

THE SCOTTISH FISHING INDUSTRY:
TECHNICAL OPPORTUNITIES AND
POLITICAL CONSTRAINTS

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The sea fisheries of Scotland present a clear challenge to political wisdom. The fish on which the industry depends have been severely depleted by the combination of a series of improvements in the efficiency of fishing technology and inadequate political control over the access of competing fishermen to the common resource. Only rising prices due to scarcity have sheltered the industry from feeling the full effects of the crisis. Legal changes offer the opportunity for rational solutions to the problem, but at the time of writing, there is still no Common Fisheries Policy and meanwhile the problem gets worse and its solution more difficult.

The interim arrangements for fisheries among the EEC states which were hastily put together on the eve of the enlargement of the Community in 1972 to include the UK, Ireland and Denmark are weak. They run only to 1982 when, in the absence of an agreed alternative policy, there is to be free competition among all fishermen of the EEC member states in what would become their joint waters. It was mainly because of this prospect that Norway decided, following a referendum, not to join the EEC, and it has been consistently opposed by fishing interests in both the United Kingdom and the Irish Republic. We wish to outline the problem and suggest the framework of a realistic answer to it.

Change and Continuity in the Scottish Fisheries

Historically, the Scottish fishing industry has shown considerable adaptability whilst undergoing comprehensive change.

For example, the latter half of the nineteenth century saw a major shift in emphasis from the traditional methods of long-line and drift-net fishing to trawl-fishing. Change was facilitated by the expansion of the railways in mid-nineteenth century and by the growing use of ice to preserve the fish. These developments encouraged the growth of the white-fish industry which was to become more important than the drift-net fisheries for herring. Towards the end of the century more changes took place with the introduction of steam-propelled trawlers and drifters.

The twentieth century has seen the virtual disappearance of the once-thriving Scottish herring industry with its hundreds of vessels and many thousands of men and with its Scottish fisher-girls who were once employed itinerantly to follow the seasonal movement of herring around the coast to North Shields, Hull, Great Yarmouth and Lowestoft. This fishery reached its peak before the first world war and has collapsed since the second. One of the most important developments in the Scottish fishing industry over the past fifty years has been the growth in the number of seine-net vessels. Apart from Aberdeen, which is still the major Scottish trawler-port, seine-net gear is now responsible for a high percentage of landings in the Scottish fishing districts. Trawling involves towing a net along the sea bed with the mouth of it held open by two boards, one on each side of the net. A seine net has large wings but no boards. A further development is the purse-seine net, the use of which allows the encirclement of a shoal of fish. The net can measure 1200 metres long with a depth of up to 240 metres and as the name suggests, the net is shaped like a purse. By using electronic equipment the skipper can tell exactly where his net and the fish shoal are with respect of one another. He can surround a shoal, or, if it is so large as to endanger his gear, take a chosen proportion of it.

Other innovations, such as the power block for lifting the net and catch aboard, and pair-trawling, have increased the catching efficiency of many vessels. In pair-trawling two vessels tow the net between them. The net can have a much larger mouth than a single vessel can handle. The inevitable results of these changes, with unrestricted entry to fishing grounds and free competition among fishermen, is a severe depletion of stocks of commercially valuable fish.

Intense fishing with fine mesh nets means that fish are usually caught young around Western Europe. So more and more effort goes into catching smaller and smaller fish, which if left to grow would provide far more food. Most species suffer from this type of overfishing although some, such as cod, have such a great reproductive potential that even when considerably overfished are still unlikely to be exterminated.

More serious still, overfishing may cut down the number of fish available to breed, and thus further reduce the harvestable population. This has already happened to herring in the North, the Irish, and the Celtic Seas, and in the waters West of Scotland.

And even extinction is no idle fear. The sardine industry of California collapsed as a result of this kind of overfishing long ago — and has never recovered. Species with low reproductive potential and those that shoal so as to be economically caught even when at a low population density are most likely to suffer extinction.

It is not only excessive catching for the table that has caused the present crisis. Since supplies of fishmeal and fertiliser from South America have decreased, industrial fishing has grown so much around Europe that more than two million tons have lately been taken from the North Sea each year to feed to animals.

