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

The Netherlands

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 – the Netherlands

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1.0 Summary[I]

Total direct employment in the core maritime sectors amounted to 107,890 in 2002[II]. Some 11,500 companies were active in the maritime sectors in 2002. In addition to the more traditional sea related sectors, the Royal Navy of the Netherlands employed 16,110 people and coastal tourism provided 85,110 jobs in 2002.[III] Therefore the total direct employment in the sea related sectors, as classified in this study, amounted to 209,110. Besides these sectors, the fishing industry generated 5,650 jobs and inland shipping 11,600 jobs in 2002. Direct employment in the maritime activities of the Netherlands comprises about 1.8% of total employment in the country.

Table 1.1 Employment in sea related sectors, 1997 and 2002

	Direct		Indirect	
	1997	**2002**	**1997**	**2002**
Shipping	17,732	19,850	5,200	5,500
Shipbuilding, excluding scapping	10,740	10,270	11,500	10,790
Shipbuilding	8,270	7,780	na	Na
Inland vessels	2,470	2,490	na	Na
Offshore	19,340	19,080	13,600	13,440
Drilling	1,429	1,157	na	Na
Construction and installation	7,447	7,097	na	Na
Other offshore-related activities	10,471	10,826	na	Na
Maritime works, figures relate to 1998	5,000	5,170	7,400	7,620
Seaports and related services	26,600	26,750	11,000	10,950
Cargo handling	13,830	13,807	na	Na
Shipping-related activity	9,600	9,838	na	Na
Management and administration of ports	1,690	1,831	na	Na
Pilotage	1,490	1,275	na	Na
Recreation	14,190	15,130	5,570	6,020
Recreation vessels	6,468	7,015	na	Na
Recreation services	7,720	8,295	na	Na
Maritime services	9,080	9,560	3,700	3,890
R&D and consultancy	na	1,355	na	Na
Classification and inspection	na	699	na	Na
Support services	na	7,527	na	Na
Marine equipment	13,050	13,190 in 2002 /13,500 in 2005	6,090	5,550

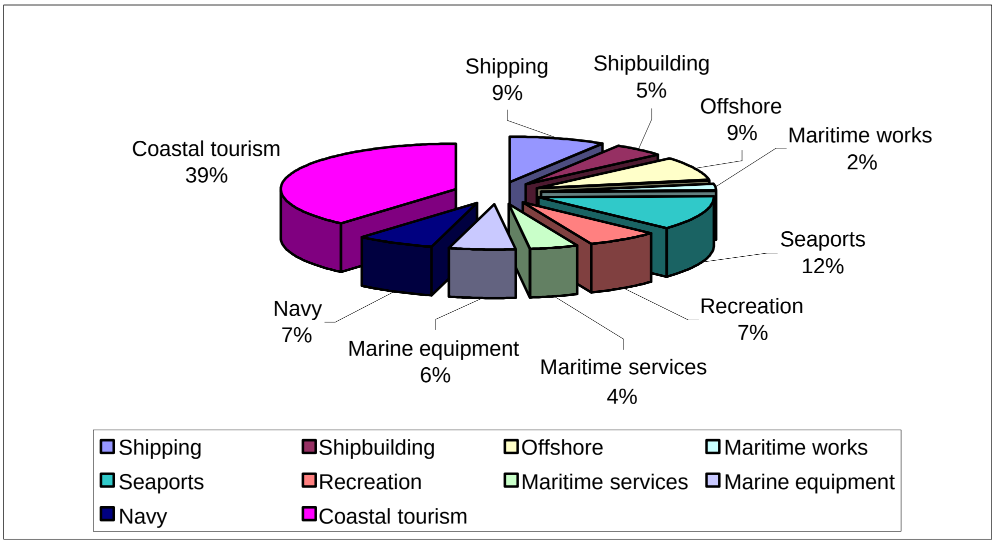
[I] This report excludes employment related to fishing.
[II] Inland shipping sector employment has been deducted from these statistics.
[III] R van der Aa, C Jansen and M Stuivenberg (2004) *Monitor Maritieme Arbeidsmarkt 2003*, NML-series, Delft

	Direct		Indirect	
Navy	na	16,110	na	Na
Coastal tourism	80,150 in 2000	85,110 in 2002 / 81,990 in 2005	na	Na

Source: ECOTEC, 2006 and ECORYS (2004) De Nederlandse maritieme cluster, Policy Research 2003, Monitor Maritieme Arbeidsmarkt

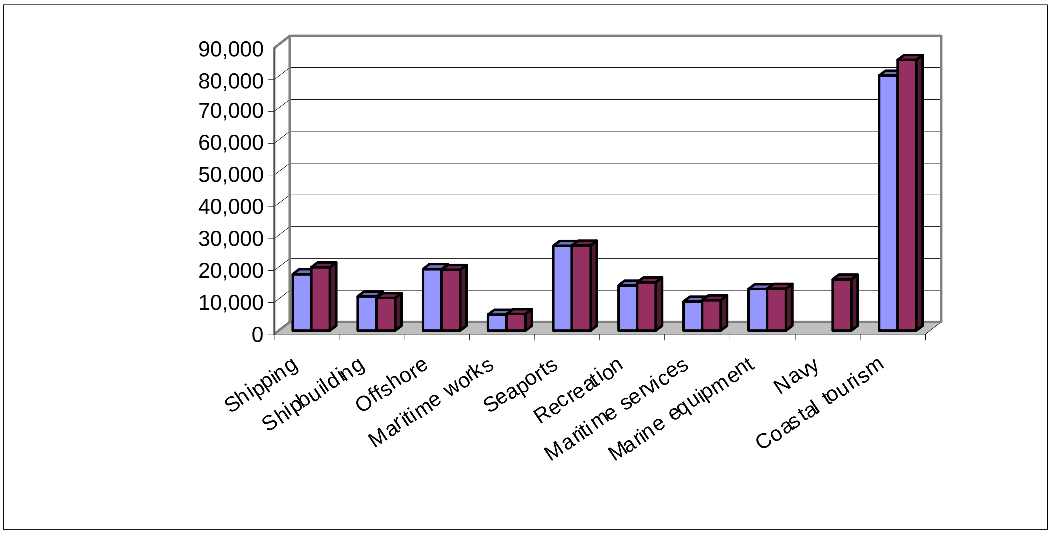
As the following graph 1.1 shows, coastal tourism is by far the largest sector in the sea related cluster constituting 39% of total employment, followed by more traditional maritime sectors; seaports (12%), recreational boating (7%) and shipping (9%).

