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# Article

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# Labour Market Developments In The Maritime Industry Of The South Baltic Region<sup>1</sup>

## Abstract

There are two aims of this study. The first is to outline the developments in the maritime economy and employment in the South Baltic Region, and the second to identify the emerging activities in the maritime industry and to reveal the prospects and potential for labour market development, taking into account the demand for labour, required professions, qualifications of the labour force, and feasible cross-border mobility. This comparative study refers to four EU Baltic coast regions, namely the Mecklenburg-Vorpommern (D), Zachodniopomorskie (PL), Pomorskie (PL) and Klaipeda (LT) regions. Prospects for the economic development and employment potential specified for each region and selected segments of the maritime economy are consequently elaborated. The analysis of the maritime economy in the South Baltic Region reveals some crucial differences in terms of strategic maritime activities and employment potential and prospects for each of the regions. The phenomenon of the diverse demand for labour force through the various segments of the maritime economy and by region has been identified and is presented in the form of a comprehensive matrix of the projected demand for labour.

Keywords: labour markets comparative study, maritime industry, South Baltic Region

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<sup>&</sup>lt;sup>1</sup> This paper presents the results of comparative research conducted by the author within Labour Market Dynamics and Attractive Environments in the South Baltic Region, South Baltic Professionals Project Part-Financed by the European Union (European Regional Development Fund).

#### 1. Introduction

The two aims of this study are, first, to present current developments in the maritime economy and employment in the South Baltic Region, and second to identify the emerging activities in the maritime industry and to analyse the potential and prospects for labour market development in the context of the future demand for labour, required professions, qualifications of the labour force, and feasible cross-border mobility.

The area of the study refers to four EU Baltic coast regions, namely the Mecklenburg-Vorpommern (Germany), Zachodniopomorskie (Poland), Pomorskie (Poland) and Klaipeda (Lithuania) regions. In this report all these regions taken together are referred to as the South Baltic Region (SBR). The study begins with an updated and in-depth analysis of the maritime economy's situation, relevant employment patterns in the specified segments, and activities carried out in each of the examined regions of the South Baltic. Prospects for economic development and employment potential, both for the regions and individual segments of the maritime economy, are consequently elaborated in the second part of the study. Inter-regional employment prospects in the maritime economy by professions and feasible labour cross-border mobility are examined in the final part of the study. The phenomenon of a diverse labour force demand throughout the segments of maritime economy and by region has been identified and presented in the form of a comprehensive matrix of the projected demand for labour.

The maritime (industry) economy is a complex industry and encompasses diverse activities, both in scope and scale, and therefore there are no clearly defined general terms for the phenomenon. In keeping with the above-stated aims of this study, despite its internal diversity analysis was carried out for the core maritime activities, as follows:

- shipbuilding and ship repair and renovation, steel and marine constructions, including yacht and boat manufacturing,
- offshore wind energy and offshore supplies and equipment,
- seaport and related services, including port handling and storage, activities of maritime transport agencies like customs, shipping agencies, ship brokering and forwarding, inspections and supervising, as well as port governance and other activities supporting maritime transport, encompassing port navigation services such as pilotage, towage and mooring, dredging works within port basins, and other unspecified port and maritime services,
- fisheries, consisting of Baltic sea fish catches, fish processing, and the distribution products distribution (wholesale and retail sales),

• maritime and costal tourism, encompassing several activities including yachting and recreational boating, with supporting services and supplies, cruise shipping, water sport activities and other maritime sport and recreation services, beach and coastal tourism, and restaurant and gastronomy branches, supplemented by other unspecified maritime activities.

#### 2. Intra-regional study of the maritime economy and employment

Current developments in the economic development and employment in the maritime industry in the Mecklenburg-Vorpommern region, as specified in Table 1 below, may be characterized as follows:

Sectors of the maritime economy	No. of companies	Employment	%	Sales revenue (in million EUR)	%
Total, including:	4,660	49,300	100	3,740	100
Seaports and related activities	80	5,600	12	900	24
Shipbuilding and repair	220	5,500	11	1,000	28
Fisheries	160	2,000	4	270	7
Maritime and coastal tourism (boat tourism and hotels & restaurants)	3,900	32,000	65	870	23
Offshore wind energy and offshore supply	200	3,200	6	640	17
Maritime research and technical infrastructure	100	1,000	2	60	1

Table 1. The maritime economy and employment in the Mecklenburg-Vorpommern region in 2011

Source: own elaborations, based on C. Peron, Mecklenburg-Vorpommern: a regional profile, CoesioNet, European Cohesion and Territories Research Network 2011.

