



## Addressing sustainability issues in Mediterranean aquaculture with a more multi-disciplinary perspective through the GFCM-CAQ initiatives

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The Mediterranean Sea is characterized by relatively warm, salty and nutrient-poor waters, its oligotrophic nature is a unique quality. Another key characteristic is the presence and relevance of seagrass beds (e.g. *Posidonia oceanica*) which is of great importance in protecting and enhancing invertebrates and fish biodiversity. The quality of the water and the landscape offers great opportunity for human development on the basin and particularly to a flourishing tourism.

The Mediterranean also offers great opportunity for aquaculture development. Aquaculture production increased steadily since the 1980s. In 2004, production reached an estimated 321 000 tonnes, of which the largest proportion was represented by marine finfish (58 percent) mainly the gilthead seabream (*Sparus aurata*) and the European seabass (*Dicentrarchus labrax*) followed by bivalves. However, this figure was about 14 percent lower than the production in 2003<sup>1</sup>. The Mediterranean, as a rather enclosed ecosystem, clearly needs collaborative and integrated approaches for the sustainable growth of aquaculture.

There are some concerns about the potential environmental effects of aquaculture in the Mediterranean Sea, particularly related to:

- (i) excess nutrient loads to aquatic ecosystems;
- (ii) interaction with fisheries including the potential effect of farmed escapees; and
- (iii) interactions with other coastal users (e.g. visual impacts). The most frequently cited impact is the addition of excess nutrients and organic matter affecting sediments under fish cages particularly in areas with seagrass beds.

Furthermore, considering that finfish production for 2003 in the Mediterranean marine and brackish waters reached 182 000 tonnes, the total nutrient loads to the sea in the form of nitrogen and phosphorus could have reached 20 and 2.1 thousands tonnes, respectively.

However, such loads would be less than 1 percent of the present total nutrient inputs due to the much larger inputs from agriculture and sewage<sup>2</sup>.

Because of the present and potential conflicts with other coastal users and in light of the identified concerns, a regional collaboration to promote the adequate management of aquaculture is strongly advocated by the Committee for Aquaculture (CAQ) of the General Fisheries Commission for the Mediterranean (GFCM)<sup>3</sup>.

The Fifth Session of CAQ held in Santiago de Compostela, Spain, from 5-7 June 2006 recommended the creation of three *ad hoc* working groups as subsidiary bodies to the Commission, involving in a cross disciplinary manner, environmental, social and economic issues<sup>4</sup>.

- a) **Working Group on Marketing** will tackle issues concerning the image of aquaculture as a sector and the image of aquaculture products. Considering that the aquaculture-environment interaction is one of the key issues for the public image of the sector, some of the expected outputs of this Working Group will be: (1) identification of main issues and criticisms to aquaculture; and (2) the development of a strategy on image rehabilitation of aquaculture.

- b) **Working Group on Sustainability** will promote an ecosystem approach to aquaculture and aims at delivering outputs such as: (a) identification of common indicators for sustainable aquaculture and development of guidelines for monitoring such indicators; and (b) evaluate and develop guidelines for bio-security in aquaculture.
- c) **Working Group on Siting and Carrying Capacity for Aquaculture** will look into the geographical distribution of aquaculture and identify the best sites to avoid social, economic and environmental conflicts/effects. Some of the most relevant outputs should be the production of carrying capacity assessment methodologies for the Mediterranean aquaculture.

In November 2006, the first Coordinating Meeting of the above mentioned Working Groups of CAQ took place in Rome. Experts identified and drafted project proposals for the three *ad hoc* Working Groups as major part of the next biannual work plan of the Committee and efforts have been made to obtain appropriate funding.

With this new, more interdisciplinary array it is expected that the approach to aquaculture management in the Mediterranean will be much more comprehensive and with an ecosystem perspective. Such approach shall also offer more opportunities for economic and social growth around this important food production system.



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### Up-coming bivalve workshop in Latin America

Workshop on "Current status of bivalve mariculture and its future: Factors affecting sustainable development of bivalve farming in Latin American countries" is funded by FAO and will bring together experts from most of the Latin American countries. The workshop will be held in Puerto Montt, Chile, from the 20 to 24 August 2007 and is being organized with the Universidad Austral de Chile (UACH). Further information may be obtained via email: [Alessandro.Lovatelli@fao.org](mailto:Alessandro.Lovatelli@fao.org)



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*Different stages of clam harvesting  
(*Ruditapes philippinarum*)*

<sup>1</sup>FAO Fishstat 2006

<sup>2</sup>GFCM. 2005. Report of the Experts Meeting for the re-establishment of the GFCM Committee on Aquaculture (CAQ) Network on Environment and Aquaculture in the Mediterranean. Rome, 7–9 December 2005. FAO Fisheries Report No. 791. 61pp.

<sup>3</sup>[www.fao.org/fi/body/rfb/GFCM/gfcm\\_home.htm](http://www.fao.org/fi/body/rfb/GFCM/gfcm_home.htm)

<sup>4</sup>GFCM. 2006. Report of the fifth session of the Committee on Aquaculture, Santiago de Compostela, Spain, 5–7 June 2006. FAO Fisheries Report No. 802. 36pp.