



STUDY ON BLUE GROWTH AND MARITIME POLICY WITHIN THE EU NORTH SEA REGION AND THE ENGLISH CHANNEL

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0. General overview

Morphological structure of the coastline

- Germany has two coastal regions¹: the North Sea region (north-west coastline) and the Baltic Sea region (north-east coastline).
- Germany's coastline has a total length of 3.204 km, representing 2.35% of the total coastline length of the EU-22 coastal Member States. Approximately 2.200 km (1.,6% of the total coastline length of the EU-22 coastal Member States) is allotted to Germany's Baltic Sea coastline and about 1.000 km to Germany's North Sea coastline.
- The country's coastal zone (within a range of 10 km from the coast) covers 13,727 km², which represents 3.30% of the corresponding EU-22 coastal area².
- Germany has 20 inhabited islands, 14 – including "Helgoland" as Germany's only deep-sea island – belonging to the North Sea and the remaining six – including "Usedom" which is divided between Germany (84% of the island's area) and Poland – to the Baltic Sea.

Population and related social condition for maritime areas

- In 2011³, 3.83 million people or 4.,69% of the country's population lived in Germany's coastal regions⁴. 2.29 million people (2.,80%) lived in the Baltic Sea region while 1,55 million people (1,89%) called the North Sea region their home. The total population in Germany's coastal regions corresponds to 0.82% of the total population living in all the EU-22 coastal Member States.
- In 2010, 1.74 million people or 4.,28% of the country's labour force was located in Germany's coastal regions. 1.06 million employed persons (2.62%) worked in the Baltic Sea region and 0.,68 million (1.,67%) in the North Sea region of Germany. The total labour force in Germany's coastal regions corresponds to 0.85% of the employed labour force in all the EU-22 coastal Member States.
- In 2010, 0.19 million people or 5.,84% of Germany's unemployed persons were located in coastal regions. 0.12 million unemployed persons (3.,83%) were allotted to the Baltic Sea region and 0.,06 million unemployed persons (2.,01%) to the North Sea region. The total number of unemployed persons in Germany's coastal regions is 0.94% of the unemployed persons in all EU-22 coastal Member States⁵.

Economic role of maritime areas over the national total

- In 2010, the people in coastal regions of Germany generated almost EUR 24.600 gross domestic product (GDP) per capita. This is 19.37% lower compared to the country's average GDP per capita. The people in the Baltic Sea region produced about € 23.750 GDP per capita (22.,15% lower than national average), while people in the North Sea region generated almost € 25.850 GDP per capita (15.,25% lower than the national average)
- In 2010, coastal regions in Germany were responsible for € 83.85 billion or 3.,78% of the country's gross value added (GVA). The Baltic Sea region accounts for € 48.32 billion GVA (2.,18%) and the North Sea region for € 35.53 billion GVA (1.,60%).

¹ Coastal regions are defined as NUTS-3 regions directly located on the coast.

² Due to the different geomorphology of Germany's North and Baltic Sea coastline it is not possible to calculate the values for each region.

³ Due to a territorial reform in Mecklenburg-Vorpommern no appropriate data are available for 2012.

⁴ Coastal regions are defined as NUTS 3 regions on the coast. Hamburg and Bremen are not included in this definition although they are major centers of the maritime industries in Germany. Even if not included in the definition of the EU coastal zone, Hamburg and Bremen are taken into account when referring to maritime-related activities in the following chapters.

⁵ Source: German NUTS-3: Federal Employment Agency: Labour market statistics; EU-22 coastal: EUROSTAT.

GVA – Details by NACE activities (2010)

Sector	Coastal regions		North Sea		Baltic Sea	
	abs.*	rel.**	abs.*	rel.**	abs.*	rel.**
Agriculture, Aquaculture and Fishing (A)	1,71	9,17	0,82	4,39	0,89	4,78
Manufacturing (C)	10,50	2,27	5,78	1,25	4,72	1,02
Construction (F)	4,09	4,25	1,91	1,99	2,18	2,26
Wholesale and retail trade; transport; accommodation and food service activities; information and communication (G-J)	18,69	4,40	7,94	1,87	10,75	2,53

* GVA (€ billion)