Figure 1.1 Share (%) of employment by different sub-sectors, 2002



In general, most sectors have a stable employment situation, apart from shipping and coastal tourism which experienced more than average levels of growth in employment between 1997 and 2002. Shipbuilding and offshore supply are the only sectors where jobs were lost during this time period, however, these reductions in employment have been marginal.

Figure 1.2 Employment trends, 1997 - 2002



In the Monitor of the maritime labour market 2003, the main labour-market trends were described as follows:[I]

- **Increase in flexible employment**

The maritime cluster tends to employ a higher proportion of flexible workers, including agency staff and employees on fixed-term contracts, than the national workforce as a whole. There appears to be a tendency towards an increase in flexible workers, probably caused by current economic uncertainties for most companies. In particular, companies in shipping, offshore and maritime works make use of agency staff, and companies in shipping, inland shipping and offshore often employ workers on fixed-term contracts.

- **Increase in foreign workers**

Companies in shipping in particular and to a lesser degree in inland shipping, employ relatively large numbers of foreign workers. Their share of employment has grown substantially between 1997 and 2002. The trend towards internationalisation of the workforce seems to apply in these sectors. However, to a large degree this trend can be explained by an increase in numbers of cruise ships sailing under Dutch colours.

- **Ageing workforce**

Most maritime sectors are faced with an ageing labour force. This trend especially applies to shipping, shipbuilding, seaports, offshore and maritime services. Compared with previous studies, the ageing workforce problem seems to have increased, especially in shipping, offshore, inland shipping and seaports.

[I] ECORYS is undertaking a new labour-market monitor in 2006, which will provide updated employment figures in around October 2006.

- **Differentiated skills demands**

The education level of the labour force in the Dutch maritime cluster varies greatly among the sectors. On average, however, maritime employees are more highly educated than the Dutch labour force overall. This holds especially for employees in shipping, maritime works, offshore, maritime services, recreation and marine equipment. From the perspective of knowledge development, these sectors seem to be in a favourable position for developing a sectoral knowledge economy.

2.0 Shipbuilding

Dutch shipyards specialise in various segments of the shipbuilding market, especially large yachts, working ships, dredging ships, inland ships and short sea ships. With this in mind, the Dutch shipbuilding sector concentrates on a 'maritime transport market' which is characterised by steady growth and is anticipated to continue.

The Dutch shipbuilding sector is positive about its future prospects.[i] Rising sea levels and a shortage of living space present opportunities for large maritime works. Traffic congestion means that transport by river and sea will grow. The rising demand for oil and gas also means that the offshore industry is growing steadily. Recreation on water will develop and with it the demand for yachts. The fishing industry will develop alternatives, such as fish farms at sea. The navy will direct its attention more and more towards small conflicts and coast guarding, giving opportunities for new innovative concepts.

Progress has been made with the development of a financial guarantee fund for the shipbuilding industry, aimed at pre-financing. This is an important measure which enables the Dutch shipbuilding sector to profit from the worldwide boom in orders for new ships. To create a level playing field, the employers' organisation (VNSI) sees continuing financial support from the Dutch government as crucial. As has already been done in other countries, VNSI is urging the Dutch government to submit an application for a European Commission innovation subsidy. Brussels has already approved German, Spanish and French policy regulation in this area.

Targeted innovation in design and construction has contributed largely to the sector's current competitive position.

[i] VNSI (2004) *Jaarverslag* (Annual report)

Recently, the employers' organisation VNSI presented its vision for the position of the sector in 2015.[I] It states that 'the shipbuilding industry is still a growing market. Because of globalisation, growing world trade and the rise of new economies in Asia, worldwide transport demand will keep rising exponentially. Because of large economic spin-offs, foreign governments are actively (financially) supporting their shipbuilding industry. The Dutch shipbuilding industry is in a very strong position because of a high productivity rate, which compensates for relatively high labour costs. Also, the physical vicinity of ports, knowledge institutes and renowned customers is an important asset.'

The document also presents a SWOT analysis for the sector's prospects towards 2015, shown in the following table.

