

# Employment trends in all sectors related to the sea or using sea resources

Ireland



European Commission  
DG Fisheries and Maritime Affairs

# **An exhaustive analysis of employment trends in all sectors related to sea or using sea resources**

Country report – Ireland

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ECOTEC Research & Consulting

► Priestley House  
12-26 Albert Street  
Birmingham  
B4 7UD  
United Kingdom

**T +44 (0)121 616 3600**  
**F +44 (0)121 616 3699**  
**[www.ecotec.com](http://www.ecotec.com)**

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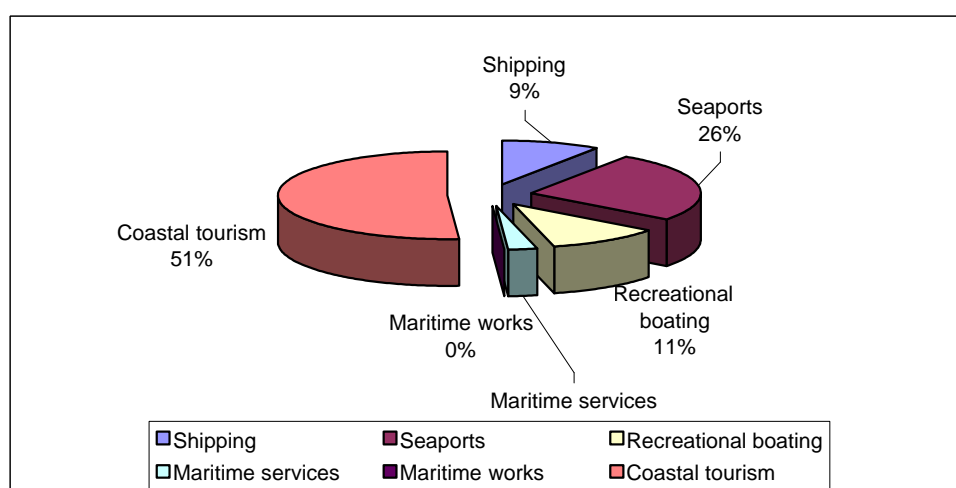
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## 1.0 Summary<sup>1</sup>

In 1998, the Marine Institute published figures on the value of the marine food, leisure and technology sectors to the Irish economy. These were estimated to contribute over €1.2 billion annually to the economy and to support over 32,000 jobs - with shipping, ports and harbours and seabed resources being the most important sectors. At the moment the core Irish maritime sectors employ in the region of 8,000 people. This figure refers to shipping and related maritime industries, excluding the figures related to fishing and food processing. Although fisheries is not analysed as a part of this study, it is worth mentioning the fishing industry is also of great significance to the Irish economy. At the end of 2002, the EC fleet register contained 1,376 Irish fishing vessels with an economic impact of approximately €180,000 annually<sup>11</sup>.

Direct sea related employment, as defined in this study, is fairly marginal in Ireland. According to this study 7,516 were employed in the maritime activities in 2004/2005. Coastal tourism is the largest sector representing just over half of total employment. Seaports are the second largest sector with nearly 2,000 jobs. New jobs were created in the shipping sector in the early years of the decade reaching over 1,300 jobs in 2001 and 2002 but employment in this sector has been in serious decline since 2005 due out-flagging plans of Irish Ferries.

**Figure 1.1 Share (%) of employment by sub-sectors, 2004/2005**



Source: ECOTEC Research & Consulting, 2006

<sup>1</sup> This report excludes employment related to fishing.

<sup>11</sup> The Irish contribution to the Green Paper on new European Maritime Policy, 2005

**Table 1.1 Employment in the Irish sea related sectors, 2004/2005**

	2001	2002	2003	2004	2005
Shipping	1,029	1,332	1,373	1,219	700
Seaports	-	-	-	1,958	-
Recreational boating	-	-	-	800	-
Maritime services	-	-	-	-	210
Maritime works	-	-	-	-	12
Coastal tourism	-	-	-	3,836	-

## 2.0 Shipbuilding

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The Irish shipbuilding sector employed 1,633 persons in 1975 of which 1,427 were involved in building new ships, whilst the rest were involved in repair and other activities. Currently there are no shipbuilding activities in Ireland<sup>i</sup>. The last Irish dockyard, Verholme, was closed in 1984. Today many Irish vessels are repaired for example in the Netherlands.

