

Mapping the European maritime cluster

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November 2015, Rotterdam



**NETHERLANDS
MARITIME
TECHNOLOGY**

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Introduction

The project: 'Mapping the European maritime cluster' is a project of the European Network of Maritime Clusters (ENMC) and aims to provide the European Commission with an overview of the maritime cluster in Europe. The countries that have been analyzed are the 28 European Union countries + Norway. Norway was included because of its close relationship with many EU-countries.

The motivation to map the entire European maritime cluster lies in the fact that large industries with a clearly indicated contribution to the European economy can have a more significant impact on decision-making by the European Commission. When an industry presents a united front and can demonstrate a clearly defined impact on the economies of the European Union, it can make its presence felt more clearly. So far, the maritime cluster in Europe has been under-represented in this respect, while the size of the industry is in fact very significant. According to the Blue Growth report, which we will touch upon later in this study, the total added value of the European maritime cluster is estimated at 485 billion euros and the estimated employment at 5.5 million people. For comparison, the aviation industry, which has significant political influence in the EU, supports 5.1 million jobs and contributes 365 billion euros, or 2.4% to European GDP (Commission, Air transport, 2015).

In order to analyze the European maritime cluster, a short theoretical description was needed to create a framework, aimed at creating a uniform, European approach. This would help the European countries in defining their calculation methods and make sure that everything is calculated the same way in each country. In addition, in the future this would make it easier to identify trends and changes in the industry.

In this report, the maritime cluster is divided in eleven categories, as described in "De Nederlandse Maritieme Cluster Monitor 2014", written by Nederland Maritiem Land (NML). These eleven categories are the following:

- Category 1: Seagoing shipping
- Category 2: Shipbuilding
- Category 3: Offshore
- Category 4: Inland shipping
- Category 5: Water building
- Category 6: Sea ports
- Category 7: Navy
- Category 8: Fisheries
- Category 9: Maritime services
- Category 10: Watersports industry
- Category 11: Maritime supplied industries

These categories aim to structure the research and create a uniform, European overview of the maritime cluster.

For some categories, the amount of vessels is relevant to show the size of the industry, for other categories this was not relevant (maritime services, sea ports etc.).

The report is partly based on figures from the European Commission-initiated Blue Growth report (2014). This report identifies seven main categories whereas the Maritime Monitor identifies 11. Some of the Maritime Monitor-categories are gathered under one heading in the Blue Growth report, such as sea going shipping and inland shipping. The Maritime Monitor categories are better suited for a specific country, in this case the Netherlands, whereas the Blue Growth report provides a

more general European overview. However, some information was missing, such as statistics on fisheries, which are included in this report.

Furthermore, other European Commission sources have been used as well as the Waterborne Declaration of 2011 and various sources from European companies or governments. Contact was established with relevant parties in the European countries who provided a substantial amount of information.

In terms of employment, the direct employment was taken into account. The European 'Report on the competitive position and future opportunities of the European marine supplied industry' was used to map the maritime services industry (BALance, 2014). Following this report, the 1st and 2nd tiers will both be included because the second tier is, in the opinion of NMT, within the scope of the direct employment as many marine supplies companies can be both 1st and 2nd tier suppliers at the same time.

A broad definition of the maritime industry was provided by the Norwegian Maritime Equipment Suppliers in their annual report: "The maritime industry is: All businesses that own, operate, design, build, supply equipment or specialist services for all types of ships and other floating entities" (Industri, 2015).

The Blue Growth report of 2012 estimates the current size of maritime economic activities at a total gross value added of 485 billion euros and the estimated employment at 5.5 million people. By 2020 estimations are that these figures have increased to 590 billion and 7 million employees. The Blue Growth report identifies 7 main categories and 24 sub-sectors. The main categories are:

- Maritime transport;
- Food, nutrition, health and ecosystem services;
- Energy and raw materials;
- Leisure, working and living;
- Coastal protection;
- Maritime monitoring and surveillance
- Shipbuilding and ship repair

According to the European Commission, the maritime regions of the European Union account for almost 50 percent of the European GDP (Commission, Facts & Figures Maritime Affairs, 2015).

Explanatory notes

All effort was made to retrieve the most up to date data. However, because some information was outdated it was determined that the information had to be from at least 2010, older information was not considered.

The Blue Growth report of the European Commission (2012) is used if no other information is available.

The report of NMT is not entirely complete due to lack of data in some areas. Further in-depth research is required. In addition, the figures from Eurostat need to be explained in terms of how they calculate employment (for example).

Regarding the calculation methods, the following problem arose: it was the opinion of Netherlands Maritime Technology that turnover would be a better standard than added value. However, for some sectors, turnover figures were hard to find. That is why it was decided to include both turnover and added value figures, if available.

There needs to be a clear distinction between equipment for offshore oil & gas installations and equipment for other offshore constructions.

The study “Competitive position and future opportunities of the European marine supplies industry” sometimes includes Turkey in the statistics. In this research, Turkey has been left out due to geographical and economic reasons.

About seagoing shipping: turnover figures could not be found, instead the added value figures were used.

About towing services: this category was hard to narrow down. To a certain extent, this sector is part of the inland shipping industry, as well as the seagoing shipping industry and the maritime services industry. The Dutch Central Bureau for Statistics (CBS) defines the towing-service as “One or more towing-ships are being towed by a towing ship”. For the purpose of this report, the towing services are included in the seagoing shipping industry.

About offshore: regarding this category, it was hard to find turnover figures. In addition, in the Blue Growth report offshore wind is included in the ‘Renewable energy’ category. Lastly, the offshore industry would be better measured in terms of capacity instead of turnover.

About fisheries: for this category, the employment has been counted for the fisheries and aquaculture sector. The processing sector was excluded because it is shore-based and including this would not create a balanced overview. In addition, the figures found at Eurostat only indicate tonnage, engine power and/or number of vessels. There is no indication about the size of ships and which ships are included. It is estimated that the majority of the European fishing vessels is smaller than 12 meters. Furthermore, Eurostat gives no indication on whether a ship needs to be self-propelled or not.

About maritime services: this category was not included in the Blue Growth report. It has proven to be extremely hard to measure. No exact figures have been retrieved for this report.

