European Social Science Fisheries Network

FAIR CT95 0070

Inshore Fisheries Management

Task Group Final Report

Department of Geography

University of Hull

March 1999

Preface

This report reflects an additional activity undertaken within the Concerted Action (FAIR CT95 0070) establishing a *European Social Science Fisheries Network* (ESSFiN). It reports on the proceedings of two workshops held in Gruissan, France (29-31 March 1998) and Amsterdam (24-26 September 1998) and attended by a relatively small number of invited participants from a total of seven EC Member States. The authors of the report wish to express their thanks to Katia Frangoudes and Rob van Ginkel for their efforts in organising the two workshops and to all members of the Task Group for their interest, enthusiasm and cooperation throughout the period.

David Symes
Jeremy Phillipson
Hull, March 1999

Contents

0.0 Summary

0.1 *Introduction*

Whereas the Community's fisheries beyond the 12 nm territorial limits are subject to a more or less harmonised system of management through the Common Fisheries Policy, those occurring inside the limits - the inshore fisheries - are subject to very diverse systems of management elaborated by the Member States. To date, however, there has been no attempt to analyse Europe's inshore fisheries through a comparative study of their structures and management systems nor to focus attention on the range of issues that these small scale fisheries have in common. It was therefore decided to attempt such a study by collating existing knowledge in a series of 'state of the art' reviews at Member State level and subsequently by reviewing the evidence in order to identify common issues.

The Task Group's activities were developed through four phases including (i) a steering group meeting to develop and refine aims and methodology; (ii) a workshop involving the presentation of state of the art reviews leading to the identification of key issues; reviews were presented for Denmark, England and Wales, Finland, France, Ireland, Netherlands, Scotland and Sweden; (iii) a second workshop involving the presentation of thematic papers, and (iv) preparation of the final report.

0.2 *Analysis*

While the lack of a common structural definition of inshore fisheries and therefore of comparative data sets makes international comparison of the relative contribution of inshore fisheries difficult, the analysis confirms the importance of inshore fisheries in providing a significant share of the supplies of fresh fish and shellfish and in generating considerable employment opportunities for adjacent coastal regions. It also highlights the economic, social, cultural and political complexities of inshore fisheries. The sector is conducted in a range of socio-political and geographical settings and encompasses a range of activities including both capture and culture fisheries. Predominately comprising family based, small scale enterprises, it has a particular social organisation built around close social relations and a petty commodity mode of production.

Inshore fisheries commonly display intrinsic strengths in terms of adaptive response and may thus provide a vital contribution to the economic and social stability and sustainability of peripheral communities and pluriactive economies. However, they face a number of common challenges including the relative immobility of the small scale boats, distance from markets, weak infrastructural provision, lack of social mobility and low levels of recruitment of young people. They are also influenced by the impacts of global markets, resource depletion and regulatory strictures, which can pose severe challenges to the production system, traditional forms of adaptive response and the processes of social reproduction. In less peripheral locations other

'externalities', derived from the multiple use of inshore waters, may place an added burden on local fisheries.

Management approaches and organisational structures for inshore fisheries reflect the particular institutional and organisational traditions and the specific structural and behavioural characteristics of the sector. The current derogation applied to the 12 nm limits implies a considerable discretion for Member States to determine the appropriate management approach. Some states have adopted decentralised and delegated powers to allow for the involvement of local user groups and the development of preferential local management approaches. Others rely largely on a state led, centralised management approach regulating the inshore sector on the basis of fleet segments and gear groups.

There are a number of key issues that need to be addressed in order to secure the economic and social sustainability of inshore fishing, including: (i) the need to remove uncertainty over the derogation concerning inshore waters; permanent renewal of the 12 nm limit would permit the development of dedicated management regimes for inshore fisheries; (ii) the need to redefine the scope and responsibilities of Member States in terms of inshore fisheries management and to provide adequate financial resources for development of inshore fisheries; (iii) the need to separate the regulatory systems for inshore and offshore management, to encourage the involvement of responsible, representative fishermen's organisations in local management and the development of appropriate systems for preferential treatment of local fishing activity; (iv) the need to institutionalise integrated systems of fisheries and marine ecosystem management and the application of the precautionary principle in respect of inshore fisheries; and (v) the need to develop and implement an effective approach to the management of the several and often conflicting claims of different user groups within the coastal zone.

It is evident, therefore, that a balanced approach to the management of inshore fisheries will need to recognise: (i) the commercial importance of inshore fisheries, the diversity of species, production systems and socio-economic structures and the significance of their contribution to local economies; (ii) the development of distinctive national, regional and local management systems; (iii) the exposure of a crucial gap in EC management structures and systems, should the existing derogation not be renewed; and (iv) the environmental sensitivity and multiple use of inshore waters. In general, the characteristics of inshore fisheries and their sensitivities and importance in economic, social and cultural terms requires a concerted and distinctive approach.

0.3 *A research agenda*

Much more understanding is needed of the economic, social and cultural roles of inshore fisheries in ensuring the sustainability of coastal regions. Further research is needed to identify more precisely the key factors in these fisheries and to outline the institutional requirements for economic, social and cultural sustainability. A number of specific research priorities are identified.

1.0 Introduction

1.1 Midway through the Concerted Action it became clear that there was an important gap in the original work programme. This referred to the management issues and practices within the inshore fishing zones of the Community's individual Member States. Whereas the Community's fisheries beyond the 12 nm territorial limits were subject to a more or less harmonised system of management through the Common Fisheries Policy, those occurring inside the limits - the inshore fisheries - were subject to very diverse systems of management elaborated by the Member States acting separately.

The importance of these fisheries in terms of the numbers of fishing boats, the value of landings and the level of employment is undeniable (see Table 1). Yet this vital sector of Europe's fisheries remains relatively unexplored. While there is a plethora of local studies on inshore fisheries dealing principally with ethnographic and historical aspects, there has been no attempt to analyse Europe's inshore fisheries through a *comparative* study of their structures and management systems nor to focus attention on the range of issues that these small scale fisheries have in common.

Table 1: Inshore fishing vessels and employment within the EC12

	Vessels (0-12 m)		Employment	
	Number	% of national total	Number	% of national total
Belgium	6	n.a.	11	n.a.
Denmark	2,149	54	2,650	35
France	5,506	74	8,560	45
Germany	1,175	70	2,163	50
Greece	20,054	93	32,312	75
Ireland	914	64	2,324	45
Italy	12,252	67	60,600	61
Netherlands	632	41	1,117	23
Portugal	12,890	90	15,528	40
Spain	15,416	76	33,734	40
UK	10,490	80	9,306	50
EC 12	*81,484*	*65*	*138,305*	*45*

EC (DG XIV) Coastal Resources and Integrated Coastal Development, Proceedings of Oporto Conference, 7-8 October 1993.

It was therefore decided to attempt such a study, using the principles of a Concerted Action by collating existing knowledge in a series of 'state of the art' reviews at Member State level and subsequently by reviewing the evidence in order to identify common issues. This report summarises the results from eight countries - in the case of the UK, separate reviews were provided for England and Wales and for Scotland - and from a series of 14 thematic papers, together with discussions from the two workshops.

1.2 *Aims of the study*

Inshore waters are also likely to become a central focus for political debate in the coming years following an increasing awareness of the link between ecosystem management and inshore fisheries, and given intensified speculation over the future of the 12 mile access derogation after 2002. If this debate is to lead to an appropriate and balanced management approach, it must be properly informed as to the current and possible future situations. The broad aims of the Task Group were, on a basis of existing research, to review the state of the art of fisheries management in inshore waters in Europe, to identify key issues for management policy and, where possible, to make recommendations to the European Commission concerning future research priorities. In pursuit of these broad aims, the following specific objectives were identified:

(i) to provide a working definition of 'inshore fisheries' on the basis of structural and/or spatial characteristics;

(ii) to describe the general situation for inshore fisheries within the EU in relation to EU policies and Directives relating to the management of coastal waters; to estimate the importance of inshore fisheries and to describe the main types of fishing activity, and; to indicate the current status of inshore fisheries by reference to existing national legislation;

(iii) to describe current policy processes at national, regional and local levels;

(iv) to identify and describe the organisational structures of inshore fisheries management (IFM);

(v) to detail the existing management systems;

(vi) to indicate existing linkages to wider management systems affecting inshore waters (*viz.* marine environmental management, coastal zone management etc.);

(vii) to identify the key management issues, and;

(viii) to outline the socio-cultural aspects of inshore fisheries.

1.3 *Methodology*

The Task Groups activities were developed through four phases.

(i) a steering group meeting held in Hull on 27th August 1997 to develop and refine aims, objectives and methodology; this was based on the responses of the Task Group to a briefing paper.

(ii) a workshop involving the presentation of state of the art reviews for participant countries leading to the identification of key issues; unlike

other workshops organised by ESSFiN, which imposed no restrictions on the structure or style of individual contributions, members of the Task Group were encouraged to follow a more or less common structure outlined by the steering group though it was recognised that an important outcome of the analysis would be to identify elements of diversity between different national experiences. In the event reviews were presented for Denmark, England and Wales, Finland, France, Ireland, Netherlands, Scotland and Sweden (Appendix A).

(iii) a workshop involving the presentation of thematic papers leading to the identification of a research agenda (Appendix B).

(iv) preparation of the final report.

In all, the initial Task Group membership comprised 10 participants from six EU countries (see Appendix C). Despite attempts to obtain a broad geographical coverage, in the event the membership focused primarily on northwest Europe, though some consideration was given to Mediterranean France and this was supported by the location of the first workshop in Gruissan. At its second meeting the Task Group was pleased to welcome four additional participants, each bringing a different area of expertise to the proceedings.

Both workshops involved two days of presentation and discussion of papers, together with an additional day's excursion to consider issues affecting the inshore sector. During the first workshop this involved a visit to the *étang* of Bages Sigean and Port La Nouvelle harbour including discussions with the local *prud'homie* and the *Comité de Pêche*; and during the second, an excursion to Zeeland, with visits to the Storm Surge Barrier and meetings with fishermen representatives at the Yerseke mussel auction.

1.4 *Report structure*

Following this introduction, the proceedings of both workshops are presented through a series of extended abstracts. For the state of the art reviews of inshore fisheries management in the different Member States these broadly follow a common format and cover issues relating to (i) the definition and importance of inshore fisheries and the main types of fishing activity (ii) policy processes and organisational structures, and (iii) strengths and weaknesses of IFM and emerging issues. Following the national reviews, extended abstracts of thematic papers relating to common elements and issues of inshore fisheries and their management are presented. The report concludes with a brief discussion of the main characteristics of inshore fisheries and shared issues of management uncovered during the workshops, together with an outline agenda for further research within this important but relatively neglected sector of the Community's fisheries.

2.0 State of the Art National Reviews

2.1 *Finland*

Kjell Nybacka

In 1995 the limit for Finnish territorial waters was changed from 4 to 12 miles. The 4 mile limit retains its importance in respect of management as decisions given by the IBSFC are valid only outside this zone. Finnish inshore fisheries can be defined by the 12 mile territorial limit, by ownership (the division between private coastal waters and state waters) or by the behaviour of the fishermen (those who start from their home harbour in the morning and arrive back the same day). Within the 12 mile limit, under the authority of Finnish national legislation and where access by other Member States is restricted, one will generally find two different kinds of waters, private and state owned. Waters close to the coast are generally privately owned, but mostly collectively administered by the fishing association of the villages. This is generally the case on the west coast in the Gulf of Bothnia, while in the Gulf of Finland it is common for private fishing waters to be divided among private owners who are not bound by an association. In the Archipelago Sea of south-western Finland both management systems can be found. The limit between private and state owned waters is set at 500 m from the 2 m depth line.

Fishing and aquaculture are particularly important in the Archipelago Sea and along the west coast of Finland and recreational fisheries play a significant role in the every day life of many Finnish citizens. In 1996 the recreational catch (covering both traditional fishing for household consumption and more modern forms of sport fishing) reached 61,300 tons, of which 25% was caught in inshore areas. The inshore waters are of generally low salinity (brackish), thus fishing is directed towards a mixture of both marine and freshwater species. The most important freshwater species include whitefish, perch, vendace, pike-perch, pike, smelt, ide, bream, burbot, Baltic herring and salmon. In the professional fisheries the most important are Baltic herring, cod, salmon, sprat and whitefish, with a total annual catch of 110,000 tons. Coastal fishing takes place in different parts of the Baltic Sea, the Gulf of Finland and the Gulf of Bothnia using small and multi-purpose vessels. In 1997 there were 2750 fishermen in Finland of which 1700 received less than 15% of their income from fisheries. Most were inshore fishermen undertaking small scale fishing based on pluriactivity. Most vessels are 10 m or smaller (in 1997 of the total 3986 vessels 3477 were small scale). Types of fishing vary between geographical areas, according to seasonal, and to inherited ways of using different types of gear. Fisheries activity creates further important employment effects in fish processing, gear manufacture, vessel construction and maintenance and other related sectors. This multiplier effect forms the basis for living in many sparsely populated areas. There are a large number of islands and coastal communities and these are often dependent on inshore fisheries; many have suffered from a loss of human capital and from centralisation. In contrast, the aquaculture sector has developed rapidly during the last 15 - 20 years and has provided the coastal communities and fishermen

with a supplement to fisheries activities. The main part of the yearly production, approximately 17,000 tons, is rainbow trout.

A special feature of Nordic fisheries is created by the arctic climatic conditions. Fishing waters, and especially coastal waters, are to varying extents covered by ice each year. When the waters are ice free the main fishing periods are April-May to the beginning of July and from late August to November. During the summer period the net fishing is the most popular fishing method combined and alternated with the use of big traps, while trawling is mostly used in sprat and Baltic herring fisheries. During winter there is some activity under the ice cover using nets, hooks and traps. Winter often means a break in fishing activities in most coastal areas. Some fishermen combine fisheries with agriculture, forestry, building sector and fur farming.

In 1995 Finland became a member of the EU and a structural programme for the Finnish fisheries sector was formulated and later adopted the same year. The basic strategy for the management of professional fisheries is laid down in the Common Fisheries Policy which is valid in all Finnish waters. Measures for conservation and management of fisheries resources in the Baltic Sea are agreed within the International Baltic Sea Fishery Commission (IBSFC), though quotas allocated in the past are now integrated into those for the Community as a whole. Both the Gulf of Bothnia and the Gulf of Finland are relatively small and narrow, which means that fishing vessels from other EU countries have few possibilities to enter, though Swedish fishermen can fish within the 4 mile Finnish limit. Fishing of four species is restricted by a quota system (Baltic herring, cod, salmon and sprat) on the basis of recommendations by the IBSFC and EU. Freshwater and recreational fisheries in inshore fisheries fall under the legislation and administration of the Finnish national fisheries authorities rather than the EU.

The basic regulations of Finnish fisheries are laid down in the Finnish Fishery Act 1983. The Ministry of Agriculture and Forestry and its Department of Fish and Game has the overall responsibility concerning regulations and management. On the regional level responsibility rests with the 11 Fisheries Sections, which are subordinated to the Centres for Employment and Economic Development, and are responsible for the implementation of fisheries policy and in developing and promoting the sector. In contrast, private owners have the right to and the responsibility for the management of private coastal waters, though they remain subject to the 1983 Act. While professional fishing in waters owned by the state is free for professional fishermen, fishing in private waters is restricted by a licence system administered by landowners, described as a 'shareholders' association for a village, which in fishery matters are represented by the statutory fishery association. The water owners and their cooperative organisations bear the main responsibility for the administration of private waters and play a central role in policy making and management of fisheries in Finland. The guidelines for the administration of private fishing waters involve a mixture of goals set by national legislation and priorities according to habits and heritage. This

mixture of formal and informal policies can create tensions between different user groups.