The Verholme site, now known as Cork dockyard, continues to provide some opportunities for repair and engineering businesses. Some companies in the port of Dublin also provide some minor ship repair services for recreational and fishing vessels.

## 3.0 Marine equipment

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Currently, no information is available on employment in the marine equipment sector. However, no significant activities are taking place in this sector.

## 4.0 Shipping

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Shipping and the movement of goods by sea is vitally important to the Irish economy. In fact sea-based transport accounted for 84% of the total volume and 58% of the value of goods traded by the Irish economy in 2004<sup>ii</sup>.

An introduction of the Irish tonnage tax in 2001, as well as social insurance refund scheme and low corporate taxes and other measures introduced by the Government, have attracted considerable interest from the part of the national and European shipowners in recent years. This interest translated into the increase in the number of registered ships. In 2003, there were 47 ships registered with the Irish Chamber which represented an increase of 68% since 1999. Leading Irish shipping firms, Arklow Shipping and the Irish Continental Group, along with newly established Maritime Management Limited have been the main contributors to the this growth in the Irish Merchant Fleet and 16.8% growth in employment<sup>iii</sup>. Recent developments in the Irish shipping sector have however turned this trend around (see the section on employment for further information).

The total tonnage of goods handled in Ireland has increased from 32,380 tons to 47,720 between 1995 and 2004. This demonstrates an increase of 47% over a 10-year period.

<sup>i</sup> CESA Annual Report 2004-2005

<sup>ii</sup> Indeco, p.iii

<sup>iii</sup> IMDO Newsletter, November 2004

**Table 4.1 Total tonnage of goods handled (1000s tonnes), 1995 - 2004**

	All Regions of Trade	GB and NI	Other EU	Non-EU	Other Ports	Coastal Trade
1995	32,380	n.a	n.a	n.a	n.a	n.a
1996	33,918	n.a	n.a	n.a	n.a	n.a
1997	36,330	n.a	n.a	n.a	n.a	n.a
1998	39,954	n.a	n.a	n.a	n.a	n.a
1999	42,928	n.a	n.a	n.a	n.a	n.a
2000	45,273	17,343	11,562	5,396	8,387	2,585
2001	45,795	17,576	11,817	5,241	8,819	2,342
2002	44,919	18,803	11,692	4,302	8,566	1,556
2003	46,165	18,900	12,476	4,632	8,593	1,563
2004	47,720	19,344	14,291	4,241	8,539	1,305

Source: Central Statistics Office Ireland, 2006

Most goods are shipped by containers and the Irish trade depends heavily on short sea shipping. The bulk of the exports and imports are trans-shipped through larger European ports. Currently over 90% of Ireland's registered Merchant fleet is engaged in European Short Sea Shipping Activity. Irish short sea operators are the largest employers in the Irish shipping sector with just over 2,800 employees in 2003<sup>I</sup>. The sector's operating capacity has continued to grow. Factors that may negatively influence the development of the sector are primarily:

- rising fuel costs; and
- higher charter rates on the Irish shipping sector<sup>II</sup>.

According to the Marine Institute the contribution of the shipping sector to the economy was €1.6 billion in 2003<sup>III</sup>. On average the shipping sector in Ireland contributes about €1.45 billion to the Irish economy every year<sup>IV</sup>.