Fish we spurn as food are the targets of this operation. But a fine net is not a precision tool, and the young of valuable species like herring are caught in large quantities together with the intended sprats. In some years more than 100,000 tons of young haddock have been turned into fish meal together with the pout that were being fished for. Pout fishing has been excluded from a "box" off the east coast of the UK to protect the breeding of haddock and whiting. Only part of the nursery grounds are protected, but a still inadequate extension of this protection is leading to the UK being taken to the European Court by the Commission of the EEC. The Commission is doing this to establish whether the measure is both necessary and non-discriminatory as between nations. Denmark is the nation doing most industrial fishing which would be most affected, but its vessels could not be excluded, in the British area, on the basis of nationality. British measures to conserve stocks by prohibiting the use of mesh sizes that were previously allowed are leading to similar action by the Commission.

Haddock caught for the table have to be above a minimum size, and if young fish are caught they must be thrown back. But it has been hard to enforce this regulation when huge quantities of the same infants are grist to the industrial mill because of the loophole of an allowable "bye-catch".

There have been a few examples of attempts at conservation by the voluntary action of fishermen. One case in point is that of the Shetland herring fishermen who adopted conservation measures some three years before the final collapse of the North Sea herring. The overall ban on herring fishing, introduced by the British government, came only after the stocks had been severely depleted mainly by the rapid growth of the Norwegian purse seine fleet and also the damage done to young herring by the industrial fisheries of Denmark in particular. This ban is particularly harsh on the Shetland herring boats which were voluntarily conserving herring by about 50% until banned from catching herring altogether. They did this by setting a daily quota based on how many fish could be bought locally for human consumption, and so none went for reduction to fish meal at a lower price. The six vessels implemented the quota by keeping in touch by radio. As soon as the quota had been reached by any combination of boats, fishing stopped. Each boat took an equal share of the money from selling the fish irrespective of how many it had caught. These Shetlanders have had no benefit from their own co-operative innovation, which in itself is remarkable for such traditionally competitive fishermen. (The Norwegian purse seiner fleet is now itself in grave difficulty. Many vessels are being taken out of fishing, in part by aid from the Norwegian Government. Some are being sold to Scottish owners).

With the failure of the herring fishery, many Scottish purse-seiners among others have turned to mackerel off the west coast of Scotland in the autumn and off Cornwall in the winter. The western mackerel is now the most important stock to the British fishing industry in volume terms. It is not properly controlled internationally and the recommended Total Allowable Catch set by the International Council for the Exploration of the Seas has been grossly exceeded. The mackerel faces the prospect of collapse in the S.W. Its management, because it is migratory, demands common action by Norway and the Community.

Overfishing, depletion of stocks and extension of state

control over traditional fishing grounds were major features in the protracted fisheries dispute between Iceland and the United Kingdom. Whilst the exclusion of British trawlers from their traditional and once rich Icelandic fishing grounds was of less immediate significance to Scotland than to Fleetwood, it had important implications for the whole of the United Kingdom industry. The resolution of this fisheries squabble, rightly in Iceland's favour, encouraged the growing demands for coastal-state control of fishing grounds, particularly by the trawler companies and the Transport and General Workers' Union which represents their employees.

As far as the North Atlantic is concerned, Iceland simply established an arbitrary lead with its decision to extend its control over the surrounding fishing grounds. The Icelandic government's actions demand sympathy because of Iceland's overwhelming dependence on fish. Similarly, the Faroe Islands face major economic problems associated with overfishing. So the Faroese have very effectively restricted fishing operations in their waters and this action has had a direct bearing on the activities of a large sector of the Aberdeen trawler fleet. In addition to the decisions taken by these two nations in the North Atlantic, the Norwegian, Russian and Canadian governments have also severely restricted the activities of foreign trawlers around their coastlines.

"The general move that is now taking shape towards 200 mile exclusive Economic Zones (EEZ) recognises that a nation state is likely to provide the best mechanism for protecting the resource and for ensuring its renewable character."¹ The declaration, at the end of 1976, of 200-mile zones by the member states of the European Community was welcomed by most people in the Scottish fishing industry but it has not stilled the demand for an exclusive British zone of at least fifty miles. This was reflected in a recommendation contained in a House of Commons Trade and Industry Sub-Committee's Report:

"We recommend that it should be the object of the UK policy to secure agreement that each EEC Member State should have exclusive fishing access to a 50-mile wide zone from its own coasts."²

There remains a considerable hostility towards the activities of European Community fishing vessels in what are regarded

as traditional British fishing grounds. John Silkin, Minister of Agriculture, Fisheries and Food in the outgoing Labour Administration epitomised this view. In Hull in March 1979 he argued: "Other member states have been very reluctant to accept the need for adequate conservation. The Commission has been much too prone to take account of the reservations of some member states unconnected with the scientific evidence. In all the circumstances I find it extremely odd that it is the United Kingdom that the Commission has seen fit to take to Court on conservation matters. But then, burglars are not known for their respect for property rights."³

The Scottish Fishing Industry Today

Scotland has now only a few large trawlers but she has a huge fleet of the smaller fishing vessels, with trawlers of all sizes being now built for fishing over the stern rather than the side.⁴

The Scottish fishing fleet has increased in importance in recent years with respect to that of the rest of the United Kingdom. The fleet consists mainly of near water vessels.

