

COMMISSION OF THE EUROPEAN COMMUNITIES
Directorate-General for Fisheries

**Regional, Socio-Economic Study
in the Fisheries Sector**

IRELAND

**Document
1992**

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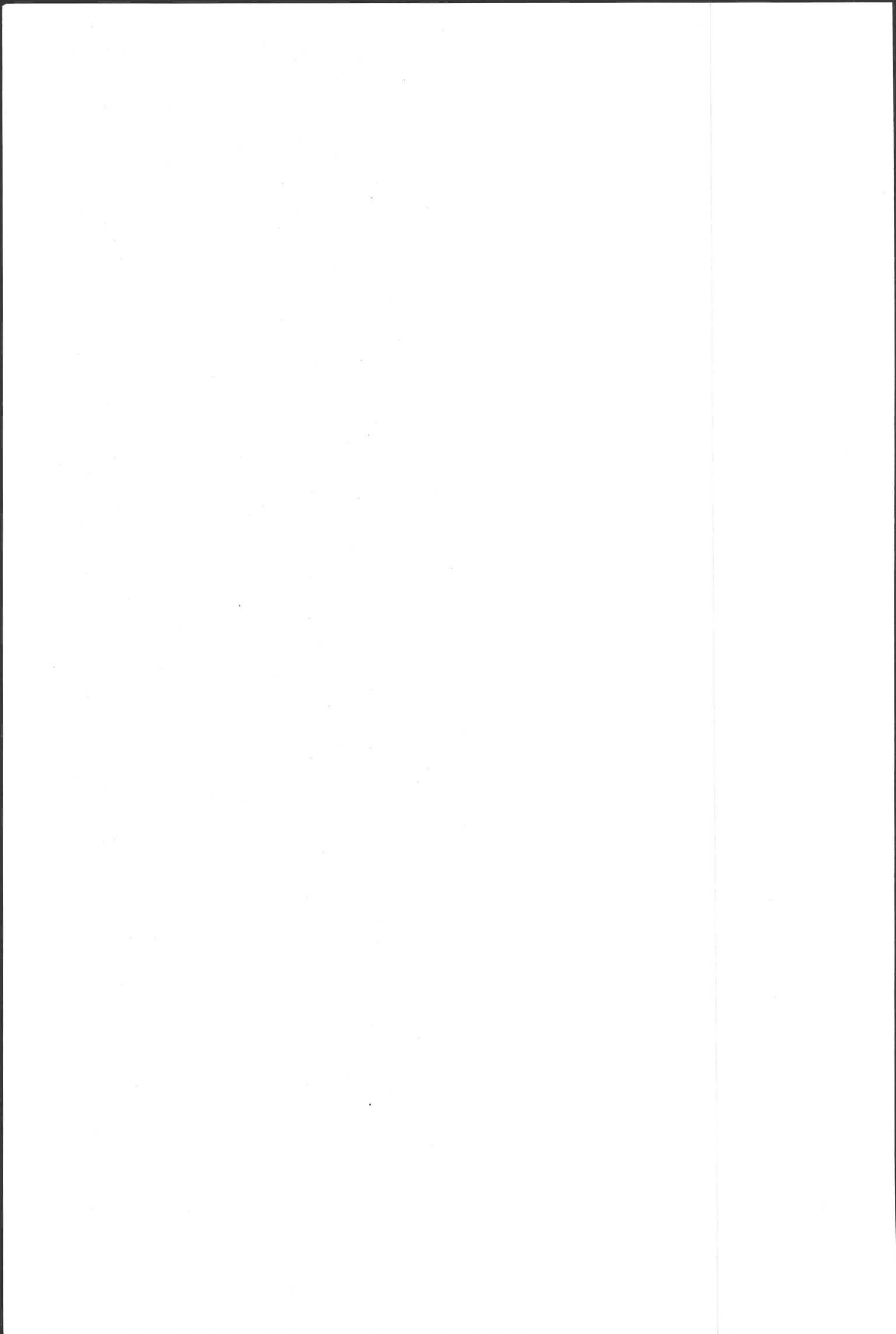
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ABSTRACT

The value of sector output has been estimated to be IR£ 201 million for 1991, with an added value content of IR£ 137 million.

Relative to the extent of the resource found in the waters surrounding the Republic of Ireland, the scale of the industry is small, indicative of the disadvantageous terms which Ireland accepted in participating in the Common Fisheries Policy, and of the poor economic standing and development of the country as a whole. The Republic of Ireland remains a peripheral region of the Community, and its fishery industry is concentrated in areas that are peripheral within Ireland itself.

The bulk of the Irish fishing fleet comprises small wooden vessels with an average age in excess of twenty years, with many of its vessels built thirty or more years ago. The bulk of the fleet prosecutes traditional inshore fisheries, utilising relatively unsophisticated fishing techniques and gear. Few vessels are capable of prosecuting a high seas fishery, and the national fleet is unequipped to exploit the deep water resources lying to the west of the country.

The industry is increasingly dependent on demersal, shellfish and farmed salmon fisheries for high value live and wet fish exports, and as raw material for a relatively unsophisticated primary processing sub-sector. In terms of volume, landings of herring, mackerel and other pelagic species are of major importance, and support high levels of seasonal employment, although the overall value of this sub-sector is limited. The country supports a small but competitive secondary processing sub-sector, but future survival as an industry will necessitate investment and growth.

The sector as a whole is grossly under-capitalised, is organised along traditional, conservative, lines, and supports an insufficient number of successful entrepreneurs, visionaries, and modern managers. Each of these factors works against the future well-being of the sector.

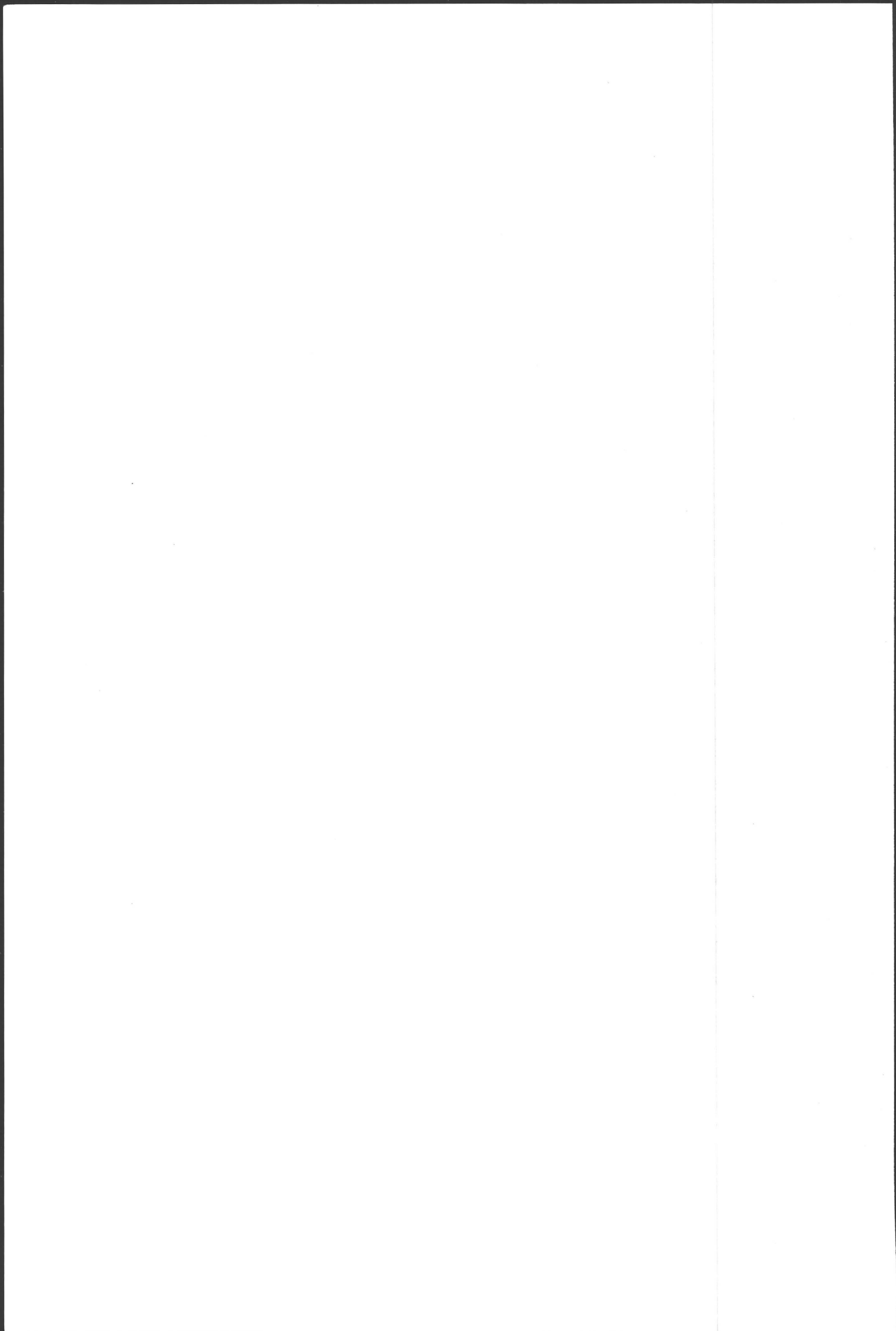
Employment in the sector as a whole amounts to some 10,000 people (in full-time equivalents). Of this number, some 5,000 work in marine fishing. Quota species account for seventy-five per cent of current marine landings.

Fishing is prosecuted along the length of the Irish coastline, and the industry is particularly dispersed. Wherever fishery related activity is found, it plays an important, and often indispensable, role in the local economy.

Along the north west, west and south west, such dependency is particularly strong, and opportunities for growth are good, despite Community enforced quota limitations. In the south east and east, resource limitations are real, and there is little opportunity for growth in fishing, although processing and ancillary services may offer some prospect. In these areas, however, alternate work opportunities are particularly poor.

Any contraction of the industry will have an adverse effect on the socio-economic standing of the associated communities. In the medium term, industry-wide contraction is likely to stimulate a permanent decline in the industry. The only hope for the future health of the sector is growth and expansion, notably in secondary processing, and the channelling of increased landings, from the European fleet as a whole, through Irish ports.

Unemployment in the country as a whole stands at some 18 per cent. In areas particularly dependent on the fishery sector unemployment is as high as 27 per cent.



ABSTRACT

La valeur de la production du secteur a été estimée à 201 mio d'IRE en 1991, avec une valeur ajoutée de 137 mio d'IRE.

Etant donné l'importance des ressources se trouvant dans les eaux qui entourent la république d'Irlande, le secteur est relativement peu développé, ce qui témoigne des conditions défavorables que l'Irlande a acceptées en participant à la politique commune de la pêche ainsi que de la mauvaise situation économique et du faible développement de l'ensemble du pays. La république d'Irlande demeure une région périphérique de la Communauté et son industrie de la pêche est concentrée dans des zones qui sont elles-mêmes à la périphérie du pays.

La plus grande partie de la flotte de pêche irlandaise se compose de petits bateaux de bois dont l'âge moyen dépasse 20 ans, nombre d'entre eux ayant été construits il y a même 30 ans ou plus. Une grande partie de cette flotte pratique la pêche côtière traditionnelle à l'aide de techniques et d'engins relativement peu sophistiqués. Peu de bateaux sont capables de pratiquer la pêche hauturière et la flotte nationale n'est pas équipée pour exploiter les ressources des eaux profondes à l'ouest du pays.

Le secteur est de plus en plus tributaire des espèces démersales, des crustacés et du saumon d'élevage, qui sont exportés de façon très rentable en tant que poissons vivants et frais ou qui servent de matière première pour le sous-secteur relativement peu développé de la transformation primaire. En termes de volume, les débarquements de hareng, de maquereau et autres espèces pélagiques sont très importants; ils procurent de nombreux emplois saisonniers, bien que la valeur globale de ce sous-secteur soit faible. Le pays dispose d'une transformation secondaire peu développée mais compétitive, mais il faudra investir dans ce sous-secteur et le développer pour qu'il se maintienne en tant qu'industrie.

Dans l'ensemble, le secteur connaît un grave déficit en capitaux; son organisation est traditionnelle et conservatrice et il manque de chefs d'entreprise dynamiques, de visionnaires et de gestionnaires modernes. Chacun de ces facteurs joue en défaveur de la prospérité future du secteur.

L'ensemble de l'industrie irlandaise de la pêche emploie environ 10.000 personnes (en équivalent temps-plein). Sur ce nombre, 5.000 environ travaillent dans la pêche en mer. Les espèces contingentées représentent 75 % des débarquements actuels de poissons de mer.

La pêche est pratiquée le long de la côte irlandaise et l'industrie y est particulièrement dispersée. Lorsqu'une activité liée à la pêche se développe, elle joue un rôle important, et souvent indispensable, dans l'économie locale.

Le long de la côte du nord-ouest, de la côte ouest et sud-ouest, cette dépendance est particulièrement accentuée et les perspectives de croissance sont bonnes, en dépit des restrictions contingentes appliquées par la Communauté. Au sud-est et à l'est, les ressources sont vraiment peu abondantes et il y a peu de possibilités de développer la pêche, bien que la transformation et les services connexes offrent certaines perspectives. Dans ces zones, toutefois, les autres possibilités d'emploi sont particulièrement limitées.

Toute restriction imposée au secteur de la pêche en Irlande aura des conséquences négatives sur le niveau socio-économique des Communautés qui en dépendent. A moyen terme, il est probable que les restrictions subies par l'ensemble du secteur entraînent son déclin permanent. Le seul espoir pour l'avenir est de développer le secteur, notamment dans le domaine de la transformation secondaire, et de canaliser des débarquements accrus provenant de toute la flotte européenne par les ports irlandais.

Pour l'ensemble du pays, le chômage est d'environ 18 %. Dans les zones particulièrement tributaires de la pêche, il atteint 27 %.

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CHAPTER 1 INTRODUCTION

In the context of the Common Fisheries Policy, there is an explicit requirement that the socio-economic consequences of policy, and of changes in policy, be taken fully into account during policy formulation. To date, this particular clause has received rather less consideration than circumstances, and EC regulations, would indicate.

Reflecting the deteriorating state of the Community's fishery resources (and the concomitant disruption to the fishery economy of the Community), and pointing up the inadequacies of current policy on management and conservation of fishery resources, the Commission reported in its findings - Communication from the 'Commission to the Council and the European Parliament: Dec. 1990 (Sec (91) 2244)' - that the main problem in the fishing industry was the serious imbalance between available resources and fishing capacity. The expert group recommended an urgent and substantial reduction in the capacity of the Community fleet, and an examination of the socio-economic consequences of such action. Amongst its proposed remedial actions were the following:

"revision of the structural policy in order to improve control over fishing effort, particularly through new multiannual guidance programmes for fishing fleets, and a thorough assessment of the expected regional and social impact of the various policy adjustment hypotheses as regards structure of the industry, conservation of resources and markets in areas heavily dependent on fishing with little opportunity for economic diversification. A study will be launched in order to identify the regions liable to be the most seriously affected and define the most appropriate flanking measures to be adopted in the context of the forthcoming review of the reform of the Structural Funds.

(".....)

"The Commission will also endeavour to ensure that the various arms of the CFP operate more synergistically, with the possible deployment, as appropriate, of other structural instruments, so that the upheaval caused by the necessary restructuring operations are kept to a minimum. It would be desirable for accompanying measures to be conceived as an integral part of the reform of the Structural Funds in order to improve the economic and social cohesion of the Community. It is only in this way that a restructuring policy can be implemented with any chance of success. It should be carried out with the aid of the same methods and instruments used in similar restructuring exercises by the Community in the past. As far as possible, a financial estimate of the various operations will be made in the context of the 1991 report."

Within the original Common Fisheries Policy, agreed in 1983, a requirement was made for a review of the implementation of the Policy after ten years. This review process is now nearing completion. The discussion paper prepared by the Commission - 'Report 1991 from the Commission to the Council and the European Parliament on the Common Fisheries Policy (Sec (91) 2288)' - refers to the socio-economic impact of the CFP in the following terms:

"6.2 Solutions for social problems

Reduction of the Community fleet capacity will inevitably entail restructuring, both of the fleet itself and of the economies of the areas dependent on fishing, which offer little or no alternative sources of production, employment or income. This means that restructuring will have a direct effect on employment, both among sailors and in related industries (shipbuilding, fitting out, services, etc.).

This will require a global approach which must:

- concentrate on fishing communities and regions which are at greatest risk:
- avert any undesirable side-effects:
- be limited in time.

In this context, socio-economic accompanying measures must be envisaged in the next stage of the reform of the Structural Funds, as expounded in the Commission Communication on the Common Fisheries in 1990.

(".....)

"6.4 The contribution to economic and social cohesion in the context of completion of the single market

The bulk of the fishing industry is concentrated in remote coastal and island regions where it accounts for a substantial proportion of jobs and incomes.

In order to improve economic and social cohesion pursuant to Article 130a of the Treaty these regions will require special attention and concentrated support from Community resources and instruments, according to their level of development and dependence on fishing.

The fact that the transition from a situation of overfishing to one of balance would seem to be in conflict with the objectives of the economic and social development of regions dependent on fishing is a further reason why particular attention must be given to the task of restructuring the fisheries sector."

This study forms one of a series being undertaken throughout the Community in conformity with the proposals given in the above mentioned 1990 report. This series of studies seeks to establish the socio-economic parameters of the industry, to identify and quantify, insofar as is possible, dependency on fishing, and the degree to which any displaced labour can be re-absorbed into the local economy. The planned study output comprises recommendations on relevant measures to be implemented in support of those communities most at risk from the proposed changes in the industry, for incorporation in the continuing reform of the Structural Funds.

This study covers the whole of the Republic of Ireland.

1.1 Overview of the Irish economy

The economy of the Republic of Ireland is one of the least developed of the member states of the European Community.

The population of the Republic of Ireland, at about 3,523,000 (Census estimate 1991) is the second lowest of the member states of the Community, after Luxembourg. The Republic of Ireland has the lowest population density of any member state in the Community, with approximately 50 persons per square kilometre as compared with the average density for the EC of 143 per square kilometre.

In 1986, the Republic of Ireland had the highest birth rate within the EC. Emigration, however, virtually offset the whole natural increase. With 29 per cent of its population under the age of 15 years, as compared with 19 per cent on the average in the EC, Ireland has a disproportionately large young population, and, as might be expected, the age dependency rate, at 0.66, is the highest for all Member States. Similarly, the labour force dependency ratio, at 1.71, is high in comparison with the EC average of 1.29. Inevitably, this situation has affected the level of income per inhabitant.

Together with Greece, Spain and Portugal, the Republic of Ireland is among the Community countries with the lowest GDP per head of population. This is an indicator of the relatively weak economic position of Ireland vis-a-vis many of its Community partners, a situation underlined by the gap which exists between the GDP levels of the group at the bottom of the scale, and the more developed, mainly northern, European States.

In terms of GDP per inhabitant, the Republic of Ireland, on a national basis (NUTS 1), ranks tenth in the Community, with a figure of 66 per cent of the EC average (for comparison, Greece is 53 per cent of EC average, Portugal 55 per cent). These figures point up Ireland's poor economic standing relative to the rest of the Community, and Ireland's greatest current problem, unemployment.

The Republic of Ireland has the highest unemployment level in the Community at an average level (1990) of 16.6 per cent. For the young the equivalent figure is 22.2 per cent, for women it is 18.5 per cent. This situation continues to worsen.

In terms of standing as a region (NUTS 2), relative to the other 170 regions of the Community, the Republic of Ireland has the twenty-fifth lowest GDP per head of population, and the fourteenth highest unemployment rate.

In addition, the Republic of Ireland is the only member of the Community that has consistent and increasing outward net migration; less than one per thousand in 1980, over six per thousand in 1985, and over twelve per thousand in 1989.

On the basis of the above and other parameters, the Republic of Ireland is afforded Objective 1 status (along with Northern Ireland, Greece, Portugal, a large part of Spain and southern Italy) with respect to the deployment of European Structural Funds, in recognition of its peripheral economic status within the Community.

1.2 Overview of the Fishery Sector

The fishing industry of the Republic of Ireland has developed considerably since its accession to the European Community and its involvement in the Common Fisheries Policy. Of all the maritime states of the EEC, Ireland was perhaps the most disadvantaged in fisheries terms at the time of its entry into Europe in 1972. At that time it had a modest fleet of vessels, practically all under 26 metres in length, with total annual production of around 85,000 tons.

Since then, largely with EC aid, the fleet has been strengthened in numbers and capacity so that today there are 34 vessels over 26 metres in length, and the total production has risen to 230,000 tons, including that of the growing aquaculture sub-sector. Some processing establishments have been assisted to expand and upgrade, increasing their contribution to the local economy, although it should be stated that processing is mostly first stage and added value is limited.

Much remains to be done to strengthen the post-harvest and service industries in the fishery sector. The ratio of sea jobs to shore jobs is estimated to vary in Ireland from 1:0.7 to 1:4.5 and the national average is only 1:1.5. This compares very unfavourably with more industrialised fisheries, such as in France, Spain, U.K. and Denmark, where the ratio may be as high as 1:5 or 1:7.

Two factors stand out clearly when assessing Ireland's fishery sector vis a vis that of other European countries. The first is the relatively small allocation of resource compared to fishing grounds, and the second is the socio-economic importance of fisheries in the Republic of Ireland, particularly on the north-western, west and south coasts.

Ireland contributed about 16 per cent of the waters in Europe's "common pond" EEZ. In return it received from 5 to 8 per cent of the TAC (Total Allowable Catch) allocations. The fact that the Republic of Ireland entered the Common Market at a disadvantage was recognised in the Hague Agreement negotiated in 1976. Under the terms of the Hague compromise, and in support of the Irish Government's Fisheries Development Programme, Ireland's catch was to be permitted to double from the level recorded for 1975. This doubling was envisaged to occur by the year 1979, to a level of about 150,000 t. In numerical terms this was in fact achieved in 1981, due in the main to an almost six-fold increase in the harvest of low value pelagic species other than herring; over this same period demersal landings increased by 75 per cent, and herring and shellfish landings each by 36 per cent. It is still a subject of contention and argument - was Ireland fully able to benefit from the Hague compromise of 1975, and was the relative advantage envisaged in this compromise sufficient vis a vis the development of the industries in other member states?

Now, however, there is a general call for fleet reductions. Despite the many disadvantages that the industry in the Republic of Ireland would appear to have relative to its neighbours, it is implementing fleet reduction programmes as rigorously as other member states, and possibly more rigorously than some.

The critically important nature of fishing to Ireland's rural economy can be seen in the location of 3 of the 5 major ports in areas where other industry is almost non-existent; in these areas other economic activity comprises, in the main, traditional (low value, smallholder) farming, modest levels of tourist related activity, and the normal support services of rural communities.

In Donegal where the top port of Killybegs is located, unemployment levels may exceed 27 per cent. The Aran Islands off Galway, whose fishermen operate from Rossaveal, depend 90 per cent on fishing and

10 per cent on tourism for their survival. South West Cork and Kerry are dependent on smallholder farming and a little tourism, in addition to the fishery sector. To reduce the fishery in those places, whether by fleet reductions or by smaller TAC allocations, will have serious socio-economic effects, and will further increase outward migration from these areas.

Even with increasing industrialisation the Irish economy, by comparison with other Member States, relies significantly on agriculture and fisheries.

In many areas around the Irish coast seafishing is the main source of full-time or part-time employment. The greatest concentration of such employment is in the south west, west and north west coastal areas, which together account for about 60 per cent of the total employment in the industry. Though they form only a small proportion of the total national labour force, fishermen form a relatively high proportion of the gainfully employed in their respective regions. In some limited areas, fisheries can account for up to 25 per cent of the local employment.