Summary

The Blue Growth report estimates the total gross value added at 485 billion euros in the European Union with an employment rate of 5.5 million. Estimations are that by 2020 the GVA will have increased to 590 billion and 7 million employed people (Commission, Blue Growth: Scenarios and drivers for sustainable growth from the oceans, seas and coasts, 2012). GVA is the abbreviation for Gross Value Added and measures the difference between output and consumption. GVA is often used to calculate the GDP, through estimating the output value minus input value.

- Seagoing shipping: total direct employment EU shipping industry in 2013: 600,000 people, of which 80 percent is at sea and 20 percent is shore-based (Economics, 2015).
The total gross value added of the shipping industry was estimated to be 147 billion euros of the total GDP in 2013 (Economics, 2015).
The short sea shipping fleet consisted of 4772 ships in October 2014, with a total deadweight tonnage of 30,000,00 (Wagelaar & Beumer, 2015).
- Shipbuilding: 175,000 jobs in 300 enterprises, amounting to a turnover of 23.5 billion euros for 2014 (ResearchGate, 2011). The total added value of shipbuilding amounts to almost 18 billion euros added value for 2012 (Commission, Blue Growth).
- Offshore: 75.000 jobs, turnover oil & gas 14 billion euros in 2014 (Commission, Blue Growth). Offshore wind: € 2 billion added value in 2012 (Fisheries, 2014).
- Inland shipping industry: total turnover of the inland shipping industry in the EU (2013) was 5,5 billion euros . Total direct employment is estimated to be around 42,000 people, of which 65 % is active in the Rhine corridor (Commission, Sectoral social dialogue: inland waterways, n.p.). In 2014, it was estimated that in Western Europe there were around 8,000 dry cargo vessels, of which two thirds are units smaller than 1,500 tons carrying capacity (small vessels).
- Dredging: 25,000 employment, 7.5 billion euros turnover (Laros & Benedetti, 2011)
- Ports: 350,000 direct employment, 20 billion euros added value (Laros & Benedetti, 2011) (2011)
- Navy: 15 billion turnover, 82.000 direct and indirect employment (Laros & Benedetti, 2011)
- Fisheries: Employment is around 730,000 people with 23 billion added value (Commission, Blue Growth). Aquaculture: The total added value of the aquaculture industry is 1.6 billion euros while the employment is 85,000 (Commission, Blue Growth). The annual turnover is around 3.5 billion euros (Commission, Facts and figures on the common fisheries policy, 2014)
- Maritime services: no information
- Watersports industry: 20 billion euros turnover, 280,000 people are directly employed (Industry, 2010)

- Maritime supply industries: For the period 2006 to 2010 EU-28, marine supplies industry' 1st tier enterprises employed in average about 257.000 persons in 23.500 companies. Including 2nd tier suppliers the total employment for marine supplies in EU-28 + Norway sums up to about 425.000 persons (BALance, 2014). The annual turnover in 2011 was 42 billion euros (Laros & Benedetti, 2011)

Total calculation of above mentioned categories:

- Employment over all categories: 2,8 million people
- Value added over the following categories: seagoing shipping, shipbuilding, offshore wind, sea ports, fisheries, aquaculture: 222 billion euros
- Turnover over the following categories: shipbuilding, offshore oil & gas, inland shipping, dredging, navy, aquaculture, watersports and maritime supply industries: 74 billion euros

Category 1: Seagoing shipping

According to Wagelaar & Beumer, short sea shipping is defined as the transport of goods between ports in the EU-28 on the one hand, and ports situated in geographical Europe, on the Mediterranean and Black Seas on the other hand (Wagelaar & Beumer, 2015). Related to this definition is SSS, the abbreviation for Short Sea Shipping, which is defined as the movement of cargo by sea without directly crossing an ocean (Group, 2015). The Blue Growth report of the European Commission defines short sea shipping as intra-European maritime shipping (Commission, Blue Growth: Scenarios and drivers for sustainable growth from the oceans, seas and coasts, 2012).

According to the European Community of Shipowners' Associations (ECSA), the shipping industry is defined as:

- the transport of goods by sea (both containerized and non-containerized);
- the transport of persons by sea (both on ferries and on cruise ships);
- service and offshore support vessels, such as ships laying or repairing undersea cables or pipelines; prospecting for oil; conducting oceanographic research; diving assistance; undertaking undersea work and servicing offshore wind farms, oil and gas platforms; and
- towage and dredging activities at sea (Economics, 2015).

The economic value report by Oxford Economics estimated the total direct employment of the EU shipping industry in 2013 to be 615,000 people, of which 80 percent is at sea and 20 percent is shore-based. The total economic impact of the shipping industry has contributed to 147 billion euros of the total GDP in 2013. In addition, for every 1 million euros the European shipping industry contributes to GDP, it creates another 1.6 million euros elsewhere in the European economy (Economics, 2015). Figure 1 and 2 illustrate the importance of the shipping industry in terms of employment and gross value added. The short sea shipping fleet consisted of 4772 ships in October 2014, with a total deadweight tonnage of 30,4 million (Wagelaar & Beumer, 2015).

Figure 1: The following figure illustrates the direct employment of shipping and comparator industries in 2013. Shipping is the third biggest category for employment:

Table 2.1 Direct employment in the EU and Norway – shipping and comparator industries, 2013

Industry	Employment (000s)
Film, television and broadcasting	834
Paper manufacturing	648
Shipping	615
Travel agents and tour operators	556
Forestry and logging	497
Air transport	423

Source: Eurostat, Oxford Economics

Figure 2: The following figure illustrates the direct Gross Value Added of shipping and comparator industries in 2013. Shipping is the third biggest category for direct GVA.

Table 2.2 Direct GVA in the EU and Norway – shipping and comparator industries, 2013

Industry	GVA
Film, television and broadcasting	€70 billion
Manufacture of textiles	€64 billion
Shipping	€56 billion
Postal and courier services	€55 billion
Manufacture of transport equipment (excluding motor vehicles)	€46 billion
Air transport	€31 billion

Source: Eurostat, Oxford Economics

Figure 3: The following graph indicates the maritime transport and shipbuilding figures for the European Union in 2012:

Table 2.2. Indicative size of maritime economic activities

Function / activities	Current size		Sources & Comments
	Value added (€ bn)	Employment (in 1000)	
1. Maritime transport and shipbuilding			
1.1 Deepsea shipping	98	1,204	Eurostat database (2012); Data 2008; share in total shipping based on freight volumes
1.2 Shortsea shipping (incl. RoRo)	57	707	Eurostat database (2012); Idem
1.3 Passenger ferry services	20	200-300	Eurostat database (2011) (passenger statistics), Annual reports of operators (staff data); Data 2009; employment calculated based on staff/pax for several large operators. GVA share assumed relative to employment
1.4 Inland waterway transport	8	36	Eurostat database (2011); Data 2007

Source: Blue Growth report

The total added value – inland waterway transport amounts to 175 billion euros added value and the total employment amounts to approximately 2 million employees.