Among its objectives, fisheries policy aims to safeguard fishing possibilities, adjust fishing capacity to resources, enable the reconstruction of fishing vessels and increase the amount of processed fish products and the quality of fish. These aims apply to professional fishermen operating in both sea water and inshore fisheries. Future challenges will include the demand for high quality and certified products, long term planning, a precautionary approach and the issue of sustainable management. These have already been built into the *Baltic 21* strategy for the Baltic Sea region. Other urgent questions include the issue of fishing capacity and conflicts between the environmental movement and the fisheries and aquaculture sectors. Disagreement and conflict is also evident between non-professional and professional fishermen over the level of controls imposed on each others activities. Finally, the development of the tourist sector and the recreational needs of urbanised people have introduced new questions. Sparsely populated coastal areas do not appear to be prepared, nor do they have resources to create tools and plans to cope. Politically the coastal areas are under pressure, with small levels of economic support for infrastructure investment and a concentration of political support in urban regions. Here there appears to be a widening gap in the understanding of community questions between representatives of urban and rural life.

2.2 *Sweden*

Gunnar Thoresson

Swedish law classifies waters out to 4 nm as coastal. Furthermore, trawl fisheries are restricted to waters outside of 2 nm with some exemptions. The Institute of Coastal Research classifies the entire fishery within the 12 mile limit, except by vessels >12 m, and all fisheries in the Bothnian Bay, irrespective of the type of gear, as coastal fisheries.

The Swedish coastline, including islands and fjords, is over 25,000 km long and there are major differences in species composition and fisheries. In part this reflects differences in salinity, topographical conditions and temperature regimes. Eel, cod, and herring and to a growing extent turbot are important marine species in the Baltic coastal fisheries. Important freshwater species include vendace, whitefish, perch and pike. Since the end of World War II there has been an ongoing decline in the number of sea fishers and vessels in Sweden. There were about 3300 professional fishermen in Sweden (89 % full-time) in 1995. The total fishing fleet consisted of 2742 vessels, of which 1281 were 8 m and under. The enterprises are generally small and skipper- or family owned. Coastal fisheries accounted for 15,000t or 5 % of the total landings in 1992. Ships larger than 12 m are also involved in coastal fisheries, such as the purse seine fishery for herring and sprat and some inshore trawl fisheries. Recreational fisheries are also important. According to a national survey of Swedish recreational fisheries, about 2.2 million persons had been fishing at

least on one occasion in 1995 (including sports fishermen, who can fish with handtackle without restriction, and household fishing) and the catch from recreational inshore fisheries was estimated at 48,000t. With regard to aquaculture, the total number of fish farms in Sweden is around 200 and the total production for consumption amounted to 6,600t in 1997. Key species include rainbow trout, trout and salmon.

Sweden has only been a part of the CFP since 1995 and the Swedish fishing administration is still in a phase of adaptation to meet the demands and possibilities of EU membership. Geographical borders govern the application of regulations within the Swedish fishery administration. The CFP is applicable only for marine waters outside the baselines and only for professional fisheries. Some commercially important species are common to both coastal and sea fisheries and therefore here the EU is involved in regulation of inshore fisheries. A typical example is the Baltic cod, which is subject to a TAC, minimum size and fishing ban periods, all agreed within the International Baltic Sea Fishery Commission. National fishing law governs fishing within the 12 nm limit and is administered by the Fishing Unit of the Ministry of Agriculture, Food and Fisheries together with the National Board of Fisheries, and provincial officials are also delegated some administrative tasks. The National Board of Fisheries has the exclusive right concerning regulation of the performance and management of the fishery and is responsible for the sustainable use of the aquatic biological resource. It utilises a range of regulations, including time restrictions, minimum size measures and protected areas. The diadromous species and the West Coast lobster are in one way or another regulated. As a general rule, freshwater species, with a few exceptions (vendace, pike and pikeperch) are not regulated. The National Board of Fisheries, together with the Provincial Government, Coast Guard and to some extent the municipalities, are the main actors in the field of professional and recreational inshore fisheries in Sweden.

Swedish coastal waters are either public or private. All waters within 300 m or inside the 3 m depth curve from the shore of the mainland or an island of more than 100 m in length are private and fishing rights belong to the owner. The owner can be an individual, collective or municipality. Collectives, comprising owners from neighbouring fishing areas, are sometimes organised in fishing associations which are established with the help of government subsidisation.

Non-licensed fishing in private waters is restricted to handtackle. In public waters the handtackle restriction is also applied to non-licensed fishing and there is an additional restriction concerning maximum number of gears (nets, fykes and long-lines). In the Gulf of Bothnia and at the West Coast there is no distinction between public and private waters concerning the non-licensed fishing. However, fishing for salmon in the Gulf of Bothnia and for oyster at the West Coast are the owners exclusive right. In public waters all fishing with stationary gears is forbidden for everyone not holding a professional fishing licence. Changes in the fisheries management system are commonly initiated

by local fishers, water owners or by biological expertise, though ultimately the National Board of Fisheries takes the decisions.

Fishing communities in the archipelagos have experienced a declining population during the last decades. Many archipelagos have become almost exclusively recreational areas and consequently are populated only for a short time of the year. Taxes and prices of estates have escalated, making it difficult for fishermen to buy and keep properties as well as fishing rights. Many professionals do not have adequate access to private waters due to complicated structures of ownership and as a result large water areas are grossly under-utilised. The coastal fishing fleet continues to decrease with the persistent decline of commercial coastal fisheries arising from a lack of fishing harbours, problems in distribution and marketing, a resource deficit and low market prices. This is set against the increasing importance of recreational fisheries which contribute some 75% of inshore fisheries catches; professional fisheries often have a weak position in relation to recreational as well as environmental interests.

To promote and develop inshore fisheries in Sweden a new management strategy is needed which can tap the existing unutilised resource potential. The vast number of different stocks for most non-quota species can, however, only be properly managed in a more local, decentralised system. It is important that the coastal fisheries are given higher access to TAC species and this might involve the allocation of individual/local or regional quotas. It is also important to evaluate the possibilities to create incentives for young generations to invest in the small scale coastal fisheries.

Coastal fisheries remain dependent on a few species and are thus very sensitive to fluctuations in stock sizes; however little is known about production capacity in the coastal zone and catch statistics are only reported for the commercial fishery. Methods for assessing coastal fish stocks which are less dependent on catch statistics are required. Furthermore, strong seasonal variations in fisheries also need to be smoothed by keeping fresh fish over longer periods and this requires moves towards the use of live catch gears such as fykes, trap nets etc.

Finally, while there are many improvements in the environmental situation in Swedish coastal waters, there are still a number of challenges. These include eutrophication and a general lack of awareness of the importance of shallow inshore waters as recruitment areas. While no environmental impact assessments have been made for Swedish fisheries, it is generally considered that they cause comparatively little harm to nature. The main problem for coastal fisheries is related to increased populations of seals. Here the development of methods and gears that reduce damage by seals and protect them from accidental deaths in nets, remains an important issue.

2.3 *Denmark*

Eva Roth

Denmark has traditionally not separated inshore from offshore or high seas fisheries. Nor is there a two tiered management system which differentiates within and outwith the 12 mile territorial limit. Fisheries are dispersed throughout fjords, coastal zones and the waters of the North Sea, Skagerrak and Baltic as well as the inner waters of Kattegat, the Sounds and Belts and the 'Southern Seas'. Defining and delimiting the inshore fisheries constitutes a problem in itself as it may be done on geographical grounds, by fishing behaviour or methods, according to divisions in fisheries statistics or simply common sense. Common sense dictates a geographic delimitation of 'inshore fisheries'. All Danish Fjords and especially the Limfjord must be considered inshore areas. The same goes for Øresund - the Sound separating Denmark and Sweden. In other areas, smaller vessels (up to 12 m) are restricted to coastal waters. Choosing 12 m as the lower limit for fishing offshore may be questionable, but constitutes the smallest size group to which disposable fishing capacity may be allocated for new vessels entering the commercial fisheries.

The economic and structural development of the 'inshore' fisheries reflects a decrease in its relative importance in the Danish fishing sector as a whole, though the level of activity is such that it can be considered essential to both local community and society. Comparing total catches by passive gear with the total catches of fish, excluding fish for reduction purposes and blue mussels, catches by passive gear constituted 6.9% of the volume and 14% of the value of Danish landings (569 m DDK) in 1997, though half the vessels using passive gear exceed 12 m in overall length. Based on preliminary sales note data for 1997, non-registered inshore vessels accounted for 589 tons of fish, valued at 8.5 m DDK, while 1714 under 12 m vessels, engaged in commercial, semi-commercial and recreational fisheries using passive gear, landed some 21,575 tons at a value of 266 m DDK (main species being cod, lumpfish, eel, anglerfish and salmon). Small trawlers in the inshore fisheries, totalling 336 vessels, caught some 80,978 tons at a value of 134 m DDK. Danish aquaculture is also important in inshore fisheries. It can be divided into 3 main branches: aquaculture of rainbow trout (primarily freshwater), mariculture of rainbow trout, and eel production in intensive freshwater recirculation systems. Denmark has 456 freshwater aquaculture plants (1994), 26 operating mariculture plants in cages at sea and 14 landbased saltwater plants. Most freshwater aquaculture production is concentrated within a few owners. This contrasts with the 35 eel production plants which are owned and run in connection with traditional farms. Estimated employment in the industry is 700 full-time employed in the freshwater aquaculture, 200 employed in mariculture and about 55 employed in the eel production plants.

Fisheries (commercial and recreational) and related activities (aqua- and mariculture) in the coastal zone and near shore areas are regulated in many different ways. The management system differentiates between commercial

fishermen, semi-commercial fishermen, recreational fisheries with passive gear and recreational fisheries with rod and line. In addition there are special regulations for aqua- and mariculture activities. Restrictions determine access to fishing rights and aquaculture activity in saltwater, whereas the land rights of riparian owners adjacent to freshwater resources determine fishing rights. A second level of regulations involve vessel and gear restrictions both in saltwater and freshwater. These effort regulations have been strengthened during the past ten years not only to counteract overcapitalisation in the fishing sector (and supplemented by a decommissioning scheme), but also as a means of balancing stock abundance, fishing effort and income possibilities for fishermen. The Danish management of inshore fisheries has also traditionally been considerate of local environmental conditions. This makes the number of local regulations comparatively high with 29 orders regulating local freshwater fisheries areas, 52 orders for coastal areas or fjords and 53 orders including fisheries relating to the management or preservation of restricted areas for birds, wildlife or for other purposes. At the same time, the aquacultural sector has been faced with a need to evolve rapidly to adhere to stringent environmental restrictions created to safeguard the natural environment. The legal framework for permission to produce fish is onerous. County Councils target the quality and use of freshwater and coastal areas within their jurisdiction. Regulations relate to production, feed levels, water condition and phosphorous, nitrogen and suspended solid content, and oxygen saturation. Establishment of a cage mariculture operation requires permission from the Ministry of Food, Agriculture and Fisheries, Ministry of the Environment and local authority.

Approximately 560,000 persons consider themselves to be anglers in Denmark and in 1993 a licence scheme for angling with rod and line was introduced by the Danish Directorate of Fisheries. Inshore fisheries management also includes a segment of recreational fishermen, sometimes termed amateur or part-time fishermen, fishing with a restricted number of passive gear, who traditionally fish for household consumption or barter their catches locally. This group also require a licence (33,559 licences were sold in 1997). Danish fisheries management aims to reserve fish for commercial fishermen who make a living from fisheries. Restrictive management practices are applied towards the recreational fisheries using licensed passive gear by limiting the number of tackle allowed and the location of nets. The struggle between the sportsfishers and this group of fishermen over who should have the right to catch the high value migratory fish species is pronounced.

While Danish inshore fisheries regulations follow the CFP and Community law, the extensiveness of Danish Fisheries Law stems from its historical and legal traditions and an administrative practice whereby local conditions have a strong influence on the implementation of overall objectives. Management and administration of inshore fisheries are in reality influenced by many different authorities in Danish legal practice. In general fisheries management is legally and administratively centralised, although hearings and the right to appeal by specific non-governmental organisations against administrative decisions are specified in law. Furthermore, within the Law on Freshwater fisheries,

provision is made for the establishment of an advisory committee in connection with management of fisheries, restocking and protection of fish, crustaceans and molluscs. This comprises representatives from various organisations including both commercial and recreational fishing interests, a representative from the County Councils and, when migratory fish species discussed, members from the amateur fishermen's associations. The Minister may also appoint a similar committee at local level who can propose specific local regulations. An advisory committee is also provided for within the Law on Saltwater fisheries and includes appointees from the associations of sportsfisheries, commercial and amateur fisheries and a member from the Danish Institute of Fisheries Research.

Emerging issues in the inshore fisheries include first, conflicts between different user groups in the coastal zone. The stringent legal segmentation and high level of organisation in interest groups make it possible for each group to participate in the management process and follow their private interests. The future battle for the rights to utilise the coastal zone will therefore partly be on political grounds. Secondly, the development of commercial small scale fisheries has shown a decline in relative importance, though a segmentation of the market for fish might alter the valuation of fish caught in this fishery. While the management scheme has reserved part of the TACs for small scale fisheries, decommissioning has resulted in a large decline in number of vessels and individual enterprises are characterised by low income. Thirdly, environmental regulation would seem to curtail possibilities for increasing production in mariculture or freshwater aquaculture and the potential for development rests with safeguarding long term planning and improved economic achievement. Fourthly, with the setting up of a new Ministry of Food, Agriculture and Fisheries in 1994 the emphasis has shifted from a sector specific to a more consumer oriented approach to food production based on environmental soundness and sustainability. This has led *inter alia* to an appointment of a committee on 'blue labelling' of fish and fish products. Finally, the market for eels is expected to change rapidly following Japanese demand for high quality '*kabayaki*' which has led to establishment of new production facilities. This will require more thorough protection of eel stocks in coastal habitats through regulation of fisheries, exports and restocking.

2.4 *Scotland*

Mireille Thom

[Note: a full paper was not available at the time of preparing the report. The original abstract is therefore reproduced in place of a state of the art summary]

While Scotland accounts for only 9% of the UK population, fish landings at Scottish ports represent some 70% by weight and 60% by value of all UK landings. Fishing is an important source of employment and income in many coastal communities. Some 60% of Scottish vessels are under 10 m and the Highlands and Islands, an area which was granted Objective 1 status over the 1994-1999 period, boasts 75 % of these small vessels. Most target shellfish,

while some fish for demersal and small pelagic species. Inshore fisheries are particularly suited to the fragmented Scottish coasts and the scattered communities which inhabit them. Often combined with other occupations, they sustain many of the most fragile economies in the UK.

Inshore fisheries are managed by the Scottish Office Agriculture, Environment and Fisheries Department. The impetus for local management provision comes through a centralisation of power resting with the Secretary of State. Inshore fisheries management is thus propagated through primary legislation and Ministerial Orders relevant within the 6 mile limit, which are reviewed in consultation with the industry on a triennial cycle. Opposition to the development of local management structures is founded on a conflict of interest between the local small boat sector, represented primarily in the northwest of Scotland and the more nomadic capital interests in the northeast. Devoid of any local management structures, local involvement of user groups is restricted to informal approaches. In western Scotland these include the activity of Area Access Management Committees, where local fishermen's associations voluntarily participate in local conflict resolution. There are moves within the industry, in cooperation with local government and other groups, to initiate local resource management controls through the establishment of Regulating Orders.

Its geographical remoteness has not shielded the Scottish inshore fisheries sector from the effects of international, EU and national policies. The globalisation of the market, depleting fish stocks, the UK's choice of measures for implementing the CFP, as well as a range of national policies concerning housing, transport and education, have all taken their toll on the inshore sector. Fishing effort is on the decrease, licences are being lost from the most vulnerable areas and competitiveness is difficult to achieve so far removed from the main centres of population. The future of inshore fisheries appears bleak.

It is possible that a partial reprieve might come from constitutional changes currently underway in Scotland, as fishing will be one of the priorities in the first Scottish Parliament when it is established in July 1999. The Parliament will be responsible for the management of coastal fisheries within the 6 nm zone. Nonetheless, for a number of reasons, caution should be exercised. The division of prerogatives from Westminster and Edinburgh has not yet been clearly spelled out. The Scottish fishing interests have long been calling for Fisheries to be managed from Edinburgh, given the disproportionate importance of the industry to Scotland, a move hitherto resisted by both Westminster and the rest of the fishing sector.

