



KIMO and the North Sea Commission call for ambitious action against PFAS pollution in the marine environment

Waiting in anticipation

We, KIMO (Local Authorities International Environmental Organisation) and the CPMR North Sea Commission, henceforth referred to as NSC, are united in our efforts to preserve and enhance the marine environment in the North-East Atlantic, North Sea, Irish Sea and Baltic Sea. Together we represent 27 regions and 80 coastal municipalities across eleven countries (Norway, Sweden, Denmark, Netherlands, UK, Ireland, Faroe Islands, Germany, Belgium, France, and Lithuania).

PFAS are found everywhere in the marine environment. From the body of water, marine sediments and sea ice to concentrated levels of PFAS in sea foam and sea spray aerosols. In the marine food chain, PFAS are found at all levels, from plankton to porpoises and sharks. Predators at the top of the food chain can have up to 10,000 times higher concentration compared to prey. Adverse effects on the immune system are the primarily reported consequence for marine wildlife, but in bottlenose dolphins, exposure has also been shown to affect blood, kidney and liver functions. This knowledge paints a daunting picture of the presence of PFAS in the marine environment and of the spill-over to our food chain with significant implications to human health and coastal communities in particular.

Considering that we know PFAS is present in the marine environment but that there is still a considerable lack of knowledge about the extent and its implications to biodiversity, ecosystems and coastal communities, in 2023 NSC and KIMO issued a shared statement urging the European Union to take a precautionary principle and impose a ban on the entire group of PFAS compounds.

While we wait in anticipation, hopeful for a full ban of all PFAS compounds, we also recognize that transformation sometime takes time. If the upcoming revision of the REACH Regulation will only be a first step, we must recognize the urgency of action beyond regulating use. Hence, based on inputs from KIMO's international PFAS Working Group, this document highlights good examples and priorities for further action.

We cannot risk the health of the marine environment, and the European Union has a responsibility to act. The revision of the REACH Regulation presents an important opportunity for the European Commission to pave the way for ambitious PFAS regulation within the European Economic Area and beyond.



Priority I: Enforce a comprehensive ban that demands action from industry

Change is often difficult and, with varying interests at play, we urge the European Commission to be mindful of the costs of not acting.

Little is known about the long-term socioeconomic consequences associated with PFAS that have already been manufactured and released into the environment, but in Europe PFAS has been estimated to cause health-related costs of EUR 52-84 billion per year, whereby these figures represent conservative estimates. The costs of PFAS remediation are high because the substances are stable, mobile and long-lived meaning that they contribute to continued exposure to both humans and the environment over a long period of time. Hence, the burden and associated costs of PFAS in the marine and coastal environment will only continue to rise unless comprehensive restrictions are imposed.

Although the end result must be a full ban of all PFAS compounds, KIMO and NSC recognize that industry remains largely dependent on them. Thus, if the ongoing revision of the REACH Regulation does not result in a full ban agreement, a stepwise approach will be curial to ensure that we are on the right path. Such an approach could focus on the types of PFAS where feasible alternatives already exist and entail a clear timeline for the continued phasing out PFAS compounds where new alternatives remain to be developed. KIMO and NSC are confident that given the right push industry will adapt and develop feasible alternatives to PFAS. The European Commission should dedicate funding to support this process (Priority 3).

Some European countries are already taking important steps in the right direction and recent legislation in Denmark is an excellent example. In 2020 Denmark prohibited PFAS in cardboard and paper in direct contact with food, in 2022 in food packaging, and in 2024 in firefighting-foam. As a next step, in 2026, the Danish government will also prohibit PFAS in clothing and textiles.



Action: KIMO and NSC urges the European Commission to dare to be ambitious in banning the use of all PFAS compounds and, at the very least decide on a stepwise approach that sets a clear path forward.





