



# ECASA

## An Ecosystem Approach to Sustainable Aquaculture



Delegates who attended the ECASA "Kick-off" meeting at SAMS in Oban on 6/12/04.

**E**CASA - An Ecosystem Approach to Sustainable Aquaculture – is a Framework 6 RTD project, co-ordinated by the Scottish Association for Marine Science, with 16 research partners from 13 member states. It is the successor to several 4<sup>th</sup> and 5<sup>th</sup> Framework Programme projects which have helped to push forward our understanding of the effects of aquaculture on the environment, especially in the Mediterranean.

Marine aquaculture is expanding rapidly. Within Europe, it brings societal benefits to coastal communities where traditional employment opportunities are declining. However, aquaculture can cause changes in the marine ecosystem through nutrient, organic and chemical waste discharges, which may affect important habitats such as seagrass meadows, genetic interactions with wild populations, transmission of exotic species, concentration of pathogens and parasites and interactions with marine birds and mammals. Most of these interactions can be minimised by effective site selection and matching the scale of aquaculture to the assimilative capacity of the ecosystem.

Across Europe, regulators and industry are aiming towards sustainable development;

creating wealth while protecting the environment by efficient use of resources and energy. Farmers and government require tested tools and methods for assessing assimilative capacity and for predicting ecosystem effects in an environment forced by economic and climatic variability.

Our objectives are to:

- Identify quantitative and qualitative indicators of the effects of aquaculture on the environment and vice-versa, and to assess their applicability
- Assess and develop operational tools, including models, to establish and describe the relationship between environmental conditions and aquaculture activities over a range of ecosystems and aquaculture production systems.
- Develop effective environmental impact assessment and site selection methods for coastal area management.

To fulfil these objectives we are: identifying indicators of the main drivers of ecosystem change both affecting and caused by aquaculture; assessing these indicators using existing datasets considering each in the context of appropriate site selection criteria;

developing a range of tools that encapsulate best understanding of fundamental marine processes at a wide range of scales; testing these in a wide variety of field locations across Europe; and, ultimately, selecting the final "toolpack" of models and indicators for assessment of aquaculture-environment interactions.

Interaction with industry and regulators will ensure the practical relevance of the work and that the user community achieves ownership of the project's outputs. The "toolpack" of indicators and models for effective environmental impact assessment and site selection will be demonstrated at an international conference and workshop in Spring 2008. This will for the first time bring together regulators and industry from across Europe to consider the best methods for ensuring the sustainable development of marine aquaculture.



**The Scottish Association for Marine Science.**  
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