Table 1 shows the weight and value of landings of all fish including shellfish in the UK in 1978. It can be seen that landings by Scottish vessels in Scotland and elsewhere in Britain now account for as much as 60% of the weight and 53% of the total value of UK landings by all UK vessels.

Table 1

WEIGHT AND VALUE OF LANDINGS IN 1978 BY SCOTTISH AND OTHER UK VESSELS

	'000 Tonnes	%	£m	%
Landings of UK vessels in UK	956.5	100	254.7	100
Landings of UK vessels in Scotland	426.2	45	122.2	48
Landings of UK vessels in Northern Ireland	11.5	1	4.8	2
Landings of UK vessels in England and Wales	518.8	54	127.7	50
Landings of Scottish vessels in England and Wales	150.9	16	13.6	5
Landings of Scottish vessels in Scotland	*420.6	44	*121.1	48
Landings of Scottish vessels in UK	571.5	60	134.7	53

* Estimated figure

Figures kindly supplied by the Department of Agriculture and Fisheries for Scotland

In contrast to the declining fortunes of the distant-water fleet, the inshore fleet has prospered, due largely to rising prices, particularly for species not previously highly valued for human consumption, some of which are exported to new markets in Africa and Australia as well as America and Europe.

The fishing industry has only a very minor role to play in the United Kingdom's gross domestic product but it is of considerable importance in a number of regions of Scotland (see Map 1). For example, in the Shetland Islands, the industry has been responsible for almost 30% of the employment and in other Scottish communities there are few employment opportunities outwith the industry. In terms of the actual number of jobs, the Grampian Region with over 50% of the industry's workforce is a most important area. Recent evidence suggests that some 8.0% (14,986 for 1978) of the employed population in the region is dependent on fishing.⁵

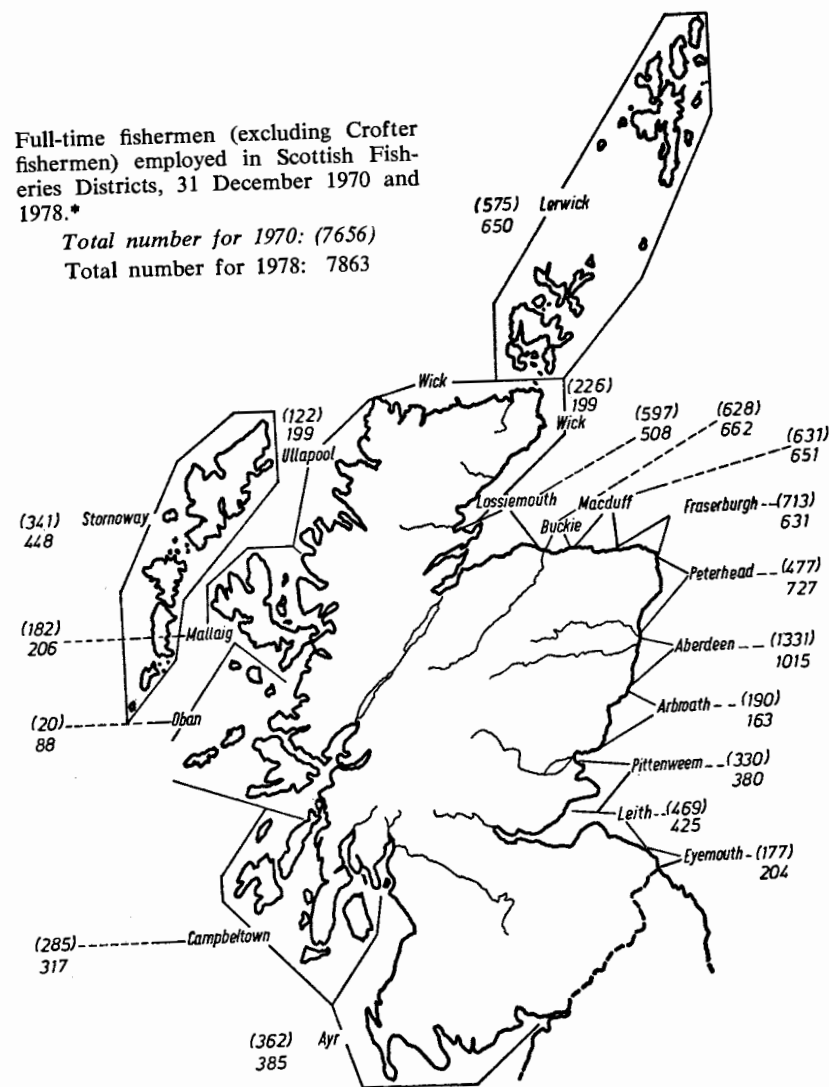
There has been little overall decline in the numbers of employed fishermen in recent years, but the pattern has changed. There has been development in a number of Highland ports due to the positive policies of the Highlands and Islands Development Board. Within the industry there appears to be a general belief that the ratio of fishermen to ancillary workers is at least 1:4 and possibly 1:7. Just as the catching sector has undergone change so too has the onshore side of the industry. We have already mentioned the decline in employment in herring processing and ancillary work but there has also been widespread contraction of employment in fish processing. In 1978, there were approximately 8000 full-time employees in fish processing, some 2,500 of whom were based in Aberdeen which is still the main Scottish centre for white-fish processing. In the same year there were upwards of 1000 employees in herring processing. One can contrast these figures with those obtaining in the early part of the century when, as J. Coull has shown, Shetland alone employed some 13,000 people to process the herring catches.⁶