<sup>I</sup> Short sea operators, IMDO Newsletter – December 2003, No 7

<sup>II</sup> Tougher market conditions impact on the Irish short sea services, IMDO Newsletter - November 2005, No 14

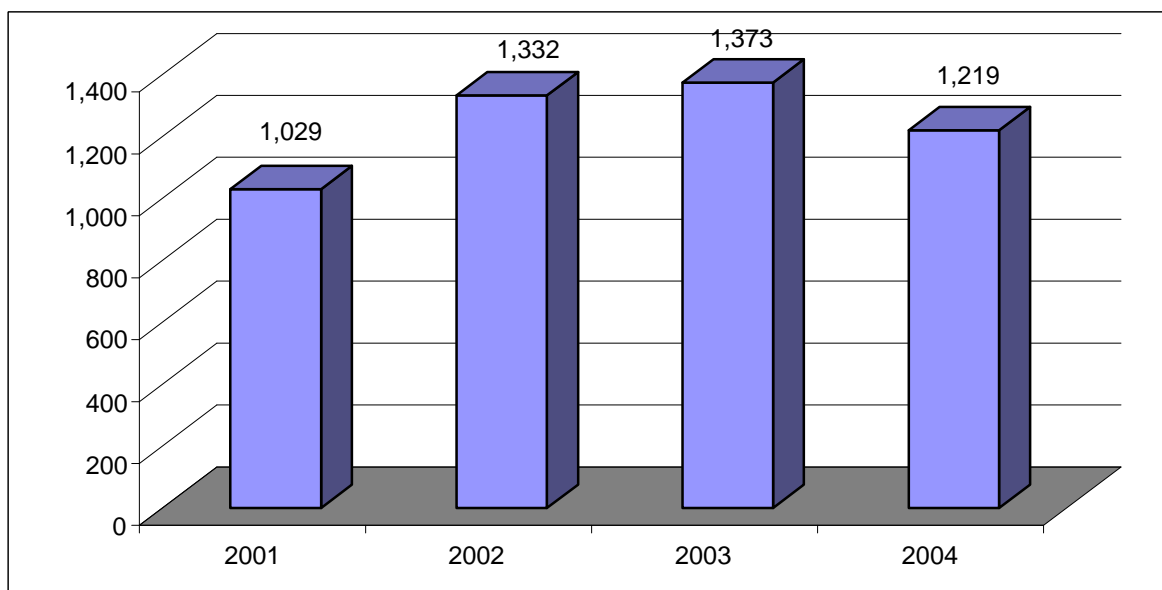
<sup>III</sup> World Marine Markets, A Report to WSTH by Douglas-Westwood Ltd., March 2005, p.27

<sup>IV</sup> The Irish contribution to the Green Paper on new European Maritime Policy

## 4.1 Employment trends

The Irish Maritime Development Office estimates that employment in international shipping has increased by an average annual rate of 5.6% since the introduction of the tonnage tax. As the following figure shows, in 2004, the Irish flagged vessels employed 1,219 seafarers. Most of the seafarers were employed mainly on regular passenger and ferry services operating between Ireland, the UK and France.

**Figure 4.1 Seafarers employed on Irish Flagged ships**



Although employment in 2004 was higher than in 2001, it was already lower than in 2003. Moreover, in 2005, the shipping sector experienced a substantial blow as a result of the Irish Ferries dispute. Irish Ferries, which is the largest employer for seafarers in Ireland, sought to put their three remaining Irish registered ferries under the Cypriot flag. As a result the company offered voluntary redundancies to 543 workers in order to replace them with workers from the Eastern European Member States. As Irish labour law, including the arrangements on the minimum wage, does not apply on ships under foreign flags, the Latvian seafarers were offered €3.60 per hour which is around 50% of the Irish National Minimum Wage.

These plans sparked protests among the trade unions and seafarers. On December 14, 2005 the officials from SIPTU (trade union) and Irish Ferries reached an agreement that supported re-registering ships to a foreign flag in order to save €11 million in cost savings annually. The company's fourth ferry, the MV Normandy, is on the Bahamas flag since January 2005. Some 150 jobs there were lost on that vessel in 2005.



As a result of redundancies among workers on board Irish Ferries, overall employment in the Irish maritime transport industry shows a significant decline. In excess of 500 employees were offered redundancy at the end of 2005. This brings down the number of seafarers on board Irish flagged ships to circa 700.