** Percent share in the national GVA in sector

Employment – Details by NACE activities (2010)

Sector	Coastal regions		North Sea		Baltic Sea	
	abs.*	rel.**	abs.*	rel.**	abs.*	rel.**
Agriculture, Aquaculture and Fishing (A)	51,90	8,01	27,50	4,24	24,40	3,77
Manufacturing (C)	183,90	2,63	85,20	1,22	98,70	1,41
Construction (F)	110,80	4,65	47,80	2,01	63,00	2,64
Wholesale and retail trade; transport; accommodation and food service activities; information and communication (G-J)	479,90	4,53	195,40	1,85	284,50	2,69

* Employment (1.000 persons)

** Percent share in the national labour force in sector

1. Marine and maritime economic activities

Table 1 - Overview of relevant maritime economic activities at NUTS-0 and sea basin level (Germany TOTAL, NORTH and BALTIC Sea region)⁶

Maritime Economic Activity		GVA (€, billion)			Employment (*1000)			Number of enterprises		
		TOTAL	NORTH	BALTIC	TOTAL	NORTH	BALTIC	TOTAL	NORTH	BALTIC
0. Other sectors										
0.1	Shipbuilding and ship repair	1,00	0,54	0,46	20,00	10,84	9,17	580	314	266
0.2	Water projects	0,12	0,08	0,04	2,80	1,82	0,98	65	42	23
1. Maritime transport										
1.1	Deep-sea shipping	3,96	3,15	0,80	24,71	19,69	5,02	1.382	1.101	281
1.2	Short-sea shipping (incl. Ro-Ro)	5,70	4,02	1,68	35,56	25,10	10,46	1.988	1.403	585
1.3	Passenger ferry services	0,11	0,04	0,07	1,87	0,69	1,18	55	21	35
1.4	Inland waterway transport	1,20	1,20	0	8,96	8,96	0	1.041	1.041	0
2. Food, nutrition, health and ecosystem services										
2.1	Fish for human consumption	2,58	1,54	1,04	65,05	38,84	26,21	4.965	2.964	2.001
2.2	Fish for animal feeding	0	0	0	0	0	0	0	0	0
2.3	Marine aquatic products	0,003	0,003	0	0,01	0,01	0	8	8	0
2.4	Blue biotechnology	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.5	Agriculture on saline soils	0,001	0,001	0	0,026	0,03	0	11	11	0
3. Energy and raw materials										
3.1	Offshore oil and gas	0,62	0,62	0	2,98	2,98	0	18	18	0
3.2	Offshore wind	1,67	1,41	0,26	18,00	15,15	2,85	200	168	32
3.3	Ocean renewable energy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	Carbon capture and storage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	Aggregates mining	0,02	0,02	0	0,27	0,27	0	24	24	0
3.6	Marine minerals mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.7	Securing fresh water supply	0	0	0	0	0	0	0	0	0
4. Leisure, working and living										
4.1	Coastal tourism	1,89	0,88	1,01	89,62	41,76	47,85	8.091	3.770	4.320
4.2	Yachting and marinas	0,50	0,23	0,26	5,10	2,38	2,72	297	138	159
4.3	Cruise tourism	0,28	0,11	0,17	3,75	1,53	2,22	38	15	23
5. Coastal protection										
5.1	Coastal protection, protection of habitat	0,17	0,11	0,06	1,68	1,13	0,55	N/A	N/A	N/A
5.2										
6. Maritime monitoring and surveillance										
6.1	Traceability and security of goods supply chains, Prevent and protect against illegal movement of people and goods	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6.2										
6.3										

⁶ For source and reference year of data (GVA, Employment, Enterprises) and "Key to allocate between sea basins" (regional shares) see Annex Table D.

Qualitative overview of maritime economic activities in Germany at NUTS-0 level⁷

Other sectors

Shipbuilding (excl. leisure boats) and ship repair in Germany

Due to growing competition from the Far East, Germany's shipbuilding industry has been in decline for decades. It is now focusing on technologically sophisticated niche markets to survive.

