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# The strategic importance of the fishing sector to rural communities and Ireland: a case study of the Rossaveal Region, Co. Galway

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## ABSTRACT

Fishing and ancillary industries are commonly perceived to be of significant social and economic value by virtue of their geographic location. Past socio-economic studies of fisheries and related industries largely confined themselves to analysing demographic statistics and relating these to official port fish landings data and descriptions of processing and ancillary industries. Despite these efforts, a clear picture of why and how fisheries are of socio-economic significance has not yet been achieved. As a consequence there is little de-tailed understanding of how ecological, legislative and market related changes impact on fisheries dependent communities. This study of the Rossaveal Region was funded by Marine Institute in an attempt to assess the importance of demersal, shellfish and pelagic fisheries to peripheral Irish communities.

## EXECUTIVE SUMMARY

### Introduction

The Rossaveal Region is located in Southwest Co. Galway on the West Coast of Ireland. It is characterised physically by nutrient deficient soils, culturally by the high proportion of the population that speaks Irish and economically by the diverse mix of activities supporting individual households.

### Aim

This report aims to describe and explain why exploitation of fisheries is socially and economically important to the present and future sustainability of communities within the Rossaveal Region.

### Objectives

- Assess the relative importance of fisheries and related industries to Rossaveal, the community dependent on these fisheries and it's specific geographical hinterland.
- Provide research results gained from Objective One highlighting the impact of EU fishery management strategies on the fishing industry.

### Research Findings

- Approximately £7 million of various species of fish was landed into Rossaveal in 1997.
- 74% of this catch is sold on behalf of vessels from the Region.
- Local boats employ 207 people.
- These boats help support an additional 697 jobs within the local area[1].
- Those working within the fishing industry have an estimated 1,400 dependants
- Nephrop fisheries are vital to the continued survival of large sections of the local fishing fleet. Without this fishery all but four local whitefish vessels between 15 - 24 metres would cease to be economically viable within two years.
- Demersal fisheries between Slyne Head and Loop Head are considered overfished.

[1] It is important to note that these boats create additional employment opportunities outside of the Region that have not been assessed.

- In general those consulted believe key fisheries have and continue to be inadequately managed.
- Mackerel fisheries are considered to be migrating further northwards as a consequence of changes in the marine environment and herring stocks are in decline following prolonged overfishing.
- Galway and Aran Fishermen Co-op has noted an overall reduction in the size of key demersal species, most notably the prime whitefish e.g. brill, sole etc.
- Decline in the overall quantity and size of important species fish landed between 1990 – 1997 have been offset by increases in price.
- The annual cost of operating the near shore sector of the Rossaveal fishing fleet has increased by an average of 14% between 1991 – 1997.
- Annual income for the near shore sector of the Rossaveal fishing fleet has increased by an average of 8% between 1991 – 1997.
- Overall profitability of the fishing fleet is declining.
- In order to offset increasing scarcity of fish and reduced profitability fishermen are:
    - Increasing the amount of time spent at sea,
    - Increasing the amount of gear deployed,
    - Diversifying into alternative fisheries,
    - Adopting new technologies and gear and,
    - Buying newer, larger, more powerful fishing vessels.
- In relative terms fishermen are earning less per hour fished than five years ago.
- Several fishing boats commented that they were having difficulty attracting and keeping experienced crews.
- In general those crewmen surveyed stated that they are satisfied with their work but stressed that earnings are declining, as is their quality of life due to the necessity of spending more time at sea.
- The families of those working at sea commented at length that their overall quality of life has declined as a consequence of the growing demands of onboard employment.

## RECOMMENDATIONS

*Demersal Species*

- Mesh sizes need to be increased to a minimum of 100mm for demersal species.

*Nephrops*

- Given the vital economic importance of nephrop fisheries to virtually all vessels from the Region a comprehensive management plan should be drafted by relevant State bodies in consultation with the local fishing industry.
- Mesh size for nephrops may have to be increased to 90mm.
- Buried nephrops should not be harvested.
- The use of twin-rigging gear on the 'back of the islands' fishing grounds should be restricted.
- Increased minimum sizes for tailed nephrops should be established and enforced.

*Shellfish Species*

- V-Notching of lobsters should be continued
- Soft-shelled crab should not be landed.
- A limitation of effort (Time at sea / Number of pots) should be considered.
- A closed season for both crab and lobster should be considered.
- Shrimp fisheries should be regulated and managed.

*Pelagic*

- High-grading of pelagic species should be outlawed.
- Given recent trends in the distribution of pelagic stocks, the issue of days at sea needs to be reconsidered with regard to smaller pelagic vessels. These boats are of vital importance to the Rossaveal Region.

*General Recommendations*

- Fishermen and those within the fishing industry need to be offered a means of contributing constructively to fisheries management. It is proposed that a local industry forum be established that would enable administrators to outline proposed changes in fisheries management to the industry on a face-to-face basis and explain why such decisions are being taken. Equally fishermen must be allowed to offer suggestions to administrators as to the effectiveness of regulations in controlling effort and conserving fish stocks.
- A comprehensive development and management plan for fisheries located between Slyne Head and Loop Head should be drafted through a consultation process between relevant State bodies and local fishermen and / or their representatives.
- Communication between fishermen, administrators and scientists needs to be improved.
- Rossaveal port requires continued investment in services and facilities, particularly a slip for vessels to be hauled ashore for repair and maintenance. Development of such a facility will also foster growth in ancillary industries within the Region.
- Means of limiting / reducing the amount of fish discarded should be investigated so as to reduce the biological and ecological impact of fishing and also to increase the economic efficiency / yield per tow.
- A formalised means of gathering social and economic data on an ongoing basis relating to the local fishing fleet and fish processors should be considered. Such a scheme would enable the forces driving change within the catching sector to be better understood. It would also facilitate continued observation of cost-of-fishing trends and their implications for the future structure of the fishing fleet and fishing dependent communities.

# Acknowledgements

I would like to thank the Marine Institute, particularly John Joyce, Marine Food Manager, John Browne, Head of Fish Stock Assessment, David Griffith, Director of the Fisheries Research Centre, Paul Hillis, nephrops and economics expert, Paul Connelly, demersal species, Sorcha Wheatley, demersal species, John Molloy, pelagic species, and Grainne Ni Chonchuir, Fleet Assessment Technician (Rossaveal).

The willingness of the members of Galway and Aran Fishermen's Co-operative to participate in this study was vital its success. To those who gave generously of their time to answer the many questions I posed over the course of this research, I owe a deep debt of gratitude. Additionally without the unstinting co-operation and assistance given by Bryan Casburn, manager of Galway and Aran Fishermen's Co-operative, and James Smyth, co-op accountant, in outlining the changes to affect the co-op in recent years much of the detail of this report would be absent.

There are a number of individuals who wish to remain anonymous that provided details relating to changes in fishing practices and the operation of fishing vessels whom I need to thank. Without their willingness to discuss sensitive issues it would have been impossible to obtain an adequate knowledge of the processes and pressures acting on fishermen as individuals and how decisions made at this level affect local communities.

I would like to express my gratitude to the people of Inishmore and Rossaveal for your warm welcome and willingness to assist and partake in this research. The staff of the local community development co-operative are acknowledged for their willingness to discuss the challenges facing community development within the Region. Finally it is necessary to thank the staff, particularly Michael Gill, Principle, and pupils of Kilronan secondary school who provided some of the most frank and well-observed commentaries on the impact changes affecting the fishing industry are having on their lives.

# SECTION I

## INTRODUCTION, AIM, OBJECTIVES AND METHODOLOGY

### 1.1 Introduction

Though it is widely believed, and accepted, that fisheries are important to peripheral coastal communities few Irish studies have attempted to explain in a comprehensive manner how and why the activities of fishing vessels translate into significant inputs to local economies. Fewer studies have considered the means by which the forces of change, ecological, legislative and economic, impact on fishermen's actions and how these subsequently affect the continued sustainability of dependent communities. As a means of validating the common assumption that fisheries are socially and economically important to coastal communities the Marine Institute commissioned this study.

### 1.2 Aim

This report considers the socio-economic significance of fisheries and related industries with regard to the present and future sustainability of peripheral coastal communities by exploring contemporary developments within the Rossaveal Region.

### 1.3 Objectives

To achieve this aim two primary objectives were established:

- To assess the relative importance of fisheries and related industries to Rossaveal, the communities dependent on these fisheries, their specific geographical area and hinterlands are defined.

- To provide research results highlighting the impact of national and EU fisheries management strategies on the current and future sustainability of communities within the Rossaveal Region.

### 1.4 Tasks

On the basis of these objectives, tasks were identified, study phases constructed and a methodology developed so as to:

- Construct a composite picture of the terrestrial and maritime natural resource base within the study area.
- Calculate the carrying capacity of the resource base. With regard to fish stocks it is important to assess whether exploitation patterns have changed over time in response to EU policy, market development or natural fluctuations.
- Establish the socio-economic composition of designated areas where clusters of the fishermen and others dependent on fisheries live in order to illustrate levels of dependency on available resources. Whilst targeting fishing and all directly related activities, the other sectors of the local/regional economy are also considered so that the study is both qualitative and comprehensive.

### 1.5 Research Plan

In order to carry out the study in an efficient manner common elements of the tasks were categorised into two broad groups based on whether the collection of empirical data was required. A

number of phases of research were then identifiable. These are outlined below.

*Phase 1*
**July 1997 – October 31st 1997**

- Available economic, social and demographic information and data was collected and assessed with regard to overall veracity;
- Issues of importance, i.e. sustainable development, were considered with regard to their application to this study, appropriate literature was reviewed,
- a number of international conferences were attended and the opinions of key individuals, specialists in their chosen area of study, sought in relation to contemporary issues and processes affecting fisheries, fishing industries and fishing dependent communities,
- a number of trips were made to Rossaveal and the Aran Islands to meet with and gather basic information and data from key individuals and the co-operative.

*Phase 2*
**November 1st 1997 – April 1998**

- A second phase of research saw the design, development and testing of a relational database. This was used to store and analyse data collected from Galway and Aran Fishermen's Co-operative, individual co-op members and ancillary industries dependent on the activities of local vessels operating from Rossaveal port, Co. Galway. Data collected at this point included:
  - Value of Galway & Aran Fishermen's Co-operative sales by month and by species. This data series extends back to 1991.
  - Volume of Galway & Aran Fishermen's Co-operative sales by month and by species. This data series also extends back to 1991.
  - Value of landings made by selected fishing boats and sold through Galway & Aran Fishermen's Co-op.
  - Volume of landings made by selected fishing boats and sold through Galway & Aran Fishermen's Co-op.
  - The National Fishing Fleet Register (1997).

*Phase 3*
**February 7th 1998 – October 23rd 1998**
The third phase of research involved:

- Drafting questionnaires
- Testing questionnaires[2]
- Revising questionnaires
- Undertaking surveys
  - Vessel Survey
  - Crew Survey
  - Co-operative Surveys
  - Processors Surveys
  - Tourist Survey
  - Transportation Surveys
  - Ancillary Industry Survey
  - General survey of local population, economic activities and composition of household income
- Re-surveying of key individuals in order to determine levels of fishing effort.

[2] This was undertaken outside of the study area using a sample of four fishermen, one fish processor and five individuals living in close proximity to a fishing community.

*Phase 4*

**March 27th 1998 – December 20th 1998**

Data collected was analysed, preliminary conclusions drafted and presented at the Marine Institute's "Year of the Ocean" conference held in Dublin Castle on the 6th of December, 1998. 'Gaps' in the collected data were also identified and appropriate modifications were made to questionnaires and surveys.

*Phase 5*

**November 9th – May 6th 1999**

The various strands of the study were brought together for presentation in this report. Further analysis of data was undertaken whilst information / data submitted by fishers continued to be incorporated into the database and results updated where appropriate. A draft report was circulated to Galway and Aran Fishermen's Co-operative on May 6th so as to ensure the veracity of data analysis and the conclusions arrived at[3].

### 1.6 Methodology

On commencement of the study an initial round of consultations with key individuals from the local fishing industry were held. These meetings yielded information relating to the structure of the catching sector, fisheries exploited by these boats, facilities available to vessels using Rossaveal and services offered by the local fish sales organisation, Galway and Aran Fishermen's Co-operative. With regard to this latter body, meetings with the Manager, Bryan Casburn, organised by John Brown, Marine Institute, and David Griffith, Marine Institute, proved instrumental in gaining access to co-op fish sales records. Subsequent meetings were held with James Smith, the co-op's accountant, to ascertain the type of data held and conditions of access to information.

Concurrent to this initial phase of research, information and data relating to the geology, geomorphology, biogeography, demography and cultural geography of the area was collected. This research enabled the delineation of the 'Rossaveal Region' and an assessment of the carrying capacity of the area.

International conferences were attended in Canada (September, 1997) and the United Kingdom (October, 1997). These events provided opportunities to obtain a greater understanding of the difficulties faced by fisheries scientists, administrators and fishing dependent communities.

Data collected from the co-operative relating to fish catches and the earnings of fishing vessels were stored within a relational database designed to analyse and retrieve the wide range of data collected over the course of this research. The database was designed and developed with the help of a consultant, Vincent Myler, over a three-month period between November 1997 and January 1998.

A variety of surveys were carried out on a face-to-face basis with several groups to gather empirical data and information that enabled the monitory and social value of various sectors of the Region's economy to be ascertained. Information and data collected was added to the database and then analysed. Further information pertaining to the aim of each of the surveys is detailed within the main body of the report where necessary.

Once preliminary data analysis was complete a further round of consultations was held with key individuals and organisations to verify the accuracy of, and gain greater insight into the trends underlying these results. Where necessary relevant pieces of EU and National legislation were

[3] Notwithstanding this process, all comments and conclusions within this report are the responsibility of the author.

reviewed with regard to their intended objective. These were then compared to observed practices amongst fishers and comments made by skippers and crewmen in an effort to understand how fishers perceive and react to current legislative attempts to manage local fisheries and fishing effort. On the basis of these and other findings it was then possible to draw a number of conclusions and develop a set of recommendations.

### 1.7 Report Structure

The report is divided into four sections.

- This first section introduces the project, establishes the aim, objectives, tasks and methodology.

- Section two delineates the 'Rossaveal Region' before outlining the Region's geological, topographical, demographic, economic and bio-geographic composition.

- Section three considers the structure of the Region's fishing industry before providing a detailed description of the operation of a sample of 31 vessels between 1990 – 1998, trends affecting these vessels and their contribution to local and regional economies.

- Section four briefly summarises the principle findings of the research and considers the implication of these results for the future sustainable development of the Region.

### 1.8 Conclusion

The remainder of the report considers various elements of the research outlined above and in doing so offers a comprehensive and integrated overview of the importance of the fishing industry to the Rossaveal Region relative to other significant economic activities. Where appropriate the methodology and analytical techniques employed during this study are commented on further.

# SECTION II

## THE ROSSAVEAL REGION

### 2.1 Introduction

The Rossaveal Region is located in Southwest Co. Galway on the West Coast of Ireland (Fig. 1). It is characterised physically by nutrient deficient soils, culturally by the high proportion of the population that speaks Irish and economically by the diverse mix of activities supporting individual households. This section of the report defines the geographic extent of the Rossaveal Region before undertaking an analysis of physical and human resources available to local inhabitants in an assessment of the Region's carrying capacity.