## 4.2 Training and skills

The education sector in the maritime field is strengthening. In 2004 two new schools opened in Ireland:

- National Maritime College of Ireland at Ringaskiddy in County Cork. The college will train merchant marine and Irish Naval Service cadets. It is expected that foreign Cadets will also be trained there.
- In Dublin, the 3rd level maritime initiative at the National College of Ireland. In September 2004 it commenced its first year of a new BA in International Shipping<sup>I</sup>.

These initiatives are seen as a long-term positive influence towards ensuring the availability of highly skilled personnel for the industry and enabling continuous training opportunities for the sector. However, due to the falling number of sea-based employees a large part of educational activities is targeted at the progression from sea to onshore service<sup>II</sup>.

## 5.0 Seaports and related services

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The main commercial ports in Ireland are State owned companies established under the Harbours Acts 1996 and 2000. Each port has a Board of Directors and a Chairman which are both appointed by the Minister of the Marine. The Board represents the commercial sector<sup>III</sup>. The Directors of each port company decide on the commercial policy of the port. The responsibility to implement this policy lies with port management.

Reflecting the global trend, containerised transport has seen a 28.9% growth to and from Ireland over the period from 2000 and 2004<sup>IV</sup>. When looking at trends from recent years in more detail, in spite of the problems in 2003 caused by the exchange rate against euro and dollar, the Irish Port companies recorded a combined overall increase of 3% in total

<sup>I</sup> IMDO Newsletter, April 2005

<sup>II</sup> ISEAS, IMDO newsletter no 14

<sup>III</sup> Factual Report on the European Port Sector, European Sea Ports Organisation, 2004-2005, p.90-91

<sup>IV</sup> Indeco, p.iv

tonnes handled. All major ports, except for Shannon Foynes, recorded increased volume increases in trade. The Shannon Foynes port was hit by the closure of a mining plant<sup>I</sup>.

Irish ports handled over 50 million tonnes of goods in 2003 which represents a 3% increase in comparison to the previous year. In 2004, this figure rose to 56 million tonnes<sup>II</sup>. 2004 was also a record breaking year with an increase of 6 per cent on its container traffic<sup>III</sup>. The growth in container trade was reflected mainly at the ports of Dublin, Rosslare, Cork and Waterford with all of them recording increases in the growth of unitised freight in both load on/load-off and roll on/roll of modes. In contrast, growth in traditional break bulk and bulk trades was just over 1% nationally.

**Table 5.1 Maritime Container Cargo by Direction, Port, Statistic and Year**

Maritime container cargo by direction, port, statistic and year (total units)	2000	2001	2002	2003	2004
Cork	73,839	72,004	73,528	82,746	93,114
Drogheda	4,995	24,078	32,865	31,338	24,817
Dublin	271,857	264,519	274,203	298,633	325,058
Shannon Foynes Port	n.a	n.a	n.a	n.a	385
Waterford	68,612	67,937	72,893	85,420	87,116
<b>Total</b>	<b>419,303</b>	<b>428,538</b>	<b>453,489</b>	<b>498,137</b>	<b>530,490</b>

Source: CSO, 2006

The country's three largest ports, measured by the share in tonnage, are Dublin, Shannon Foynes and Cork with their shares at 36%, 22% and 20% respectively in 2003<sup>IV</sup>. Dublin port handled over 1-3 of all commercial traffic in 2003 and recorded 7% increase in traffic<sup>V</sup>.

