

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

Poland



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 – Poland

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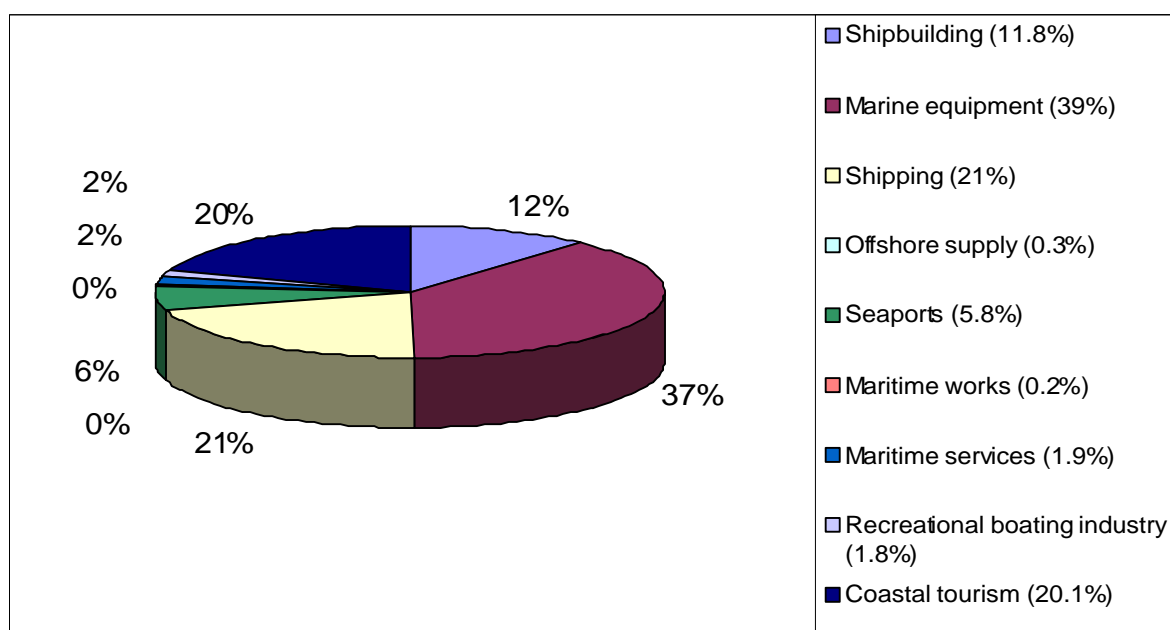


## 1.0 Summary<sup>I</sup>

The Polish maritime activities accounts for a significant share of total GDP. The maritime sector is the most important economic sector in the Pomeranian region. The region concentrates 57% of employment within the Polish maritime sector, as well as 52.6% of maritime enterprises and 55% of maritime trade.<sup>II</sup> The West Pomeranian region is another important region for the maritime sector in Poland. It concentrates 47% of the country's total transshipment and is also a home to the largest ship owners, such as Unity Line, Polska Żegluga Morska, Euroafrica and Polska Żegluga Bałtycka.

The following table outlines total employment in the Polish maritime sector. The sector contributes to the creation of 171,000-201,000 jobs directly<sup>III</sup> of which marine equipment is clearly the largest sector with an estimated workforce of 50,000 to 80,000. Shipping and coastal tourism are also significant employers with more than 33,000 employees each. It is however important to note here that a large majority of Polish seafarers are working on foreign vessels.

**Figure 1.1 Share (%) of maritime employment by sub-sectors, 2004, excluding navy**



In terms of employment trends from the past decade, marine equipment, maritime services and recreational boating have seen a clear growth in employment. The future of the

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

<sup>II</sup> Polish Agency for Investment Promotion (PAIZ), [www.paiz.pl](http://www.paiz.pl)

<sup>III</sup> Based on 2003 and 2004 figures.

recreational boating, especially the manufacturing sector, looks bright. Employment in the shipbuilding sector has declined by nearly 39% since the mid-nineties.

**Table 1.1 Employment in the Polish maritime sectors, 1995 - 2005**

Table header	1995	1996	1997	1998	1999	2001	2002	2003	2004	2005
Shipbuilding	31,894	30,316	26,767	26,874	28,800	-	20,132	19,180	19,600	18,700
Marine equipment <sup>IV</sup>	-	-	-	-	-	-	-	-	50,000-80,000	-
Shipping	-	-	-	-	-	45,000	45,000	-	-	35,000
Offshore supply <sup>V</sup>	-	-	-	-	-	-	-	-	-	475
Seaports	-	-	-	-	-	11,547	10,220	9,727	-	-
Maritime works	-	-	-	-	-	579	499	303	-	-
Maritime services	-	-	-	-	-	853	2,820	3,185	-	-
Recreational boating industry	-	-	-	-	-	-	-	-	3,000	-
Coastal tourism <sup>VI</sup>	-	-	-	-	-	35,600	33,400	33,800	33,500	-
Navy	-	-	-	-	-	-	-	-	-	16,000

Source: ECOTEC Research and Consulting, 2006

<sup>IV</sup> Estimates from the Ministry of Economy and Labour.