### 2.2 Rossaveal: A Brief History

Frequent visitors to fishing ports will notice that Rossaveal is, in many respects, unique for not having structures commonly associated with areas considered to be dependent upon fisheries. Although there are facilities for the landing, selling and processing of fish, few other structures that typify Irish fishing communities are based within the port's hinterland. Shops, chandlers and additional services vital to the day-to-day operation of a busy fishing fleet are conspicuous by their absence. Restaurants, craft shops and tourist accommodation, based on fisheries related tourism and providing services to the industry are also in short supply. One therefore finds that Rossaveal port, considered here to be the economic heart of the Region is, somewhat paradoxically, defined by the absence of community structures common to fishing ports. However, on considering the history of State funded fisheries development in Ireland, it becomes apparent why basic services, facilities and structures one would assume to be present in all ports are absent in this instance.


**Figure 1.** Location of Rossaveal, Co. Galway

Originally Galway City harbour acted as the principal west coast fishing port. Development of these facilities began shortly after the State adopted recommendations made in the Bjuke Report (1960). Prior to this fishermen had landed the bulk of their annual catches into Galway. In his report, Bjuke - an Icelandic fisheries consultant - endorsed the centralisation of fishery related services and facilities within eight national Fishery Harbour Centres in the hope that the catching sector would develop economics of scale thereby encouraging the growth of onshore ancillary industries (Fig. 2). With the onset of the second global oil crisis (1979) and the resultant increases in fuel and oil costs fishermen found that steaming to and from local fishing grounds and then on to Galway harbour made fishing unprofitable. Taking the initiative, Galway and Aran Fishermen's Co-operative commissioned a study aimed at identifying potential sites for the development of extensive landing facilities. Geographically strategic relocation to a port with ready access to local fishing grounds would reduce steaming times and provide the members of the co-op with a competitive advantage over other fishers.

Though the consultants employed to undertake the study found that Rossaveal fulfilled the criteria set down by the members of the co-op it was stressed that considerable investments would have to be made in the physical and communications infrastructure of the Region if the harbour was to be commercially viable in the long-term. It was on this basis that the State initially opposed development of Rossaveal as a National Fishery Harbour Centre. However, faced with local and national pressure to assist the catching sector at a time of considerable economic hardship for fishing communities, the State eventually consented to the relocation of the National Fishery Harbour Centre from Galway to Rossaveal in 1981. Unsurprisingly then, because of the way in which Rossaveal initially developed, relatively few boat owners or crewmen live within the immediate hinterland of the port. This process of development largely explains the lack of ancillary

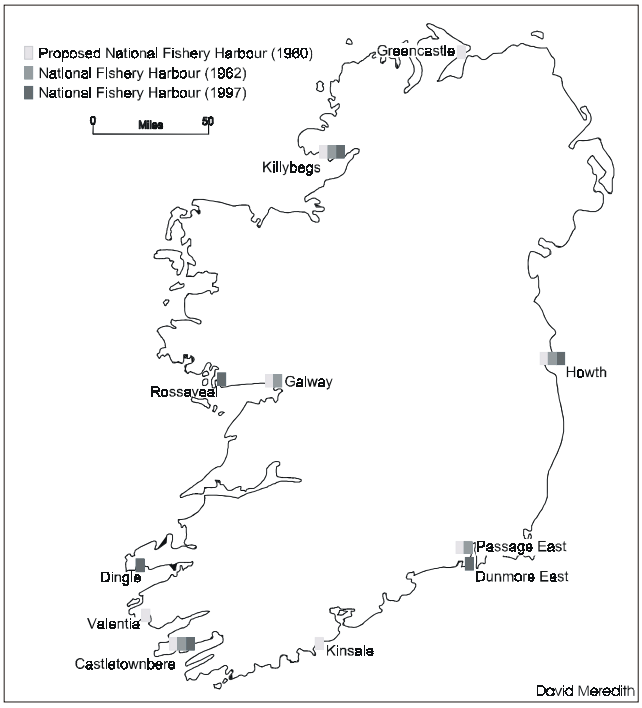


**Figure 2.** Development of National Fishery Harbours 1960 - 1999

service providers around the port supplying the catching sector as those with the inclination to establish such enterprises had already done so in Galway City. From the perspective of this report, failure to develop onshore ancillary industries and services is largely responsible for the continued high loss of potential revenue to areas outside of the Rossaveal Region.

### 2.3 The Rossaveal Region

In order to establish the geographic extent of the Rossaveal Region the names and addresses of all currently active members were collected from Galway and Aran Fishermen's Co-operative and collated with additional data provided by the Central Statistics Office, the Department of the Marine and Natural Resources and Inishmore Community Development Co-op. When plotted on a map it is apparent that there is a primary cluster of boat owners, skippers and crewmen on Inishmore, the largest of the Aran Islands (Fig. 3). A secondary cluster of fishermen extends from Rossaveal northwards to encompass Carraroe and the surrounding area whilst a third grouping is found in Galway City (Fig. 3).

Data provided by the Central Statistics Office on Census of Population data indicates that at the time of the last census (1996) 314 people classified themselves as fishermen within Co. Galway[4] (Table 1). Figure 4 indicates that the greatest concentrations of fishermen occur on Inishmore and further to the north in Lettermore, Gorumna and Skannive. Taken in isolation of additional data collected from skippers and processors during this study indicating that their employees also live in or in close proximity to the clusters identified in Figure 3, Census data suggest that the Rossaveal Region might encompass the District Electoral Divisions (DEDs) of Inishmore, Lettermore, Gorumna and Skannive[5].

However, on consideration of information and data collected during this study relating to the residential distribution of vessel owners, skippers, crewmen and ancillary industries the terrestrial element of the Rossaveal Region is considered to encompass Inishmore, Crumpaun and Kilcummin (Fig. 5). Concentrations of fishers located east of Kilcummin in Sillerna are, according to the

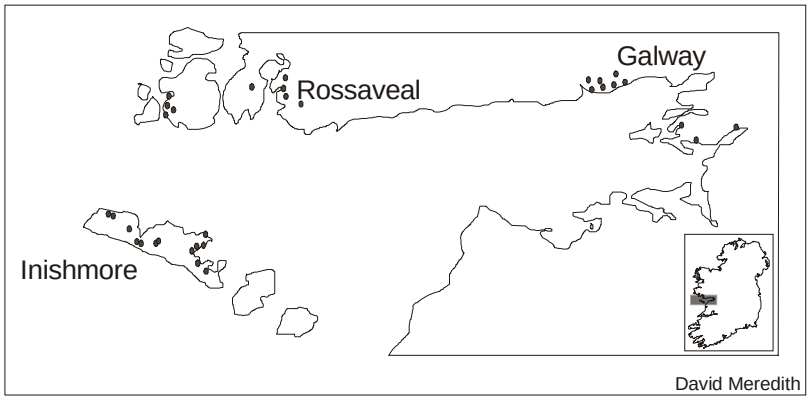


**Figure 3.** Distribution of Vessel Owners

[4] The CSO disaggregated fisheries and forestry employment data so that the total number of fishermen within DEDs with greater than 10 fishermen could be plotted on a map. DEDs with less than 10 fishermen were grouped into the 'Rest of County' category.
[5] A map of DEDs plotting the data in Table 1 could not be presented here due to copyright issues.

**Table 1. Distribution of Fishermen by DED**

| Fisheries Employment | No. |
|---|---|
| Sum Classified as Occupation 'Fishing Industry' | 314 |
| Sillerna | 10 |
| Kilcummin | 12 |
| Inishmore | 53 |
| Crumpaun | 11 |
| Lettermore | 19 |
| Gorumna | 18 |
| Skannive | 28 |
| Rest of County | 92 |

limited research undertaken in these areas associated with the provision of angling related services to tourists and a limited amount of inshore fishing heavily dependent on the once prolific salmon fishery.

In defining the Rossaveal Region it is of necessary to stress that as this research examines the socio-economic importance of fisheries the boundaries of the Region must be considered porous reflecting the movement of goods, services, people and the economic benefits derived from fisheries and the Region has a seaward element that is of considerable economic and cultural significance.

Following the rational that the Region's boundaries are necessarily porous it is possible to identify satellite areas and communities extending in scale from Galway City to those working in electronics manufacturing in Germany and Asia, that benefit from primary socio-economic activities taking place within the Rossaveal Region. As a consequence, these fisheries, occurring at specific geographic points, are an integral element of the Region (Fig. 5). They are also the basis of how many of those interviewed during the course of this research perceive their communities.

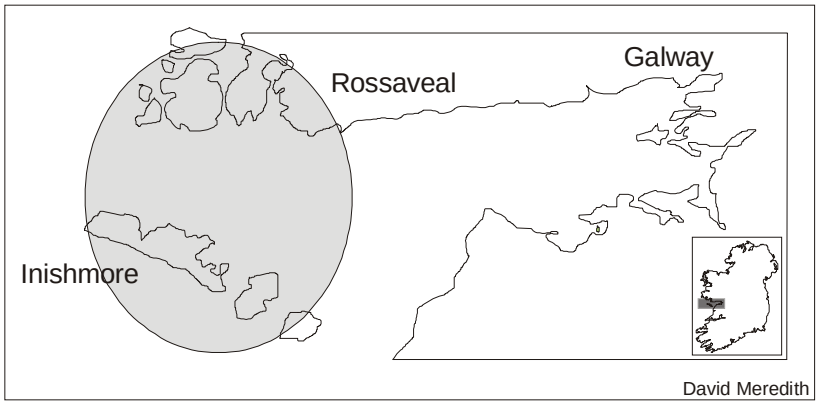


**Figure 4.** Areas with Concentrations of Fishermen in Southwest Co. Galway

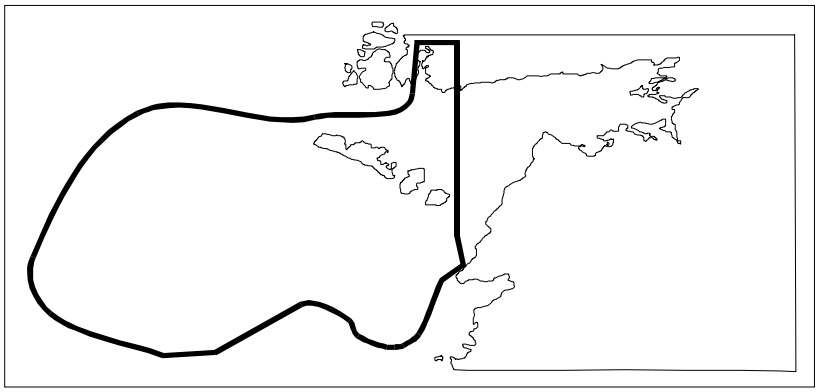

**Figure 5.** The Rossaveal Region

## 2.4 Ecological Carrying Capacity of the Rossaveal Region

Having defined the geographic extent of the Rossaveal Region from a terrestrial and maritime perspective it is possible to provide a description of the physical and human resource base that supports the population of the Region. This is in effect an assessment of the ecological carrying capacity of the Rossaveal Region[6]. Within this study the concept is used to quantify the maximum number of people that can be supported within the Rossaveal Region by a mix of economic activities, namely fishing, agriculture, and tourism whilst also having regard for future sustainable development of each of these sectors.

## 2.5 The Rossaveal Region's Natural Resource Base

*2.5.1 Geology*

Within the Rossaveal Region there are two distinct sub-regions. These areas are linked or, depending on ones perception, divided by the sea (Fig. 5). The islands, of which there are three, Inishmore, Inishmaan and Inisheer, are composed of limestone and stretch in a line across the mouth of Galway Bay. These outcrops of rock are the shattered remains of an escarpment that once extended in a north-westerly line from Co. Clare. The escarpment is composed of Lower Carboniferous Limestone that was deposited in deep-sea basins during the Upper Palaeozoic Era approximately 286 million years BP (Before Present) (Duff, 1993 p.69).

In contrast to the islands, the terrestrial portion of the Rossaveal Region is composed of massive igneous deposits, namely granite, felsite, schist and gneiss. These were intruded as magma into the earth's crust before cooling to form a batholith that has since been exposed through erosion of overlying sediments.

*2.5.2 Topography*

As a consequence of the porous nature of limestone and its erosion by weak chemical compounds, i.e. water, the Aran Islands' topography is an example of what is referred to, geologically, as Karst topography. Drainage in such regions is subterranean with the result that despite being the recipient of abundant rainfall, water shortages are not uncommon. Because of the manner in which limestone is formed, regular faults are an integral aspect of this type rock. Exploitation of these weaknesses by the processes of erosion, primarily water peculating downwards, results in the formation of

[6] For a clear explanation of the origins and current application of Carrying Capacity see Johnston et al., 1994 p.44.

clints and grikes. A clint is a deep narrow channel or crack seen surrounding a grike, a flat-topped block of limestone. Where this process occurs on a large scale it leads to the creation of what is known as limestone pavement. From a practical perspective these processes result in the creation of spectacular shattered rock landscape that is all but impossible to farm.

The topography of the mainland element of the Region is characterised by low, domed hills that the result of progressive exposure of the underlying batholith.

*2.5.3 Quaternary Geomorphology (2 million years BP – 14,000 years BP)*
The Rossaveal Region, indeed much of the area west of the Twelve Pins, was affected by the movement of a number of ice-sheets during the last ice age (2 million years BP – 14,000 years BP). The passage of these glaciers scoured the landscape of soil and exposed the underlying bedrock. It is this process that is largely responsible for clearing soil from the Aran Islands and exposing the limestone bedrock to contemporary processes of erosion.

Where the snout of the ice-sheets calved into the sea, sand and gravel were deposited in stratified layers. Today these deposits form one of the richest fishing grounds in close proximity to the islands. Known locally as the 'Back of the Islands', the grounds are relatively flat and covered by less than 60 fathoms of water (Fig. 6). There are also a number of similar, smaller, fishing grounds to the north and northwest. Warmer coastal currents intermingle with cold Atlantic waters across this relatively shallow area resulting in prolific biological growth at all levels of the food chain.

*2.5.4 Soils*
Denudation of soil during the last ice age and the prolonged cold period that followed left the Rossaveal Region almost entirely bereft of significant accumulations of fertile soil. What soil exists is described as shallow, poorly drained, infertile, peaty and podzolised (Ordnance Survey, 1969). Soil conditions on the islands are, if anything, even more extreme than those of the mainland. Glacial scouring has left significant proportions of the limestone bedrock exposed. Soil accumulations found around the various villages has largely been created by human endeavours

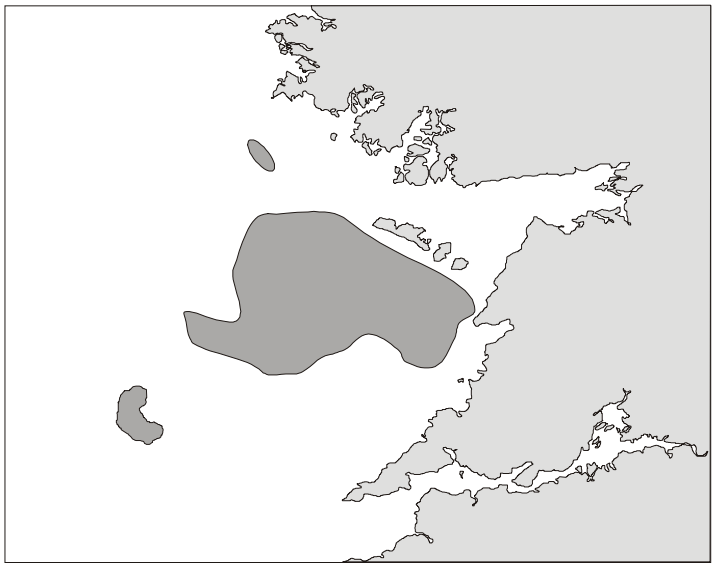

**Figure 6.** Local Fishing

that entailed carrying sand and seaweed from the beaches and spreading it over gently sloping rock in multiple layers until one had a field. These fields tend to be situated along the margins of limestone terraces where subterranean drainage briefly surfaces. There are also areas of naturally occurring soil formations at the centre and southern end of Inishmore known amongst botanists as *machair* (Robinson, 1996 Map). Such landforms are resistant to heavy grazing and other erosive forces.

