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## Aquaculture and the environment

There has been substantial growth in European aquaculture in the past few years. This has been particularly evident in fish breeding in coastal waters (salmon in Scotland and Ireland, seabass and seabream in the Mediterranean). Still at sea, there has also been an increase in mussel farming by line or raft in Ireland, Spain and France. Aquaculture in marshes, as in Italy, and on the foreshore, such as oyster culture and mussel breeding in France, remain more traditional activities. Lastly, the significance of fresh-water aquaculture, i.e. in rivers, lakes and ponds, should not be overlooked.

The growth in aquaculture has coincided with increased interest in environmental protection. In this context aquaculture has tended to become the guilty party. Fish farming has most frequently been brought under attack, in particular where there has been large-scale densification, owing to waste discharges, such as excrement and chemical products, which they bring to rivers, estuaries and bays. Shellfish farming and algae cultures tend to be involved to a lesser extent, since they have a more limited impact on the environment. However, this has not prevented resident's committees from opposing this "visual pollution".

As our *Interview of the month* points out, however, aquaculture has also tended to become the victim. Oyster bed workers, for example, along with other aquacultural workers on the foreshore, coastal waters or lagoons, frequently suffer from land-based (agricultural, industrial or urban) and maritime chronic pollution. In addition, they see themselves as guaranteeing better water quality. The occurrence of accidents, such as the sinking of oil tankers which have caused serious damage to aquacultural activities in Galicia, Shetland Islands, Wales and Brittany should not be overlooked.

For this reason, new aquacultural plants are now increasingly taking account of pollution problems and, in more general terms, potential conflicts of use. In addition, the growing application of the concept of integrated coastal management and planning in various European projects provides an appropriate framework for the improved integration of aquaculture in the environment.

### The Editor

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## Region of the month

### **SMÖGEN: Swedish prawns from the Skagerrak**

Smögen is a particularly special fishing port within Bohuslän, Sweden's primary fishing region. The Bohuslän coastline is less than 200-km long and accounts for over a third of the country's boats and over 40% of its fishermen.

Traditionally a great herring-fishing region, it has undergone major changes. The region houses Sweden's primary landing point in terms of tonnage at Fiskebäck in the Göteborg area, the large commercial port as well as two industrial fishing centres at Rörö and Hönö. Industrial fishing, partly landed in Denmark, is highly significant in the region.

Smögen, an artisanal coastal fishing port, also differs in terms of species landed. While herring, sprat and cod dominate elsewhere, shellfish takes pride of place here. The latter accounted for 63% of tonnage and 80% of the value landed in 1996. "Smögen räkor", or prawns cooked on board ships in sea water, scampi and lobsters are products which have helped to give the port its reputation, although cod and flat fish are also found.

Unlike fleets from the region's other ports which have been forced to relocate in part in the Baltic Sea following the North Sea herring crisis, the fishing grounds have remained confined to the neighbouring Skagerrak waters. The proximity of the fishing grounds allows fishing to be carried out by relatively modest vessels. 90% of the fleet is made up of wooden trawlers, which are a reasonable high-yield investment. This explains why young people are drawn to the industry and, even if the total number employed has not risen since 1985, there is a downward trend in the average age of fishermen.

The non-computerized market, which opened in 1920, houses 3 fresh-fish warehouses and has 8 employees. Selling invariably takes place from Monday to Thursday, from 5.00 p.m. until 8.00 p.m., so that fresh fish is on the Stockholm markets from the following day. National consumption is one of the two main outlets for local products. Remaining produce is sent to the three locally-based processing firms.

The existence of these outlets as well as the fast and high-quality service which the market provides attracts foreign vessels. In 1996, for example, 6 Danish vessels and 12 Norwegian trawlers used the port.