Table 2.1 SWOT analysis for the shipbuilding industry 2015

Strengths	Opportunities
- Smart entrepreneurship - Attractive location and infrastructure - Innovative in complex market segments - Availability of knowledge institutes	- Growing world market - Durable ships and production - Synergy in the production chain - Exploiting knowledge lead position
Weaknesses	**Threats**
- Image - Cooperation in the production chain	- Overcapacity - Skills shortages - No level playing field - Foreign competition

Source: VNSI, Dutch LeaderShip 2015, the power to lead

2.1 Economic impact

The production volume of the Dutch shipbuilding industry is estimated at €2 billion.[II] The added value amounts to approximately €500 million. The Dutch shipbuilding industry provides direct employment for 10,000 people in 90 companies, which is approximately 7% of employment in the Dutch maritime cluster. Within Europe, the Dutch shipbuilding industry is ranked in third place. Its world market share is steady at 2%.

[I] VNSI *Dutch LeaderShip 2015, the power to lead*.
[II] VNSI Jaarverslag (Annual report) 2004.

2.2 Employment trends

Some 500 jobs were lost in the shipbuilding industry between 1997 and 2002; employment declined from 10,740 to 10,270. During this time period ship repair activity increased whilst the number of jobs in the shipbuilding slightly decreased.

Table 2.2 Employment in the shipbuilding sector, 1997-2002

	Direct		Indirect	
	1997	**2002**	**1997**	**2002**
Shipbuilding, excluding scrapping	10,740	10,270	11,500	10,790
Shipbuilding	8,270	7,780	na	na
Inland vessels	2,470	2,490	na	na

Progress has been made with the development of a financial guarantee fund for the shipbuilding industry, aimed at pre-financing. This is an important measure which enables the Dutch shipbuilding sector to profit from the worldwide boom in orders for new ships. Increasing productivity means that it is unclear if the positive trend in the sector will increase employment.

3.0 Marine equipment

The maritime equipment sector consists of the supplier companies for marine technology and services. It therefore has direct relations with many other sectors, most of them maritime. Companies in the sector are active in the fields of maritime engineering and contracting, fabrication of installations and components, the supply of maritime services and ship repair. The sector depends on economic developments in the other maritime sectors.

Since maritime equipment is dependent on economic developments in other maritime sectors (mainly offshore and shipbuilding), its future prospects are also strongly inter-related with these sectors. The offshore sector expects a continuation of activities, and the prospects of shipbuilding are fairly good.

Besides the Dutch market, the Chinese market for shipbuilding seems to be very profitable for Dutch firms in the immediate future. Maritime equipment is a technologically advanced industry and therefore to a certain extent is able to cope with competition from low-wage countries.

A possible threat is the insufficient supply of labour, since the number of students in technical education cannot meet the demand.

3.1 Economic impact

There were about 700 maritime equipment firms in 2004, and net turnover amounted to approximately €2.6 billion.

3.2 Employment trends

Employment trend of the marine equipment industry is that of positive with employment increasing from 13,050 to 13,500 between 1997 and 2002[I].

	Direct			Indirect	
	1997	2002	2005	1997	2002
Maritime equipment	13,050	13,190	13,500	6,090	5,550

4.0 Shipping

In both the shipping industry and the global economy there has been a clear positive worldwide trend since 2003, continuing in 2004 and showing no signs of ending in 2005. The volume of goods transported has grown and rates have risen strongly in most market sectors. Nevertheless, Netherlands-based shipping companies have failed to profit from this situation fully because of a worsening international competitive position. The root cause of this is that the Dutch business climate has lagged behind for several years. In addition, expansion of the EU in 2004 has led to uncertainty about the continued employment of seafarers from the new EU countries. On the other hand, two EU initiatives – Marco Polo and Motorways of the Sea – offer new opportunities to promote short sea shipping.

In 2004, for the second year running since the introduction of the 1996 Dutch Shipping Policy, the number of ships flying the Dutch flag declined as the policy's success wanes. This trend is worrying, for once new ships are not registered in the Netherlands, or ships bought abroad are reregistered elsewhere, the bond between the Netherlands and its ship owners weakens.[II] As a result, ship owners might opt to leave the Netherlands, or at any rate to build up their position abroad, by making use of the possibilities offered by other countries, generally European. An international industry like shipping does not have to carry out its activities from the Netherlands. Whenever shipping companies relocate their activities abroad, this is detrimental not only to the Dutch shipping sector but also to the Dutch maritime cluster as a whole.

I Source: HME, 2006.

II KVNR (2005) *Annual report 2004*, Rotterdam

Between 1996 and 2002, Dutch shipping companies profited from the measures – fiscal ones in particular – introduced by the 1996 Shipping Policy. Since then, neighbouring countries have not sat still: they have copied the policy and in some cases even improved on it. Dutch business policy, however, has not been improved despite urging from the employers side (KVNR). Although the Secretary of State for Finance announced an initial cautious step in April 2005, this will probably not lead to significant improvements in the short term. So Dutch shipping policy is at present struggling under the 'dialectics of progress': direct action produces direct reaction. According to ship owners, it was therefore essential for the Dutch government to continue to prioritise the action points indicated in the KVNR Annual report 2004.

For some time now, the Dutch shipping industry has been struggling with a shortage of Dutch seafarers. To overcome this, the organisation of Dutch ship owners (KVNR) has been undertaking a number of recruitment campaigns in cooperation with the workers federation (FWZ) and Dutch nautical colleges. Although these efforts appear to be successful, the supply of potential Dutch recruits is still not enough to meet demand. Nevertheless, ships cannot sail without sufficient qualified personnel, so well-qualified foreign seafarers on Dutch ships are necessary as well. The number of foreign officers and masters in the Dutch fleet is growing, partly because the supply of Dutch seafarers appears to be insufficient. KVNR is working on a strategic plan to determine ways of dealing with staffing policy, for the benefit of the fleet flying the Dutch flag.