*2.5.5 Climate*

Given that the Rossaveal Region is dominated by its relationship to the marine environment it is unsurprising to find that the local climate is strongly influenced by oceanic processes (Robinson, 1995 p.27). As a consequence of relatively continuous mild weather induced by passing warm water currents, farmers interviewed during this study stated that those animals that can be reared on the limited land available rarely have to be housed or their diets supplemented with chemically treated foodstuffs as grass grows on the island through the year, albeit a good deal slower during the winter months (Local Economy Survey). This has facilitated adoption of organic farming techniques with limited disruption to traditional practices or income in recent years (Organic Trust, 1998).

From a fisherman's perspective the location of fishing grounds close to shore enables them to make short trips during periods of calmer weather and maintain cash flow and economic viability. Fishermen exploiting the 'Back of the Islands' grounds estimate that average swell height is approximately 2 – 3 metres.

**2.6 Settlement and Society**

People have lived and worked within the Rossaveal Region for several millennia. Each phase of settlement has left its mark, whether it is a standing stone, a hill top fort or a barracks, on the landscape. By reading these traces of the past one may begin to understand the processes of historical developments and how they affect or benefit contemporary inhabitants.

*2.6.1 Cultural Landscape*

The Aran Islands and Inishmore in particular, are renowned throughout the world for their cultural landscape; the visible, material landscape that individuals and groups have created by living within and modifying the physical environment (Robbison, 1996 p.151). Inishmore was first settled several thousand years before the birth of Christ. Wedge graves and dolmens provide evidence of this prehistoric settlement whilst the famous stone forts stand testament to the endeavours of Celtic inhabitants. Later additions to the cultural landscape include churches and other religious settlements and a barracks and courthouse from colonial times. Ruined cottages and houses evoke images a time when the Region's population was significantly greater than it is today. The crumbling remains of piers built by the Congested District Board following the Famine (1845 - 1848) act as a reminder of past attempts to revitalise the fishing industry and the difficulties encountered by officialdom in planning for the development of a fishing industry in this area. Modern additions to this landscape include the proliferation of bungalows and advent of craft villages. Successful marketing of this landscape in recent years, particularly by tour operators, has resulted in the development of mass tourism on Inishmore.

*2.6.2 Society*

Culturally the Rossaveal Region is distinguished by its mix of economic activities based on the exploitation of indigenous resources and the dominance of the Irish language. Local commentators

consulted during the course of this study stated that this culture is faced with growing pressure from the decline of traditional economic activities and growth in mass tourism. On the mainland existing communities have to cope with settlement of individuals with few if any traditional links to the Region commuting to Galway City or buying holiday properties. In this context fishing, based on exploitation of local stocks and providing employment to local people, has an important role to play in sustaining the Region's indigenous culture as something that can be experienced rather than packaged and presented in museums and university courses.

The dominant fishing tradition also highlights the Region's distinctiveness as an area where fishing has survived as a viable economic activity providing employment and support to, according to the findings of this study, in excess of 33% of the indigenous population. This economic link to the sea strengthens the local perception of the Region as being different to other Gaelteacht areas. From a community perspective there is a certain degree of pride that locals are not directly dependent on foreign multinational corporations to provide employment (Household Survey). Amongst those interviewed during the course of this research, a significant proportion, 68%, perceived fishing and agriculture as being important in continuing the use of Irish in everyday settings (Household Survey). When interviewed Prof. M. O'Cinnedia, UCG, stated that traditional activities lend themselves to the Irish language whereas manufacturing and service industries based on modern technology do not (Interview, 1998; O'Cinnedia, 1988).

*2.6.3 Demography*

The demographics of the Rossaveal Region are similar in many respects to those of peripheral Irish coastal areas in general with the exception of the Aran Islands that account for in 33% of the total population of the Region (Fig. 7). Island demographics in Ireland are accepted to be different to the norm given that their populations are largely dependent on traditional activities such as agriculture and fishing, sectors that continue to experience inexorable decline. Nonetheless, Inishmore is one of the few islands that have managed to successfully incorporate the advent of mass tourism into the local economy through exploitation of its cultural landscape. Despite this success however, Census of Population data indicates the population of Inishmore continues to decline (Fig. 8). With reference to Figure 8 the DED 'Inishmore' encompasses all three Aran Islands. Research undertaken during this study indicates that there are currently approximately 930 people living on the island of Inishmore. In recent years this figure has fluctuated somewhat but appears to be stabilising according the local development co-operative.

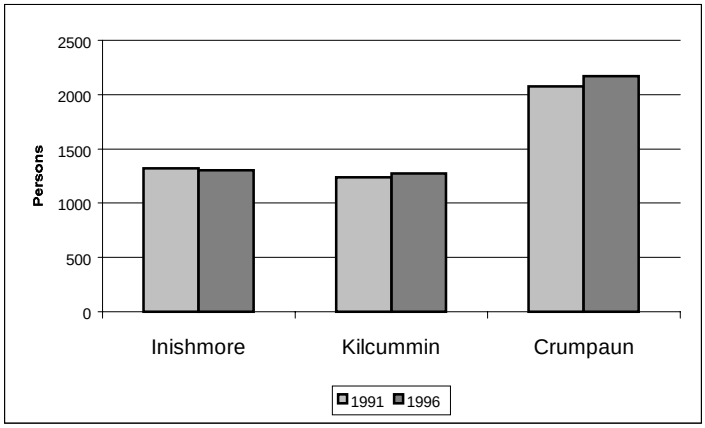


**Figure 7.** Population of the Rossaveal Region

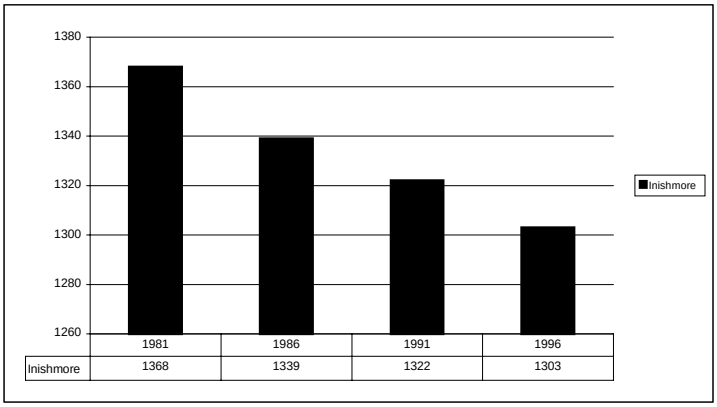


**Figure 8.** Inishmore's population 1981 - 1991

A review of data presented in Table 2 indicates that greater proportions of the Region's female population are likely to emigrate between the ages of 15 – 24; a reflection of the limited employment

opportunities available to females. Figure 9, a comparison of changes in the Region's demographic structure between 1986 and 1996, provides a broad overview of trends affecting the area during this period. It is notable however that despite significant economic development with the advent of mass tourism, particularly on Inishmore, greater proportions of the population under the age of 25 continue to leave the Region. Between 1986 and 1996 the percentage of the total population between the ages of 0 – 24 declined by 2.14% for Inishmore DED and 3.01% for Kilcummin. A proportion of this drop can be accounted for by a fall in birth rates, down 1.3% for the Region. Given these developments it is unsurprising to find that the population of the Region is ageing, an issue of concern for many who recognise the need to retain young people within the community if it is to have a solid foundation for future social and economic development. These trends are also resulting in increased levels of dependency on other sectors of the local and national economy. Data from the last Census of Population indicates that of the 4,743 persons residing within the Region 29% are classified as being over 15 years of age and at work whilst, 9.99% are unemployed, 7.36% are retired, 17.20% are engaged in home duties, 7.14% are students and 1.75

**Table 2. Population of the Rossaveal Region (1996)**

| **DED** | **Inishmore** | | **Kilcummin** | | **Crumpaun** | |
|---|---|---|---|---|---|---|
| Age | Males | Females | Males | Females | Males | Females |
| 0 - 14 | 170 | 143 | 169 | 168 | 275 | 255 |
| 15 - 24 | 81 | 65 | 107 | 94 | 185 | 148 |
| 25 - 34 | 82 | 84 | 60 | 60 | 131 | 147 |
| 35 - 44 | 114 | 89 | 104 | 94 | 139 | 130 |
| 45 - 54 | 85 | 68 | 84 | 65 | 151 | 133 |
| 55 - 64 | 66 | 56 | 61 | 37 | 104 | 76 |
| 64 + | 100 | 100 | 84 | 86 | 140 | 157 |

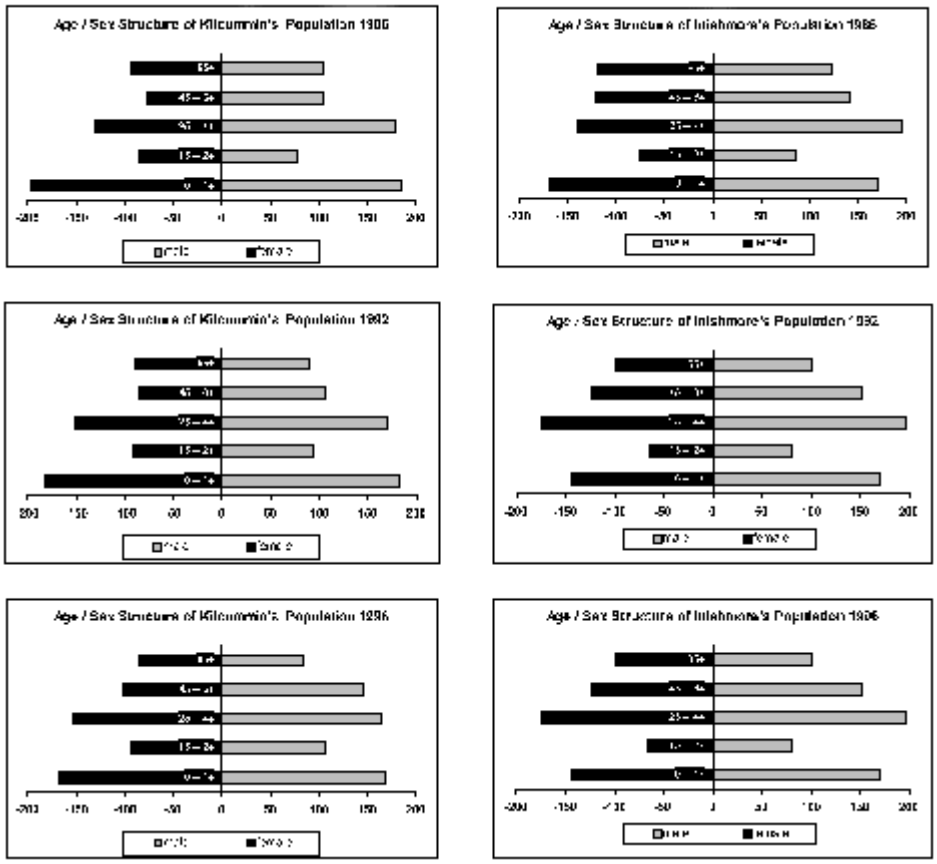

**Figure 9.** Demographic Trends within the Rossaveal Region

are seeking their first job (Fig. 10) (CSO, 1996). The remaining 27.5% of the population are less than fifteen years of age. Further analysis of census data relating to those at work indicates that males account for 60% - 69% of the workforce within the three DEDs that comprise the Region (Fig. 11). The disparity in employment opportunities between the genders is, according to research undertaken in the Region, a consequence of male dominance within the traditional economic activities that provide the majority of job opportunities. Compounding this imbalance is the necessity for the spouses of fishermen to remain at home to take care of children whilst their husband is at sea.

Nevertheless, despite the picture presented here by the use of statistics taken from the Census of Population (1996) it is important to note that research undertaken in the Region indicates that:

a. Unemployment rates, as of October 1998, are lower than those recorded at the time of the last census.

b. Women account for a growing percentage of the workforce, which is reflected in the growing propensity of females between the ages of 15 – 24 to remain within the Region.

With regard to the latter point the growth job opportunities for females is linked to further

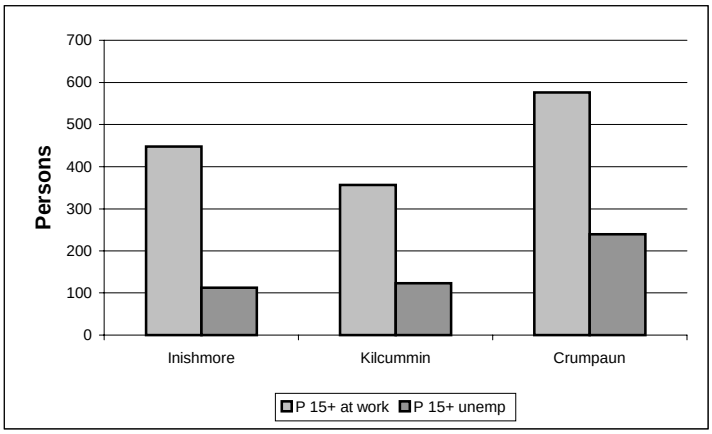


**Figure 10.** Numbers Employed / Unemployed in the Rossaveal Region (1996)

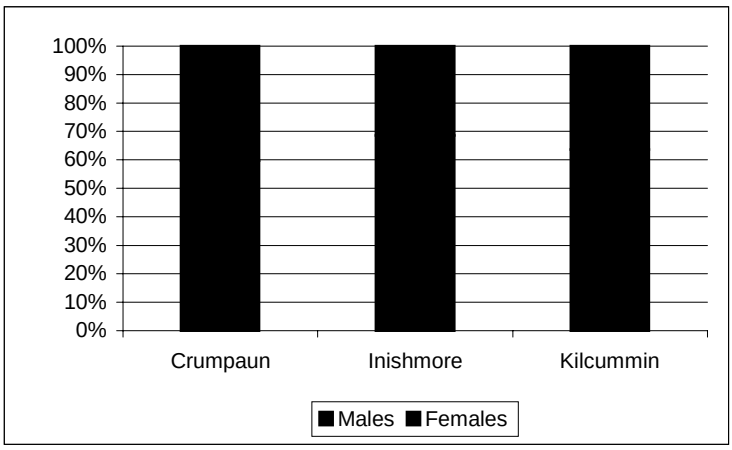


**Figure 11.** Employment by Gender within the Rossaveal Region (1996)

development of the services to the tourist industry and expansion of fish processing facilities on the mainland. Conversely, as employment opportunities for females are increasing, there is a belief amongst local commentators that job opportunities for males remain limited and, particularly with regard to the agricultural sector, are contracting. For additional data pertaining to demographic statistics.

