Aquaculture: Helping blue turn green

January 21 2013, by Jean-Francois Hait

Producing sea shells and algae alongside fish could provide both an environmentally friendly and economically viable solution to make Mediterranean aquaculture sustainable.

Sea bass or sea bream, by far the most consumed fish species around the Mediterranean area, increasingly originate from aquaculture. The sector is expected to double between 2010 and 2030, thus becoming prime competitor to mass tourism for available coastal surfaces. Recently, however, the green credentials of aquaculture have been called into question.

The problem is that traditional aquaculture generates tremendous amount of environmental waste from the fatty acid and protein-rich feed released through an open water circulation system. "The intake of this

aliment by farm fish is no more than 30%. The rest is wasted," Jean-Paul Blancheton, a researcher at Ifremer research station in Palavas, France, tells youris.com. Another consequence of such practice is that parasites from cultured fish and antibiotics are being released in the environment.

Besides, economic concerns have added to environmental ones. Feed's limited availability—it is made of fish too small to be sold—and corresponding cost pressure have impacted the sector, putting its sustainability into question.

Blancheton expect part of the solution could come from adopting a concerted approach in research and development policies for the field. Speaking as the scientific coordinator of an EU-funded project called Aquamed, he explains the project's approach: "The rationale is finding ways to make Mediterranean aquaculture sustainable." Taking a first step towards this goal, the project is due to complete the mapping of aquaculture capabilities of each of the 16 countries located around the Mediterranean by June 2013.

Long term solutions may emerge from this pan-Mediterranean study. For now, there are already short-term remedies. A possible concrete solution to the sector's environmental problem is dubbed integrated multi-trophic aquaculture, according to Blancheton. It involves combining complementary cultures. For instance, by adding large amounts of silica to the fish feed, will lead to the development of a broad variety of microscopic algae. These will, in turn, become fodder for molluscs such as oysters and mussels. Molluscs can thus be cultivated alongside fish, thanks to a closed water recirculation system. What's more, this recirculation does not allow fish pathogens from outside to enter the system, hence requiring little use of antibiotics, if any.

This solution is welcome by experts in the field. "To become more sustainable, the Mediterranean area needs to establish several leading

producers that use state-of-the-art technologies for land-based closed containment systems" Steve Summerfelt, of the Freshwater Institute in Shepherdstown, West Virginia, USA tells youris.com.

Another possibility to remedy the feed waste issue is to produce macroscopic algae eating the wasted feed. These larger type of algae can find applications in cosmetics, biofuels and even be consumed as food, etc. "[Learning] how to cultivate and eat different kinds of algae, as we do in Asian countries, could be one of the challenges of a sustainable aquaculture in the Mediterranean area", says Liu Yin, of the Institute of Oceanology of the Chinese Academy of Sciences in Qingdao, Shandong province, China.

To help the Mediterranean aquaculture, Latin fish lovers might have to slightly alter their diet.

More information: www.aquamedproject.net/

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