There are about 900 locations around the Irish coast which are used as landing places by local communities. The size of these landing places, and the facilities provided, vary enormously.

The landing places can be divided into two general categories:

- 1) About 700 landing places with minimal facilities of a pier and/or slipway and little else, used by local people with small boats for small scale operations;
- 2) about 200 harbours and landing places which can accommodate larger boats, including about 25 harbours which provide developed facilities, both harbour and on-shore, and which service the bulk of the fleet.

Five major fishery harbour centres are located strategically on the north west, west, south west, south east and east coasts, at Killybegs, Rossaveal, Castletownbere, Dunmore East and Howth. Extensive development works have been carried out recently at Dingle, Co. Kerry, in order to provide an adequate level of landing facilities for the fleet at a port located strategically between Rossaveal and Castletownbere.

The economic status of those areas where fishery activity is concentrated is exemplified by:

- 1) lower than average national income levels;
- 2) higher than average national unemployment levels;
- 3) subsistence agriculture on poor soils with very small farming units;
- 4) high labour dependency ratios;
- 5) inshore fishing from small boats;
- 6) very poor physical and communications infrastructure; and
- 7) very limited industrial development.

While a major effort is sustained in promoting these regions for industrial development purposes, there are extreme difficulties in attracting suitable industries. The handicaps in location, poor infrastructure and the lack of any local raw materials, have made it unlikely that industrial development on its own will create the necessary stable and long-term activity needed. For these reasons, the development of natural and marine resources in particular has been identified as offering a significant advantage in developing stable and acceptable long-term economic activity in the regions with advantages in their location and offering work for which many of the skills required are available locally.

1.3 Broad Industry Statistics

The Irish fishing industry has been making a growing contribution to the economy in recent years in terms of increased output, employment and exports. The industry also generates activity in related sectors such as boatbuilding and repair, equipment supply, transport, distribution, retail and other service industries.

The fishery sector in Ireland employs 16,000 persons at present (full- and part-time). Further development of the processing sector, and of the service industries could raise this to 20,000 without much change in production volume. Some 40 per cent of the fishery work force is part-time, but for many of them this is the preferred status as it allows them time to attend to the other activities essential to survival in a semi-subsistence rural economy.

Depending on the smallest size of boat to be included in the number, Ireland's fishing fleet ranges from 1,400 to 2,100 in quantity. Of these only 600 are over 12 metres in length and only 150 over 20 metres. The vessels are mostly old, some over 30 or even 40 years in age; the average is probably over 20 years. It is of note that there have been hardly any new vessels delivered in the past 5 years.

Three main types of fishing predominate, - demersal, pelagic and shellfish. The full time pelagic vessels are large. Some demersal boats fish for pelagics for a few weeks in the year. Of the shellfish boats, the prawn (nephrops) trawlers take both demersal fish and prawns. Killybegs is the principal pelagic port (it also attracts considerable demersal landings), Dunmore East, Cobh and Rossaveal have short local pelagic seasons, mainly for herring.

Fleet component	Quota Species	Non-quota Species	Total All Species	% Quota Species
Inshore demersal	32,505	13,151	45,656	71
Offshore demersal	4,504	872	5,376	84
Beam trawl	2,048	0	2,048	100
Celtic/Irish Sea herring & sprat	17,973	814	18,787	96
W&NW herring & sprat	23,000	348	23,348	99
Mackerel & scad	71,036	35,485	106,521	67
Total	151,066	50,670	201,736	75

Source: Dept. of the Marine

In 1989, the volume of seafish landed by Irish registered vessels was 225,400 t. This figure comprised some 38,800 t (17 per cent) of demersal species, 25,700 t (11 per cent) of shellfish, and 159,100 t (71 per cent) of pelagic species. In value terms, total seafish landings amounted to IR£ 104 million. The relevant proportions were 45 per cent demersal, 27 per cent shellfish, and 24 per cent pelagic.

About 83 per cent of the volume of fish catches is brought ashore at Irish ports: the remainder is landed directly into foreign ports by Irish vessels, with a decreasing quantity sold over the side to foreign freezer vessels. Of the total volume of fish landed ashore, it is estimated that almost 80 per cent is processed in one form or another; less than twenty per cent of this, however, is subjected to secondary processing. Thus it is estimated that about 60 per cent of landings enter the fresh market in one form or another, 30 per cent in frozen form, mainly bulk frozen, and only some 10 per cent as secondary processed product.

There are about 280 fish farms in Ireland and they concentrate chiefly on salmon production, though shellfish culture is increasing rapidly. In 1989 they produced 19,700 t of fish and shellfish valued at just under IR£ 29.4 million. Over 85 per cent of the production in value was from salmon. An estimated 2,100 persons work in aquaculture, 900 of them full-time. Expansion of fish farming is constrained by lack of additional sheltered sea coast sites and by the current depressed state of the global market for salmon.

Figure 1 - Contribution of fisheries to total production by quantity; 1960 - 1990

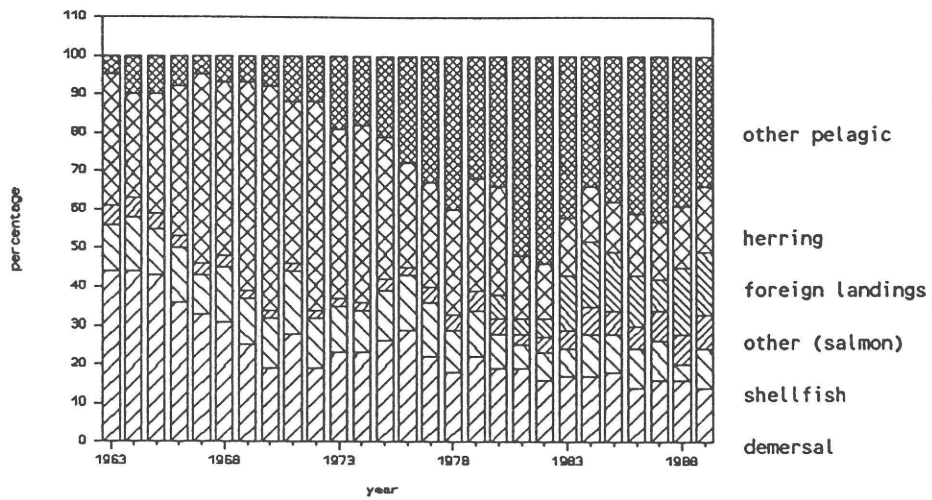


Figure 2 - Contribution of fisheries to total production by value; 1960 - 1990

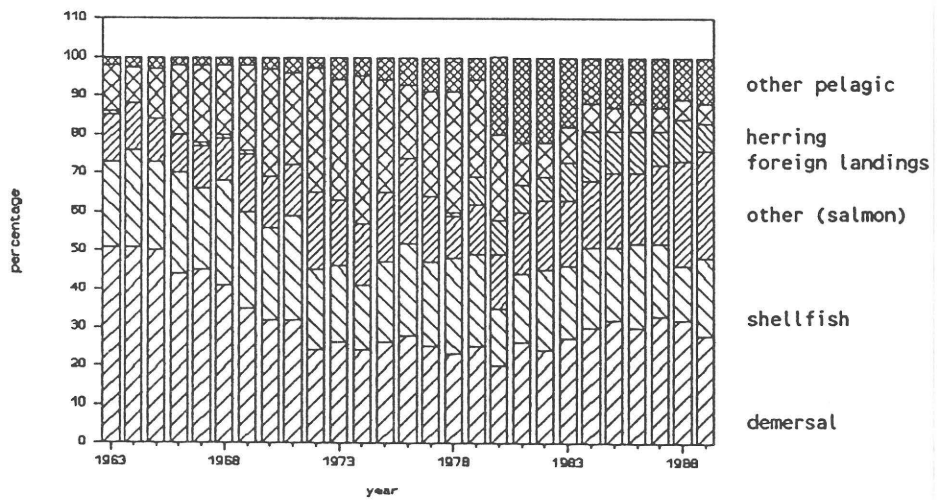


Figure 3 - Cumulative production, by type and by quantity; '000 tons

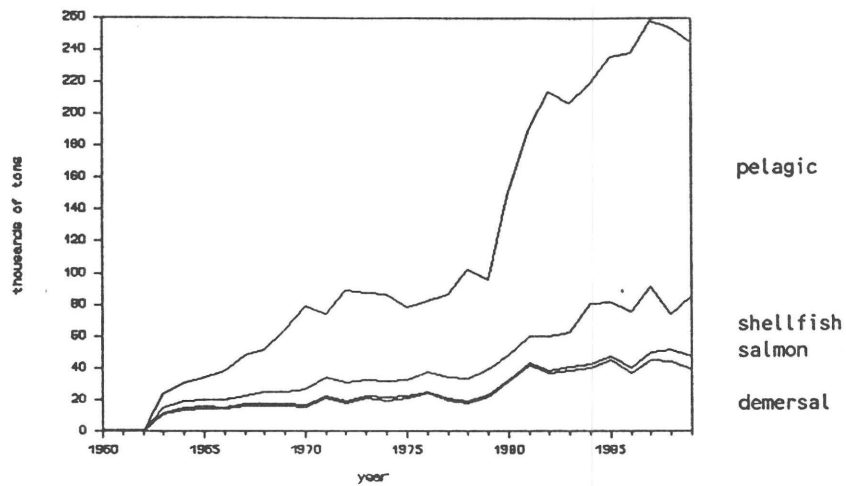


Figure 4 - Cumulative production, by type and by value; IR£m

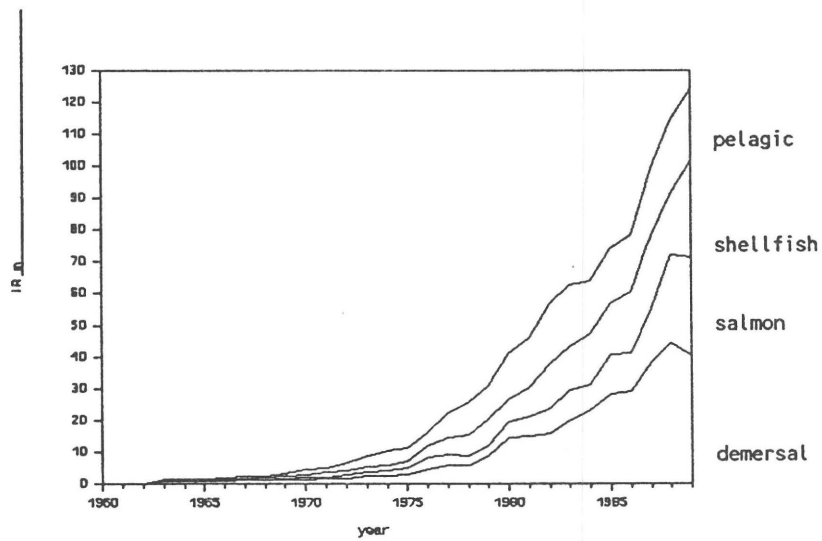


Figure 5 - Landed volume by species group; 1983 - 1990

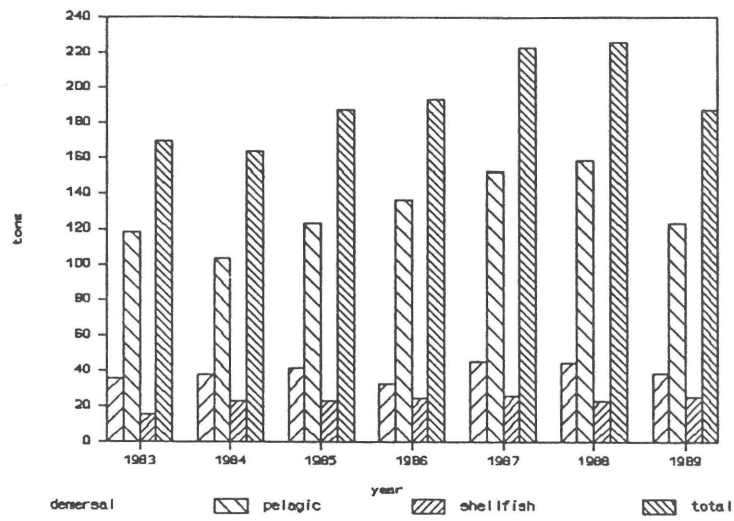
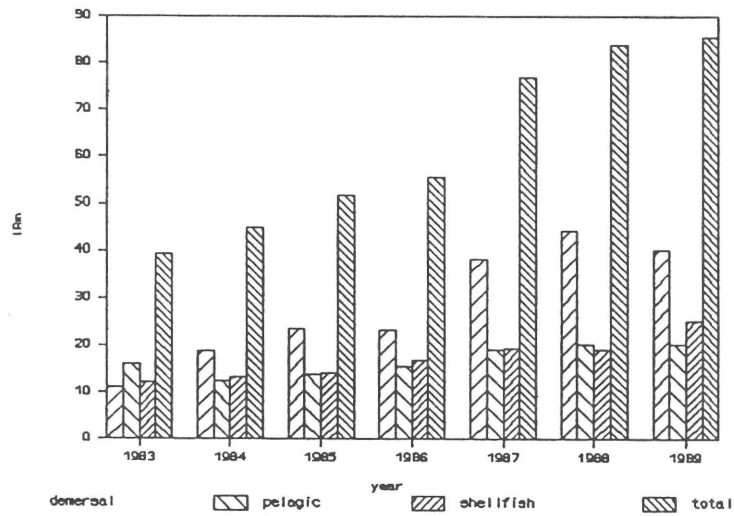


Figure 6 - Landed value by species group; 1983 - 1990



Ireland has close on one hundred fish processing establishments but most of them are of modest size. This sub-sector employs 4,000 persons, just under half of who are seasonal or part-time employees.

In 1989 Ireland exported 43,000 t of fish products valued at IR£ 46 million. Some 16,000 t of that total was fish meal valued at IR£ 6.6 million. Most of the fish processing in Ireland is of a preliminary nature and there is good potential to increase value added work in this sector. For 1986 it was estimated that processed output comprised 20 per cent high added value, 17 per cent medium added value and 63 per cent low added value product.

Exports of fish and fishery products in the period 1985-1989 grew from 138,200 t, valued at IR£ 82 million to 145,800 t, valued at IR£ 154 million. Exports of fish are mainly in fresh, commodity frozen or semi-processed form, and go to importers, processors and distributors in the countries of destination. A proportion of fish exports is sold for direct consumption in this form, while a further proportion goes for processing in the importing countries. Non-EC markets, such as Japan and Nigeria, have become relatively more important over the last number of years, although the Community market still takes more than 80 per cent by value of all Irish fish exports, with France the largest EC market, followed by Spain, the UK and Germany.

Total imports of fish and fish products, amounted to 43,200 t, valued at IR£ 46 million, in 1989. This compares with a 1985 volume of 39,500 t, valued at IR£ 37 million. The bulk of fish imports comprise smoked fish, canned and bottled fish, as well as various preparations of fish and shellfish products. Great Britain and Northern Ireland provide approximately 70 per cent of all Irish fish imports.

Ancillary industry in the fishery sector employs around 1,750 persons in Ireland, over 75 per cent of them full-time. This sub-sector includes boat building, marine engineering, electronics, fishing gear manufacture, fuel and ice supplies, and financial services. The ancillary and service industries are not well developed. Most of Ireland's fishing vessels, for example, were built abroad, and none of the engines or electronic instruments used on these vessels are made in the country.

Investment in the Irish fleet is reckoned to be IR£ 120 million at present values, and in the fish processing sector around IR£ 80 million. The aquaculture sector is more difficult to assess since fish farms may vary in size from a few oyster rafts to a well equipped large salmon hatchery and farm. The consultant estimates that at present the investment in fish farms is around IR£ 20 million.

Ownership of enterprises is largely private and family. Company ownership of fishing vessels is confined to large pelagic trawlers and some beam trawlers. The spread of individual ownership is widest among demersal and shellfish boats. Fish plants are owned by companies, families and individuals. Large fish farms are company owned. Most small ones are owned and operated by individuals or families.

Absentee ownership does not exist in the fishing sector as experience has shown that such arrangements invariably result in business failure.

Profitability of the Irish fleet varies greatly from sub-sector to sub-sector and vessel to vessel. Given the very old average age of the fleet, most vessels are able to pay their way, but very few are returning sufficient profits to facilitate vessels replacements. The most profitable components of the fleet are the medium-sized demersal trawlers operating out of the South West and North West. Operating in the Irish Sea fishery is marginally profitable and a large part of the inshore fleet is operating on a breakeven basis only. Much of this is due to ageing vessels and technology, but also limited skill levels, part-time activity, and resource constraints. Increased exploitation of inshore shellfish resources is proving financially attractive. The larger vessels in the pelagic fleet have in the past returned healthy profits, but the deteriorating market conditions and the resultant inability to finance new technology is proving highly damaging to this sector of the fleet.

By 1989 the total value, at first sale, of fish production had risen to IR£ 104 million from capture fisheries and IR£ 32.3 million from fish culture. Value of output from the processing sub-sector may have amounted to IR£ 165 million. The turnover in the fishery service and manufacture industries was probably around IR£ 10 million. The industry then currently generates an output valued at around IR£ 200 million (reduced to take account of primary production input to the processing sector) a year.

1.4 The Fishing Fleet

The total number of powered vessels in the Irish fleet grew steadily from some 1,000 vessels in 1972 to 1,600 in 1982, falling in subsequent years to a total of 1,400 by 1990. In tonnage terms the growth was from 19,000 grt in 1972 to 39,000 grt in 1972 to 51,000 grt in 1990. This represents a notional average increase in vessel size from 19 grt to 24 grt to 36 grt. Hidden within these figures, however, are some significant factors; notably that some sections of the fleet have modernised, whilst others have not; yet others constitute additions to the fleet.

Over half of the fleet comprises inshore vessels under 12 m in length. This component of the fleet has remained relatively unchanged, and comprises, in the main, aging vessels, most over twenty years of age, many well over thirty years of age.

About a third of the fleet comprises inshore trawlers under 20 m in length. Some ten per cent of the 12 to 18 m length group is under ten years of age, but the bulk are of twenty to forty years old. The modal value for the 18 to 20 m length group is somewhat better, lying around the fifteen year mark.

The larger demersal trawlers, up to 27 m or more, are of variable age, but older rather than younger; clusters are notable around the fifteen and twenty-five year marks.

The beamer fleet comprises some 20 large vessels in the range 20 m and upwards. The bulk of this fleet is twenty years or older, and has been a relatively recent addition to the Irish fleet.

The most modern component of the Irish fleet is that which fishes the mackerel, horse mackerel and scad fisheries of the middle and distant waters surrounding the Republic of Ireland. 22 vessels are fitted with refrigerated seawater tanks, referred to as "tank boats"; one has additional freezer capacity. The average age of this fleet is twelve years, with the six largest vessels having entered this fleet, new, in the last eight years. All of these vessels are over 27 m in length, the largest are 60 m and over.

Under twelve metre vessels exploit inshore grounds, covering mixed demersal species, shellfish, and a significant fishery for salmon.

The total fleet currently employs some 3,400 full-time fishermen, and 4,500 part-time (1991 figures), landing some 225,000 t of fish valued at first-hand at IR£ 104 million.

Principal fisheries are those for general demersal resources, including nephrops, prosecuted by the bulk of the inshore and middle distance fleet, the beamer fleet, which specifically targets flat fish, the seasonal herring and sprat fishery, prosecuted by elements of the demersal fleet, and some drawn from the dedicated pelagic fleet, the mackerel, horse mackerel and scad fishery, prosecuted by the relatively new dedicated pelagic fleet, and small, more specialist fisheries for live crab, whelks and bivalves (mussels and oysters).

1.5 Fishing Ports

In 1989 the five major ports of Killybegs, Rossaveal, Castletownbere, Dunmore East and Howth accounted for 64 per cent of total landings into Irish ports, by volume, and 47 per cent by value. Killybegs, the primary pelagic port, and home port to the bulk of the dedicated pelagic fleet, accounted for 45 per cent of landed volume, though only 20 per cent of total landed value. Nevertheless this was more than double the value of landings at the next best port, the predominantly white fish port of Castletownbere, and more than four times that of the lowest ranking of the five major ports, the whitefish and shellfish port of Rossaveal.

A further fifteen ports each had landings valued at over a IR£ 1 million accounting for 26 per cent of the value of national landings, 19 per cent by volume.

Of the next thirty ports with landings valued at between a quarter and one million Irish pounds, 19 develop the bulk of their value from shellfish (pointing up the importance of coastal shellfish fisheries to the smaller ports), 8 from demersal species, and only 3 from pelagic landings. This group of lesser ports accounted for a further 17 per cent by value, and 16 per cent by volume.