Category 2: Shipbuilding

According to SEA Europe, in 2014 the direct employment resulting from shipbuilding was 175,000 jobs in 300 enterprises, amounting to a turnover of 23.5 billion euros. According to the Blue Growth factsheet of 2014, the European shipbuilding and ship repair sector has a total added value of 17,8 billion euros.

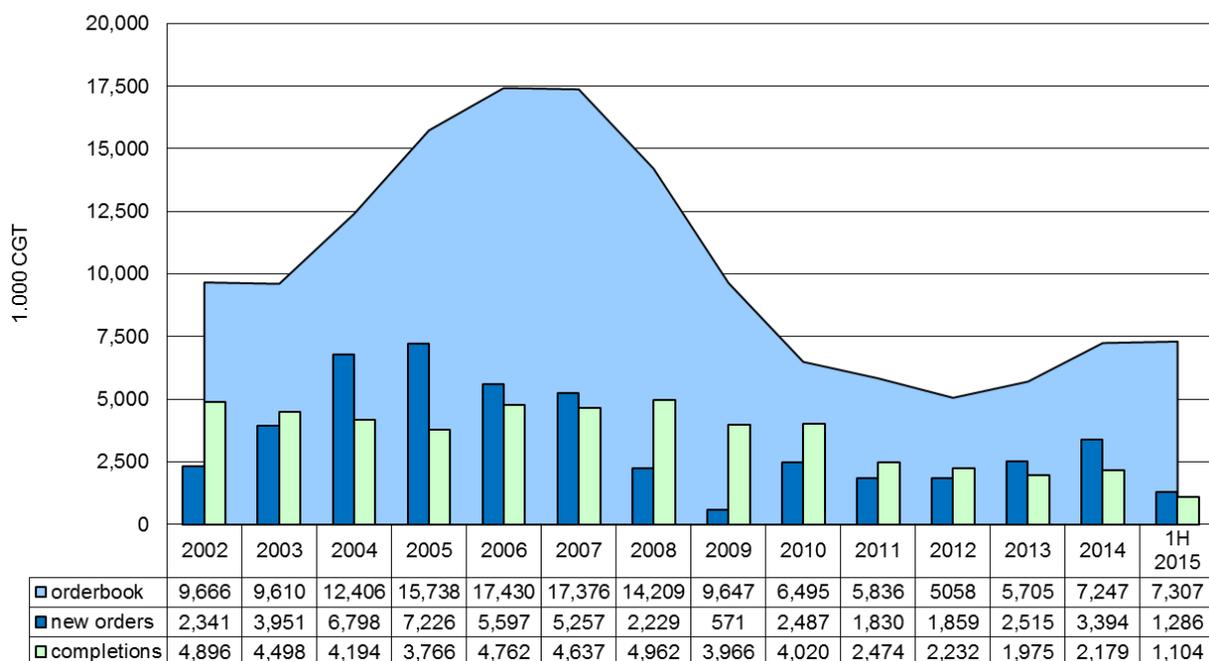
The shipbuilding sector includes shipbuilding yards and ship repair shipyards.

For the category shipbuilding, contact was established with SEA Europe. This organization is composed of 23 associations across 18 countries in Europe. SEA Europe promotes and supports the European maritime technology industry.

In addition, Europe has the 3rd largest order book with 35.4 billion euros amounting to 12 percent of the market shares. In 2013, over 6 million ships were ordered, over 2 million were completed and approximately 2,5 million were ordered (Europe, 2014). Norway, Germany, Romania and the Netherlands are the biggest countries for ship completion (2013), Romania has seen the most new orders, followed by the Netherlands and Italy.

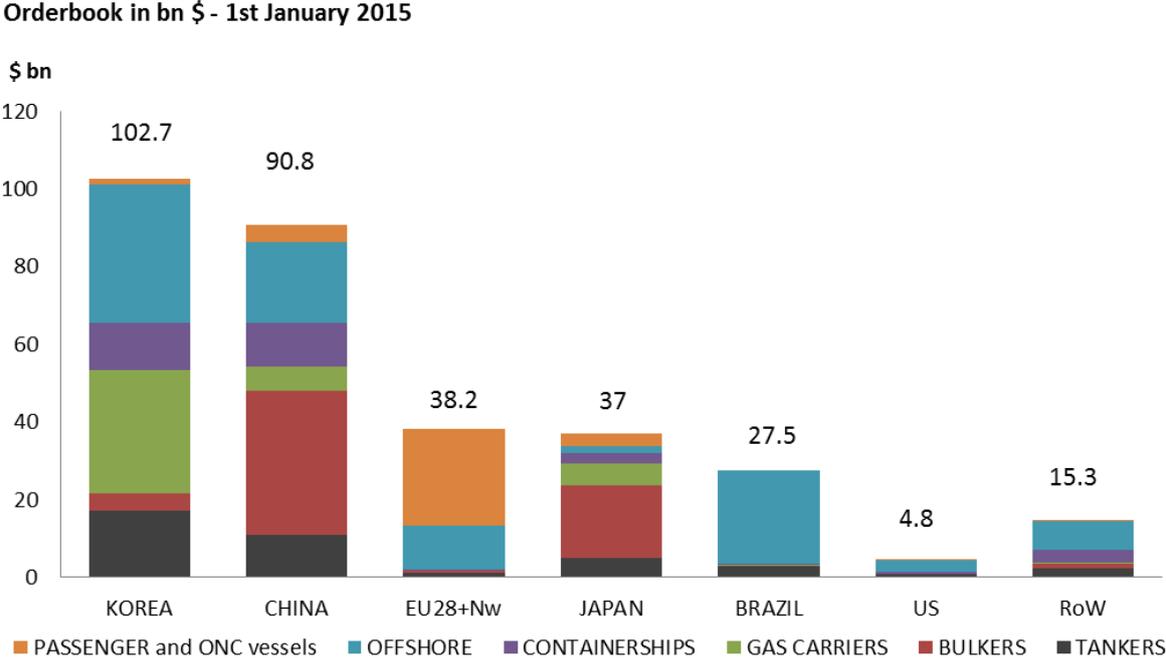
According to Sea Europe, European military shipbuilding industries have annual sales of EUR 18 billion, representing more than 0.3% of European GDP, while employing over 80,000 people, representing 0.3% of EU employment. Naval shipbuilding accounts for about 45% of the European shipbuilding industry, the other 55% being commercial shipbuilding.