- in economic terms (measured by weighted sales revenue) the most important maritime sectors relate to shipbuilding & repair, seaport services, maritime tourism, and offshore wind energy,
- in terms of employment, the maritime economy is dominated by maritime tourism, followed by seaport industry, shipbuilding & repair and offshore activities,
- the most labour-intensive sectors, with economic potential for development, are maritime tourism and offshore industry.

At present the maritime economy in the Zachodniopomorskie region, as outlined in Table 2 below, is characterized in terms of economics and employment by the following:

Sectors of the maritime economy	No. of companies	Employment	%	Sales revenue (Mio EUR)	%
Total, including:	3,552	35,208	100	2,337	100
Seaports and related activities	324	3,642	10	413	18
Shipbuilding and repair	1,200	6,200	18	604	26
Waterborne transport	93	808	2	104	4
Fisheries	1,007	8,185	23	1,110	47
Research & Development, Maritime education	31	990	3	11	1
Maritime and costal tourism (only hotels & restaurants)	666	13,855	40	95	4
Other maritime activities	231	1,528	4	Х	х
Share in the Zachodniopomorskie region's economy (%)	1.3	4.4		х	х

Table 2. The maritime economy and employment in Zachodniopomorskie region in 2011

Source: own elaborations based on the Statistical Yearbook of the Maritime Economy, Central Statistical Office and Statistical Office in Szczecin, Warsaw-Szczecin, 2012.

- in economic terms the most important maritime sectors relate to fisheries, which constitute the revenue base for the region's maritime economy, followed by shipbuilding & repair and seaports,
- in terms of employment, the maritime economy is dominated by maritime tourism, followed by the fisheries and shipbuilding & repair industries,
- the most labour-intensive sectors with economic potential for development are maritime tourism and fisheries.

The maritime economy of Pomorskie region, exemplified in Table 3 below, is presently distinguished by the following:

- in economic terms, the most important maritime sectors relate to shipbuilding & repair, supported by the almost equally important sectors of fisheries and seaports,
- in terms of employment, the maritime industry is more dispersed in comparison to other regions and the most important sectors are shipbuilding & repair, maritime tourism, and fisheries,
- the most labour-intensive sectors with economic potential for development are shipbuilding & repair, followed by maritime tourism, seaports and fisheries.

Sectors of the maritime economy	No. of companies	Employment	%	Sales revenue (Mio EUR)	%
Total, including:	5,245	47,846	100	3,539	100
Seaports and related activities	558	6,161	13	883	25
Shipbuilding and repair	3,322	15,800	32	1,400	39
Waterborne transport	113	2,650	6	126	4
Fisheries	1,051	7,934	17	1,034	29
Research & Development, Maritime education	65	2,438	5	24	1
Maritime and costal tourism (only hotels & restaurants)	413	9,460	20	72	2
Other maritime activities	774	3,403	7	Х	Х
Share in the Pomorskie region's economy (%)	2.2	5.2	х	х	х

Table 3. The maritime economy and employment in the Pomorskie region in 2011

Source: own elaborations based on the Statistical Yearbook of Maritime Economy, Central Statistical Office and Statistical Office in Szczecin, Warsaw-Szczecin 2012.

The developments in the Klaipeda region's maritime industry, in terms of economics and employment, elaborated in Table 4 below, present the following features:

 Table 4. The maritime economy and employment in the Klaipeda region in 2010

Sectors of the maritime economy	No. of companies	Employment	%	Sales revenue (Mio EUR)	%
Total, including:	866	17,081	100	1,170	100
Shipping and ports	309	6,307	37	727	62
Shipbuilding and repair	114	5,213	31	246	21
Fisheries	49	1,431	8	90	8
Energy	13	356	2	55	5
Marine recreation and tourism	381	3,774	22	52	4
Share in the Klaipeda region's economy (%)	х	17.47	X	18.55	x

Source: Foresight study (Lithuania) GenerationBalt 2012, R. Viederyte, Maritime sector impact on the economy of Lithuania, Economics and management 2012, nr 17 (1).

