

# KNOWSEAS

## AT A GLANCE

**Title:** Knowledge-based Sustainable Management for Europe's Seas (KnowSeas)

**Instrument:** FP7 Collaborative Project (Large-scale integrating project)

**Total Cost:** 7 409 148.58 €

**EC Contribution:** 5 764 200.00 €

**Duration:** 48 months

**Start Date:** 01/04/2009

**Consortium:** 32 partners from 15 countries

**Project Coordinator:** Scottish Association for Marine Science (SAMS), Scotland, Great Britain

**Project Web Site:** [www.knowseas.com](http://www.knowseas.com)

**Key Words:** Ecosystem Approach, Costs and Benefits, Sustainable Seas, Socio-Ecological Systems Modelling, Marine Ecosystem Impacts, Marine Resources



## THE CHALLENGE

Europe's four regional seas (Baltic, Black, Mediterranean and NE Atlantic) have suffered severe environmental degradation due to human pressure. Existing measures to manage pressures have proven inadequate and the EU Member States have recently responded by adopting a new policy (Maritime Strategy Blue Book) and environmental legislation (Marine Strategy Framework Directive). These instruments rely on the Ecosystem Approach, a management paradigm that encompasses humans and the supporting ecosystem. But the science base for this approach needs strengthening and practical tools must be developed and tested for policy implementation. In particular, criteria for assessing costs and benefits of management actions are poorly developed in the complex marine environment where multiple uses and management conflicts are common. There is a strong need for a "joined up" systems approach between natural and social science that delivers the knowledge base to support management for sustainable seas.

## PROJECT OBJECTIVES

The overall objective of the project is: a comprehensive scientific knowledge base and practical guidance for the application of the Ecosystem Approach to the sustainable development of Europe's regional seas. This will increase the evidence base available for decision makers and facilitate the practical implementation of the Ecosystem Approach, currently seen by some stakeholders as confusing and nebulous. It will be delivered through a series of specific sub-objectives that lead to a scientifically based suite of tools to assist policy makers and regulators with the practical application of the Ecosystem Approach. It is also expected to deliver high-quality scientific outputs that advance our understanding of coupled social and ecological systems.



## METHODOLOGY

The consortium brings together key natural and social scientists with unique experience of the marine environment. The project team has developed a new approach of Decision Space Analysis to investigate mismatches of scale between human drivers and the consequences to the marine environment. KnowSeas will work at the two geographical scales envisaged for new EU policy: the Regional Sea Scale and Member State Exclusive Economic Zones (EEZs). Core teams examining and modeling the causes and consequences of ecosystem change, costs and benefits, and institutional and social aspects, will interact with cross cutting case studies in the regional seas in order to develop a systems approach. Knowledge created through the earlier FP6 European Lifestyles and Marine Ecosystems (ELME) project will be augmented with necessary new studies of climate effects, fisheries and maritime industries. New research will examine and model economic and social impacts of changes to ecosystem goods and services and costs and benefits of various management options available through existing and proposed policy instruments. Institutional and social analysis will determine conflicts of interest and examine governance as well as stakeholder values and perceptions. Our research will be participatory, engaging with stakeholders through regional liaison groups and a multisectoral Project Advisory Board.

## EXPECTED RESULTS

The KnowSeas consortium will strengthen the science base for managing Europe's seas through the practical application of systems thinking. The consortium will work with stakeholders to develop a common understanding of terms such as 'ecosystem-based management' in the context of Europe's seas. It will use compatible methodologies to develop case studies of key problems affecting each sea. These will be of immediate management use but will also contribute information for developing a better understanding of how humans interact with marine ecosystems at all scales and the management options available for their sustainable use. This knowledge should support the further development of integrated policy at the national and EU scales and help to resolve conflicts. It will also generate high-quality scientific publications on systems science. At a practical level the project will develop and test a toolbox that will include:

- Application of Decision Space Analysis;
- Modelling causality using 'joint fact finding';
- Indicator suite for Ecosystem Approach application;
- Assessment of the benefits of European marine ecosystems goods and services and the costs of human induced changes;
- Adaptive Management of Europe's Seas;
- Sustainable development options appraisals for Europe's seas; and a
- Conflict resolution guidance and toolkit.

PROJECT PARTNERS	
Scottish Association for Marine Science, GB	Middle East Technical University, TR
Alfred Wegener Institute for Polar and Marine Research, DE	Norwegian Institute for Air Research, NO
Baltic Nest Institute, Stockholm University, SE	Sir Alister Hardy Foundation for Ocean Science, GB
Centre for Environment, Fisheries and Aquaculture Science, GB	University of Plymouth – Marine Institute, GB
Consiglio Nazionale delle Ricerche, IT	Southern Denmark University, DK
Consejo Superior de Investigaciones Científicas, Barcelona, ES	Sea Fisheries Institute, PL
Deltares, NL	Finnish Environmental Institute, FI
ENVISION Management Ltd, GB	University of Bretagne Occidentale, FR
Coastal & Marine Union (EUCC), NL	University College Cork, IE
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