<sup>V</sup> Includes employment in Petrobaltic only.

<sup>VI</sup> Includes employment in coastal hotels and restaurants only.

## 2.0 Shipbuilding

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The Polish shipbuilding industry is a key producer of industrial goods for export. Its share of total export volume amounts to 5%. In 1999, 95% of the shipyards' production was designated for export, 80% of which to the EU<sup>VII</sup>. In terms of employment shipyards and maritime equipment sector are estimated to employ up to 70,000 – 100,000 persons.

In 1999-2001 Poland's share in the world production of ships was 3%, which placed it in fifth position in the world. However, the crisis in 2002 resulted in a decrease in this share to 1.6% and, consequently, a fall to the eighth position<sup>VIII</sup>. The crisis was caused by the collapse of the Porta Holding of Szczecin Shipyard and production problems in Gdynia shipyard in 2003. By the end of 2004 the situation had improved; in 2004 Polish shipyards built 25 ships totalling 448.684 CGT and worth USD 754.7 million<sup>IX</sup>. At the end of 2004, Poland occupied second position in Europe and fifth position in the world (2.3%).

In 2005, Polish shipyards built 30 ships of 566,000 CGT and worth USD 933m. At the end of 2005 Poland occupied third place in Europe and sixth place in the world with regard to the forward order book, with 1.6% world market share and 87 ships (1,660,000 CGT and worth USD 3.2bn)<sup>X</sup>.

The strength of the Polish shipbuilding sector is the presence of the construction and technological infrastructure as well as strong research and development background. The Polish shipyards also represent a high production potential and a high quality of service, which make them internationally competitive. The weakness of the sector is its low labour productivity (22 CGT per employee which is half that of Germany, France and Spain). Low productivity is attributed to the differences in organisation of production and low amount of high value added ships<sup>XI</sup>. However, productivity is growing fast and in 2005 the corresponding figure was 30 CGT per employee. It reflects an improvement of 30%<sup>XII</sup>.

The main threats for the sector still include the unfavourable exchange rate of dollar against Polish zloty (PLN), low prices for ships, lack of transparency with regards to the prices of ships, slow productivity growth in the sector and poor management and strategic planning. Last but not least, Poland, as the sector in Europe as a whole, faces fierce competition from China and Korea.

<sup>VII</sup> The Shipbuilding and Ship Repair Sectors in the candidate countries: Poland, Estonia, the Czech Republic, Hungary and Slovenia, NOBE Independent Center for Economic Studies, Lodz 1999, p.27

<sup>VIII</sup> Barriers to and development strategy of the Polish maritime economy 2005, Senate of the Republic of Poland, Materials from the conference on 9.03.2005 edited by prof. Czesława Christowa, Warsaw 2005, p.22

<sup>IX</sup> Polish shipbuilding industry in 2004, Forum Okretowe

<sup>X</sup> Material from the Ministry of Infrastructure (Poland)

<sup>XI</sup> Consolidation of the shipbuilding sector, Ministry of Economy, 2003, p.1-2

<sup>XII</sup> Material from the Ministry of Infrastructure

## 2.1 Employment trends

As shown in the table 2.1, there has been a downward trend in employment in the shipbuilding sector. Employment fell from 31,245 in 1993 to 18,700 in 2005.

**Table 2.1 Employment in the Polish shipbuilding sector, 1993 - 2005**

	1993	1994	1995	1996	1997	1998	1999	2002	2003	2004	2005
Newbuilding	24,111	23,017	24,762	23,151	20,563	20,831	-	15,073	-	15,500	-
Repair	7,134	7,374	7,134	7,165	6,204	5,983	-	3,468	-	4,100	-
<b>Total</b>	<b>31,245</b>	<b>30,392</b>	<b>31,894</b>	<b>30,316</b>	<b>26,767</b>	<b>26,874</b>	<b>28,800</b>	<b>20,132</b>	<b>19,180</b>	<b>19,600</b>	<b>18,700</b>

Sources: **1993-1999**: NOBE, 1999, p.30; **2002-2004**: Maritime economy, Statistic Review 2004; **2005**: The Polish position paper on the future of the EU maritime policy.

Some of the decline can be explained by growing levels of outsourcing. For example, the number of employees working for sub-contractors increased from 1,165 to 6,297 between 2002 and 2003. The dramatic decline between 1999 and 2002 can be explained by the collapse of the Porta Holding of Szczecin Shipyard and production problems in Gdynia shipyard in 2003.

Traditionally Polish shipbuilding has been concentrated on three regions; Gdynia (with 11,050 employees), Szczecin (9,910 employees) and Gdańsk (7,840 employees) in 1999.