4.1 Economic impact

The Dutch shipping industry provides direct employment for 20,000 people, in 400 companies. This is approximately 6% of employment in the Dutch maritime cluster.[I] The direct production value of the Dutch shipping industry amounts to approximately €5 billion, which is 15% of the total (direct) production value of the Dutch maritime cluster.[II]

4.2 Employment trends

The number of seafarers has increased between 1997 and 2002 from 17,700 to nearly 20,000. Indeed, the Netherlands is one of the few EU countries where employment in this sector has seen a strong growth over the past decade.

[I] R van der Aa et al (2003)

[II] *Stichting Nederland maritiem land, de Nederlandse maritieme cluster. Beleidsaanbevelingen*, Delft University Press, 2000

Table 4.1 Employment in the shipping sector, 1997-2002

	Direct		Indirect	
	1997	2002	1997	2002
Shipping	17,732	19,850	5,200	5,500

Employment is increasing mainly because of the growth of the world economy. Nevertheless, Netherlands-based shipping companies have failed to profit from this situation *to its full extent*, because of a deteriorating international competitive position.

5.0 Offshore supply

The soaring world market price of crude oil finally resulted, by the summer of 2004, in the long-awaited upturn in new investments in the upstream oil and gas industry. Despite the still-depressed economy of the Netherlands, the Dutch oil and gas industry managed to perform reasonably well over the year. In particular, the second half of 2004 proved to be successful for most companies. Activities on the Dutch continental shelf increased as well, thanks to several new exploration and production (E&P) projects initiated in the course of 2004.

The offshore industry in the North Sea in general and on the Dutch continental shelf in particular has matured, and activities as we have known them for the last three decades are on the decline. European E&P companies are facing rising costs, increased taxation and conflict between production and profitability targets. Additionally, they are under government pressure to release fallow acreage.

The Dutch employers' organisation IRO reports that investments are being made in the sector, which will continue to create opportunities for relatively small and unknown independent operators who develop the marginal fields and, with some success, have discovered new oil and gas.

In October 2004, the Minister of Economic Affairs presented a letter to Parliament to outline a number of actions he was proposing to stimulate and enhance the production of natural gas in the Netherlands. According to the IRO, these proposals were positively received by the industry and present new opportunities.

New Dutch mining legislation, which came into effect in January 2003, is still suffering some teething problems. In particular, implementation of the working time directive is proving to be very difficult for offshore operating contractors and service companies.

5.1 Economic impact

Its turnover amounts to approximately €4.5 billion, which is about 14% of the turnover of the maritime sector.

5.2 Employment trends

The offshore industry provides employment for 13,340 people in 340 companies in 1997 but by 2002 the sector has experienced some minor job losses (260). This decline was caused by job cuts in drilling and construction & installation activities.

Table 5.1 Employment in the offshore sector, 1997-2002

	Direct		Indirect	
	1997	2002	1997	2002
Offshore	19,340	19,080	13,600	13,440
Drilling	1,429	1,157	na	na
Construction and installation	7,447	7,097	na	na
Other offshore-related activities	10,471	10,826	na	na

6.0 Maritime works

About 80 companies in the Netherlands are contractors in maritime works, and twice as many work in nautical services. The net turnover of these contractors is approximately €500 million. About 10 medium-large and large companies are active in the European market, mostly in dredging, with a turnover of €400 million. Outside Europe, a few large Dutch companies are active, with a turnover of €1.2 billion – almost half of the total worldwide market. The worldwide projects concern the construction and maintenance of harbours and waterways, the construction of new land in the sea, and coastal protection. The largest firms in maritime works in the Netherlands are Boskalis Westminster and Van Oord BV.

After a few less-profitable years nationally as well internationally, the net profit of most enterprises in maritime works increased in 2005, especially for international dredging companies. Although profits have increased, margins are still modest. For 2006, most companies expect increasing turnover and higher equipment usage.

Almost half of the personnel working internationally are Dutch. Although the firms are very internationally orientated, the development of equipment and the education of experts are embedded in the Netherlands. Technological developments in recent years have been characterised by the scaling up of equipment.

The maritime works sector has a strong infrastructure in the Netherlands, along with the supply of labour (education) and technology and equipment. Most of the world's knowledge and skills concerning dredging are to be found in the Netherlands.

Smaller firms mainly depend on work tendered by the Dutch government, which makes them very vulnerable to fluctuations in government expenditure.

6.1 Economic impact

In 2002, maritime works provided employment for about 5,000 people in 300 companies. Together, Dutch companies realised a net turnover of more than €2 billion worldwide, with a market share of almost 50% of the world's dredging market.

6.2 Employment trends

Some 170 new jobs were created in the maritime works sector between 1998 and 2002, mainly in the dredging sector. After a few less profitable years nationally and internationally, the net profit of most enterprises in maritime works has increased in the last year, especially for companies in international dredging. Although profits are increasing, the margins are still modest.

Table 6.1 Employment in the maritime works sector, 1998-2002

	Direct		Indirect	
	1998	2002	1997	2002
Maritime works	5,000	5,170	7,400	7,620

7.0 Seaports and related services

The Dutch sector of seaports and related services is dominated by the world ports of Rotterdam and Amsterdam. The port of Rotterdam is the largest in the area of Maburg – Le Havre, though it has lost some market share in recent years. At the same time, the port of Amsterdam has been growing strongly. More than 70% of total transhipment in the Netherlands takes place in Rotterdam. As a result of sufficient draught, the port of Rotterdam is able to receive large ships more easily than Amsterdam. In 2002, approximately 600 companies were active in the seaports. The sector is dominated by the presence of various large foreign leading firms.