In remote areas such as Shetland, boats may "trip" to a more central port, such as Aberdeen, to get a better market. This makes it difficult to maintain adequate local processing. The most hopeful developments are processing co-operatives, such as that on Westray, where the fishermen are part owners of the processing factory.

Full-time fishermen (excluding Crofter fishermen) employed in Scottish Fisheries Districts, 31 December 1970 and 1978.*

Total number for 1970: (7656)

Total number for 1978: 7863



*Department of Agriculture and Fisheries of Scotland Statistics, Hansard, 3 April 1979.

Share Fishermen

In Scotland, the majority of the sea-going workforce are share fishermen and they crew the smaller vessels. They receive equal shares of the crew's allocation of the total earnings and are classified by the Department of Employment as self-employed even though they obtain unemployment benefit if they can demonstrate that they are prevented from working due to reasons outwith their control, e.g. harsh weather conditions or vessels under repair. The size and composition of the crews of these vessels varies in terms of the species hunted, fishing methods (e.g. creel fishing, dredging, great lining, seine-net fishing, pair-trawling and trawling) length of voyage, fishing conditions, and so on, but in general they range from two or three men on the smaller boats to eight and up to eleven men on the largest vessels. These vessels are usually owned by the skippers jointly with other crew members. The purchase of a vessel is generally helped by a grant and/or loan from the White Fish Authority, the Herring Industry Board or the Highlands and Islands Development Board. Recently some Scottish fishermen have obtained loans, at very low interest, from Norwegian sources in order to buy Norwegian purse-seiners with no grant aid.

In 1977, the HIBD provided the fishing industry in the Highlands and Islands with the sum of £1,950,000 by way of grants and loans, an increase of some £417,000 over the 1976 total. The overall sum of money approved by the Board since 1965 is in the region of £13 million and it is estimated that over 3,000 jobs have been established or retained and that, with such assistance, some 450 vessels have been acquired by fishermen in the area.⁷

A large number of the vessel owners have formed associations, often co-operatives, and these help by selling gear and equipment and fuel to members, auctioning their catches, and in some cases, processing the fish. Assistance is also given with the financial needs and administrative functions associated with vessel ownership. A survey of Scottish skipper-owners found that "while in one place some older members seemed to exert considerable influence in conserving old habits, in another the Association had been more successful in stimulating technical progress and efficiency among others by building its own ice factory to the profit of its members. In general, the fishermen

seemed to be reasonably satisfied by the functioning of their associations, and they had no objections against running part of the business themselves."⁸

Many of these share fishermen and skipper-owners live in small and remote communities in which there is a long, historical tradition of fishing. J. Tunstall, a sociologist, has argued:

"The basic economic set-up is similar to that in a smaller family-run farm. It is a dangerous job under bad conditions for very low pay per hour. But inshore men choose to do it, because they presumably do not want to leave the region to work for more money in factories in Glasgow (sic). In this type of fishing there is a genuine family tradition."⁹

One could add that the financial rewards, though varied in the extreme, can be high.