- in economic terms, the maritime economy is dominated by the shipping & ports sector, followed by shipbuilding & repair,
- employment in the Lithuanian maritime economy is rather evenly distributed among shipping & ports, shipbuilding & repair and maritime tourism,
- the most labour-intensive sectors with (moderate) economic potential for development are ship repairs & supplies, fish processing, and maritime tourism.

# 3. Cross-regional developments of maritime segments and their employment potential

In terms of the future demand for labour, the maritime economy of Mecklenburg-Vorpommern is to a great extent polarized. High growth rates for employment are expected in segments of offshore wind energy and maritime and coastal tourism. Other segments are not expected to generate new jobs, owing to technological changes which do not induce worker demand (port and related services), barriers hindering further development (shipbuilding and repair), and competitive issues (fish processing). The offshore energy sector has already absorbed the redundant workforce from shipbuilding and it is foreseen that further development of the sector will convert demand towards a new labour force (ECOTEC Research&Consulting 2006a). The forecasted demand for labour by maritime segments of the region is outlined in Table 5 below.

	Projected demand for labour					
Maritime segments	high (annual growth rate>10%)	moderate (annual growth rate 5%-9%)	low (annual growth rate<5%)	no change	negative	
Shipbuilding & repair				✓		
Offshore wind energy	✓					
Coastal fishing					✓	
Fish processing				~		
Maritime & coastal tourism	~					
Port & related services				$\checkmark$		

Table 5. Projected demand for labour in the Mecklenburg-Vorpommern maritime economy

Source: own elaboration.

The situation of the maritime economy in the Zachodniopomorskie region is a complex one, which translates into future prospects for employment. The traditionally strong and main sector – shipbuilding - is, following the bankruptcy of the Szczecin Shipyard in 2009, undergoing deep restructuring and this process is not yet completed. The ship repair sector is slowly moving towards recovery. It is however aimed at utilizing existing capacities and employees formerly involved in shipbuilding sector. There are some slight signs of development in steel constructions, but not enough yet to be expressed in a noticeable rise of employment. Positive trends in the labour force engaged in port and related services are conditional and much dependent on large investments aimed at improvement of seagoing vessels' access to the port of Szczecin (Bernacki 2012). The region's flag maritime segments, like fish processing and maritime and recreational tourism, are expected to develop and, even if growth rates will most probably be lower, owing to the labour-intensive nature of both industries a noticeable rise in the number of overall employees is expected. The projected demand for labour in each segment of the Zachodniopomorskie maritime economy segments is depicted in Table 6 below.

Table 6. Projected demand for labour in the maritime economy	of the Zachodniopomorskie region
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	Projected demand for labour						
Maritime segments	high (annual growth rate>10%)	moderate (annual growth rate 5%-9%)	low (annual growth rate<5%)	no change	negative		
Ship repairs & steel constructions			✓				
Port & related services		✓ if induced by investments		~			
Coastal fishing				~			
Fish processing		~					
Maritime & coastal tourism	~						

Source: own elaboration.

The Pomorskie region generally exhibits developmental trends, both as to the scale and scope of its maritime economy. The restructuring of the shipbuilding and ship repair industry, currently in progress, is expected to translate into an increase in demand for labour, especially as regards sophisticated offshore vessels and constructions. What distinguishes Pomorskie from the other analysed regions is the anticipated rise in demand for labour in the port and related services industry segment, geared by developments in port logistics services. Maritime and coastal tourism is also regarded as important segment inducing demand for labour, additionally supported by positive trends in cruising and the development of water sports and other forms of sea-related tourism. The projected demand for labour in the maritime economy of the Pomorskie region has been elaborated in Table 7 below.