The Dutch position as the leading seaport sector in Europe is to a large degree dependent on international economic developments. Although the world economy has been growing strongly in recent years, the Eurozone has lagged behind, largely because of the caution of European consumers. Economic growth has also been reduced by rising oil prices in 2004 and 2005. The Dutch economy has been performing relatively less well than the European average in the past few years. The same goes for Germany, which is the main trading partner for the port of Rotterdam. A countervailing effect in this regard is the growth in imports from the UK. Also favourable for the port of Rotterdam is the strong growth in exports to China, which is one of the fastest-growing economies in the world.

As well the development of the world economy and economies in the Eurozone, the main threat for Dutch ports comes from other seaports in North-West Europe, which are also heavily investing in their quality and capacity.

7.1 Economic impact

The seaport sector is the largest sector in the Dutch maritime cluster. In 2002, its annual turnover amounted to €3.7 billion, with a production volume of €3.7 billion. The sea ports provide direct employment for 27,000 people. Indirectly, the seaport sector has an important impact; together with the shipbuilding industry and offshore, the seaports are the main catalyst for the Dutch maritime cluster.

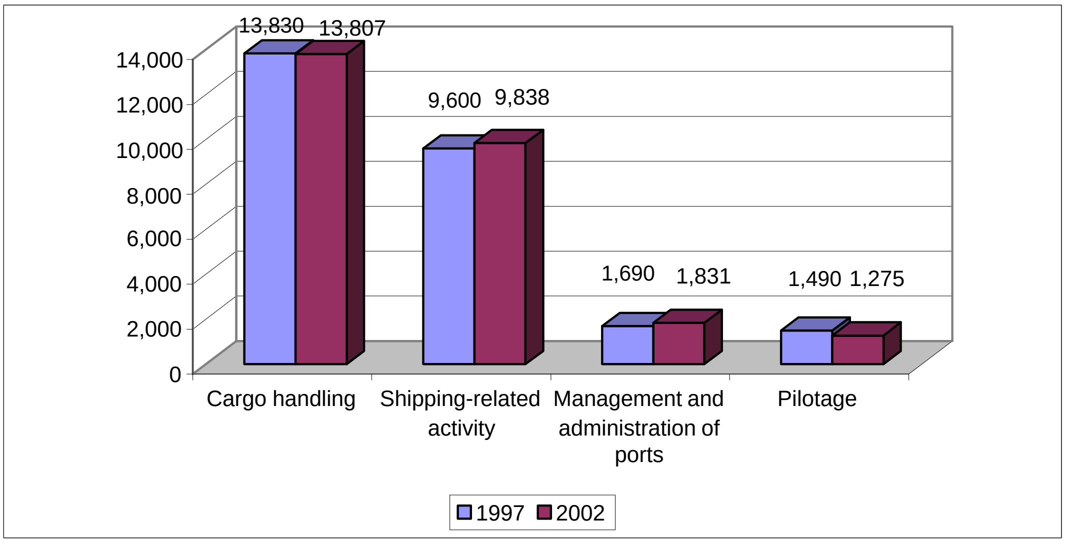
7.2 Employment trends

Employment in the seaport sector witnessed a marginal growth of 150 employees between 1997 and 2002. Increases in the number of jobs took place in shipping related activity and port administration, whilst pilotage saw a decline of over 200 jobs.

Table 7.1 Employment in the seaport sector, 1997-2002

	Direct		Indirect	
	1997	2002	1997	2002
Seaports and related services	26,600	26,750	11,000	10,950
Cargo handling	13,830	13,807	na	na
Shipping-related activity	9,600	9,838	na	na
Management and administration of ports	1,690	1,831	na	na
Pilotage	1,490	1,275	na	na

Figure 7.1 Employment trends by different areas of activity, 1997-2002



8.0 Recreation boating

Around 19% of the surface of the Netherlands is water, which makes it an outstanding country for water recreation. Almost a third of all inhabitants sail at least once a year.

It is difficult to get a complete picture of water recreation because it encompasses many different activities, from industry to trade: there are 17 sub-sectors in total. In general, recreation in the Netherlands is a fairly large (larger than agriculture for instance) and growing sector. Total expenditure amounts to €36 billion.

Recreation has a shortage of labour, and this shortage is expected to increase in the next few years because of the ageing of the working population and insufficient intake of students. In the shipyards in particular there seems to be a problem in filling vacancies.

8.1 Economic impact

In 2002, recreation provided employment for 15,310 people in 4,100 companies. Total turnover was about €1,5 billion.

8.2 Employment trends

In general, water recreation in the Netherlands is a fairly large (larger than agriculture for instance) and a growth sector. This is also demonstrated by the employment data from 1997 and 2002 that showed that over a thousand new jobs were created in this sector, both in the manufacturing and service segments of the industry.

Table 8.1 Employment in the recreational boating sector, 1997-2002

	Direct		Indirect	
	1997	2002	1997	2002
Recreation	14,190	15,130	5,570	6,020
Recreation vessels	6,468	7,015	na	na
Recreation services	7,720	8,295	na	na

9.0 Maritime services

In 2002, approximately 700 companies were active in maritime services. The sector is characterised as being very diverse, with no clear profile. Typical of this diversity is the absence of an employer's organisation for this sector in the Netherlands. Nevertheless, maritime services are termed the 'cement' for the maritime cluster because of their facilitating functions for the nautical sectors. Aside from some big firms operating worldwide, the sector is dominated by a large number of small firms operating from the Netherlands.