**Table 5.2 Total Tonnage of Goods Handled (000 Tonnes) by Year, Port and Type of Cargo**

Year	All types of cargo	Roll-on/Roll-off	Lift-on/Lift-off	Liquid bulk	Dry bulk	Break bulk and all other types of cargo
2000	45,273	8,947	6,262	14,008	14,463	1,593
2001	45,795	9,253	5,731	14,247	14,832	1,732
2002	44,919	9,449	5,919	13,154	14,775	1,622

<sup>I</sup> The Irish Maritime Transport Economist, Volume 1, September 2004

<sup>II</sup> Indeco, p.iii

<sup>III</sup> Maritime Transport Economist, IMDO

<sup>IV</sup> Ibidem, p.18

<sup>V</sup> Ibidem, p.18

Source: CSO, 2006

State commercial seaports generated around €129m in revenues during 2004. This figure relates to the direct operations of ports and harbours and does not reflect the overall economic contribution arising from the activities supported by the commercial seaports<sup>I</sup>. The Irish seaports have contributed directly €132.5m to the Irish economy. This figure includes expenditure on capital projects, purchase of goods and services and wages and salaries<sup>II</sup> (see table below).

**Table 5.3 Gross economic impact in millions € in 2004**

	Amount
Direct	132.5
Indirect	70.5
Induced	32.5
<b>Total</b>	<b>235.5</b>

Source: Indeco, 2006

The direct expenditure of the Irish seaports is estimated to have further generated indirect and induced impact on the economy that amounted to €103m in 2004. The impact of industries related to seaports can be found in the next section of this chapter.

## 5.1 Employment

The Indecon report of January 2006 has presented detailed calculations on direct, indirect and induced the economic impact arising from the presence and operation of commercial seaports<sup>III</sup>. In 2003, a total of 2,522 full-time equivalent jobs was supported by the activities of ports and harbours (see table below). These figures were calculated on the basis of State commercial seaports' overall expenditure in 2004, which amounted to €132.5m and believed to have generated 1,958 full-time equivalent jobs (directly and indirectly). This expenditure is estimated to have generated additional €103m in 2004, which contributed to 564 full-time FTEs (induced impact)<sup>IV</sup>.

**Table 5.4 Direct, indirect and induced employment in Irish ports / harbours**

Employment	2004
Direct impact	793
Indirect impact (stevedoring etc.)	1,165

<sup>I</sup> Indeco, p.vii

<sup>II</sup> Indeco, p.ix

<sup>III</sup> Economic Impact of State Commercial Seaports on the Irish Economy, Irish Ports Association, Indecon, January 2006, p.vii

<sup>IV</sup> Economic Impact of State Commercial Seaports on the Irish Economy, Irish Ports Association, Indecon, January 2006, p.ix

<b>Total</b>	<b>1,958</b>
Induced impact	564

Source: Indecon, 2006

However, it must be borne in mind that these figures relate to full-time equivalents and often are lower bound estimates. Therefore, the full scale of employment might not be reflected in these figures. Also, a number of port companies do not directly employ staff to undertake activities in ports. This applies in particular to stevedoring where the services are delivered by the licensed companies operating in the port<sup>1</sup> - and are likely to come under indirect employment in this particular study.

## 6.0 Recreational boating industry

Information on this section refers to all aspects of the recreational boating industry including manufacturing, operation of marinas, marine insurance companies, recreational boating tourism and equipment. Recreational boating activity accounted for almost 1.5 million day trips and 148,500 overnight trips during 2003<sup>II</sup>. An estimated 142,800 adults engaged in some form of boating activity (out of 3,013,000 adults in the country) in 2003. Some 115,500 adults were engaged in sea related boating activities, which shows that a great majority of the recreational boating industry activities take place at sea rather than in inland waterways. Approximately 80% of overnight stays taken as a part of a boating trip relate to boating at sea rather than in inland waterways.

**Table 6.1 Participation to recreational boating activities, 2003**

	Adult participation	Estimated no of total nights
Sailing at sea	58,800	149,700
Boating at sea	32,100	22,500
Boating in power boats at sea	24,600	50,500
Inland waterways	42,800	59,500
Total	142,800	282,200
<b>Total sea related</b>	<b>115,500</b>	<b>222,700</b>

Source: Irish Marine Institute (2003) *A National Survey of Water-based Leisure Activities in Ireland 2003*.

Recreational boating is still an up and coming activity in Ireland with one of the lowest ratios of boat ownership, even though the country is surrounded by the sea. The most popular boating is sailing at sea, which accounted for an estimated 606,000 day trips and 82,500 overnight trips, generating domestic revenue of €24.7 million in 2003.