GVA (-15%) and employment (-10%) declined from 2008 to 2010 annually. In 2012 Germany's (big) shipyards delivered 26 ships with a gross tonnage of almost 450 thousand tonnes, mainly yachts, passenger ships, RoRo ships and offshore installation ships. Employment in these shipyards is nearly split half and half between the North and Baltic Sea.

Construction of water projects in Germany

This MEA includes activities in the construction of dams and dykes, harbour, river and offshore installations and waterways and is therefore of increasing importance due to population and economic growth.

GVA and employment have grown about 5-8% annually from 2008 to 2010 and it is anticipated that this trend will continue in the next years. Figures for both water projects and coastal protection derive from EUROSTAT but from different sources (see table D in the annex); while it is assumed that part of the expenditure in coastal protection is spent for the construction of water projects this amount is minimal!

Maritime transport

Deep-sea shipping (DSS) in Germany

The economic crisis led to a huge slump in global shipping markets. In view of the interdependence of global trade and maritime transport, a recovery is expected in the medium-term.

In Germany freight volume in DSS declined from over 120 million tonnes in 2008 to 99 million tonnes in 2009 (-20%) but recovered to almost 119 million tonnes in 2011.

Germany's merchant fleet is the third largest in the world and a world leader in the container shipping segment (with 4,8 Mio. TEU = one third of global capacity). Furthermore, Germany has two ports among the top 20 EU cargo ports (gross weight) and container ports (TEU)⁸.

Due to better accessibility, deep-sea-shipping is concentrated on the North Sea ports (Hamburg, Bremerhaven, Wilhelmshaven) while short-sea shipping is most relevant to Germany's Baltic Sea region.

Short-sea shipping (SSS) in Germany

Due to increasing trade relationships between Germany and the new eastern EU Member States and other eastern European states (especially Russia), a continuous growth is expected, from which especially the ports in Germany's Baltic Sea region would like to profit.

But the economic crisis hit the SSS market hard, too. The SSS freight volume in Germany declined from 190 million tonnes in 2008 to 156 million tonnes in 2009 (-18%) and recovered slower than DSS to only 168 million tonnes in 2011.

⁷ Includes further indicators tied to Table 1; a distinction between sea basins is given if possible; for source and reference year see Annex Table D.

⁸ Accounts for whole "Maritime transport" function. A subdivision by MEA is not possible at these indicators.

Passenger ferry services in Germany

Regarding GVA and employment, the MEA “Passenger ferry services” is one of the smallest under the mature MEAs.

The economic crisis did not have any effect on this MEA when referring to passenger volumes only, which were constant at about 20 million passengers from 2004 to 2011 (12,5 million in Germany’s North Sea ports). Otherwise there was a heavy decline of about 30% annually from 2008 to 2010 in GVA and employment of NACE Code H55.10: “Sea and coastal passenger water transport” (which also includes cruise passenger transport, but this MEA has been growing for years).

Inland waterway transport in Germany

In comparison with the competition (especially road and rail freight transport), freight transport on inland waterways in Germany is smaller (accounted only for 5.6% of total inland transport modes in 2012) and growing less.

The economic crisis has had an impact on this MEA, too. Freight volume in Germany declined from 246 million tonnes in 2008 to 204 million tonnes in 2009 (-23%) but recovered to 223 million tonnes in 2012 (which is, by the way, higher than the freight volumes of DSS and SSS, due to the extensive intra-national transport of bulk cargo). Furthermore, the MEA is totally allocated to Germany’s North Sea region.

Food, nutrition, health and ecosystem services

Fish for human consumption in Germany

According to this study’s methodology for calculation of this MEA, Fish for human consumption is the second largest employer of all MEAs. But this derives from the complete inclusion of NACE Code G 46.38 “Wholesale of other food, including fish, crustaceans and molluscs” (about 20% would be realistic). This NACE Code accounts for approximately 73% of the MEA’s GVA and employment. Fish processing against that accounts for 13% to 16% and fishing itself only for 3% of the MEA’s GVA and employment. The strong growth of the MEA (+15% GVA and +21% employment annually from 2008 to 2010) also derives from the strong increase of NACE Code G 46.38, which was about +23% GVA and +29% employment annually from 2008 to 2010.

Landings were about 97 thousand tonnes, representing a value of EUR 155 million in 2011. Weight and value of landings decreased annually by 6% and 2% respectively since 2008.