The sector's diversity and absence of a central employers' organisation mean that no concrete information is available on SWOT aspects of the sector in the Netherlands.

9.1 Economic impact

In 2002, the sector's turnover amounted to €1.1 billion, whereas the production volume was €1.0 billion. The sector provides employment for 13,450 people, of whom 9,560 are directly employed.

9.2 Employment trends

Maritime service sector is also one of the sea related sector that experienced a growth in employment between 1997 and 2002. The number of jobs went up from 9,080 to 9,560 during this time period.

Table 9.1 Employment in the maritime service sector, 1997-2002

	Direct		Indirect	
	1997	2002	1997	2002
Maritime services	9,080	9,560	3,700	3,890
R&D and consultancy	Na	1,355	na	na
Classification and inspection	Na	699	na	na
Support services	Na	7,527	na	na

10.0 Coastal tourism

No employment figures for coastal tourism are available for the Netherlands. An estimate of employment in coastal tourism is made here, based on labour-market statistics for the hotel and catering industry. Hotel and catering covers the following activities:

- hotels, pensions and conference locations;
- camping sites, youth hostels, holiday parks and caravan parks;
- restaurants, cafeterias, lunchrooms and snack bars;
- pubs and bars; and
- canteens and catering.

Statistics are not available for the coastal area as such. Therefore 12 COROP regions were selected,[I] all of them including coastal areas. The selected regions were:

- Agglomeratie 's Gravenhage;
- Agglomeratie Haarlem;
- Agglomeratie Leiden en bollenstreek;
- Alkmaar en omgeving;
- Delft en Westland;
- Groot Rijnmond;
- Ijmond;
- Kop van Noord-Holland;
- Noord-Friesland;
- Overig Groningen;
- Overig Zeeland; and
- Zeeuwsch-Vlaanderen.

The employment statistics for coastal tourism are shown in the following table. These figures are based on the above-mentioned statistics for the hotel and catering industry in 12 regions that include coastal areas. It however must be mentioned that this is likely to be an overestimation of tourism employment within 50km from the sea.

Table 10.1 Employment in coastal tourism (hotel and catering industry) in the Netherlands, 2000-2005

	Businesses	Number of jobs

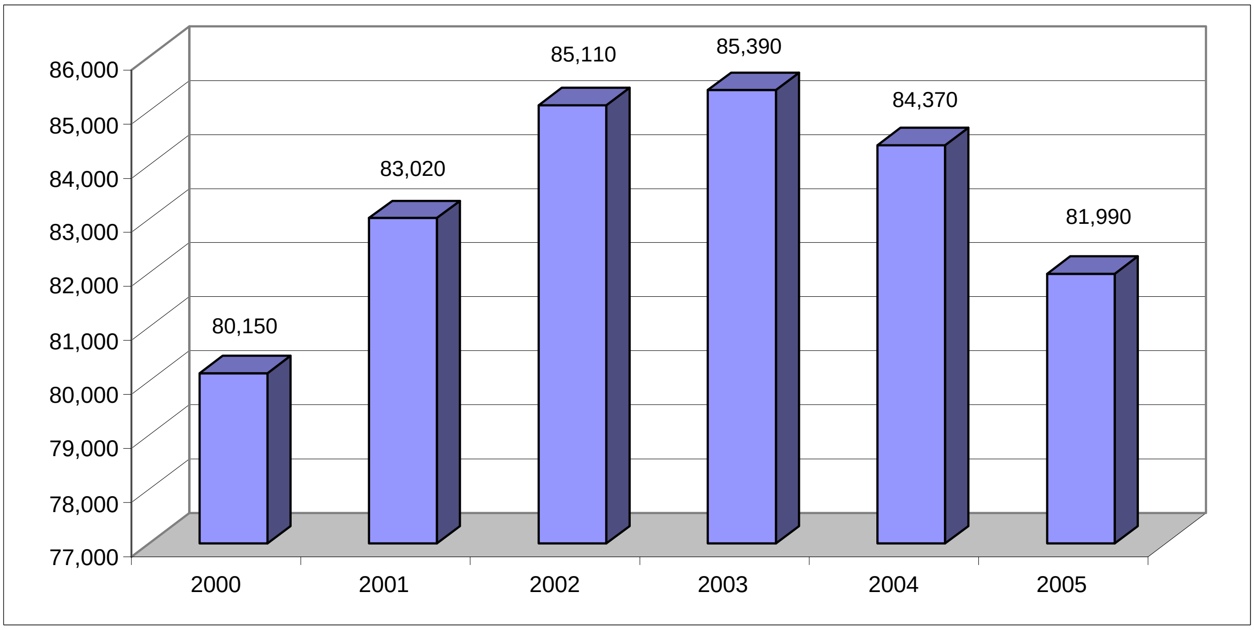
[I] COROP is a regional classification by the Netherlands Statistical Office. In total, there are about 40 COROP areas in the Netherlands.

	Businesses	Number of jobs
2000	13.940	80,150
2001	13.870	83,020
2002	13.930	85,110
2003	14.120	85,390
2004	13.970	84,370
2005	14.000	81,990

Source: Lisa, 2005

According to this data tourism sector in coastal regions of the Netherlands has experienced growth between 2000 and 2005 with employment peaking at 85,400 in 2003.