## 2.2 Employment projections

Although there are no official forecasts on employment it is fairly clear that the industry will be faced with two challenges. First challenge will undoubtedly concern the productivity of the workforce in the sector. As already mentioned, the labour productivity is still lower than in France, Germany and Spain and its' growth might cause further reductions in employment. On the other hand Polish shipyards have recently recorded a very high number of new orders, which might turn into increased demand for labour. For example, at the end of 2003 the orders for new ships had increased by 40% in comparison to 2002. In 2004 the shipyards recorded the highest volume of orders in the past 5 years (2.1 million CGT for USD 3.6 billion)<sup>xiii</sup>. A question however remains whether the demand for certain types of ships will match the skills of the workforce.

<sup>xiii</sup> Barriers to and development strategy of the Polish maritime economy 2005, Senate of the Republic of Poland, Materials from the conference on 9.03.2005 edited by prof. Czesława Christowa, Warsaw 2005, p.23

## 3.0 Marine equipment

The marine equipment sector is closely related and dependent on the shipbuilding sector. Shipyards collaborated with 800 domestic and 270 foreign suppliers in 2001. Approximately 690 of these enterprises deliver materials used to the basic production in the shipbuilding sector and the remainder of the materials are used for traffic maintenance. It is generally estimated that one job in a shipyard creates three jobs in the marine equipment sector. Given the figure of 18,700 employees in the Polish shipyards in 2005, it can be estimated that employment in the marine equipment sector was 56,100 in that year. These estimates are in line with the Ministry of Economy estimates (see table below) indicating that the sector employs around 50,000 – 60,000 persons (excluding shipyards)<sup>XIV</sup>. However, Poland's position on the future of the EU maritime policy quotes the figure of 80,000 employees in the 800 domestic companies for the year 2005<sup>XV</sup>.

**Table 3.1 Employment in the marine equipment sector**

Marine equipment sector	2005
Ministry of Economy estimates	50,000 – 80,000
Industry estimates* (18,700*3)	56,100

\* An interview with the representative of Forum Okretowe

As the sector is closely related to shipbuilding, employment is also dependent on similar factors such as growth in the orders for new ships. As the order book for Polish shipyards is improving, so is demand for labour.

### 3.1 Skills

The Polish marine equipment sector, like the shipbuilding sector, are experiencing a high outflow of experienced and qualified workforce to shipyards and enterprises abroad. The highest number of Polish engineers is employed in Norway, Finland and Germany<sup>XVI</sup>.

<sup>XIV</sup> Estimates of the Ministry of Economy and Labour

<sup>XV</sup> Poland's position on the future of the EU maritime policy, 31.10.2005

<sup>XVI</sup> An interview with the representative of Forum Okretowe.



## 4.0 Shipping

Polish sea transport plays an important role in Polish foreign trade as approximately 35-45% of export goods are transported by sea<sup>XVII</sup>. As regards to imports, this share is lower and amounts to 15%. Exports to European countries account for 80% of total shipping volume, with over 90% of recipients being EU Member States. As shown in the table 4.1 below the value of export and import by sea has been growing steadily. When comparing the 2001-2003 period with the period of 1999-2000, this trend is particularly visible for the export sector<sup>XVIII</sup>.

**Table 4.1 Export and import - total and by sea (mass net tonnes) and cargo turnover**

Description	2001	2002	2003
Total export	64,504,017	66,431,332	70,517,944
- Of which by sea	23,623,536	26,169,850	24,327,600
Total import	71,045,387	76,931,374	81,967,955
- Of which by sea	13,319,792	13,121,833	13,640,495
Cargo turnover	47,754	48,966	51,885

Source: *Maritime economy, Statistic review, 2004*

The key strength of the Polish shipping sector is its human resources and highly trained officer crew. The main weakness has been mentioned to be an insufficient interest of the Polish policy-makers in the maritime policy. This has resulted in poor maritime culture, lack of a human resource development policy and very weak condition of the Polish fleet. Additionally, the delay in the introduction of tonnage tax has pushed some domestic operators to register their ships under foreign flags<sup>XIX</sup>. Over the past decade a growing number of Polish vessels have registered under foreign flags. Some 92% of Polish fleet sailed under the Polish flag at the beginning of the 1990s. This share dropped to 32% by 2000 and down to 22% by 2002<sup>XX</sup>. In 2004 the merchant fleet under Polish ownership amounted to 112 vessels, of which only 12 were under the Polish flag. In 2005 the number of ships in the Polish fleet was 16 (51,909 GT).