<sup>I</sup> Indecon, p.viii

<sup>II</sup> Marine Institute (2003) *A National Survey of Water-based Leisure Activities in Ireland 2003*.

## 6.1 Economic impact

Domestic spend on boating at sea as well as on inland waterways generated almost €50 million in 2003<sup>1</sup>. The total sea related domestic boating activity came up to the value of €32.9 million in 2003. Manufacturing and rental of boating related equipment generated nearly €11 million, day trips €5.1 million and overnight stays €17 million.

**Table 6.2 Breakdown of spend (€millions)**

	Equipm.	Daytrip	Overnight	Total
Sailing at sea	9.4	3.1	12.3	24.8
Boating at sea	0.6	0.6	2.8	4
Boating in power boats at sea	0.7	1.4	2.0	4.1
Inland waterways	4.2	6.3	6.4	16.9
Total	14.9	11.4	23.5	49.8
<b>Total sea related</b>	<b>10.7</b>	<b>5.1</b>	<b>17.1</b>	<b>32.9</b>

Source: Marine Institute (2003) A National Survey of Water-based Leisure Activities in Ireland 2003.

## 6.2 Employment trends

Information on the recreational boating industry have been obtained from several different sources. According to consultations with the Irish Marine Federation, this sector has experienced growth both in economic and employment terms over the past decade. The main reasons contributing to the growth have equally been the growth of the Irish population as well as the growth of the Irish economy. According to the estimates of the Federation the sector provides approximately 800 jobs directly. They also estimate that 20% of small companies in the sector have been established in the past 5 years. Currently the Irish Marine Federation represents approximately 237 companies.

A study carried out by the Irish Marine Institute<sup>II</sup> on the recreational boating industry in 2003 shows that the sector provided approximately 413 service jobs directly and 248 jobs indirectly. The sector has witnessed substantial growth between 1995 and 2005 leading to employment doubling between this ten-year period. No exact figures are available for employment generated by sea related boating. It can only be concluded that most employment is generated through boating activities related to sea rather than inland waterways.

<sup>I</sup> Marine Institute (2003) A National Survey of Water-based Leisure Activities in Ireland 2003.

<sup>II</sup> Marine Institute (2003) A National Survey of Water-based Leisure Activities in Ireland 2003.

**Table 6.3 Employment in recreational boating, 1995 - 2005<sup>1</sup>**

	1995		2003		2005
	Total	Direct	Indirect	Total	Total
Overnight expenditure	n.a	217	131	348	n.a
Expenditure on equipment	n.a	141	85	226	n.a
Expenditure on day trips	n.a	55	32	87	n.a
<b>Total</b>	<b>400</b>	<b>413</b>	<b>248</b>	<b>661</b>	<b>800</b>

Source: Irish Marine Institute, Irish Marine Federation

### 6.3 Employment projections

The recreational boating industry has a tremendous growth potential in Ireland for a number of different reasons. For example, the ratio of boat ownership is very low in Ireland, 1 boat per 172 persons, which is indeed one of the lowest rates in Europe. The low level boat ownership in combination with a growing population and one of the fastest growing economies in Europe presents a remarkable opportunity for the industry. Furthermore, the country is obviously surrounded by sea thus enhancing opportunities to expand the sector.

The main obstacle for employment development in the sector has however been said to be the poor condition or complete lack of facilities supporting the industry. The country's marinas are too 'crowded' and waiting lists are long. This makes the sale of new and used boats more difficult as their owners find it difficult to find marinas<sup>II</sup>. A survey carried out by the Marine Institute found that a further 68,000 persons would take up some kind of boating activity at sea if facilities were improved.

### 6.4 Skills and training

Companies that manufacture boats, vessels and engines have reported skill shortages. Otherwise employment in the sector is characterised by low turnover levels. Recently the Irish Marine Federation has started to run an Interreg programme called Flying Start that provides management training for employees in the recreational boating industry. Currently the first phase of training is under way with 15 students taking the course leading to a certificate in marine leisure management. The course is focussed on equipping participants with skills in operations management, marketing and e-business.