As a whole, several variables appear to be shaping the future of the Scottish inshore fisheries sector. They point to the need for greater decentralisation of fisheries management responsibilities and for the involvement of local stakeholders. The new Parliament may offer some potential to support the inshore sector and the challenges it faces in terms of market forces, policy measures and conflicts between resource users, although the forecast does not

appear to be optimistic. It is possible, however, that the Scottish experience could help muster support beyond Scotland for a different approach to inshore fisheries, involving preferential access for local communities.

2.5 *England and Wales*

Jeremy Phillipson

Defining the inshore sector on the basis of its intrinsic characteristics of fleet or sectoral interests is problematic. There is an imprecise divide between inshore and offshore vessels in terms of their technical sophistication and geographical range and the sector cannot be defined purely in terms of target species. An easier task is to define the management regime. Both the 6 and 12 nm limits are potentially valid boundaries for 'inshore fisheries', 6 miles as representing the limit to the existing dedicated inshore management system and the 12 as the extent of UK territorial waters. Formerly the 12 nm limit reflected the realistic limit to the geographical range of smaller vessels (under 10m) and for most shellfish fisheries, though new technologies have challenged the relevance of these limits in recent times.

Inshore fisheries are extremely diverse and cut across the spectrum of fishing methods and target fisheries. They include finfish, shellfish, migratory stocks, seaweed harvesting, sportsfishing and aquaculture. Shellfish remain the key species group for the inshore fleet with main species including cockles, mussels, crabs and scallops. In 1996 shellfish landings totalled 72,900t at a value of £53 million (36% of the total landings in terms of volume and 31% by value). The 10 m and under fleet, characterised predominately by family based enterprises, provides possibly the best statistical proxy for the inshore sector. At the start of 1997, of the 4887 vessels in England and Wales 78% were 10 m and under vessels, and they employed 5600 fishermen, or 56% of the total number of fishermen in England and Wales. It is an extremely diverse sector. At one end of the scale, vessels have the capacity to fish well beyond the 12 mile limit. At the other extreme, there are a large group of smaller vessels working static gears in close proximity to the port, prosecuting a number of seasonal fisheries. The inshore contingent comprises full-time commercial fishermen as well as part-time and recreational fishers.

The system of inshore fisheries management is essentially a two tiered system in a territorial and jurisdictional sense. Considerable management responsibility is held by regional Sea Fisheries Committees (SFCs) which represent a unique organisational structure consisting of representatives from local government and the local fishing industry. SFCs have powers extending out to 6 nm. However, overriding management authority within the UK 12 mile territorial waters is held centrally by the Ministry of Agriculture, Fisheries and Food (MAFF). Within bounds set by the division of responsibility between Member State and European Union, its competence is exclusive in the seas beyond the geographical remit of the SFCs, while within 6 miles MAFF and the Welsh Office confer an element of steering or influence over the SFC role and executes a number of specific management tasks

outwith the SFCs competence. Hence the system is characterised by a spatially and hierarchically diffuse allocation of responsibility. This complexity is increased when it is considered that the approach taken in England and Wales is only one distinctive strand in a UK inshore regime. Scotland and Northern Ireland are to date both devoid of formal local management arrangements. This distinction will become more important following the devolution of government in 1999 granting Scotland (and Wales) separate legislative powers.

The legislative basis to inshore fisheries management is hierarchical in form. Local and regional legislation is embedded within systems of national and European regulation. In addition, regulations are tailored to the needs of the small boat sector, sectorally (through licensing and a quota management system for 10 m and under vessels) and spatially through the SFCs. SFCs aim to secure the well being of the fishing industry through a range of enforcement, management and fisheries enhancement functions. Their regulatory role embraces byelaws (for the purposes of regulating fishing methods and restricting or prohibiting sea fishing), several and regulating orders (for both molluscan and crustacean fisheries) and enforcement (fisheries officers and patrol vessels). SFCs are also concerned with wider issues in the coastal zone. Perhaps the most significant interest relates to the issue of environmental conservation and their potential role in the implementation of the *EC Habitats Directive* in ensuring fishing is compatible with the necessary conservation measures which correspond to the ecological requirements of Special Areas of Conservation. SFCs are also now able to develop fisheries byelaws for environmental purposes; they must have regard for the precautionary principle in their activities and must include an environmental expert within their membership. While SFCs have the prime position within the organisational structure of inshore fisheries management there are other groups which play partial but significant roles. These include private interests, the Crown Estate Commissioners, harbour authorities and the Environment Agency which relates to salmon, trout, freshwater and eel fisheries.

The allocation of access rights appears to be a key theme in inshore fisheries and is represented spatially through a mosaic of access arrangements and sectorally in relation to the partitioning of the seas between gear groups or vessel categories and the allocation of user rights to non-fishing interests. Moreover, it is through such access arrangements where preferential processes often emerge. Related to the question of access is that of representation. The inshore sector's socio-economic position within the industry hierarchy and the regulatory system is arguably less favoured. Within the industry's own system of representation, there has been a partial sidelining of small boat interests and the sector is increasingly self-perceived as an underclass. In regulatory terms the small boat sector is warranted less focused attention by the fisheries administration and this arises from the large numbers of vessels involved, their geographical dispersion and uncertain activity rates, together with the relatively small catch quantities taken by such vessels. These features pose a considerable challenge to introducing a sensitive and effective regulatory system.

SFCs partially redress the situation through providing a spatially sensitive approach to management, an understanding of the local resource base and an awareness of local interests and politics. They have managed to incorporate the users themselves within the regulatory system through a balanced and accountable decision making structure and take a holistic approach to management within a broad remit and at low cost. However, there are clear challenges relating to differential performance among SFCs; the division of responsibilities between the centre and locality; the incursions of larger vessels within the 6 mile limits and impacts of non-fishing related activities on inshore fisheries; an insecure financial basis in light of local government organisation; and an internal constitution which is seen by some to lack legitimacy. A final uncertainty relates to their widened environmental remit and the inclusion of environmental participants within their membership which poses a potential challenge to the position and social legitimacy of the Committees through the introduction of new management objectives and actors. Establishing an acceptable reconciliation of environment and fisheries objectives is likely to be the crucial test. That marine environmental management will somehow presume against commercial interests is of uppermost concern and this is partly predicated on the existing underdeveloped level of understanding of the relationships between environmental science and fisheries activity.

The system of inshore fisheries management, based on SFCs, represents a unique and useful institutional model of local regulation, though the system would benefit from internal consolidation and the strengthening of existing functions. A review of byelaw making procedures with a view to developing a more proactive approach to management is a key requirement. Some scope for internal reform may also lie in a realignment of the membership with a view to providing a stronger and more legitimate representational base and there is also an argument for a partial reallocation of responsibility between MAFF and SFCs in order to improve the sensitivity of those management tasks currently performed centrally. At present the future form and role of SFCs is a matter of some speculation and very much depends on their involvement in marine environmental management. They may choose to consolidate their existing function within fisheries management. Alternatively, their fisheries remit might be relegated much more in favour of environmental and coastal zone management. On the future agenda, the subject of marine environmental management and its relationship to traditional fisheries approaches is likely to continue to feature predominantly.

2.6 *Ireland*

Nathalie Steins

Fisheries in the 12 mile territorial waters are often referred to as 'inshore fisheries' with the implicit assumption that these waters are the domain of smaller vessels mainly targeting non-quota species. The Irish 12 mile zone has a somewhat different status in that approximately 70% of the fleet depends on these waters for non-quota *and* quota species. In addition to the Irish fleet and a number of flagships, several Member States also have historical access rights

to the 6-12 mile zone. In this context, there is a strong argument to use the 0-6 mile zone as a geographical boundary for defining 'inshore fisheries'. This is problematic, however, as this area is also fished by the Irish pelagic fleet (vessels >24m) in the herring season and smaller vessels are not merely restricted to this zone for their activities. The following definitions are therefore adopted: *Inshore waters:* waters within the 12 mile territorial limit; *Inshore fishermen:* part-time and full-time fishermen targeting quota and non-quota species in the inshore waters in vessels <17m; *Coastal fishermen:* seasonal, part-time and full-time fishermen fishing exclusively for non-quota species in the 0-6 miles zone in vessels <12m; *Inshore fisheries:* all capture and culture fisheries within the inshore waters.

Inshore fisheries in Ireland can broadly be divided into two categories: (a) capture fisheries, including recreational fisheries, and (b) culture fisheries. The principal capture inshore fisheries are those for demersal species (cod, haddock, whiting), herring, nephrops, salmon and more specialist fisheries for crab, crayfish, lobster and bivalves. Culture fisheries are still in their development phase and have been heavily dominated by finfish farming. Recently, shellfish cultivation has become of increasing importance.

With 70% of its fleet depending on the inshore waters, Ireland's 12 mile zone is a crucial resource for capture and culture fisheries in both ecological and socio-economic terms. The inshore fleet (12-17m) includes both polyvalent vessels and dredgers and constituted 14% of the registered fleet (which totalled 1,352 vessels) in 1996. The coastal fleet (<12m) accounts for 65% of the total registered fleet. It is estimated that there is a further 900 small unregistered vessels. In 1994, Ireland also had 198 aquaculture operations. The shellfish aquaculture sector employed 1,574 people in 1995 of which 244 worked full-time. Finfish aquaculture is in the hands of a small number of national and foreign companies and in 1995 employed 1,038, of which 615 were full-time workers. Part of the aquaculture workforce consists of seasonal and part-time fishermen and their sons. A commercial salmon fishery is also important although employment in this fishery has decreased.

Sea fisheries management in Ireland operates through a centralised system with the Department of the Marine and Natural Resources (DoMNR) acting as the responsible legislative and enforcement authority. Management regimes are in place for herring and for pressure stocks such as mackerel, horse mackerel, sole, place, cod, hake, monk and megrim, though regimes for non-quota species, excluding salmon, are virtually absent and where they do exist mainly relate to bivalves. A lobster v-notching programme is in operation almost nation-wide through a network of approximately 30 local co-operatives. The Fisheries (Consolidation) Act 1959 is the principal legislation governing fisheries and stipulates regulations on access, registration and licences, fish sizes, gear, monitoring and enforcement. Under the 1980 Fisheries Act, seven Regional Fisheries Boards (RFBs) and the Central Fisheries Board were established which have statutory responsibility within the 12 mile limit for the management, conservation, protection and promotion of the inland fisheries and sea angling resources (including the issuing of

salmon licences) and for the protection of mollusc fisheries. In 1997 existing regulations were strengthened to include, among other measures, a cap on commercial licences. Management structures are proposed to facilitate salmon fishery management including the establishment of a National Salmon Management Commission, responsible for setting quotas; the salmon management strategy is to be implemented by the year 2000. At local level, it is proposed to establish Fishery Management Committees, operating under the guidance of the RFBs.

A number of national policy developments are likely to affect inshore fisheries. In particular, the new Marine Policy for Ireland, which aims to develop a new and fully integrated approach to the marine resource, and a draft Coastal Zone Management Policy. In addition, the 1997 Fisheries (Amendment) Act, which takes direct responsibilities for licensing away from the Minister and makes provision for increased public consultation, should lead to decreasing conflicts over aquaculture operations. At the same time, there is ongoing discussion over commercial versus recreational salmon fishing. The present policy favours the re-direction of salmon stocks from interceptory commercial exploitation towards recreational fishing. In fact. angling interests and the tourism industry are calling for the phasing out of drift netting. In view of international decisions on the banning of drift netting, and the continuing decline of net income from commercial fishing, it seems unlikely that drift netting will continue to remain an inshore fishing activity in the long term.

Key stakeholder issues include: the centralisation of fishing capacity and an increasingly aged fleet; difficulties in monitoring the large number of small unregistered vessels; socio-economic consequences of restrictions on the use of vessels for dual purpose (fishing and tourism); marketing difficulties and reduced prices due to increased imports and competition; a lack of investment and infrastructural facilities; a lack of regulatory systems for management of and entry into non-quota fisheries and overfishing as a result of overinvestment or incursions from larger vessels in inshore waters (and associated gear conflicts); concern over the impacts of free riding, marine pollution and mineral extraction; a lack of research into inshore stocks and their management; and constraints on the development of aquaculture development given a lack of suitable production sites, investment opportunities, disease problems and competition for space.

It is possible to identify four emerging issues of particular importance. Firstly, the shortcomings of a centralised management approach are evident, including the absence of locally specific management regulations, conflicts between different marine users, difficulties in monitoring of fishing activities and a lack of opportunities for proactive management at the local level and empowerment of local interests. Secondly, the sector is facing increasing structural problems in relation to fleet and infrastructure, including the increasing presence of old vessels in the inshore waters, difficulties in assuring product quality and the marginalisation of small scale enterprises which lack investment possibilities. Thirdly, it is apparent that there has been a shift towards 'conservation

mindedness' amongst fishermen targeting non-quota species. In this respect the lobster v-notching programme may represent a useful example to inform similar self-management initiatives. Finally, a case can be made for a devolved management approach whereby all stakeholders are involved in the evaluation and design of local regulations. This is of particular importance in the context of the continuing development of the coastal waters into a multiple-use resource.

2.7 *The Netherlands*

Rob van Ginkel

The 12 nm limit would seem useful to distinguish between inshore and offshore fisheries in the Netherlands. In fact, only vessels not exceeding 300 hp engine capacity (273 in 1993) are allowed to fish inside this limit. Some policy documents equate coastal fisheries with specific littoral and sub-littoral areas and include in this definition the Wadden Sea and the Dutch part of the Eems-Dollard estuary, the Western and Eastern Scheldt and its tributaries in the province of Zeeland, and the Voordelta, all of which are significant as spawning and nursery grounds.

Inshore fishing in the Netherlands constitutes only a small portion of the overall fishing industry, while in terms of fleet size and employment it is one of the smallest in the EU. The fishing fleet as a whole consists of 457 beam trawl cutters, 12 pelagic freezer trawlers and 143 shellfish vessels, with a total crew of some 4,000. In terms of economic output, mussel cultivation, shrimping, cockle fishing and oyster farming dominate the inshore fisheries and account for 20% of the value of fish landings in the Netherlands (amounting to Dfl 1,000 million in 1995). The Zeeland township of Yerseke is the country's foremost shellfishing community.

Coastal fishing is mainly subject to national policy based upon the Fishery Act. Inshore fisheries policy aims to manage fisheries (notably through restrictive licensing/permits and the leasing of shellfish farming plots) and regulate them in relation to other objectives, such as nature, and other industry sectors. Growing pressure for the integration of fisheries concerns and marine environmental management led to the 1993 policy document *Vissen naar evenwicht* (Fishing Towards a Balance) which gives shape to the Sea and Coastal Fisheries Policy (1993-2003). Concomitantly, fisheries policy is intertwined with government policies regarding water management, nature conservation and planning, which makes for a complex institutional framework, especially in inshore fishing. Management of inshore fisheries is further complicated by a large number of designations and protected areas. Non-binding regional policy plans are in place throughout the coastal fisheries and most of the Dutch Wadden Sea is designated as a publicly owned nature reserve. The Wadden Sea Memorandum represents a binding physical planning document defining the overall objectives of conservation, management and use of the Wadden Sea. In addition, the area is subject to international agreements such as the 1982 Joint Declaration on the Protection of the Wadden Sea.

The Dutch state opts for the principle of interwovenness in its fisheries policy meaning that exploitation is allowed only if fisheries and nature can coexist. The Sea and Coastal Fisheries Policy encourages fishermen's responsibility and social control through self-management with the hope of achieving a better balance between fishing activities and nature values. Under the policy 60% of a specific minimum level of cockle and mussel seed is reserved for seabird consumption and TACs are applied when this situation takes effect. In addition, fishermen organisations and state representatives, in consultation with environmental organisations, have agreed to restrict fishing in intertidal zones. 26% of the intertidal zone in the Wadden Sea and 14% in the Eastern Scheldt are closed for shellfisheries altogether. A co-management scheme is in place for the mussel and cockle industries involving the establishment of producers' organisations (POs) which participate in the development, implementation and enforcement of management measures and which has resulted in increased fishermen support for management regimes. Under this scheme the industry is responsible for implementation of the *beheersplan* which incorporates measures aimed at the integration of fisheries and nature on a basis of tangible agreements. The plan is approved by government and environmental groups and applies for a 5 year period. Management measures are implemented in yearly fishing plans drafted by the POs and relate to the area, duration and time of fishing, gear restrictions, TACs, capacity reductions, control and arbitration. All vessels must be equipped with a 'black box' so that fishing activities can be monitored and sanctions are applied when rules are breached. This management system involves the Ministry of Agriculture, Nature Management and Fisheries (MANMF) which performs policing functions, the leasing of plots and determines closed seasons and locations for dredging, and The Fish Board, which determines quality standards and minimum prices.