Figure 7 - Age Distribution of Irish Fishing Fleet - 1990

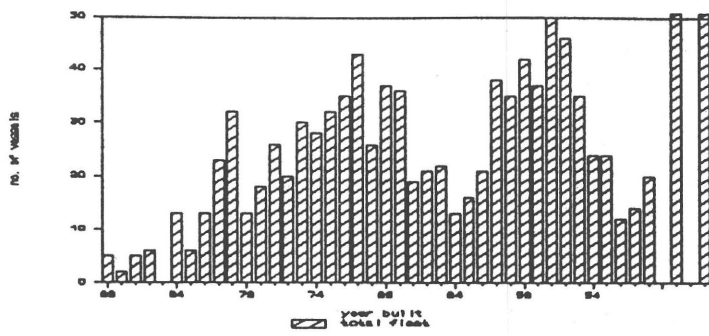


Figure 8 - Age Distribution Trawler Fleet in Irish Fleet, as of 1989

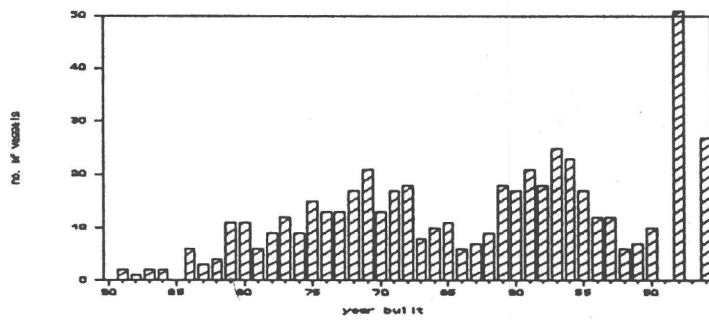


Figure 9 - Age Distribution of 12m - 18m Trawlers in Irish Fleet, as of 1989

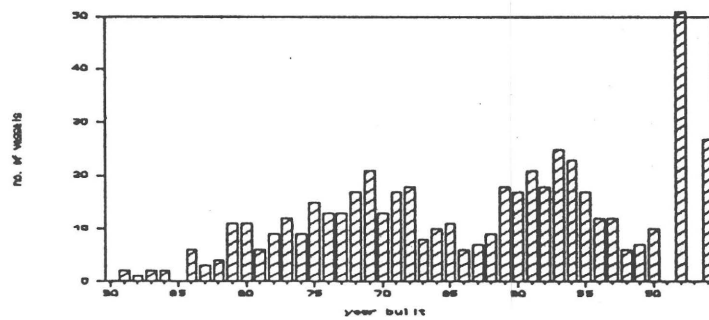


Figure 10 - Age Distribution of 18m - 20m Trawlers in Irish Fleet, as of 1989

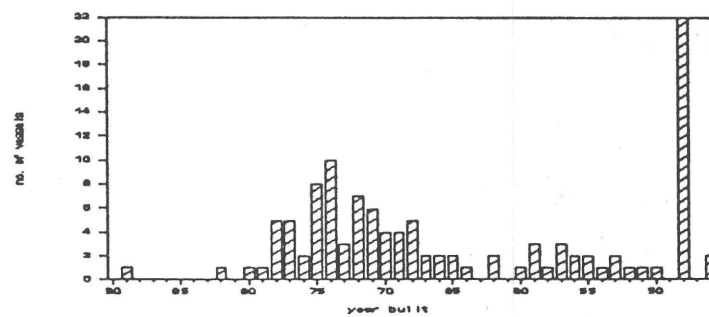


Figure 11 - Age Distribution of 20m - 24m Trawlers in Irish Fleet, as of 1989

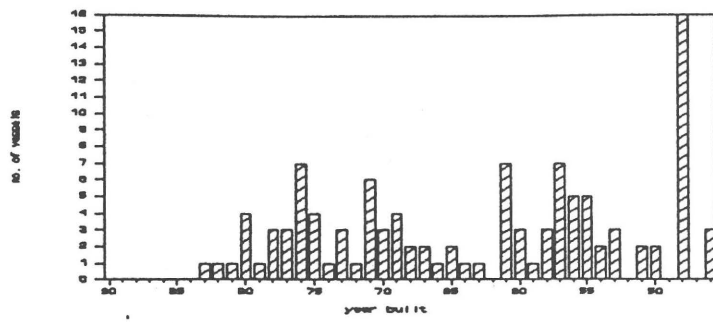


Figure 12 - Age Distribution of 24m - 27m Trawlers in Irish Fleet, as of 1989

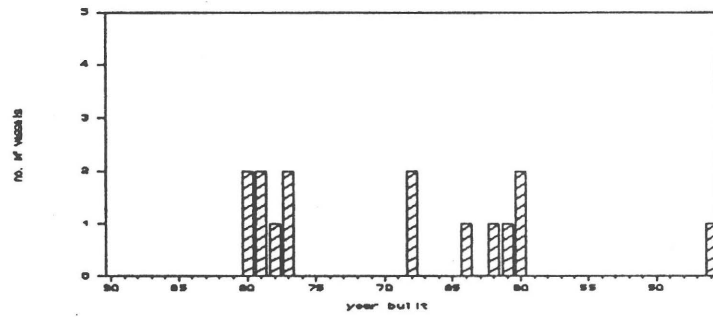


Figure 13 - Age Distribution of 27m+ Trawlers in Irish Fleet, as of 1989

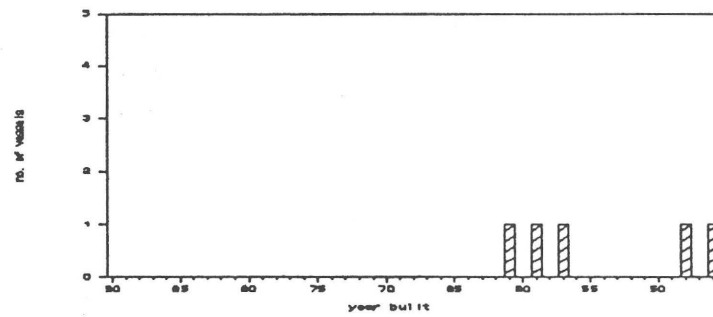
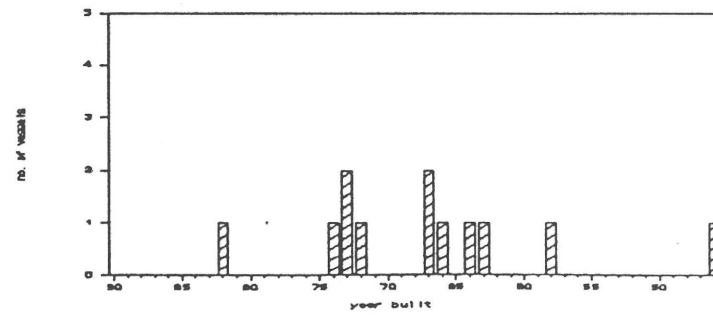


Figure 14 - Age Distribution of Flag Vessels in Irish Fleet, as of 1989



The top fifty ports, by value of landings accounted for 84 per cent of the value of national landings, and 90 per cent by volume.

In the case of pelagic landings, it is of note that the principal ports are Killybegs (69,000 t in 1989), Rathmullen (5,000 t), Downings (4,000 t), and Kincasslagh (3,000 t), all in Co. Donegal, and Cobh (7,000 t) and Fenit (2,000 t), in the south and south west respectively, seasonal herring ports. Significant, but not the dominant landings by value, are made in Dunmore East (5,000 t), the Celtic Sea herring port, Castletownbere (4,000 t), Rossaveal (3,000 t), and Howth (1,000 t), the Irish Sea herring port.

The dominant demersal ports are, by region,

North/ North West:

Greencastle
Moville
Bunbeg

West:

Rossaveal

South/South West:

Castletownbere
Dingle
Valencia
Union Hall
Baltimore
Schull
Kinsale,

South East:

Dunmore East
Kilmore Quay
Rosslare
Helvick
Duncannon
Ballycotton

East:

Howth
Arklow

For those ports highly dependent on shellfish landings, by region they are:

North/ North West:

Burtonport
Malin Head
Kilalla/Kilcummin

West:

Belmullet
Carna/Cill Chiarain
Achill
Ballyglass
Clifden/Cleggan
Roundstone/Ballyconnelly
Porturlin/Portacloy
Clarinbridge

South/ South West:

Castlegregory
Bantry
Fenit
Cromane
Garnish/Travara
Kenmare
Glengarriff
Dunmanus Bay

South East:

Wexford.

East:

Clogherhead
Balbriggan
Loughshinny.

1.6 Aquaculture

Total aquaculture production has increased from some 6,000 t in 1980 to some 20,000 t in 1989; value increases have been from IR£ 2 million in 1980 to IR£ 32 million in 1989. Salmon is by far the most important farmed organism in value terms, accounting for 78 per cent of the total farmed fish value, and almost 85 per cent of the increase in value.

Against national production figures, farmed production amounts to 3 per cent by volume, but 20 per cent by value (1988 figures). The value of aquaculture exports as a proportion of overall fish exports grew from 3.9 per cent in 1983 to 16.4 per cent in 1987.

In 1982 employment in the aquaculture sector was estimated at 90 full-time and 70 part-time workers. For 1989, full-time employment of people directly engaged in aquaculture activities was estimated to be in the region of 915 and part-time employment at 1,102. Other estimates have put direct employment in the industry at 1,500 and indirect employment at the same again. In relative terms, these are not large numbers, but it is of note that this employment is created in remote areas in Ireland where there are few other sources of work.

Salmon production has increased dramatically since 1983 when 257 t were produced. In 1990 6,332 t were produced from Ireland's 27 marine salmon farms, valued at IR£ 29 million, up from IR£ 25 in 1989. Approved capacity at the end of 1989 was 14,000 t. Farms are located along the western coast of the Republic of Ireland. Physical potential for expansion of the industry exists, but constraints to this development are mounting, with increasing pressure for alternate use of suitable sites, increased concern over environmental issues, and the continuing depressed state of the market due to supplies exceeding current demand levels. Recent transfers of ownership of the larger farms point up the currently high risk attaching to this sub-sector of the aquaculture industry.

In the farmed salmon industry the current trend is towards larger integrated production units. Decreasing margins at the farm gate in the smaller sized fish (due to high production levels from Norway), combined with environmental issues, have become important constraints to the development of new ventures in the Republic of Ireland. Disease is at present the major technical constraint on production levels and it is expected that increased production will be achieved through better disease control and expansion in licensed capacity.

Apart from individual marketing initiatives by the major salmon producers, group marketing is organised through the Irish Salmon Producers Group (ISPG) which was founded in 1985 and which co-ordinates the sale and marketing for its members. This form of co-operation in seafood marketing is being promoted for other aquaculture products, notably by the Gaeltacht Development Agency, Udaras na Gaeltachta.

Bottom culture of mussels is practised in Wexford Harbour, Co. Wexford, Cromane, Co. Kerry, and Youghal, Co. Cork. The production of bottom grown mussels has increased from approximately 6,000 t in 1983 to 12,500 t in 1988. Production is limited by the available seed supplies and production estimates for 1993 are in the region of 15,000 t.

Rope culture of mussels is on the increase, with initial work centred around the south west, notably Bantry, but production has now been taken up in sites around the country. Production in the 1990/91 season was estimated to total some 2,200 t which was probably about 60 per cent of installed production capacity. Regional harvests were 1,950 t in Bantry, 650 t Kenmare, 100 t Killary, 200 t Clew Bay, 100 t Donegal and 250 t Roaring Water Bay. Rope cultured oysters tend to be thin shelled and relatively free from encrustation and grit; as a consequence they tend to command higher prices than those for bottom grown mussels.

Growth of flat oyster production has been slow, increasing from 278 t in 1983 to 575 t in 1988. Flat oyster production is expected to increase to 850 t by 1993 and 1,390 t by 1996.

In 1983 Ireland produced 35 t of Pacific oysters which increased to 300 t in 1988. Growth of the Pacific oyster industry is projected to continue at present levels reaching 870 t by 1993 and 1,500 t by 1996.

Clam production for 1990 is estimated at 101 t, increasing to 560 t in 1993 should prices of clams on the Spanish market not decrease further.

Future opportunities exist for the cultivation of such species as scallop and abalone, eels and halibut.

As a significant growth area in the fishery sector, total aquaculture output has been estimated to have the potential for increase to up to 62,000 t valued at around IR£ 117 million by 1995. Government investment and support to this sub-sector has been considerable and continues. Much of the rationale for this support is based on the high socio-economic benefits derived from development of this sub-sector, and the fact that, natural physical resources permitting, relatively greater scope exists for growth in this sub-sector than in most sub-sectors of the capture fisheries.

The bulk of the aquaculture industry is located in areas of low population density, and where employment opportunities are very limited. Much of this development is in Gaeltacht (Irish speaking) regions, notably in the west of Ireland. In a survey in 1987, taking into account both the direct and indirect effects of the fish farming industry, it was estimated that total GNP arising was in the order of IR£ 8.4 million, of which two-thirds was estimated to arise from activities in the Gaeltacht.

1.7 Processing

At the end of 1990 the Irish processing sector consisted of 92 firms, processing 215,000 t of fish, and developing sales valued at IR£ 165 million. This sub-sector employs nearly 4,000, comprising some 1,800 full-time and 2,200 seasonal or part-time staff.

This sub-sector is characterised by small and medium sized companies, and in this respect, no company has sales in excess of IR£ 10 million.

Even so, 12 companies employ more than 100 staff, but within these figures there is a high level of temporary employment. This reflects the seasonal nature of much of the industry's activities, which responds to the availability of landings from the catching sector.

The greatest concentration of processing concerns, and largest levels of employment, are in Co. Donegal. Other important processing centres are in Dublin, Galway and Wexford.

Most of the fish landed in Ireland is subject to some form of processing, but only 23 per cent by value and 9 per cent by volume of raw material or primary processed products are taken to a secondary stage of processing. Examples of secondary processes include smoking, canning, marinating and breading/battering.

The extent to which secondary processing is employed differs from species group to species group. For example, only 11 per cent of processed herring, by volume, has been subject to secondary processing (including extraction of roe), but represents 45 per cent of the output value for this species. For salmon the figures are 9 per cent by volume and 24 per cent by value; for mackerel, 1 per cent by volume, 2 per cent by value.

Little or no processing is undertaken on most white fish - for particular species this is as much because a premium price is offered for the fresh fish, as that processing capacity is poorly developed in this sub-sector. For many of these species processing consists of grading, icing and packing. Of note, the bulk of Ireland's consumption of breaded and battered fish products, and of prepared meals, is of product imported from the UK.

The Irish processing sector separates out into three distinct divisions - fresh processed, deep frozen, and other (incorporating the highly significant component of shellfish processing). In terms of industry turnover, 28 per cent is accounted for by fresh processed, employing 27 per cent of the sector's workforce, 27 per cent is of deep frozen product, accounting for 33 per cent of sector employment, 24 per cent by "other", predominantly shellfish processing, employing 23 per cent of the workforce. 8 per cent is accounted for by smoking operations, employing 6 per cent of the workforce, and the rest, including prepared dishes, dried and salted products, marinades, canned products and fish meal, accounts for the remaining 12 per cent of turnover, and 12 per cent of employment.

CHAPTER 2 IDENTIFICATION AND CHARACTERISATION OF THE ZONES HIGHLY DEPENDENT ON FISHERIES AND ANCILLARY ACTIVITIES

2.1 Administrative structure

The Republic of Ireland is recognised, in terms of Community planning, as comprising a single NUTS 2 region. This is sub-divided into seven NUTS 3 regions. For planning within Ireland, the divisions recognised by the Industrial Development Authority (IDA), comprising nine regions, are more commonly used. The bases of these divisions differ significantly each from the other. For marine fisheries administration, four coastal divisions are used, which differ from both of the above planning divisions.

Common ground is reached at the county level. The country is divided into 26 counties, which are each sub-divided further - into 212 rural districts and county boroughs (urban districts), and these again into 3,457 District Electoral Divisions (DED's). Census data are recorded by DED and can be accessed through the Small Area Population Statistics (SAPS) of the Central Statistics Office (CSO).

To give some dimension to the scale of the country and its administrative divisions, the six county boroughs account for 36 per cent of a total population of 3.5 million people. The extent of "urbanisation" or, conversely, the extent of the dispersal of this population, can be judged from the following figures drawn from the 1986 Census.

County Boroughs (cities)	population
Dublin	921,000
Cork	174,000
Limerick	77,000
Galway	47,000
Waterford	41,000
	number of towns
towns with populations of 10,000 or more -	19
towns with populations of 5,000 to 10,000 -	33
towns with populations of 3,000 to 5,000 -	27
towns with populations of 1,500 to 3,000 -	43
towns with populations of 1,000 to 1,500 -	68
towns with populations of 500 to 1,000 -	126
towns with populations of 50 to 500 -	298

The remaining thirty-six per cent of the population live in dispersed rural locations.

The country has the lowest population density in the Community, at 51 per square kilometre (1987). The national population is small in number, and highly dispersed in nature, typical of a predominantly rural economy.

In general, fishery activity is dissociated from any of the main urban centres listed above (Howth and Balbriggan are located in the northernmost district of County Dublin, on the periphery of the main urban conglomeration, i.e. outside Dublin County Borough; they draw their workforces from the immediate locality), but rather with the smaller towns and rural areas along the extensive coastline of Ireland. This applies to all sub-sectors of the fishery economy -fishing, harbours, processing, aquaculture and ancillary services.

2.2 Zonation

On a functional basis, zonation around the five principal fishing ports which are Killybegs, Rossaveal, Castletownbere, Dunmore East and Howth is a good starting point. This conforms roughly with the NUTS 3 planning regions of Dublin/East, South East, South West, West and North West.

Further, however, given the small and dispersed nature of the population, and the non-involvement of the major urban centres in fishery related activities, the areas of influence of the fishery economy are very

limited, conforming closely to coastal communities only, and notably to those communities around major and secondary ports, and centres of aquaculture (salmon and mussels).

On this basis it is possible to identify still tighter zones of influence of the sector, notably:-

all of Donegal;

Connemara, the Aran Isles, and the south western part of Mayo;

the western halves of counties Kerry and Cork;

the south eastern part of counties Waterford and Wexford; and

the coast from north Dublin to Clogherhead/Dundalk, towards the border with Northern Ireland.

Since, outside the major, secondary and tertiary ports, there are several hundred small harbours and jetties, it would be reasonable to place those coastal areas not covered in the above described zonation as a further zone. This is not just because together they contribute significantly to the sector, but more particularly because they form a vital link in the socio-economic structure of the smallest coastal communities, and therefore are of considerable relevance in the context of this study. Fishery activity, measured in terms of the value of sector output, falls off markedly the greater the distance from one of the five major ports. It is these identified areas of low activity that form the sixth zone of the study.

Tested against a variety of sectoral and economic indicators these six zones have been shown to be fair functional reflections of the different characteristics, and geographical influences, of the sector.

2.3 Fishery industry indicators

The fishery industry indicators are strong.

Key parameters for comparison are summarised in the following table. For ease of comparison, and/or where more specific data are not available, county, planning region and NUTS 3 data have been used as approximations to zonal data.

Forty-two of the 50 top performing ports of Ireland fall within the five identified zones, and account for 76 per cent of the value of landings to Irish ports, and 84 per cent of the volume. The other eight, out of the fifty top ports, account for a further 5 per cent of the value of landings, and 10 per cent of the volume, leaving 16 and 21 per cent respectively to be allocated amongst the remaining 750 odd harbours and landing jetties located along the Irish coastline.

For comparison, of the 104 commonly recognised fishing harbours, other than the top 50, 46 per cent are to be found outside the 5 zones. Apportioning the unallocated landings according to the relative distribution of these other ports (i.e. on the assumption that the distribution of these ports is proportional to the distribution of the value of landings from the 800 odd lesser harbours and jetties), indicates that the sixth zone might be responsible for 12 per cent of the value of national landings; indicating that the five main zones explain 88 per cent of total landed value. This is a crude reflection of the lesser standing of the sixth zone, in value of sea fishing, relative to the other five zones.

84 per cent of the vessels operating in the Irish fleet are estimated to operate from shore bases within the five zones, equivalent, in very crude terms, to 72 per cent of the power of the fleet.

87 per cent of employment within the sector is estimated to fall within the five zones (calculated in full-time equivalents). This includes 90 per cent of fishermen, 87 per cent of the processing workforce, 75 per cent of aquaculture employment, and 95 per cent of employment in ancillary services.

From these employment figures, it should be noted that aquaculture activity is proportionately greater in the sixth zone than the five together. This reflects the predominance of aquaculture activity all along the west coast of Ireland.

Table II - Zonal indicators

	units	1	2	3	4	5	6
Employment							
population							
population of IDA regions	000's	130	294	537	385	1,534	
population of coastal counties	000's	130	247	404	152	230	
population of zones	000's	130	63	107	88	170	
zonal pop. relative to nat.	%	3.67%	1.78%	3.04%	2.50%	4.81%	
area of zones	000's ha	483	359	478	206	72	
population density of zones	persons/sq km	27	18	22	43	235	
migration rates	persons/1000	1.2	1.7	3.8	3.3	5.0	
workforce							
workforce:population	%	34.6%	35.6%	35.7%	35.9%	37.0%	36.1%
unemployment:workforce	%	27.1%	16.3%	15.7%	19.6%	17.7%	18.1%
dependents per person in work	persons/employ	2.96	2.36	2.32	2.46	2.28	2.38
sector employment							
employment in fishing	no.	1,256	473	1,201	723	697	570
employment in aquaculture	no.	303	321	338	101	67	374
employment in processing	no.	952	291	210	352	439	323
employment in ancillary serv.	no.	756	59	241	111	229	75
total employment in sector	no.	3,267	1,144	1,990	1,287	1,432	1,342
prop. to sector employment	%	31.2%	10.9%	19.0%	12.3%	13.7%	12.8%
prop. to zonal employment	%	10.0%	6.1%	6.2%	5.0%	2.8%	
Production							
landed value							
demersal landings	IRmil	9	3	13	7	6	2
pelagic landings	IRÉmil	17	1	2	1	0	2
shellfish landings	IRÉmil	3	3	15	4	4	2
salmon landings	IRÉmil	2	1	1	1	1	1
total landings	IRÉmil	29	9	31	13	11	7
total landings	%	29%	9%	31%	13%	11%	7%
Fleet							
size							
fleet size	nos.	326	150	358	205	156	236
fleet size	000's hp	113	21	75	51	44	28
fleet power	%	34%	6%	22%	15%	13%	8%
average power per vessel	kW	348	141	209	249	283	119
estim. current value of fleet	IRÉmil	49	7	26	19	12	14
fleet performance							
landings per primary employee	IRÉ/person	23,422	18,465	25,454	18,598	15,825	11,463
landings per primary employee	t/person	103	24	32	27	18	25
power per fisherman	kW/person	90	45	62	71	63	50
Output							
fishing output	IRÉmil	32.7	8.8	28.5	15.2	12.3	6.5
aquaculture output	IRÉmil	6.2	7.5	8.2	0.9	1.5	8.0
processing added value	IRÉmil	64.0	22.4	19.0	16.1	30.8	12.0
output of ancillary services	IRÉmil	4.6	0.5	2.3	0.8	0.7	0.8
total output	IRÉmil	64.8	24.3	45.3	22.3	24.8	19.6
Added Value							
fishing added value	IRÉmil	21.6	5.8	18.8	10.0	8.1	4.3
aquaculture added value	IRÉmil	1.6	1.9	2.1	0.2	0.4	2.0
processing added value	IRÉmil	21.3	7.5	6.3	5.4	10.3	4.3
ancillary added value	IRÉmil	2.3	0.3	1.2	0.4	0.4	0.4
total added value	IRÉmil	46.8	15.5	28.4	16.0	19.2	11.0
GDP							
GDP per capita, 1990	IRE	6,047	6,279	7,195	6,546	6,274	
GDP by zone	IRÉmil	784	395	772	579	1,065	
sector contribution to GDP	%	6.0%	3.9%	3.7%	2.8%	1.8%	

Source: Nautilus' calculations.

2.4 Economic activity indicators in the zones

The total population of Ireland in 1986 was 3.538 million; preliminary results of the 1991 Census give a figure of 3.535 million. From the 1986 Census data, the population of the counties covered by the five zones was 1.2 million, excluding the 1 million of County Dublin. By zone, however, the overall figure drops to 560,000, or 16 per cent of the total population.

The density of population per zone is lowest in Connemara at 12 per sq km, rising to 50 per sq km in the south west. Around the three west coast major ports are found the largest expanses of low population density in Ireland; notably southern Donegal, west Mayo and Connemara, and western Kerry and Cork. The density figure for the area from Dublin to the border with Northern Ireland is somewhat anomalous, given the extraordinary weighting brought about by the Dublin conurbation. Nevertheless, these density figures are far below those for the Community as a whole, at 144 persons per sq km, and generally below the figure for Ireland of 51.

The average GDP per head for the Community as a whole, over the period 1986-87-88, was IR£ 11,418, when the overall figure for the Republic of Ireland was IR£ 7,365. Over this period, Ireland was identified as having the 25th lowest figure for GDP per head of population of the 171 NUTS 2 regions of the Community. For 1990 the national figure remains almost unchanged at IR£ 7,255. Zonal GDP per capita is considered to be considerably lower than these national figures, and to be amongst the very lowest in the Community.

Official unemployment in each of these zones lay between fifteen and twenty-three per cent in 1986. In each of the zones conditions have deteriorated further in subsequent years. The Community average for the period 1986-87-88 was 9 per cent.

The Republic of Ireland is the only member of the Community with negative net migration. Expressed as net migration per thousand of population, the figure for the country was between zero and minus one in 1980, worsening to minus seven in 1985 and minus twelve in 1989. For 1986, net migration rates for all of the zones were negative, in the range minus one to minus five.

2.5 Zonal choices

On the above counts, the identified zones represent fishery dependent areas. The wide dispersal of the industry, ranging from the highly sophisticated fleet operating out of Killybegs, to the large number of relatively small inshore vessels operating from communities all around the coast, is considered to be adequately represented in the five key zones. Given the crucial importance of small-scale fishing to the mixed, often semi-subsistence, rural economy predominant in Ireland, it is difficult to warrant the exclusion of any part of the coastline from analysis.

"Travel to work areas" are clearly not appropriate to the analysis of such a highly dispersed population. The discontinuous nature of the geographical distribution of the industry militates against the delineation of single zones of influence, e.g. the area immediately around the town of Killybegs. This lack of economic concentration of the industry is indicative of the pre-industrial status of the bulk of the sector, and the particular sensitivity of the socio-economic structure of the industry to external change.