Table 7. Projected demand for labour in the maritime economy of the Pomorskie region

		Projected dem	and for labour		
Maritime segments	high (annual growth rate>10%)	moderate (annual growth rate 5%- 9%)	low (annual growth rate<5%)	no change	negative
Shipbuilding, repair & offshore supplies		✓			
Port & related services	~				
Coastal fishing				~	
Fish processing			$\checkmark$		
Maritime & coastal tourism		✓			

Source: own elaboration.

In the Klaipeda region the most promising maritime segments in terms of generating labour force demand are ship repair and supplies, port services, fish processing, and maritime and costal tourism (ECOTEC Research&Consulting 2006b), however the rise in employment is expected to be moderate and of a variable nature. In comparison with other regions, feasible developments are more dispersed. They cover a wide range of activities, however expected growth rates for employment are at moderate and low levels, and thereafter the number of new jobs generated in the future are expected to be limited in number. The projected demand for labour in the maritime industry of the Klaipeda region is depicted in Table 8 below.

Table 8. Projected demand for labour in the maritime economy of the Klaipeda region

		Projected d	lemand for labour		
Maritime segments	high (annual growth rate>10%)	moderate (annual growth rate 5%- 9%)	low (annual growth rate<5%)	no change	negative
Ship repair & supplies		✓			
Port & related services			$\checkmark$		
Coastal fishing				~	
Fish processing		$\checkmark$			
Maritime & coastal tourism		$\checkmark$			

Source: own elaboration.

# 4. Inter-regional employment prospects in the maritime economy

An inter-regional comparison of the maritime economy in terms of employment in the South Baltic Region is depicted in Table 9 below.

# Table 9. Cross-regional forecasted demand for labour, by maritime economy segments, in the South Baltic Region

Maritima comunta	High and moderate demand for labour by maritime economy segments and regions					
Maritime segments	Mecklenburg- Vorpommern	Zachodniopomorskie Region	Pomorskie Region	Klaipeda Region		
Shipbuilding & repair				$\checkmark$		
Offshore wind energy	$\checkmark$					
Offshore supplies			~			
Port & logistics services		✓ conditional only	~			
Fish processing		~		✓		
Maritime & coastal tourism	$\checkmark$	$\checkmark$	√	~		

Source: own elaboration.

When analyzing some segments of the maritime economy, one should distinguish economic developments from the employment effects they induce. Due to technological advances and improvements, port and related services is clearly the segment with the lowest potential for generating a demand for labour. Both containers and roll on-roll off traffic are labour-saving, characterized by increased efficiency, which in turn makes the labour elasticity very low and does not induce a noticeable number of jobs. There are, however, exceptions, as in the case of Pomorskie region, where the port container throughput allows for and creates incentives for the development of port-related logistics services. Logistics, especially value added services, is a labour intensive sector if developed in the environment of dynamic progress in container throughput, which should induce a high demand for labour. Pomorskie is also a leading region in shipbuilding and ship repair, and the sector has already undergone a transition which has enabled it to not only sustain output level in volume and in value, but has also established grounds for development in the area of advanced offshore supplies activities. This restructuring creates good prospects for labour demand in the emerging offshore activity, whereas in the sector of new buildings and ship repair it allows it to maintain its existing level of employment. Some positive and moderate trends in workforce demand also relate to the Lithuanian ship repair industry, which for the most part has its roots in the cost efficiency of the industry (Foresight study 2012). The traditionally labour-intensive and well developed sector of fish processing is an important activity in terms of demand for labour in the Zachodniopomorskie and Klaipeda regions. Increased demand for labour is expected in the maritime and costal tourism sector, and this phenomenon applies to all the analysed South Baltic regions. Having in mind the already attained level of sector development and its maturity, one may assume that overall the highest employment growth rate in maritime tourism will take place in Zachodniopomorskie, followed by Mecklenburg-Vorpommern and the Pomorskie region, and then by the Klaipeda region. In the offshore wind energy sector, Mecklenburg-Vorpommern is the leading region, both in terms of economic development and employment potential. There is a high demand for skilled labour in this branch is based on long term experience and know-how, and in the existence of a whole value production chain involving several sophisticated manufacturers, clustering developments, and finally in the competitive advantages of the activity.