Under the Sea and Coastal Fisheries Policy non-mechanised cockling is regulated through a restrictive permit system and a division of the total quota between mechanised and non-mechanical cockling. Mechanical fishing is not allowed in specific areas which are reserved for exploitation by non-mechanical harvesting. The number of Dutch shrimpers operating in the Wadden Sea is also limited. Almost half of them are allowed to shrimp in coastal waters out to a 3 nm limit, and some hold a Certificate of Soundness entitling them to fish in the 12 nm zone. There are a great variety of other seasonal inshore fisheries which involve various species and catching methods. Surprisingly little is known about these and other inshore fisheries. Data concerning various types of inshore fishing, other than shellfish and crustacean fisheries, is sparse.

The co-management system has produced a number of benefits. Notably, fishing plans in the mussel and cockle industries have led to quality improvements and economic advantages as a consequence of concentration of licences. The regime has also increased the legitimacy of state measures and enables an integrated and holistic approach to the management of coastal waters. Shrimpers have also enjoyed economic benefits from the licence system since potential competitors cannot enter the business and black boxes used by cockle and mussel fishermen have allowed more effective monitoring. Drawbacks, however, have included financial setbacks due to decreasing output and even closure of the fishery in the

cockle sector. There is also a perceived decrease in the level of freedom for use of skills and experiences in maximising landings. Competitiveness in fishing has facilitated a system of PO controlled rights and obligations. The licence system also appears to privilege those who are presently working in the industry as licence holders and obstructs entry for prospective newcomers; many petty entrepreneurs have been ousted from the industry and the market values of quotas and licences have proved costly. In addition, in the shrimp sector not all fishermen are members of POs which can undermine the co-management regime and introduce free riding. There would seem to be a need for government to enforce PO membership or to make their regulations binding upon non-members.

The key issues within and impinging on inshore fisheries involve predominantly multiple use conflicts. Firstly, in recent years conservation organisations have become new stakeholders in the decision making process. Inshore fishermen are subject to increasing interrogation and opposition regarding the impacts of their activities on marine habitats and ecosystems. A scarcity of mussels and cockles in the early 1990s gave rise to intensified opposition and it is possible that in the integrated management process the conflictive stance of environmentalists may undermine the legitimacy of the co-management policy. Secondly, multiple use of the inshore marine domain for fishing purposes can also lead to conflicts between various groups of fishermen using the same locations and whose activities cannot be conducted simultaneously. If exploiting similar niches, stationary fishing methods cannot take place alongside fishing with mobile gears. Similarly, mussel farming is carried out in privatised locations which are preferred by cockle fishermen and shrimp fishermen with different modes of resource exploitation. Thirdly, inshore waters are increasingly used for purposes other than fishing and nature conservation. Holiday making, recreation, military activities, maritime traffic, sand and shell dredging, oil and gas exploration and exploitation, the building of coastal estates, industrial and harbour developments and agriculture, all interfere to a larger or lesser extent with inshore fishing and shellfish farming. Finally, in addition to these multiple use conflicts, there may be ecological and economic problems which can be exacerbated by monoculture production. Considerable fluctuations of natural stocks can occur in inshore fisheries without an apparent relationship with stock-recruitment. It is possible that shellfish cultivation can enhance production, but at the cost of ecological diversity.

2.8 *France*

Katia Frangoudes and Karine Dusserre

Identifying and quantifying coastal or inshore fisheries in France is a demanding task. Various approaches have been adopted: most use criteria such as vessel length, GRT, or fishing trip duration, while others are based upon the economic organisation of the fishing unit, the collective organisation of the fishermen or the spatial range of operation. The division between inshore and offshore fishing activity in France is perhaps best defined by spatial characteristics rather than technical or economic attributes of the fishing units.

Indeed, in terms of today's policy concerns, notably the renegotiation of access derogations after 2002, it appears that geographical criteria are most relevant in identifying inshore fisheries. Such a territorial approach is most likely to play a significant role in framing future access and use rights of these fisheries. While these limits already play an important role in management practices, the issue is whether they will gain more legal consistency and recognition at the European level.

French law defines 'small scale fisheries' as involving fishing trips of less than 24 hours and 'coastal fisheries' as fishing between 24 and 96 hours. For the purpose of allocating fleet subsidies, and taking into account differences in fishing practices, coastal vessels are classed as under 16 m when registered in harbours on the North Sea, Channel or Atlantic coast, under 18 m in the Mediterranean and under 12 m in overseas territories. A typology based on vessel length is also used for the management of fleet reductions under the MAGPs, which distinguishes vessels under 12 m as small scale, those between 12 and 16 m as inshore artisanal fisheries, and from 16 to 25 m as offshore artisanal fisheries. Most of these administrative classifications do not, however, contribute much to understanding the logic of resource exploitation and fishing management strategies.

The majority of the French fishing fleet comprises units under 12 m in length: in 1996 they represented 4,766 boats (of which 1,700 operated in the Mediterranean), that is 73% of the French fleet, and employed some 6,468 fishermen. There is a significant diversity of fishing practices within the industry generally which relates to the varied extent of the continental shelf and particular port specialisations. Indeed, a diverse range of fishing techniques is used by vessels of less than 12 m throughout the Channel, the Atlantic Ocean and the Mediterranean Sea. Gear design and target species also vary, as does the relative importance of each *métier*. Most often, these small vessels are polyvalent and use different gears according to season and target species, though most operate within the 12 nm zone. The 12-16 m fleet tends to be more specialised and operates both within and outwith this limit, at least where the extent of the continental shelf allows. The Mediterranean inshore sector is a particularly heterogeneous component of the French fleet. Fishing activities are conducted by small and medium scale day trip units, the former working in coastal areas and lagoons for benthic and demersal species, the latter in deeper waters catching demersal and pelagic species. In French fisheries generally, statistics give only partial information on small unit production, as a large part of production is sold directly at the landing point without any formal recording. Otherwise, sales are conducted within auctions or through producers' organisations.

Overall responsibility for fisheries policy is vested with the Directorate of Marine Fisheries and Aquaculture within the Ministry of Agriculture, Fisheries and Food. Fisheries administration comes under the authority of the Maritime Affairs which also performs policing, economic and social support functions and participates in fisheries management and decision making at all levels. A range of fishermen's organisations are also relevant to coastal fisheries. Some

exist in all coastal regions in France including the *Comités Locales des Pêches*, the producers' organisations and the maritime cooperatives. Fishing boat owners, crew members, fishmongers and processing plant staff are represented by a pyramidal elective structure organised at the local, regional and national levels. Each maritime district has its own local committee which represents fishermen and gives advice or suggestions to the local administration. Proposals for regulation must be transmitted to a regional committee; however the local committee is responsible for implementing regulations set at national or regional levels concerning fishing effort control and technical measures. The regional committee coordinates proposals coming from the local level while the national committee participates in the elaboration of the national fisheries policy. In addition to the committees there are the producers' organisations (POs) responsible for fish marketing activities. POs of artisanal fishermen are federated at national level through the Federation for Artisanal Fisheries Producers' Organisations (FEDOPA). Other fishermen's organisations, such as the *prud'homies,* are specific to the Mediterranean. Having existed for almost a thousand years they have jurisdiction over a specific sea territory, the authority to make rules in relation to conflict avoidance and the power to judge without any possibility of appeal. Thus they are a paternalistic corporative institution involved in the management of fishermen rather than fish.

French fisheries fall under European legislation regarding quotas, licences and technical measures (though a common resource conservation policy has only been developed in the Mediterranean since 1994). In a number of respects, however, small scale fisheries may avoid some European regulations. Many small polyvalent units, for example, are not significantly affected by quota management as they often work non-quota species. Similarly, licences are not obligatory for boats of less than 10 m which operate within inshore waters. Small scale fisheries, however, must respect various additional local regulations set by local fishermen through the local committees or POs in the Channel and the Atlantic Ocean, as well as the *prud'homies* in the Mediterranean, rules which are often ratified by the administration. Specific regulations may be in place for certain gears, for example scallop fishing licensing in the Bay of Saint Brieuc and in the Bay of Brest, and a ban on trawling within the 3 nm in the Mediterranean established through the *prud'homies*. Other local management arrangements include 'squaring' (*carroyage*) where the sea is divided between static or mobile gears to avoid potential conflicts. Technical measures on mesh size, net length or numbers of hooks are also in place.

Within fisheries there seems to be a continual outbreak of new conflicts and, typically, management responses tend to be reactive. In the French Mediterranean at least, an important source of conflict solving ability is located in the *prud'homies* which aim to ensure that wealth creation from the use of local resources contributes in the best way possible to the welfare of the whole community and to the fishermen themselves. There are, however, questions about the limits of such organisations and their rights and jurisdiction in relation to national law. Furthermore, while *prud'homies* may

have been able to cope with the challenge to their authority from the development of offshore fisheries, it is less clear that they will be able to answer the challenges posed by competition with non-fishing activities.

Besides fisheries, other human activities have a direct or indirect impact on the productivity of inshore marine ecosystems. River or waste management is important, particularly in the case of closed and fragile ecosystems like the lagoons (*étangs*) on the Mediterranean coast. Another important issue involves competition for space among fisheries user groups and other uses of the coastal zone, including aquaculture, tourism, leisure fisheries, harbour construction and navigation. Tourist development is particularly significant as is the increase in marine leisure activities among the resident populations. The partition of traditional fishing areas leads to several conflicts between professional and leisure fishing. Leisure interests are accused of not following rules and damaging the local ecosystems and there is competition for space between fishermen and leisure navigation both within the harbours and in the inshore waters.

3.0 Thematic Issues

3.1 *The Social Organisation and Reproduction of Inshore Fishing*

David Symes

We know little about the forms of social organisation and processes of social reproduction of inshore fishing in late twentieth century Europe. However, attempting to invoke parallels from small scale farming in Europe is fraught with danger. While there are parallels in terms of a predominance of family based enterprises, high levels of risk and uncertainty, dependence upon strong seasonal rhythms and a tendency for part-time engagement in a pluriactive economy, there are significant differences. In fisheries the nature of property rights is less clearly defined. Neither the fish, nor the areas where they are to be found, are subject to normal rules of ownership. In the past, and especially in inshore waters, there were many forms of 'closure' of the commons which constrained the notion of free access to fishing grounds and more recently intervention has further refined the concept of access rights through licences and quotas which have led to a disruption of established patterns of social organisation and reproduction in inshore fisheries. Other distinguishing characteristics include the separation between home and workplace and the creation of 'separate worlds' for those who fish and those who remain at home. In some instances, however, the social systems of small scale farming and inshore fishing interlock within a dual economy.

Family and community provide the essential keys to the social organisation of inshore fishing. The principal assets - vessel, gear and fishing rights - are held in private ownership. Ownership is widely distributed within and shared among a fairly large number of petty capitalists. In common with the system of shared ownership, the means of remuneration is based on the principle of a share of the value of the catch. Today, new entrants are frequently discouraged by the high initial outlays and by the reluctance of both public and private finance to capitalise a new venture. Nonetheless, there has been a surge in the building of small boats, marking, in some instances, a redeployment of capital assets to circumvent regulations applied to larger vessels.

Inshore fishing is normally conducted from small boats. It is given to periods of intense seasonal activity interspersed with periods of 'inactivity' when the owner is engaged in maintenance and repair and the crew disperses into non-fishing related employment. The composition of the crew is commonly built around a nucleus of agnatic kin drawn initially from the same family household and evolving with the death or retirement of the father into brother:brother groupings. Scarcity of agnatic kin will mean the extension of the recruitment process to include affinal kin, 'friends', or hired men. The egalitarian principle evident in the share system of ownership and remuneration also extends to the organisation of the crew on board. For most inshore fishing activities there is little division of labour and virtually no hierarchical structure, while the skipper is *primus inter pares*. Much has been made in the literature of the 'skipper effect' as a principal cause of variations

in achievement. Success is also influenced by the level of cohesion and experience of the crew as a whole.

Within the fishing community there is usually a strong gender based division of labour. Put very simply: men fish while women manage the household. Although inshore fishing rarely involves long periods of enforced absence from home, the unsocial hours involved in some of the more intensive seasonal fisheries can disrupt normal family life. In most traditional inshore fisheries, women formed an important part of the 'shore crew' and, where fishing formed part of a dual economy of farming and fishing, their work would often involve three competing areas of activity: home and family, the farm and the fishing enterprise. With the development of factory based processing, women moved into the processing plants and were able to provide a valuable source of additional income for the household. The traditional stereotype of the woman's role within the fishing community is breaking down through a tendency for women to become directly involved in fishing and increasing occupational separation between men and women reflecting a growth in opportunities for women outside the family and beyond fishing.

Succession and inheritance of the inshore fishing enterprise differ from certain other family businesses. Succession can occur early in the household cycle as the skipper succumbs to the physically demanding work and retires to take on shore based employment, leaving the eldest son to assume responsibility. Furthermore, the fishing enterprise is subject to regular renewal of the principal asset (the boat) and is not readily divisible among competing heirs. Modern forms of ownership where, for example, outside capital is involved or where wives have been incorporated within the firm, will tend to complicate the transfer of the enterprise.

Traditional patterns of social organisation were largely developed within the context of a local community which provided a continual source of capital, labour and social security. In some cases, this picture of the fishing village has been replaced by the image of a 'company town' shaped by the incursion of a large scale, capital intensive processing industry where hierarchical social structures have replaced egalitarian relationships. More commonly, the social and spatial boundaries of the fishing community have been blurred by demographic processes and the replacement of indigenous fishing families by communities, retired persons and by holiday homes. Former localised kin based networks have been both diluted by the introduction of well qualified 'outsiders' and dispersed by greater individual mobility. The socialisation of children is less strongly oriented towards fishing, reinforcing the experience of post-primary education. The territorial notions of the fishing community has thus been replaced by a functional community of well defined groups who share a common interest in a fishery but who have no other specific geographical or social ties.

At the same time that customary coping strategies and traditional processes of social reproduction have been breaking down, inshore fisheries are facing new pressures arising from resource depletion, regulation, the privatisation of

property rights and globalisation of markets. Another challenge comes from coastal aquaculture, including competition for space, labour and markets and risks of pollution to the coastal environment and disease transmission. The state's role in sustaining the inshore fishing sector has been torn between support for rationalisation and the need to protect employment. The continued designation of six mile limits is intended to afford protection as is the exemption of small boats from certain obligations. By contrast, the introduction of rules governing minimum levels of participation in fisheries appears to disadvantage part-time fisherman and the introduction of ITQs has, in some cases, precipitated a decline in the number of small boat enterprises.

Today the established systems of social organisation and reproduction are threatened internally by widespread changes affecting the structure of the domestic household and the dilution and dispersal of kinship ties, and externally by resource depletion and the usurpation of local management responsibilities by state-led management institutions. However, inshore fishing remains a numerically significant sector of Europe's fishing industry. Family based enterprises prevail, still reliant upon a nucleus of close kin but ever more in need of supplementing domestic sources of capital and labour from outside the nuclear household.

3.2 *Reproduction and Social Organisation of Mediterranean Fishermen*

Katia Frangoudes

In the past, the skippers of small scale vessels were always helped onboard by one or more seamen, often a member of the same family. Nowadays crew numbers have decreased due to a reduction in incomes, and often only the son of a vessel owner will work alone onboard. He may, in turn, become owner of a boat, through purchasing a boat with a licence or by inheriting a boat, or he may join another boat. In contrast, the owners of trawlers and purse seiners are usually skippers and will often work together with brothers on a share basis of remuneration. A brother will often sell his share in the boat in order to start up with a son. It is, however, increasingly difficult to become a boat owner in Mediterranean fisheries given a reduction in fishing effort under the CFP and boats are typically under multi-ownership. Obtaining a boat and fishing licence is problematic given the costs and commercialisation of licences and the difficulties in obtaining available boats.

