided funding to support international institutions in their action against marine plastic pollution as well as national initiatives in the ASEAN:

- *Marine Litter and Microplastics*: supporting UNEP for action in prevent marine plastic pollution in Asia, Africa and Small Island Developing States (SIDS) countries.
- *MARINFORSK/NORGLOBAL*: supporting Research Council of Norway to strengthen research knowledge on marine litter and pollution in Asia.
- *Marine Pollution Enforcement Project Phase II*: supporting INTERPOL to strengthen global, regional and national law enforcement responses to prevent and reduce marine pollution crime from sea- and land-based sources.
- *PROBLUE*: supporting the World Bank to prevent and reduce marine litter and pollution, as well as to contribute to the rehabilitation of coastal and marine ecosystems with impact area focused on East Asia, South Asia, Africa and SIDS.
- *The Potential Human Health Impacts of Microplastic in the Environment*: supporting the WHO to assess the current state of knowledge on the occurrence of microplastics in the environment, consequent human exposure and potential health impacts.
- *The Indonesia Oceans, Marine Debris, and Coastal Resources Multi-Donor Trust Fund (OMC-MDTF)*: supporting the World Bank to provide technical assistance, analytical

support, pilot activities and financing to assist the Indonesian government in developing and implementing its National Oceans Agenda, including support to achieving the country's targets for reduction of marine debris and ocean plastic.

- *IMO Marine Environment Protection of the Southeast Asian Seas (MEPSEAS) Project*, which includes the adoption and implementation of MARPOL Annex V in Cambodia and Thailand. This includes the management of all plastic waste by ships.
- Support of a project proposal concerning the environmentally sound management of plastic wastes entitled 'Marine litter and microplastics: Promoting the environmentally sound management of plastic wastes and achieving the prevention and minimization of the generation of plastic wastes'. This is a project of the Secretariat of the Basel, Rotterdam and Stockholm Conventions. However, the latter is implemented in Bangladesh only from the regional centre located in Indonesia.
- Support of work on marine plastic debris in Indonesia. For more details, see <https://jakartaglobe.id/context/denmark-boosts-funding-indonesia-curb-ocean-waste>.