Maritime	High an	d moderate demand for la	bour, by professio	n
segments	Mecklenburg- Vorpommern	Zachodniopomorskie	Pomorskie	Klaipeda
Shipbuilding & repair			technicians and marine engineers	technicians and marine engineers
Offshore wind energy	technicians and marine engineers, environmental engineering and logistics engineering			
Offshore supplies			technicians and marine engineers, logistics engineering	
Port & logistics services		maritime logistics & logistics engineering (conditional only)	maritime logistics & logistics engineering	
Fish processing		lower qualified		lower qualified
Maritime & coastal tourism	manager	s and entrepreneurs, envir	onmental enginee	ers

Table 10. Cross-regional analysis of the demand for labour by profession in the maritime economy segments in the South Baltic Region

Source: own elaboration.

An upward trend for professions obviously will relate to engineering and technicians specialized in the vast area of marine constructions, machinery, and electrical power supplemented by environmental engineering. The demand for these kinds of professions will be especially visible in the segments of shipbuilding & ship repair, offshore wind energy, and offshore supplies, and therefore in the regions of Mecklenburg-Vorpommern, Pomorskie and Klaipeda. A labour force with maritime logistics (economists, managers, lawyers) and logistics engineering will be most required in the port and logistics services segment, especially in the Pomorskie region. If properly induced by investments into the improvement of maritime transport access to the port, this upward trend may also be visible in the Zachodniopomorskie region. There will be a demand for low qualified staff in the fish processing sector, which is projected to develop further in the Zachodniopomorskie and Klaipeda regions. Some moderate growth is expected in the demand for production and environmental engineers, especially in the Zachodniopomorskie region. All the analysed regions are expected to experience an upward trend in the demand for labour in maritime and coastal tourism. Generally, the managerial and entrepreneurship professions will be most desired, however the demand for specific professions will differentiate depending on the already attained level of development and expected growth in various segments of maritime and coastal tourism. In all regions there is projected to be a rising demand for catering and gastronomy staff, both qualified and nonqualified (seasonal employment), as well as hotel service. Workers engaged in servicing yachting and boating, chartering, supplies of water crafts equipment, and marina service personnel and water sports and leisure activities personnel will be most in demand in the Zachodniopomorskie and Pomorskie regions. In the Klaipeda region, at the utmost general tourism services and activities staff will be required, while in Mecklenburg-Vorpommern there will be a demand for qualified personnel tailored for further developments in the quality of services rendered in maritime and costal tourism.

These above-described trends in the demand for labour by qualifications and professions have been confirmed to a great extent by the expert opinions (Foresight 2012). In this survey, the experts in maritime-related activities indicated engineering as the leading area of qualifications needed in the maritime economy. Also, there will be cross-cutting among specific segments with respect to the demand for environmental engineers and lawyers and for staff with maritime logistics skills (management, economy, and law), as well as logistics engineering. This should be supplemented by the high demand generated by maritime and coastal tourism for employees of various specific qualifications. On the other hand, it is foreseen that there will be a rise in demand for lower skilled staff in the well-developed sector of fish processing.

With respect to the maritime economy of the South Baltic region as a whole, the potential for cross-border mobility, i.e. streams of workers commuting among the relevant regions for work, are impeded by the phenomenon of synchronic labour markets in the eligible regions. In short, this means that what is in oversupply, or in demand, in terms of the work force and its qualifications in one region will usually be the same for the other regions (Cross-border 2012). Therefore, in general there is a weak potential for crossborder labour force mobility.

However, such mobility could come about either as a result of foreign direct investments in relevant regions and business and trade cooperation, or in the form of seasonal work. As examples one may point out German investments in the port and related services segment in the Zachodniopomorskie Region. A few highly qualified Germans are involved in the administration and management of stevedoring companies. On the other side, the main Polish logistics company with a site in Szczecin has recently taken over a German inland transport company, which resulted in the substantial development of transport and logistics services and consequently induced cross-border mobility of Polish qualified staff engaged in cross-trade transport and logistics. In the Klaipeda Region there is one company with Polish origins involved in bunkering vessels and other watercrafts, but it is characterized by low labour force mobility, because almost the entire employee staff comes from the local Lithuanian market.