### 4.1 Employment trends

<sup>XVII</sup> Ibidem, p.5

<sup>XVIII</sup> Maritime economy, Statistic review, Maritime Institute in Gdansk, 2004

<sup>XIX</sup> Puchalski J., Dobrze perspektywy dla polskich marynarzy (Good perspectives for Polish seafarers), *Marynarski Rynek Pracy (Seafarers' Labour Market)* in: *Namiary na morze i handel*, January 2006, p.4

<sup>XX</sup> *Report on the state of maritime economy*, Ministry of Infrastructure, Warsaw, November 2002, p.6

Polish seafarers account for over 50% of all seafarers from the New Member States. The total number of Polish seafarers in 2001/2002 was estimated at around 45,000, of which around 35,000 were employed by foreign ship owners<sup>XXI</sup>. This data is based on the number of diplomas issued to the seafarers by the Maritime Authority (Urząd Morski). Of these seafarers approximately 26,000 were ratings and 19,000 were officers. Over the previous 5 years the number of seafarers has decreased of approximately 10%<sup>XXII</sup>. Seafarer's Labour Market (2006) however states that employment has declined more dramatically, from 45,000 in 2001 down to just 35,000 in 2005

**Table 4.2 Employment of Polish seafarers (estimates)**

Description	2001	2002	2004	2005
Seafarers in Poland	6,300*	n.a	n.a	n.a
Seafarers abroad	35,000	35,000	n.a	30,000
- of which EU flagged ships	-	-	7,000-12,000	10,000-15,000
Total	45,000	45,000	-	35,000

\* This figure is taken from the Report on the state of maritime economy, 2002; thus the total does not add up.  
Source: Seafarers' Labour Market, 2004, 2005, 2006

It is estimated that in May 2004 around 7,000 Polish seafarers were employed under EU flags - thus accounting for 4% of the crew employed under EU flags<sup>XXIII</sup>. These estimates however differ. Also, if Malta and Cyprus flags are added, this number increases by several thousands (approximately 5,000)

Currently the number of seafarers employed in foreign shipping companies is estimated at around 30,000. The total number of seafarers employed in national shipping enterprises (under the Polish flag) was 6,300 in 2001<sup>XXIV</sup>. Approximately 10,000 seafarers employed by foreign ship owners are employed under EU flags<sup>XXV</sup>. Approximately 5,000 seafarers are employed under Norwegian flags and another 5,000 under Cypriot flags<sup>XXVI</sup>.

<sup>XXI</sup> Puchalski J., *Czy polscy marynarze będą mieli pracę? (Will the Polish seafarers have jobs?)*, Marynarski Rynek Pracy (Seafarers' Labour Market) in: Namiary na morze i handel, January 2004, p.3

<sup>XXII</sup> Ibid,

<sup>XXIII</sup> Puchalski J., *Dobre perspektywy dla polskich marynarzy (Good perspectives for Polish seafarers)*, Marynarski Rynek Pracy (Seafarers' Labour Market) in: Namiary na morze i handel, January 2006, p.4

<sup>XXIV</sup> *Report on the state of maritime economy*, Ministry of Infrastructure, Warsaw, November 2002, p.6

<sup>XXV</sup> Puchalski J., *Marynarski Rynek Pracy 2004 / 2005 (Seafarers' Labour Market 2004 / 2005)*, Marynarski Rynek Pracy (Seafarers' Labour Market) in: Namiary na morze i handel, January 2005, p.5

<sup>XXVI</sup> Interview with the representative of APMAR

In 2005 the employment in the Polish fleet under a Polish flag was 182 persons; 88 were officers and 94 were ratings. Additionally, there were 200 people based on land<sup>XXVII</sup>.

In relation to indirect employment, the Polish shipping sector contributes substantially to job creation in related sectors such as commercial services and ship maintenance. It is estimated that one job at sea generates 10 jobs on land<sup>XXVIII</sup>.

The downward trend in employment can be partly explained by regulatory and fiscal factors. As already mentioned Poland has not introduced tonnage tax regime yet<sup>XXIX</sup>. Its absence, as well as national insurance and VAT legislation which are not favourable to the Polish ship owners, has resulted in a situation where most Polish ships are registered under flags of convenience. This trend has been intensifying since the beginning of the 1990s<sup>XXX</sup>. The introduction of the tonnage tax and preferences to the Polish ship owners employing Polish crew would trigger a return of Polish ships to the national flag and thus employ more Polish seafarers under Polish employment conditions.

Rising employment costs of Polish seafarers due to higher national insurance costs and fear of claims for higher wages from the part of the Polish trade unions have already caused some reductions in the employment of Polish seafarers and their replacement by non-EU seafarers. There has also been a noticeable decline in the number of Polish seafarers seeking employment on board Polish vessels. This is thought to be caused by:

- increased opportunities for work outside the maritime sector (especially for seafarers from lower grades);
- experienced and more senior workers join educational centres, research institutes, shipyards, shipping companies, etc. in which the sea-related experience is very important<sup>XXXI</sup>.