It is of some interest to note that a number of the distant-water trawler companies and other companies in the food-processing industry have taken a financial interest in the near-water sector. For example, it has been reported that one firm alone has invested several million pounds in a number of these vessels. The growing interest shown by the large trawler companies in fishing operations around the Scottish and English coastline is now causing disquiet among the traditional near-water fishermen.

Wage-earning Fishermen

The wage-earning fishermen in Scotland are based in Aberdeen and are employed by a small number of trawler companies on a variety of craft (see Table 2). The smaller trawlers have crews of from nine to twelve men and the very small number of larger trawlers have crews of twelve to fourteen men. The skippers and mates of most trawlers receive 5.33% and 4.33% respectively of the gross earnings of the vessel and the skipper gets an additional 5% of the net proceeds. The rest of the crew receive both a basic weekly wage and a share of the gross earnings of the voyage. In their evidence to the Trade and Industry Sub-Committee inquiry into the fishing industry, representatives of the Aberdeen Fishing Vessels Owners' Association claimed that average total earnings for deckhands in January 1978 was £113.75 for seven days at sea.¹⁰

Table 2

OWNERSHIP OF SCOTTISH DEEP SEA FLEET

As at 31 December 1977

	Number of Owners	Number of Vessels	Cumulative Percentage of Fleet
Over 10 vessels	2	23	27
5-10 vessels	5	35	69
4 vessels	—	—	—
3 vessels	—	—	—
2 vessels	1	2	71
1 vessel	24	24	100
TOTAL	32	84	—

White Fish Authority, Annual Report and Accounts 1977-8

It will be seen from Table 2 that seven companies own approximately 70% of the Scottish deep-sea fleet. For example, Associated Fisheries, through British United Trawlers Limited, own companies in Aberdeen, Hull, Grimsby and Fleetwood. In England and Wales, three companies own more than 50% of the deep-sea fleet. Despite the concentration and rationalisation of trawler companies, assisted by interlocking directorships between holding companies and subsidiaries, they remain fairly small organisations when compared with firms in the manufacturing industries.

To date most trawler fishermen remain casual employees, and so they receive little or no protection under the provisions of the Redundancy Payments Act 1965 and other industrial legislation, and even although the Merchant Shipping Acts ensure that trawler crews sign articles of agreement, this does not guarantee security of employment, since crews are employed for only one voyage at a time. It follows that, given this casual employment relationship, the extended absence from home and community, the hazardous nature of the work, the long work hours, the somewhat cramped living conditions on many of the trawlers, the brief leave entitlement, few fishermen have a record of continuous service with a particular trawler company.¹¹

Wage-earning fishermen are members of the T & GWU, which has officers in the main fishing ports and a National Fishing Officer. In Aberdeen, Hull and Grimsby, skippers and

mates have their own Trawler Officers' Guilds and they, along with the T & GWU, negotiate with the Fishing Vessels Owners' Association in each of the major ports. Trade unionism is virtually 100% in Aberdeen but almost nil elsewhere in Scotland. (In view of the role of the union in the politics of fisheries, it is unfortunate that most of the Scottish fishermen are unrepresented by the union because of their non-membership).

The union has become increasingly involved in the industry in terms of the resources given to its fishermen-members, and its involvement with the fishermen's registration scheme in each port, ensuring fairer discipline and grievance procedures. Union representatives have been appointed to a number of Department of Trade (Maritime Division) working groups concerned with the safety of fishermen, fishing vessels and safe working practices. In addition, the union in recent years has vigorously argued the case for a different and more equitable employment scheme which has led in 1979 to an agreement in principle on a modest scheme of decasualisation.¹² A key aspect of the scheme¹³ is the "topping up" of unemployment benefit by payments from employers.

A Community Fishing Policy

Many of the fish stocks on which Scottish fishermen depend move long distances during their lifetimes. Adequate management in the interests of the Scottish fishing industry depends on agreed policies for these shared stocks. England, Ireland, other Community countries and Norway share many Scottish problems as well as stages in the life cycle of her fish.

A Community Fishing Policy requires broad agreement on principles and objectives. The following objectives should be taken into account:

1. To sustain an economic use of marine fish.
2. To maximise the supply of food at a reasonable and stable price for the consumer, bearing in mind the likely long-term requirements for first-class protein which is likely to become more expensive in world markets.
3. To assist in resolving social and regional problems by providing jobs for communities that have few other economic options for employment.