*2.6.4. Economy*

As previously noted the Region's inhabitants rely upon employment generated by a mix of traditional activities and more recently by the provision of tourist services. That the Region is dependent on these sectors is hardily surprising given its location, natural resource base and cultural heritage. In an assessment[7] of the relative importance of each of these economic sectors, it was found that, from a regional perspective, as of 1997, fisheries and fishing related industries

[7] One hundred and thirty seven individuals were surveyed within the Region. Fifty eight percent of questionnaires were undertaken on Inishmore Island, 36% in Kilcummin and the remaining 6% in Crumpaun. Results from this survey were compiled and collated with information collected from vessel owners, skippers, crew, and those working in the processing and ancillary industries.

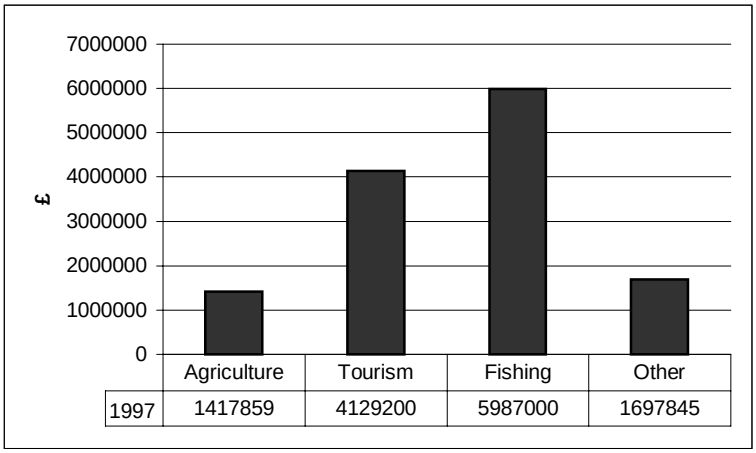


**Figure 12.** Gross Income by Sector within the Region (1997)

spread the greatest wealth amongst the largest number of people (Figure 12 / Table 3). Regarding the assessment of gross income from the agriculture sector it is important to note that this is considered a 'top level, all things being equal' calculation of the wealth generated through farming *and* off farm activities and receipt of National and EU grants. It is accepted that the figure presented here may be an overestimation of farmers' income within the Region of which there are approximately 179 according to comments made by local Irish Farmers Association representatives, data collected from the CSO and surveys carried out during the course of this research. Additionally with regard to wealth generated through 'Other' economic activities, construction, retailing etc. one should note that it is largely a derivative of the agricultural, tourist and fishing sectors.

With regard to actual levels of dependency and the spread of the wealth generated by the various sectors considered above, research indicates that incomes from the fisheries sector support more individuals than any other activity in the Region by virtue of the fact that spouses have few opportunities to work outside of the home because their partner is away for lengthy periods of time. Data collected indicates that each person employed on board a fishing vessel, of which there are 207 residing within the Region, supports an additional 2.59 full and part-time jobs also ***within*** the Region. In total it is estimated that 696 people directly benefit to some degree from the fishing industry and that these in turn support an additional 1,124 people. This figure includes the vital role

**Table 3 Assessment of Gross Income by Sector**

| | **Fishing** | **Farming** | **Tourism** |
|---|---|---|---|
| **Total Employed** | 207 | 179 | 97 |
| **No. Surveyed** | 68 | 58 | 22 |
| **No. Dependent Jobs** | 696 | 12 | 87 |
| **Minimum Gross Income** | IR£1,875 | IR£5,173 | IR£900 |
| **Mean Gross Income** | IR£17,634 | IR£7,921 | IR£16,795 |
| **Total Gross Income** | IR£5,987,000.00 | IR£1,417,859.00 | IR£4,129,200.00 |

of accountant and vessel manager often assumed by the wives of vessel owners. When considered from a local industry perspective, fishery related incomes support 1,803 (38% of total population) individuals within the Rossaveal Region. Incomes from agriculture and tourism are believed to directly support, to some degree, an additional 1,002 (21.12% of total population) of the Region's inhabitants. The remaining 41% of the Rossaveal Region's population rely on a variety of sources of income ranging from the provision of tourist accommodation, retailing, construction, unemployment assistance and FAS schemes to name but a few. Although attempts were made to gain an insight into the relationships between spending by those employed within the various sectors outlined above and further spread of wealth through the community, these were largely unsuccessful in that insufficient accurate data was collected. Nonetheless what information was gathered indicated that those involved in providing tourist services spend a considerable proportion of their gross income on further development / maintenance of their facilities thereby supporting employment within the local construction / transportation industries.

## 2.7 Conclusion

Data presented here indicates that exploitation of natural resources occurring within the Region currently supports a minimum of 59% of the Rossaveal Regions population. This figure equates to the carrying capacity of the area under current economic models including inputs from sources such as the State in the form of FAS schemes and unemployment assistance and the EU in the form of grants for farmers participating in the Rural Environmental Protection Scheme (REPS). It is thought locally that overall carrying capacity has declined with the advent and adoption of new agricultural and fishing techniques and increases in the standard of living. It is important to note that this assessment of carrying capacity may not reflect the true ability of the Region's natural resources to sustain inhabitants. Overfishing and overexploitation of the landscape may result in long-term losses that are as yet unapparent. Decline is fish stocks will limit the ability of this resource to sustain 38% of local inhabitants. Similarly overexploitation of the landscape, leading to erosion and environmental degradation, may make the Region less attractive to tourists. Any decline in the number of visitors will result in greater competition amongst existing service providers and eventual contraction / consolidation of this sector of the economy.

The Rossaveal Region is entirely dependent on income generated by the activities of those involved in fishing, farming and tourism. Fisheries and those industries dependent upon their exploitation provide the greatest level of support to those residing within the Region and, as will be seen in Section III, also through export of benefits to other areas.

In Section III the structure and operation of the local fishing industry is considered before assessing current trends affecting the Irish fishing fleet and how these developments impact on fishing communities.

# SECTION III

## ROSSAVEAL'S FISHING INDUSTRY

### 3.1 Introduction

The economy of the Rossaveal Region, characterised by the dependence of significant proportions of the local population on incomes from fishing, farming and tourism is similar to other western coastal areas of Ireland. Exploitation of fisheries and related economic activities are the most significant element of the Region's economy providing an income or support to 38% of the population. This section of the report examines the structure and operation of the local fishing industry with a particular focus on the catching and processing sectors. A sample of 45 boats, 18 inshore vessels, 24 near shore vessels and 3 offshore boats is examined with regard to their contribution to the local economy and community. Trends affecting these vessels are also commented upon with regard to their impact on the long-term sustainability of the Region's population.

### 3.2 The Fishing Industry

Rossaveal port is one of five national fishery harbour centres in Ireland and acts as one of the principle ports for those exploiting demersal, pelagic and shellfish stocks off the west coast of Ireland. A wide variety of boats use the facilities at Rossaveal to land their catch, repair damaged gear and refuel. Data published by the Department of the Marine and Natural Resources (DoMNR) indicates that an average of 9,138.5 tonnes of fish is landed into Rossaveal annually with a mean value of £5 million (Fig. 13). Proportionally, Rossaveal accounted for 2.87% of total national fish landings in 1997 by comparison to 3.17% in 1990 (DoMNR 1990 and 1997). In terms of value Rossaveal accounted for 3.25% of the total national catch in 1997 as opposed to 5.43% in 1990 (DoMNR 1990 and 1997). These developments can be explained by a wider analysis of fishery depletion, market development, fish landings and sales in Ireland; where appropriate these issues are considered further throughout this section. However in order to provide an overall context for the apparent decline in the quantity and value of fish landed into Rossaveal one should understand that, nationally, inshore fisheries have become progressively depleted and fishing activity has

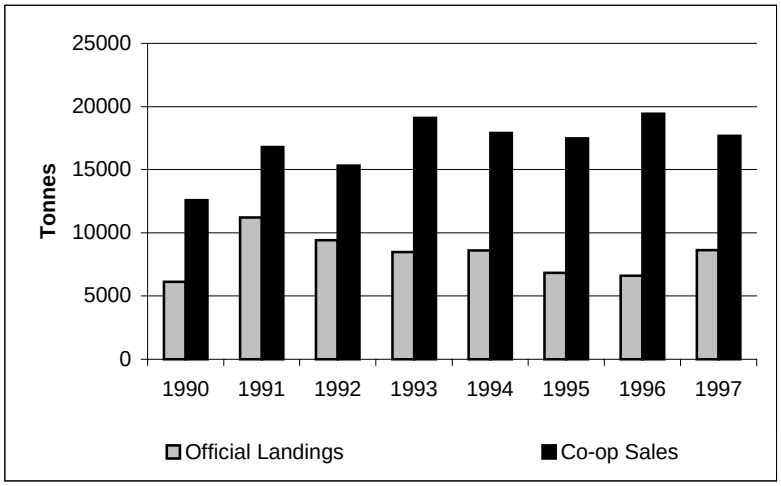


**Figure 13.** Comparison of Co-op Sales & Official Data

shifted further offshore where fish destined for the lucrative continental market can still be found. The richest of these fisheries are located in the north-west and south-west. Given this shift in focus, it is unsurprising to find that landings into ports such as Union Hall, Co. Cork and Greencastle, Co. Donegal continue to grow relative to Rossaveal. However it is important to make the distinction between where fish are landed, where they are sold and to what Region monies from these sales are repatriated. Figure 13 compares the total annual quantity of fish sold by Galway and Aran Fishermen's Co-op, including large quantities of fish landed into Dunmore East, Castletownbere and Killybegs, with official records for fish landings in Rossaveal. Though official data indicate there was a general decline in landings into Rossaveal during the 1990s the co-op's data shows the volume of fish it sold on behalf of its members increasing throughout the period. Official data is therefore considered to be of limited value in assessing the socio-economic contribution of fisheries to local communities.

### 3.3 Rossaveal's Fishing Industry

As of 1997 there were 93 registered fishing vessels with addresses in Co. Galway accounting for 4.99% of the total national GRT and 5.88% of the total registered kW (Fig. 14) (DoMNR, 1997). Those
vessels based within the Rossaveal Region account for 95% of this GRT and 88% of the total registered vessel power (Vessel Survey). In addition to registered boats there are approximately 60 vessels less than 12 metres in length employing one – two people on a part-time basis. Many of these boats have applied to the DoMNR for registration since 1997 under a special scheme whereby 3,000 Gross Registered Tonnes (GRT) has been made available to unregistered vessels less than 12 metres in length.

*3.3.1 The Inshore Sector*

Within the Region there are approximately 60 vessels less than 12 metres in length, two of which are officially registered with the DoMNR. Of the 18 individual vessel owners surveyed 14 provided what is considered to be reliable data (Table 4). Three of the respondents live on Inishmore whilst the remainder operate from the mainland portion of the Rossaveal Region. It is estimated that a total of 78 people work on these boats with employment traditionally reaching a

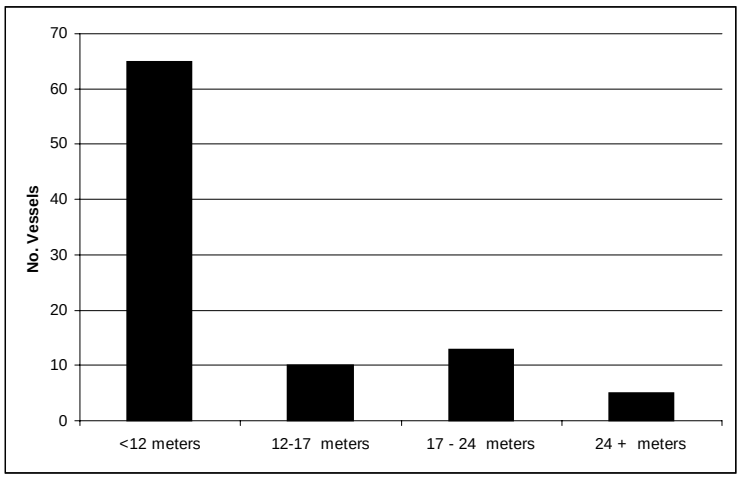


**Figure 14.** No. Registered Vessels in Co. Galway by Length

**Table 4 Respondents to the Inshore Sector Survey**

| Survey | | Marital Status | | | Number Children | |
|---|---|---|---|---|---|---|
| **Sample** | **Responses** | **Single** | **Married** | **Widowed** | **Children <18** | **Children >18** |
| 18 | 14 | 2 | 11 | 1 | 19 | 24 |
| **Mean Age** | | **Mode I Age Group** | | **Mode II Age Group** | | **Mean Income** |
| 39.2 | | 27 | | 58.9 | | £9,954 |
| **Mean Age Started Fishing** | | **Mean Years Fishing** | | **Children at School** | | **Spouse at Work** |
| 14.2 | | 31.6 | | 14 | | 9 |
| **Farm Holding** | | **Receives EU / National Farm Assistance Grant** | | **Member of Sporting Organisation** | | **Speaks Irish at Work / at Home** |
| 9 | | 9 | | 14 | | 14 |

peak during the summer months (Fig. 15). Several of those surveyed stated that recent years have seen greater numbers employed during winter and spring, the result of a decline in traditional fisheries, e.g. whitefish and salmon, and their replacement by shellfish fisheries.

In an assessment of the dependence of these individuals on fisheries and their contribution to the local economy it was found that those willing to answer questions in detail are those who consider fishing to be an integral element of their annual household income. For this reason, the average gross income per person, £9,954, is not considered to be representative of all small fishing vessels less that 12 metres in length. Indeed from comments made by a number of inshore fishermen it is believed that many in this sector make less than £6,500 each year, roughly £752 - £1,000 per month worked. From the group that was sampled it was found that they depend on a number of incomes, generally fishing, agriculture and cultural tourism, to support their families. In recent years agricultural incomes are perceived to have declined, a consequence of continued increases in economies of scale within the farming sector and the decline in demand for livestock following a number of food scares. One therefore finds that those surveyed are increasingly dependent on incomes form fisheries.

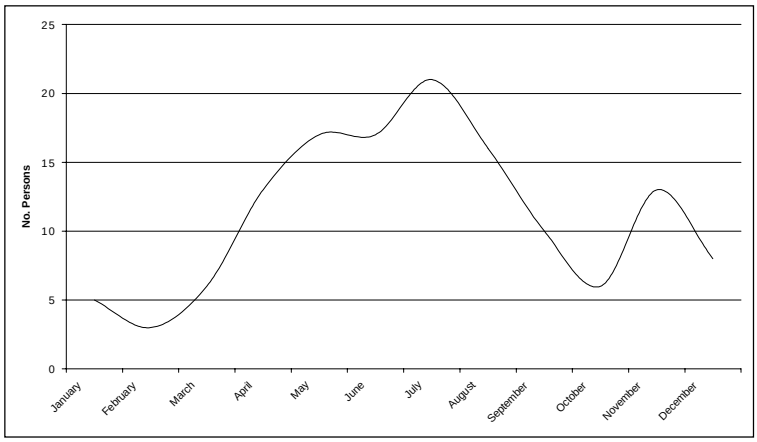


**Figure 15**. Employment on Vessels < 12 meters

Total household income for the sample ranges from £15,000 - £21,500 with a mean income of £16,593 per individual surveyed. On average 60% of this income is derived from fishing. There is considerable variance between household incomes but this is considered to relate to the receipt of farm enabling and EU agricultural grants, participation in the Rural Environmental Protection Scheme and income from provision of tourist services. Each income supports approximately 2.8 people per household. As the majority of the sector's catch is sold directly to the catering trade or for export little added value processing takes place within the Region although there is a processor in Rossaveal that buys shellfish for export to France and Spain. Six people are employed by this processor on a full-time basis cleaning and packing shellfish and whitefish for export. There are also a number of processors closer to Galway specialising in supplying the catering sector that depend on these vessels provide a considerable proportion of their raw materials. Consequently it is accepted that the inshore sector, although limited in terms of scale and total quantity of fish landed, makes an important contribution to the Region's society and economy through the exploitation of valuable shellfish stocks found within the locality.