Figure 4: The following figure shows the commercial shipbuilding activity in the 28 European Union countries + Norway



Source: Sea Europe

Figure 5: the following graph shows the order book in billion dollars as from January 2015:

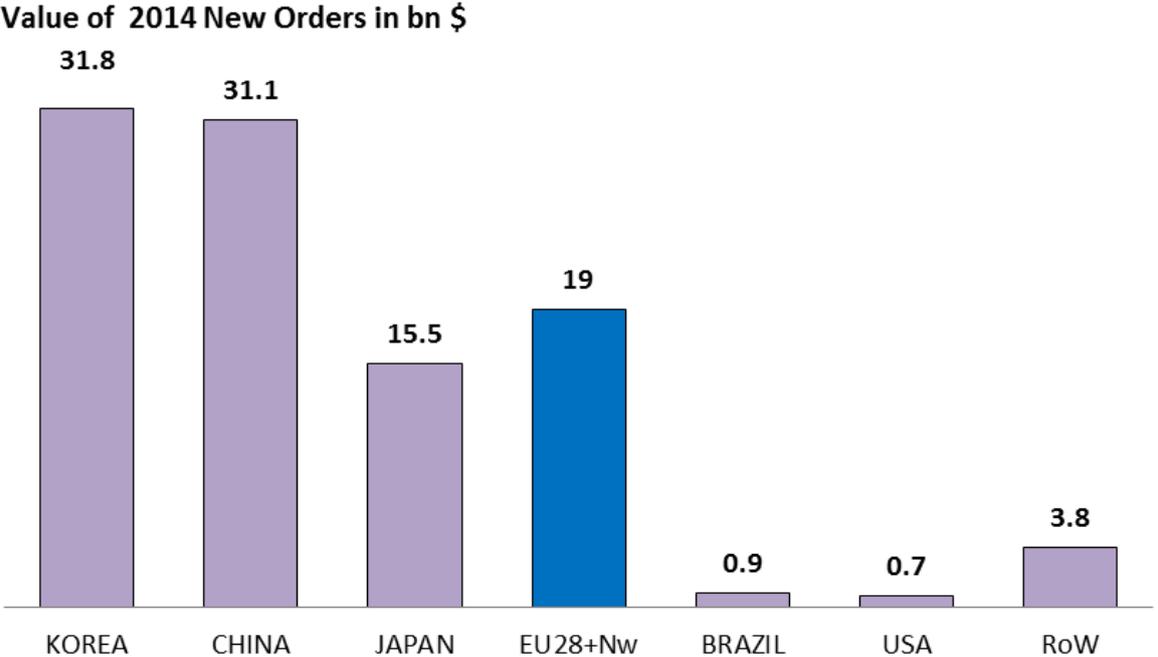


Source: Clarkson's January WSM

For the 28 EU-countries + Norway, passenger and ONC vessels make up the largest share of the order book, followed by offshore.

European shipyards are specialized in building non-cargo, carrying high technology vessels.

Figure 6: The value of these new orders lead to the following graph:



Category 3: Offshore

The maritime offshore sector contain the key players in the offshore industry: oil and gas companies. The maritime offshore sector also entails all companies that enable these big companies to produce goods in the most effective way, through delivering high-quality maritime products and services. In addition, offshore wind installations have been included in the offshore category.

The International Association of Oil & Gas Producers (IOGP) does not have figures for business or employment related data.

According to the Blue Growth factsheet of 2014, the offshore oil & gas industry employs has a total value of 14.3 billion euros in the European Union.

The total offshore oil, gas & wind industry amounts to 75,000 jobs in the European Union (Commission, Blue Growth: Scenarios and drivers for sustainable growth from the oceans, seas and coasts, 2012).

An estimate of the Ecorys institute was made for the offshore wind industry, where it is estimated that the total added value of the offshore wind industry exceeds 7 billion euros and employs more than 100,000 people in 2020, as compared to 20,000 in 2009. The offshore wind industry is expected to grow significantly, with planned installed capacity figures for 2020 doubling or tripling the installed capacity of 2010 (Ecofys, 2011).

Category 4: Inland shipping

Inland shipping is defined as the industry that involves the transportation of goods and people over water within the same country or to another country. It is also known as inland waterway transport (IWT).

80 % of the total European inland navigation workforce is accounted for by the Netherlands, Germany, France, Belgium, Luxembourg, Italy, Romania and Bulgaria (Commission, Transport Facts, 2012).

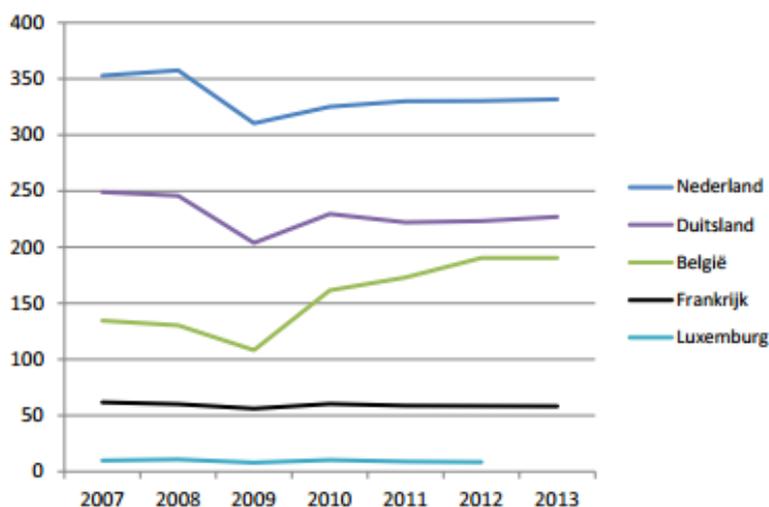
The Central Commission for the Rhine estimates the amount of vessels for West-Europe (Belgium, Germany, France, the Netherlands and Switzerland) in 2011 at approximately 13,000 (Rhine, 2013).

