Aquaculture in Ireland - IE

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Sound use of resources and promotion of less resource intensive processes/products
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment
- SUSTAINABLE ECONOMIC GROWTH: Improving competitiveness

2. Key Approaches

- Ecosystems based approach
- Technical

3. Experiences that can be exchanged

The development of a coastal-dependent, aquaculture industry and the way that it has been regulated and financed for development.

4. Overview of the case

The modern Irish aquaculture industry provides employment and generates income in rural communities. The industry has been stimulated by subsidies, is well-regulated and its development incorporated into successive government policy documents.

5. Context and Objectives

a) Context

Shellfish and finfish aquaculture takes place around the coast of Ireland except, in general, on the east coast. It has been practised in Ireland for over a century. Shellfish and finfish aquaculture operations have become an increasingly significant socio-economic activity for marginalized communities around Ireland's coasts.

Extensive cultivation of blue mussels (Mytilus edulis; 18,270 t. in 2007) and native/flat oysters (Ostrea edulis) on managed natural beds is still carried out at a number of locations around Ireland. Blue mussels are also cultivated on ropes, usually seen suspended between floating plastic barrels (11,200 t. in 2007). Since the late 1980s, the cultivation of native/flat oysters (382 t. in 2007) has declined markedly following the spread of Bonamia disease. This resulted in a shift to intensive cultivation of non-indigenous Pacific oysters (Crassostrea gigas) using hatchery-reared stocks (7,032 t. in 2007). There is increasing interest in the scallop (Pecten maximus) and queen scallop (Chlamys opercularis), and in small-scale operations for the hatchery and on-growing of both European (Haliotis tuberculata) and Pacific (Haliotis discus hannai) abalone. Quantities of non-indigenous Manila clams (Tapes semidecussatus or Ruditapes phillipinarum) are also cultivated.

Finfish farming began in the 1970s and has since spread to nearly every coastal county. Rainbow or sea trout (Oncorhynchus mykiss) was the first species to be commercially farmed, reared in sea cages. Cage production of Atlantic salmon (Salmo salar) followed in 1981 when 100 t. were marketed. The finfish farming industry developed rapidly during the 1980s following a change to large pens. The 2007 production of farmed Atlantic salmon was 9,923 t. In recent years, there has been considerable research and development effort on extending the range of finfish species. Both turbot (Scophthalmus maximus) and halibut (Hippoglossus hippoglossus) are now being produced.

b) Objectives

The overall goal of the government is to support the sustainable development of the sector in order to maximise its contribution to jobs and growth in coastal communities and to the national economy. One of the key objectives is to create a sustainable and environmentally appropriate framework and critical mass for the expansion of aquaculture under the National Development Plan 2007-2013.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The Department of Agriculture, Fisheries and Food is responsible for aquaculture policy and its Seafood Policy & Development section for strategic, economic and sustainable development. Licensing, monitoring and enforcement are handled separately by the Department's Coastal Zone Management Division. The Irish State agency, Bord Iascaigh Mhara (BIM - Irish Sea Fisheries Board) has responsibility for developing the Irish Sea Fishing and Aquaculture industries. BIM provides grants and technical advice and delivers quality and environment programmes as well as marketing and training support to promote the development of the fish farming industry in a sustainable manner. The Marine Institute has responsibility for the monitoring programme.

b) ICZM tools

All aquaculture sites must be licensed under the Fisheries (Amendment) Act 1997. Under the provisions of the Act, a person intending to engage in aquaculture must first apply for, and then be granted, an aquaculture licence, a trial licence, or an oyster bed licence or an oyster fishery order, as appropriate. To engage in aquaculture without authorisation is an offence. Unlicensed operations could entail a fine and/or imprisonment. Furthermore, a person who contravenes or fails to comply with a term of a licence is guilty of an offence and is liable to a large fine or imprisonment, or both. Aquaculture project developers must also obtain a foreshore licence before occupying or undertaking any works or placing structures on state-owned foreshore for the purpose of aquaculture. The foreshore is defined as the seabed and shore below the line of high water of ordinary or medium tides and extends outwards to the limit of 12 nautical miles (approximately 22.24km). Aquaculture licenses are valid for the period specified in the license, which cannot exceed 20 years, and may be renewed upon expiration of that period. In 2007, there were 573 active licences, of these there were 494 shellfish licences (86% of total), 75 finfish licences and 4 algae licences. The greatest number of licences is for oyster farming (268 licences) and there were 167 mussel licences.