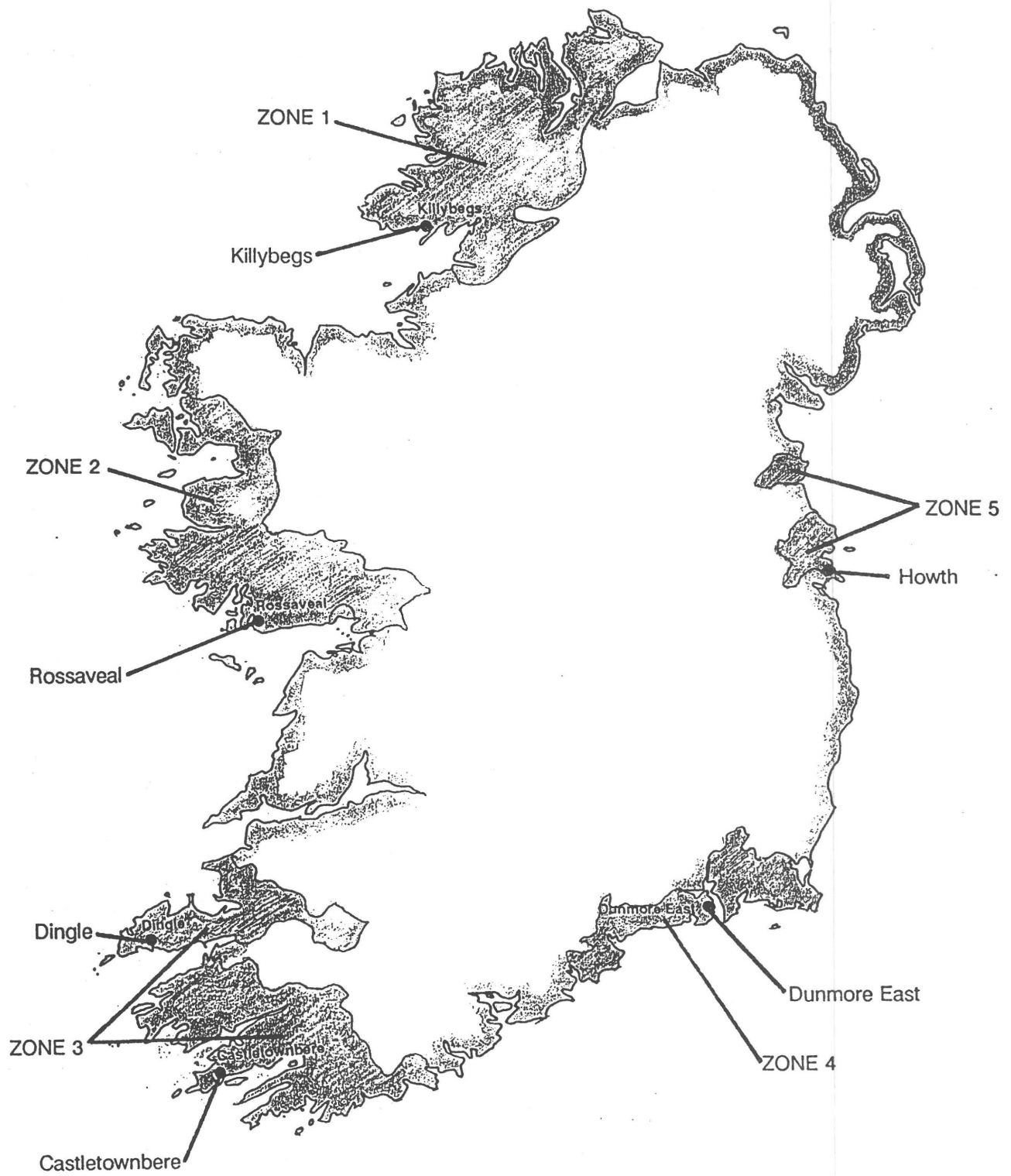
For analytical work, the above zones suffice.

For the implementation of any support programme that might result from this series of socio-economic studies of the fishery sector, given the Objective 1 status of the whole of the Republic of Ireland (and of Northern Ireland), broad eligibility might best be considered on a NUTS 2 basis, i.e. zonation is of no direct relevance to the administration of any support measures, in the case of Ireland.

Administration on a NUTS 3 region basis is cumbersome, but possible; the one area of difficulty is that the principal port on the east coast of Ireland, Howth, lies within the NUTS 3 region 1, Dublin, whilst its sister ports to its north lie in NUTS 3 region 4, covering areas to the north, south and west of Dublin.

Should tighter boundaries be required for eligibility for support, zones can be defined by coastal county, or by rural district.

MAP OF IRELAND SHOWING MAJOR PORTS,
AND THE FIVE ZONES USED IN THE SOCIO-ECONOMIC ANALYSIS.



CHAPTER 3 FISHERY ACTIVITY BY ZONE

3.1 Overview

In the following sections, the principal components and parameters of the fishery industry in each zone are described, and evaluated in the context of the socio-economic standing of each zone.

Available production data are used to develop figures for sector output and added value for the year 1991. Given that the most recent fish landings data refer to 1989, and aquaculture and processing data refer to 1990, adjustment to 1991 equivalence has been made using inflators.

In the calculation of sector output, landings to the main primary and secondary ports in each zone (the only figures available on a zonal basis), shown in Table V, have been increased pro-rata to approximate to total national landings (including landings of salmonids) for that year, 1989. These figures have additionally been inflated by five per cent per year to reflect increases in price.

For aquaculture, given the stagnation in the salmon market, and the dominance of farmed salmon production in the overall value of the farmed sub-sector, the value of 1990 production is considered to be a fair reflection of the value of 1991 production.

Estimates of the value of processed fish output have been developed from figures derived by Colin McIver Associates in their 1991 report to the EC on the Irish fish processing industry.

Value added calculations have been made on the basis of a number of surveys undertaken over the last decade, giving indications of Gross Value Added by sub-sector. Sub-sector output figures have been adjusted to prevent double accounting in the calculation of value added. Transformation values used for the calculation of Value Added are:

- 66 per cent of the gross output value of the fishing sub-sector
- 25 per cent of the gross output value of the aquaculture sub-sector
- 25 per cent of the gross output value of the processing sector
- 50 per cent of the gross output value of the ancillary services sub-sector.

Employment figures have been derived from the results of a range of recent surveys, and from field observation. These figures have been converted to full-time equivalents using the factors below:

- 3 part-time fishermen equivalent to one full-time
- 2 part-time aquaculture workers equivalent to one full-time
- 4 part-time processing workers equivalent to one full-time
- 2 part-time ancillary service workers equivalent to one full-time.

Summaries of output and value added figures for the industry in each zone, together with a summary of employment in the sector are shown in Tables III, IV and V. These figures are used as the basis for the establishment of the role of fisheries in each zone's economy.

Dependency on quota species by zone has been estimated on the basis of fleet disposition and composition. Such estimates are indicative only, given the imperfect nature of the available data, and are as follows:

	Zone	1	2	3	4	5	6
Dependency by volume of landings		0.72	0.73	0.74	0.87	0.81	0.71
Dependency by value of landings		0.73	0.77	0.78	0.79	0.81	0.75

Table III - Output value of the sector, by sub-sector, and by zone, 1991 (IRm)

Zone	fishing	aquacult.	processing	ancillary	total
1	32.7	6.2	64.0	4.6	64.8
2	8.8	7.5	22.4	0.5	24.3
3	28.5	8.2	19.0	2.3	45.3
4	15.2	0.9	16.1	0.8	22.3
5	12.3	1.5	30.8	0.7	24.8
6	6.5	8.0	12.9	0.8	19.6
Total	104.0	32.3	165.2	9.7	201.1

Output values are estimated exclusively on a sub-sector basis; i.e. input values for the processing sub-sector are included in the figures for fishing and aquaculture.

Source: Nautilus' estimates.

Table IV - Added value of the sector, by sub-sector, and by zone, 1991 (IRm)

Zone	fishing	aquacult.	processing	ancillary	total	%
1	21.6	1.6	21.3	2.3	46.8	35.1
2	5.8	1.9	7.5	0.3	15.5	12.2
3	18.8	2.1	6.3	1.2	28.4	18.5
4	10.0	0.2	5.4	0.4	16.0	10.8
5	8.1	0.4	10.3	0.4	19.2	14.7
6	4.3	2.0	4.3	0.4	11.0	8.6
Total	68.6	8.2	55.1	5.0	136.9	

Source: Nautilus' calculations.

Table V - Employment in full-time equivalents, 1991.

	fishermen	aquaculture	processing	ancillary	Total
Zone 1	1,256	303	952	756	3,266
Zone 2	473	321	291	59	1,144
Zone 3	1,201	338	210	241	1,990
Zone 4	723	101	352	111	1,286
Zone 5	697	67	439	299	1,502
Zone 6	570	374	323	75	1,340
Total	4,919	1,503	2,566	1,540	10,527

Note: 1 full-time fisherman = 3 part-time
 1 full-time aquaculture = 2 part-time
 1 full-time processing = 4 part-time
 1 full-time ancillary = 2 part-time

Source: Nautilus' estimates

3.2 ZONE 1 - DONEGAL

3.2.1 General Economic Indicators

Zone 1 comprises the county of Donegal, located in the north western corner of the Republic of Ireland, adjacent to Northern Ireland. The county has a land area of some 483,000 ha, a population of 130,000, and a population density of 27 persons per square kilometre (well below national and Community averages).

The county is mountainous, with agricultural land of poor to very poor quality. It is also a county of striking natural landscapes, and areas of wilderness. This ruggedness, which is highly valued by visitors, is also indicative of the great difficulties experienced in generating a living from the land. Much of the farming activity is of a subsistence/semi-subsistence nature, cultivating very small plots of land (below 40 ha in size). Hill farming is the other major form of agriculture practised.

GDP for the IDA region North West/ Donegal was estimated in 1990 to amount to IR£ 1,288 million. Apportioned according to population, this would give a Donegal GDP figure of IR£ 784 million.

On a GDP per capita basis, this gives a figure for the region of IR£ 6,047. For comparison, average GDP per capita for the Community for years 1986-87-88 was IR£ 11,418, and for Ireland, IR£ 7,337. This figure is at least half the Community average, and reflects the very low level of economic activity in this region of the Republic of Ireland.

Of the zonal population, those identified as participating in the workforce amounted to 45 per cent, an unusually high level. Unemployment in the zone is the highest in Ireland, at 22 per cent. This gives a high dependency rate (the number of people dependent on each wage earner) of 2.96. For comparison, that for the Republic of Ireland was 2.24, and for the EC, 1.34.

There is a healthy "black economy" operating in this part of the country, but even this does not diminish the extremely high unemployment levels, by Irish, Community and international standards, operating in this peripheral and poorly developed economic zone.

There is net migration from the zone, estimated over the period 1981 to 1986 to amount to 1.2 persons per thousand of population per year. This is indicative of continuing urban drift, and the movement of the younger elements of the workforce to other parts of Ireland, or overseas.

Zone 1 incorporates the most important elements of the Irish fishery sector - the highest value and volume of landings, the largest, most modern and most sophisticated components of the fleet, the greatest, by far, employment in fishing, processing and ancillary services, and the greatest proportion of businesses operated on the basis of maximising returns on capital invested (i.e. less involved in the social and economic influences of business).

The fleet landed 94,000 t of fish in 1989, valued at IR£ 23 million (landings attributable to major and secondary ports only). The fleet is estimated to include 326 vessels, including all the large pelagic vessels, and the bulk of the country's steel hulled vessels. Employment in the sector is estimated, in full-time equivalents, to amount to just under 3,300. Salmon and shellfish farming contribute significantly to the local economy.

The industry ratio of value of landings and aquaculture production per primary production sector employee is the highest of all the regions at IR£ 23,422 per fisherman/farmer.

The current value of direct output from the sector, avoiding double accounting, is estimated to amount to IR£ 104 million. The Added Value component of this is estimated to amount to IR£ 35 million. Relative to the estimated GDP for the zone, the fishery sector would appear to account for 4.6 per cent.

3.2.2 The Fleet

The major port of Killybegs is the largest in Ireland in terms of fleet size and volume of landings. The majority of the country's 78 large and deep sea fishing vessels are operated from here. The bulk of the catch is pelagic (mackerel and herring) and is taken by the Killybegs fleet, which has the only large deep sea vessels in the country (over 50 m). This component of the fleet, comprising six RSW (refrigerated

seawater tank) and one freezer trawler, concentrates entirely on pelagic species, chiefly mackerel. Killybegs also has 10 of the 15 Irish steel fishing vessels in the 27-35 m range.

The zone 1 fleet is estimated by the consultant to comprise the following mix of vessel sizes:

	< 12m	12-15m	25-20m	20-28m	28-40m	> 40m	
	35 kW	110 kW	225 kW	600 kW	1,900 kW	2,600 kW	totals
numbers	183	54	32	37	13	7	326
power (000'kW)	6,405	5,940	7,200	22,200	24,700	18,200	84,645

Source: Nautilus' estimates

Landings by the ten zone 1 ports that register in the top 50 Irish ports are:

value	1989	1988	1987	1986	1985
demersal	7	7	9		7
pelagic	13	14	15		10
shellfish	2	2	2		1
total	23	24	25		16
volume	1989	1988	1987	1986	1985
demersal	9	11	11		14
pelagic	82	107	128		98
shellfish	2	4	6		1
total	94	122	145		112

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 750 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

The remainder of the Killybegs fleet is composed of white fish vessels which work for mackerel or herring in the winter time. They use demersal and semi-pelagic otter trawls most of the year, and operate two-boat midwater trawls during the pelagic season.

The second most important port in the zone, Greencastle, has about 70 vessels, ranging in size from 13 to 27 m in length. These boats are organised in two co-operatives - the Loch Fine and the Greencastle Co-ops. Greencastle is a demersal port, earning almost all of its IR£ 2.3 million from whitefish landings. The fleet uses mainly whitefish trawls and bottom set gill nets.

The zone has a further eight of the fifty top performing ports in Ireland. Fishing from these other ports involves mainly small boats, catching white fish, salmon and shellfish in the summer, and in some cases concentrating on pelagic fish in the winter.

Of these, Burtonport focuses on white fish and shellfish from inshore grounds, and has a lean time in the winter as a result. Fishing from Downings is more evenly shared out over all species. Pelagic fish is also landed at Rathmullen and Kincasslagh; a little is also landed at Moville.

The large pelagic vessels are of recent design and construction. Many, if not most, of the medium sized pelagic vessels, though in good condition, will need to be modernised if they are to remain commercially efficient in this high cost sub-sector of the industry. The other, mainly white fish, vessels in the fleet are old to very old, in the range 20 to 30 years and over. None of these latter vessels are equipped to operate on off-shore grounds, where fishing opportunities are considered to be better, given the heavy pressure on the coastal fisheries.

3.2.3 Aquaculture

Zone 1 has over 40 known fish farms, most of which are small and privately owned. A few are owned by fish processors. Most of the farms are engaged in the production of bivalves. Of the eight salmon farms, most operate their own hatcheries. Aquaculture specialisations by species are as follows:

oysters	18
clams	13
salmon	8
salmon hatchery	5
mussels	3
trout hatchery	2
scallops	1

these 50 activities are undertaken at 41 farms.

Some 210 full-time, and 305 part-time persons are employed in the fish farms of the north west. As these numbers probably include the 8 farms located in Co. Sligo, the actual figures for Co. Donegal are in the order of 176 and 254 respectively.

Production figures for the area are not available but from an assessment of the number of farms and employees it would appear that Zone 1 produces in the order of 3,700 t of farmed fish and shellfish, worth approximately IR£ 6.2 million annually.

Prospects for aquaculture expansion are modest. Shellfish are the best long-term possibility, but the long payback periods for this type of venture are a disincentive to investment.

3.2.4 Processing

There are 19 fish processing establishments in Zone 1, and these employ from 700 to 1,650 persons, depending on the season. In terms of numbers of plants Donegal has about 18 per cent of the national total, and in terms of employees, about 40 per cent of the fish processing workforce.

Most of the processing is primary and so value added is modest. It is the pelagic sector, rather than white fish, which affords most work to the processors; white fish landings are relatively small and destined for the fresh fish trade. One result of this is the high degree of seasonality in the work, and the consequent demand for a temporary work-force in season.

The processing of salmon and mussels from aquaculture provide some additional year-round work, but this component of the processing sub-sector is small.

Fishermen's Co-operatives engage in some primary processing, for example those at Killybegs, Greencastle and Burtonport. Generally speaking the co-ops mainly handle white fish.

The two largest processors in Killybegs are Gallagher Bros., and Killybegs Seafood, though other large processors also exist. These are primarily engaged in pelagic fish processing, involving canning and some more sophisticated processes. In both the search for export markets and for additional raw material, these companies have travelled to, and established contacts with, producers and merchants in West Africa, East Europe and North America. These contacts have opened up possibilities for the processing of tuna from West Africa, for sale in Europe, and for the sale of primary processed herring and mackerel to West Africa, Russia and East Europe, either on a cash basis, or involving some degree of barter.

There is potential for expansion of current processing activities, and for diversification into more high added value forms of processing and packaging.

3.2.5 Ancillary Industry

Zone 1 has six net factories - 3 located in Killybegs, 2 in Greencastle and 1 in Burtonport. Of the six factories, two are large and involved in substantial export business; both of these factories are located in Killybegs. One specialises in very large pelagic trawls for deep sea vessels, the other produces a variety of gear including trawls and gill nets.

There are two boatyards of note in the zone. The one in Killybegs was established by An Bord Iascaigh Mhara (Irish Sea Fisheries Board) (BIM) and has built vessels of up to 24 m in length. The smaller yard in Greencastle is used mainly for slipping and repair of local boats, but has construction capability. With very low turnover in vessel replacement and modernisation, reflecting continuing poor operational performance of the whitefish fleet, and current fleet policy, there has been little activity in Irish boatyards in recent years.

Killybegs, Greencastle and Burtonport all have local electrical and marine engineers able to effect installations and repairs. They are mainly small businesses or workshops, and their engineers may also work on transport vehicles and agricultural equipment. Whenever required, the electronic and engineering companies travel to the smaller ports in Donegal to complete repairs or installations on the spot.

As employers and wealth generators the ancillary fish industry companies perform a valuable role in Zone 1. The Donegal vessels spend about IR£ 167,100 a year on fishing gear, and about IR£ 83,500 a year on repairs and overhauls.

3.2.6 Summary

The fishing industry in Zone 1 provides employment to 4,791 persons - about 7.5 per cent of the area workforce. About 40 percent of the fishery sector jobs are part-time, mostly for seasonal processing of herring and mackerel, but also on summer fishing boats and fish farms. The employment numbers vary from season to season and from year to year, but an estimate of the average for 1991 is as follows:

Table VIII - Zone 1 Fishery Sector Employment

	full time	part time	total
fishermen	953	908	1,861
fish plant staff	720	926	1,646
aquaculture	176	254	430
other fishery sector	657	197	854
total	2,506	2,285	4,791

Source: Nautilus' estimates

Employment	popul- ation (no.) a	work force (no.) b	in work (no.) e	fisher- men (no.) f	other jobs (no.) g=e+f	total sector (no.) e/b	labour dependency g/b	prop. in work (%) 9.9
	130,000	45,000	33,000	1,256	2,010	3,266	3.8	
Economic	total GDP (IR£m) c	per cap. GDP (IR£) d=c/a	landings (IR£m) h	other (IR£m) i	added value sector (IR£m) j=h+i	contrib. (%) h/c	fishing contrib. (%) j/c	sector
	784	6,047	21.6	25.2	46.8	2.8	6.0	

Source: Nautilus' estimates.

3.3 ZONE 2 - ROSSAVEAL - GALWAY/MAYO

3.3.1 General Economic Indicators

Zone 2 covers the coastal area from Westport, in the south west of Co. Mayo, to, but not including, the city of Galway, Co. Galway. This area encompasses the predominantly Gaelic speaking coastal region of Connemara, the Aran Islands, and the islands of Clew Bay. The Zone centres around the port of Rossaveal on the south coast of Connemara.

Of all the zones, Zone 2 is the one that is predominately Gaeltacht (Irish speaking). Gaeltacht regions have been identified as having the poorest socio-economic standing of all regions in Ireland.

Zone 2 has a land area of some 294,000 ha, and a population of 63,000. This indicates a population density of some 18 persons per square kilometre, well below the national average of 51 persons per square kilometre.

To some extent due to the traditional isolation and small size of the communities, and their consequent requirements for self-sufficiency, exploitation of adjacent marine resources has always formed an important component of the local economy. Notable in such exploitation has been the involvement of the people of the Aran Isles, a group of islands lying just off the Connemara coast. The primary occupation of these people is fishing, supported by subsistence/semi-subsistence agriculture. Virtually all the larger boats operating from this Zone are reported to be crewed by Aran Islanders.

GDP for the IDA region of West Ireland, 1990 was estimated to amount to IR£ 1,846 million, indicating a per capita GDP figure of IR£ 6,279. This figure is a little over half that of the Community at the time.

Reduced proportionately by population (see early part of chapter) the regional GDP figure yields a GDP figure for Zone 2 of IR£ 327 million; (given the increasing economic power of Galway City, and the much richer agricultural areas in the eastern parts of counties Galway and Mayo, this is likely to be a substantial over-estimate of the GDP for Zone 2).

For this Zone, the workforce constitutes 36 per cent of the zonal population, and the rate of unemployment, as estimated from the 1986 Census, was 16 per cent. Net migration from the region was estimated for the period of 1981-1986 to be 1.7 persons per thousand.

The major port of Rossaveal is unique in Ireland in that it is a port without a town or village. Built as a ferry terminal for connection with the Aran Islands, and as a fishing port, Rossaveal consists of little other than the harbour, fish market, fishermen's co-op and a fish processing plant.

Fish landings in this Zone amounted to 11,000 t valued at IR£ 6.1 million (landings to major and secondary ports only, and excluding salmon). To this can be added IR£ 7.5 million as the value of output from the aquaculture sub-sector, comprising mostly of salmon. This Zone contains about half of the country's salmon growing capacity, and a similar proportion of current production, mainly from smaller units. Processing output amounts to some IR£ 22.4 million, and that from ancillary services, some IR£ 0.5 million. Adjusted to 1991 levels, this gives a cumulative output value, avoiding double accounting, of the order of IR£ 24.3 million.

Expressed in terms of added value, these figures become IR£ 12.2 million. This indicates a contribution to the GDP of the zone of 3.7 per cent.

Employment in the sector is estimated to be 1,144 in full-time equivalents, split evenly between fishing, aquaculture, and the combined category of processing and ancillary services.

3.3.2 Fleet

The main port of the Zone is Rossaveal. In addition to this, other important zonal ports are Carna (or Cill Chiarain), Cleggan (or Clifden) Roundstone (or Ballyconnely), and Westport. These, and still smaller ports, deal primarily with shellfish.

Most of Zone 2's fishermen are from the Aran Islands and the other main group is from Connemara. A number of south and southeast fishing boats use Rossaveal as a base for part of the year.

Although the Zone has the smallest fleet and the lowest landings in value, it has perhaps the greatest potential for growth. Few of the existing boats are big enough to operate on the edge of the shelf offshore, but with adequate vessels Rossaveal is ideally placed to work the Porcupine Bank and the deep western grounds presently being fished by the fleets of other member states. The port could be further developed jointly for tourism (island ferries) and fishing, and for servicing foreign offshore vessels when necessary.