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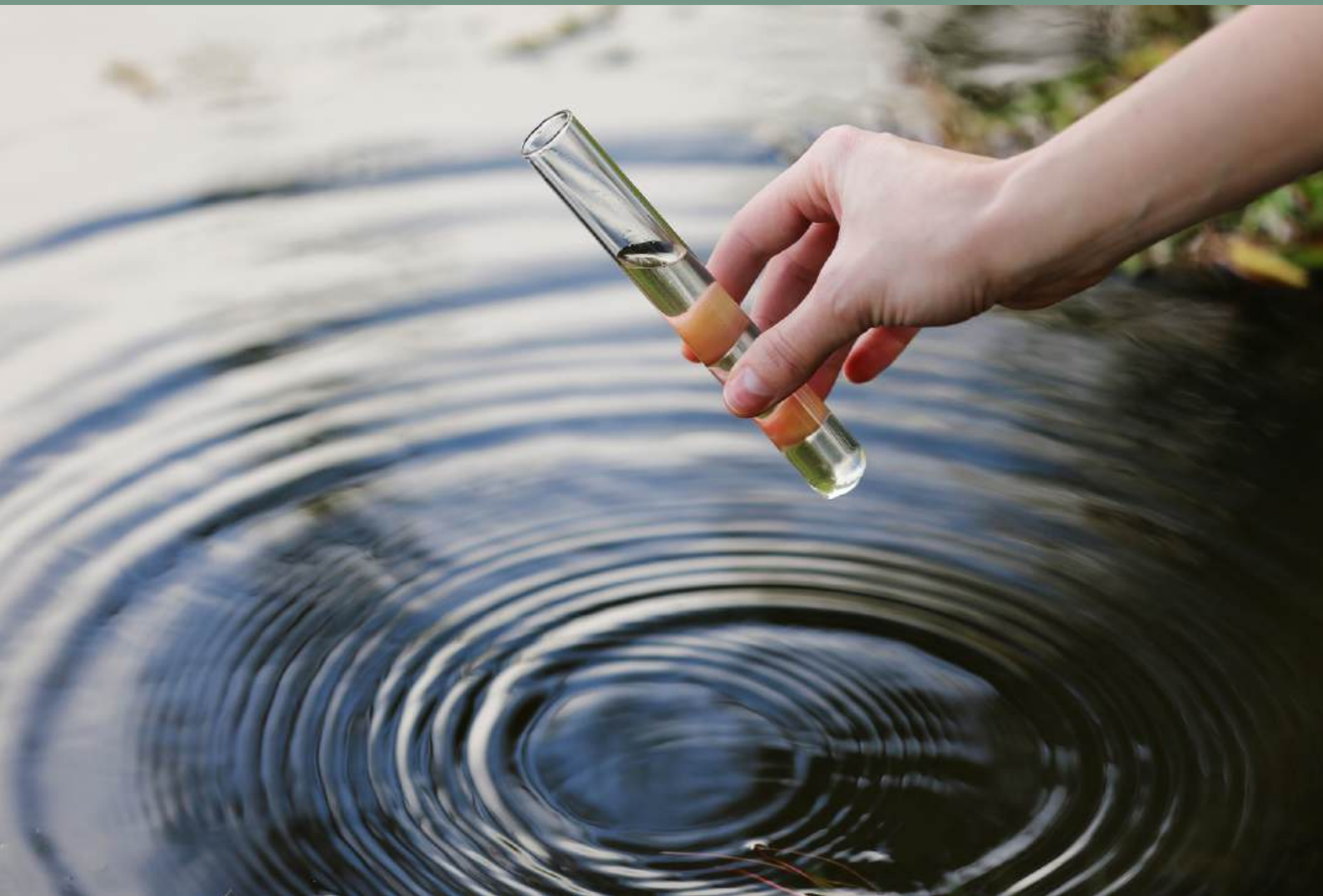
Priority 2: Monitoring

Although many European countries are beginning to monitor the presence of PFAS in the environment, monitoring is often focused on drinking water with limited focus on the marine environment and the spread from water to land. And even for the monitoring that does focus on the marine environment, the reality is that the indicators and extent of monitoring varies significantly between and even within countries.

If we are to fully understand the presence and implications of PFAS in the marine environment, a more holistic, robust, and systematic approach is required. KIMO and NSC encourage the European Commission to establish a baseline monitoring approach, focusing on what we need to know to better understand the presence and implications of PFAS in the marine environment while still allowing flexibility for local communities to monitor additional indicators of local relevance.



Action: KIMO and NSC urges the European Commission to establish a common monitoring approach and facilitate systematic reporting.





Priority 3: Close Knowledge Gaps

Although the evidence base on PFAS is gradually increasing, there is still a considerable lack of knowledge about PFAS in the marine environment. With many unanswered questions, policymakers at international, national, regional and local levels are acting in the dark trying to address a problem that they do not fully understand. To enable effective prevention and mitigation of PFAS in the marine environment it is crucial that we close existing knowledge gaps.