To be classed as a fisherman, a person must earn the main part of his income from fisheries, be registered, and pay social insurance as a fisherman. Boat owners also require navigation experience or must prove that fishing is the main source of their income. France, in fact, is the only Mediterranean country that requires a diploma to become a skipper/owner. Here crew must also be trained, and pass an exam before being able to work. For most Mediterranean crew (with the exception of engineers) there is no training obligation and the job is learned onboard. Most crew are therefore unskilled when they start working. Except for the skipper and engineer, who require specific skills, all positions on board may be occupied by any of the crew and within the system

of work organisation they may move from one position to another. Crew work, however, appears to be less attractive to young people and in this respect the profession as a whole needs to be re-evaluated. Crews are generally decreasing in size given the introduction of social insurance systems, mechanisation and economic restrictions. Vessels increasingly hire immigrant workers from third countries, notably from North Africa, often on a seasonal basis or on short term contracts.

Women are mostly absent from the production sector but play an important role in maintaining the household and raising the children. Some are involved in the mending of nets given the reduced availability of crew and frequently they will work in processing plants. In many places women will also manage their husband's enterprise through, for example, keeping of accounts or banking, and will often speak for and lobby on behalf of the enterprise. Others will be active in fish selling. They play a important role in the renewal of the maritime population through the encouragement (or discouragement) of sons to enter fishing. For some children their choice in joining the industry may, in part, be influenced by the gear type used by their father, with inshore fisheries often having less attraction.

Mediterranean inshore fisheries, based within 12 nm, often form the basis of social structure and the local economy in many coastal villages. The industry has learned how to adjust its activities to many transformations and modifications, such as the introduction of trawlers and purse seines in the 1950s which had significant consequences for the social structure of the community and the fleet structure. Reduced catches is a new phenomenon that they must account for. Here inshore fishermen may be more able to adapt to new market demands and scarce resources than the larger vessels. Decreased incomes and resources are often countered by intensified fishing or decreased numbers of crew.

While some areas, often for economic or regional development reasons, are attempting to encourage young people into the industry, the most serious problem for the sector continues to be the non-renewal of the maritime population and the increasing average age of fishermen. Efforts by the authorities must be made to tackle this problem. European policy, however, tends to favour fleet reduction or the redeployment of fishermen, rather than the encouragement of new entrants.

Women can play an important role in reconversion and diversification strategies. They are often more open minded to strategies for providing additional income for the household. They may, for example, encourage diversification into fish farming or marine tourism. In many cases the survival of Mediterranean inshore fisheries depends on tourism development, though this can lead to a radical transformation of village structures and pose a number of conflicts and negative effects. Environmental claims may pose an equally significant challenge to the survival of some Mediterranean fishing communities.

3.3 *Life-Modes and the Fishing Industry*

Kirsten Monrad Hansen and Thomas Højrup

Fishing is not necessarily dominated, as it is in many other industries, by a capitalistic division between investors, companies and employees. European society reveals both a simple commodity mode of production and a capitalist mode of production often existing side by side. Each contains a number of possible logical variants which coexist in changing patterns of interdependence and opposition. Under various forms of dominance of finance capital or state planning, private competition oriented entrepreneurial capitalism coexists with monopoly capitalism and state capitalism, and with simple commodity production in the form of (1) family organised units in agriculture, (2) partnership companies and (3) joint ownership of fishing units. The simple commodity production fishing enterprise is characterised as particularly resistant to market fluctuations and can function for long periods without earning income commensurate with the value of the plant and equipment involved in production. The owner operator's income can be supplemented by ancillary activities so as to keep the enterprise afloat. Such enterprises can prove resilient and survive under conditions where capitalist business capital would be withdrawn from production or invested in other sectors.

It is generally acknowledged that technological development gives rise to economies of scale in an evolutionary unilateral way. This, however, is not always the case as the development of new and more advanced technologies may negate the economic advantages of large scale operations. Furthermore, in Denmark, fishing in coastal waters, in the Baltic, North Sea and Atlantic Ocean, is based on resources that are dispersed, so that advantages inherent in large scale operations, such as segmentation and specialisation of the fleet, can no longer result in increased productivity. In fact, the efficiency of fishing and the required quality of the fresh fish product requires fishing units to be fast, flexible, suited to catching smaller concentrations of fish and to alternating between types of catch. Hence, fishing with small, fisherman owned ships, equipped with advanced technology, is highly competitive.

The core of a simple commodity production unit is structured according to social relations in the form of family ties, cooperative relations and other ideologically based social forms which bind the producers together in cohesive production units. Joint ownership and share arrangements serve the same function and concepts of 'partners' and 'family' assume a different meaning than they do among wage earners. In partnership and family enterprises, the prime concern may be to maintain production; however, it is not absolutely necessary to earn revenue commensurate with the interest on the value of the plant and equipment beyond that needed for replacement and to keep up with developments in productivity. The goal may ultimately be to be able to remain self-employed and no mechanism ensures that they will produce at what would be an optimum level from a strictly financial point of view. A fall in prices is not automatically countered by a decline in production due to the withdrawal of producers. Simple commodity producers will instead try to increase their

production or supplement their revenues and subsidise the enterprise through secondary activities or wage work. The concept of 'work' therefore assumes a different cultural content than it has for wage workers. There is no distinction between 'work time' and 'free time'. Free time has no meaning: you are never free from work because you are never put to work; instead, you put yourself to work because this is the prerequisite for, and the essence of, being self-employed.

Wage earning workers in the capitalist mode of production possess neither the means of production nor the qualifications to set in motion and control the entire production process. The worker is incorporated into a long and complex production process, wherein their task is confined to a single process. For the employee, work serves the function of providing an income which will make it possible to live a meaningful life beyond work. Work is merely a means of earning free time and is carried out not for its own sake, but with the aim of achieving a wage. In the wage earner life mode one does not work for the sake of the business and the enterprise's competitiveness is of no concern. On the other hand, in a career oriented life mode one strives to make demands on oneself by fulfilling the expectations of leadership, by improving qualifications, by involvement in tasks, and by surpassing colleagues. The career professional does not attain greater freedom by becoming self-employed or by earning a higher wage, but through advancement. The concept of freedom and involvement is wholly confined to the work situation and to a career perspective.

In western Europe both modes of production have coexisted for hundreds of years in fishing. The capitalist mode dominated the high sea fishery from the fifteenth century and in the twentieth century the simple commodity fishing units expanded their field of operation at the expense of the old capitalist company fleets. Similarities between the differentiation of fishermen in different countries are partly explained by different resource management regimes. One variant of the simple commodity mode of production refers to 'simple catching and commodity mode of production' based on 'the principle of catch'. This principle structures the access to the primary object of labour in fishing. Here, for example, the state may exempt fishing resources from private property rights and thus allow fishermen free access. Common rules regulate the way in which fishing units relate to each other and the state implements measures to settle disputes. Both modes of production are viable under the principle, though capitalist investors prefer alternative management regimes such as ITQs as they allow them to buy the right to catch and monopolise the object of labour.

The simple commodity mode of production concept is elaborated on the basis of a purely commodity market concept. Overheads constitute on the production side the means of production which makes it possible to increase the produced quantity or quality or to reduce the cost per unit. The production unit's praxis consists of managing the means, such that the expenses of the production cycle and its earnings cancel out. There are four manipulable components (quantity, quality or price, overheads, and unit costs) and four

related forms of reasoning. First, we must spend that amount of time at sea as it takes to catch only the quantity necessary in order to cover our overheads. Second, if prices continue to fall we must invest in the operational equipment so that we can lower the unit costs or raise quantity. Third, when prices are expected to remain low investments in operational equipment must not generate expenses larger than the ability to catch the quantity of fish to cover overheads and unit costs. And, finally, we must organise a catching unit whose crew members, vessel and equipment are ensured part of the total income which corresponds to their share of the total overheads, and which together can produce at a level which covers these overheads. This form of reasoning describes the basic features which mould a share based fishing fleet into a flexible, dynamic whole of internally competing and cooperating units and explains why share based units are in a constant state of reorganisation. The simple commodity mode of production, found in much of the inshore fishing industry, has an advantage because of its flexible organisation, in that the components of the fishing units are able to unite in a flexible manner. Thus, the ownership pattern of waters and the management system are of great importance for the conditions of existence of life modes. Furthermore, the maintenance of viable fishing villages moulded by the self-employed life mode is closely connected to the choice of management systems.

3.4 *The Ways of Fishers: Cultural Dimensions of a Maritime Occupation*

Rob van Ginkel

European fishers often constitute close knit occupational communities. Fishing is not merely a job, it is a way of life. The cultural forces that facilitate a group identity include: esoteric knowledge, skills and expertise; extreme or unusual work demands; consciousness of kind; pervasiveness (social relationships mould the realms of work and leisure); norms, values and perspectives that apply to work routines and that bestow positive self-images and social value on the tasks; standards for proper and improper behaviour; work codes surrounding relatively routine practices; mental maps giving primacy to the occupational group as a reference group; consistent cultural forms (including a special language, shared rituals and taboos, occupationally unique symbols, myths, stories and jokes); and compelling accounts attesting to the logic and value of these cultural forms. Fishers derive satisfaction from their work and they are proud of their identity as fishers. Fishing can be of modest economic importance yet be the subject of considerable cultural attention, and provide a source of communal and personal identity. In strikingly different settings, one may encounter among fishermen remarkably similar ideas concerning work ethos, egalitarian ideology, rhetorics and concepts of independence, self-reliance and freedom. A good deal of difference also exists between fishing systems and the ways in which they are embedded in encompassing socio-economic structures and cultures. Different modes of production will, for example, entail different social relations, rationales and motivations. Even spatially and socio-economically proximate fishing communities can exhibit vast differences in mental maps, cultural rules, practices, styles, goals and aspirations. Similarly, there is diversity with respect

to preferred modes of regulation, institutional arrangements, organisations and management regimes.

In becoming a fisher, each prospective fisher must learn through enculturation or socialisation the cultural and behavioural modes of the occupation. This process includes internalising norms, values, attitudes, interests, knowledge and skills. In the relatively small crews in inshore fishing, crew members are usually recruited in a local network of kin, neighbours, friends or community members. Occupational inheritance is common and continuity in family firms highly valued. Fishermen's wives often have an important part in giving offspring an outlook on life which makes fishing an attractive occupation, though for many communities the opposite occurs given a pervading crisis. Many fishers prefer to work with agnatic kinsmen and especially so in the inshore sector. In addition to keeping income within the (nuclear) family, family firms enable the pooling of social, economic, cultural and cognitive capital and are relatively fluid and flexible units. Work permeates the entire existence of the household and seeking a profit is not the only motivation. In many communities there is a sharp division of labour along gender lines. Men mostly do the fishing while women perform shore based tasks, manage the household and raise the children. Often the economic contribution of women will underwrite fishing activities and they often take an active role in the fishing business. Their organisational, economic and emotional contribution to the fishing household can be crucial for its flexibility and resilience.

Occupational communities of fishers are often characterised by an egalitarian ideology which emphasises equivalence and plays down status differences between crew. The share system of remuneration also increases labour motivation, cooperative behaviour and fosters a spirit of egalitarianism and the fact that crew membership, kinship, friendship and community ties are often intertwined also helps to mitigate status differences. However, even if crew relationships appear egalitarian, there are status and prestige differences in practice. A skipper has certain privileges and he may receive a higher share. In inshore fishing, however, the degree of specialisation is low, the division of labour simple; tasks are shared or exchanged through rotation and an egalitarian ideology is more adhered to.

In many fishing communities an ethos of freedom and independence prevails. Independence and self-employment are highly valued, particularly among inshore fishermen who own their own boats and work alone or with a small crew of kin. Despite individualism, fishers do cooperate and can be seen as 'cooperating competitors'. At local level, face to face relationships sometimes make for a 'moral economy' in which transactions between fishers, merchants and processors are to a certain degree mitigated by shared community norms and values. The interplay of competition and cooperation also holds true with regard to access to and use of resources. However, while fishers may resort to collective action, formalising cooperation is not always successful given that petty fishers are a heterogeneous group expressive of contrasting and often conflicting ideologies and behaviours.

As competitors, fishers have also adopted specific information management stratagems. Skippers have to balance the dilemma of being competitive and secretive on one hand, and being (or seeming) helpful to peers on the other. The social nature of production plays an important role in explaining differential success; here luck is also used as part justification. Fishing involves team work and its outcome depends on the experience, skills, cooperation and coordination of the entire crew. Fishers often have a specialised and intimate knowledge of the marine ecosystems and with new technologies and markets fishing involves a process of continual learning. Their traditional methods of reading natural signs continues to be of importance and this cultural competence is earned only through experience at sea. But ecological knowledge is no longer sufficient and fishers need to acquire knowledge concerning markets, exchange rates, bureaucracies, political negotiations and so on, which can lead to the marginalisation of small scale inshore fishers.

Fishers are often suspicious of, and resent interference from, policy makers, especially if measures are believed to be flawed or unjust. The images of nature held by fishers, on the one hand, and scientists, managers and policy makers, on the other, are often at loggerheads. In this respect fishers would seem to be conservative; they often stubbornly resist change in resource management regimes. New regimes are often seen to impede time honoured fishing strategies and flexibility. To obtain compliance with rules and regulations, these regimes have to be perceived as legitimate and devolved management systems are an important element in this respect.

In many communities, fishing no longer dominates local culture but has turned into an occupational subculture. Inshore fishers are pessimistic; the number of inshore fishers has declined, young people are increasingly reluctant to join the industry and outmigration is a increasing problem. A crisis in the fisheries potentially undermines the entire economic basis and social fabric of both families and communities. However, many fishers tenaciously adhere to fishing even when facing declining catches and incomes. Their relation to fishing is expressive and existential: to them, fishing is a lifestyle and permeates their entire personas and their image of themselves. While communities dependent on inshore fishing have proven to be resilient in the past, today they must cope with forces that are beyond their control. More attention should be devoted to the needs of inshore fishers in order to protect the economic and cultural survival of many inshore fishing communities.

3.5 *The Economics of Inshore Fisheries*

Eva Roth

The term 'inshore fisheries' is not necessarily reserved for small scale low-capital fisheries using passive gear, although the common perception often fits this description. On the contrary, they may cover a multitude of different types of fishing methods. Structural development in the inshore fisheries is somewhat ambiguous. On the one hand, the economic conditions and changes in fisheries management have encouraged the development of larger vessels

with active fishing gear and less employment in the traditional inshore fisheries. On the other hand, the quality of the catches from the traditional fisheries using passive gears are often very high. A further segregation of the fish market might further increase the prices from these fisheries and thereby counteract the tendency towards larger vessels.

A number of parameters influence the economic viability of traditional inshore fisheries. These include the prices of fish and substitute food; these have been decreasing over the past decades and have affected the income of small scale fisheries businesses. This development is not compensated by higher catches, as both marine and inland fisheries in general show a static or declining trend in catches. The costs of inputs in fisheries (capital, labour etc.) are also important. Due to technological development, the relative price of capital has been decreasing whereas, due to increases in average income, labour costs have been rising. The right to fish has in many societies been capitalised into the price of used vessels or various forms of private property rights. The relative prices between capital and labour are also significant and this can lead to substitution between the two. Hence the cost efficiency of substituting capital for labour has been significant. Other parameters include increasing technological development which has encouraged changes in levels of cost efficiency between different fishing methods. Finally, external effects costs from other fishermen and industries are important. The interdependence between fishermen is such that an increase in catches from one group will often lead to a loss of catch for another and may in turn lead to both economic and biological overfishing. At the same time, a rise in demand for recreational activities, leisure fisheries or aquaculture, creates other external costs for the inshore sector.

The question remains as to whether development in these parameters leaves a competitive income for traditional inshore fisherman. Entering and investing in fisheries is clearly a very long term decision. However, cost reductions and the acceptance of low income have become part of economic adjustment for many fishermen. Low income opportunities will inevitably hamper the entry of new and young fishermen in the industry. Also significant is the influence of the Common Fisheries Policy on the economic conditions for fisheries, on which decisions on entering, investing, leaving or continuing activities in traditional inshore fisheries are based. Management is often seen to alter such parameters.

