



photo by Yiannis Issaris



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### Facing future environmental challenges

SESAME is an Integrated Project (IP), funded by the EU's 6th Framework Programme, which commenced in November 2006. It is designed to study the past, present and future environmental changes in the Mediterranean and Black Sea ecosystems, and how these affect their abilities to sustain essential goods and services, such as tourism, fisheries, mitigation of climate change through carbon sequestration and ecosystem stability through conservation of biodiversity.

By assessing the changes that have occurred in the two seas over the last 50 years, while simultaneously predicting the impact of these changes in their ability to provide goods and services in the next 50 years, SESAME will involve and assist the relevant stakeholders towards implementing sustainable management policies.

SESAME will interpret and bring together available and new observations, identify gaps in knowledge, understand past changes through hindcasting and explore possible future changes. It will further achieve its goals of upgrading, developing and improving process-oriented predictive dynamic models, as well as developing indicators for ecosystem changes connected to societal scenarios.

The project approaches the two seas as a coupled climatic-ecosystem entity for the first time, and its innovation lies in the large scale merging of economic and natural sciences. SESAME takes advantage of past efforts made in the Mediterranean and Black Sea regions, which had provided the scientific community and the public with comprehensive information regarding the state of the Mediterranean and Black Sea.

Over the project's implementation period, existing information, model simulations and scenarios will be

**Innovative Design**  
The choice of a wide time-scale, the combination of natural and social sciences and the ambition to create a platform for education and public outreach define SESAME's innovative design.

integrated under several work packages. The models will embrace the broad spectrum of physical and ecological features and processes that characterise the Mediterranean and Black Sea, and will be calibrated against past and present data, collected and assessed during SESAME's activities. Using the models, the combined effects of natural and anthropogenic pressures on the ecosystem will be predicted.

### Building up our knowledge

During SESAME's lifespan ten oceanographic research vessels will simultaneously conduct multinational cruises across the entire Mediterranean and Black Sea basins. The cruises are planned for March-April 2008 and August-September 2008. Data collection for model definition and validation will also be conducted in seven sub-regional areas (map).

The collected high quality *in situ* data will be used to tune and validate the basin-scale and sub-regional models and feed the SESAME databases. SESAME's multidisciplinary approach will bring together natural scientists and socio-economists. The semi-quantitative fields of economics and social sciences will be fully addressed over five study areas (map). Studying

these areas will explore the possibility of transferring and adapting state-of-the-art analytical and policy tools to investigate the economic welfare implications of alternative development scenarios in the Mediterranean and Black Sea ecosystems. A sound methodological approach for integrating scientific modelling and socio-economic analysis will also be developed.

### Creating an information platform

SESAME will promote a *knowledge conveyor belt* within the Mediterranean and Black Sea through various opportunities, such as summer schools, and professional training schemes in the form of workshops and lab and field training. It will also stimulate the involvement of schools in research activities. The project's website will act as a channel for further education of pupils, students and young researchers through specific interactive sections. SESAME will disseminate the scientific knowledge gained from its activities appropriately to all levels of society, encompassing the scientific community, decision makers, stakeholders and the general public.

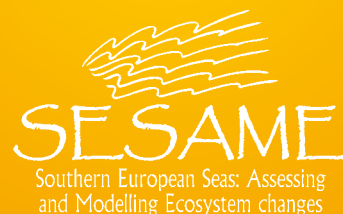
**An integrated & international approach**  
For the first time, SESAME will set a joint and coordinated study of the Mediterranean and Black Sea ecosystems, and will establish a modelling and observational network beyond country and basin borders, while simultaneously mobilising large human and material resources in the two basins.



The SESAME Consortium comprises 47 partners from  
62 institutes and 380 scientists in total.

List of Participants

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2. Centre National de la Recherche Scientifique,  
CNRS (LOV, CEFREM, LOB, LMGM, LOBB, LA, Paris), France
3. P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SID-RAS, Russia
4. Institute of Marine Sciences, Middle East Technical University, IMS-METU, Turkey
5. University of Liege, MARE Interfaculty Research Centre, ULg, Belgium
6. Consejo Superior de Investigaciones Cientificas,  
CSIC (IMEDEA, ICMAN, CEAB, ICM), Spain
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