4. To guarantee to those employed in the industry good conditions of employment and training and educational opportunities.

These aims will often conflict to some extent, and fisheries management should be compatible with energy conservation (a distant-water freezer trawler uses roughly a ton of oil for each ton of fish landed) and pollution policies. (These, too, can cause problems. Regulations have recently had to be made to control the mackerel industry in Loch Broom where major sales to Russian processing ships take place seasonally). In addition, as we have argued elsewhere, European fisheries have a contribution to make to the fisheries development of the Third World.¹⁴

When there will finally be an agreed Common Fisheries Policy remains uncertain. The negotiations have got stuck because of the incompatibility between the British demand for a national preference that will reflect the fact that 60% or so of EEC fish swim in the UK sector of the seas of the Community states and the fact that the UK fishermen have lost the right to fish in distant waters that used to contribute 40% of their catches; and the demand of most of the other states that competition should be more free. In the view of many Europeans with no particular interest in fish, the UK position runs counter to the spirit of the Treaty of Rome, and if acted on might set a very dangerous precedent.

As the collapse of fish stocks has been the clear result of the free play of the competitive market forces up till now, Mr Silkin's stand was acclaimed by everyone in this country connected with fishing. The deadlock has now become so bitter that it threatens negotiations over issues like currency stability and whether Community funds should be used mainly to diminish regional inequalities rather than to subsidise some sectors of agriculture indiscriminately.

Such issues are vital to Scotland. Fishing is not a major industry for the UK nor for any of the EEC states. It is, however, extremely important to particular localities, where the industry provides up to one-third of the economic input. The Ministers could resolve their deadlock by recognising the local nature of the problem and basing policy on this fact. Given that the exclusive rights approach is anathema to most of the Member States of the Community, it will not be acceptable. Local

dominant preference could provide the foundation for an agreement, particularly on the basis of forward fishing plans, an idea acceptable to the Community. Given that Scotland, and to a lesser extent the UK as a whole, has so many fishing ports near fishing grounds, local preference along these lines should add up to a fair share in fishing from the national point of view. It would go some way towards solving conflicts between different types of fishing vessel, but would not solve the conflicts between the catching, and the marketing and processing sectors.

Co-operative ownership of the kind that is relatively common in agriculture is probably the main hope here. It should be encouraged by the EEC Commission as well as by national and local governments. For any scheme to succeed, the fish stocks must be allowed to recover and a European policy for conservation would make more biological sense than a series of national policies.

This means less fishing while the fish breed and grow. EEC funds should be used to make this period bearable. When stocks have recovered more fish will be available in the shops at lower prices, employment in fishing will be secure with higher incomes, and there will be more jobs in fish processing as the quantity of fish increases. But if there is no sound agreement, no one will get what they want.

Among the proposed objectives of Community fishing plans put forward by the Commission (COM(78) 39 final, of 30 January 1978) are:

1. To promote rational exploitation of the biological resources bearing in mind the social and economic needs of certain categories of fishermen in specific regions of the Community.
2. To assure, in regard to these regions, the enjoyment of the natural geographic advantage in catch possibilities within a few hours steaming time from home ports so as to favour balanced development in line with the progressive improvement of fish stocks.

As fishing plans could eventually extend to all waters beyond twelve miles from baselines within the 200-mile Exclusive Economic Zone, it seems appropriate for EEC fishing interests to think out and argue for components of such plans that seem desirable in local circumstances.

This idea of fishing plans is catching on in Scotland.^{15 16} Fishermen's associations are considering making local plans, and already the Shetland Islands Council with the Shetland Fishermen's Association are behind the development of a local fishing plan for the sea between 59 degrees North and 61 degrees 50 minutes North, and between 1 degree East and 3 degrees West. The plan shows how modest are the needs for preference to local boats. Between 1970 and 1977 Shetland boats took 11% of bottom-feeding fish. In this period, the USSR fleet took 26%, Scottish vessels 20%, the Danes 16%, the French 8% and English boats 4%. In 1977 information produced by the International Council for the Exploration of the Seas shows that Scotland landed only 14% of the fish taken from their statistical area that includes Shetland (IVa). Shetland's share was 3% compared with Denmark's 36% and Norway's 29%. The Russians are now excluded, as they are from all EEC waters. The patterns of fishing for sand-eels, pout, and herring vary, but for not one of these did Shetland take more than one-quarter of the total catch. The plan should anticipate the need for growth of the fishing sector to replace the temporary employment in oil-related activities in Shetland. We believe that most local communities of fishermen and the related shore-based workers would benefit from a fishing plan for the maritime areas in which they operate. Plans would need to extend to all waters for their full benefit to be realised for mobile fishermen and migratory fish. Fishing plans might be based on the following principles:

