

“ECASA”

An ecosystem approach for sustainable aquaculture

In 2002, the European Commission published a strategy for the sustainable development of European aquaculture. One of the main objectives of this was to ensure an environmentally sound industry and develop specific criteria and guidelines for Environmental Impact Assessments of aquaculture developments. The Common Fisheries Policy, which covers European aquaculture development, recognises that the way forward to a sustainable industry is through an ecosystem based approach, “where the integrated management of land, water and living resources must promote the conservation and sustainable use of marine resources in an equitable way”.



An ecosystem approach to aquaculture management is not about managing or manipulating ecosystems but **is concerned with ensuring aquaculture management decisions do not adversely affect ecosystem function and productivity** and so **marine resource use is sustainable in the long term.**

ECASA is a Sixth Framework RTD project, coordinated by the Scottish Association of Marine Science, with 16 research partners from 13 EU member states. The focus of the project is to **provide industry and regulators with tested tools and methods for assessing assimilative capacity and for predicting ecosystem effects in an environment forced by economic and climatic variability.** The objectives of the ECASA project 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.

Fifty three environmental indicators were proposed for testing in the 2006 field campaign, **capable of measuring various environmental impacts of aquaculture** – which can occur for example in sediments under the farms, in the benthic fauna, in water quality – **as well as the socio-economic aspects of aquaculture.** The main criteria for these indicators are that they should be scientifically robust, easy to measure and interpret and be cost efficient. Their applicability was tested throughout Europe at 14 different study sites which include both finfish and shellfish production systems during 2006. The results from these assessments are currently being evaluated.



COLLECTING SEDIMENT SAMPLES WITH A VAN VEEN GRAB. SOURCE: K. BLACK/SAMS

Project acronym:

ECASA

Full title of Project:

Ecosystem approach for sustainable aquaculture

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“A SUITE OF INDICATORS
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 WILL BE INCORPORATED IN
 AN ECASA TOOL-BOX”

Another set of operational tools being developed by ECASA are a selection of **environmental models** which are capable of examining the relationship between the environment and aquaculture activities. These models are being tested for their practical utility (“are they easy to set up, run and interpret?”), and their scientific robustness.

This suite of indicators and predictive environmental models will be incorporated in an **ECASA “Tool-Box”**, to be made available on-line, which will also include a manual that will present the knowledge gained in the project, and guide industry and regulators to the most useful tools appropriate for evaluating site suitability across varying environmental conditions. The project will thus provide a **consistent framework for the application of Environmental Impact Assessments, resulting in coherent and relevant Environmental Statements.**

Interaction with industry and regulators ensures the practical relevance of the work and that the user community achieves ownership of the project’s outputs. The “Tool-Box” of indicators and models for effective Environmental Impact Assessment and site selection will be demonstrated at an international conference and workshop in Heraklion, Crete on 18th and 19th September 2007. 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.

Marine aquaculture has been expanding rapidly in the last decade and the current value of annual aquaculture production is €2,500 million, consisting of 17% of the volume and 27% of the value of the total fishery production of the union. Usually based in rural coastal areas where traditional employment is in decline, aquaculture developments have helped stabilise rural populations by providing year round employment. To maintain current production levels and enable further development of the industry, a holistic ecosystem based approach to the application of farming technologies and governance, the consideration of socio-economics and natural resource use, should be adopted so that all these factors can be integrated and sustainability may be achieved.

ECASA aims to support the aquaculture industry in providing guidance and tested tools to minimise environmental impacts whilst maximising sustainable productivity. These tools shall inform industry of effective site selection and provide a coherent and fair approach to Environmental Impact Assessment.