Ireland has established a comprehensive system of environmental and food safety monitoring for the shellfish and finfish sectors which meet EU and market demands. Samples of shellfish are routinely collected from both wild fisheries and aquaculture production sites as part of the National Biotoxin Monitoring Programme. Water samples are collected from both shellfish and finfish sites and the number of known toxin-producing phytoplankton species and harmful/nuisance phytoplanktonic species is determined. A full suite of biotoxin and phytoplankton tests as well as microbiological contamination are also conducted and a virus testing facility was introduced in 2006. The health status of shellfish stocks is monitored. A similar monitoring programme has been set up for the finfish industry e.g. sea-lice, following the provisions of a benthic Protocol.

In 2007, BIM's new Eco-Standards for Rope Grown Mussels and for Farmed Salmon was accredited by the Irish National Accreditation Board to ISO65 / EN45011, the internationally recognized benchmark for food product certification. The eco-standards have been established as an extension of scope to the existing Irish Quality Mussel (IQM) and Irish Quality Salmon (IQS) schemes and are the world's first independently accredited eco-standards for aquaculture. The Irish Quality Trout Eco-standard is currently being piloted as part of the accreditation process.

7. Cost and resources

€216m will be invested (2007-13) to support the application of technological innovation to further develop environmentally sustainable techniques, including aquaculture, and achieve successful diversification into new species, while ensuring the highest international quality standards are met. In 2007, there were a total of 1,981 people employed in the aquaculture

industry (686 full time, 478 part time & 817 casual). Total production was 48,350 tonnes valued at €105.7 million. Salmon accounted for about half of the total value (€51.3 million).

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The monitoring programme has shown that a parasite, Bonamia ostreae, is now endemic in eight bays. This knowledge allowed the introduction of the movements of shellfish susceptible to these diseases to be prohibited from infected or "non-approved" zones into free or "approved zones". A strategic environmental assessment of the marine aquaculture sector has not yet been conducted and is needed for marine aquaculture to be integrated into ICZM.

9. Success and Fail factors

Under the Regional Programmes of the National Development Plans 2000-06 & 2007-13, subsidies to producers and research & development projects have supported the rapid growth of aquaculture. It is government policy to support the diversification into novel species by funding marine aquaculture projects in a pilot development phase prior to full-scale commercial development e.g. abalone and sea urchins for the Japanese export market. The Aquaculture Industry Forum, comprising government, the State agencies BIM, Údarás na Gaeltachta and the Marine Institute, as well as key players from the industry (although not environmental NGOs), was established to facilitate communication and dialogue between producers, representative bodies such as the Irish Shellfish Association and the Government on strategic issues facing the industry. An ecosystem-based approach has yet to be applied to the management of marine aquaculture in Ireland. Most environmental impact studies have been conducted at single fish farm level. Whereas the local scale effects are well documented, the effects at the ecosystem or regional scale remain largely unknown.

10. Unforeseen outcomes

It is anticipated that the period 2007-13 will see the emergence of a smaller number of larger operators in this sector, working on greater economies of scale. Farming of new temperate water species such as haddock (Melanogrammus aeglefinus) and hake (Merluccius merluccius) are likely to spread to Ireland in the near future. BIM has adopted a strategy of supporting and encouraging the location of new, high-technology marine finfish production systems at exposed marine "high-energy" sites (i.e. sites that are quite exposed in terms of wave energy and high current flow). This is because the industry is unlikely to find the necessary space to achieve full production capacity close to the coast because of demands from increasing numbers of other users of inshore marine resources.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- National Development Plan 2007-2013 Transforming Ireland A Better Quality of Life for All (2007) Government of Ireland
- Status of Irish Aquaculture 2007 (2008) MERC Consultants Ltd.
- www.agriculture.gov.ie/fisheries
- <u>www.bim.ie/templates/homepage.asp</u>



National Development Plan 2007-13 (2.79 MB)