Despite this negative tendency the demand for highly trained officers is increasing rapidly with the increasing number of new ships. More and more ships are specialised so the demand for staff has shifted towards highly educated and trained officers. This trend has

<sup>XXVII</sup> Information from the representative of the Polish Shipowners' Association

<sup>XXVIII</sup> Plewiński L. (debate), Barriers to and development strategy of the Polish maritime economy 2005, Senate of the Republic of Poland, Materials from the conference on 9.03.2005 edited by prof. Czesława Christowa, p.95

<sup>XXIX</sup> Grunert E., *Podatkowe perturbacje (Tax worries)*, Marynarski Rynek Pracy (Seafarers' Labour Market) in: *Namiary na morze i handel*, January 2005, p.3; and Klasa M., *Biało-czerwone przypomnienie (White-red reminder)*, Portal Morski (Maritime Portal), 14.11.2005

<sup>XXX</sup> *Report on the state of maritime economy*, Ministry of Infrastructure, Warsaw, November 2002, p.5

<sup>XXXI</sup> Puchalski J., *Dobre perspektywy dla polskich marynarzy*, Marynarski Rynek Pracy, *Namiary na morze i handel*, January 2006, p.4

been marked notably by the sharp, 30-40% increase in the employment of ‘top four’<sup>XXXII</sup> categories<sup>XXXIII</sup>.

## 4.2 Employment projections

The labour market for seafarers faces two contradictory trends. On one hand there is a growing demand for highly trained and experienced officers in and outside the EU, but on the other hand there is a declining number of Polish seafarers employed on the EU-flagged ships due to fears of the ship owners of rising employment costs.

In addition, Poland has traditionally had a great surplus of qualified seafarers. Under the Communist regime seafaring provided opportunities for foreign travel and relatively high level of unemployment in the country led to considerable competition in the labour market, resulting in a highly skilled and educated seafaring labour force. Even the decline in the Polish owned vessels has not had significant impact on the supply of newly trained officers. Nevertheless, no studies have been carried out on the future employment prospects in the sector. But the demand for higher skilled, specialised seafarers is likely to increase but on the other hand the attractiveness of the sector is likely to diminish in the future. Whilst the sector used to be highly paid, especially during the communist regime, nowadays an average monthly pay of a seafarer equals an average monthly salary in shore-based employment in Poland.

## 4.3 Education and training

It is estimated that currently approximately 90-95% of seafarers employed in categories from captains to 2nd officer are highly educated. There are around 400 graduates from officer schools annually (two Maritime Universities). But most school and academy graduates work abroad today<sup>XXXIV</sup>. And due to the fairly large number of seafarers relative to the career opportunities, Polish seafarers have fewer opportunities to obtain maritime related shore based employment than seafarers from most other European countries – as a consequence the retention rate of seafarers is high<sup>XXXV</sup>. It has been estimated that 8 to 9 officers out of 10 stay at sea for ten years or longer. Civil servants rather than ex-seafarers tend to fill in posts in the maritime administration in Poland.

<sup>XXXII</sup> Top four are the most searched for categories of seafarers nowadays and they include: captain and 1<sup>st</sup> officer, chief mechanic and the 1<sup>st</sup> mechanic.

<sup>XXXIII</sup> This information was obtained during an interview with the representative of APMAR on 21.03.2006

<sup>XXXIV</sup> Interview with the representative of APMAR on 15.03.2006

<sup>XXXV</sup> Southampton SOLENT University: The mapping of career paths in the maritime industries. ECSA and ETF.



Approximately 20-30% of Polish ratings become officers during their seafaring career<sup>XXXVI</sup>. Officers' progression route is quite fast, especially in the lower ranks.

## 5.0 Offshore supply

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The Baltic Sea is an attractive area from the point of view of natural resources. This applies not only to oil but also to natural aggregates. Poland is one of Europe's oldest crude oil producers. Its oil reserves are located in:

- Pomerania near the Baltic coast;
- Baltic sea (several fields);
- near the western border with Germany; and
- in the Carpathians (south of Poland)<sup>XXXVII</sup>.

However, Polish oil reserves, including those in the Baltic Sea, are expected to cover only 4% of the Poland's total demand for oil<sup>XXXVIII</sup>. At present there are intensive exploratory works being carried out in the Baltic Sea in order to determine whether there are further oil fields. In case more oil reserves are discovered the oil extraction would increase from 320,000 – 350,000 tonnes in 2001 to 700,000 over the period of 2002 – 2012<sup>XXXIX</sup>. However, even if the outcome is positive, it is unclear whether any increased oil extraction will translate into the increase of employment as this heavily depends on the capacity of drilling platforms<sup>XL</sup>.