There is however growing concern amongst those surveyed that several inshore stocks, most notably crab and lobster, have become progressively overfished in recent years. This decline has resulted in increased fishing effort in terms of the amount of fishing gear deployed and the length of time that these traps are in the water. Figure 16 highlights the dramatic increase and then decline in landings attributable to vessels less than 12 metres during the period 1990 – 1997. Data collected and published by the DoMNR indicates that the inshore fleet's catch has seemingly collapsed in the period since 1993 (Fig. 16). The most significant change is the drop in edible crab catches from a high of 130 tonnes in 1993 to 15.6 tonnes in 1997 (Fig. 17). Data provided by Galway and Aran Fishermen's Co-operative largely reflects these developments although the quantity of crab it sells is relative small. Considerable analysis of this dataset was undertaken, however following consultation with Galway and Aran Fishermen's Co-op and local inshore fishermen it is thought that the co-op's information is unrepresentative; a consequence of fishermen selling their catches to a variety of individuals rather that a single co-operative or processor. Given these limitations it is necessary to rely on the observations of those surveyed to assess the background to and impact of developments observed by inshore fishermen.

Those surveyed stated that figures available from the DoMNR do not fully reflect the trends affecting inshore stocks available to local fishing vessels. The data is considered misrepresentative of the actions of this segment of Rossaveal's fishing industry. Fishers consulted state that gradual overfishing of inshore stocks, particularly lobster and crab, began in the late 1980s in response to the incremental decline in agricultural incomes. Initially a small number of vessels were seen to be successful thereby attracting greater numbers into the fishery. Lobster potting was traditionally seen as a means of supplementing household incomes and the mainstay of the inshore fleet. Overfishing, through deployment of pots outside of traditional seasons, introduction of greater numbers of pots and dwindling catches led to a refocusing effort into the crab fishery that was perceived to be relatively lucrative due to the abundance of crab greater than 1Kg during the late 1980s and early 1990s. This shift in effort resulted in initial increases in crab landings as indicated by the DoMNR data presented in Figure 17. Nonetheless as both lobster and crab fisheries became progressively overfished fishers found it necessary to spend greater amounts of their gross income on gear and fuel. The number of traps regularly deployed began to increase in the late 1980 and early 1990s in response to greater access to lucrative fresh shellfish markets in France and Spain and the demands of local processors supplying these markets. As fishing effort increased so too did

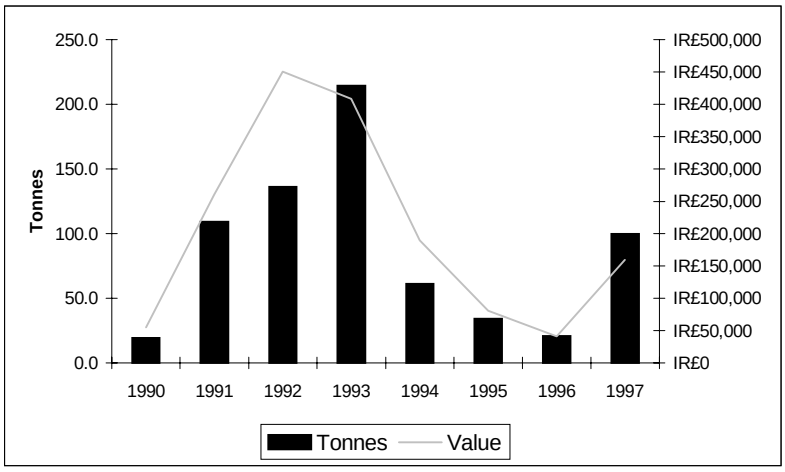


**Figure 16**. Recorded DoMNR Sales for Vessels <12Meters

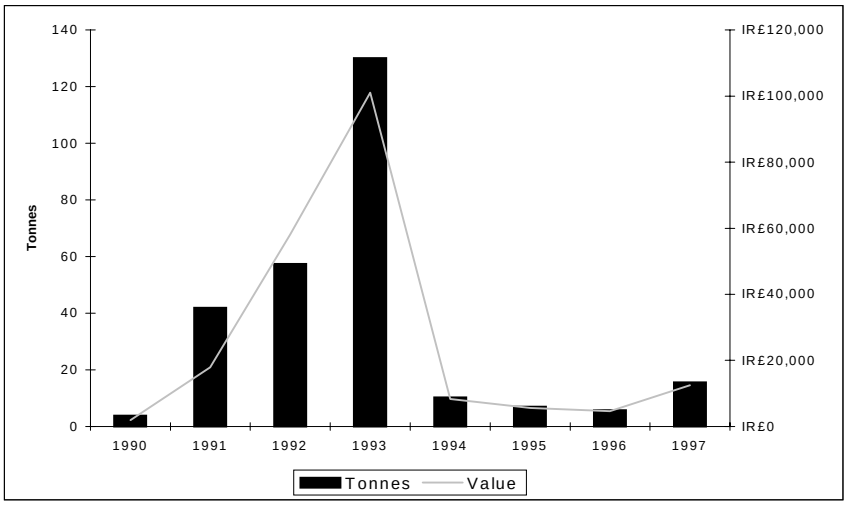


**Figure 17**. Crab Landings into Rossaveal

catches. However as few fishers differentiated between catches of male and female crabs / lobsters, recruitment overfishing resulted. Given these developments and further increases in effort it is unsurprising to find that the size of fish caught began to decline along with overall landings. Data used to compile Figure 18 was collected from a sample of 18 fishermen during informal interviews and reflects the number of pots they currently own. Information relating to the regular deployment of pots is incomplete and therefore unsuitable for further analysis. Despite these limitations, the data indicates that effort has increased and continues to do so. According to those surveyed, data collected from Galway and Aran Fishermen's Co-operative, interviews with processors and analysis of data published by the Department of the Marine, incomes from the fishery have not increased in line with greater fishing effort. Several fishers commented that in relative terms, they are earning less today than 3-4 years ago. This development has prompted some fishers to cease crab fishing, as contemporary economies of scale are such that one now requires as many as 700

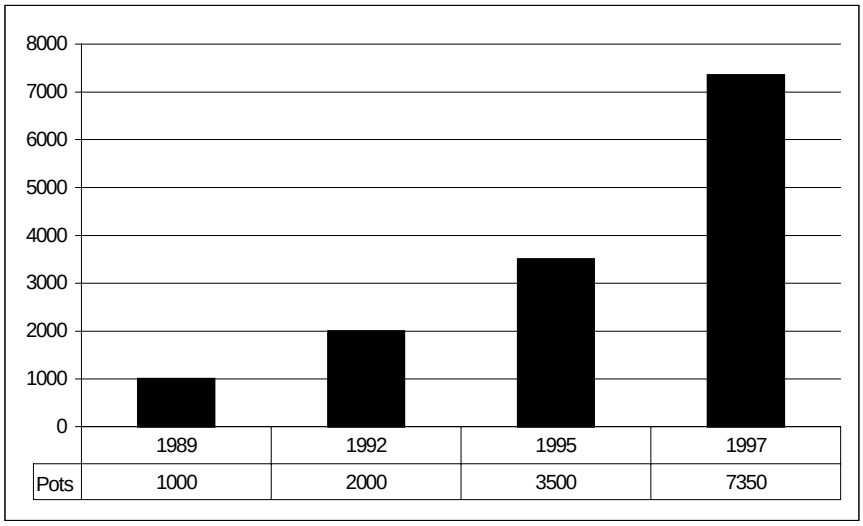


**Figure 18**. Number of pots Owned by a Sample of Inshore Fishermen

pots in order to remain operationally viable; a capital investment that forces fishermen to deploy as many pots as possible throughout the year and places further pressure on already depleted fisheries.

Those participating in this element of the research associate the advent of 6-day working weeks and extended fishing seasons with depletion of stocks. Older fishermen stated that traditionally one would only fish four days each week between May and September for lobster and crab. This provided a fallow period during which time it is thought crab and lobster bred and stocks could rejuvenate. For the remainder of the year fishers exploited a variety of pelagic and whitefish stocks and tended small land holdings none of which are available to or financially viable for inshore fishermen. Linkages between farming and fishing are becoming ever more tenuous as similar processes affect each sector. Conversely this has resulted in an increase in the overall importance of inshore fisheries to the limited number of individuals that remain within the sector. Nevertheless increasing economies of scale and subsequent marginalisation of small-scale operators have left dependent populations with few options other than to increase fishing effort in the short term, transfer effort into new fisheries and avail of social welfare and various grants from the EU for small farm holdings. Those involved in this sector, no more so than those in other sectors of the Region's fishing fleet, find it difficult to diversify into alternative economic activities as many hold a fundamental belief that as fishermen they have few skills that can be applied to other, onshore activities. Additionally those with debts accruing from the purchase of gear and equipment cannot leave as their vessel is largely without value and its sale would fail to realise sufficient funds to meet outstanding liabilities or provide an income in the future.

Despite current trends and difficulties all those who took part in the research commented that they are positive about the future of lobster fishing within the Region. A program of 'V-Notching' females has now been instituted that is considered to offer sufficient protection to the remaining stock and should result in a gradual improvement in catches. Notwithstanding these efforts, all but four of the fishers consulted during the course of this aspect of the research stated that they would like to see the introduction of a closed season for crab, lobster and scallop fisheries during the winter period. The greatest threat to the sector is perceived to be continuation of unregulated

fishing and the encroachment of larger and or more powerful boats into shellfish fisheries. All those surveyed agreed that a greater degree of management is required if remaining fisheries are to be sustained into the future.

*3.3.2 The Near Shore and Deepwater Fleet*

The near shore sector is considered to include five vessels within the Region between 12 – 17 metres that are complemented by an additional 19 boats between 18 – 24 metres in length that generally work the same grounds and sell their product through Galway & Aran Fishermen's Co-op. The number of vessels capable of fishing in deep water, 100+ fathoms, is small and for this reason are analysed in conjunction to the group of boats between 17 – 24 metres. Vessels <17 metres are, by virtue of their age, structure and confinement to fishing grounds located between Slyne Head and Loop Head considered to belong to the near shore sector (Fig. 19). Notwithstanding this it is important to note that a several vessels from this segment of the Region's fleet do exploit offshore grounds during periods of settled weather.

The Co-op made available detailed sales records for each of the 27 vessels enabling assessments of individual boat performance to be made. However, having regard to confidentially agreements made with the Co-op and those vessels owners and crew that supplied information none of this analysis is presented here[8]. Nevertheless, the data was used to identify trends at an individual level and then assess to see if these are part of broader developments affecting the local fleet and possibly the Irish catching sector as a whole. Aggregated data is used to provide an overview of trends affecting all fishing vessels selling their catch through the co-operative before further considering data pertaining to the near shore sector of the Region's fishing fleet.

**3.3.2.1 Galway and Aran Fishermen's Co-operative**

As previously stated all included in this section of the report sell their catches through Galway and Aran Fishermen's Co-operative on a regular basis. Established in 1974 the co-op was originally

**Figure 19.** Near Shore Fishing Grounds

[8] It was agreed that data from more than six vessels would be grouped so that the identity of those who supplied data would remain confidential.

based in Galway Harbour, the then National Fishery Harbour Centre, moving to Rossaveal following the onset of the 1979 oil crisis and subsequent global recession. By 1981 the State passed legislation naming Rossaveal as a National Fishery Harbour Centre. The co-op, managed by Bryan Casburn, currently represents the interests of 39 members, all but one of which is actively fishing. The principal objectives of the co-operative, the only organisation of its kind within the Region, are *"to increase the prosperity of fishermen by co-operative action in all kinds of fishery, fish processing, fish marketing and distribution and to improve and develop the industry of sea and river fishing. To buy, sell and deal generally, wholesale and retail, in all sea and river products including by-products thereof and in all things requisite to the fishing industry or to the convenience or advantage of members of the society"* (Galway and Aran Fishermen's Co-operative Article of Incorporation, 1974). On a day-to-day basis the co-operative organises the sale of members landings through public auction and also by forward contract agreement. It is estimated to handle as much as 93% of all local fish landings. In recent years the overall number of members has declined, a consequence of an internal policy that has seen shares held by dormant members purchased by the co-op. Galway and Aran's manager stated that it was necessary to consolidate ownership of the co-operative within the hands of those actively fishing as these individuals have the greatest interest in seeing further development of services and facilities within the co-operative organisation. According to co-operative records, of the 39 principal shareholders, 28 land fish into Rossaveal for auction on a regular basis. Since the establishment of the co-operative gross turnover has increased from under £500,000 pounds to over £7.5 million pounds annually (Fig. 20[9]). Annually the co-op sells an average of £6,214,727.09 or 17,000 tonnes of fish. In real terms, having accounted for inflation, the co-op has achieved better than average value for its fish in recent years (Fig. 21). This assertion is borne out in data depicting the price per ton paid by the co-operative to its members for prime fish species and whole prawns (Fig. 22).

Though data presented in Figures 21 and 22 show increases in the quantity and value of sales made through the co-operative on behalf of its members, this information cannot provide an indication of changes that have affected various sectors of the Rossaveal Region's catching sector. Figures 23, 24, 25 and 26 summarise the total annual sales for each group of species made on behalf of all the

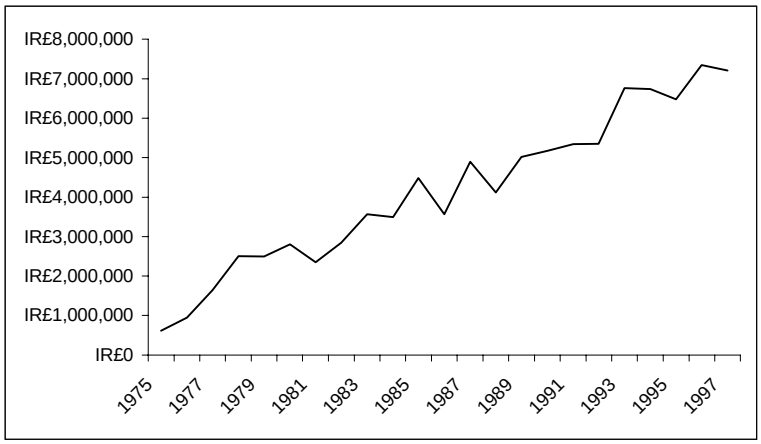


**Figure 20.** Galway & Aran Co-operative Gross Income from Fish Sales 1975 - 1997

[9] Data relating to period 1990 – 1997 have been adjusted to account for inflation.