3.6 *Recreational Fisheries*

Eva Roth

The FAO European Inland Fisheries Advisory Commission's (EIFAC) 18th Session in 1994 delimited recreational fisheries as 'those fisheries where the stock is exploited either for an individual's personal consumption or for leisure. This implies that the activity is not undertaken for the purpose of commercial gain by the fisherman'. Thus both angling with rod and line and spare time fishing with passive gear (household and subsistence fisheries) are

included in this definition. Common to all these types of fishing is the lack of any market affiliation for the catch. It is most often used for household consumption, barter or gifts. If it enters the market at all, it may be sold on the grey or black markets. The benefit of recreational fisheries is derived not only from the catch, but also in the recreational activity it provides. It is a leisure activity which for the individual may include social, health and educational benefits. Recreational fisheries are usually classed as being non-commercial, in the sense, that these fishermen do not fish to earn a living. A key area of conflict concerns whether fish should be caught by anglers, recreational fisheries with passive gear, kept for subsistence fishing or exploited under commercial conditions.

Within EIFAC member states, recreational fisheries account for some 20 million persons and create associated employment in a number of industries. This in itself suggests the need for protection and development of freshwater areas in addition to the coastal zone for fisheries purposes. It also calls for a deeper understanding of the different types of fishermen in these regions. The EIFAC working group has in fact recommended a strengthening of scientific work relating to the socio-economic and welfare issues associated with recreational fisheries, guidelines for the rehabilitation of lakes and other still waters, and a proactive and integrated methodology for the sector.

Fisheries regulations have multiple objectives: first and foremost, to reduce fishing mortality, but also to regulate the behaviour of fishermen and allocate the potential catch between different groups of fishermen. Restocking plans and monitoring of fish health are also important. Very few policies are targeted on objectives for the development of recreational fisheries. There are, therefore, difficulties in establishing specific success criteria for recreational fisheries. This underlines the need for a common denominator for comparison of different exploitation techniques for common fish stocks.

One method under development for assessing, evaluating and developing practical tools for the protection and sustainable exploitation of coastal areas is integrated coastal zone management. While this may contribute to a decrease in the negative effects of development, as a tool for the development of sustainable fisheries it must be strengthened in order to handle fisheries and coastal ecosystems in an integrated management approach.

Without more explicit objectives and tools for analysis, recreational fisheries will develop separately from other fishing and fisheries related activities in the coastal zone. The rising demand for recreational activities will further aggravate the problem. Conflict resolution, building on lobbying from recreational fishing communities, is one way of solving the problems on political grounds, whereas a planning oriented approach involving a co-management regime may be a more useful way of reaching a proactive and integrated solution to the conflicts evident in freshwater and coastal areas.

3.7 *From Capture to Culture: The Role of Aquaculture in Inshore Fisheries*

Nathalie Steins, Eva Roth and Mireille Thom

In recent years the aquaculture industry has witnessed tremendous growth. In 1995, aquaculture products represented 18.5% of the world's total food supply and 27% of global seafood consumption. In the EU output in 1993 accounted for 0.9 million tonnes, representing 12.4% by volume and 25% by value of all EU fish production. This provided full-time employment for 35,000 people and part-time work for 50,000 people. Traditionally, aquaculture production has been dominated by China, India and Japan, targeting mainly domestic markets. However, from the 1980s onwards, there has been a greater investment in the production of farmed seafood for American and European markets. At the same time, production in the United States, Canada, Norway, Scotland and Ireland has increased rapidly. Aquaculture development has been encouraged world wide for the creation of employment in peripheral coastal communities, the generation of export income, the growing demand for food, the reduction of pressures on wild stocks and the enhancement of recreational and commercial fisheries through restocking. In the EU it plays a role in supplementing depleting fish stocks and offsetting the trade deficit.

Aquaculture signifies a number of potential advantages over inshore capture fisheries. It is often seen as a means of generating employment and income opportunities and reducing pressures on wild fish stocks. Public perception of aquaculture, and particularly finfish farming, has been influenced by previous negative assessments of its environmental impacts, despite subsequent improvements in industry practices and potential spin-offs in terms of tourism and education. In many coastal regions, where development opportunities are often constrained by climatic and physical factors or by poor road and marketing infrastructures, employment opportunities are often scarce and fishing has provided an important means of income generation. The development of culture fisheries can play a significant role in helping coastal communities to cope with recession and can provide a supplement to fishing incomes. It is also increasingly seen as a way to enhance production of finfish and shellfish and to rehabilitate existing wild fisheries through restocking and ranching programmes. Unlike agriculture, it does not require significant alterations to the natural environment. It also takes place in clearly demarcated, licensed areas to which property rights are attached, though property rights do not necessarily guarantee sustainable management.

The development of culture fisheries is also associated with a number of problems for inshore fisheries. Increasing availability of farmed salmon has resulted in a substantial decrease of the market price for wild salmon. Increased production of shellfish on a world scale has also resulted in a drop in the market price for shellfish products and has adversely affected shellfish producers and the processing sector. Aquaculture is not always easily accessible to coastal fishermen and communities, given the requirement of high capital investments and demand for specialised knowledge. Shellfish aquaculture potentially offers a more accessible opportunity, but the lead time between first

input and first output, vulnerability of shellfish to diseases and lack of marketing infrastructure form major constraints. The development of aquaculture has also resulted in a number of multiple use conflicts in inshore waters given reduced access to traditional grounds for fishermen, reduced access for recreation and tourism, and aesthetic issues related to the location of production structures. The growth of aquaculture has also resulted in a scarcity of suitable sites as well as potential environmental and ecological externalities.

It is evident that dynamic interactions between culture and capture fisheries occur at ecological, environmental, socio-economic, cultural and political levels. Nevertheless, aquaculture is often considered in isolation from traditional capture fisheries for a number of reasons. First, it is difficult to perceive aquaculture as fishing as the production cycle of a farmed species is controlled by the producer. Nor is it subject to quota restrictions, mesh sizes and gear types under national and EU fishing regulations. The majority of regulations, once licences have been acquired, are related to consumer health and the environment. Second, finfish aquaculture tends to be the domain of large multi-national companies with little or no relation to the fishing industry. While in the inshore capture sector, ownership tends to be associated with family firms, the shellfish aquaculture sector is dominated by cooperative arrangements between individual producers or capitalists firms. Third, the management problems differ substantially and demand a different approach.

However, to consider aquaculture as a separate activity does not do justice to the dynamic nature of fishing practices in inshore fishing communities; capture and culture fisheries are not mutually exclusive. The use of cultivation techniques to enhance production levels from inshore shellfisheries has been practised for many centuries. Shellfish aquaculture has become part of inshore fishing and in many communities has taken over from traditional fishing activities and plays an important part in their survival. For many inshore fishermen, aquaculture techniques have become indispensable in rehabilitating traditional wild fisheries that have suffered from overfishing and marine pollution or to improve the natural production of wild shellfisheries. Finally, consumer preferences have led to the adoption of aquaculture techniques in inshore fisheries to improve the marketing quality of shellfish products.

Understanding the challenges fishing communities face and the responses of those involved is not possible without considering the dynamics between capture and culture fisheries. On a global scale significant efforts have been made to reduce the negative side effects of aquaculture. More focus has been directed on the location of production sites, fallowing regimes, management strategies and a reduction in the use of antibiotics. There has also been a tendency to focus on integrated coastal zone management to reduce conflicts among multiple user groups and secure a balanced, sustainable use of the coastal resource base. At the producers' level, joint marketing strategies and processing and sales channels have been set up to secure a stronger position in the global market.

Although the dynamic nature of interactions between aquaculture and the wider socio-economic and ecological systems evolving around the inshore waters is increasingly being recognised, the role of aquaculture in coastal fishing communities has been somewhat underexposed. Research on aquaculture development has primarily focused on the maximisation of production efficiency and reduction of ecological and environmental externalities. There is a need for research into the interactive processes between capture and culture fisheries, focusing not only on areas of conflict but also on the role, importance and social and economic consequences of the development of culture fisheries for inshore fishing communities. This should include an assessment of the socio-cultural aspects of aquaculture and should be carried out with a view to developing more integrated management strategies.

3.8 *Inshore Fisheries Management in the Western Isles*

Duncan MacInnes

Fishing has been one of the main commercial activities in the Western Isles for the last 500 years. Despite the geographically remote location and the distance from the markets, the industry has adapted to changing demands and embraced new technologies, which have allowed it to continue as one of the main features of the local economy. Fishing currently employs some 1,000 people, including 700 fishermen and 300 ancillary workers. Fish farming is similarly important, providing employment for nearly 300 full-time and over 50 part-time staff, with a further 150 being involved in processing and ancillary activities. Although the Western Isles is made up of a relatively diverse and small scale fishing fleet, fish landings are valued at over £12 million, whilst fish farming production contributes 19% of the Scottish total. The economic security offered by fisheries is, however, under threat from restructuring policies, quotas and the uncertainties surrounding salmon farming.

The Western Isles fleet of 375 registered vessels consists mainly of an under 12 m sector which, with the exception of 2 large pelagic vessels, takes nearly all its catch from the inshore waters of the Minches and within 12 nm to the West of the Hebrides. Nearly all the vessels are family or partner owned with company ownership of the large pelagic vessels. The most important species by value are nephrops, lobster, velvet crab, brown crab and scallops. Capacity aggregation which allows the aggregation of any number of over 10 m licences to build larger vessels, coupled with decommissioning, has resulted in the downsizing of the Western Isles fleet. Furthermore, the age profile of the fleet is a matter of concern with the average age being 30 years for the over 12 m sector and 22 years for the under 12 m vessels. A similar trend is being repeated in the Scottish inshore fleet as a whole with a reduction of 223 vessels, a change of 24% from 1985 to 1995. During the same period the number of offshore super trawlers has increased, clearly highlighting the need for a strategy which would treat the inshore fleet differently from the developing offshore sector.

Fishing is highly regulated, with regulations on licensing and quota entitlements all now adding to the initial cost of entering the industry. The recent introduction of fixed quota allocations is seen to represent a degradation of future fishing entitlements and there are concerns over the ability to purchase additional quota entitlement given inflated prices. In the inshore context fishing is regulated under the *Inshore Act (Scotland) 1984* which allows trawling with otter boards and scallop dredging in most areas and within the 3-mile limit. A range of restrictions are in place including seasonal closures to reduce gear conflict between scallop dredgers and brown crab fishermen (many fishermen consider this approach as the best to reduce conflict and conserve stocks), creel prohibition areas to protect lobster stocks (again seen to work well by local fishermen) and closed areas for mobile gears. Access Management Committees, comprising the main industry organisations, have been established to manage gear interaction in specific areas.

There are, however, some concerns that the Inshore Act lacks flexibility to meet the changing needs in marketing demands and new developments within the inshore sector. In this respect the industry has proposed a number of developments within the latest legislative review, including the re-opening of certain areas to scallop dredging, further creel prohibition areas and a vessel length restriction to control large super crabbers fishing in the inshore area. It is considered that inshore waters should be used exclusively by static vessels of under 16.5 m.

Regulating Orders are also identified as a key management tool available for controlling inshore fisheries on a local basis. In the Western Isles cockles and razorfish are two species currently being proposed for inclusion under such an Order. The Order will be implemented through a management committee structure that will comprise a number of interests including the fishing industry, local authority and the statutory conservation organisation in Scotland. The Order will define key features concerning the number of licences (and restrictions on gear and vessel length), effort restrictions (including a weekend ban and closed seasons), minimum landing sizes, maximum daily landing limits, licence fees (used to enforce, monitor and enhance the fisheries) and the provision of information from vessel owners (grounds fished, catches and fishing effort). In the cockle fishery the licensing of buyers, scientific research and water classification will also be relevant.

In contrast, the introduction of Several Orders, which can give exclusive rights of the seabed to an individual, has received a hostile response from the fishing industry, who fear exclusion from traditional fishing areas. A number of Several Orders have already been granted following public inquiries and it is likely that more will be emerge in the near future.

Public agencies also play a significant role in the inshore fisheries sector. For example, Western Isles Council and Western Isles Enterprise are both committed to assisting the fishing industry, in recognition of the region's dependence on fisheries. Important areas of assistance include vessel purchase,

infrastructure provision, upgrading of processing facilities, salmon farming, marketing of products and training.

In conclusion, many coastal communities, like the Western Isles, are dependent on inshore fisheries. In this respect inshore fishermen often express a number of key concerns: first, that the current 6-12 mile access derogation is maintained beyond 2002 and preference offered to vessels from areas adjacent to the fish stocks; second, that EU funding be made available to renew the inshore fleet and for ring fencing quota entitlements, to ensure that economic benefits and fishing rights are retained. Finally, it is considered that the problems facing the inshore sector are different from those of the developing offshore fleet and that different management regimes are necessary to secure future entitlement in areas like the Western Isles which rely on fisheries in both social and economic terms.

3.9 *Institutional Organisation and Regulatory Systems: Locality Versus Centre Driven Approaches to Inshore Fisheries Management*

Jeremy Phillipson and Mireille Thom

The regulatory regime governing inshore fisheries embraces aspects of institutional organisation, comprising structures and organisational forms, institutional linkages and decision making procedures, together with the regulatory mechanisms and approaches involved in the implementation, monitoring and enforcement of management policy. Deconstructing and analysing the regulatory regime is a demanding task. It can involve structures and provisions which are spread across the full spectrum of actors and levels of organisation within a state and is not necessarily confined to the locality or to locally based approaches. Regimes and legal instruments differ between states. In some, inshore fisheries are recognised as requiring special management structures or arrangements. Most, however, are governed by only partially designated inshore management regimes and remain subject to regulations, often single species specific, applied also to the offshore sector. Hence, the inshore management regime is distinguishable according to one of any number of regulatory parameters including vessel length, target fishery and, only occasionally, geographical area.

In part, the framework for inshore fisheries management (IFM), and subsequent policy implications and impacts, is determined at the macro-institutional level. While the EC has exclusive competence in the management of sea fisheries, Member States are empowered to take conservation and management measures within waters under their jurisdiction insofar as these measures only apply to local stocks prosecuted by fishermen from the Member State concerned. In practice, this means that Member States retain a degree of initiative in determining the details of management and the choice of institutional approach in relation to coastal fisheries. This is provided that they conform with Community law and the measures and overall objectives of the Common Fisheries Policy. The macro-institutional influence is further varied

in the cases of the Baltic and Mediterranean which are affected by international commissions.

The delivery of IFM can potentially embrace both public and private actors as well as both central and local levels of administration and regulation. In these terms four generic configurations can be defined including: IFM by central authority where the central state defines and implements all aspects of IFM; IFM by decentralised authority which involves the transfer of management responsibilities for IFM from the central to the regional or local state - responsibility for IFM remains within the democratically accountable political system; IFM by delegated authority where, within limits set by the central state, certain responsibilities for IFM are delegated to local organisations outside of the democratically accountable system - co-management represents a specific example of delegated authority; and IFM by autonomous authority where all responsibilities for IFM originate with or are delegated to local user group organisations or communities.

It is possible to identify several arguments for and against central as opposed to local based approaches to the delivery of IFM. On the one hand, a designated local inshore fisheries management framework offers several theoretical opportunities including: the possibility of developing more sensitive management approaches; the potential for more effectively incorporating local users in management activities and engendering an improved sense of local accountability; the opportunity for reducing the regulatory burden of the central state; and an institutional basis in which to allow preferential approaches for less mobile and locally dependent populations. On the other hand, some arguments suggest that the most appropriate scale for the development and implementation of IFM is the national level and performed by the central state. This allows for less fragmentation of management responsibilities between organisations and provides the opportunity to take an overarching perspective of the management system. The establishment of local systems may also be seen to be costly and there is uncertainty over the organisational capacities of fishermen's organisations to receive delegated management responsibilities and doubts over their democratic accountability. The choice between regimes is not necessarily a simple either/or scenario. A centralised approach may attempt to harness some of the benefits of local management through the use of regional enforcement structures, the enactment of local consultation or by the encouragement of local voluntary or informal management actions. Similarly, delegated or decentralised management configurations entail a continued role for the central state which is able to maintain an overarching perspective and steering influence.