According to Rabobank figures of 2013, the direct employment in the Netherlands was 14,000 people (Land, 2014) and the annual turnover in 2014 was almost 90 million euros (Statistiek, 2015). German figures for 2013 show 4.500 inland skippers and 1.8 billion turnover (Eurostat, 2014). Belgian figures for 2014 show 1500 independent entrepreneurs and 700 employees (Vlaanderen, 2015) and an annual turnover of 311 million euros in 2012 (Statista, 2015). French figures for 2014 show employment of 11,000 people and 1.5 billion euros of turnover (Federovsky, 2015).

The majority of transport volume transported on inland waterways is accounted for by the Netherlands, Germany and France. According to figures from Eurostat, the total turnover of the inland shipping industry in the EU (2013) was 5.5 billion euros. Our current own estimations, extrapolated from previous figures, are that the turnover will be approximately 6 billion euros in 2015.

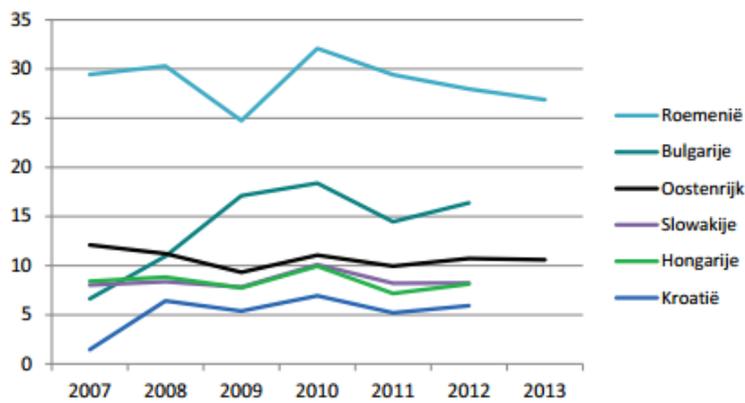
In 2014, it was estimated that in Western Europe there were around 8,000 dry cargo vessels, of which two thirds are units smaller than 1,500 tons carrying capacity (small vessels).

Figure 7: The following graph displays the transport of goods from 2007 to 2013 in Rhine-bordering countries.



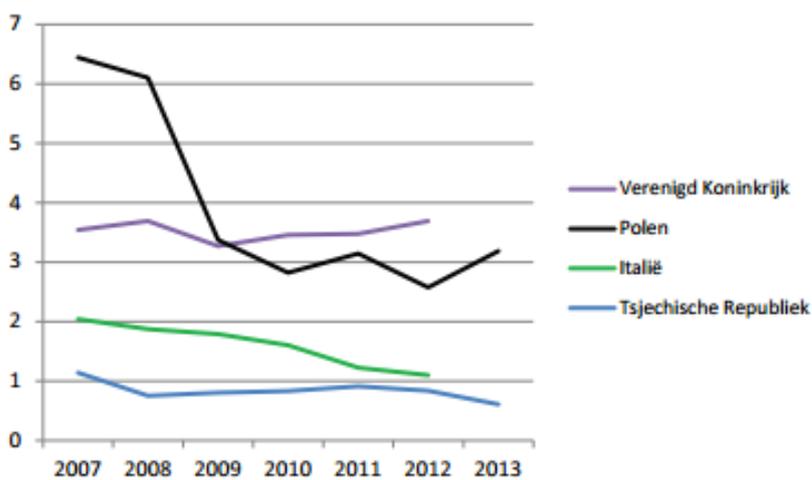
Bron: Eurostat, met uitzondering van Nederland¹ en Frankrijk²

Figure 8: The following graph shows the transport volumes in the Danube basin in millions of tons:



Bron: Eurostat

Figure 9: The following graph shows the transport on inland waterways in millions of tons in the United Kingdom, Poland, Italy and the Czech Republic:



Bron: Eurostat, met uitzondering van Italië (AiPo) en Groot-Brittannië (UK Department of Transport)

Category 5: Dredging industry

According to the Maritime Monitor, the dredging industry has the following sub-sectors: land reclamation, dredging, coast- and bank activities, constructive dredging, soil sanitation and area development (Land, 2014). The International Association of Dredging Companies (IADC) identifies 6 categories that drive the dredging industry. They are: World trade, population growth, coastal protection, energy, water-related tourism and environment (Companies, 2013). The categories are further defined into:

Trade:

- Harbor extensions (excluding offshore crude oil terminals and LNG terminals and excluding marinas and cruise terminals)
- Navigation channels and turn basins
- Maintenance dredging

Coastal defense:

- Beach nourishment and replenishment
- Dike building/raising and flood defense works (excluding civil works)
- Coastal protection, river training and other shore protection measures

Urban development:

- Land reclamation for, e.g.:
 - Industrial infrastructure port, industrial, trade and service, recreational, transport infrastructure and for urban development (coastal expansion),
 - Trade and service infrastructure (trade fairs, business parks, conference centers),
 - Transport infrastructure (airports, roads, parking facilities, rail projects),
 - Residential real estate (housing driven by demographic pressure)
- Dredging trenches for immersed tunnels, dams
- Outfalls and landfalls
- Marine storage basins for contaminated dredged materials

Energy:

- Dredging for offshore crude oil terminals and LNG terminals
- Trenching and backfilling for sub-marine cables and pipelines
- (Pre)dredging related to oil drilling facilities (e.g., platforms, glory holes)
- Other offshore installations (gravity-based structures for wind farms)

Tourism:

- Land reclamation for recreation sites such as theme parks, recreation piers/wharfs, shopping malls and marinas and cruise terminals, land reclamation for hotels, holiday resorts
- Beach restoration and replenishment (Companies, 2013).

According to figures from the European Dredging Association (EUDA), the direct employment among EUDA members is 25,000. Approximately 750 vessels make up the fleet of EUDA's members. The member countries of EUDA are: Belgium, Denmark, Germany, Great Britain, Ireland, Italy and the Netherlands. These countries represent the biggest share in the dredging industry.