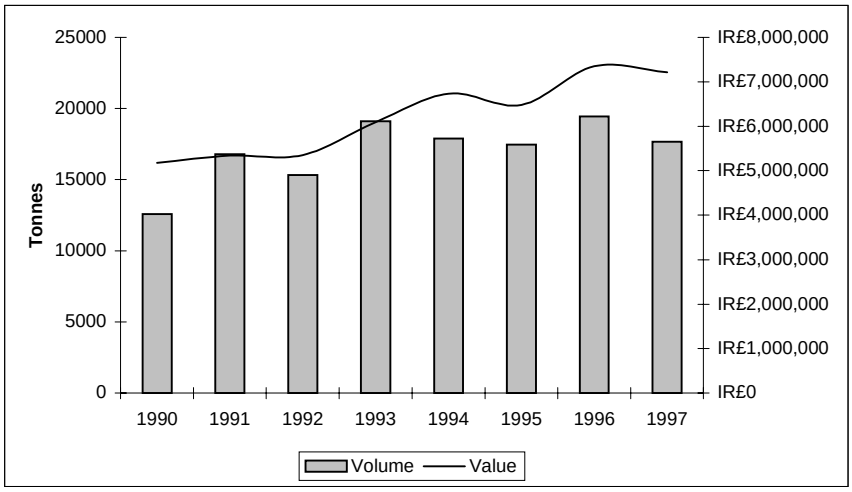


**Figure 21.** Total Annual Sales Volume & Value 1990 - 1997

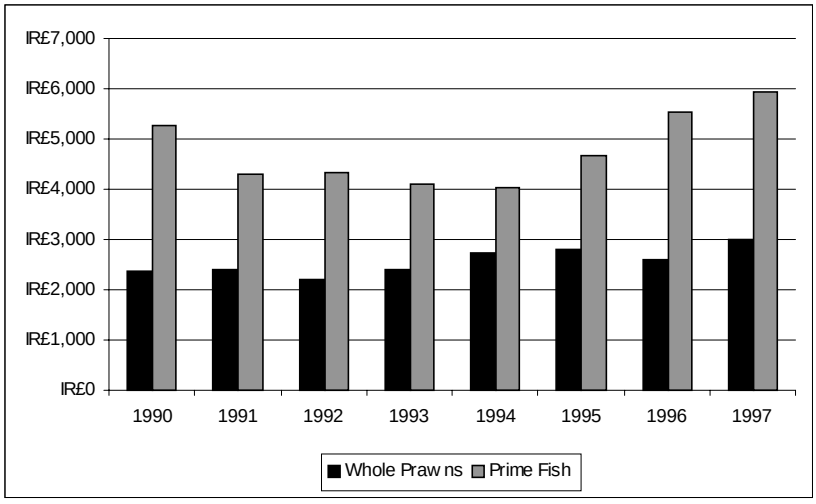


**Figure 22**. Value per Tonne of Selected Fish

co-op's members and highlight some of those trends affecting important fisheries or markets.

A sharp decline in the value and quantity of demersal landings in 1997 reflects reduced availability of key species due to, according to local fishers, inclement weather, overfishing of inshore stocks and environmental changes. The demersal sector has however witnessed such downturns before as indicated by considerably lower than average landings in the early 1990s. Consideration of data presented in Figure 23 indicates that the decline is part of a fundamental change in fisheries and traditional markets being exploited by local fishermen. During the early 1990s a greater proportion of the co-op's annual sales comprised valuable prime fish species and 'Spanish Fish'. From 1994 onwards one sees a continued increase in the volume of fish landed but a relative decline in value. This trend implies is that the largest, most valuable fish were caught whilst the capacity to catch fish increased based on higher returns from fisheries between 1990 – 1994. Results from surveys undertaken with fishers during the course of this research indicate that they believe intensified fishing effort, (represented by increases in the number and duration of tows), and discarding have resulted in depletion of key stocks. This in turn has resulted in recruitment overfishing and the

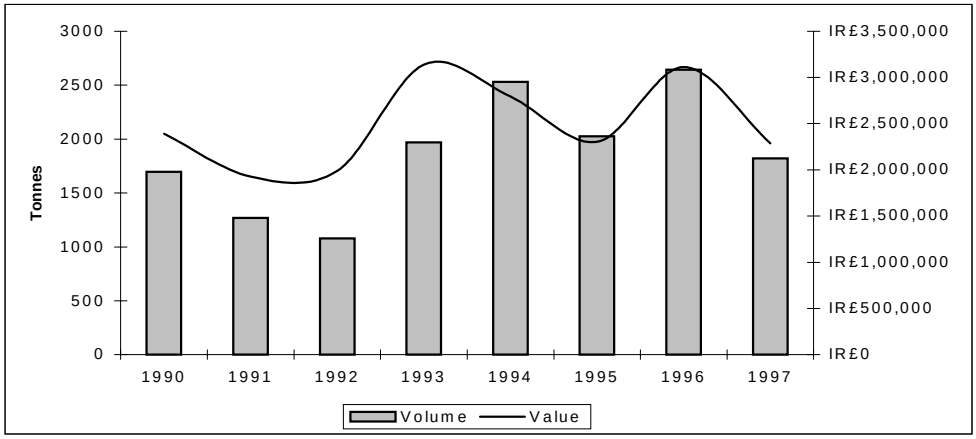


**Figure 23.** Annual Demersal Sales 1990 - 1997

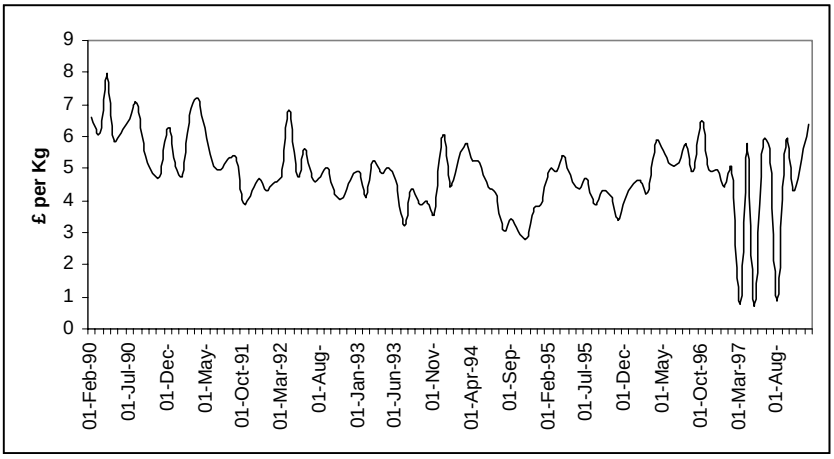


**Figure 24.** Price paid per Kg of Turbot 1990 - 1997

landing of smaller, less-valuable fish, particularly the prime fish species, i.e. sole, a process indicative of a 'race to fish'.

In contrast to trends affecting demersal landings and sales, Figure 25 indicates that shellfish fisheries are becoming increasingly more important in terms of value to the fleet. The nephrop fishery, for it is almost exclusively nephrop (Norwegian Lobster) sales that account for the data presented in these graphs, are located primarily on the Back of the Island's fishing grounds. Smaller grounds are located further north and also west of Dingle, eight hours steaming from Rossaveal, on a ground referred to as The Porcupine. Data indicates that there is a cyclical process affecting availability of nephrops, a point commented upon at length by fishers in the locality. That quantity and price are closely matched over time reflects market demand for fresh nephrops. The relative growth in quantities landed reflects developments within the local catching sector that, as will be seen, is increasingly dependent on nephrop fisheries. Few fishers commented on any observed adverse impact this greater effort has had on the stocks although many are concerned by the adoption of twin-rig fishing gear, which is considered by some to be 'too efficient'.

Data relating to the pelagic sector's performance in 1997 shows a drop in landings of 3,000 tonnes valued at £600,000, reflecting the impact of the economic crisis affecting Asian consumers of herring roe and the downturn in the Easter-European frozen fish market (Fig. 26).

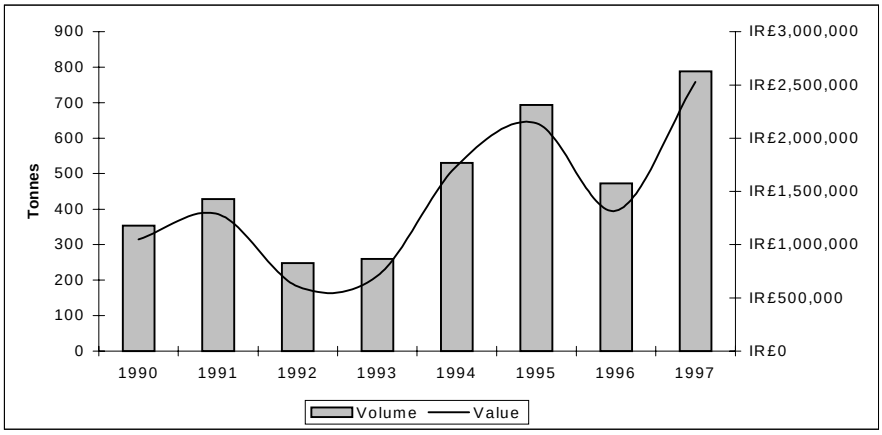


**Figure 25.** Shellfish Sales 1990 - 1997

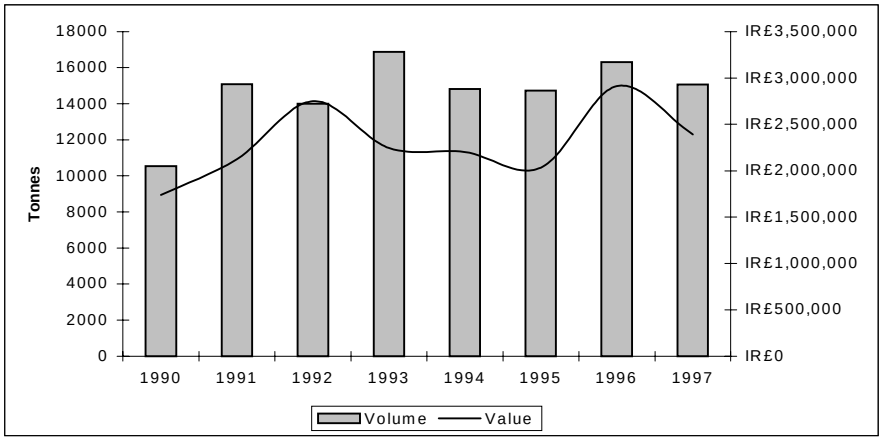


**Figure 26.** Pelagic sales 1990-1997

Though useful, analysis of the co-op's annual sales is limited to assessing trends and processes affecting landings for grouped species for all vessels exploiting the various fisheries that comprise the demersal, shellfish and pelagic sectors. Hidden within this data are significant biological, and consequently economic trends affecting specific segments of the fleet that hold both long and short-term implications for the operational viability of the Region's catching sector and indeed the industry as a whole. Assessment of how and why fisheries are socially and economically important requires a more detailed assessment of the activity of a sample of vessels.

As already outlined, 27 vessels affiliated with the co-op were chosen for further analysis so as to elucidate current trends and processes that impact on the viability of these boats and assess the socio-economic contribution they make to the community. In undertaking this analysis data relating to the near shore fleet are presented in detail. Regarding those vessels over 24 metres in length limited amounts of data are presented due to the small size of the sample. Despite the constraints imposed by confidentiality agreements on presenting data relating to the deepwater fleet observations made during this study and the opinions of those fishermen interviewed are incorporated into the overall analysis.

*3.3.3 The Near Shore Sector*

This segment of the Region's fleet comprises vessels between 12 and 24 metres in length (Table 5). Those familiar with fishing boats will know that, as a general rule, the larger a boat the greater

**Table 5 Statistical Description of the Near Shore Sector**

| 12 - 17 Meter Vessel Sample | | Mean Length | Mean GRT | Mean kW |
|---|---|---|---|---|
| Number | 5 | 16 | 35.41 | 148.25 |
| Average Age | 32.52 | Minimum Length | Minimum GRT | Minimum kW |
| Wooden Hull | 5 | 14.87 | 31.14 | 116 |
| Steel Hull | 0 | Maximum Length | Maximum GRT | Maximum kW |
| | | 16.5 | 37.11 | 186.53 |
| | | | | |
| 17 - 24 Meter Vessel Sample | | Mean Length | Mean GRT | Mean kW |
| Number | 19 | 21.85 | 101.5 | 372 |
| Average Age | 25.27 | Minimum Length | Minimum GRT | Minimum kW |
| Wooden Hull | 14 | 18.51 | 45 | 149 |
| Steel Hull | 5 | Maximum Length | Maximum GRT | Maximum kW |
| | | 24.99 | 296 | 697.6 |

capacity it has to catch fish given that it is capable of fishing further from shore for longer periods of time in deeper waters. Consequently one could argue that the inclusion of all vessels between 12 – 24 metres within a single category presents a misleading assessment of the Rossaveal Region's fishing industry. However it was found that vessels one would assume to be fishing on grounds further from shore are either largely confined to near shore fisheries as a consequence of their age and wooden hulls or dependent on them to provide a significant proportion of their annual turnover. This is not to suggest that this segment of the fleet simply fish the area between Slyne Head and Loop Head on a continuous basis. Interviews with skippers and crews found that vessels from the Region also exploit fisheries such as the Stags (Sligo) and the Inner and Outer Dingle Bay grounds. Scarcity of fish or inclement weather also induces fishermen to relocate their operations to The Smalls, The Saltees and Mine Head Grounds located off of the Waterford coast. The common element that characterises all of these grounds is their location in near shore waters.

From the statistical description provided in Table 5, taken from the DoMNR's national fleet register and data gathered during this study, the Region's near shore fleet can be characterised as being dominated by old, small, wooden boats. These boats are generally well maintained and have been continuously modernised so as to be capable of fishing the Back of the Islands. Due to the proximal location of this ground the boats in question are able to make 3 / 4 day trips on a relatively continuous basis throughout the year. The duration of trips is important as it allows the skippers and crews time at home with family and friends on a regular basis whilst also providing the Co-op with a product twice a week and thereby increasing its employment generating potential. Information and data collected from these boats shows that they are generally, although not always, owner operated and those crewing come from within the Region or the Islands off the Galway Coast. These boats are therefore considered be of considerable socio-economic significance and contribute to the overall stability of the Region's economy.

Because vessels between 12 – 17 metres are limited to fishing inshore and near-shore grounds one finds that they are especially vulnerable to changes in the availability of fish in this sea area. It is therefore significant and indeed worrying to note that data supplied by the Co-op indicates that the total annual mean value of fish landed by this sample of vessels is declining (Fig. 27). From a survey of the five boat owners it was found that they perceive overfishing of inshore and near shore demersal stocks has resulted in a loss of earnings. Analysis of the co-op's data supports these observations as a 20% reduction in the quantity of demersal species being landed and a corresponding 23.59% fall in overall value of the catch is shown between 1990 - 1997. That the value of demersal species landed by 12 – 17 meter vessels has declined supports assertions made by boat owners that those demersal species that remain are small and therefore less valuable. Fortunately for these and indeed all vessels in the near shore sector, a lucrative nephrop fishery has developed on the 'Back of the Islands' fishing ground. But for this fishery, vessels between 12 - 17 metres would, according to data collected from the Co-op and vessel owners, loose operational viability. Figure 28 and Figure 29 provide an indication of the growing significance of nephrop fisheries to these boats.

