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## WHAT IS SEACASE?

The main goal of the SEACASE project was to develop effective tools for the maintenance of competitiveness, productivity, and profitability of extensive and semi-intensive aquaculture production in Southern Europe. Therefore, the minimization of environmental impacts and improvement on the quality and public image of its products, were key sustainability factors. Traditional extensive coastal and semi-intensive aquaculture systems in Southern Europe are facing difficulties, especially due to increased competition for coastal areas by other candidate users and market competition, due to lower price products from intensive aquaculture. By promoting this type of aquaculture, the project aimed to assist the management of coastal areas of particular ecological interest, support sustainable production, employment and in the long-term ecotourism and environmental education.

## SEACASE INTERNATIONAL WORKSHOP

The "International Workshop on Sustainable Extensive and Semi-intensive Aquaculture Production in Southern Europe", was held in Tavira (Hotel Porta Nova), Portugal, on the 20-21 January, 2010. The event was attended by 125 participants from several European countries and Egypt, including researchers, SEACASE project participants, farmers, students, government and EC officials. The Workshop included 40 oral presentations and 19 posters. Extensive and semi-intensive aquaculture production systems were discussed based on the results of the SEACASE Project and on contributions from farmer associations and from the international scientific community. The discussion focused on production techniques, relevant scientific and technical improvements, product quality, certification procedures, and socio-economic issues that could be used or need to be addressed to valorise and enhance the productivity and competitiveness of these production systems. The current status of extensive and semi-intensive aquaculture productions systems in several southern European countries (Portugal, Spain, Greece, France, and Italy) was also discussed. The importance of an effective dialogue between farmers and researchers was also highlighted.

The Workshop main conclusions point towards the maintenance of extensive and semi-intensive production systems. Although potentially less profitable than intensive systems, extensive and semi-intensive systems generate social, patrimonial and environmental gains that intensive systems cannot generate. According to a socioeconomic study carried out within the SEACASE Project, in the long-term it is more advisable for the society to invest in this type of economic activity, which contributes to the maintenance of functional coastal ecosystems (in terms of biodiversity, cultural heritage, landscape, etc.), rather than abandon these ecosystems and try to restore them later on.



## MAJOR PROJECT OUTCOMES

### Current status of extensive and semi-intensive systems in Southern Europe



Courtesy of UIV

Extensive and semi-intensive systems are responsible for a significant production (at least 100 000 tons/year) and for using a large area (at least 92 000 ha) along the southern European coastal zone (e.g., confined areas of coastal lagoons, natural and managed deltas, and semi-closed bays and estuaries, encompassing polders with earthen ponds). Nevertheless, further geographical studies are required to better estimate the evolution of land use by farmers, and wetland abandonment.

### Technical improvements in extensive and semi-intensive systems

Technical improvements within the SEACASE project aimed to add value to non-intensive aquaculture while increasing sustainable production, improving management practices and resources conservation. These improvements included the development of innovative eco-friendly diets, optimisation of slaughter procedures and the identification of genes that confer a higher adaptability to low temperature allowing the selection of best performing strains in extensive aquaculture.



Courtesy of CSIC

### SEACase studies



Courtesy of IFREMER

Six independent case studies were developed to demonstrate the feasibility for productivity enhancement in coastal extensive or/and semi-intensive aquaculture in Southern Europe under sound environmental conditions. These included production of juveniles in extensive or semi-extensive conditions, extensive and semi-intensive polyculture in earthen ponds, an intensive-extensive integrated land-based system, extensive production in valliculture, and integrated management of marine extensive ponds and lagoons for a sustainable eel fishery.

### Quality markers for final product and juveniles

The project investigated quality criteria as potential markers to differentiate fish (seabream) reared in different systems. Sanitary and nutritional quality, yields and body traits, colour, sensory quality and muscle structure were followed. In addition, an artificial intelligence application was developed in order to distinguish between fish juveniles reared in intensive and non-intensive systems.



Courtesy of UIV

### Codes of conduct and certification systems



After a review of certification procedures at the national level, six specific Codes of Conduct for each of the SEACASE case studies were developed. These Codes of Conduct were used as a starting point to build up a proposal for a Joint European Certification System for Products of Non-Intensive Sustainable Aquaculture.

### Socio-economic assessment

The patrimonial value of aquaculture was assessed over the case study of integrated eel fisheries and oyster refinement, through a patrimonial audit approach. This illustrated the importance of non-intensive aquaculture in maintaining ecosystems functionalities and services supported by the ecosystems in confined and intertidal areas. It also pleaded in favour of maintaining such systems beyond farms' private profitability alone.



Courtesy of CCMAR

## DOC LIBRARY AT SEACASE WEBSITE

In the SEACASE website at: [www.seacase.org](http://www.seacase.org) a document library is regularly updated. Information available focuses on extensive and semi-intensive Aquaculture production, and will cover SEACASE publications and reports, and other research made in the participant countries.

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This newsletter has been carried out with the financial support from the Commission of the European Communities, specific RTD programme "Specific Support to Policies", SSP-2005-44483 "SEACASE - Sustainable extensive and semi-intensive coastal aquaculture in Southern Europe", and does not necessarily reflect the European Commission views and in no way anticipates the Commission's future policy in this area.