Business and trade cooperation is above all connected with maritime works, maritime engineering, and the modernization or construction of port infrastructure. This induces labour force mobility among the staff involved in business administration, sales, and firm representatives. The German firm Bilfinger Berger is an example of such a company, It has been involved in the renovation of the Szczecin and Świnoujście port infrastructure, and recently has expanded its engagement into a joint project for setting up a large manufacturer of offshore constructions in Szczecin. The factory is to produce substructures for marine wind turbines, and will occupy twenty hectares of land. With an investment worth 75 million EUR and employing 450 people, an output of 80 trusses per annum at the beginning of production is expected to be attained as early as 2014. The investor is the KSO company, specifically set up for this purpose. It consists of the German Bilfinger Berger, which specializes in constructions and maintenance services for industry and energy, CRIST SA, a shipyard specializing in shipbuilding and marine structures, and the MARS Investment Fund.

Seasonally, at the coastal area of Mecklenburg-Vorpommern, and especially at Usedom Island, some 500 jobs in the coastal tourism and restaurant branches are available for young Polish workers each year between the months of June-August.

### 5. Conclusions

All regions will exhibit either high or moderate demand for employment in maritime tourism. Fish processing will generate moderate but stable demand for employment, particularly in the Zachodniopomorskie and Klaipeda regions. Labour will be in demand the shipbuilding & repair sector mostly in the Pomorskie and Klaipeda regions. Port industry will generate demand for labour in the Pomorskie region only, unless the fairway is deepened to the port of Szczecin, in which case labour demand in the industry may also appear in the Zachodniopomorskie Region. In Mecklenburg-Vorpommern, besides maritime tourism a rise in the demand for labour force is expected in the offshore wind energy sector.

The most demanded professions in the maritime economy of the South Baltic Region include:

- marine technicians and marine engineers, maritime logistics and logistics engineers (in offshore wind energy and offshore supplies, shipbuilding and repair, seaports ),
- managers and entrepreneurs, environmental engineers (in maritime tourism),
- lower qualified workers (in fish processing).

So far the cross-border exchange of workers within the maritime economy is limited, but if operational it can induce a weekly/monthly mobility of highly skilled workers and create significant added value. In the future however, specialized development of maritime segments might create a broad base for workforce mobility as a result of the de-synchronization of the local labour markets. Then cross-border mobility might be an effective tool for covering the gaps between demand and available qualified labour in each of the analysed regions.

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#### Streszczenie

## ROZWÓJ RYNKÓW PRACY W GOSPODARCE MORSKIEJ REJONU POŁUDNIOWEGO BAŁTYKU

Dwa główne cele badań, to analiza stanu gospodarki morskiej i zatrudnienia w Rejonie Południowego Bałtyku oraz zidentyfikowanie sektorów gospodarki morskiej wykazujących potencjał dla rozwoju i określenie wpływu, jaki będzie to miało na zatrudnienie i wymagane kwalifikacje zawodowe, a także na możliwości wymiany międzyregionalnej pracowników. Badania porównawcze przeprowadzono dla czterech nadmorskich regionów UE, a mianowicie Meklemburgii-Przedpomorza Przedniego(D), województw: Zachodniopomorskiego i Pomorskiego (PL) oraz Regionu Kłajpedy (LT). Wskazano na perspektywy rozwoju gospodarczego poszczególnych segmentów gospodarki morskiej i ustalono związany z tym wpływ na rynki pracy w poszczególnych regionach. Analiza porównawcza poszczególnych segmentów gospodarki morskiej Rejonu Południowego Bałtyku umożliwiła zidentyfikowanie różnic w możliwościach ich rozwoju i w efektach popytu na pracę i na kwalifikacje zawodowe dla każdego z regionów. Zjawisko zróżnicowanego potencjału rozwoju rynków pracy w wyróżnionych segmentach gospodarki morskiej w ujęciu międzyregionalnym przedstawiono w formie wielokryterialnych macierzy prognoz popytu na pracę.

Słowa kluczowe: badania porównawcze rynków pracy, gospodarka morska, Rejon Południowego Bałtyku