Demersal trawling is the mainstay of the Galway fleet, and this is supplemented by mainly herring fishing in the pelagic season. The small harbour boats work mostly for shellfish, and for salmon in the summer time. This is supplemented with some gill netting for cod and turbot.

The port of Rossaveal handled over 13,000 t in 1990. The potential exists in both herring and white fish stocks to increase this, but facilities need to be improved first. Rossaveal is strategically situated in relation to west coast grounds, and as a safe haven for medium sized fishing vessels, lying between Killybegs to the north and Dingle to the south.

The Zone 2 fleet is estimated to comprise some 150 vessels, most of which are small inshore vessels with an age of between twenty and thirty years. Since 1983 there has been little change in this fleet.

The size distribution of the fleet is estimated to be as follows:

Table X - Zone 2 Fleet							
	< 12m 35 kW	12-15m 110 kW	25-20m 225 kW	20-28m 600 kW	28-40m 1,900 kW	> 40m 2,600 kW	totals
numbers	99	27	14	10	0	0	150
power (000'kW)	3,465	2,970	3,150	6,000	0	0	15,585
Source: Nautilus' estimates							

Zone 2 landings were:

value	1989	1988	1987	1986	1985
demersal	2	2	2		1
pelagic	1	1	1		1
shellfish	2	2	2		2
total	6	4	5		4
volume	1989	1988	1987	1986	1985
demersal	3	2	3		2
pelagic	7	2	5		6
shellfish	1	1	1		2
total	11	6	9		10

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 800 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

3.3.3 Aquaculture

There are around 40 fish culture establishments in Galway, mostly around Connemara, and mostly dealing with salmon; other cultured species are mussels and oysters. The work is supported by research at Galway University and several commercial hatcheries are in operation. The area is well suited to aquaculture, having abundant fresh and marine water of high quality, and many sheltered coastal sites. Further, there is now a history of aquaculture development in the zone, and further enterprise development, especially by traditional residents of the zone, is being promoted, notably by the Udaras na Gaeltachta.

In Zone 2 aquaculture provides work for around 210 full time and 221 part time persons. In 1989 the value of produce from fish farms in the zone amounted to about IR£ 7.5 million. The revenue dropped slightly in 1990 due to a fall in the price of salmon.

Most of the suitable sea front sites are already utilised for fish farms. Scope for expansion remains, however, and the physical environment could allow for a doubling of fin fish capacity over the next 20 years. Development of shellfish culture is still slow, though the social and economic benefits that could be generated with this type of culture system are considerable.

3.3.4 Processing

There are 14 fish processing establishments in the Galway area, mostly small, and scattered about the county.

One large plant is located near Rossaveal; this plant has recently changed hands. Whilst interest has been expressed in starting other businesses at Rossaveal, the limited infrastructure at the port militates against this.

In addition to white fish and herring processing, which dominates the activities of local processors, there are a number of small establishments handling shellfish and smoking salmon. These are modest in terms

of staff and throughput, but they engage in a stable year-round activity, unlike the pelagic fish plants which are idle much of the year due to lack of raw material.

Employment in processing is estimated to amount to 291, in full-time equivalents. Opportunity for substantial increase in these numbers is thought to be good, given the high quality of the fish and shellfish caught and landed from the coastal fishery.

3.3.5 Ancillary Services

There is little in the way of direct ancillary industry in Zone 2. This is partly due to the remoteness of Rossaveal port, and the limited development to date of additional sector infrastructure.

3.3.6 Summary

The fishery sector provides modest levels of employment and output in the zone, but this does not disguise the zone's dependence on the fishery sector. A number of small and isolated communities that traditionally work the sea, continue to be heavily reliant on fishery related work. For them there are little to no alternate work opportunities within the area. Movement away from the area will further exacerbate the high labour dependency rates found in these communities, and in particular cases, traditional fishery communities will die out.

Employment estimates for Zone 2 are:

	full time	part time	total
fishermen	270	610	880
fish plant staff	231	239	470
aquaculture	210	221	431
other related industry	45	28	73
total	756	1,098	1,854

Source: Nautilus' estimates

Employment	popul- ation (no.) a	work force (no.) b	in work (no.) e	fisher- men (no.) f	other jobs (no.) g=e+f	total sector (no.) e/b	labour dependency g/b	prop. in work (%)
		63,000	22,000	18,000	473	671	1,144	2.6
Economic	total GDP (IR£m) c	per cap. GDP (IR£) d=c/a	landings (IR£m) h	added value other (IR£m) i	sector (IR£m) j=h+i	fishing contrib. (%) h/c	sector contrib. (%) j/c	
	395	6,279	5.8	9.6	15.5	1.5	3.9	

Source: Nautilus' estimates.

The Zone does, however, have enormous potential, both in deep sea fisheries and in aquaculture. To access the former, it will need the licences to build or acquire larger deep sea vessels. For fin fish culture, investment and staffing is more likely to come from outside the area than from within. For shellfish culture, it is more plausible to consider indigenous ownership of such enterprises.

With a modest increase in production, and the provision of further port infrastructure, overall employment in the sector could be substantially increased, along with the value of direct sector outputs.

3.4 ZONE 3 - CASTLETOWNBERE / CORK, KERRY

3.4.1 General Economic Indicators

Centred around the port of Castletownbere, Zone 3 incorporates the rural south west of Cork and Kerry counties. This includes the four main peninsulas making up the south west coasts of these two counties. Excluded from the zone are the large urban areas to the east of the zone, especially that surrounding Cork City.

In the western parts of Cork and Kerry, smallholder agriculture predominates, exploiting poor to very poor land. The coastline in this area is fjord-like, rocky, and open to the full force of the Atlantic. The communities are small and dispersed. Road communications in this Zone are particularly poor, increasing its isolation from the rest of the country. The Zone, however, also incorporates one of Ireland's principal tourist areas, notably Killarney, and The Ring of Kerry.

The Zone comprises a population of 107,244, and an area of 477,694 ha. The population density is 22 persons per square kilometre, and the IDA Region of the South West (counties Cork and Kerry) has experienced net migration at a rate of 3.8 persons per thousand of population.

Participation in the workforce is low at 36 per cent, and unemployment in this relatively small workforce is 16 per cent. The labour dependency rate for the zone is 2.32.

GDP for the region was estimated for 1990 to be IR£ 3,864 million. Per capita, this gives a figure of IR£ 7,195, slightly higher than the other regions, excepting the East Region. Reasons for this are likely to relate to the considerable agricultural and industrial wealth around Cork City, and in the eastern parts of these two counties. GDP from the Zone 3 is estimated to amount to IR£ 772 million.

The value of direct output from the fishery sector is estimated to be in the order of IR£ 45.3 million. Added value for the zone is estimated to be IR£ 19.0 million, making up a contribution to total zonal GDP of 2.4 per cent. Given the proportionately better economic performance of eastern Cork and Kerry, the zonal estimate of GDP on the basis of population alone is likely to overestimate output in the western parts of the counties. Accordingly, the contribution from the fishery sector to zonal GDP might be expected to be somewhat higher, at over three per cent for the area covered.

Direct employment in the fishery sector is estimated to be 1,990, in full-time equivalents, representing almost six per cent of the active workforce.

A large fleet of small to medium sized vessels operates from this zone landing high value white fish and shellfish. Total landings amount to 27,000 t valued at IR£ 19.7 million in 1989 (landings to major and secondary ports only, and excluding salmon). Over fifty per cent of employment in the sector is accounted for by fishermen; a further twenty per cent is engaged in aquaculture ventures. Processing activity is particularly under-represented relative to the volume of landings.

3.4.2 Fleet

The main port of Zone 3 is Castletownbere, the most distant fishing port of note from Dublin. It is situated behind Bere island on the Bere peninsula and has for over a hundred years and more been a safe haven for fishing vessels from Spain and Portugal, as have the principal zonal harbours of Valencia and Dingle.

Pelagic fishing is not an important feature in Zone 3, which concentrates on demersal fish and shellfish. This aspect has given the area a stability and a steady, if not dramatic, growth. It has not been subject to the variations that would occur in a fishery heavily dependent on pelagic fish whose stocks may fluctuate from year to year. This situation is also reflected in the generally conservative attitudes of industry members.

While Zone 3 vessels may travel to Dunmore East or to Rossaveal for a season, most of them fish year round from home. The industry has in consequence been somewhat insulated from the rest of the country and has been freer to develop in its own way.

The six secondary ports in the zone are Dingle, Valencia, Union Hall, Castlegregory, Baltimore and Bantry. Bantry and Castlegregory are primarily shellfish ports. Fish exports from the area go mainly to Spain and France, by ship from Cork and Rosslare; the bulk of this is live shellfish, and fresh high value white fish.

In 1989 the value of landings from Zone 3 was IR£ 19.7 million. This figure does not include landings at Cobh and other harbours just outside the Zone although Zone vessels may land fish there for convenience at certain times. It does not include the estimate of landings at smaller harbours not included in the table of landings at Ireland's fifty top ports (of which fourteen are located in this zone).

Zone 3 landings were as follows:

Table XIV - Zone 3 seafish landings (excluding salmon)

(value - IR£ m; quantity - 000't)

value	1989	1988	1987	1986	1985
demersal	11	9	7		5
pelagic	1	2	1		1
shellfish	12	4	3		3
total	20	15	11		9
volume	1989	1988	1987	1986	1985
demersal	9	9	8		7
pelagic	8	14	12		5
shellfish	10	3	3		8
total	27	26	23		20

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 800 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

The zone 3 fleet comprises some 358 vessels, including the largest proportion of the Irish fleet in the 15-20 m category. Very few of the vessels operating from this zone are suited to deep sea fishing, though many venture far afield in fair weather. Vessels in this zone concentrate on demersal fish and shellfish most of the year and tend to operate from home. Some larger boats occasionally fish herring at Cobh or Dunmore East, and some occasionally work for white fish out of Rossaveal.

Table XV - Zone 3 Fleet

	< 12m 35 kW	12-15m 110 kW	25-20m 225 kW	20-28m 600 kW	28-40m 1,900 kW	> 40m 2,600 kW	total
numbers	200	59	74	17	8	0	358
power (000'kW)	7,000	6,490	16,650	10,200	15,200	0	55,540

Source: Nautilus' estimates

The Kerry fleet is generally in poor repair and 20 to 30 years of age. That of Cork, notably the Castletownbere fleet, is in a good state of repair, with a component of more recent construction (15 to 30 years of age), although aging by international standards. The fleets of both areas have increased since 1983. Fleet composition is estimated to be as follows:

The port of Cork has ferry services to France and is used as an outlet for Zone 3 fish destined for Spain and France. Remoteness is one of Zone 3's traditional problems and its fish trade is more oriented in consequence to France and Spain than it is to the rest of Ireland or Britain.

The Government has recently granted 20 new licenses, almost all of them for Dingle and Castletownbere skippers. The licenses were granted on the condition that the recipients buy out of the fleet an equivalent vessel tonnage to that which they acquire.

3.4.3 Aquaculture

There are over 60 fish farms in County Cork and over 30 in County Kerry, i.e. more than in any other zone. Of these, 57 deal in mussels, 12 in oysters, 7 in salmon, 7 in trout, 3 in clams, 3 in scallops and 1 in abalone. Yet others engage in collecting and holding operations. There are at least 5 farms with trout hatcheries and 3 with salmon hatcheries.

Employment in aquaculture in the Zone is reckoned to be 175 full-time and 326 part-time, and to generate a sales turnover of about IR£ 8.2 million annually.

Fish culture has grown more in Zone 3 in the past 10 years than in any other part of the country. It is now the leading area for mussel culture in Ireland, with most of the produce destined for France; this and other markets appear, at present, to be able to take all that can be produced. Further expansion of mussel/shellfish cultivation is possible, but much depends on the acquisition of suitable sites - these are becoming scarce and more difficult to get hold of.

3.4.4 Processing

Zone 3 is not well endowed with fish processing plants. There are only about 17 establishments in Cork and Kerry, and this is a small number in comparison to the volume of fish produced. These plants are estimated to employ 151 persons on permanent staff.

Opportunity exists for considerable expansion of this sub-sector. Constraining influences would appear to be a general lack of investment capital (and more immediately attractive opportunities for outside investors, for example in tourism), and scarcity of the entrepreneurship necessary to establish and develop such businesses.

Although pelagic landings in the Zone are limited, the volume of high quality white fish, prawns, crabs and molluscs is considerable, and should be more than sufficient to support modestly sized high added value processing businesses, serving niche markets in the UK and continental Europe.

3.4.5 Ancillary Services

This sub-sector is also poorly represented in the area. Boatyards, engineering workshops, net making units, marine electrical and electronic workshops are all in demand and could be established or strengthened with a little help.

The dearth of shore employment opportunities is witnessed by the fact that people enter rather than leave the fishing fleet in Zone 3. Of 22 men who left the fishing in County Cork in recent years, 15 are now working on salmon or mussel farms, 2 joined a net factory in Donegal, 2 went to work on North Sea oil rigs, 1 became a garage mechanic, 1 emigrated to the USA and 1 to England.

3.4.6 Summary

In the areas around the fishing ports and aquaculture establishments in this zone, dependency on fishery activity is particularly high. Alternate work opportunities are poor.

There is a striking lack of processing facilities and ancillary industry, and both these might be further developed. Employment estimates for Zone 3 are:

	full-time	part-time	total
fishermen	815	1,158	1,973
fish plant staff	151	235	386
aquaculture	175	326	501
other related work	193	96	289
total	1,334	1,815	3,149

Source: Nautilus' estimates

The fishery sector activity in this zone is stable, and focused on demersal fish and shellfish. Steps have recently been taken to help Zone 3 fishermen acquire some larger vessels to fish the offshore demersal grounds. Whilst major advantage has been taken of shellfish farming opportunities, further development of processing and fishery support services is unlikely to occur without outside stimulation.

Employment	popul- ation (no.) a	work force (no.) b	in work (no.) b	fisher- men (no.) e	other jobs (no.) f	total sector (no.) g=e+f	labour dependency e/b	prop. in work (%) g/b
	107,000	38,000	32,000	1,201	1,652	1,990	3.8	6.2
Economic	total GDP (IR£m) c	per cap. GDP (IR£) d=c/a	landings (IR£m) h	added value other (IR£m) i	sector (IR£m) j=h+i	fishing contrib. (%) h/c	sector contrib. (%) j/c	
	772	7,195	18.8	9.5	28.4	2.4	3.7	

Source: Nautilus' estimates.

3.5 ZONE 4 - DUNMORE EAST / CO. WATERFORD AND WEXFORD

3.5.1 General Economic Indicators

Zone 4 extends from the small fishing harbour of Helvick eastward to Wexford and includes the ports of Duncannon, Glengarriff, Dunmore East, Kilmore Quay and Rosslare. Dunmore East is the major port of this Zone, and its history as a fishing centre goes back over a century due to the annual massing of herring shoals nearby for spawning in December and January.

The Zone includes most of Waterford and Wexford counties, but excludes urban Waterford. The area around Helvick to the west of the Zone is a designated Gaeltacht (Irish speaking) area and its inhabitants have traditionally engaged in small scale farming and fishing.

The population of the Zone is around 88,000. The area of the Zone is 206,000 ha, giving a population density of 43 per square kilometre, the highest figure after the East zone, Zone 5. Net migration rates for the area over the period 1981 to 1986 were 3.3 persons per thousand of population.

These counties comprise relatively rich agricultural land, and contrasting areas of well developed modern agriculture and less developed small-holder farming, and the area enjoys a mild climate most of the year. There is moderate industrial development in the zone, and a coal mining tradition. GDP for the South East Region, comprising the whole of the counties of Wexford and Waterford, is estimated to have been IR£ 2,520 million for 1990. On a per capita basis this amounts to IR£ 6,546. Adjusted for the population of the zone, GDP for the zone for the year 1990 is estimated to be IR£ 579 million.

Participation in the workforce is estimated to be some 36 per cent, with a high unemployment level of 20 per cent. The dependency ratio is high at 2.46 persons per wage earner.

Employment in the fishery sector is estimated to amount to 1,290, full time equivalents. Landings per primary worker are on a par with those for Zones 1, 2 and 3, at IR£ 18,598 per fisherman. Slightly under fifty per cent of employment is in fishing, and a high proportion of the sector labour force is engaged in the processing sub-sector - 27 per cent. Primary processing activities are in the extraction of herring roes, and the processing of mussels. Aquaculture and ancillary service sector activity is low.

The value of sector output is estimated to be IR£ 11.0 million from first hand sales, IR£ 0.9 million from aquaculture output, IR£ 16.1 million in sales of processed products, and IR£ 0.8 million from ancillary services. Together this gives an output value, adjusted for supplies to the processing sector, of some IR£ 22.3 million.

Expressed as added value, the sector contributes IR£ 11.1 million to zonal GDP, or 1.9 per cent.

3.5.2 Fleet

Over half the sea fish landings of the zone are at Dunmore East, which has a well developed harbour and considerable local infrastructure and support services. The second most important port of the Zone is Kilmore Quay, followed by Rosslare.

Rosslare is also the major ferry port for the south-east of Ireland and attracts considerable fish-related traffic from the west and north.

The Zone contains seven of the top fifty ports in Ireland. Landings to these ports are as follows:

Table XVIII - Zone 4 seafish landings (excluding salmon)

(value - IR£ m; quantity - 000't)

value	1989	1988	1987	1986	1985
demersal	6	6	4		4
pelagic	1	1	1		1
shellfish	4	1	2		2
total	11	8	7		6
volume	1989	1988	1987	1986	1985
demersal	5	6	5		6
pelagic	6	9	7		5
shellfish	7	4	5		4
total	18	18	17		16

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 800 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

Despite its herring tradition, the Zone depends mainly on demersal fish and shellfish. While local boats may prosecute the herring fishery in the wintertime, it is regarded as a seasonal option and they do not depend greatly on it. This is not, however, the case with local fish buyers and merchants, to whom the herring season represents an important component of their trade. Vessels from Howth, Castletownbere and other ports may come to Dunmore for 2 months a year to participate in the herring fishery.

Some Zone 4 harbours like Wexford and Glengarriff are involved solely in shellfish production. The area around the south east point has good scallop, other molluscs and crustacean resources. Offshore there are areas where prawns (nephrops) may be found and these grounds are fished in good weather. The area is exposed to the west and south west, and only the largest boats can remain offshore in high winds and heavy seas.

The small boat harbours like Helvick are facing economic difficulties. Their boats need to carry several sets of gear to pursue different species according to the time of year. They also have to maximise their sea time to earn sufficient money for the year. This is difficult for small half-deckers once the winter weather breaks. The reasons for their marginal returns are that their inshore and nearwater grounds have no protection from exploitation by larger vessels, and also that the local stocks appear to be declining.

Employment in this sub-sector is considered to be some 540 full-time fishermen, and 548 part-time. A crude survey of 45 fishermen who left the fleet in Kilmore Quay and Dunmore East in the past two years yielded the following. 22 persons are still on unemployment benefit except for brief periods when they are offered short term work, for example during the herring season; nine men have full-time work in non-fishery sectors; five were able to get jobs in fish factories; four joined the fish trade and are buying and selling on a small scale; three joined the merchant navy; one man got a job in fish haulage and one moved to Waterford City. These forty five men would have been full-time fishermen in 1989.

The Zone's fishing fleet is fairly evenly spread out into four size categories, up to 12 metres, 12-15 m., 15-20 m. and 20-30 m. There are only 3 vessels in the zone over 30 metres in size. Most of the boats are white fish and/or shellfish trawlers, though the under 12 metre boats operate gill nets.

The Waterford component of the zonal fleet is of 20 to 30 year old vessels in a good state of repair. This fleet component has increased in size since 1983. The Wexford component of the fleet is aging (most vessels are over 25 years of age), and has remained relatively stable since 1983. This fleet component is in only a fair state of repair. Estimates of fleet numbers and size distribution are:

	< 12m	12-15m	25-20m	20-28m	28-40m	> 40m	total
	35 kW	110 kW	225 kW	600 kW	1,900 kW	2,600 kW	
numbers	91	35	54	22	3	0	205
power (000'kW)	3,185	3,850	12,150	13,200	5,700	0	38,085

Source: Nautilus' estimates

A number of fishing-related issues appear to be of local concern. These are - the dumping at sea of non-roe or unripe roe herring (fish with mature gonads are required for the Japanese roe market); the ghost fishing of large gill nets lost by large gill netters working the coastal area; and the depletion of the inshore/coastal resource. These are legitimate concerns affecting stock conservation and the sustainable management of the coastal resource. They would appear to be indicative of potentially serious resource constraints, and the probability of diminishing returns from these fisheries.

3.5.3 Aquaculture

The Zone earns some IR£ 0.9 million annually from aquaculture. There are 23 fish farms, 10 in Waterford County and 13 in Wexford. Ten of the farms produce oysters, ten produce mussels, five grow trout, four clams and one scallops. There are three salmon hatcheries and one trout hatchery.

Lack of sheltered sites is probably the main constraint to fish farm expansion. Most of the coast is exposed and rocky.

Aquaculture provides employment to 74 persons full-time and to 53 persons part-time.

3.5.4 Processing

There are 11 processing plants in the Zone of which one, Letts in Wexford, is one of the largest in Ireland. The plants deal with white fish and shellfish all year round, and some handle herring for 2 or 3 months in the winter time. Fish is exported through the port of Rosslare nearby and the markets targeted abroad are mainly in France and Britain.

Numbers involved in fish processing are difficult to determine owing to the short herring season which calls for a lot of part-time labour. It is believed, however, that at least 320 work permanently in the sub-sector and about 140 more find work in the area during the herring season.

Undue concentration on the roe market is considered to be having a negative affect on the long-term stability of both the processing sub-sector and the herring fishery. Increased employment in herring processing and fishing is possible, but only with more conservative management of the fishery and of the processing of herring for human consumption.

3.5.5 Ancillary Services

Both Dunmore East and Kilmore Quay are well served with ship chandlery stores and net lofts. Marine engineers and electronics services are available from Waterford and near Rosslare. Boatyards in the area are small and the nearest good slipway/repair yard is in Arklow, just north of Wexford.

The Zone's fishery co-ops and service industries provide a variety of support activities from transport to repairs to spare part supplies. Fuel, water and ice are all available in the main harbours of the zone.

Smaller harbours like Helvick have very little in the way of infrastructure or on the spot services, but most requirements can be delivered in a relatively short time following a telephone call.

It is estimated that ancillary industry in Zone 4 employs 90 persons full-time and 41 part-time.

3.5.6 Summary

With the downturn in large industry in the area (such as Waterford Glass), the fishery sector, though a modest employer, plays an important role in providing stability and year round income in the coastal towns.

Estimates of current full-time and part-time employment in the fishery sector in Zone 4 are as follows.

	full-time	part-time	total
fishermen	540	548	1,088
aquaculture	74	53	127
processing workers	318	137	455
other fisheries sector	90	41	131
total	1,022	779	1,801

Source: Nautilus' estimates

It is unlikely that aquaculture will increase much in the zone due to the limited number of sheltered bays suitable for fish farm location. The present combination of shellfish fishing and shellfish growing is likely to continue, particularly around Wexford, Glengarriff and Kilmore Quay.

More value added work could be undertaken by the processing sector, both with herring and with shellfish, provided supplies can be secured.

Employment	popul- ation (no.) a	work force (no.) b	in work (no.) b	fisher- men (no.) e	other jobs (no.) f	total sector (no.) g=e+f	labour dependency e/b	prop. in work (%) g/b
	88,000	32,000	26,000	723	563	1,286	2.8	4.9
Economic	total GDP (IR£m) c	per cap. GDP (IR£) d=c/a	landings (IR£m) h	added value other (IR£m) i	sector (IR£m) j=h+i	fishing contrib. (%) h/c	sector contrib. (%) j/c	
	579	6,546	10.0	6.0	16.0	1.7	2.8	

Source: Nautilus' estimates.

