Joint Action
Munition in the sea

Action Description

Lead country: Italy

About

The JPI Oceans Action on munition in the sea was proposed by the Strategic Advisory Board in April 2014 and approved by the JPI Oceans Management Board in November 2015. The aim of the Action is to coordinate research and innovation to assess risks, define priorities and suggest intervention options with regards to munition in the marine environment.

The outcomes of the action will be used to support identification, monitoring and elimination of threats through more systematic and sound approaches.

The added-value of this JPI Oceans Action consists of three aspects:
• Introducing and structuring a European scientific interdisciplinary and cross-sectoral cooperation
• Providing an interface between scientific expertise and operators
• Contributing to cost and time efficient solutions

Objectives

Based on dialogue between stakeholders, it has been decided that JPI Oceans will conduct activities along three action lines:

Science Support- By combining different scientific disciplines, JPI Oceans intends to support the development of a service to forecast changes in the sea state in relation to munitions. The impact of removal, dispersion and detonation on human health, on the environment, and on economic activities will also be assessed.

Technology Transfer- The JPI Oceans Action will advance the analysis of different technologies and procedures for intervention to support decisions by operators and policy makers who want to increase safety, improve the efficacy and reduce the environmental impacts of interventions. JPI Oceans will support the exchange of findings between different disciplines, projects and initiatives.

Exchange of Knowledge- Panels of experts will support transfer of knowledge and experiences of dealing with munitions in the sea.

Expected impact

A. Science Support: provision of services to support operators and provide risk-assessment, through:
the use of 3D numerical models to provide meaningful data for the risks effect of shallow/deep water explosions, chemical leakage, diver visibility, sediment transport; impacts of blast waves and underwater sounds generated from controlled and spontaneous detonations; estimate of corrosion phenomena and consequences; recognition and identification of munitions, increasing the accuracy and efficiency in the post-processing of sonar and visual data.

B. Technology Transfer: technology transfer and development of new technologies for:
high resolution seabed mapping, acoustic, magnetic and visual, measure sea conditions and marine ecosystems; mitigate effects of blast waves and underwater sounds from controlled detonations on marine life and infrastructure; autonomous and robotic systems, chemical sensors
for aquatic systems and assessment of health of marine ecosystems; safety conditions for operations on the sea floor along with confirmed procedures to monitor the release of toxic compounds; protect current infrastructure and improve safety for new infrastructure; avoid the introduction of potentially harmful chemicals into the human food web via aquaculture facilities; improving defence and national security.

C. Exchange of Practices and Knowledge: Science–to–policy transfer, with knowledge support to select best options; improvement of existing knowledge base, method standardization and intercalibration; exchange of practice, standardization of guidelines; improvement of personal skills of experts.

Progress

- 2014: The JPI Oceans Strategic Advisory Board proposed an Action on munition in the sea
- 2015: The JPI Oceans Management Board approved the Action for implementation.
- 2016-2017: 
  - End-users’ priorities and national offers were identified.
  - JPI Oceans attended NATO Research workshops "Applied Vehicle Technology - Sea Dumped Munitions and Environmental Risks".
- 2016-2017: JPI Oceans joined the large exercises at sea (REP16 and REP17) organized by the Portuguese Navy in the framework of NATO activities.
- 2018: The ERA-Net COFUND MARTERA added the topic “munitions in the sea” in its joint calls.
- 2018: Experts and end-users designed a framework for filling scientific gaps and the implementation of activities.
- 2019: JPI Oceans has been invited by the European Parliament at the hearing “Security risks posed by unexploded ordnances, sea-dumped and expired munitions”, of the Security and Defence Committee.
- 2019: Participating countries agreed to implement joint activities via a joint call and provision of in-kind contributions (i.e. personnel, infrastructures, travels).

Background

The presence of unexploded ordnances in the sea is a historical legacy from conflicts in the recent history of Europe. Of the vast amount of munition produced during the World Wars many stocks were disposed on dumping sites at sea or, in recent conflicts, dropped to allow for safe aircraft landing. By leaking contaminants after long-term seawater exposure and corrosion or by exploding accidentally, the discarded munitions increasingly emanate a new generation of serious threats to the environment and to people.

At the time of adoption, back in 2008, disposed munitions had not specifically been mentioned in the Marine Strategy Framework Directive among the threats to a Good Environmental Status of European waters. However, the directive does aspire to eliminating harm from contaminants and marine litter, which dumped munitions undoubtedly constitute, as has become increasingly clear. Moreover, the increasing human activities at sea and increasing use of the seafloor calls for minimization or remediation of hazard and contamination risks as an element of comprehensive and responsible Maritime Spatial Planning.

Up till now, the problem of dumped munitions has usually been addressed by national authorities, without taking into account the capacities in expertise and technology available across Europe. An effective response to the threats from unexploded ordnances calls for the coordinated involvement of a broad range of sectors, stakeholders and operators, and the generation of interdisciplinary scientific knowledge in this relatively new research area to support solutions and decision-making.

Participating countries

Belgium, Germany (Co-leading country), Greece, Ireland, Italy (Lead country), the Netherlands, Norway (Co-leading country), Poland, Portugal, Sweden and the United Kingdom.