Of the five vessels selected as a sample two provided data relating to their operational costs whilst all five gave indications of the amount of time they spend at sea. In the interests of preserving the confidentiality of those who provided information and data pertaining to the operational costs of their vessels a detailed analysis is not presented here. It is however possible to state from an examination of the data that each is spending greater amounts of time at sea, an increase of 29.87% for the group as a whole between 1990 – 1997 whilst operational costs have also increased. During interviews with the owners and skippers it was found that all have adopted new strategies, technologies and fishing techniques in the past three years in an effort to maintain profitability. Operational data from the two vessels seems to indicate that these developments have resulted in increased costs and reduced profitability. One should however be aware that, given the limited amount of data and small sample size, the latter finding is precursory at best. Economic data showing the operational costs of vessels between 12 – 17 metres is combined with similar data and information gathered from boats in the 17 – 24 meter class size (Fig. 34). This data is analysed towards the end of this section of the report. It is however sufficient to state at this point that the trend towards spending more time at sea and larger amounts on modernisation are primarily

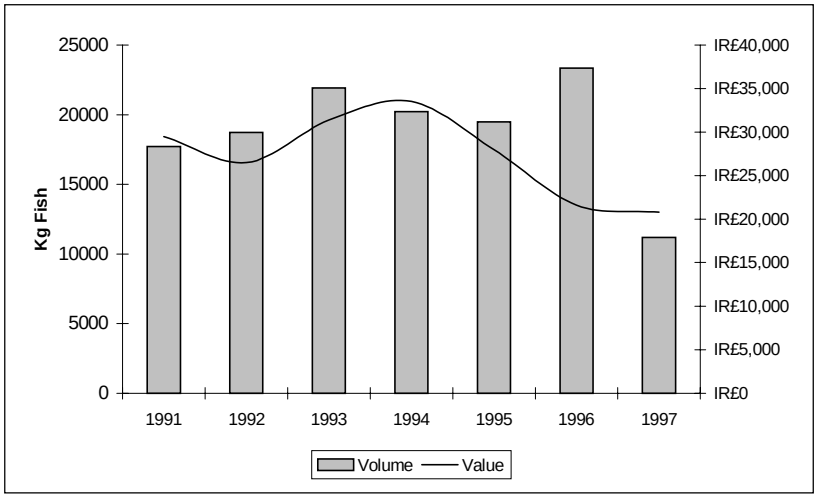


**Figure 27.** Mean Sales from Vessels 12 - 17 Meters

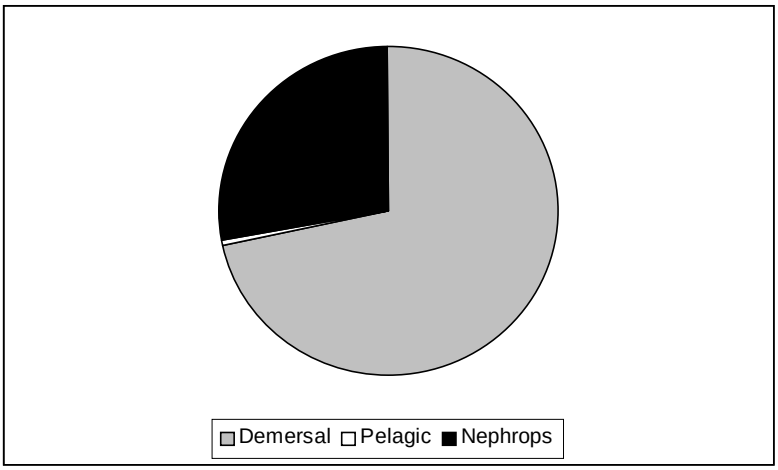


**Figure 28.** Proportional Value of Catch by Species Group 1990

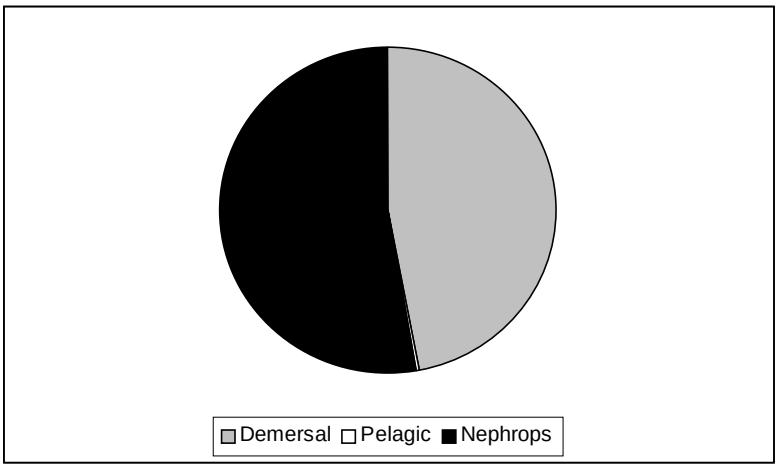


**Figure 29.** Proportional Value of Catch by Species Group 1997

associated with depletion of fisheries found between Slyne Head and Loop Head.

In total 17 people are employed full-time on the sample of five fishing vessels whilst a further 6 are employed occasionally. Of these 23 individuals, 18 provide the primary household income, an average of £10,141 per year. There are a further 38 children, 23 of whom are less-than 18 years of age, in some way dependent on a fishery related income. Of the 11 skippers and crew members that are married, 3 have a spouse working outside the home.

The owners and skippers of those vessels surveyed remain largely positive regarding the future of their operations. They do, however feel that:

- A healthy, sustainable managed, local nephrop fishery will maintain the viability of their operations.
- Mesh sizes for whitefish fisheries must be increased.
- Twin-rigging should be limited or constrained by having to use 90-95 mm mesh size.

- Fisheries management must be capable of accounting for local conditions, traditions and culture.
- The socio-economic importance of vessels such as theirs needs to be recognised as they provide an important point from which a fisher can gain valuable experience operating a boat of their own.
- Closed areas and closed seasons, applicable to all fishers, should be considered as a means of providing stocks with an opportunity to breed.

The remaining 19 vessels between 17 – 24 metres that fall within the near shore fleet category were found, unsurprisingly, to be largely similar to boats 12 – 17 metres in length in terms of the grounds which they depend upon. The most significant difference between the two vessel classes was the scale of operations. It is clear from Figure 30 that the capacity of vessels in this segment to catch fish far outstrips that of boats <17 metres. Like their smaller counterparts, these boats fish for a variety of demersal species and nephrops on a regular basis between Slyne Head Loop Head. However, the boats will venture to the 'West of Achill' grounds in search of demersal fish or as far south as Dingle to exploit nephrop stocks on a ground known locally as 'The Porcupine'.

This segment of the fleet has witnessed considerable change in recent years. Research indicates that limited yields in the early 1990's resulted in greater investment in fishing gear and equipment enabling the sample to participate in the nephrop fishery and venture further afield to deeper water fisheries (Fig. 31). Comparison of data presented in Figures 30, 31 and 32 indicates that these boats have, like their counterparts will smaller vessels, been affected by the depletion of fish stocks but to a significantly lesser extent. A key difference between the two samples is that the quantity of fish sold on behalf of vessels 17 – 24 metres continues to grow. Nonetheless if one examines the mean monthly sales made by the boats it is clear that they too depend on high yields from lucrative fisheries during the spring – summer period (Fig. 33). Relatively small catches of prime fish and, increasingly, nephrop products (whole prawns and tailed prawns) from March to August provide a considerable proportion of the total annual gross income accruing to the sample. The noticeable drop in income for the group during August is associated with the annual tie up of the Region's

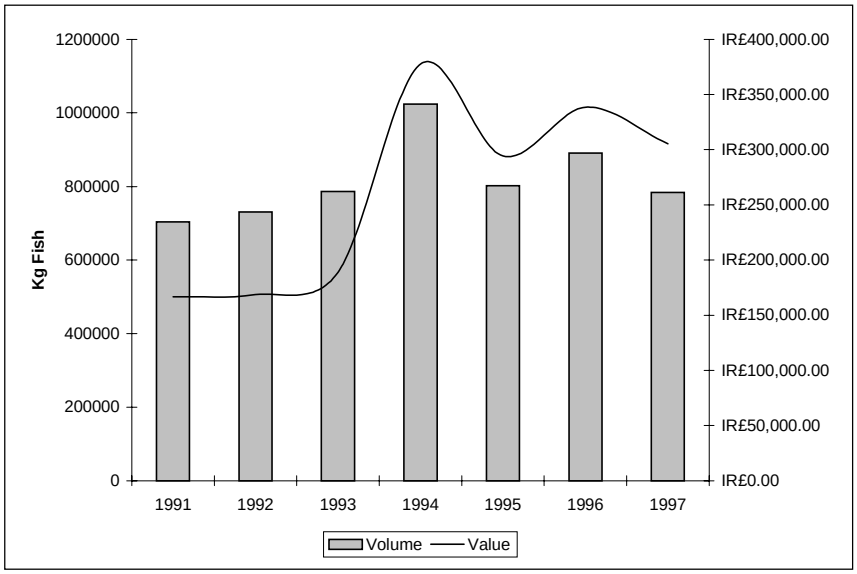


**Figure 30.** Mean Annual Sales for Vessels 17 - 25 Meters

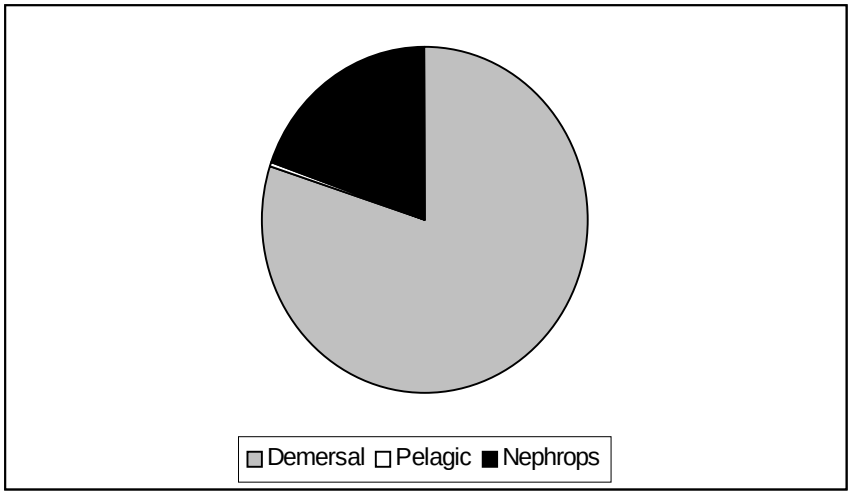


**Figure 31.** Significance of Demersal, Pelagic and Nephrop Fisheries for 17-24 meter vessels 1990

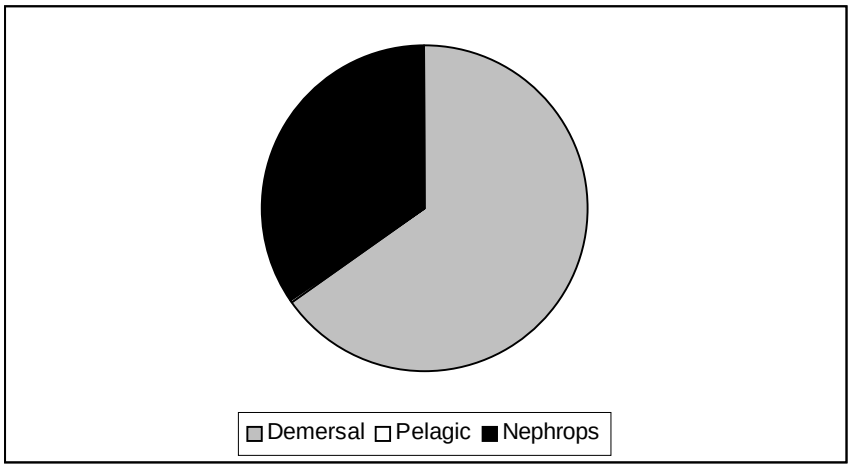


**Figure 32.** Significance of Demersal, Pelagic and Nephrop Fisheries 1997

fleet for repairs and to prepare for the winter fishing season. The sale of large volumes of fish during September – January is related to the fishing season for traditional demersal species.

Data pertaining to the operational costs of this sample of 19 vessels was collected from 15 boats and combined with similar data gathered from two vessels between 12 – 17 metres in length (Fig. 34). Those surveyed were asked to detail the various costs incurred in the operation of their vessel. From this data it is possible to assess the contribution of the fleet to the local and regional economy as well as identify trends that may affect the overall operational viability of the near shore sector. Because the data collected relates to individual vessels and these differ from each other in terms of length and capacity, each boat's costs, earnings and operation was assessed separately and then, where appropriate weighted so as to account for that element of the sample that did not supply data. Given that this information is very sensitive and the sample relatively small, no detailed data is provided for specific groups of vessels e.g. boats >20 metres. Notwithstanding these limitations a comprehensive analysis of the information presented in Figure 34 is provided below and recommendations made.

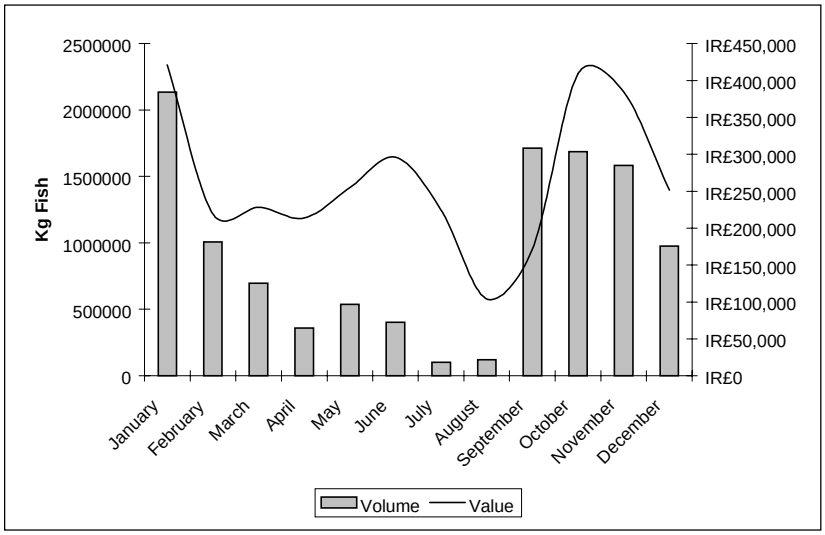


**Figure 33.** Mean Monthly Sales by Vessels 17 - 24 Meters 1990 - 1997

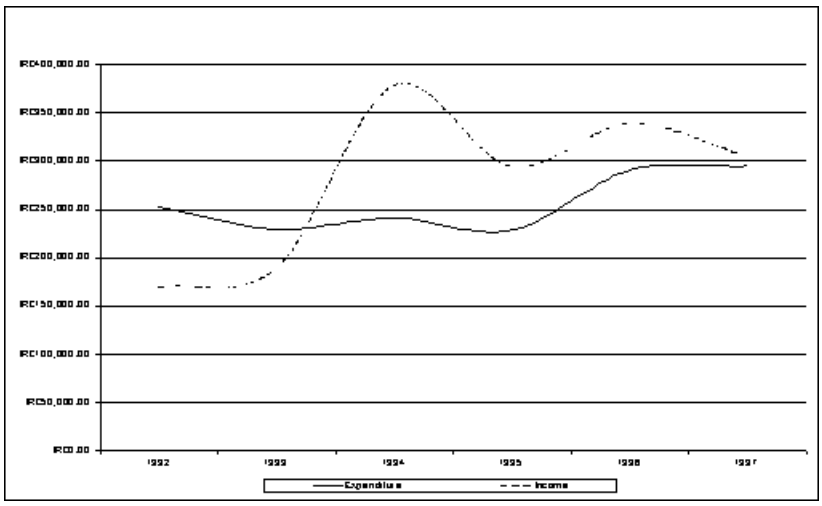

**Figure 34.** Income and Expenditure of the Near Shore Fishing Fleet

One can see from the data that the sample made a collective loss during the years 1992 and 1993. Reinvestment in fishing gear, equipment and the replacement of older vessels by younger, larger, second-hand boats resulted in increased expenditure and, in the longer term, operational costs. It is important to note that a proportion of the reduction in gross income seen in Figure 34 is attributable to the cessation of fishing operations by those vessels undergoing refits or modernisation work. However when data from boats which continued fishing are analysed one finds that, individually, they made marginal gross profits at best. Returns from fisheries during this period are considered to have been poor by comparison to previous years, however as data is not available for the period prior to 1992 it is not possible to provide definitive commentary on this point. Interviews with boat owners indicate that ploughing back profits and bank loans paid for the work.