3.6 ZONE 5 - HOWTH - DUBLIN, DUNDALK

3.6.1 General Economic Indicators

Zone 5 extends from the port of Howth just north of Dublin, to Clogherhead in the southern part of the coast of Louth. Although this stretch of coast includes a small part of Meath, none of this area is involved with the fishery sector; County Meath is consequently not included as a part of this zone. The area therefore takes in the north east of County Dublin and the south east of County Louth.

The close proximity of Dublin City with its urban service industries, financial centres and government offices, greatly distorts the economic picture for the east coast fisheries. On top of that the fishing port areas are also desirable "dormitory" areas for professional, business and retired people from the city. Howth is a northern suburb of Dublin, but separated from it by a narrow isthmus of land, which itself forms part of the northern perimeter of Dublin Bay. The fishery harbour lies below, and is protected by, Howth headland, and is the major fishing port, in the Republic of Ireland, for the Irish Sea fisheries; (other important ports on the perimeter of the Irish Sea are located on the east coast of Northern Ireland).

As stated, Howth itself is primarily a residential area. The workforce and investment in the Howth fishing industry are drawn more particularly from within the northern suburbs of the Dublin conurbation to the west and north of Howth. Nevertheless, the influence of the fishery industry on the immediate economy is minor in general, but highly significant within small localised areas. Expression of this using readily available industry and economic indicators is difficult, given the sheer size of the Dublin population and the scale of its economic activity. This should be borne in mind when reviewing the following, and when comparing Zone 5 statistics with those of the other zones.

The population of zone 5 is estimated to be some 235,000. The area of the zone is estimated to be 72,000 ha. Population density is thus estimated to be 235 people per square km (cf 1,108 persons per square kilometre for Dublin county and county borough). The recorded net migration rate for the period 1981 to 1986 was particularly high at 5 persons per thousand of population.

Workforce participation is 37 per cent, and unemployment stands at 18 per cent. The labour dependency ratio is 2.28 persons per wage earner.

GDP for the East and North East Regions is estimated to be IR£ 11,165 million and IR£ 1,242 million respectively. Given the dominant influence of the Dublin economy on these figures, it is difficult to determine a fair assessment of the GDP that can be allocated to the economic activity in the zone under consideration. On a population basis, the GDP for the zone may be estimated at IR£ 1,065 million.

On a per capita basis, the GDP for the Dublin region is IR£ 8,357; that for the North East region IR£ 6,274.

Output from the fishery sector in zone 5 is estimated to amount to IR£ 9.0 million from fishing in 1989, IR£ 1.5 million from aquaculture, IR£ 30.8 million from processing and IR£ 0.7 million from ancillary services; a total, adjusted for input to the processing sector, and referring to the year 1991, of IR£ 24.8 million.

Added value for the sector as a whole is estimated to amount to IR£ 15.2. As a proportion of GDP, this represents a little over 1.4 per cent. This figure is, however, a distortion of the actual, due on the one hand, as explained above, to the undue influence of the Dublin conurbation, but on the other, to the high added value contribution of processing, much of which is undertaken within the conurbation of Dublin, away from the ports of the Zone.

Total employment in the sector is estimated to be some 1,502, in full time equivalents, with a little under half in fishing, and a third in processing, and a fifth in ancillary services. As a proportion of the zonal population in work, these figures represent some four per cent.

3.6.2 Fleet

The main port of Howth depends on demersal fish chiefly, landing about 4,650 t of it in 1989, worth over IR£ 5 million. Nephrops prawns are the next major catch, over IR£ 1 million of these being landed at Howth in 1989.

The other Zone 5 ports concentrate mainly on prawns. These ports are Clogherhead, Skerries, Balbriggan and Loughshinny. Although herring were once plentiful in the Irish Sea, there is not much caught there now and only 1,480 t were taken in 1989.

The concentration of effort on the prawn fishery has a depressing effect on fleet size and efficiency as is explained below, and this in turn discourages new investment and fresh manpower entrants.

Landings at Zone 5's main fishery harbours are as follows:

Table XXII - Zone 5 seafish landings (excluding salmon)

(value - IR£ m; quantity - 000't)

value	1989	1988	1987	1986	1985		
demersal	5	9	4		5		
pelagic	0	0	1		0		
shellfish	3	4	2		2		
total	9	13	7		7		
volume	1989	1988	1987	1986	1985	1984	1983
demersal	6	9	5		9		
pelagic	1	3	7		0		
shellfish	1	2	5		2		
total	9	13	17		12		

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 800 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

In the Irish Sea, the Zone 5 vessels face strong competition from the more powerful fleets in the Northern Ireland ports of Killeel, Ardglass and Portavogie, plus the Isle of Man and Fleetwood, Holyhead and

Whitehaven based boats in England. Apart from a few of the larger Howth boats which go to Dunmore East for the herring season, most of the Zone 5 vessels operate year-round from home.

Local infrastructure and service industries are adequate for fishing fleets in the area since there are many boatyards and engineering shops serving the merchant marine and leisure craft industries. Financial and insurance services are also plentiful in Dublin, and there are numerous long-established fish processing businesses.

Arklow is the only fishing harbour of any consequence south of Howth before Wexford by Rosslare.

Zone 5 has a fleet of some 98 vessels in the 12-30 metre range, and about 58 boats of less than 12 metres in length. Practically all of these vessels are equipped for prawn trawling and fish trawling. The exceptions are 5 large steel boats rigged as beam trawlers in the Dutch style. They operate longer trips for higher priced bottom fish such as sole, plaice, cod, skate, monks and some molluscs.

For most of the boats, prawns are the mainstay of their earnings and the vessels are geared mainly towards that fishing. Fuel costs are a major and unavoidable expense in prawn fishing, so all other items of recurrent cost are kept to a minimum. That would include expenditures on fishing gear, vessel overhauls and new pieces of equipment. Prawn fishermen will extract the longest service possible from their nets, warps, winches and engines, and from the boat itself. As a result prawn fleets tend to be made up of older vessels in less than prime condition. Boats which have served their useful life at herring or demersal fishing, may still be good enough for many years of prawning. Further, these vessels tend to be operated in the more protected waters of the Irish Sea.

This then is the condition of most of the Zone 5 vessels, and in that climate little construction of new boats may be expected. Current fleet composition is estimated to be as follows:

	< 12m 35 kW	12-15m 110 kW	25-20m 225 kW	20-28m 600 kW	28-40m 1,900 kW	> 40m 2,600 kW	total
numbers	58	12	62	23	1	0	156
power (000'kW)	2,030	1,320	13,950	13,800	1,900	0	33,000

Source: Nautilus' estimates

This zone also faces a manpower shortage. While there are estimated to be 560 full-time and 410 part-time fishermen in Zone 5, some boats are unable to obtain sufficient crewmen. It is not that there are no applicants for vacancies on deck, but rather that most of the applicants have no fishery skills. They would not be able to repair a net or be reliable enough to take a watch alone or know what to do in an emergency. Apparently those young local fishermen who learn those skills soon move to the West Coast in search of more lucrative berths on more efficient vessels. Some Howth owners also own vessels operating from the west coast.

Shore facilities for Zone 5 vessels are quite good, especially in Howth which now has an enlarged harbour.

The proximity to Dublin reduces transport costs on fish consignments and gives Zone 5 a price advantage over west coast and south coast ports. The fishermen are therefore less concerned with foreign markets than their colleagues in Killybegs, Galway, Castletownbere or Dunmore East.

3.6.3 Aquaculture

Apart from a salmon hatchery there are no fish farms in County Dublin, although some fish culture companies have their head-quarters there. County Louth has eleven fish farm entities, almost all of which deal with oysters. In addition, 6 of them work with clams, one with scallops, one with mussels, and one with abalone.

Most of these units are located in Carlingford Lough, just to the north of the identified zone. They are included in the analysis, for the sake of completeness; given the existing difficulties of assessing, numerically, the contribution of labour and added value of the sector in this zone, any distortion from this inclusion is minimal.

The aquaculture activities give employment to 44 persons full-time, and 46 persons part-time. The value of production is estimated at IR£ 1.5 million annually.

While a modest increase in fish farming may be possible on the east coast, no dramatic change is expected.

3.6.4 Processing

Zone 5 has over 16 fish processing establishments some of them like Clayton Love and H.J.Nolan, having a long history of involvement in the industry. They are mostly based in and around Dublin, only two of them being located in Louth. The Dublin merchants take delivery of fish from the West and South coast ports, as well as fish from local landings. The bulk of fish is distributed for consumption within the Dublin area, after primary processing. Secondary processing in this sub-sector of the industry is poorly represented in the Dublin area.

The processing sector in Zone 5 is estimated to employ around 587 persons, about 390 of these being full-time. As Zone 5 is not a herring area, the fish plants do not have large seasonal variations in throughput which would call for a lot of part-time labour.

On the basis of Zone 5 catches and culture production, the local processing sector would have a turnover of about IR£ 15 million in processing output. Since they also take fish and shellfish from other parts of the country, their total turnover could be double that amount. An examination of the companies involved in processing suggests an output figure of IR£ 30.8 million for the sub-sector.

3.6.5 Ancillary Services

Zone 5 has at least two net factories and several boatyards. Marine engineers and electronics servicemen are available in plenty since they also serve the merchant fleets. Howth has a large marina and pleasure craft basin which attracts further services in boat chandlery and marine hardware. Since the merchant fleet and leisure craft markets are substantial, it is difficult to say to what degree the fishing industry supports these services.

The other types of service industry on hand in Zone 5 are those of banks, financial houses and insurance brokers. Given that Zone 5 boat owners do not invest in new vessels and only seldom replace existing craft, the financial services are not utilised as much as they might otherwise be.

Altogether there may be 316 jobs in the ancillary fishery sector and some 282 of these would be full-time. Zone 5 boats spend about IR£ 200,000 a year on vessel overhauls, and about IR£ 400,000 a year on fishing gear. Ice supplies would come to IR£ 120,000 and diesel fuel to IR£ 900,000.

3.6.6 Summary

Situated adjacent to the heavily exploited Irish Sea the zone does not enjoy the relative abundance of marine resources that can be found off the west and south coasts. Also, by virtue of its proximity to the national capital, the contribution of the fishery sector to the local economy is not so pronounced or as vital as that of the other 4 Zones to their areas.

Numbers employed in the Zone 5 fishery sector are estimated as follows:

Table XXIV - Zone 5 Fishery Sector Employment

	full-time	part-time	total
fishermen	560	411	971
aquaculture	44	46	90
processing workers	390	197	587
other related industry	282	34	316
total	1,276	688	1,964

Source: Nautilus' estimates

Given its proximity to Dublin City, Zone 5 workers leaving the fishing sector have not found it easy to obtain work locally. Of a total of 20 men who withdrew from fishing in the past 2 years, from Clogherhead and Howth, the following were the job results:

six obtained work in the Belling Electric plant
two emigrated to the USA and two to England
two men joined the merchant navy
two entered on further education courses
four took up employment outside the sector.

There are few prospects for growth in Zone 5 owing to the limited nature of the resource. Marginal improvements are possible in the fleet and in the aquaculture sector. The processing sector could always expand or improve since it can bring in supplies from other parts of the country if need be; (in fact, at times, Dublin factories have had to get supplies from East England and N.E. Scotland). Of the ancillary industry sector, the net factories can and do supply other parts of the country, as also can some of the electronic and financial service companies.

Table XXV - Zone 5 Indicators

Employment	popul- ation (no.) a	work force (no.) b	in work (no.) e	fisher- men (no.) f	other jobs (no.) g=e+f	total sector (no.) e/b	labour dependency g/b	prop. in work (%)
	170,000	62,000	51,000	697	805	1,502	1.4	2.9
Economic	total GDP (IR£m) c	per cap. GDP (IR£) d=c/a	added value landings (IR£m) h	other (IR£m) i	sector (IR£m) j=h+i	fishing contrib. (%) h/c	sector contrib. (%) j/c	
	1,065	6,274	8.1	11.0	19.2	0.8	1.8	

Source: Nautilus' estimates.

3.7 ZONE 6 - OTHER AREAS

3.7.1 Zone Composition

Identified zone areas encompass in total about half of the marine coast of the Republic of Ireland. In terms of land area the zones cover just over 40 per cent of the 15 coastal states in the Republic, taking in all of Donegal and Waterford Counties, excluding urban Waterford. The zones also take in parts of Mayo, Galway, Kerry, Cork, Wexford, Dublin and Louth Counties - from a third to a half of each. In total the zone land areas are in the order of 20 per cent of the total area of the Republic of Ireland.

There are five coastal areas not included in these zones, plus inland freshwater fishery areas. Some of the non-zone areas do depend heavily on fishing for part of their rural economies, but as the populations are small or scattered, or the total amount of fishing effort is modest, they are not included in the identified zones. Some mention needs to be made of them, however, by way of comparison, and to indicate their development needs which in some degree will involve fisheries.

The six non-zone fishery areas in the Republic of Ireland are:

1. The coastal regions of Mayo and Sligo and Leitrim Counties.
2. South East Galway, Clare, Limerick and North West Kerry.
3. South East Cork from Kinsale eastward.
4. The coastal areas of South Dublin, Wicklow and Wexford up to Curracloe.
5. North East Louth and the coast of Meath.
6. The sixth non-zone area would be the freshwater fishery areas of the river basins, chiefly the Shannon, but there are several others. There the fishery activities are primarily tourist and sports related, and there is also some aquaculture.

The characteristics of the fleet in Zone 6 are estimated, for completeness, to be the following:

	< 12m 35 kW	12-15m 110 kW	25-20m 225 kW	20-28m 600 kW	28-40m 1,900 kW	> 40m 2,600 kW	total
numbers	170	40	21	3	2	0	236
power (000'kW)	5,950	4,400	4,725	1,800	3,800	0	20,675

Source: Nautilus' estimates

Landings from the main fishing harbours in non-Zone areas, covering Cobh, Arklow, Belmullet, Ballyglass, Ballycotton, and Portacloy are:

value	1989	1988	1987	1986	1985
demersal	2	2	2		1
pelagic	1	1	1		1
shellfish	2	0	0		1
total	5	3	3		2
volume	1989	1988	1987	1986	1985
demersal	2	2	2		1
pelagic	8	6	6		7
shellfish	1	2	1		1
total	10	9	9		9

Note: allocation of landings to the zone are on the basis of the allocated landings of the fifty top performing ports; it is not possible to allocate landings to the other 800 lesser ports, and thus these figures are only representative of the levels of landings.

Source: BIM

There are seven fishing harbours of some note in the non-zone areas, with landings in excess of a quarter of a million Irish punts. Of these, one, Cobh, is really served by Co.Cork vessels when fishing for herring in that area. The bulk of the landings do not reflect the activities of local vessels, as would be the case regarding the other six ports below.

Landings from named ports in Zone 6 amount to a value of some IR£ 4.5 million.

Activities in Zone 6 are considered to support a workforce of some 2,271, of which 1,137 are engaged in fishing. 832 are full-time employed in fishing; the part-time workers would be mostly crofter/fishermen, but some might be on welfare subsistence when not engaged in fishing. In full-time equivalents, this amounts to 1,340.

3.7.2 Main non-zone fishery areas

The area of Sligo and north Mayo encompasses the main fishery harbours of Belmullet, Ballyglass and Porturlin/Portacloy. This is an economically depressed area with little alternative employment opportunity. This is borne out by its Gaeltacht status (N.W. Mayo). Between them, Sligo and Mayo have 8 fish processing establishments, 40 fish farms and 163 fishing boats. Apart from farming and some tourism there is little other economic activity in the two counties.

The next large non-Zone area on the west coast is that from Galway city to Fenit in Kerry, which includes the coasts of Clare and Limerick, as well as the south of Galway and north east of Kerry. There are over a dozen small fishing harbours on this stretch of coast, but none of them of much significance in terms of size and number of vessels or landings. The area has some small scale aquaculture but much less than in west Galway and Mayo.

On the south coast, the stretch of shoreline from Kinsale to Helvick extends between Zones 3 and 4. This area, while it has the port of Cobh and the small fishing harbour of Ballycotton, does not really depend much on fishing activity. Cobh is a harbour used seasonally by vessels from Castletownbere and Dingle when they are fishing herring in the area. It is not a major fishing port in its own right. In any case, the presence of the City of Cork with its urban industries, distorts the economic picture here for agriculture and fisheries.

The next non-zone area is on the east coast from north of Wexford up to Howth. This stretch of coast has only one fishing port of note, namely Arklow, which is also one of the traditional centres of fishing boat building in Ireland. Arklow is in north Wexford county and there is no fishing harbour to speak of in Wicklow to the north, or in County Dublin until one comes to Howth.

The last non-zone area is in two parts. First the short coast line of Meath, and then the N.E. part of County Louth from Clogherhead to the Northern Irish border. The only fishing activity in this area is around Carlingford and it is small scale in nature.

None of the non-zone areas possess a single fishing harbour of any consequence. The largest in terms of landings is Cobh which is really a seasonal landing place for herring by Zone 3 vessels fishing in that area. Arklow, the next largest in terms of value of fish landings had about IR£ 1 million of fish discharged in 1989.

Mention must still be made of the important inland waters of Ireland, both for their contribution to tourism and to aquaculture. The attraction of sports fisheries to tourists is difficult to quantify but it must be significant to Ireland. Inland aquaculture provides trout and salmon, both for consumption and for stocking waters for anglers.

CHAPTER 4 THE IMPACT OF THE COMMON FISHERIES POLICY

4.1 Historical Impact of CFP

The fishing industry of the Republic of Ireland has developed considerably since its accession to the European Community and its involvement in the Common Fisheries Policy. Despite such development, however, the fishing sub-sector continues to be dominated by a fleet of aging wooden vessels exploiting coastal resources only; the processing sub-sector is still small and predominantly engaged in primary processing, and the ancillary services sub-sector is generally poorly developed. The aquaculture sub-sector has shown rapid growth, notably in the cultivation of salmon, but significant further opportunity remains for expansion.

The lack of capacity of the fleet is exemplified by the fact that Ireland has been consistently under-fishing its demersal quotas. The reason is that the Irish demersal fleet is composed of small and medium sized vessels which are not able to operate on the exposed deep water grounds to the west of the Country. Vessels of 36 metres length or larger are required for that work in the open Atlantic.

The take-up of Irish quota in recent years is shown in the following table.

**Table XXVIII - Comparison of Irish quotas and landings (at home and abroad)
(tons live weight)**

	landings			% uptake of quota		
	1987	1988	1989	1987	1988	1989
whiting	17,240	17,240	15,985	54.9	57.4	50.4
cod	11,350	11,520	11,220	67.9	74.9	66.4
haddock	3,850	4,090	4,590	84.8	73.3	59.0
saithe	3,760	4,790	4,340	52.5	35.0	64.3
plaice	3,295	3,410	3,920	93.4	95.3	71.0
megrim	2,960	3,260	3,260	72.8	65.0	96.9
monkfish	3,060	3,370	3,370	52.7	63.4	96.9
hake	1,990	2,070	2,060	90.6	84.9	102.2
sole	625	640	622	86.9	107.7	81.2
pollock	910	1,230	1,230	88.6	84.7	88.5
nephrops	9,315	9,315	9,805	47.6	33.8	47.7
herring	38,920	33,448	43,540	101.7	123.6	94.1
mackerel	79,350	79,350	70,180	94.8	85.1	101.2
Total	176,625	173,733	174,122	85.9	84.2	86.5

Source: Review of the Common Fisheries Policy - Report of Advisory Group (The Whittaker Report)

The relative dependency on quota species, by zone, has been estimated according to assumptions on fleet distribution. Of necessity, this a very rough estimate. The tabulation below indicates the differences between zones. Dependency, from the view point of both volume and value, is between 71 and 87 per cent on quota species. Differences between zones are limited.

On the basis of the volume of landings, the greatest dependency is indicated for the West (87 per cent) and the North West (81 per cent) fisheries. All other regions are relatively less dependent than these two regions, with Zone 6 the least dependent.

On the basis of the estimated value of landings, dependency increases steadily from the East in a clockwise direction. On a relative basis, dependency is lowest in the East (73 per cent) and in Zone 6 (75 per cent).

Relative dependency on quota species, by zone

zone	1	2	3	4	5	6
dependency by volume	72	73	74	87	81	71
dependency by value	73	77	78	79	81	75

A number of structural weaknesses in the industry have only been more clearly shown up as a result of participation in the CFP.

The industry has a weak capital structure, very much in line with the artisanal character of the sector, despite the fact that the scale of the industry is far from artisanal. The capital structure of the sector is typical of a traditional industry that continues to utilise traditional forms of finance - savings, family and close community investors, augmented by modest bank finance (involving only limited financial exposure of the borrower). The need for much greater capitalisation of the industry is now beyond the capacity of these traditional systems, and difficulties with the transition to more formal and financially efficient practices is now greatly constraining the sector.

Two elements of the sector have, however, already made this jump - the large-scale pelagic industry centred on Killybegs in Donegal, and the salmon farming industry. The former has been the result of successful risk taking by a small number of fishing skippers, originating from outside the Donegal area. The latter has been the result of corporate investment from outside the areas of production, coupled with the employment of graduates with technical and management qualifications, to operate the farms. Some signs of change are additionally apparent in the way that East coast skippers and vessel owners finance and manage their businesses.

Of all the maritime states of the EEC, Ireland was perhaps the most disadvantaged in fisheries terms at the time of its entry into Europe in 1972. Even in 1983, at the outset of the Common Fisheries Policy, the Irish fishery sector was still poorly developed, and whilst much opportunity remained for further development of the industry, significant development of traditional fisheries - white fish - was effectively capped by the concept of relative stability in the allocation of proportions of TAC's (Total Allowable Catch).

In competitive terms, despite some striking developments in the industry up to the present, the Irish industry is particularly vulnerable to incursions from foreign investors. Its limited marketing and processing capacities further promote the shipment of raw and part-processed material to more market oriented processors in mainland Europe. The same conditions also support the increased landing of catches directly to Continental ports, and discourage foreign vessels from landing their catches to Irish ports, even for consignment to home ports.

The scene is thus set for the worst possible scenario whereby beneficial ownership of catching and processing facilities shifts to investors not just from outside the areas of operation, but from outside the country, and where the development of the Irish industry is being determined more by, and in the interests of, Continental businessmen, than by the Irish, in the interests of the Irish people and the Irish economy.

Since 1983, the economies in those zones most dependent on the fishery sector are no stronger, and are now threatened. Current threats are less to do with the possibility of fleet reductions, than with the exposure of businesses in these zones to strong competitive influences from outside Ireland, against which they have no defence. As a result of industry-wide weaknesses in marketing, business management, entrepreneurship, and, above all, capital structure, the industry is particularly poorly equipped to participate in Europe, and the Single Market, on anything like an even basis.

As a consequence, the deterioration of the industry over the coming years is a serious possibility, despite the current well intentioned efforts to bring about change in the sector. What is required is more along the lines of the energy, commitment and tenacity that has been shown by those entrepreneurs who developed the Killybegs' pelagic industry. Unfortunately there are few such risk takers in the white fish sub-sector, and able, ambitious and qualified managers tend to find rewarding work other than in the fishery sector, outside the fishery dependent areas, and often outside Ireland altogether.

Three factors stand out clearly when assessing Ireland's fishery sector vis a vis that of Europe.