<sup>I</sup> Figures for 1995 and 2005 are based on estimations by Marine Institute.

<sup>II</sup> Lack of infrastructure causes marine leisure crisis, 23.09.2005, Irish Marine Federation website: [www.irishmarinefederation.com](http://www.irishmarinefederation.com)

## 7.0 Maritime services

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Employment in shore side professional shipping services sector has grown steadily over the last 4 years in particular with some niche sectors developing in shipping finance and IT. There is a strong commitment on the part of the Irish Authorities to encourage the development of maritime cluster concept and the services related to the maritime sector.

Another important growth factor for the sector is the growth in added value services, such as banking, accounting and legal services. In 2003, the Bank of Ireland established a dedicated Shipping Finance team in Dublin and entered the international maritime finance sector<sup>1</sup>. Furthermore, Transas - a global maritime IT specialist - is relocating Global Headquarters to Cork and is expected to bring 30 new jobs. Other international companies are also establishing maritime dedicated services in Ireland. The second major Irish bank to establish dedicated international shipping finance operations was AIB. Growth is also envisaged in areas such as ship finance, ship management, legal and shipbroking. Financial institutions such as Royal Bank of Scotland have followed with announcements of a new Maritime Unit and Centre of Excellence located at their IFSC-based Structured Asset Finance division.

No breakdown of employment is available for the sector. Researchers have been able to get hold of some, although limited, data on some key institutions (see table below).

**Table 7.1 Employment in the maritime service sector**

Institution	Number of employees
National Maritime College of Ireland	70
Marine Institute	140

Source: ECOTEC Research & Consulting, 2006

## 8.0 Maritime works

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The Irish Dredging Company (a member of the Royal Boskalis Westminster Group) employs 2 full time members of staff and then staff on a project basis. The total current employment is 12 persons.

## 9.0 Coastal tourism

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<sup>1</sup> Inward investment – Cluster development, IMDO Newsletter – December 2003, No 7

Ireland is one of the only countries where employment in water based recreational sectors has been studied in more detail<sup>I</sup>. According to this study almost 1.5 million adults in Ireland participated in some form of water-based activity in 2003. These activities include 2.5 million overnight stays and 29 million day trips<sup>II</sup>. Water-based tourism accounts for 22% share in the domestic tourism market. The most popular coastal tourism activities include seaside / resort trips, angling, watersports and nature related coastal activities.

## 9.1 Employment trends

Leisure and marine-based tourism is estimated to have generated between 3,200 – 3,760 jobs in 2003 (direct employment). This figure, together with indirect employment, amounts to 5,100 or even up to 6,000<sup>III</sup>. The difference between the figures comes from the fact that they are based on calculations of jobs per expenditure. It is assumed that the direct employment multiplier in 2000 was as 10.8 jobs per €1 million spent on domestic tourism.

The above mentioned figures however relate to all water based tourism activities. Table 9.1 below provides a breakdown of sea related tourism activities. According to this data 2,986 jobs were created directly by the sector and further 4,785 jobs were generated indirectly in 2003.

**Table 9.1 Estimated direct and indirect employment sea based recreational tourism in 2003<sup>IV</sup>**

Activity	Direct employment	Indirect employment
Angling	239	384
Watersports	337	539
Seaside/resort trips	2,410	3,862
<b>Total</b>	<b>2,986</b>	<b>4,785</b>

Source: Maritime Institute, 2003

Since the above mentioned data have been calculated on the basis of expenditure, the analysis of employment trends related to marine activities must take into account the fact that not all of the expenditure has to be related to marine activities. The displacement ratio is the amount of expenditure that would have taken place anyway. Taking into account the 50% replacement ratio the actual employment figures are lower (see table below).

<sup>I</sup> A National Survey of Water-based Leisure Activities in Ireland in 2003, Marine Institute

<sup>II</sup> Marine Institute website: [www.marine.ie](http://www.marine.ie).