The offshore supply sector in Poland is difficult to investigate due to the lack of systematic employment data collection in the sector. Employment related to manufacturing of offshore platforms and other equipment comes under employment related to shipbuilding and marine equipment. In terms of drilling, one of the most important companies is Petrobaltic that exploits underwater oil fields. The company currently has 3 drilling platforms, with one of them being unmanned. The oil extracted by the company covers 3% of Poland's demand<sup>XLI</sup> and accounts for 41% of the domestic oil extraction<sup>XLII</sup>. Currently, it employs 475 employees. Over 40% of the crew is highly educated with 90% male workers. Another company that is active in the sector is Energobaltic (in which Petrobaltic holds 45% of shares). This company was established with the aim of utilising gas accompanying the oil extraction process.

<sup>XXXVI</sup> Ibid.

<sup>XXXVII</sup> World Energy Council, survey of the World's resources 2001, [www.worldenergy.com](http://www.worldenergy.com)

<sup>XXXVIII</sup> In the search of oil and gas (*W poszukiwaniu ropy i gazu*), Polish Geological Institute, 4.11.2003

<sup>XXXIX</sup> *Report on the state of marine economy*, Ministry of Infrastructure, Warsaw, November 2002, p.10

<sup>XL</sup> This information was obtained through the website of Petrobaltic and through the telephone conversation with the representative of the Polish Geological Institute

<sup>XLI</sup> Petrobaltic website: <http://www.petrobaltic.com.pl/>

<sup>XLII</sup> Polish Geological Institute website: [www.pgi.gov.pl](http://www.pgi.gov.pl)

## 6.0 Seaports and related services

There are 55 ports and harbours in Poland with approximately 55 million tons of cargo being handled and over 3 million passengers being serviced every year<sup>XLIII</sup>. Approximately 30% of the Polish international trade turnover is serviced by the Polish ports, with 55% in export and 27% in import.

### 6.1 Employment trends

There is a general downward trend in employment in the Polish seaports. This trend is thought to be a result of restructuring process and the establishment of private companies dealing with cargo handling. The employment reduction was achieved by means of early retirement schemes and redeployment of staff<sup>XLIV</sup>. Employment in the four largest Polish ports was 7,970 in 2003 with Gdynia being the largest port in terms of number of employees (see table 6.1 below). This figure, however, represents a significant drop in comparison to 2002 when the seaport generated 8,517 jobs.

Total employment (cargo handling, storage, supporting activities for shipping and port authorities) came up to 11,547 persons in 2001, but fell to just under 9,800 employees in 2003. This demonstrates a decline of nearly 16% in two years, and it is mainly caused by a considerable decline in employment related to activities supporting the maritime transport sector. Workforce in the cargo handling sector and in port authorities has declined, but only slightly.

**Table 6.1 Employment and the number of companies in Polish ports**

	2001	2002	2003	2001	2002	2003
Cargo handling, storage in seaports	5,835	5,634	5,515	119	117	114
Other activity supporting maritime transport sector	4,383	3,306	2,970	259	251	247
Port authorities <sup>XLV</sup>	1,329	1,280	1,242	-	-	-
<b>Total</b>	<b>11,547</b>	<b>10,220</b>	<b>9,727</b>	<b>378</b>	<b>368</b>	<b>361</b>
- Gdańsk	-	2,274	2,139	-	-	-
- Gdynia	-	2,896	2,689	-	-	-
- Szczecin	-	2,562	2,388	-	-	-
- Świnoujście	-	785	754	-	-	-

<sup>XLIII</sup> Poland's position on the future EU maritime policy, 31.10.2005

<sup>XLIV</sup> Maritime economy, Statistic review, 2004, Maritime Institute in Gdańsk, Gdańsk 2004, p.5

<sup>XLV</sup> The figure relates to six largest port authorities only.

Source: *Maritime Economy, Statistic Review, 2004*

As the table above showed, the port of Gdynia is the largest Polish port in terms of workforce. Many of the companies in the port are undergoing privatisation. These companies include: Baltic Grain Terminal, Baltic General Cargo Terminal and Seaport's Technical Facility. It has been stated that one of the challenges faced by the port is a rapidly ageing workforce. On the other hand there is a large supply of labour and companies in the port are not facing recruitment problems.

The port of Gdańsk used to employ nearly 6,000 persons before the privatisation, but the employment fell to just 2,200 in 2003. This reveals the extent of job cuts over the past decade.

## 6.2 Employment projections

Although there are no specific forecasts on employment in the Polish ports it may be expected that employment will further decrease due to the ongoing privatisation process. The poor condition of the port infrastructure and weak intermodal linkages to land transport infrastructure further complicate the situation of the Polish ports.

On the other hand, the sector is facing many opportunities too, including an increasing importance of maritime transport and an increasing volume of cargo in both Polish ports and in the Baltic Sea Region. Whilst it is expected that import turnover will increase by approximately 2-4% per year in the Scandinavian countries and Germany, it is expected to increase by approximately 4-10% in the remaining countries of the region, including Poland. It is also expected that the global turnover in the Baltic Sea Region will increase by 75% and that the structure of the commercial exchange of Poland, Russia and Baltic States will evolve towards the model currently noticeable in the Scandinavian countries<sup>XLVI</sup>.