According to EUDA, European dredging companies have a 90 percent market share of dredging in worldwide markets (2012). In addition, the annual maritime turnover of the European dredging companies was 7.5 billion euros in 2012 (Companies, 2013). This is supported by the Waterborne declaration (ResearchGate, 2011).

The International Association of Dredging Companies (IADC) represents worldwide dredging organizations in Asia, Africa, Australia, Europe, Middle East and the Americas. According to their yearly report, in 2013 the European turnover was approximately 1.2 billion euros (IADC, 2013).

Figure 10: Turnover 2010 regarding the global dredging market per area. Europe has the second highest turnover, after China, indicating the size of the industry. A division is being made between free and closed markets. The difference between those markets is that in closed markets only homeland contractors may bid for a government tender.

Turnover 2010 global dredging market per area in mln €

	free markets	Closed markets	total 2010
Africa	805	75	880
Central/South America	960	35	995
Australia	605	0	605
Europe	1,820	30	1,850
Middle East	1,155	45	1,200
India	355	150	505
Asia	600	260	860
China	0	2,975	2,975
North America	25	925	950
total *	6,325	4,495	10,820
	58%	42%	

*) of which stone works € 400 mln

Source: IADC

Category 6: Sea ports

According to the Waterborne declaration, seaports generate approximately 20 billion euros turnover and employs around 350,000 people directly (ResearchGate, 2011).

The maritime monitor divides the seaports in four categories: “loading, unloading and transfer”, “storage”, “services transport over water” and “intermediaries freight traffic”. The chemical companies in the ports, for example, are not included in the seaports category.

Figure 11: The following graph shows the gross weight of seaborne goods handled in all ports for 2012-2014, in million tons. For 2014, the total gross weight in EU-28 was 3,721 million tons and the annual growth rate was around 2 percent:

	2012		2013			2014			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Gross weight of goods (in Mio tonnes)	893.7	899.0	924.4	918.4	910.7	913.7	939.1	930.2	938.8
Growth rate on previous quarter (%)	-2.2	+0.6	+2.8	-0.7	-0.8	+0.3	+2.8	-0.9	+0.9
Growth rate on same quarter of previous year (%)	-2.1	-1.3	+0.1	+0.5	+1.9	+1.6	+1.6	+1.3	+3.1
Gross weight of goods (in Mio tonnes) - Annual data						3 652.5			
Annual growth rate (%)						+0.3			
						3 721.7			
						+1.9			

Source: Eurostat

Category 7: Navy

The EU navies' economic impact is estimated to be around 15 billion euros and the navies provide direct and indirect employment to 82,000 people .

The navies add to the maritime contribution of the European countries with their ships and their employment. There are no exact in- and export flows and it is, therefore, hard to calculate added value. A naval study was conducted in 2015 but this study was not published at the time this report went to press. Any help in finding statistics about this maritime sector would be greatly appreciated.

Category 8: Fisheries

Regarding fisheries, the following definitions apply:

The fishery sector can be divided in small sea fisheries, big sea fisheries (also known as trawler fisheries) and fish nurseries, also known as fish farming.

Total global capture production: Global total production of fish, crustaceans, mollusks and other aquatic animals has continued to increase and reached 158 million tons in 2012 (Organization, 2012). The EU's level in 2010 stood at 6.2 million tons.

The European fleet is broken down into different sizes. The total European fleet was estimated at 87,000 vessels in February 2014 with a total tonnage of 1.7 million gross tonnes (Commission, Facts and figures on the common fisheries policy, 2014).

Figure 12: The following graph shows the specifications per length:

EU fishing fleet capacity by length category
(situation as at 28 February 2014)

Length				Average age
0 - 6	28 198	23 385	352 894	27
6 - 12	45 946	162 730	2 287 848	24
12 - 18	6 955	159 505	986 749	25
18 - 24	3 330	249 700	886 491	22
24 - 30	1 729	243 883	642 124	20
30 - 36	579	139 979	311 268	22
36 - 45	433	172 689	409 750	17
45 - 60	109	93 235	164 607	19
60 - 75	76	130 994	225 899	16
>75	90	349 840	414 945	20
	87 445	1 725 938	6 682 574	21.3



Source: Commission, Facts and figures on the common fisheries policy, 2014.

The majority of the European fishing vessels are shorter than 12 meters (approximately 74,000 boats). However, the ships longer than 75 meters contribute the most to the total gross tonnage (350,000), followed by the ships with the length of 18-24 meters and 24-30 meters.

The fisheries industry, according to the Blue Growth factsheet, employs approximately 730,000 people and has a total added value of almost 23 billion euros.

The aquaculture industry in the European Union employs approximately 90,000 people, according to the Blue Growth factsheet (Commission, Blue Growth). The total added value of the aquaculture industry is 1.6 billion euros and the annual turnover is around 3.5 billion euros while employment is estimated at 85,000 people (Commission, Facts and figures on the common fisheries policy, 2014).

These two categories combined amount to the following:

- Employment: 820,000 people
- Added value: 24.6 billion euros
- Turnover aquaculture: 3.5 billion euros