<sup>III</sup> A National Survey of Water-based Leisure Activities in Ireland in 2003, Marine Institute, p.24

<sup>IV</sup> The direct employment relates to the jobs supported by direct expenditure on marine services, namely employees of hotels, restaurants, boat hire, etc. The indirect employment relates to the secondary employment among groups which supply the operators delivering marine services, such as farmers supplying food to hotels and restaurants or manufacturers of engine to the boats



**Table 9.2 Estimated direct and indirect employment in coastal tourism in 2003 after 50% displacement ratio**

Activity	Direct employment	Indirect employment
Angling (inland waterways and sea)	190	305
Watersports	301	481
Seaside/resort trips	2,003	3,211
<b>Total</b>	<b>2,494</b>	<b>3,997</b>

Source: Maritime Institute, 2003

The following provides more information on each sea related tourism sector individually:

- Seaside / resort trips have generated €278m in domestic tourism revenue and supported an equivalent of 5,214 jobs in coastal communities. Although generally the participation rates have not substantially changed, there is a noticeable trend of decreasing participation in swimming in the sea between 1996 and 2003. The reasons for that decline are environmental concerns and poor infrastructure<sup>I</sup>.
- Sea angling has continued to hold a strong position in the Irish coastal tourism generating over €59m in domestic revenue and supporting 495 direct and indirect jobs. The most popular activity that fall under angling is freshwater game hunting, and the largest share of expenditure is for angling equipment. Although the number of those involved in angling remained constant, there was an increase among sea anglers<sup>II</sup>.
- Watersports include water / jet skiing, windsurfing, sailing, scuba diving, snorkelling, and other categories. It generated €35m in revenue, and more than half of that amount was spent on equipment<sup>III</sup>. It supports 782 direct and indirect jobs.
- Nature-related Coastal Activities include whale / dolphin, bird watching and visiting nature reserves. It generated €12.3m in revenue. However, poor facilities are likely to have impacted on the decline in the number of people that go whale and bird watching<sup>IV</sup>.

In addition to water based recreational tourism, the INDECON study on the economic impact of port related services studied the employment impact of cruise tourism. On the basis of expenditure INDECON established the number of jobs created ashore by visitors and staff of cruise liners. According to this study cruise liner passengers and crew contribute to the direct creation of 850 full-time equivalent jobs job across the economy.

Consequently, coastal tourism in Ireland contributes to the creation of 3,836 jobs in 2003/2004.

<sup>I</sup> A National Survey of Water-based Leisure Activities in Ireland in 2003, Marine Institute, p.1

<sup>II</sup> Ibidem, p.1

<sup>III</sup> Ibidem, p.2

<sup>IV</sup> Ibidem, p.2

## 9.2 Employment forecast

Although no exact employment forecast are available it can be assumed that together with the growth of expenditure on marine services, employment is likely to grow. In the case of angling, participation rates are thought like to increase by 38% among the existing participants and 39.2% among potential participants should the proper facilities be put in place<sup>1</sup>. This is also true for watersports where the participation rate among the existing participants would increased by 9.5% and by 89.4% among potential participants if facilities were improved. The increase in participation rates among existing participants in the seaside / resorts trips would be 115.4% and 85.8% among the potential ones.

It is clear that these results do not demonstrate real behaviour but only declared intentions. However, they show that there is a potential for improvement that might result in the increased revenue from coastal tourism and consequently might increased employment.

<sup>1</sup> Ibidem, p.34

## 10.0 Ocean and wave energy

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Ireland aims to become a leading nation in ocean energy technology and this is a maritime sector in Ireland with a great growth potential – in terms of economic value and employment. For example, the Marine Institute / Sustainable Energy Ireland (SEI) initiative has led to an opening of a wave energy test site a mile and a half off the coast of Spiddal, County Galway. The 37-hectare site is open to entrepreneurs and engineers to test prototype ocean energy generators.

The Marine Institute and SEI have to date invested €300k in university based research and a further €850k in industry based research of ocean energy technology.