## 6.3 Skills and training

The automation of processes in the port sector and a growing number of container terminals constructed in Polish ports is expected to trigger changes in the skill needs in the sector towards more managerial and more specialised functions.

<sup>XLVI</sup> Galor A., Salmonowicz H., *Bałtyckie otoczenie portów morskich* (Baltic surrounding of the seaports), presentation on the international conference on ports in 2005, p.2, available at: <http://www.portalmorski.pl/opracowania2.php> (Polish version only)

## 7.0 Maritime services

The maritime services sector employed 3,185 persons in 2003 (see table 7.1). The data is not comparable with the data for previous years due to the lack of data availability from earlier years. It can however be noted that employment in many service areas, such as maritime agencies and the shipping register, declined, but on the contrary increased slightly or remained stable in the field of maritime education and training.

**Table 7.1 Average employment in the marine services**

Description	2001	2002	2003
Maritime agencies	201	191	184
Classification societies	-	-	135
Polish Register of Shipping	307	281	278
Polish Maritime Search and Rescue Service	-	292	283
- of which: floating crew	-	179	171
Polish Ship Salvage Company	-	90	83
- of which: floating crew	-	76	70
Gdynia Maritime University	-	753	766
Szczecin Maritime University	-	544	545
Maritime Schools in Darłowo	-	81	77
Maritime Schools in Gdańsk	-	107	107
Maritime Schools in Kołobrzeg	-	77	97
Maritime Schools in Świnoujście	-	93	82
Sea Fisheries Institute in Gdynia	208	187	187
Maritime Institute in Gdańsk	137	124	126
Supply to ships	220*	-	-
R&D Marine Technology Centre	-	-	200
Polish Geological Institute – Marine Geology Branch	-	-	35
<b>Total</b>	<b>853</b>	<b>2,820</b>	<b>3,185</b>

\* Excluding Polish Ship Salvage Co.

Source: Maritime economy, Statistic Review 2004

The overall number of education and research institutions related to the maritime economy is approximately 30. All of them are located in Gdańsk-Gdynia-Sopot, Koszalin, Słupsk and Szczecin. The number of students that are enrolled for the programmes offered by these institutions approaches 20,000 and is still increasing. Employment in the maritime universities of Gdynia and Szczecin went up slightly between 2002 and 2003. Other high



education institutions offering courses and degree programmes relevant to the maritime sector include:

- Naval Academy in Gdynia
- Gdańsk University of Technology
- Szczecin University of Technology
- Gdańsk University<sup>1</sup>

There are also secondary schools offering education in the field of the maritime economy. These include maritime schools in Darłowo, Gdańsk, Kołobrzeg and Świnoujście. Total employment in these schools in 2002 reached 358 persons and 363 persons in 2003.

The major institutions in the field of research and development in the maritime sector in Poland include:

<sup>1</sup> *Report on the state of maritime economy*. Ministry of Infrastructure, Warsaw, 2002, p.20

- Maritime Institute (Instytut Morski)<sup>I</sup>. The Institute is a research and development branch of the Ministry of Infrastructure. Its main activities include research and consultancy on such issues as hydrotechnology, oceanology, water management and disaster prevention, monitoring and database maintenance. In 2003 it employed 126 persons.
- Sea Fisheries Institute<sup>II</sup>. It was established in 1921 and is the oldest sea resource research institutes in Poland. Its main activities include fisheries biology, fisheries oceanography, and marine ecology, fish processing technology and fisheries economics. It is supervised by the Ministry of Agriculture and Rural Development and its activities are financed by the Ministry of Education and Science. The institute employed 187 people in 2003.

Both institutes experienced a slight decrease in staff over the 2001-2003 period, mainly within the research and scientific staff.

Important R&D centres in Poland include:

- Ship Design and Research Centre (Centrum Techniki Okrętowej)<sup>III</sup>. The Centre's main aim is to stimulate innovation in the shipbuilding sector through research, design and information support and advice.
- R&D Marine Technology Centre (Centrum Techniki Morskiej)<sup>IV</sup>. It was established in 1982 and its supervisory body is the Ministry of Economy. Its main activities include the development and implementation of state-of-the-art solutions for weapons systems and equipment used by the Polish Navy and other Services of the Polish Armed Forces. The Centre employs almost 200 employees; 70% are R&D personnel, designers and engineers.
- Polish Geological Institute – Marine Geology Branch<sup>V</sup>. The Institute was established in 1968. It carries out geological and hydrogeological research on the Polish sea zone, including sea geological and hydrogeological cartography and monitoring underground water. It employs approximately 35 people (scientific staff).

