The Economics of Aquaculture with respect to Fisheries

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THE CURRENT STATE OF WORLD AQUACULTURE

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[The text below has been prepared by the Editors from a summary of the keynote speech provided by the above speaker/author.]

FAO recognizes the important role of economic research in aquaculture for the sustainable development of the sector world-wide, and, for example, hosted the 16th Annual Conference of the European Association of Fisheries Economists (EAFE) at its premises in Rome in 2004. At present, FAO contacts more than 200 countries and areas in order to obtain information on the production and use of fish in the world. The information received is used to estimate the production and use of fish for the world as a whole. From the information collected, it is clear that the overall production of fish has been increasing over the last decade. However, as capture fisheries production has been relatively stable, the increase is coming purely from aquaculture. In 2003, world aquaculture production reached 42 million tonnes (excluding aquatic plants), while capture fisheries production was around 90 million tonnes.

The volumes produced by capture fisheries for the world as a whole have remained relatively stable over the last five years; possibly with a slight decline in 2002/2003. China’s capture fisheries production, accounting for about one quarter of the world catch, showed little variation over this period. Aquaculture is widely considered a growth sector, as shown by the following facts:

- worldwide aquaculture is the fastest-growing food sector
- fish is the world’s most internationally traded food
- currently more than 210 fish and aquatic plant species are used in aquaculture
- employment in fisheries sector has increased at an average rate of 2.6% per year since 1990
- there are currently over 10 million+ people employed in aquaculture worldwide
- the importance of aquaculture for food security and poverty alleviation in the world is growing rapidly.

There are however large differences in growth between aquatic environments, regions and species. At present, some 58 per cent of aquaculture production (excluding aquatic plants) is realized in freshwater, while 36 and 6 per cent of aquaculture production originate from marine and brackish water environments respectively. Including aquatic plants, total world aquaculture production in 2003 was estimated by FAO to be 54.8 million tonnes by volume and US$67.3 billion in value terms. The growth of the aquaculture sector in the last few
years was around 5 to 6 per cent per year in terms of volume; however, this growth was not homogeneous: Steady growth took place in Asia, while stagnation could be seen in Europe and Oceania, rapid growth in Latin America and slow growth in most of Africa.

Aquaculture production of the EU-25 is dominated by just a few species. Mussels account for some 32 per cent of the production in terms of volume, rainbow trout 15 per cent and Atlantic salmon around 12 per cent. The diversity of species widely used in aquaculture in Europe is relatively low; this is shown by the fact that the top ten species cover 95 per cent of total production volume in Europe. In terms of value the aquaculture production of the EU-25 countries in 2003 was estimated at 2.5 billion Euros. Rainbow trout production generated the highest value, followed by Atlantic salmon and blue mussel.

Not everyone sees aquaculture growth as a positive development. Aquaculturists and those consuming the products want aquaculture to be well managed, safe for the ecosystem, sustainable, people-centered, socially just, producing safe food for the population, generating work and income. In short, we want aquaculture development to happen in a responsible manner, as reflected in the history and implementation of the Code of Conduct for Responsible Fisheries, especially Article 9 of the Code on aquaculture development. On basis of Article 9, technical guidelines were developed in the last decade to assist states and all aquaculture sector stakeholders to develop and manage their aquacultures responsibly.

In discussing the challenges for aquaculture, it is important to identify first the major trends. During a recent international workshop in Ramsar, Iran, jointly organized by the Network of Aquaculture Centres in Asia Pacific (NACA) and FAO, a panel of experts came up with 6 major trends seen in aquaculture in Asia, but also elsewhere:

1. restricted aquaculture expansion, tending towards increasing intensification
2. continued diversification of species and need for their responsible use
3. continued diversification of production systems
4. increasing influence of markets, trade and consumption
5. enhanced regulation and better governance
6. drive for better management.

Challenges for aquaculture are, among others:

- Aquaculture should continue to increase production to meet growing demand for fish as capture fishery production is unlikely to increase further.
- Competition with other sectors for suitable locations for aquaculture and for access to clean water resources will further increase.
• Aquaculture should adjust to changes in consumer preferences through diversification and value addition; food safety and quality will become more important, as well as standards and certification.
• Implementation of the Code and related instruments, e.g. FEAP Code of Practice and the (EU) Strategy for the sustainable development of European aquaculture. will be important, as well as planning, policy and law development, and codes of practice development and implementation.
• It is critical to improve and maintain the image of the sector and its products.
• Aquaculture’s dependence on fish meal and fish oil for sectoral growth should be decreased.

These challenges are just some of many more, and different countries and regions and different farms have different challenges to meet.

FAO is undertaking a number of activities in the area of aquaculture economics and is supporting relevant European networks and regional fisheries bodies which also address aquaculture economic issues, e.g. EIFAC (European Inland Fisheries Advisory Commission), GFCM (General Fisheries Commission of the Mediterranean) and NACEE (Network of Aquaculture Centres in Central - Eastern Europe).

FAO provides every two years a forum where Governments discuss global issues related to aquaculture and fisheries. This unique forum is called the Committee on Fisheries (COFI).

The 3rd session of the Committee on Fisheries (COFI) Sub-Committee on Aquaculture will take place in New Delhi, India, in September 2006. FAO and many COFI member states welcome efforts towards increasing the involvement of economists in the regional fisheries bodies, such as EIFAC, GFCM and networks such as NACEE.