The range of approaches to IFM adopted by the Member States is diverse. Individual states have devised their own particular arrangements to manage specific fisheries, sectors or geographical areas. While some states rely primarily on a centralist approach, others have to differing degrees utilised delegated or decentralised structures. The countries display considerable variation in the level of local organisational structure that they afford to IFM,

in the degree of central state involvement and in the patterns of interaction between state authorities and the fishing sector. Local management approaches also vary in terms of the scope of the delegated or decentralised management remit. In most cases local IFM appears to involve industry management rather than wider resource management. The distinctiveness of regime is likely to reflect a combination of elements including the particular characteristics of the fishing sectors, the traditions of state intervention and user participation, the sectoral imperatives intrinsic to the country concerned, the level and history of organisational development and the perceived balance of costs and benefits arising from local and central approaches. The outcome of such a cost-benefit analysis may reflect the interests of particular sectors, or the perceived financial costs of local management. It may also represent groundswell opposition to proliferating 'corporate led' local management approaches or a lack of political to support the development of coherent approaches to IFM. The extent to which a state has a well defined inshore sector, and the levels of activity involved, may also be important in justifying the development of a local regime and in some instances the difficulties implicit in regulating inshore fisheries may persuade in favour of a centralised approach. Furthermore, the state of local organisational development may not always be considered sufficiently developed or secure to allow local approaches and some industries may be characterised by a strong centralist organisational tradition.

The common regulatory challenges facing local IFM arrangements in the future include uncertainty over the future of the 6 and 12 mile access derogation. Renewal of such a derogation may signify a step towards a strengthening of preferential access for local vessels or even engender a clearer separation of management structures and regimes between inshore and offshore fisheries and a shift in the balance of empowerment between the centre and locality. A further challenge relates to the question of management scope and the positioning and level of involvement of IFM institutions with regard to new areas of management activity, notably integrated management and coastal zone management.

3.10 *The Inshore Sector, the CFP, Social Policy and Rhetoric*

Mireille Thom

There is remarkable variety of coastal settings and management systems for inshore fisheries. A number of variables, not directly connected to inshore fisheries or the Common Fisheries Policy, influence the fortunes of the sector. Like other economic sectors, it is affected by international policies (notably the globalisation of trade and the European single market), currency fluctuations (affecting exports) and the location of fishing communities (often remote from population centres and in sparsely populated areas). Remedies to alleviate problems belong largely to the realm of social policy and to some extent economic policy and relate to factors such as housing, transport, education and training, social amenities and the creation of job opportunities.

Some might argue that if economic sectors and the communities they support are not viable, then they should not be kept artificially alive. However, it should be noted that the problems facing the inshore sector are often the result of political choices and public policies and the resulting economic context. In fisheries, policies have often favoured the capital intensive nomadic fleet and the concentration of fishing rights and fishing capacity into fewer hands. Here, the challenge for the inshore sector is to develop productivity and competitiveness.

Often decision makers consider that fisheries dependent regions, like lagging areas, should be assisted to protect their socio-economic fabric. In fact, the importance of economic and social cohesion was reaffirmed in the Amsterdam Treaty, and cohesion remains a key pillar of the European Union. Policies, however, have not succeeded in accounting for and contributing to this objective. The CFP has favoured the large vessels of the nomadic fleet which is evident in the programme of fleet cuts. Inshore fisheries have not been insulated from the worst effects of the CFP. Overfishing and reduced TACs have resulted in a shift in fishing effort, in part to inshore waters and non-quota species. This has led to increased competition and decreased productivity for small scale fisheries. In other instances, national policy measures have favoured the redistribution of fishing rights away from the inshore sector and their concentration in fewer and larger vessels. In some regions vessel numbers have declined to such an extent that local ancillary services have been hit, further penalising small boat interests. At the same time, structural funds have lacked coherence and been too dispersed, and the investment capability of local government has often shifted in emphasis from sector to sector. The reform of structural funds is in part a recognition that investment needs to be focused and lasting.

Clear political choices need to be made for the inshore sector, as to whether market forces should prevail, or whether a coordinated approach should be applied combining resource conservation and the promotion of coastal communities in resource exploitation and management.

3.11 *The Stakes and the Players: Multi-Use Conflicts in the Inshore Zone*

Rob van Ginkel and Nathalie Steins

The sea, and inshore waters in particular, are increasingly used for many purposes other than fishing and navigation. The public's growing demands for entry to the inshore zone have brought about competition and conflicts between various users and claimants over access to, allocation of, and control over coastal space and resources. In addition to multiple use conflicts, intensified use of the coastal zone by human activities, often unrelated to fisheries, has exacerbated marine resource management problems. The coastal zone is a typical example of a common pool resource, where exclusion of access is difficult and where joint use involves subtractibility. As the number of resource users and the types and extent of resource use multiply, interdependencies increase. Conflicts of interest emerge when activities interact and there is a requirement for renegotiation of

the institutional framework within which collective resource use takes place. The management of multiple use situations relates to three dimensions, resource management, space management and people management. Multi-use conflicts are usually first and foremost conflicts between different user groups over space and solutions typically involve segregation of use over area or time.

Although fishers may compete with each other for the same species or exploit the same ecosystem, they usually catch different species with different kinds of gear over the annual cycle, and use various ecological niches. However, extraction of renewable resources by similar categories of users may lead to congestion and the use of different types of gear (for example, stationary versus mobile gear) may be incompatible. In such situations there are often informal regulations as to who may use certain locations at a certain time and in order to keep different gears apart. Nevertheless, conflicts do occur, and there is often encroachment by 'outsiders' into territories traditionally claimed by certain categories of fishermen. Limiting the number of people who can legally exploit resources, for example by licensing, is another common approach, though such interventions can crosscut systems of self-governance. Offshore fishing can also interfere with small scale fishing not just in terms of competition for resources, but also in terms of markets. Similarly there is competition from recreational fishers who can catch considerable amounts of fish without being subject to the same kind of restrictions.

Aquaculturalists increasingly compete for space and resources with other users of the marine domain. Competition for fishing grounds is a particular concern for fishermen and tourist interests are fearful of aesthetic damage. While aquaculture development may often be actively encouraged through tax incentives and financial and technical support, fish farmers face increasing opposition from other coastal users. Fishers express concern over declining prices due to increased production, competition for labour, the quality of fishing grounds in the vicinity of aquaculture units, pollution and disease.

The extraction of oil and natural gas has also had negative effects, including competition for sea and harbour space and local labour, hazards to navigation, pollution risks and oil spills, and damage to fishing gear. While oil and gas companies have provided some alternative employment opportunities for displaced fishers and fish workers, the industry is unlikely to provide a replacement economy for most fishing communities. Shell, sand and gravel extraction also pose dangers; again the restriction of access for fishing is a problem. Others include disturbance of spawning grounds, seabed damage and increasing turbidity of surface waters.

Among the non-extractive uses of the inshore domain, its amenity use would seem to have the greatest impact on fishing and fishing communities. The expansion of seaside tourism has been associated with a gradual deterioration of the natural environment. Coastal construction has altered the littoral fringe and damaged marine life, and development of coastal resorts has led to competition for space. Fishers are sometimes relegated to peripheral locations and face growing opposition to their quayside activities. Cruise shipping, recreational

boating, swimming, skin and scuba-diving and water skiing all potentially interfere with inshore fishing and mariculture. There are some positive effects whereby tourism can provide an opportunity for fishers to earn an income through the tourist market or alternative employment opportunities.

Inshore fishermen are subject to increasing interrogation from environmentalists, some of whom favour limited use or even non-use of renewable marine resources, though there are also examples where fishers and conservationists have cooperated closely to defend their mutual interests. As claimants to the marine domain, environmentalists enjoy widespread popular support. The threats to coastal habitats and areas, whether caused by fishing, tourism or other developments, have caused concern not only among conservationists, but also among scientists and state agencies.

A last type of use that interferes with inshore fisheries comes from waste disposal and pollution. Urban, domestic, agricultural and industrial waste all enter the marine environment and potentially affect fish, crustaceans and shellfish. The disposal of waste matter is a particularly severe problem in the North Sea, which is surrounded by some of the most heavily industrialised countries in the world. The seepage of agricultural pesticides is also a problem, as is the release of untreated sewage into coastal waters. The release of nutrients can also lead to changes in the levels of phytoplankton which can lead to large mortalities and contamination of fish. Oil pollution from tankers, discharges, leakage and run-off also have serious effects on the marine environment and fisheries.

User 'platforms' may provide the viable means for conflict resolution and the facilitation of dialogue in multiple use contexts. These are negotiating or decision making bodies, comprising different stakeholders, which work collectively towards an understanding of the resource base, cooperate in solving social dilemmas and undertake joint actions. The establishment of communication channels between competing users is a first requirement for facilitating negotiation over management objectives and strategies. In this connection, it is important to identify the relevant vested interests and to understand the ways in which people, resources and institutions in multi-use contexts are embedded within webs of economic, social and cultural relations. The problem of participation, representation and cooperation in decision making has important consequences for dispute regulation. Fishers may risk being alienated by other powerful interests and this may undermine the legitimacy of the multi-use management context. It is equally important for an integrated management approach to decentralise authority and decision making structures for management strategies to be locally compatible. Collective learning about the ecosystem and its dynamics are equally important in balancing the interests of multiple users. In this context, the facilitation of platforms for negotiation can make an contribution not only to resolution of multi-use conflicts but also to the encouragement of responsible practice.

3.12 *Swedish Coastal Management from the Perspective of Fisheries*

Laura Piriz

In Sweden the concept of welfare and standard of living is very much related to access to the coast. What once was the domain of fishers and sailors is now increasingly being used for other purposes. Historically, the combination of coastal activities such as fisheries and agriculture has been significant for social and economic development along the Swedish coastline. However, fishery dependent communities have undergone a period of drastic population loss and decreased dependency on coastal fisheries. This is explained by resource management institutions which have been moulded to meet the needs of a centralised and capital intensive fishery, and also by decisions taken within other sectors and wider policies. The coastal zone became attractive for industrial land based activities that were not dependant on the marine living resources and, with the increasing demand for nature based leisure activities from urban populations, the values and interests of non-residents now frequently predominate. There is a risk that the needs of localised small scale coastal fishers are lost in intra- and inter-sectoral trade-offs. Both sectoral and wider policies do not necessarily meet the needs of local coastal fishers despite the important role of coastal fishing in contributing to ecologically sustainable development and a living archipelago.

A comprehensive analysis of coastal management in Sweden is lacking. Sweden, in fact, has a long tradition for regulation and planning of land use and more recently in terms of integrated coastal zone management. The legal and regulatory framework relating to the coast is dispersed among a range of sectors and levels of decision making. Central to 'ecological sustainable development' is the Natural Resources (Management) Act (NRA) which covers all legislation regulating how land, water and the physical environment are to be used. It provides a common statement against which specific decisions have to be scrutinised. The act identifies both geographical areas and economic activities of 'national interest'. Development is only to be permitted if it does not have detrimental effects on large unexploited and ecologically sensitive areas, environments of national interest for conservation and research, and areas for outdoor activities. The NRA gives special priority to areas used for outdoor recreation and tourism and land and waters of significance for professional fisheries; all shallow coastal waters in lightly exploited areas are protected. It also defines those activities requiring special permission, including heavy chemical industry developments, oil refineries and sea platforms. Prior to taking major decisions the government normally commissions an appraisal and consults sectoral, regional and local authorities representing different interests, while the administrative county plays an important role in implementation. At present, coordination between different sectors over the use and management of the coastal and marine resources is covered by processes at different levels. With the increasing weight given to environmental and nature conservation policies, the integration role by agencies representing these interests has increased. All sector authorities, including the National Board of Fisheries, have environmental responsibilities.

According to the Swedish Planning and Building Act and, under the umbrella of the NRA, each municipality draws up a plan for the use of land, water and the physical environment. The Municipal Plan is not a binding instrument, but expected to guide decision-making and direct new development. The plans have a spatial development perspective and could be characterised as an instrument for dialogue between the central government and the local municipalities. They are intended to cover the territorial waters up to 12 nm, though in practice their extent is often unclear and varies between municipalities. The plans are recognised as being decentralised, integrative, problem oriented and based on the democratic process; however, some assessments identify hidden conflicts, often involving fisheries. Planning is still seen to be a top-down process and can be rather static compared to the process oriented notions included in integrated coastal zone management. Local fishers' needs are seldom assessed or given as a reason for development recommendations.

In addition to municipality plans, under the Water Act, permits from the Water Courts are required for all kinds of water works or constructions. The aim is to determine the conditions under which these works can be undertaken with minimal effect on the environment and sectoral interests. Monitoring programmes to follow up outcomes affecting fisheries and compensation for damage are the most common conditions put forward by the National Board of Fisheries. A process of informal consultation is involved and the National Board of Fisheries can influence construction design and site selection.

Small scale coastal fisheries in Sweden are confronting two critical problems. First, how to increase the involvement of young people and second, how to get rights to fish legitimated in a multiple use coastal area. Some argue that there is a lack of dialogue with local communities, which is risking cultural and natural prerequisites for people to remain on the coast, particularly the archipelagos. Improved communication infrastructure, the identification of sites for new enterprises, housing and local services, have tended to be given priority. In this context economic diversification may play a role in the erosion of the social structures and meeting places where communications among fishers normally occur. Furthermore, with the recreation and tourism boom, combined with nature protection regulations, land and summer houses along the coast have become a scarce good and the prices paid for them exorbitant. To facilitate life for permanent residents in coastal areas the central government has recently approved selective real estate tax reductions. Facilitating communication and meeting places for the fishers, as well as permanent housing for those willing to join the industry, are aspects that should be dealt with in the municipal plans.

Pollution is also recognised as posing a threat to coastal fisheries and is addressed at all levels. In addition to source related approaches, environment related management strategies and projects are becoming more important. When new values given to nature are to be institutionalised the central level tends to play a predominant role. The problem with seals, for example, follows this pattern and has resulted in conflict between international and national

policies and local fisher interest. So far there has not been any particular official involvement at the municipality level; probably because seals attract tourists and most coastal municipalities are economically dependent on recreation and tourism, but also because of the existence of different ethical values. A final latent conflict involves proposals for marine protected areas.

As a whole, many different instruments from outside the fishery sector influence coastal fisheries. Most threats identified by coastal fishers are related to the implementation of conservation policies which are seen to lack social and geographical differentiation, the search for green alternatives in the energy sector and the re-valorisation of natural resources. Furthermore, agriculture continues to affect environments that are essential to coastal fisheries. Planning does play an important role in forming the environment of coastal fisheries, even when the significance of fisheries is seldom visible in particular plans.

3.13 *Fishing Versus other Forms of Marine Utilisation in Finland*

Kjell Nybacka

Fishing in Finland is part of normal everyday life. However, strong trends towards the centralisation of community activities and urbanisation are leading to significant changes. Urbanisation has encouraged the development of recreational fisheries, prosecuted by people from the cities. There are some 3000 professional fishermen in Finland while some 600,000 persons have invested in a state fisheries licence which is needed for certain kinds of fishing activities. Recreational fishermen's organisations claim a membership of between 1 and 2.5 million. Most professional fishermen are active throughout the year in both the open sea and inshore areas. Their most active periods, April-June and August-November, avoid the vacation month of July which is popular for recreational fishers. Recreational fishing is also important from March-April. Most traditional recreational fishermen are active in coastal areas, allowing short travel distances and proximity to summer cottages. Only marginal, specialised groups within the main recreational fishermen's bodies fish in the open sea. Conflicts between recreational and professional fishermen or owners of fishing waters are most common in the coastal southern parts of Finland, where more than half of the population is concentrated.

Mariculture is also significant in Finland. This includes aquaculture activities to produce fish for restocking and enhancement purposes, rearing activities, or consumption, the latter being important in coastal inshore areas. The largest concentration of aquaculture enterprises is situated in the archipelagos of the Åland Islands and the southwestern parts of Finland. When situated in shallow waters the eutrophication impact can be very significant at the local level. The location of enterprises can also coincide with important breeding or feeding areas for coastal fish stocks and negative impacts, such as disease transmission to wild stocks, can diminish fishing possibilities. The environmental impact of aquaculture has become an object of both public and political concern.