Supply to ships includes the supply of food, fuel, ship equipment and spare parts, as well as maps and other navigation publications. Another group of products supplied to ships are duty free goods such as alcohol, cigarettes and cosmetics. The number of companies active in this field is estimated at approximately 45. The turnover of the companies in 2001

<sup>I</sup> Marine Institute website <http://www.im.gda.pl/> (English version available)

<sup>II</sup> Sea Fisheries Institute website: <http://www.sfi.gdynia.pl/> (English version available)

<sup>III</sup> Ship Design and Research Centre website <http://www.cto.gda.pl/en> (English version)

<sup>IV</sup> R &D Marine Technology Centre <http://www.ctm.gdynia.pl/> (English version available)

<sup>V</sup> Polish Geological Institute – Marine Geology Branch website <http://www.pgi.gda.pl/> (English version)

was estimated at around PLN 90 million (ca. €24 million<sup>I</sup>). The number of individuals employed in these sectors in 2001 was 220<sup>II</sup>.

The Maritime search and rescue service (Morska Służba Poszukiwania i Ratownictwa SAR)<sup>III</sup> is a public entity supervised by the Ministry of Infrastructure. In 2002 and 2003 it employed 292 and 283 persons respectively (see table 7.1). The Polish Ship Salvage was established in 1951 and from 2002 has been performing commercial services only. These services include ocean and open sea towage, craning and crewing. As shown in the table 7.1, the company employed 90 persons in 2002 and 83 persons in 2003.

## 8.0 Recreational boating

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No information has been obtained from national stakeholders about employment related to manufacturing of recreational vessels. Information from the British Marine Federation and ICOMIA states that the industry provides employment for approximately 3,000 persons in Poland. A study carried out by ICOMIA also stated that the industry has seen a fairly substantial growth over the past few years in Poland, mainly because of relatively low labour costs. Half of the employment in the sector relates to manufacturing of recreational vessels, while equipment manufacturers (20%) and service providers (30%) provide rest of the jobs in the industry<sup>IV</sup>.

In terms of employment forecast, the European level industry representatives have projected that Poland has the greatest economic outlook in recreational boating and the country is expected to continue increasing its workforce in this sector, particularly in the manufacturing activities.

## 9.0 Maritime works

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The largest company in the maritime works sector is Dredging and Underwater Works enterprise which employed 303 people in 2003. No employment data is available on other companies involved in maritime works sector and it excludes employment in the company's branch in Szczecin.

**Table 9.1 Employment in the maritime works sector, 2001 - 2003**

Description	2001	2002	2003
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<sup>I</sup> At the exchange rate of 2001 (1 EUR = 3.7069 PLN)

<sup>II</sup> *Report on the state of maritime economy*, Ministry of Infrastructure, Warsaw, 2002, p.21

<sup>III</sup> Maritime search and rescue service <http://www.sar.gov.pl/>

<sup>IV</sup> British Marine Federation (2005) *European Overview 2004*.

Maritime works	579	499	303*
- of which: floating crew	409	362	213

Source: *Maritime economy, statistic review, 2004*

\* Excluding Dredging and Underwater Works Company Ltd. in Szczecin

## 10.0 Coastal tourism

Polish coastal tourism is concentrated in two coastal regions – Pomerania and West Pomerania. The coastline of these two regions is 560 km. The undoubted strength of the Polish coastal tourism is the diversity of the landscape and rich cultural heritage. The weakness of the Polish coastal tourism is undeveloped coastal infrastructure, especially for yachts and other recreational vessels – as well as strong seasonality. Creation of the ports and marinas is regarded as a factor that could help improve the development of coastal tourism in Poland.

### 10.1 Employment trends

No studies have been carried out to look at employment in the coastal tourism sector. Therefore, for the purposes of this study hotel and restaurant sector employment data for the two coastal regions has been used as an indicator.

Hotels and restaurants in Pomeranian Voivodship generated 17,200 jobs in 2004. This represented a decrease in employment in comparison to the period of 2001-2003 (see table 10.1 below). The employment in the West Pomeranian region reached 16 300, the same as in previous year. However, this figure is still lower than in 2001.

**Table 10.1 Employment in hotels and restaurants of Pomeranian coastal regions (thousands)**

Voivodship	2001	2002	2003	2004
Pomeranian	18.6	17.2	17.5	17.2
West Pomeranian	17.0	16.2	16.3	16.3
Total	35.6	33.4	33.8	33.5

Source: *Polish Statistical Office, 2005*



A recent analysis of the tourism sector in Poland similarly found a slowdown in tourism between 1998-2003<sup>1</sup>, as found in the case of coastal tourism. The study however forecast growth in the sector and a moderate growth in employment.

## 11.0 Navy

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The Polish navy currently employs approximately 16,000 people.

<sup>1</sup>Wagnos M. (ed.), *Uwarunkowania i kierunki rozwoju turystyki w Województwie Pomorskim (Determinants and directions of the development of tourism in the Pomeranian Voivodship)*, Pomeranian Voivodship Marshall Office, Gdańsk, 2004, p.151