Action: KIMO and NSC urges the European Commission to use its research call mechanisms to allocate funding to research that thoroughly examine the presence and implications of PFAS in the marine environment within and beyond EU.

Gap 1: Sources

We need to better understand the levels of PFAS entering the ocean from:

- Rivers and streams
- Wastewater and sludge from sewage treatment plants and flue gas from incineration plants
- Production water

Gap 2: PFAS in the food chain

Research conducted in Netherlands and Belgium identified high levels of PFAS in sea foam but also in fish, shrimp, shellfish, seals and birds. As a consequence, the Netherlands have banned commercial fishing in some waters in coastal environments where there are high levels of PFAS. Knowledge and measurement of PFAS accumulation in aquatic organisms is limited and more knowledge is needed to understand the wider implications of PFAS exposure through food. Because seaweed and to some extent also starfish are considered both a food source for livestock and high-quality products for humans, the occurrence of PFAS in these should also be investigated in more detail. Furthermore, to enable us to deal with PFAS found early in the food chain, the link between the presence of PFAS in feed, animals and food should be further examined.

Gap 3: Looking beyond PFASs and PFCAs

In aquatic animals little is known about PFAS compounds beyond the well-known PFASs and PFCAs. Furthermore, at present only few toxicology studies have explored the combined effect of different PFAS, which is how the environment and humans are exposed to PFAS in the real world. Such studies are important for us to understand the aquatic health impacts of PFAS.

Gap 4: Spill-over from soil-to-ocean and ocean-to-soil

There is a lack of knowledge about the release of PFAS from contaminated soil on agricultural land, urban areas as well as release from sediments to the overlying water and biota. Similarly, we need to know more about the implications of exposure to PFAS contaminated sea foam for humans and animals living in coastal communities.



Priority 4: Address the burden on coastal communities

Although PFAS pollution in the marine environment is caused by a multitude of factors not specific to coastal communities, these communities experience the negative effects of PFAS pollution first-hand with potentially severe effects on local agriculture, tourism and wildlife activities. Hence, the presence of PFAS not only has environmental effects, but also severe financial effects that hit coastal communities the hardest.

Agriculture

One of the problems in the coastal environment occurs when residents grow their own vegetables and fruit. In the Netherlands, residents have expressed concerns about PFAS in their home-grown food and although standards for PFAS in soil exist, they are not all legally binding. Local farmers have also expressed concern regarding the spread of PFAS as cattle from a particular coastal area in the Netherlands and Belgium have been found to have high levels of PFAS in their serum and have consequently been banned from slaughter. As a result, coastal cattle from this area are being examined. More research is needed on the absorption of PFAS in homegrown vegetables and on the uptake of PFAS by livestock.

Tourism and wildlife activities

Based on existing knowledge about the negative effects of PFAS on human health, high levels of PFAS in the marine environment affect both tourism and local wildlife activities such as fishing and hunting. For example, in Lemvig Municipality in Denmark, high concentrations of PFAS in ducks have led the Danish Veterinary and Food Administration to advise against eating venison from a particular coastal area and to terminate its hunting.



Action: KIMO and NSC urges the European Commission to fund research that increase our understanding of the burden posed by PFAS to coastal communities and to take a “polluter pays” approach, dedicating financial support to coastal communities struggling with this type of pollution.





Spread through sea spray

Studies in Denmark and the Netherlands have shown high levels of PFAS in sea foam along beaches and in Denmark, coastal nature, pastures and groundwater have also been contaminated by PFAS, probably due to PFAS-rich sea foam and sea spray aerosols.

Denmark: A recent study has found a link between the presence of PFAS in the sea and on land as it spreads through sea spray aerosols and into surface water, soil and groundwater. Furthermore, the study found decreasing PFAS concentrations in groundwater samples the further away from the coast the samples were taken.

Netherlands: In the municipality of Veere, coastal soil surveys have been carried out to investigate the spread of PFAS via sea spray aerosols. The study measured higher PFAS levels up to 500–600 meters inland compared to further inland locations. External factors such as landscape, soil type and the content of soil organic matter seem to affect this dispersion. After the study, the spread of PFAS within the municipalities was mapped. One of the problems that municipalities in the coastal environment have encountered is that excavated soil from the area often contains PFAS levels which are above the standards for soil. This causes problems in projects as reuse of some of the soil is not possible.