Category 9: Maritime services

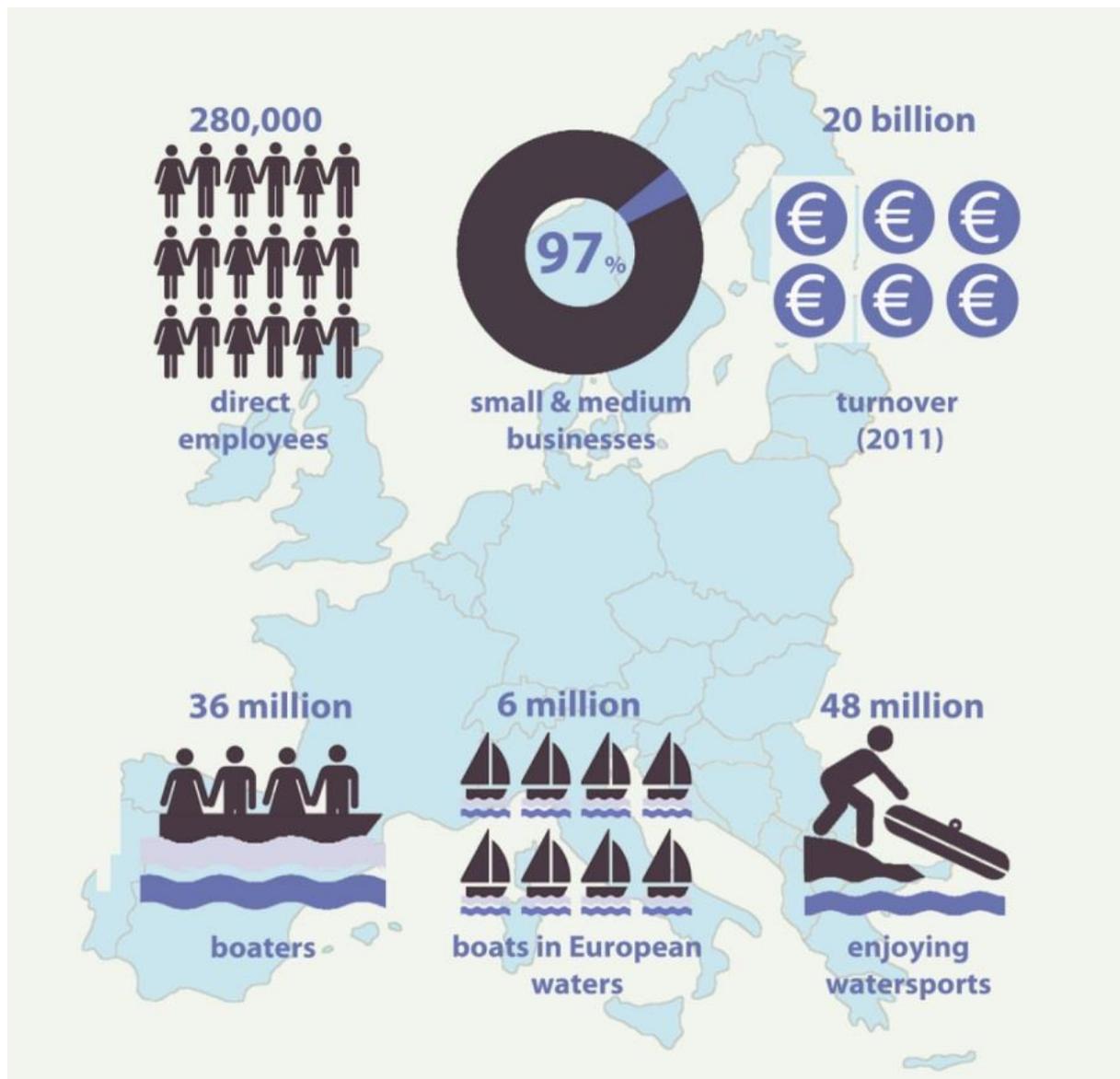
The maritime services category is composed of companies that support the maritime sector with knowledge, insurances, financing, bunkering, towing- and salvage services. This sector proved very hard to identify and it was decided that there was not enough information to include the sector in this report. As with other parts of the European maritime cluster, further investigations into this topic would be very welcome.

Category 10: Watersports industry

According to the figures from the European Boating Industry, the annual turnover in 2011 was approximately 20 billion euros. This was further divided in two categories: 18 billion was generated by services (marinas, trade and maintenance, boat rental and charter, crews, schools for boating and water sports, etc.) and 4 billion was generated by manufacturing activities (boatbuilding, equipment, accessories, engines, water sports equipment). 280,000 are people directly employed, of which 230,000 people work in the services field and 50,000 employees work in manufacturing. The total company number amounts to over 38,000 with 35,000 services companies and 3,000 manufacturing companies, of which a majority (98 %) are small companies (Industry, 2010).

The recreational European fleet encompasses 7 million vessels. On a yearly basis, 48 million people practice water sports and 36 million people are sailing in the European Union (Industry, 2010).

Figure 13: The watersports industry is characterized by its small-scale character within many sectors, such as yacht-basins, sailing schools etcetera.



Source: ICOMIA Statistics Book 2010

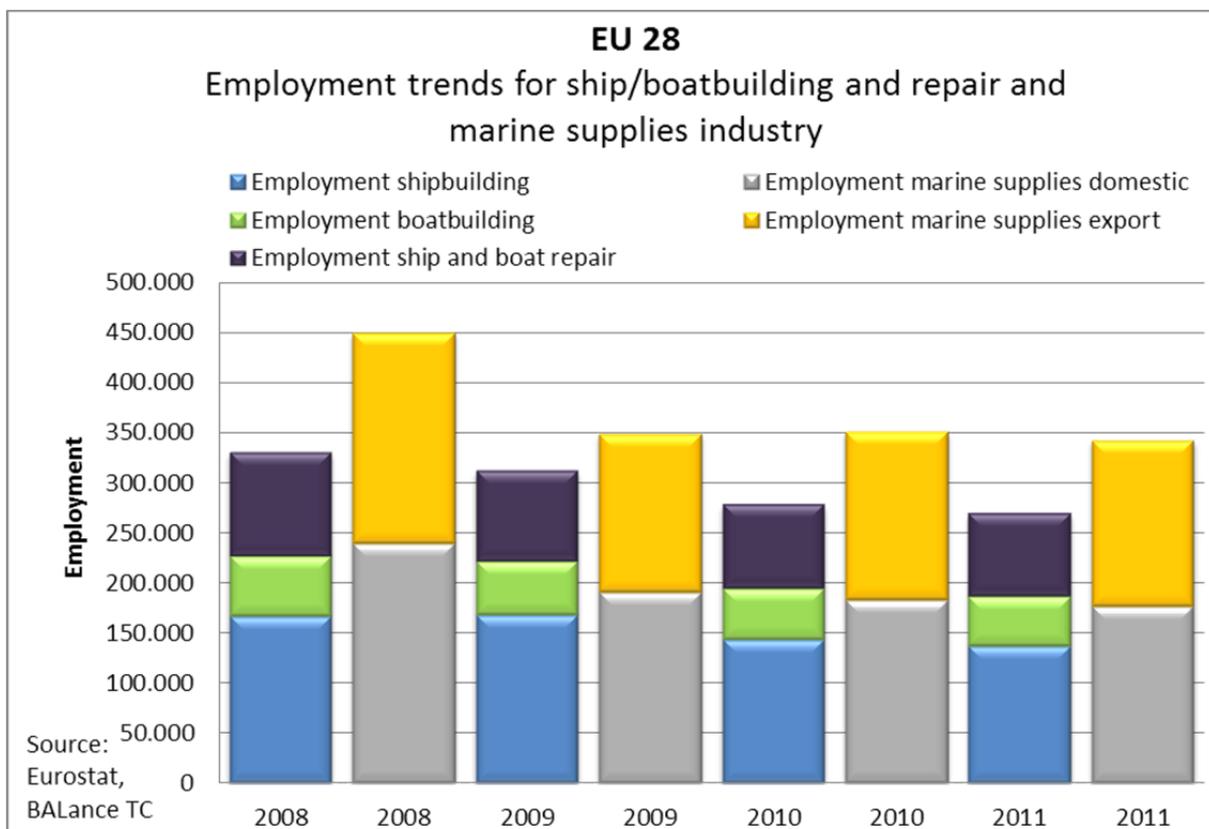
Category 11: Maritime supplied industries