Europe seems far removed from here and fishermen, here as elsewhere, deplore over-regulation, paperwork, etc. EU membership has few supporters, clearly owing to failed attempts to open into new markets, particularly in Belgium, which the abolition of customs barriers should have made easier. The only innovations involve the modernization of packaging techniques and the creation of a new producer's organization.

### **Questions put to A. SAMUELSON, Director of the Smögen fishing market.**

*Pesca-Info (P.I.): How would you summarize the situation in 1996?*

*A. Samuelsen (A.S.):* The past year has been characterized by a significant rise in prawn landings. Favourable prices were maintained throughout the year, with on average 62 crowns per kilo.

*P.I.:* Shortly after Sweden's accession to the EU, this is surely a positive factor. Are you satisfied with the Common Fisheries Policy?

*A.S.:* No, for us the future seems uncertain. For the first time ever, several crates of fish have remained unsold on our quays. Norwegian exports are disrupting our market with their selling price which is below the minimum price of 42 crowns which Europe has imposed on us. Nevertheless, we should point out the creation of an organization for producers in Smögen.

*P.I.:* Could you tell us more about this?

*A.S.:* The Norra Bohusläns Producentenorganisation (NBPO) was set up in the winter of 1994, following a demerger within a western fishermen's league. The NBPO has received support from Swedish authorities towards improved management of the industry. It plays a similar role to other European POs.

## Data sheet

### Smögen

- *Location:* Bohuslän, Sweden
- *Type of fishing:* artisanal, deep-sea trawling
- *Fishing grounds:* Skagerrak and North Sea in summer
- *Fleet:* 48 vessels, mainly wooden trawlers
- *Catches (1996):*
  - *species:* prawns, scampi, cod, flat fish, eels
  - *volume:* 2.4 million tonnes, including over 1.1 million tonnes of prawns
  - *value:* 76.5 million Swedish crowns (**9 million Ecu**)
- *Number of fishermen:* 132
- *Jobs in processing:* 630 (in 3 firms)

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## Common Fisheries Policy

### Aquaculture

Aquaculture has enjoyed the benefits of a support policy since 1971, although financial pledges involved only fresh-water activities at first. It was only in 1978 with a widening of the scope of activities towards salt and brackish waters that marine aquaculture could be considered.

Fresh-water species involve mostly trout, eel and carp. In marine aquaculture the two major types of production are:

- shellfish breeding, a long-standing activity involving mainly oysters, mussels and clams,
- marine fish breeding, in particular salmon, seabass, seabream and turbot, a more recent activity.

Community operations have been carried out under the FIGG since 1994. They involve:

- the construction, modernization and acquisition of new buildings;
- the development or improvement of hydraulic circulation works within firms;
- the acquisition and installation of new equipment and machines intended exclusively for aquacultural production, including craft and computerized and telematic equipment.

The main aim of support towards aquaculture is to meet consumer needs as well as contributing towards reducing the Community balance of trade deficit in sea products.

However, the policy also aims at supporting the economic development of coastal and rural regions and it has achieved good results in this field. While the project has occasionally been criticized for not being 'selective' enough in its approach, the low discontinuation rate of 4% confirms the overall success the investments have had. This expansion has contributed towards the development of remote regions of EU Member States which are themselves peripheral (west of Ireland, Scotland in the United Kingdom, Galicia and Andalucia in Spain, Corsica and south of France, peripheral regions of Greece, Italy, etc.).

In addition, the policy has successfully met market supply objectives, but occasionally competes with certain fish products. The Commission, aware of the various problems an anarchic development of the industry may cause, has drawn up recommendations for harmonious development aimed at preventing surplus output. It also underlines the need to comply with Community public health standards. Such concerns have been highlighted by recent standardizing activities, such as in the field of shellfish breeding.

It should also be pointed out that the development of aquaculture falls within the framework of integrated coastal planning and that the CFP pays particular attention to the constraints associated with respecting the environment.