Other extractive and non-extractive activities can have an important impact on both fishing and mariculture. There has been extensive development of road connections. Road embankments have had a major effect on water flow and quality regimes and in turn fish stocks. Sand extraction has created great concern in terms of impact on breeding or feeding sites and ecosystem effects. Also important is the need for deepening of navigation routes which can significantly affect the water ecosystem and quality. The archipelago areas are increasingly subject to tourist pressure, recreational vessels and ferry traffic. The Baltic 21 Agenda aims to provide an overall plan to diminish the negative impact from these kinds of activities.

Management of nature conservation is provided through a network of protection plans, summarised within Natura 2000, and important parts of the coast are protected by law from exploitation. Most attention is, however, given to flora and fauna above the waterline and this has posed problems for infrastructural development for the fisheries sector. Fishery activities are also threatened by extensive protection programmes for seals and wild salmon stocks. There seems to be little understanding between fisheries and environment interests and there is a need to distinguish between the needs of coastal and open sea fishermen.

Finally, waste disposal and pollution pose considerable conflicts for fishing and mariculture. Inland communities and industrial activities both influence water quality through, for example, sewage outflows and river pollution. Another main threat comprises the runoff from forest and agricultural areas.

3.14 *Inshore Fisheries and the Concept of Integrated Management*

David Symes

Inshore waters contain some of the most highly diverse marine ecosystems. Concern has been growing for the quality of the marine environment and the political rhetoric is switching its emphasis away from fish stock sustainability to ecosystem management and endorsement of the precautionary principle. The intensification of fishing effort, the development of more efficient technologies, and the growth of industrial fishing have prompted the realisation that marine ecological change is due in part to fishing activity. Concern has led to proposals for the closure of large areas of the sea to all forms of extractive activity. Where such closures impinge upon inshore waters, they are likely to impact seriously upon less mobile, local inshore fishermen, for whom closure would mean loss of livelihood, social identity and cultural meaning. It is important, therefore, for fishing and conservation interests to work in concert to achieve a balanced and integrated system of management. Inshore fishermen must be seen as an integral part of the ecosystem based on the concept of integrated management wherein the objectives of sustainable fisheries and healthy marine ecosystems are considered jointly.

Inshore waters are highly productive systems and comprise a variety of habitats. The Habitats Directive has identified a number of marine habitats in need of conservation, together with a list of threatened species covering benthic fauna, commercial and non-commercial fish and sea mammals. A further list of endangered seabirds is included in the earlier Directive on the Conservation of Wild Birds. The existing status of marine habitats and ecosystems is often the product of a history of exploitation through fishing. There are probably no inshore waters that are unaffected by past or present fishing activity. Most of the significant changes to the natural ecosystems occurred in the early stages of exploitation and the impacts of continuing exploitation through fishing may be marginal. While it may not be possible to restore heavily exploited ecosystems to their original state, it may be feasible to improve their biodiversity and enhance their natural productivity through carefully controlled levels of fishing activity.

There is evidence to suggest that fishing will continue to exert a damaging impact. The increasing size and weight of modern fishing gears and the attachment of devices to expose target species will inevitably degrade fragile habitats. Where recovery from physical damage and loss of benthic fauna is slow, benthic communities may be permanently altered. Of particular significance for inshore fisheries are the modern methods used in fishing for cockles, mussels, oysters and scallops and the incidental capture of marine mammals and seabirds. Some of the most significant changes occur in the structure of fish populations themselves and in the mortality and spawning stock biomass of target species. While there are few reported 'crashes' among the commercial or non-commercial species, changes do occur in species composition and size structure of the overall population and within the food system. One particular problem generated by offshore fishing, but with implications for the coastal ecosystem, concerns the expansion of industrial fisheries which form vital elements in the diet of a wide range of seabirds. In addition, the estuaries and low lying coasts also provide over-wintering sites or vital feeding grounds; their ability to sustain this function is under threat from overexploitation of shellfish stocks and from damage to habitats by mechanical or suction dredges.

Existing policies have failed to achieve a sound basis for sustainable fisheries or a healthy marine ecosystem. In inshore fisheries, ill defined property rights, inadequate systems of regulation and the 'disembedding' of management from the local community are blamed for the inability to restrain increases in fishing effort and to prevent the incursion of inappropriate fishing practices. Integrated management and the precautionary principle are seen by some as providing a new opportunity to establish the basis for the sustainable use and ensure the long term viability of the inshore industry. The application of the precautionary principle is seen to provide a more robust mechanism for the rational exploitation of fish stocks, through setting target and threshold values and safe biological limits. Conversely, interpretations of the principle by some conservationists are used to buttress arguments for the closure of certain fishing grounds on the pretext that damage is being done to the marine environment. Correctly interpreted and sensibly used, however, the principle

can operate as an essential bridging device linking fisheries and ecosystem management within the broader concept of integrated management. So far there has been little shift of emphasis in the CFP towards a precautionary or integrated approach. There is perhaps more evidence at Member State level in respect of territorial waters. Examples include the joint management of the Wadden Sea and changes to national legislation in the UK in order to implement the Habitats Directive.

Designated areas in the form of marine protection areas, marine national parks, marine nature reserves or 'no take zones' are perceived as the optimal form of ecosystem management by some conservation interests. It is likely, however, that no take zones would have to cover very large areas of sea to achieve their goals. The assumed benefits would no doubt be considerable, but so too would the economic and social costs to the fishing industry and to the local community. It is arguable that similar results could be achieved from less draconian action through the implementation of regulations concerning the number and size of vessels, fishing days, gears, seasonal closures and impact assessments.

Natura 2000 could make a major contribution to integrated management of inshore waters through the designation of Special Protection Areas (SPAs) under the Birds Directive, and Special Areas of Conservation (SACs) as part of the Habitats Directive. Designation of marine SACs involves the creation of a new management structure, the definition of specific management objectives and the development of a detailed management plan. It is unlikely that SACs will have severe negative repercussions for existing inshore fisheries. However, any new development project will be subject to an appropriate scientific assessment to ensure that it will not adversely affect the integrity of the site or viability of the listed species. In this way, the precautionary principle will be correctly applied.

The achievement of a holistic approach to North Sea management will have to overcome a number of institutional obstacles. While management is already conducted on a North Sea basis through the CFP, the EC's powers concerning environmental legislation are unclear. Political reality suggests the continuation of coastal state responsibility for inshore waters which will allow management to be varied to suit local ecological conditions and fishing practice. Integrated management seeks to balance the sometimes conflicting interests of the marine ecosystem and the social ecology of inshore fishing. Applying the precautionary principle does not mean outlawing fishing activities on the merest suspicion that it may damage the ecosystem. The principle can be used within a robust regulatory system to protect inshore waters from the worst excesses of fishing practice. A prerequisite for integrated management must be the establishment of separate though carefully coordinated regulatory systems for inshore and offshore fisheries.

4.0 Analysis

Inshore fisheries management has received rather less critical attention than the management systems for offshore waters and, as a result, there is a lack of material for comparative analysis. This report takes but a short step towards redressing the balance, firstly by collating information in respect of seven EU Member States providing a cross section of western Europe from the Gulf of Bothnia to the French Mediterranean and, secondly, by reanalysing the information in order to elaborate a number of key issues common to most if not all countries. In no sense does this analysis presume to be exhaustive.

4.1 *Definition*

Providing a common working definition of inshore fisheries has, as expected, proved difficult. The conventions used in the different countries draw upon a range of structural, behavioural and spatial characteristics relating to particular features of the inshore sector and the specific legislative, management and institutional traditions. Thus some definitions focus on structural aspects - most commonly vessel length but also mobility and behaviour, ownership characteristics and even levels of technical sophistication. Others focus on the target species, the nature of the regulatory system or access rights. Overall, the 12 nm territorial limit would appear to provide a useful universal legal definition, in embracing most small scale fisheries and shellfish stocks. Despite this, the lack of a common structural definition and therefore of comparative data sets makes international comparison of the relative contribution of inshore fisheries difficult. Nonetheless the eight national reviews all serve to confirm the intrinsic importance of inshore fisheries in providing a significant share of the supplies of fresh fish and shellfish and, perhaps more importantly, in generating considerable employment opportunities for the adjacent coastal regions.

4.2 *Economic, social and cultural characteristics*

The studies highlight the economic, social, cultural and political complexities of inshore fisheries. The inshore sector certainly represents a significant component of the fishing industry but one which is conducted in a range of socio-political and geographical settings as diverse as the ice trap fisheries of the Gulf of Bothnia to the *lamparos* (light seines) used off the French Mediterranean coast. Inshore fisheries encompass a range of activities including both capture and culture fisheries for finfish and shellfish species. They may be undertaken on a full-time, part-time, seasonal or casual basis; and they may be engaged in for commercial or recreational reasons. The relationship between these various economic categories of inshore fishing is worthy of more detailed consideration.

Inshore fisheries commonly display intrinsic strengths in terms of adaptive response, built upon a flexible system of social and work organisation, and may thus provide a vital contribution to the economic and social stability and sustainability of peripheral communities and pluriactive economies. At the

same time, they face a number of common challenges including the relative immobility of the small scale boats, distance from markets, weak infrastructural provision, lack of social mobility and low levels of recruitment of young people. Nor are they immune from 'external' factors such as the impacts of global markets, resource depletion and regulatory strictures, which can pose severe challenges to the production system, traditional forms of adaptive response and the processes of social reproduction. Some of these challenges are exacerbated by the peripheral locations of many inshore fishing communities, the tendency towards the centralisation of economic activity, the privatisation of access rights and the marginalisation of the status of inshore fishermen.

In less peripheral locations other 'externalities', derived from the multiple use of inshore waters, may place an added burden on local fisheries: in particular, the chemical and biological pollution from the discharge of untreated urban and industrial waste waters; competition for space from other users, including recreational activities; and the demands from conservationists for the greater protection of inshore ecosystems, habitats and wildlife species from the adverse impacts of fishing.

At the same time, inshore fishing communities, their structures, social organisation and culture, are in a state of flux resulting from indigenous depopulation, the infiltration of new urban inhabitants - including retirees and commuters - and the introduction of new aspirations, living standards and lifestyles within the fishing households.

The inshore fishing sector is structurally distinctive in economic and social terms. Predominately comprising family based, small scale enterprises, it has a particular social organisation built on close social relations and a petty commodity mode of production. This is accompanied by specific forms of identity, modes of behaviour, divisions of labour and mechanisms for social reproduction which distinguish inshore fisheries as a social system from the more conventionally capitalistic mode of production for offshore fisheries. But inshore fisheries also vary quite markedly within and between Member States. Between states there are clearly differing emphases as between the relative importance of private fisheries, aquaculture and recreational fishing or between marketing systems or in terms of the management of inshore fisheries.

4.3 *Management systems*

Management approaches and organisational structures for inshore fisheries reflect the particular institutional and organisational traditions and the specific structural and behavioural characteristics of the sector. The current derogation applied to the 12 nm limits implies a considerable discretion for Member States to determine the appropriate management approach. The ensuing regulatory regimes utilise complex systems of property rights, statutory and informal means of regulation. Some states have adopted decentralised and delegated powers to allow for the involvement of local user groups and the development of preferential local management approaches. Others rely largely

Among the priorities for future research in this field we would identify the following:

* a comparative analysis of the demographic, social and cultural changes occurring within coastal fishing communities and households and the changing patterns of socialisation and social reproduction of inshore fishing;

* the impacts of corporate led privatised use rights on access to and exploitation of inshore fisheries resources and on adaptive strategies developed within traditional modes of production;

* a cost-benefit analysis of full-time, part-time and seasonal participation in inshore fisheries and of recreational fishing activity; and the role of small scale fisheries in the maintenance of pluriactive local coastal economies;

* the impacts of centrally directed, universal regulatory systems for both harvesting and marketing on the economic and social viability of inshore fisheries;

* the potentials for integrating non-traditional forms of production, including maritime tourism in the development of the economies of coastal regions;

* the institutional frameworks and regulatory mechanisms for resolving multiple use conflicts within inshore waters occurring both within and outwith the inshore fisheries sector;

* the scope for devolving responsibility for inshore fisheries management to properly constituted, locally based co-management organisations and for developing alternative mechanisms for the regulation of inshore fishing activity; and

* further consideration of the ecosystem impacts of inshore fisheries, the development of an integrated approach to fisheries management in inshore waters and the elaboration of local measures for the harmonisation of inshore fishing and marine conservation interests.

Appendix A: Programme - Workshop 1

European Social Science Fisheries Network: FAIR CT95 0070
Task Group on Inshore Fisheries Management
Workshop 1: Gruissan, France, 29-31 March 1998

Sunday 29th March

0930 - 1030 Introduction, organisational aspects, objectives: David Symes

Presentation and discussion of state of the art papers:
Netherlands: Rob van Ginkel

1030 - 1100 *Coffee*

1100 - 1230 Presentation and discussion of state of the art papers:
England and Wales: Jeremy Phillipson
Scotland: Mireille Thom

1230 - 1400 *Lunch*

1400 - 1530 Presentation and discussion of state of the art papers:
Denmark: Eva Roth
Sweden: Gunnar Thoresson

1530 - 1600 *Coffee*

1600 - 1645 Presentation and discussion of state of the art papers:
Finland: Kjell Nybacka

Monday 30th March

0930 - 1030 Presentation and discussion of state of the art papers:
Ireland: Nathalie Steins
France: Katia Frangoudes

1030 - 1100 *Coffee*

1100 - 1230 Discussion on main themes

1230 - 1400 *Lunch*

1400 - 1530 Future activities

(i) second phase of Task Group: next workshop

(ii) recommendations for future research

1700 Visit to the Prud'homie of Gruissan

Tuesday 31st March

Excursion to the étang of Bages Sigean and Port La Nouvelle harbour.

Appendix B: Programme - Workshop 2

European Social Science Fisheries Network: FAIR CT95 0070
Task Group on Inshore Fisheries Management
Workshop 2: Amsterdam, 24-26 September 1998
Nederlands Scheepvaartmuseum

Thursday 24th September

0930 - 1030 Introduction, aims and objectives: David Symes
including welcome from museum by Dr. Els van Eyck van Heslinga

1030 - 1100 Coffee

1100 - 1230 Regulatory systems: Mireille Thom
Institutional organisation: Jeremy Phillipson
Commentary: Duncan MacInnes

1230 - 1400 Lunch

1400 - 1530 Social organisation and reproduction of inshore fisheries: David Symes, Katia Frangoudes and Erland Eklund
Cultural dimensions: Rob Van Ginkel
Commentary: Kirsten Monrad Hansen (Life Mode Analysis)

1530 - 1600 Tea

1600 - 1730 External relations: Mireille Thom
Economics of inshore fisheries: Eva Roth

Friday 25th September

Fisheries excursion to Zeeland. This will include visits to the Storm Surge Barrier and Yerseke. During the afternoon we will meet with representatives of Zeeland fisheries and shellfish farming organisations at the Yerseke mussel auction.

Saturday 26th September

0900 - 1030 Integrated fisheries management: David Symes
Integrated management in Sweden: Laura Píriz
Commentary: Erland Eklund

1030 - 1100 Coffee

1100 - 1230 Aquaculture: Nathalie Steins
Multiple use of inshore waters: Rob van Ginkel, Nathalie Steins, Eva Roth, Kjell Nybacka

1230 - 1400 *Lunch*

1400 - 1530 Recommendations for future research; publication: David Symes

Appendix C: Task Group Members

Denmark Kirsten Monrad Hansen, Fjerritslev
Eva Roth, Danish Institute of Fisheries Economics Research

Finland Erland Eklund, University of Helsinki
Kjell Nybacka, Empl. and Econ. Devel. Centre for Swedish Ostrobothnia

France Katia Frangoudes, OIKOS
Karine Dusserre, Projet du Parc Naturel régional du pays Narbonnais

Neths Rob van Ginkel*, University of Amsterdam
Nathalie Steins, Produktschap Vis

Sweden Laura Píriz, National Board of Fisheries
Gunnar Thoresson, National Board of Fisheries

UK Duncan MacInnes, Western Isles Fishermen's Association
Jeremy Phillipson*, University of Hull
David Symes*, University of Hull
Mireille Thom*, Ceol-an-Uillt, Nethybridge, Inverness-shire

* Steering group