All of those that modernised their vessels stated that it is a necessary ongoing expense with older vessels that increases their ability to compete with the rest of the fleet for available fish. Boat

owners stated that they reinvested in their operations in order to be capable of catching more fish quicker, to work grounds further from shore and also to maintain short-term economic viability. Data presented in Figure 34 indicates that this strategy was effective with gross profits for the fleet increasing through the period 1993 – 1997, a trend related to intensified exploitation of nephrop fisheries and offshore demersal species. However as more vessels entered these fisheries they became progressively overexploited with the result that fishermen had to increase the amount of time spent at sea in order to sustain incomes. Unsurprisingly then one finds that sea going costs, fuel, oil, wages, stores, ice, net repairs, also increased throughout the period. Over the period that data are available gross profitability increased by 8% for the sample whilst operational cost rose by 14%.

Essentially what is outlined above is the autonomy of what is known as 'the race to fish'. As fish become scarce, the result of increased exploitation, fishermen increase the amount of time they spend at sea. This strategy enables them to maintain, if not increase gross turnover. However as fisheries they depend upon become overexploited through increased effort income begins to decline and the yield for the amount of hours spent fishing is diminished to such an extent that it is no longer considered viable to continue operating at this level. Adoption of new fishing techniques, e.g. twin rigging, and modernisation of vessels allows fishermen to considerably increase the geographic scale of their operations whilst also increasing the value of their landings. Eventually when it is recognised that a boat has reached its maximum operating capacity and profits can no longer keep pace with costs fishermen are faced with two primary choices:

1. Buy a new, younger, modern and larger vessel, or
2. Diversify into a new fishery.

In general the latter option is a short-term strategy that will allow the boat owner to accumulate sufficient capital enabling them to eventually buy a new vessel. The jump up to a larger, more powerful boat expands the range of fisheries and consequently potential profitability open to a vessel owner.

The group sampled stated that they have adopted each of these strategies at various stages in their careers. Fishermen, particularly those over 40 years of age, indicated that they consider the

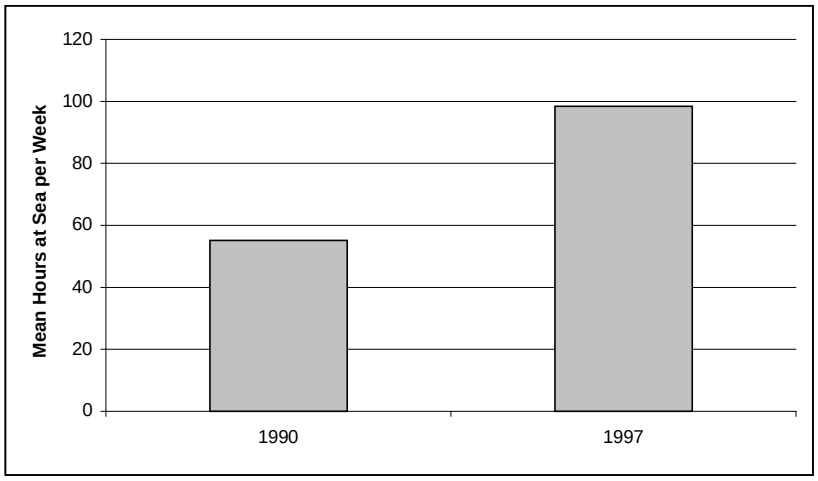


**Figure 35.** Mean Hours at Sea per Week 1990 - 1997

pressures of maintaining operational viability to have increased dramatically in recent years. Continual reinvestment in gear, equipment and the vessel has led many of those consulted to consider the wider implications of the race to fish. From a boat owners' perspective there is a growing sense of loosing the ability to react constructively to changes in fisheries or development of administrative regulations. As a group they have become so dependent on a limited number of fisheries that the slightest change in the availability of fish can result in further pressure to increase fishing effort and consequently investment in their vessel. Compounding this is a belief that national administrators have failed to understand the complexities of operating a boat and the short, medium and long-term consequences of increases in effort on local fisheries and also on those grounds further offshore for them personally and also for the communities from which they draw their crews. Asked if there is a future for their offspring in fishing 78% stated that they cannot foresee sons or daughters entering the fishing industry due to:

- Contemporary trends resulting in the destruction of important fish stocks,
- Continued deterioration in working conditions at sea particularly on older, wooden boats,
- The minimal return received for considerable effort, and
- A belief that their vessel will no longer by operationally viable in 10 years time.

*3.3.3.1 The Whitefish Processing Industry*

There is one whitefish processor within the Region, which specialises in high value prime fish species and shellfish for export to continental markets. They buy a small proportion of their raw material from the co-operative, sourcing the remainder at a national level. The largest Irish buyers of fish sold through the co-op are based around Galway City or located in Counties Donegal and Cork.

From preliminary analysis of data made available by Galway and Aran Fishermen's Co-operative there are a number of identifiable trends affecting processors buying fish from the Region's catching sector. However as no single processor depends to a significant degree on a single source of fish it is difficult from this level of analysis to state definitely what impacts changes in the operations of Rossaveal's catching sector, have had on the viability of the processing industry. Nevertheless as these trends are recognised as being national in scale interviews with a sample of processors based around Galway and Killybegs found that the general reduction in the quantity of traditional species and those fish for export has led to the loss of economies of scale. Inability to maintain supplies of fish has resulted in processors reducing the number of days worked per month thereby reducing the significance of fisheries as a contributor to the national economy. Additionally these developments have increased the costs of ownership of capital assets, e.g. filleting machinery, and contributed to a reduction of market share, which in the short term will lead to consolidation within the processing sector. The level of impact this consolidation will have on an area will depend upon the scale of the processing operations and the market to which they sell.

- Those specialising in supplying the catering trade and to a lesser extent local retailers will be, in the short and medium-term, insulated from increases in fish prices, caused by reduction in supply, as they can pass on these costs to the buyer who in turn passes them on to the consumer. Fortunately for these processors Irish consumers now view fish as a healthy alternative to red meats and other white meats and have, as yet, shown no hesitancy in paying relatively high prices for fish products. However, although considered to be growing, this segment of the market is remains relatively small and the processing industry has had to develop new structures with commercial buyers.

- In many instances these developments have seen the removal of wholesalers from the food

supply chain as buyers, particularly the national and international multiple retailers, seek to reduce their costs by sourcing their products, if not from the producer then as close to them as possible. Processors in this category are coming under pressure as supply diminishes, price of fish increase, the costs of production grow and profit margins shrink due to price setting by the multiple retailers. Once again consolidation in the processing sector amongst those supplying the same markets is the most likely outcome in the short-term of this trend, as less individual processors would lead to a relative increase in supplies to the market.

- Finally there is those who sell directly to the continental market. These organisations are possibly faced with the greatest challenge to their medium and long-term viability as the EU opens the Common Market to global competition with the result that continental processors, wholesalers and retailers can now source fish products from virtually any country in the world. Given that this process is almost irreversible due to World Trade Organisation agreements it is likely that a sector of the Irish fish processing industry will have to source some of its raw materials from other countries if they are to remain operationally viable. This however will result in lower prices being paid to Irish fishermen as demand falls both nationally and internationally for products that will be considered expensive by international standards. Should this happen then one can expect the Irish fishing fleet to be dominated by a relatively small number of large whitefish vessels.

*3.3.4 The Pelagic Sector*

Two of Ireland's 23 pelagic vessels operate from Rossaveal and are owned by individuals who live on Inishmore. These boats were commissioned at the same time in 1982 from a Dutch shipyard and designed to work together fishing for mackerel, herring, horse mackerel and other pelagic species. Since their introduction to the fleet each vessel has upgraded gear, equipment and technology in conjunction to structural modernisation. This work was undertaken in an effort to improve safety, increase the vessels' ability to catch fish and 'keep up with the times'.

Data was gathered relating to the income and expenditure of the boats, however as this is a sample of two vessel owners that are well known both locally and nationally detailed information cannot be presented in this report. Recent trends to impact on the Irish pelagic sector have affected the operational viability of the boats. The most significant developments include:

- Enforcement of quota restrictions that limit the total quantity of fish available to both vessels and consequently places a cap on their potential earnings.
- Introduction of 'Day's at Sea' which limits the total amount of time that the boats can spend at sea meaning that they have to maximise their operational efficiency and profitably when they are fishing. This, in conjunction with enforced quota restrictions, may result in discarding of catches that appear to contain large quantities of small, low value fish whilst also increasing costs as vessels gear up to locate, catch, and return to port as quickly as possible.
- General decline in the price paid for pelagic fish as a consequence of a collapse in the European, Russian and Asian markets.
- Continued increase in operational costs for all vessels.

Despite the limitations in presenting data relating to the operation of the boats it is possible to provide an indication of the socio-economic significance of these vessels to the Rossaveal Region.

Each of the boats employs eight people from the Region and operates on a relatively continuous basis from September – June each year in an area extending from West of Scotland to the South coast of Ireland. Fish are sold on behalf of the vessels through Inishmore Fish Sales Ltd., which has

something of a gentleman's agreement to supply fish to a local pelagic processor based in Rossaveal. The plant has the capacity to process 350 tonnes of fish per week and employs up to 200 people, 87% of which live within the Region, during the pelagic fishing season. Fifty of these individuals are employed on a full time basis as the plant undertakes processing of small quantities of nephrops during June – September. It is estimated from data collected from those working on behalf of this processor that fish supplied by the two pelagic vessels helps to support 89 families within the Region. Data collected indicates that these jobs contribute between 20% and 75% of total annual household incomes. In terms of the age structure of the workforce it was found that women with young families are most likely to seek work in the processing industry. This is of socio-economic significance as it provides employment opportunities for women in an area where there are few alternative economic activities for females. A total of 268 people are thought to depend, to varying degrees, on incomes from the pelagic processing sector.

This employment and significant socio-economic contribution is increasingly threatened by trends affecting the operational viability of local pelagic vessels. Given recent increases in the cost of transport, competition between Irish processors for limited supplies of fish and continued imports of cheaper pelagic products into the EU from non-member States, it is worrying to note that Irish processors will soon have to sell fish below the cost of production in order to maintain market presence. This trend will lead to consolidation amongst primary producers and processors within the Irish pelagic industry.

### 3.4 Conclusion

There is considerable anger amongst the Region's fishing industry that national legislators have allowed local fisheries to deteriorate to such an extent that, combined with similar processes of resource degradation at a national level, the future of the fleet and processing industry is threatened. The introduction of new vessels though largely welcomed by the Region's industry are seen as one of many steps that need to be taken in order continue maintain the viability and competitiveness of the industry as a whole. If supporting measures, e.g. integrated fleet and fisheries management, are not put in place these boats could conceivably jeopardise the viability of all vessels less than 20 metres both within and outside of the Region. The long-term health of the Region and its fishing industry depends upon healthy, well-managed, sustainable fish stocks. Under prevailing fisheries and fleet management policies this is not a realistic or achievable goal. Unsurprisingly those consulted, whether boat owners or crews, requested the immediate development of an integrated fisheries management plan that would take into consideration all pertinent issues affecting the long-term economic viability of the fleet as it is currently structured. The most important element of any such scheme is a detailed national development plan for all segments of the fishing fleet. From this fishermen would like to get a general indication of what they can expect from fisheries and administration of the industry in the future.

# SECTION IV

## CONCLUSION

### 4.1 Conclusion

The Region, indeed Ireland, is faced with a complex and seemingly contradictory challenge. New vessels are urgently required to renew an ageing and increasingly unsafe fleet. Yet if existing boats are replaced with larger vessels of greater catching capacity the near shore sector, particularly boats between 12 and 20 metres, will become unviable as a consequence of fishery depletion and increased economies of scale. The loss of this segment of the fleet will have serious repercussions for Ireland's fishing dependent communities as it is the operation of these boats that support the greatest number of people both at sea and ashore whilst also operating as a training ground for young skippers. The challenge then is to renew the fleet without destroying either fisheries or the dependent communities.

There is no easy solution to this problem but, as fishermen have little faith in traditional approaches, it is necessary to consider alternatives to both fleet and fisheries management. Central to any solution is the introduction of measures that will bring about the end of the race to fish and resulting cyclical increases in economies of scale. Fortunately this is an issue being considered by every country in the North Atlantic and tools are available to fishery managers to mitigate the need to overfish. These management strategies are based around the allocation of fishing rights to vessels, e.g. Individual Quotas and Individual Transferable Quotas, or specific segments of a fishing fleet. Given that Ireland is part of the European Union Single Market it is thought that IQs and ITQs would result in centralisation of the ownership of the rights to fish, as these would be gradually bought up by a small number of large corporations as has happened in both New Zealand and Iceland. Given the potentially negative implications of such developments for fishery dependent communities their introduction is not considered advisable. An alternative to the allocation of quotas to individuals is to allocate them to Region'ss or communities or introduce real time fisheries management capable of reacting to seasonal or daily developments within fisheries.

The complexity of introducing the latter systems is considerable. At a fundamental level they require a shift in how fisheries and dependent communities are perceived by the State. This 'shift' can only be brought about through the education of policy formulators and the political establishment as to the integral importance of fisheries to coastal communities. The education process is the responsibility of fishermen and their representatives given that they know what is happening on the ground. Without sufficient information, particularly biological and economic data, regarding trends affecting fisheries or the catching sector at this level, policy formulators cannot be expected to develop coherent strategies for the sustainable management of Irish fisheries. Therefore it is the responsibility of the various State bodies, e.g. The Marine Institute and Bord Iascaigh Mara, to work in partnership with fishermen and their representatives to collect relevant datasets pertaining to fisheries and the operation of the fleet and provide the expertise to comprehensively analyse data and information that will allow trends to be assessed and appropriate regulatory changes to be made.

At present Irish fisheries are not sustainable. There are a vast number of reasons why, many of which operate at a supranational level and are often considered to be beyond the control of fishermen or the State. Potential future trends outlined in this report have not been preordained. It is not certain that near shore fisheries will continue to decline as a consequence of resource

degradation or that the forces of globalisation will relegate large sections of Ireland's fishing industry to the pages of history. The fishing industry and policy formulators do have choices open to them that can and will change the future of all of those individuals that assisted in this research or that depend on the fishing industry. The most important and pressing choices is the need to decide whether Ireland wants sustainable fisheries capable of supporting dispersed communities in the future. If the answer to this question is yes then all concerned must decide what they are willing to do to bring about the necessary changes that will sustain fisheries for the benefit of the next generation. What is suggested here is recognised as being difficult to achieve given the opposition to change by powerful sectional interests at local, national and EU levels. However the trends and developments outlined in this report suggest that the futures of large sections of the fishing industry are in doubt. There is currently a window of opportunity available to both the industry and the State to influence future development through the adoption of coherent fishery management strategies and representation of the needs of Irish fishing communities at the review of the Common Fisheries Policy in 2002.

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