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SAMI

Synthesis of Aquaculture and Marine Ecosystem Interactions

The Challenge

During the last decade several EU projects have dealt with the environmental issues of marine aquaculture in Europe and as such knowledge in this field has grown significantly. However, most of the results are not readily accessible and an overview and synthesis of the most important environmental issues is needed. It is, therefore, difficult to integrate this knowledge into the environmental requirements of the Common Fisheries Policy (CFP). A general overview of environmental issues related to aquaculture were provided in documents and papers produced during the MARAQUA 4th Framework Programme Concerted Action. However, the significant progress achieved through recent FP5 EU-funded projects as well as by the international scientific community has not been recorded.

Project Objective

The SAMI project reviewed and summarised the current knowledge in the field of environment and aquaculture. The project gathered together experts from the many aspects of aquaculture-environment interactions.

Key Points

- To discuss the most significant advances in knowledge from completed and on-going research both in Europe and globally, and the future perspectives of marine aquaculture within Europe particularly in the environmental context.
- To integrate these advances into the environmental requirements of the CFP.
- To consider the views and inputs of other stakeholders (including industry and NGO's) in the discussion of future scientific actions and aspects.

Output Highlights

A review of the results was published in BioScience 59:967-979 to bring recent advances into the general arena. This publication also provided a basis for stimulating the scientific community to address gaps in knowledge in their future work, and to provide recommendations for the future EU research agenda.

Literature review

Comprehensive reviews of the most important issues in marine aqua-

EATiP Thematic Area of Relevance

TA1: Product Quality, Consumer Safety and Health

TA2: Technology and Systems

TA3: Managing the Biological Lifecycle

TA4: Sustainable Feed Production

TA5: Integration with the Environment

TA6: Knowledge Management

TA7: Aquatic Animal Health and Welfare

TA8: Socio-Economics and Management

Key Words

Aquaculture, environment, interaction

Project Information

Contract number:

22656

Contract type:

Specific Support Action

Action line:

POLICIES-1.3 The modernisation and sustainability of fisheries policies

Duration:

18 months (11/01/2005 – 30/04/2007)

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No longer live



culture was undertaken and a collection of chapters on emerging issues in aquaculture environment interactions is available in a book, "Aquaculture in the ecosystem" <http://www.springer.com/life+sciences/ecology/book/978-1-4020-6809-6>

The information collected by the literature review is of benefit to the aquaculture industry providing better knowledge of environmental issues which is important for the sustainable growth of the industry. The review will have a positive impact by providing information on aquaculture environment interactions, increasing the knowledge available on aquaculture environment as well as considerations needed for the expansion of the aquaculture production sector. The scientific community benefits from the state-of-art information provided.

Scientific publications

Three papers - one on domestication, one on the potentials for aquaculture to feed the humanity and a synthesis paper on the MedVeg project were produced during the project. These papers provide information on environmental issues related to aquaculture.

Next Steps – Suggested Actions/Follow On



Policy

SAMI provided the following:

- State of the art review of environmental issues facing marine aquaculture in Europe;
- Advice for integration of environmental requirements into the Common Fisheries Policy; and
- Expert perspective on the sustainable development of marine aquaculture in Europe.

This will enable the project consortium to identify gaps in current knowledge and will give guidance on future directions for EU research policy in the field of aquaculture-environment

Related Publications/Projects

Duarte, C.M., Marbà, N., Holmer M. (2007) Rapid domestication of marine species. *Science* 316:382-383

Duarte CM, Holmer M, Olsen Y, Soto D, Marbà N, Guiu J, Black K, Karakassis I. (2009) Will the oceans help feed humanity? *BioScience* 59:967-976

Holmer M, Black K, Duarte CM, Marbà N, Karakassis I (2008). *Aquaculture in the Ecosystem*. Springer, Netherlands, p. 326.

Holmer M, Argyrou M, Dalsgaard T, Danovaro R, Diaz-Almela E, Duarte CM, Frederiksen M, Karakassis I, Marbà N, Mirto S, Pérez M, Pusceddu A, Tsapakis M. (2008) Effects of fish farm waste on *Posidonia oceanica* meadows: synthesis and provision of monitoring and management tools. *Mar. Pollut.* 56:1618-1629