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## **PESCA on the spot**

### **The AQUA-LINE project: promoting the transition from fishing to aquaculture**

The development of aquaculture has provided many jobs in very remote regions of the EU. Nevertheless, fishermen have not directly played a part in the development of the industry and have, on the whole, not benefited from it.

The AQUA-LINE project aims at simplifying investment activities and the training of fishermen in aquaculture by gathering and then disseminating appropriate information. Through Aqua TT in Ireland, AQUA-LINE has partners in peripheral regions of the EU, including Greece, Portugal and The United Kingdom.

This ambitious project will receive ECU 45,000 from PESCA and aims at providing all relevant information, such as technical and financial assistance, education and training programmes, legislative and regulatory framework, etc., to small and medium-sized firms in fishing or aquaculture which may benefit from information available on Internet without having to be a member of the Aqua TT group. Only relevant information will be selected and passed on directly to these firms. An Internet site has been set up for AQUA-LINE (<http://www.aqua-line.org>) equipped with a discussion panel and within the framework of which the various partners await any suggestions or reactions.

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## Interview of the month

### Interview with Dr Harald ROSENTHAL, Director of the ICES working group "Impact of Mariculture on the Environment"

*Editor's note: intended as a medium for freely voiced opinions, the PESCA bulletin reflects the views held by professionals. Articles express the opinions of the authors alone.*

*P.I. (Pesca Info): What are the main environmental impacts of aquaculture in coastal zones of European countries?*

*H.R. (Harald Rosenthal):* In the past, nutrient release and suspended solid loads were of major concern. Today most of the problems related to these factors have been resolved by improved husbandry and system management as well as by very tight regulations. The same holds largely for the use of antimicrobials which are still of concern, in particular with respect to their wider environmental implications, although their usage has substantially been reduced in recent years because of the development of vaccines and reduced stress.

*P.I.: More precisely, what has been done to limit the negative impacts of coastal aquaculture?*

*H.R.:* For example, with regard to nutrient releases, the trend towards high energy feeds and the reduction of crude protein and fish meal in feeds has greatly reduced the outputs for N and P by about 60%. This is certainly an achievement. I also think that in some areas the aquaculture industry is over-regulated in several of the EU countries, while other resource users are not sufficiently regulated to protect aquacultural systems in their vicinity. Effluents of fish farms in Germany, for example, are regulated in the same manner as industrial wastes and if some limits are exceeded, the farmer will be fined accordingly.

*P.I.: How is it possible to manage the needs of the industry and the environment?*

*H.R.:* Aquaculture is different from other industries which can pollute the receiving waters while producing a quality product. Fish will respond to environmental mismanagement with reduced growth, reduced feed conversion (which means higher production costs) and eventually with reduced quality of the product and finally disease. Therefore, the farmers are in principle highly interested to operate as a clean industry. Nevertheless, I strongly believe that with competitive pressures the farmers may be tempted to compromise environmental needs and therefore tight regulations are required to safeguard both the environment and the industry.

On the other hand, I believe that such regulatory mechanisms are not sufficient. For example, we do have tight sanitary measures in place in most EU countries to control diseases and disease transfer from aquaculture activities. Others, like shipping industry transmit diseases with ballast water without control. Aquaculture itself has a vital interest in a clean environment and therefore, in the context of coastal zone management, there is also a definite need to regulate other industries to protect aquaculture.

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## Newsflash

### **Fish '97, Helsinki, 22-24 August 1997**

An international fish fair will bring together workers from the fishing industry in Finland and neighbouring countries during the weekend of 22-24 August at the Wanha Satama exhibition centre in the heart of Helsinki.

All enquiries should be made to: Association of Finnish Fish Retailers and Wholesalers, P.O. Box 7, FIN-00561 Helsinki

**Offshore coastal fishing (see Pesca Info No 8): the closing date for calls for proposals (OJ C 216 of 17/07/97) has been postponed until 03/10/97.**

*This column is available to you if you wish to announce various events or actions likely to interest the fishing world.*

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