Figure 10.1 Employment trends in coastal tourism sector, 2000-2005



11.0 Skills and training

11.1 Demand for and supply of skills

- **Driving forces behind skills development**

According to employers, several developments are influencing future qualification demands for employees. The main development faced by all sectors relates to more rigorous safety and environmental rules. In addition, most sectors are experiencing a growing need for multi-skilled employees. Various other developments are also seen as important: automation of work processes (shipping, inland shipping and sea ports), new technologies (shipping, inland shipping, recreation and maritime equipment), more projectoriented work (shipbuilding and offshore), more task specialisation (inland navigation, maritime works and maritime services) and more self-steering work teams (sea ports).

Table 11.1 Driving forces behind skills developments

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
Co-makership	-	29	17	14	3	-	14	3	25
Internationalisation of staff	39	16	50	21	-	5	7	21	18
Internationalisation of work	18	11	33	17	7	32	12	33	24
Automation	35	16	17	48	17	55	30	24	27
New technologies	34	31	17	38	21	12	45	21	38
Safety and environment regulations	75	60	33	69	43	58	37	29	18
Increase of purchasing casco's	-	18	-	5	6	-	4	-	2
Thematic working	6	38	33	11	13	17	15	26	26
More employable personnel	44	69	17	55	44	83	48	42	52
Further specialisation	12	9	17	27	28	4	24	29	25
Self-reliant teams	18	11	17	22	19	39	15	23	31
Other	10	2	17	6	14	1	7	6	8

Source: ECORYS (2004) Monitor maritieme arbeidsmarkt 2003

- **Required competences**

Recently, the nature and composition of required competences in maritime sectors in the Netherlands has been investigated.[I] Four competence areas have been assessed: (i) attitude and behaviour, (ii) nautical knowledge and skills, (iii) design, construction and maintenance, (iv) organisation and management. Each of these competence areas comprises a sub-set of competences which have been mapped in detail among employers in all maritime sectors. Findings relating to the importance of knowledge and skills in these areas are shown in the following table.

I R van der Aa, C Jansen and M Stuivenberg (2004) *Monitor Maritieme Arbeidsmarkt 2003*, NML-series, Delft

Table 11.2 Importance of knowledge and skills for employees (%), in four competence areas

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
Attitude and behaviour	71	41	55	63	54	56	53	66	49
Nautical knowledge and skills	44	4	11	64	62	35	19	31	7
Design, construction and maintenance	14	14	7	20	14	4	22	18	16
Management and organisation	17	5	8	36	29	19	10	24	4

Source: ECORYS (2004) Monitor maritieme arbeidsmarkt 2003

From the results it can be concluded that there appears to be a relationship between the required competences of employees in different maritime sectors. Of particular note is the importance of attitude and behaviour as an essential basic competence for all employees in the maritime cluster, irrespective of sector. In this context, attitude and behaviour refer mainly to affinity with sailing and insight into the maritime world. But other more general attitudinal and behavioural competences are also emphasised, such as willingness to work irregular hours, openness to other cultures, and the ability to solve technical problems.

The importance of nautical knowledge and skills is limited mainly to shipping, inland shipping and maritime works. By contrast, in shipbuilding, offshore and marine equipment, nautical knowledge and skills appear to be of minor relevance.

Design, construction and maintenance competences are of relevance for only a small proportion of employees in the maritime cluster. Employers in inland shipping in particular attach importance to these competences. This probably relates to the general need for broadly skilled employees because of the variety of activities on board ship, including maintenance. The activities in shipbuilding are more specialised, with the emphasis on maintaining and repairing ships and offshore equipment, and installing on-board systems.

The importance of organisation and management varies considerably among the sectors, but is not the most important one in any of them. In inland shipping, maritime works and maritime services in particular, these competences are relatively important. They mainly refer to knowledge of law and regulations.

According to employers in the maritime cluster, competences in the area of attitude and behaviour in particular will become more important in the coming years. From a reflective point of view, it can be concluded that organisational strategic competences and social cultural competences in particular will gain importance among employees.

- **Unfilled vacancies**

In spite of the moderate economic developments in recent years, there is still a need for new personnel in the maritime sector, mainly because of staff turnover. The number of job vacancies compared to the total labour force is used as an indicator for the tightness of the labour market. Whereas for the Netherlands as a whole the proportion of job vacancies is 2%, the figure is 4% in recreation and 3% for companies in offshore, inland shipping and maritime services. The sectors of maritime works, seaports and marine equipment have a relatively low proportion of job vacancies.

A relatively low proportion of job vacancies does not automatically imply, however, that they are easy to fill. In general, half of all job vacancies in the maritime cluster are seen as hard to fill. Companies in offshore, maritime works and marine equipment in particular are faced with hard-to-fill job vacancies. Also, the problems of filling job vacancies in recreation seem to be persistent. In most sectors, unfilled vacancies relate to specific jobs, details of which are given below.

Table 11.3 Unfilled vacancies per sector (%), 2004

	Number of vacancies compared to total labour force	Number of hard to fill vacancies compared to all vacancies
Shipping	2	26
Shipbuilding	2	58
Offshore supply	3	100
Inland shipping	3	33
Maritime works	1	86
Seaports	1	9
Recreation	4	53
Maritime services	3	56
Maritime equipment	1	93

Source: ECORYS (2004) Monitor maritieme arbeidsmarkt 2003

The following information shows the positions for which vacancies exist. Unfortunately, information is not available for offshore.

- Shipping

Most job vacancies are for the position of officer – 91% of all vacancies; 7% are for the position of captain. About 26% of all companies say that their vacancies are hard to fill.