1. Local dominant preference, reflected in guaranteed percentages, based on the proximity to the fishing grounds, should be the basis for management policy. This could be achieved by dividing the waters of all the EEC countries into maritime areas that take account of our knowledge of fish stocks. Priority of access would be based on (a) first call to local boats, particularly when individual or co-operatively owned so as to maximise the economic and employment benefits to the communities of peripheral maritime areas. Preference for local owners would tend to control the movement into biologically rich inshore and middle-water fisheries by fleet owners whose main interest has previously been in distant waters. This is happening on a rapidly

increasing scale in Scotland; (b) favourable treatment for other areas with few employment options apart from fishing; (c) temporary allowance for vessels from ports whose home maritime area has fewer fish than normal; (d) allowance for mobility between areas for vessels designed for fishing migratory species; (e) diminishing priority on the basis of historic rights, and on the basis of exclusion of vessels, such as those of Humberside and West German ports, from waters outwith the EEC.

2. Implementation of fishing plans should be based, in the main, on effort limitation. This would require a licensing system for boats linked to an appropriate definition of fishing effort, an increase in mesh size of nets phased over a period and seasonal and area controls to protect fish when spawning or while of poor quality. Some use of catch quotas would also be necessary. Boats would be prohibited from carrying industrial fishing gear together with normal trawls.
3. Exclusion from most controls of boats below a certain size, varying with local circumstances. This might refer, say, to boats under ten or twelve metres in length. The catch of these boats would be recorded and count towards the total catch allowed for a given species.
4. Relatively relaxed limitations to be imposed on boats of intermediate size, up to perhaps twenty-five metres. "Size" is related to fishing capacity, but a more effective measure might involve several factors including length of vessel, engine power (including auxiliary power), gear, etc. Gross Registered tonnage is a crude but simple alternative.
5. Vessels capable of very high fishing capacity must be limited to certain areas and subject to relatively stringent limitations. Both Faroe and Iceland have successful experience in enforcing regulations along these lines.

Allocation by licensing of fishing effort has the following advantages over allocation by catch quota:

1. It is more certain, and therefore can be seen to be fair.

2. It is more flexible in operation, and therefore a more effective tool of management and conservation.
3. It reduces costs to the industry and makes them more predictable.
4. It is easier to enforce, and more economical given that enforcement at sea can be combined with the other "civil power" duties of the coastal state concerned (e.g. oil and gas installation and pipeline protection, regulation of sand and gravel extraction, traffic control, environmental monitoring), some of which can be best done by suitable aircraft. The licence numbers of vessels could be detected from the air in poor visibility by putting a transponder on each vessel.
5. It is relatively easy for fishermen to know who is licensed and whether a vessel is breaking the rules, which will encourage self-discipline.
6. It tends to be self-regulating in that the effort permitted will result in larger catches when there are more fish than had been predicted when the Total Allowable Catch (TAC) was set. With a catch quota alone, there is a tendency for fishing effort to be increased if fish are scarce.
7. It will reduce discards as well as controlling landings. Discards of ineligible fish are a majority consequence of the catch-quota system; they cause high mortality to young fish which the regime seeks to protect. Controlling effort by the use of larger mesh sizes will help to protect young fish.
8. It allows licence holders more flexibility to fish at times of their own choosing. This will tend to remove one of the factors that forces fishermen to work in bad weather. This should lead not only to a reduction in the numbers of fishermen lost or injured at sea but also to an improvement in their working conditions.
9. Whilst not discriminating between nations, it enables regional and local interests to be protected.