The first is its relatively small allocation of resource compared to the scale of the fishing grounds adjacent to its coast;

the second is the socio-economic importance of fisheries in Ireland, particularly on the north, west and south coasts; and

the third is the absence of a critical mass of skilled and experienced industry managers, capable of putting the Irish industry on an equal and competitive footing with those of its neighbours.

Ireland contributed about 16 per cent of the waters in Europe's "common pond" EEZ. In return it received from 5 to 8 per cent of the TAC allocations. The fact that Ireland entered the Common Market at a disadvantage was recognised by the Hague Agreement and under the terms of the Hague compromise Ireland's catch was permitted to rise to double that of the 1975 level, by the year 1979. This was only achieved in 1982, and then only by the substantial development of the low unit value mackerel industry. Doubling of white fish and shellfish landings, as allowed for in the under the Hague Agreement, has even now not been achieved. As a consequence, the full value of the Hague Agreement has not been realised by Ireland, and the industry; the white fish and shellfish components of the industry, remain poorly developed relative to those of other member states, and relative to the extensive natural resources surrounding the island of Ireland.

Despite recognition of:

- the peripheral nature of the Irish economy,
- the increasing disparity between economic development in Ireland and the rest of the Community, and
- the fact that the west of Ireland is itself peripheral within the Irish economy,

current Community directives are for Community-wide reduction in fishing capacity. Ireland is effecting such reductions, and is well on the way to achieving the required target reductions,

- even though it continues to operate at a lower level of development than those other states,
- even though it is not currently able to harvest the full extent of its allowable quotas, and
- even though it is recognised as being one of the least economically developed regions of the Community.

Structural aids to development of the Irish fishing fleet have been provided in accordance with Multi-Annual Guidance Programmes (MAGPs) prepared and submitted by the Irish government for the periods 1983-86 and 1987-91, and continue under the latest MAGP for 1992-96. Within the framework of this latest MAGP, a Zonal Plan has also been prepared and submitted concerning development of the small-scale fisheries sector.

During the mid-eighties the over-capacity of the EC fleet received official recognition as a major structural obstacle to the sustainable development of the Community's fishery sector. In approving the MAGPs for 1987-91 the Commission stipulated that fleet capacity targets for 1991, in all Member States, should be three per cent below the corresponding GRT targets for the end of 1986, and two per cent below engine power targets for that year.

In the case of Ireland, the Commission sought to apply a GRT target of 32,000 GRT for the end of 1986, but this was subsequently revised upwards to 45,399 GRT in the light of bilateral discussion between the Commission and Ireland, and more complete information on the size of the Irish fleet. Nevertheless, this revised target represents a requirement for substantial reduction in actual tonnage of the Irish fleet; the scale of this challenge can be judged from achievements - a reduction from 58,845 GRT to 55,822 GRT over the period of 1986 to 1989.

This left a requirement for further targeted fleet reductions to 49,903 GRT by the end of 1990, and 43,941 GRT (the 1986 figure) by the end of 1991. In practice the end of 1990 tonnage of the Irish fleet was deemed to be 49,800 GRT, i.e. just within the target for that year.

This significant reduction in fleet tonnage between the end of 1989 and the end of 1991 has been achieved by re-registering the fleet during 1989/90 - with the application of stricter criteria for admission onto the register (and thus presenting a more realistic picture of the size and composition of the active Irish fleet) - and by excluding vessels that were engaged in aquaculture and bivalve fisheries.

Further, no additional capacity had been allowed onto the fleet register without the withdrawal of an equal tonnage, but this ruling was subsequently waived by the Irish government, when, in 1992, it allocated twenty new licenses for the operation of middle distance vessels in demersal fisheries to the west of Ireland.

In its recent policy paper "Programme for Economic and Social Progress" the Irish government stated that its key current economic objectives for the development of the fishery sector were:

- "(a) to secure higher value-added through improvements in quality, and additional fish processing in Ireland;
- (b) to increase supply of fish generally through higher take-up of existing fish quotas, additional catches of non-quota species, and higher output from the aquaculture sector;
- (c) to prepare the fish-processing industry to compete successfully in the Internal Market; and
- (d) to increase the contribution of the inland fishery resource to the national economy particularly through increased tourism."

In practice, the current Multiannual Guidance Programme (MAGP) submission, running from 1992 to 1996, seeks to increase the supply of fish from the catching sector, the modernisation and restructuring of the fishing fleet to better match the available fish stocks, and to strengthen its long-term viability. This programme, together with various other programmes and sectoral plans, covering processing, harbour development, etc., constitutes a comprehensive integrated approach to the optimum medium-term development of the Irish fishing industry.

Within this programme, however, the government is seeking to continue its general programme of fleet capacity reduction, in line with the EC's requests, whilst at the same time seeking to restructure the fleet to better exploit Ireland's underutilised whitefish quotas and to allow greater diversification into non-quota species. Whilst this is a laudable ambition, it would be wrong to suggest that current fleet reduction plans can be guaranteed to deliver the reductions called for by the Commission, or that the industry (and perhaps the government) is compliant in this matter. The issuance of twenty new demersal licenses is clearly contrary to the intent of fleet capacity reduction, but sits well with the government's avowed objective of increasing the supply of fish through the higher take-up of existing fish quotas.

The 'Whitaker Report' of July 1991 - Review of the Common Fisheries Policy (with respect to the development of the Irish fishing industry) - recognised the continuing controversy over the fleet capacity issue in general, and the specific difficulties of the Irish industry in complying with the EC directives on the issue. With reference to the disparity between actual fleet tonnage and the end of year target for 1991, the report stated - "...there is a gap of 6,000 tonnes between the recorded GRT at the end of the 1990 and the 1991 target. It is not practicable to eliminate this gap. Indeed the exclusion of certain vessels from the fleet register may be legally challenged and if successful this could have the effect of raising the official GRT figures above the end of 1990 level."

The Report goes on to say - "..... In summary, Ireland cannot reasonably be expected to accede to the reductions in fleet capacity sought by the end of 1991. Instead, an additional allocation of 5,000 tonnes GRT is sought for the offshore demersal fleet to bring it into line with the available quotas by 1994, while subject to paragraphs 17 and 18 [referring to continuing disadvantages of the Irish fleet relative to those of other neighbouring fleets], the remainder of the fleet might be retained at its actual end-1990 level pending a review of the MAGP in 1994. It is important to emphasise that the Irish fleet constitutes less than three per cent of the Community fleet and that the margin of manoeuvre required for rapid restructuring of the whitefish fleet (5,000 tons) represents a mere one-quarter of one per cent of the Community fleet."

Clearly much still remains to be resolved in this issue. Nevertheless, the specific aims of the current MAGP for the Irish fleet are to seek to reduce the average age of the fleet (through an active replacement policy), to favour employment maximisation in its support programme, to encourage redeployment of the existing fleet more in line with resource opportunities, and to influence fleet reduction in line with the above principles. Additional fleet reduction is identified as coming from market forces, with natural attrition as the least profitable elements of the fleet cease to operate.

One specific area of fleet increase is, as noted above, to bring that component of the fleet capable of exploiting offshore demersal species more in line with the available quotas for such a fishery.

As is apparent from the above, some changes in the structure and disposition of the Irish fleet are supportable, and notably a movement in fishing power from the east and south coasts to the west, but overall reductions would appear to be contrary to the intent of the Community concepts of cohesion and development of its peripheral regions. Substantial increase in the fishing capacity of the Irish fleet can be achieved through modernisation, without increasing overall tonnage or engine power. Such increases would be of marginal value, however, unless this fleet had access to a larger proportion of the available resource.

As with the fleet capacity, the re-deployment of fishermen leaving declining components of the fishing sub-sector can, in theory, be accommodated through relocation to more buoyant components of the country's fishing sub-sector. More particularly this can be achieved, in theory, through a shift to shore-based activities within the sector - notably shellfish culture and various forms of fish processing and fishery support services. In practice, as a survey of some of the most recent outflows from the sector demonstrates, this has not been achieved, and in some regions is not likely to be achieved. Yet the level of dependency of most of these communities on the fishery sector suggest strongly that current levels of employment within the sector must be maintained, and that opportunity exists for considerable expansion of employment in the shore-side sub-sectors of the economy.

The indications from the analysis of the socio-economic status of the Irish industry are that EC/Government led support measures should be directed at facilitating necessary adjustments within the sector, at facilitating maximum uptake of such development opportunities as are identified, but, above all, at the maintenance of the current levels of employment within the sector.

4.2 Prognosis

The critically important nature of fishing to Ireland's rural economy can be seen in the location of 3 of the 5 major ports in areas where unemployment is particularly high, where industrial development is minimal, and where agricultural potential is strictly limited to small-holder subsistence and semi-subsistence level activity. In the zones around these ports, the fishery sector is estimated to contribute significantly to local employment and to local economic production. In the other two zones, fishing opportunities are limited, and some relocation of fishing effort, and the demise of the less successful vessel operations, will further reduce already limited employment in these zones. Whilst the extent of dependency of these two zones is less than that for the west coast zones, by European standards the dependency is nevertheless real.

The figures shown overleaf clearly demonstrate this dependency.

The fishery sector in each of the five zones is at risk, some from a failure to change, others because changes are likely to be forced upon them.

4.2.1 Donegal

In Donegal great strides forward have been made in the development of the highly successful pelagic industry. But current instability in international pelagic markets and market structures threatens the future of this high capital sector of the industry. A very large component of full-time and part-time employment in this zone is dependent on the success of this fishery. In addition, general high unemployment levels in the county, currently 27 per cent, militate against the re-employment of people displaced from the pelagic or any other fishery sub-sector in this zone.

Table XXIX - Regional Indicators of Relative Dependence on the Fishery Sector (European Currency Units - ECU)

Zone (1)	General Features of Zone					no. of jobs in fisheries and related activities			added value of fisheries and related activities			relative dependence				dependency on quota species	
	total pop.	work force (2)	total no. of jobs (3)	GDP (4) total ECUm per cap. ECU		fisherm only (5)	other jobs (6)	landings total (7)	(7)&first handling ECUm	other activ's ECUm (6)	total ECUm	in terms of jobs (%)		in economic terms (%)		volume	value
	a	b	c	d = c/a		e	f	g=e+f	h	i	j=h+i	e/b	g/b	h/c	j/c		
<u>ZONE 1</u> Co. Donegal	130,000	45,000	33,000	1,021	7,876	1,256	2,010	3,266	28.1	32.8	61.0	3.8	9.9	2.8	6.0	72	73
<u>ZONE 2</u> Cos. Galway & Mayo	63,000	22,000	18,000	514	8,178	473	671	1,144	7.6	12.5	20.2	2.6	6.4	1.5	3.9	73	77
<u>ZONE 3</u> Cos. Cork & Kerry	107,000	38,000	32,000	1,006	9,371	1,201	789	1,990	24.5	12.4	37.0	3.8	6.2	2.4	3.7	74	78
<u>ZONE 4</u> Cos. Waterford & Wexford, excl. urb. Waterford	88,000	32,000	26,000	754	8,526	723	563	1,286	13.0	7.8	20.8	2.8	4.9	1.7	2.8	87	79
<u>ZONE 5</u> Dublin to Dundalk	170,000	62,000	51,000	1,387	8,172	697	805	1,502	10.6	14.3	25.0	1.4	2.9	0.8	1.8	81	81
<u>ZONE 6</u>	50,000	18,000	15,000	-	-	570	770	1,340	5.6	8.7	14.3	3.8	8.9	-	-	71	75
ALL IRELAND	3.54 m	1.33 m	1.09 m	33,465	9,450	4,919	5,608	10,527	89.4	89.0	178.4	0.5	1.0	0.3	0.5	75	77
latest data	1991	1991	1991	1990	1990	1991	1991	1991	1991	1991	1991						

Notes:

(1) the zones comprise groupings of rural districts

(2) the working force is defined as those between the ages of 15 and 65 who are in work, or listed on the unemployment register

(3) those registered as in-work, including self-employed

(4) GDP - deduced from regional output estimates

(5) including part-time employment, converted as:

3 part-time fishermen are equivalent to one full-time fisherman

2 part-time aquaculture workers are equivalent to one full-time aquaculture worker

4 part-time processing workers are equivalent to one full-time processing worker

2 part-time ancillary workers are equivalent to one full-time ancillary worker

(6) "other jobs" (activities) refers to jobs (activities) related to fisheries and/or aquaculture not considered under items "fishermen only" and "landings & first handling"

(7) landings of domestic vessels in the ports of the zone

(8) conversion factor IRE:ECU - 0.767760:1

The prognosis for this zone is fair only:

maintenance of current levels and dispositions of employment and output must be considered the most likely development over the next few years;

a pessimistic future would be a substantial reduction in the level of pelagic related processing, difficulties in maintaining the current composition of the pelagic fleet, and further difficulties in the salmon farming sub-sector;

an optimistic outcome would include the steady modernisation of the medium sized whitefish and shellfish fleet, and thus improved landings from this fleet, upgrading of the older large pelagic vessels, a substantial improvement in the marketing of fishery products from the zone, and notably of mackerel, and a consequent boost to the processing sector, including further development of small-scale high added value processing businesses.

4.2.2 Galway

Dependency on the fishery sector in this zone is particularly high, and the potential for development is particularly great. A lack of indigenous capital and entrepreneurship appear to be holding back development, despite the efforts of Udaras na Gaeltachta. A strong government role in the further development of industry infrastructure would help, but a convincing development strategy needs to be presented by strong local leadership. Aquaculture development is likely to progress, but to involve investors and workforce from outside the immediate area; growth in non-salmon cultivation is likely to be strong, but economic and financial returns will develop but slowly.

The prognosis for this zone is only fair, despite the undoubted opportunities existing for development:

a high probability projection would involve further development of the port of Rossaveal with some replacement/ modernisation of the whitefish fleet, improved landed volume and value in the zone, and some further development of small-scale processing;

a pessimistic projection would involve maintenance of the status quo, with next to no changes over the next few years;

a more favourable projection would involve substantial further development of the port of Rossaveal, expansion of the fleet operating out of this port (from other ports, and including the deployment of larger vessels able to operate off-shore), substantial modernisation and replacement of the existing fleet, further consolidation of the marketing skills of the aquaculture sub-sector, improved overall marketing and management skills of businesses within the zone, and concomitant improvements in the number, scale and profitability of small and medium sized processors.

4.2.3 The South West

The reputation of the fishery sector based at Castletownbere is one of able but conservative management. Significant development of the industry is possible, but will require a degree of adventurism alien to this area. Recent developments at Dingle may, however, prove to be the necessary incentive to necessary off-shore and on-shore speculation. Aside from these fishing related opportunities, the greatest scope is to be found in further growth of the substantial aquaculture sub-sector, and strengthening of the processing sub-sector, which is poorly represented in this zone.

As the second most important fishery zone in Ireland, after Donegal, much depends on firm leadership from this region if a decline in the sector is to be avoided. The employment capacity of the sector in this region is substantial, and, as the zone with the greatest potential for increased landings of high value white fish and shellfish, much is riding on the further development of existing entrepreneurial skills in the area.

The prognosis for this zone is generally good:

increases in whitefish landings will bring about modest increase in employment in the zone, particularly in processing and in ancillary services; continuing development in the aquaculture sector will provide

employment opportunities for both indigenous fishermen/ coastal workers, and for the now traditional flow of biology graduates from other parts of the country.

a pessimistic projection would be if the industry were kept very much as it is today, at a time when all economic and business indicators were pressing for expansion

the most favourable prognosis would accompany a sea change in the way that traditional businesses finance and manage expansion, and in the way that they market their products, whether it be the supply of primary or secondary processed fish, the marketing of security of supplies for Continental traders, or the attracting of foreign landings to south west ports

4.2.4 The South East

Limitations within both the fleet and the resource are now biting home, with generally reduced profits, and withdrawal from the fishery. The ablest vessels continue to do well, but a modest reduction in the fleet should be expected, with accompanying loss of employment. Opportunities exist for increased processing business, given both good connections with the UK and the Continent, and with the high quality of raw material supplies from the local fishery and the south west. Improvement in the herring market situation will have a significant affect on herring related processing, but long-term stability in this sub-sector will require diversification of both markets and products.

The prognosis for this zone is fair to poor:

a median projection would be a slight fall in fishing employment as the less efficient vessels leave or are forced from the fleet, coupled with stable, if not increased employment in the processing sub-sector

a poor projection would involve a failure to check the Japanese roe-market focus of the herring fishery, and a failure to further benefit from ancillary employment relating to export trading and transport

a favourable outcome for this region would involve, over the next few years, significant development of additional small and medium scale secondary processing and marketing businesses, drawing on a relatively stable and concentrated local labour force, and access to the principal European markets.

4.2.5 The East

The fishing component of the East zone will do well to continue to take its share of the Irish Sea fishery, given growing resource constraints, but there is already evidence of expansion of the interests of local skippers and vessel owners to developments on the west coast. Improvements in the marketing channels for the distribution and wholesaling of fish to the Dublin urban retail and restaurant markets, say through a new wholesale market, could prompt increased flows of product from the north west and west, and stimulate further development of an already strong processing sub-sector. Various components of the ancillary service sub-sector could benefit from expansion of their coverage to the west and south west regions.

All in all, however, the prognosis for the zone is not particularly good, with opportunities for growth mainly by diversification away from dependence on the zone. Employment levels are likely to remain stable however, assuming that businesses can secure and/or retain sufficient qualified labour.

Projections for the zone are:

a median projection is maintenance of the current structure and scale of the industry, but with increased investment in activities outside the zone; employment levels are likely to remain much the same as at present, but income from non-zone activities are likely to increase

a poor projection would involve a small reduction in the zonal fleet as a result of falling returns

a favourable projection would involve substantial development and growth in the trading, exporting and secondary processing of fish and shellfish, the strengthening of marine engineering services to other than fishery related businesses, the strengthening of financial services to the sector, and possibly a degree of import substitution through the local processing of consumer fish products for the Irish market, using imported frozen raw material.

4.3 The direction of future assistance to the sector

Given the above descriptions and analyses, what the Irish industry now needs is:

- the substantial modernisation of its aging fleet,
- the development of a moderately sized fleet of vessels capable of exploiting the deep water grounds to the west of the country - Porcupine Bank and Rockall,
- increased access to quota resources to the west of the country
- some limited protection of the smaller coastal communities, and of the resources they exploit, possibly through some form of limited access to the coastal fisheries (size of vessel allowed to fish within 12 and 6 mile coastal zones)
- substantial development of industry infrastructure and services in the west of the country
- marked increase in the number and capacity of managers/ entrepreneurs entering the sector, especially experienced in international marketing, the management of modern small and large scale added value processing, and general business management
- an increase in the grant element available for vessel replacement, and shore based infrastructure and business development, yet taking into consideration the limited financial resources available to the Irish government for co-funding
- the provision of substantial preferential credit facilities to the sector, through the existing banking infrastructure, and perhaps through a specially formulated Maritime Bank or investment fund, designed to overcome the very poor capital structure of the traditional centres of the fishing industry, and to promote sector diversification on-shore
- the development of substantial Irish investments in fish processing and service enterprises elsewhere in the Community, so as to secure market access to Continental markets, and to reap the benefits of scale, and trading muscle
- a coherent and comprehensive fishery development policy, and the committed support of politicians and businessmen to implement the policy.

In the worst of scenarios, there will be limited growth in the sector, with displacement of labour from easterly fisheries, and some outflow from the processing sub-sector as the competitive position of the Irish processing and fish marketing sub-sector vis a vis other European businesses weakens. Given the existing under-developed state of the Irish industry, however, it should be relatively easy to avoid this situation, by stimulating growth in the sector. Contrary to the situation that most of the other fishery industries of Europe find themselves in, the Irish industry has the scope for growth - what it lacks is the ability to retain and to attract sufficient trained middle managers and entrepreneurs to bring about these changes, and the investment capital to finance these changes.

The review of the five zones of strong fishery dependency indicates in most cases a paucity of alternative economic possibilities. Irish IDA and Gaeltacht programmes have been attempting to improve the situation through diversification policies for many years without much success in the rural and coastal areas. It is now essential that the obvious development capacity of the fishery sector be exploited, and that current employment levels in the sector be maintained and expanded.

To emphasise the difficulties faced by fishermen displaced from their traditional work, a survey of a sample of 210 fishermen who ceased work as fishermen in their home ports, indicated the following:

Table XXX - Redeployment of a sample of labour displaced from the fishery sector

JOB OR ACTION	AREA/ NORTH -WEST	WEST	SOUTH -WEST	SOUTH -EAST	EAST	TOTAL
Emigrated Temp.	19	7	2			28
Perm.	22	39	4		4	69
Fishing Elsewhere in Ireland	3	12				15
Fish Processing	5	1			9	15
Aquaculture	2		15			17
Other *			2	4	4	10
Non Fishery Job	1	8	1	10	12	32
Unemployed	1	3	2	22		28
TOTAL	53	70	26	45	20	214

Notes: * Net Factory, Merchant Navy, Haulage, Fish Shop, Training Courses.

Not all of the sample came from within Zone areas, therefore they are grouped by coastal region, but these roughly correspond to the five Zones.

Source: Nautilus' survey

From the table it can be clearly seen that only 15 per cent of the fishermen found work in a non-fishery area ashore, and a large number of these went to one factory in the East near Dublin. Nearly half the total had to emigrate, whether on a temporary or permanent basis. Only one area (the south west) had a significant number of job opportunities in aquaculture. Several of those classed as unemployed in the south west would get temporary work in herring plants during the short winter season.

The table if anything understates the gravity of the situation since it deals with a sample and not a complete assessment. For instance, a single Donegal fishing community, Burtonport, claims to have lost a hundred fishermen to emigration in recent years; to a large extent brought on by the falling price of wild salmon, a seasonal fishery of great importance in this area.

The traditional alternatives in the West of Ireland for redundant fishery or agricultural labour have been tourism and service industries. It is significant from the survey that only one non-fishery job was tourist related - a souvenir shop in the Aran Islands. The others were mostly general service industry work including window cleaning, garage mechanic work, carpet laying and selling lawn mowers.

Of the other fishery related jobs, excluding work in processing plants, not a single one was in boat building. That industry is now moribund in Ireland. Some moved to fish haulage and some to net mending.

In short it would appear that the possibilities of work in non-fishery sectors in the various zones are very modest.

CHAPTER 5 RECONVERSION SCHEMES

Experience of reconversion schemes in Ireland is limited. None of the industrial programmes apply to the Irish situation. Relevant programmes of interest are those of LEADER (which is only now getting underway), the development activities of the Udaras na Gaeltachta, the development activities of the International Fund for Ireland (stimulating business in the area around the border between the Republic of Ireland and Northern Ireland), and the development activities of the Industrial Development Agency. In addition, each of the county administrations operates a Development Team with responsibility for employment generation and enterprise development.

The results of the above programmes can offer guidelines for further work in job creation and economic development. Given the high levels of unemployment in the Irish economy in general, however, there is little specific guidance from the above programmes that is any more relevant to the fishery sector than any other sector. In view of this, no detailed analysis of this experience has been undertaken.

CHAPTER 6 SUPPORT MEASURES

6.1 Priority areas and directions for development

The following proposed support measures are presented for consideration by the Commission in the context of actions to be taken to provide future stability and security to those zones and communities in the EC that have been shown to be highly dependent on fisheries, especially during these times of change.

Unlike many other areas of the Community where fleet reduction is likely to have considerable adverse socio-economic impact, in the Irish situation fleet reductions are likely to have minor repercussions, relative to the restructuring and growth requirements of the industry.

In the Irish industry, the assessment of dependency suggests that, relative to most regions of the Community, all those areas with involvement in the fishery sector are, on the basis of economic and socio-economic indicators, highly dependent on fisheries. Some fleet reductions, more by wastage than external pressure, are likely in the east and south east fisheries, but, if Ireland is to continue to benefit from its fishery industry, both economic and commercial pressures strongly favour growth and expansion.