- Shipbuilding

In shipbuilding, most openings are positions in manufacturing, particularly for metalworkers (30% of all vacancies) and pipe workers (15%).

- Maritime works

Small enterprises in maritime works have hardly any job vacancies. Medium-large and large enterprises are mainly looking for navigating officers (21% of all vacancies). There are also vacancies for barge captains, mechanical operators and assistant barge captains.

- Seaports

The port of Rotterdam has a surplus of staff, and therefore there are almost no vacancies.

- Recreational boating

There are many job openings in recreation, mainly for general recreation employees (42% of all job openings). Vacancies seem to be hard to fill, especially openings for general recreation employees, mechanics, yacht brokers and chief painters.

- Maritime services

Employers in maritime are mainly looking for mechanical maritime personnel. This refers to a wide range of mechanical employment with a maritime background.

- Marine equipment

In marine equipment there are just a few job openings. Most vacancies are for service mechanics (32% of all vacancies) and in sales (24%). Although there are not many openings, almost all jobs are hard to fill.

- Reason for unfulfilled vacancies

As a result of moderate economic performance over recent years, the number of vacancies has been low compared to the total labour force, but the vacancies that are unfilled seem to be hard to fill in most maritime sectors. According to employers, the main reason for this is that there are insufficient candidates. The demand for qualified labour is higher than the supply. To some extent, the reason for the lack of labour supply can be found in the attractiveness of the sector. Furthermore, it seems that the candidates who are available do not match the requirements. According to employers, they do not have enough work experience or are insufficiently specialised or educated.

Table 11.4 Reasons for unfilled vacancies (%), 2001

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
Insufficient candidates	59	na	70	94	70	66	51	10	75
High wage claims	18	na	20	27	15	42	3	5	21
Working hours	14	na	20	23	16	0	2	15	24

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
Insufficient work experience	49	na	50	34	49	64	15	33	45
Insufficient motivation	23	na	10	32	25	7	8	-	3
Education mismatch	22	na	30	41	19	20	7	28	15
Unfamiliarity with the sector	-	na	40	-	-	-	9	-	-
Insufficiently specialised	-	na	30	-	-	-	43	-	-
Job content	-	na	50	-	-	-	3	-	-
Long-term absence	-	na	-	-	-	-	-	-	-
Attitude	-	na	-	-	-	-	-	-	12
Other	12	na	10	-	-	-	3	10	-

Source: ECORYS (2002) De arbeidsmarkt in de Nederlandse maritieme cluster

11.2 Transferability of skills

Information on the transferability of skills in the maritime sectors can to a large degree be gleaned from the origins of new personnel and the exit destinations of staff. This section presents data on both these aspects of the labour market.

- **Origins of personnel**

On average, one in every six new employees in the maritime cluster is a school leaver/graduate straight from school/college (see table 3.5). Only in maritime works and sea ports was this proportion substantially lower in 2002. In most sectors, the bulk of new employees originate from other industries and sectors. Often, these are other related maritime sectors. This applies especially to shipbuilding, maritime works, seaports, maritime services and marine equipment. These sectors are apparently able to make use of labour mobility among maritime sectors, indicating a sector-specific transferability of maritime competences.

Some sectors have high internal labour mobility from one company to another. This applies especially to shipping and inland shipping. In these sectors, there seems to be considerable competition for the available employees.

Table 11.5 Origin of personnel (%), 2002

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
From another company in the sector	39	-	-	38	25	6	24	5	10
From another company outside the sector	32	75	33	27	56	67	48	64	76
From another maritime sector	17	37	-	15	52	64	22	44	47
Recent graduate	17	17	33	18	9	5	22	15	14
Recent unemployed	-	-	-	-	2	0	3	-	-
Other	13	8	33	16	7	22	4	15	15
Total	100	100	100	100	100	100	100	100	100

Source: ECORYS (2002) De arbeidsmarkt in de Nederlandse maritieme cluster

- **Exit destinations**

A majority of employees leaving their job also leave the sector in which they were working. In 2002, this proportion amounted to 65-75% in most maritime sectors. However, from a maritime cluster perspective it is interesting to note that a substantial proportion of staff take another job within the maritime cluster. Hence qualified maritime personnel are preserved within the cluster, once again indicating transferability of maritime competences among maritime sectors. In shipbuilding, for instance, this applies to about 25% of staff turnover, in offshore approximately 66%, and in maritime works and inland shipping around 40%.

The Monitor of the maritime labour market 2003 (ECORYS, 2004) determined broadly among which maritime sectors the mobility of personnel takes place. It appears that in 2002, labour mobility particularly took place from:

- maritime works to inland shipping and vice versa;
- inland shipping to maritime services and vice versa;
- shipping to maritime services and marine equipment;
- shipbuilding to recreation;
- maritime services to sea ports; and
- Recreation to maritime services.

Table 11.6 Exit destinations (%), 2002

	Shipping	Shipbuilding	Offshore supply	Inland shipping	Maritime works	Seaports	Recreation	Maritime services	Maritime equipment
To another company in the sector	51	3	33	36	-	54	27	26	8
To another company outside the sector	10	43	67	52	82	15	36	52	55
To another maritime sector	10	37	67	44	59	15	13	15	25
Unemployment	-	9	-	2	-	-	4	-	11
Declared disabled	-	-	-	2	-	-	-	-	-
Retirement	14	36	-	5	-	19	14	7	17
Other	25	9	-	3	18	12	19	15	9
Total	100	100	100	100	100	100	100	100	100

Source: ECORYS (2002) De arbeidsmarkt in de Nederlandse maritieme cluster