For this category a lot of information was retrieved from the report “COMPETITIVE POSITION AND FUTURE OPPORTUNITIES OF THE EUROPEAN MARINE SUPPLIES INDUSTRY” of the European Commission. This report gives a detailed overview of the major markets and customers and identifies the following categories:

- Newbuilding of merchant ships and offshore ships (shipyards, boatyards and shipping companies)
- Ship repair and conversion of merchant ships (shipyards, boatyards and shipping companies)
- Retrofitting - a special conversion market for ships following new regulations (shipyards, boatyards and shipping companies)
- Offshore platforms, jack-ups etc. for oil and gas (offshore- and shipyards, oil and gas companies/operators)
- Offshore facilities, plants for offshore wind applications (offshore- and shipyards, offshore wind operators and wind farm developers)
- Naval shipbuilding, maintenance and repair (shipyards and governments)
- Shipbuilding (boatyards, shipyards)
- Other marine and maritime markets, e.g. underwater services, traffic and environmental surveillance, safety and security markets, harbor technologies, shipyard equipment, special polar markets and (governments, ship/offshore operators, port developer etc.)

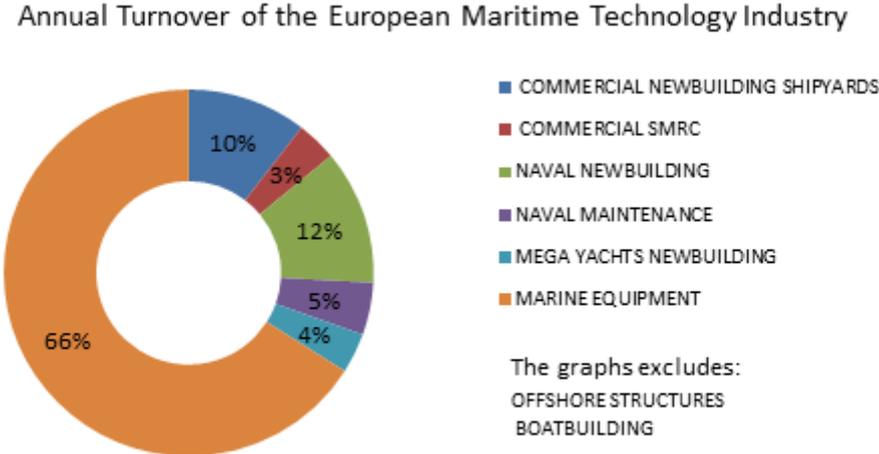
Horizontal co-operation in the sector could lead to an artificial increase of the size of the sector (part of the contract could be entrusted to someone else)

Figure 14: The total employment, from the 1st and 2nd tier, amounts to 390,000 persons in EU-28, excluding Norway.



Regarding Norway, figures for 2012 show an employment rate of under 20,000 people in the ship equipment manufacturing sector. Another 5,000 jobs can be found in the marine specialist equipment and drilling equipment, creating a total employment of approximately 25,000 for 2012. The total turnover in 2012 for all maritime equipment suppliers was 95 billion Norwegian kroner, approximately 10 billion euros (Industri, 2015).

Figure 15: The following graph gives an overview of the annual turnover of the European Maritime Technology Industry in 2013



Source: SEA Europe

According to SEA Europe, in 2014 the turnover of marine equipment was 60 billion euros and the direct employment was 350,000 in over 22,000 enterprises.

Conclusion

In conclusion, the European maritime industry is substantial in terms of employment, turnover and added value. The total figures amount to the following:

- Employment: 2,8 million people

The problem with the contribution of the categories is that some categories are being valued in terms of Gross Added Value (GVA) and others in turnover figures. As a result, two categories have been established, with figures of the sectors for which information could be retrieved:

- Value added over the following categories: seagoing shipping, shipbuilding, offshore wind, sea ports, fisheries, aquaculture: 222 billion euros
- Turnover over the following categories: shipbuilding, offshore oil & gas, inland shipping, dredging, navy, aquaculture, watersports and maritime supply industries: 74 billion euros

The Blue Growth report estimates the total gross value added at 485 billion euros in the European Union with an employment rate of 5.5 million. Estimations are that by 2020 the Gross Value Added will have increased to 590 billion and 7 million employed people (Commission, Blue Growth: Scenarios and drivers for sustainable growth from the oceans, seas and coasts, 2012).

In conclusion, the data found by Netherlands Maritime Technology do not match with the data from the Blue Growth report. This is due to the following reasons:

- The NMT report does not have added value and turnover figures for all categories, as it was not always possible to find this information. Consequently, some sectors are left out in the calculations.
- The Blue Growth report is very broad and takes nearly all maritime activities into account whereas the NMT report is more specific. An example of this are the inland shipping industry, the shipbuilding industry and sea ports. These three categories are all included in the Blue Growth category 'Maritime transport and shipbuilding', whereas the NMT report gives a better overview of the respective categories.

Given the geographic characteristics of the European Union countries, the proximity of waterways and a highly developed maritime infrastructure in notably the Benelux-countries, the importance of the European maritime industry cannot be denied.

Compared to other transport industries, such as aviation, the maritime sector is a very big industry in Europe and needs more research in terms of definitions and exact figures per country. Reliable, unbiased data would create a more precise overview of the entire maritime sector and its contribution to the European economy while it would also create a foundation on which policies could be based. Some sectors are hard to identify, especially the naval and maritime services sector. Regarding these categories, more research is needed regarding definitions and more European cooperation is necessary.

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