

## What are the main challenges facing marine affairs and how can they be overcome?

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**The seas play a vital role in providing food, enabling transportation and maintaining the environment. However, there are storm clouds circling the marine sector. Overfishing, the effect of mass transit on coastal areas and pollution are in danger of damaging our seas beyond repair. Here, a panel of experts consider how best to overcome these issues, ensure a healthy ecosystem and maintain the oceans**

Europe's seas and oceans are changing rapidly through a combination of human and natural pressures. More than ever, we need excellent science to address such changes and their potentially profound societal implications. On 12-13th October 2010, more than 400 delegates gathered at the EurOCEAN 2010 conference in Ostend, Belgium, and unanimously approved the Ostend Declaration, which stated that: "The seas and oceans are a grand challenge for the 21st Century."

This declaration by the European marine science community reflects many years of European cooperation in marine science. The EU Framework Programme has played a critical role in supporting such collaboration, providing the glue and impetus for member states to share resources, infrastructures and data, and to collaborate on multi-disciplinary research projects and programmes. But times are changing. The financial crisis in Europe means that future EU research investments must address the core objectives of the Europe 2020 Strategy and the Innovation Union: smart, sustainable and inclusive growth.

The Ostend Declaration highlights the key role that marine science and technology can play in supporting growth in sectors such as marine bio-technology, marine renewable energy, aquaculture and maritime transport. But basic science, generating fundamental knowledge on marine environments, ecosystems and processes, is also a precursor for achieving sustainability in growing maritime sectors. The key is getting the balance right.

Collaborative European research should be a bedrock of efforts to achieve economic recovery and address rapid environmental change. The newly emerging Joint Programming Initiative on 'Healthy and Productive Seas and Oceans' could be a major consolidating force for marine science in the years to come and deserves support.

However, it is still at an early stage of development. Therefore, support from the successor to the 7th Framework Programme (FP7) will be critical.

The Horizon 2020 Programme, which will replace FP7 from 2014, is designed to address high-level societal challenges such as health, food, transport, energy and climate. It is clear that seas and oceans research cuts across all of these challenges. Few could argue with the vision of healthy seas supporting a thriving maritime economy, which is at the heart of the EU Integrated Maritime Policy. But to achieve it, we must continue to support substantial, coherent, cross-cutting and multidisciplinary marine research at European level. The societal issues to be addressed by Horizon 2020 must integrate those presented by the seas and oceans, which are a grand challenge for us all.

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