

## JPI Oceans' pilot actions

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The JPI Oceans pilot actions are (small-scale) activities, limited in time and scope, designed to test out new modes of cooperation. They should offer a fit for purpose contribution to address societal needs and challenges related to marine and maritime issues. In addition, they are implemented to demonstrate the added value of JPI Oceans as a high-level intergovernmental strategy process. Currently there are three pilot actions in the pipeline, however their final scope and content still needs to be agreed upon:

### **Ecological aspects of micro-plastics in the marine environment**

The accumulation of plastic litter in the environment has become a growing concern ever since the rise in plastics production. The pilot action will specifically comprise (i) analytical method development; (ii) an interlaboratory study, and (iii) research into the ecotoxicological effects of particles. Part one will focus on the development of methods for the extraction, analysis and reporting for selected matrices (sediment, biota and water column). The action aims to improve current methods both in terms of their robustness and cost-effectiveness, and seeks to harmonise research methodologies to enable better data comparisons. In a next phase the pilot action plans to focus on an interlaboratory study on micro-plastics in sediment in order to validate methods and standard operation protocols. The third part will focus on the study of the ecotoxicological effects of plastic particles, particularly on the mechanisms of toxic impact on organisms, the impact of chronic exposure as well as the transfer of micro-plastics into the (human) food chain and the resulting effects.

### **Ecological aspects of deep-sea mining**

Marine mineral resources, such as polymetallic nodules, crusts and submarine-exhalative sulfides have recently become the target of policy makers, mining companies and deep sea researchers. However, commercial deep-sea mining will always cause a major impact on local ecosystems. This pilot action aims to assess the long-term environmental consequences of deep-sea mining, especially human impact on the benthic community. Germany offered 90 days for on-site research on RV Sonne for a cruise in the Pacific in early 2015. Envisaged is a three-legged cruise to visit the DISCOL area off the coast of Peru where a sea-floor disturbance experiment was carried out in the 1980s as well as to conduct research in the various (undisturbed) claims of European countries in the Clarion-Clipperton Fracture Zone in the Pacific Ocean. The pilot action will enable scientists to better assess the impact of deep sea mining activities and, ultimately, to make recommendations for environmental standards to allow policy makers to define a better legal framework for deep sea mining activities.

### **Multi-use of Infrastructure for Monitoring**

A long history of monitoring of the marine environment in the North Sea exists, including oceanographic, hydrographic, biological and human impact monitoring programs. To make best use of each Euro spent, international and inter-disciplinary collaboration is needed to coordinate the North Sea monitoring activities, crossing national borders. The pilot action on Multi-use of Infrastructure picks a number of indicators that require monitoring activities (for example marine litter on the sea floor from survey catches, consumption by fish through stomach sampling, biodiversity of infauna from benthos boxcore sampling), trying to integrate them with current (fish stock) monitoring programs. The intention is to develop pilot studies to test these on current monitoring activities as soon as possible.