The two most serious objections to this proposal are:

1. That local preference would act to the disadvantage of fishing interests prepared to operate at a distance from their home ports. For instance, Scottish fishermen would only fish for mackerel on the south west coast of England by agreement on the same basis as fishermen from other EEC states. In Britain, the trawler companies would have reason to object strongly to our proposal. West Germany with least coastline in relation to the size of her fishing fleet would presumably raise similar objections. These objections could preclude local preference unless interests in those localities most in need of preference unite to press their case. Ireland has already obtained substantial advantages in negotiation within the EEC. Her case was based on economic need. With rich local fishing grounds and a relatively small fishing fleet, Ireland shares some characteristics and problems with Scotland, and, for instance, the south west of England. The other current member state in need of regional preference, partly on the grounds of low *per capita G.D.P.* and partly on the grounds of doing rather badly where the Common Agricultural Policy is concerned, is Italy. By a happy chance, Italy's fishing interests, though considerable, do not impinge upon those of the United Kingdom.
2. This proposal would entail much greater regulation of fishing. Fishermen have been long accustomed to operating under conditions of competition with regulations that can be evaded with relative impunity. Our scheme would have to be administered by an authority that some would decry as yet another bureaucracy. This disadvantage should be minimised by decentralising the administration as far as possible. Only the overall conservation framework should be centrally co-ordinated.

Some Possible Effects of a Common Fisheries Policy

Appropriate reduction in fishing effort will allow fish stocks to recover, as they did during two World Wars, so that most species of fish will be harvested at a larger size, when they are economically more rewarding. Some species, particularly among

the pelagic forms, such as herring, will reproduce more effectively so that greater numbers of fish will be caught, to the considerable benefit of the industry and those many communities dependent on fishing. This will give greater profitability to those licensed to fish. A reduction in scarcity may lead to a fall in fish prices, though this in its turn may lead to an increase in consumption of fish on a *per capita* basis. Such extra revenue could be subjected to some form of taxation or licence fee to provide revenue for fisheries policing. The fee might be varied to take account of policy objectives and regional factors.

While the stocks recover, considerably less fishing, and hence fish processing, distribution and marketing, can be done, except insofar as:

1. Underexploited species can be utilised. There are important possibilities for developing fisheries, of which the most promising are the horse mackerel which has export potential, and the blue whiting, whose breeding stock is so large that possibly around 1 million tonnes might be taken annually on a continuing basis. The easiest way to use the stock is for fish meal production. The project to develop fish meal processing in the Outer Hebrides, as elsewhere, has the severe problem that once established a fish meal factory exerts pressure for supply, and this too often is found at the expense of fish stocks that could better be fished for human consumption. Blue whiting could be caught by vessels of the distant-water fleet during part of the year and so assist the fleet to adapt itself during a critical phase. The standing stock of some other species is also very large, but not enough is known of their productivity to assess the harvesting rate that could be adopted safely. The grenadier, for instance, has a very large population size but the productivity of the population is low.
2. There are still some important opportunities in Third World economic zones available for fishing under licence from the coastal state, for agency fishing under contract from the coastal state, and perhaps for joint enterprise fishing with local fishing interests, as a form of aid to encourage the appropriate development of their fisheries by the states concerned.

3. Agency and joint enterprise fishing is also possible in the fisheries of advanced nations. Where schemes are marginally viable Community incentives could well be given during the hard period when EEC stocks must be allowed to recover. The expertise of Scottish fishermen is widely recognised. Canadian and Newfoundland fishing interests have sought to recruit Peterhead skippers of advanced dual purpose seine net-pair trawlers with their vessels to fish to their maximum capacity in their waters while local skippers learn their techniques

In the long term, job opportunities in the catching sector should become stable at a level rather lower than at present unless part of the surplus value from improved profitability that can be expected is used to promote employment among fishermen. This would entail a deliberate reduction in efficiency. Controlled fishing will mean a larger harvest of fish. The long-term prospects for the fish processing, storage and marketing side of the industry are therefore excellent. If human consumption fisheries are given preference over industrial fisheries where these conflict this will foster jobs in both the catching and processing sectors because industrial fishing employs few people. The fish that are harvested by present fisheries management techniques are only a small fraction of the primary productivity of the sea. There are exciting possibilities for technological improvement that could increase the scale of fisheries, given successful research and development and appropriate training. A better understanding of the interaction between species may have great practical value.

Filter feeding shellfish offer great scope for improved yields. They subsist directly on the plankton micro-organisms that are more or less the marine equivalent of grass. In the relatively cool waters of Scotland mussel culture offers the best prospects. Natural mussel beds can often be made more productive, but, as they are limited in numbers by the shortage of suitable places to live, the most exciting possibility is to provide them with artificial sites from which they can be easily harvested.

The future for the Scottish fisheries will be calamitous without effective management but given far-sighted policies, that are rigorously enforced, prospects are extremely good. If a Common Fisheries Policy has been agreed by the date of

publication, this paper, we believe, offers a yardstick by which the policy can be judged. The penalty of an inadequate policy will become severe indeed when the Community is enlarged to include the huge fleets of the applicant nations.

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