The proposals concentrate on achieving growth, within the present confines of the CFP, concentrating on:

- 1) improvement in the business management standards and practices employed in all sub-sectors of the industry;
- 2) improvement in the marketing skills exercised within the industry;
- 3) facilitating the take-up of the full demersal quota allocated to Ireland;
- 4) improvement in the sector's long-term competitive position in Europe through a strengthening of the capital structure of the sector, and the acquisition of upstream assets elsewhere in Europe;
- 5) the take-up of specific business opportunities within zones, especially where providing particular employment related benefits;
- 6) the strengthening of the skills base of the sector, through retraining, and through recruitment to the sector.

Certainly the industry would favour an expansion of the fleet, notably into bigger vessels capable of exploiting deep water resources to the west of the country, and would favour a commensurate increase in the proportions of demersal quotas allocated to it. Given the current complexities of maintaining a political and economic balance in the implementation of the CFP, however, change in this direction, before the end of the century, is considered by the consultant to be very unlikely, no matter how credible the arguments - notably Community principles on cohesion and reduction of economic and social disparity. Changes that in effect will bring about the same outcome might be possible after the year 2000 - downgrading UK quota allocations by nationality of vessel; improved integration of fleet, first landing, processing and marketing activities throughout Europe.

6.2 Objectives

On the basis of our assessment of the needs of the Irish fishery industry, the primary objective is to improve management and marketing.

A secondary objective should be to stimulate new business and business expansion through assistance in pre-feasibility, feasibility and financing.

A tertiary objective should be to facilitate the substantial modernisation of the fleet, bring about greater efficiency of operation of the fleet, and increase the quantity, quality and value of landings.

A fourth objective should be to attempt to have construction and refitting of vessels undertaken within Ireland.

6.3 Proposed support measures

Policy

Assistance in the preparation of a detailed long-term strategy for the industry that incorporates expansion of the sector, ultimate de facto harvesting rights to an increased proportion of western demersal stocks - through increased quotas, investment in European registered, rather than Irish registered vessels, securing of landings from non-Irish vessels, and ultimately location of foreign owned vessels at Irish ports.

Business management skills

Establishment of fishery sector development units - in Zones 1, 2, and 3 - each operated by a development team comprising a development economist, an industry specialist, and a financial specialist, all with commercial and business management experience;

Budgetary support to industry institutions - BIM, PO's, Co-ops - with a view to strengthening their ability to provide business/investment advice;

Development of a programme to encourage those in secondary and tertiary education to enter the industry as owners and middle managers;

Develop curriculum material for use in training institutions, pointing up the intellectual stimulation, job satisfaction and financial reward that can come from the management and development of successful fishery related enterprises - processing, marketing, engineering, transport, product design, commercial research;

Programme to encourage qualified managers into the industry;

Mounting of a campaign to raise image and competence of the sector, so encouraging professional entrants to the sector;

Ensure that rural fisheries related activities/developments are fully considered and eligible under the current LEADER programme;

Marketing skills

Establishment of a technology unit able to provide technical and financial assistance in the development of new products and the design of appropriate processes and processing lines;

The funding of a review of market access mechanisms for fish companies processing and selling into continental and U.K. markets;

A review of the opportunities for investment by Irish firms in other parts of Europe as a means of securing market access and beneficial ownership of businesses closer to the core markets of Europe;

Specific technical measures in processing and packaging technology, product design, and market research;

Capital restructuring

Establishment of a funding centre where industry can seek advice on where to, and how to, obtain investment finance;

feasibility study for the establishment of a fishery related investment fund for use by the Irish industry.

Take-up of demersal quota

Increase in the proportion of EC grant contribution to vessel modernisation, and reduction of proportion to be met from the Irish exchequer;

Assistance in designing new middle sized vessels for the Irish fleet, with a view to their construction and fitting out in Ireland, and making maximum use of locally manufactured materials and fittings;

Study the practicality and legality of restricted access to coastal resources - examine policy and legal aspects, possibly in co-operation with the west of Scotland fishery communities.

Development of specific business opportunities

Funding of a series of investment studies for each of the five zones identified in this study, identifying profitable investment opportunities and developing technical and financial feasibility studies for the most promising;

Establishment of a programme in the co-funding of pre-feasibility and feasibility studies for the establishment of businesses in secondary processing and non-salmon aquaculture;

Feasibility study for a new Dublin fresh fish wholesale market;

Improvements of the general skills base of sector

The funding of an expansion/strengthening of the capacity of the country's vocational and academic training institutions to provide business and skills training to the fishery sector - BIM, CTT, universities, colleges and night schools, etc..

Direct placement of labour

Establishment of an agency for the increased participation of Irish fishermen in development work in other parts of the world - notably less developed countries; also as crew and officers of vessels of other European countries (stimulating technology and skills transfer, and innovation).

To achieve structural and economic change will require resources well out of proportion to recent expenditures and investment. Not to restructure, however, would lay the industry open to predation from stronger, cash-rich and more able and aggressive businesses from outside Ireland. These businesses would tend to use Ireland as a way-station for accessing raw material, whilst providing the added value benefits to other regions of Europe, closer to core markets. Unless Irish processing, Irish servicing and Irish costs are attractive to markets/foreign fleets, etc., the Irish will lose out. Unless Ireland can secure market entry for its processed product, continuation of raw material exports are likely to undermine development of the sector.

CHAPTER 7 CONCLUSIONS

With respect to the design of new support instruments within the EC Structural Funds, directed specifically towards the re-structuring of the fishery industry, the socio-economic make-up of the Irish fishery sector, and the development requirements of the industry prompt the following suggestions.

At the outset, the particular structure, and the development and growth requirements, of the Republic of Irish industry would strongly indicate that any measures taken with respect to the socio-economic aspects of the industry should certainly not be limited to schemes to redeploy displaced labour likely to result from a programme of fleet reductions. Such measures should also be applicable to the needs for growth and increased employment within such sub-sectors of the industry for which growth opportunities can be demonstrated.

As with other EC programmes, any financial commitments under a new scheme should be on the basis of clearly articulated policy and programme proposals from those regions that conform to eligibility criteria for support from such a scheme. In line with current trends (and based on evaluation of development schemes) any such documentation should conform to a programme approach to development, rather than a project oriented approach. Further, given the complexity of the sector and its requirements, such programmes as might be prepared and submitted for financial assistance should be clearly linked to an integrated development programme for the sector.

In the interests of promoting stability within the sector, such proposals should cover reasonably long periods of time - at least three years, and possibly five. Given the currently unstable nature of industry planning and resource management regimes, however, such time scales could only be considered as part of a European wide programme designed to stabilise the European fishery industries. Without a "level playing field" short-term, or longer-term, interventions can become part of the problem rather than part of the cure.

It does appear possible, on the basis of the analyses undertaken, to prepare quantitative and qualitative data on the socio-economic dependency of certain zones on aspects of the fishery industry. On this basis it should be possible to delimit zones requiring of, and deserving of, preferential assistance in meeting the consequences of structural change within the sector.

Given the particular nature and distribution of economic activities in the peripheral areas of the Community, however, it will be necessary to establish some fairly clear distinction between the forms of assistance that might be directed towards more formal, industrial scale activities, and those activities of an artisanal and/or semi-subsistence nature. Such programmes as the recently instituted LEADER programme do go some way to addressing the latter, but some more specific actions under a fishery related programme would appear, from the Irish analysis, to be warranted. A programme element that specifically addresses highly dispersed and small-scale fishery related communities, typical of the peripheral regions of the Community, should be included in any support measures.

In general, assistance measures in support of structural change in any sector of the economy might be expected to cover such elements as:

- retraining,
- facilities for placement of displaced and retrained labour,
- facilities for expansion of existing businesses,
- facilities for assisting in the development and start-up of new businesses,
- promotion of entrepreneurship
- facilities for strengthening of marketing skills
- facilities for the promotion of change
- strengthening of planning and management skills, in both the public and private sectors,
- facilities for direct assistance in supporting localized restructuring of the target industrial sector,
- facilities for strengthening and streamlining access to capital loans and grants, and for supporting increased demand for working capital.

The analysis of the socio-economic situation within the Irish fishery industry, and the demands of the change process forecast for the sector, clearly indicate that the above range of measures is also appropriate to this sector.

In defining any such programme of scheme, any funding package should include allocations to:

- the establishment of public/ private sector mechanisms for the management of change (funding of special units, of policy and planning studies, funding for pre-investment studies) relating specifically to the fishery sector (fishing, aquaculture, processing handling, marketing, etc., and related services), and businesses able to deploy/ absorb personnel displaced from that sector;
- funding for business development services, whether through specialist units, existing industry service infrastructure, or direct to businesses themselves; eligibility should be for firms within the fishery sector, or for firms in any other sector that can demonstrate current or future absorption of displaced fishery industry personnel;
- funding of retraining programmes for fishery personnel (including those that might wish to enter the sector), in the further development of the skills base of the industry, or the development of skills appropriate to industries capable of absorbing displaced labour, and/or the funding of individuals for such retraining;
- provision of a specific fund
 - for the development of businesses in the secondary processing of fish,
 - for the development of service businesses to the sector, in the promotion of vertical integration within the sector, and
 - in the development of cross-border businesses to the industry;
- the examination of mechanisms by which the capital base of the sector, and notably areas where the capital structure of the industry is weakest (as is shown in the case of south-east, west and north-west Ireland), can be strengthened (for example through the formation of a specific investment/development fund for the sector, as might be indicated for Ireland).

As is indicated in the discussion in the previous chapter, it is considered that further assistance is required in the restructuring of the Irish fleet, and in the expansion rather than contraction of the Irish fishery industry. Financing and technical assistance in these matters should be available under other programmes of EC assistance to this sector. Nevertheless, in the light of the need for an integrated approach to industry development, restructuring and intervention, care should be taken to ensure that the total range of support measures available to the sector does in fact cover all the legitimate intervention needs of the sector, and that the needs of those areas not included areas/ zones of special status are also adequately met.

Lastly, it is axiomatic that in those countries and areas where the economy is weakest, national and regional tax revenues are commensurately weak. The consequent ability of such national Governments and regions to finance and co-finance development funding is particularly weak, to the continued detriment of the regions of greatest need. Serious consideration should be given to identifying ways in which, for certain high priority developments and sectors, the demand on the limited financial resources of such national and regional governments can be limited. Such mechanisms may, for example, come within the ambit of the proposed Community Cohesion Funds. It may, however, be appropriate to include some form of reduction in the co-funding element in any scheme put forward for the restructuring of the fishery sector (for example, for the modernisation of the Irish west coast fleet).

Table XXXI - Landings of sea fish (excluding salmon) at five major ports.

Zone	Port	1989	1988	1987	1986	1985	1984	1983	1982	1981
v = value (IR£ '000)		v	v	v	v	v	v	v	v	v
1	Killybegs	14,632	15,889	16,604	12,578	11,953	10,792	9,815	8,571	8,563
2	Rossaveal	3,619	2,674	3,696	2,875	3,362	1,583	2,209	2,324	1,208
3	Castletownbere	6,274	7,547	4,186	4,113	3,787	3,294	3,379	4,006	2,386
4	Dunmore	5,533	3,499	3,426	3,229	2,983	2,518	2,109	1,863	1,518
5	Howth	5,257	8,906	8,093	6,697	4,053	2,843	2,793	2,146	1,994
Total five major ports		35,315	38,515	36,005	29,492	26,138	21,030	20,305	18,910	15,669
Total for country		74,671	71,157	55,887	53,615	49,909	42,760	45,353	43,809	35,444
Percentage contribution		47	54	64	55	52	49	45	43	44
Zone	Port	1989	1988	1987	1986	1985	1984	1983	1982	1981
q = quantity (t)		q	q	q	q	q	q	q	q	q
1	Killybegs	72,399	102,866	119,503	99,715	94,193	76,732	63,347	58,275	66,628
2	Rossaveal	5,905	4,537	7,539	5,759	9,350	6,225	7,191	8,846	5,515
3	Castletownbere	8,330	17,315	5,698	6,246	7,558	9,534	10,002	25,438	14,729
4	Dunmore	9,356	11,317	8,912	8,862	8,268	6,143	5,198	6,021	5,197
5	Howth	6,564	10,127	9,108	9,669	7,285	5,378	5,571	5,817	6,152
Total five major ports		102,554	146,162	150,760	130,251	126,654	104,012	91,309	104,397	98,221
Total for country		159,633	191,780	201,565	182,673	177,076	151,213	170,195	194,842	176,577
Percentage contribution		64	76	75	71	72	69	54	54	56

Source: Dept. of the Marine/BIM

Table XXXII - Volume and value of sea fish landings (excluding salmon) at leading Irish ports

v = value, q = quantity, av = average value

Zone	Port	tot. 1989 v	dem. 1989 v	pel. 1989 v	shl. 1989 v	tot. 1989 q	dem. 1989 q	pel. 1989 q	shl. 1989 q	tot. 1989 av	dem. 1989 av	pel. 1989 av	shl. 1989 av
sub-total 1		22,639	7,211	13,381	2,046	92,041	8,596	81,737	1,708	0.25	0.84	0.16	1.20
sub-total 2		6,120	2,384	1,032	2,705	7,858	3,037	3,854	967	0.78	0.78	0.27	2.80
sub-total 3		19,669	10,598	1,300	11,931	27,316	9,436	7,633	10,247	0.72	1.12	0.17	1.16
sub-total 4		10,502	5,867	1,058	3,577	14,100	5,329	5,626	3,145	0.74	1.10	0.19	1.14
sub-total 5		8,536	4,866	177	3,493	8,821	5,900	1,481	1,440	0.97	0.82	0.12	2.43
sub-total 6		4,486	1,523	1,314	1,649	10,073	1,512	7,433	1,128	0.45	1.01	0.18	1.46
Total named ports		71,952	32,449	18,262	25,401	160,209	33,810	107,764	18,635	0.45	0.96	0.17	1.36

Source: Bord Iascaigh Mhara, (BIM)/ Irish Sea Fisheries Board

Table XXXIII - Employment statistics, by coastal county, 1986.

		total population	total population >15	total employed	total unemployed	work force	work force	unemployed
	Donegal County	129,664	90,243	32,715	12,178	44,893	34.6%	27.1%
Zone 1		129,664	90,243	32,715	12,178	44,893	34.6%	27.1%
	Mayo	115,184	81,915	33,287	6,952	40,239	34.9%	17.3%
	Galway	131,448	92,615	40,110	7,358	47,468	36.1%	15.5%
Zone 2		246,632	174,530	73,397	14,310	87,707	35.6%	16.3%
	Kerry	124,159	89,027	35,493	8,275	43,768	35.3%	18.9%
	Cork County	279,464	195,068	86,075	14,440	100,515	36.0%	14.4%
Zone 3		403,623	284,095	121,568	22,715	144,283	35.7%	15.7%
	Waterford County	51,622	35,991	15,650	3,304	18,954	36.7%	17.4%
	Wexford County	102,552	71,254	28,880	7,539	36,419	35.5%	20.7%
Zone 4		154,174	107,245	44,530	10,843	55,373	35.9%	19.6%
	Dublin Fingal	138,478	90,025	43,708	7,284	50,992	36.8%	14.3%
	Louth	91,810	64,061	26,512	7,794	34,306	37.4%	22.7%
Zone 5		230,288	154,086	70,220	15,078	85,298	37.0%	17.7%
	Sligo	56,046	40,496	17,546	3,307	20,853	37.2%	15.9%
	Clare	91,344	63,817	29,548	4,486	34,034	37.3%	13.2%
	Meath	103,881	69,806	30,969	6,432	37,401	36.0%	17.2%
	Wicklow	94,542	65,322	27,779	6,532	34,311	36.3%	19.0%
Zone 6		198,423	135,128	58,748	12,964	71,712	36.1%	18.1%
Total		1,362,804	945,327	401,178	88,088	489,266	35.9%	18.0%

Source: 1986 Census, CSO.

Table XXXIV - Volume and value of sea fish landings (excluding salmon) at leading Irish ports, 1989.

v = value, q = quantity, av = average value

Zone Port	tot. v	dem. v	pel. v	shl. v	tot. q	dem. q	pel. q	shl. q	tot. av	dem. av	pel. av	shl. av
1 Bunbeg	418	338	*	79	385	325	*	60	1.09	1.04		1.32
1 Burtonport	1,022	479	2	541	1,953	1,274	12	666	0.52	0.38	0.17	0.81
1 Downings	1,270	390	663	217	5,779	299	4,124	320	0.22	1.30	0.16	0.68
1 Greencastle	1,906	1,766	1	139	2,320	2,238	4	79	0.82	0.79	0.25	1.76
1 Kilalla/ Kilcummin	241	93	-	148	271	71	-	200	0.89	1.31		0.74
1 Killybegs	14,632	3,011	11,521	100	72,399	3,096	69,249	54	0.20	0.97	0.17	1.85
1 Kincasslagh	510	1	473	36	3,294	-	3,277	17	0.15		0.14	2.12
1 Malin Head	413	8	-	405	715	10	-	71	0.58	0.80		5.70
1 Moville	841	546	45	250	1,038	612	280	167	0.81	0.89	0.16	1.50
1 Rathmullen	978	277	676	25	4,977	177	4,791	9	0.20	1.56	0.14	2.78
1 Rockall (Killybegs)	408	302	-	106	558	494	-	65	0.73	0.61		1.63
sub-total 1	22,639	7,211	13,381	2,046	93,689	8,596	81,737	1,708	0.24	0.84	0.16	1.20
2 Achill	352	91	-	262	163	115	-	48	2.16	0.79		5.46
2 Carna/ Cill Chiarain	380	-	-	380	107	-	-	107	3.55			3.55
2 Clifden/ Cleggan	313	56	21	236	290	51	209	30	1.08	1.10	0.10	7.87
2 Galway	1,170	341	583	246	4,148	482	358	88	0.28	0.71	1.63	2.80
2 Rossaveal	3,619	1,865	391	1,363	5,905	23,233	2,926	656	0.61	0.08	0.13	2.08
2 Roundstone/ Ballyconneely	286	31	37	218	465	66	361	38	0.62	0.47	0.10	5.74
sub-total 2	6,120	2,384	1,032	2,705	11,078	23,947	3,854	967	0.55	0.10	0.27	2.80
3 Baltimore	1,136	565	68	503	1,046	475	405	167	1.09	1.19	0.17	3.01
3 Bantry	1,081	36	1	1,044	1,857	43	9	1,804	0.58	0.84	0.11	0.58
3 Castlegregory	1,183	337	-	846	469	173	-	296	2.52	1.95		2.86
3 Castletownbere	6,274	5,169	735	370	8,330	3,810	4,334	186	0.75	1.36	0.17	1.99
3 Cromane	625	-	-	625	5,542	-	-	5,542	0.11			0.11
3 Dingle	2,383	1,688	111	584	2,970	2,102	691	176	0.80	0.80	0.16	3.32
3 Dunmanus Bay	253	-	*	252	139	-	1	138	1.82			1.83
3 Fenit	852	84	305	4,625	1,868	98	1,615	155	0.46	0.86	0.19	29.84
3 Garnish/ Travara	434	5	-	429	354	5	-	349	1.23	1.00		1.23
3 Glengarriff	294	-	-	294	387	-	-	387	0.76			0.76
3 Kenmare	335	5	*	329	323	5	1	317	1.04	1.00		1.04
3 Schull	706	354	8	344	459	294	38	127	1.54	1.20	0.21	2.71
3 Union Hall	1,865	939	69	857	1,928	1,009	526	393	0.97	0.93	0.13	2.18
3 Valentia	2,248	1,416	3	829	1,645	1,422	13	210	1.37	1.00	0.23	3.95
sub-total 3	19,669	10,598	1,300	7,769	27,317	9,436	7,633	10,247	0.72	1.12	0.17	1.16

Zone Port	tot.	dem.	pel.	shl.	tot.	dem.	pel.	shl.	tot.	dem.	pel.	shl.
	v	v	v	v	q	q	q	q	av	av	av	av
4 Ballycotton	337	243	13	81	369	251	74	44	0.91	0.97	0.18	1.84
4 Duncannon	560	343	*	217	394	189	*	205	1.42	1.81		1.06
4 Dunmore	5,533	2,444	1,023	2,066	9,356	2,731	5,425	1,200	0.59	0.89	0.19	1.72
4 Helvick	879	682	22	175	983	766	126	907	0.89	0.89	0.17	0.19
4 Kilmore Quay	1,417	981	*	436	948	698	1	249	1.49	1.41		1.75
4 Rosslare	1,307	1,174	*	133	765	694	*	71	1.71	1.69		1.87
4 Wexford	469	-	-	469	469	-	-	469	0.10			1.00
sub-total 4	10,502	5,867	1,058	3,577	14,100	5,329	5,626	3,145	0.60	1.10	0.19	1.14
5 Balbriggan	499	118	-	381	325	177	-	148	1.54	0.67		2.57
5 Clogherhead	1,450	422	*	1,028	946	567	2	377	1.53	0.74		2.73
5 Howth	5,257	4,050	177	1,030	6,564	4,656	1,479	430	0.80	0.87	0.12	2.40
5 Loughshinny	272	-	-	272	160	-	-	160	1.70			1.70
5 Skerries	1,058	276	*	782	825	500	*	325	1.28	0.55		2.41
sub-total 5	8,536	4,866	177	3,493	8,820	5,900	1,481	1,440	0.97	0.82	0.12	2.43
6 Arklow	981	873	-	108	843	799	-	44	1.16	1.09		2.45
6 Ballyglass	349	44	-	305	486	47	-	439	0.72	0.94		0.69
6 Belmullet	501	-	-	501	218	-	-	218	2.30			2.30
6 Clarinbridge	276	-	-	276	101	-	-	101	2.73			2.73
6 Cobh	1,586	222	1,301	63	7,621	228	7,366	26	0.21	0.97	0.18	2.42
6 Kinsale	509	360	13	136	541	398	67	76	0.94	0.90	0.19	1.79
6 Porturlin/ Portacloy	284	24	-	260	264	40	-	224	1.08	0.60		1.16
sub-total 6	4,486	1,523	1,314	1,649	10,074	1,512	7,433	1,128	0.45	1.01	0.18	1.46
Total named ports	71,952	32,449	18,262	21,239	160,209	54,720	107,764	18,635	0.43	0.59	0.17	1.36

Source: Bord Iascaigh Mhara, (BIM)/ Irish Sea Fisheries Board

Table XXXV - Fishery sector employment, 1991.

	Fishermen			Aquaculture			Process workers			Ancillary fish			Total sector		
	full-t	part-t	all-fm	full-t	part-t	all	full-t	part-t	all-pt	full-t	part-t	total	full-t	part-t	total
Zone 1	953	908	1,861	176	254	430	720	926	1,646	657	197	854	2,506	2,285	4,791
Zone 2	270	610	880	210	221	431	231	239	470	45	28	73	756	1,098	1,854
Zone 3	815	1,158	1,973	175	326	501	151	235	386	193	96	289	1,334	1,815	3,149
Zone 4	540	548	1,088	74	53	127	318	137	455	90	41	131	1,022	779	1,801
Zone 5	560	411	971	44	46	90	390	197	587	282	34	316	1,276	688	1,964
Zone 6	286	851	1,137	235	277	512	253	278	531	58	33	91	832	1,439	2,271
TOTAL	3,424	4,486	7,910	914	1,177	2,091	2,063	2,012	4,075	1,325	429	1,754	7,726	8,104	15,830

Source: Nautilus' estimates