

Cage Aquaculture in the RECOFI Region – Highlights on a Recent Technical Workshop held in Oman

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During the fourth session of the Regional Commission for Fisheries (RECOFI), held in May 2007, in Jeddah, Saudi Arabia, the Commission endorsed the organization of a “Regional technical workshop on sustainable marine cage aquaculture development” in view of the growing interest of this aquaculture sub-sector. The workshop organized in Muscat, Oman, from 25 to 26 January 2009, focused on issues related to site selection, environmental impact assessment and monitoring, and licensing specific to finfish cage aquaculture.

In preparation for the workshop, RECOFI countries submitted national reviews on marine cage farming which provided an insight on the status of the industry and the technical and policy-related constraints challenging cage mariculture as well as highlighting the different development potential among the countries in the region. In addition, two background documents, one on the regulations governing Norwegian cage fish farming, with specific emphasis on environmental impact assessment (EIA) and monitoring procedures, and one on cage aquaculture licensing procedures were commissioned.¹

OPENING OF THE WORKSHOP

Mr Saoud Hamood Al-Habsi, Director General, Directorate General for Fisheries Research of the Ministry of Fisheries Wealth, Oman, officially opened the workshop. In his opening address, he recalled that the RECOFI Working Group on Aquaculture (WGA) was established by the Commission in recognition

of the growing importance of aquaculture at both global and regional levels. He underlined that the support granted to the WGA by the Commission reflected the common understanding that for the sector to grow sustainably and competitively there is a need to strengthen communication in the region.

The workshop was attended by experts from seven members of the Commission with a total of 31 participants including selected WGA focal points (Bahrain, Iraq, Oman, Qatar, Saudi Arabia, and the United Arab Emirates), scientists from the Ministry of Fisheries Wealth and Sultan Qaboos University (Oman), members of the private sector (Asmak Quriyat International LLC, Oman), a representative from the Fish Farming Centre in Jeddah, Saudi Arabia, and members of the Secretariat.

CAGE AQUACULTURE IN THE RECOFI AREA

The status of cage culture in the region and the technical, physical and policy constraints currently faced by individual countries in support of the sector were presented at the opening of the workshop.

The major constraint identified in the establishment of fish cages has been the limited availability of suitable farming sites characterized by shallow waters (particularly in the north-eastern shores of the Gulf), highly fluctuating salinity and temperature levels and inadequate sea currents. Other limitations identified included price competition from wild-caught fish, inadequate farming technologies for the region and the limited availability of endemic candidate species of commercial importance suitable for cage aquaculture. The issue of seed supply of commercial finfish species was also recognized as hampering the growth of the sector with only few existing hatcheries mainly operated by the public sector.

From an institutional point of view, the experts acknowledged that not all countries in the region had progressed with developing targeted policy frameworks, rules and regulation to adequately encourage the private sector to invest in cage culture. In fact, many countries in the region lack in-depth regulations focused on governing cage aquaculture, from licensing application process, environmental impact assessment



Group photo of the workshop participants

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and monitoring requirements, to site selection procedures. It was further recognized that in some of the RECOFI countries, where environmental impact assessment regulations exist, these are not tailored for cage aquaculture.

The experts noted that recommending and finding suitable sites for cage aquaculture in the region has been and will be a challenge for the authorities and the industry. It was agreed that although coastal zoning, through the use of appropriate spatial tools, can be a time consuming and resource demanding process, it would allow for the identification and allocation of specific geographical areas to aquaculture practices and hence simplifying the process of farm site selection

CAGE AQUACULTURE – ENVIRONMENTAL IMPACT AND MONITORING

The experts at the workshop discussed at length the procedures and contents of an EIA and site selection criteria, particularly as some countries in the region require a mandatory EIA prior to establishing a cage operation. It was noted that the existing protocols have not been specifically designed for cage aquaculture projects. The experts further acknowledged that there is a need for the region and individual Commission members to develop an *ad hoc* EIA format based on the conditions of the local marine environment as this would determine the level of detail and elements needed to complete a thorough and useful EIA study. At the end of the agenda item, the content of an EIA format was developed which will enable individual countries to adapt the format to the national regulations and needs by selecting those elements of relevance.

In terms of monitoring, the participants indicated the need to obtain information on how to monitor cage fish farms with regard to both their benthic and pelagic impacts. It was suggested that

monitoring programmes from other cage culture farming countries be used; however, these would need to be adapted to local conditions. A monitoring programme consists of a number of parameters to be measured, but also specifies how, where and how often samples should be taken and analysed. Furthermore, the importance of monitoring results against threshold impact limits (EQS) was emphasized. In order to develop and establish a standard and specific fish cage culture monitoring protocol for the region, it was recommended that selected biologists from the RECOFI countries be responsible for the adaptation of an existing monitoring programme and EQS by establishing contacts and undergoing training with a research institute that holds expertise in cage farming impact and monitoring.

CAGE AQUACULTURE – LICENSING

The workshop participants discussed the licence application process outlined in a review paper prepared for the meeting and those currently adopted in selected countries in the region. It was agreed that potential investors require access to different types of information in order to adequately complete and submit an application form as well as a clear understanding of the application procedures. Furthermore, it was agreed that the legislation involved and process in aquaculture licensing should be transparent, readily available and include information on processing time, payable fees, if any, and whether there is a need for financial coverage in order to ensure that a site is cleared and cleaned in the event the culture operation is interrupted. A proposed cage aquaculture licence procedure was discussed and developed at the workshop based on a format developed and adopted by Oman.

ALGAL BLOOMS

The damage resulting from algal red tides to fish farming was also raised by the experts. It was reported that the industry in the region had recently suffered a serious setback due to a red tide event that killed the



Commercial cage aquaculture using imported circular and flexible structures off the coast of Dibba, UAE



Cage aquaculture using a rigid cage culture structure, UAE

fish in cages off the coast of Oman and the United Arab Emirates. The question raised was how to tackle the problem, protect and prevent disasters in the mariculture industry. It was generally agreed that there is a need to develop the ability to anticipate such events, monitor water quality conditions, establish warning procedures and develop contingency plans. The experts recommended that the WGA consider organizing a workshop on the impact of hazardous algae on aquaculture in collaboration with the Regional Organization for the Protection of the Marine Environment (ROPME).

¹The full report of the workshop is available from the RECOFI Secretariat and FAO Web site and contains the background documents. FAO/Regional Commission for Fisheries. Report of the Regional Technical Workshop on Sustainable Marine Cage Aquaculture Development. Muscat, Sultanate of Oman, 25–26 January 2009. *FAO Fisheries and Aquaculture Report*. No. 892. Rome, FAO. 2009. 135p.