Marine aquatic products in Germany

Marine aquaculture (business) in Germany is almost limited to the production of blue mussels in the North Sea only. However, there is growing scientific research on marine fish aquaculture (especially in Recirculating Aquaculture Systems). In 2009 the national competence center in research on marine aquaculture was launched at Büsum (Schleswig-Holstein) to foster the industry.

21 thousand tonnes of marine aquaculture products, mostly blue mussels, were produced in the North Sea in 2011.

Blue biotechnology in Germany

The German Blue Biotechnology industry is still nascent and very much focused on research and development. Some important research institutions with special expertise in different fields of Blue Biotechnology were identified in Germany (e.g. GEOMAR Helmholtz Centre for Oceanic Research; The Kiel Center for Marine Natural Products at GEOMAR; Fraunhofer Research Institution for Marine Biotechnology).

Aquaculture in saline soils in Germany

This MEA is not of relevance in Germany. In coastal regions the share of saline soils is under 0.5% of the total agricultural area. Furthermore, all saline soils are located in the North Sea region.

Energy and raw materials

Offshore oil and gas in Germany

Despite low domestic activities, German companies are important suppliers on the global market (e.g. pump, drilling, compressor technologies and components; but no systems integrators).

With the exception of the offshore oil platform "Mittelplate" in the North Sea (1.3 million tonnes or 53% of the country's total oil production in 2011) Germany's oil and gas production takes place onshore.

Offshore wind in Germany

Due to environmental protection of the Tideland National Park in the North Sea, offshore wind farms have to be built in the Exclusive Economic Zone (EEZ). Difficult oceanographic and climatic conditions in the EEZ require powerful turbines (5-6 MW) to run the wind farms profitable. German companies are therefore market leader and systems integrators in this technologically sophisticated sub-segment.

Due to Germany's nuclear power phase-out and climate protection targets, the extension of offshore wind energy is a main concern of the Federal Government. In March 2013 were 320 Megawatt (MW) in operation (50 MW in the Baltic Sea), another 1.600 MW under construction and 10.000 MW approved, most in the North Sea. Therefore, the rapid growth of the last years (+68% turnover and +62% employments from 2010 to 2012 annually) is anticipated to continue. Manufacturing of turbines, supplies and large components (e.g. foundations, tower, gondola, rotor blades) accounts for about 75% of the employment followed by construction and grid connection with both approximately 10%⁹.

Ocean renewable energy in Germany

Except for offshore wind energy the other offshore renewable energy technologies are still at an early stage of development in Germany.

Due to the hydrographic and oceanographic conditions in the German North Sea and especially the Baltic Sea, there is scarcely any potential for a domestic commercial exploitation.

Carbon Capture and storage in Germany

In Germany, carbon capture and storage technologies / industry are still nascent and very much focused on research and development.

Carbon capture and storage is part of Germany's plan of action according to the National Masterplan for Maritime Technologies (NMMT).

Aggregates mining in Germany

Aggregates mining only takes place in the German North Sea.

In 2010, 9 million of 535 million tonnes or 1.7% of the national aggregates production were covered by offshore mining.

Marine minerals mining in Germany

Marine minerals mining is still at an early stage of development. Some research and development

⁹ See: PWC (2012).

activities are taking place in research institutions.

Leisure and tourism

Coastal tourism in Germany

Coastal tourism is a very important industry for the somewhat structurally weak coastal regions in Germany.

This MEA is the largest employer of all MEAs in Germany and, furthermore, has been growing strong for years (+4% GVE and +11% employment from 2008 to 2010 annually). Moreover, overnights in German Coastal NUTS 3 regions increased by 2.3% from 2008 to 2010. Germany's Baltic Sea region accounted for almost 31 million overnights (corresponds to 62% of the total overnights in the coastal regions) in 2010.

Yachting and marinas in Germany

Increasing wealth led this MEA to expand over the last decades. The economic crisis did not have any effect on this MEA regarding the development of GVA and employment. GVA increased by 1,3% while employment slightly shrunk by -1,4% from 2008 to 2010 annually. An alternative estimate (ICOMIA) points to larger numbers of employees (20,000), including boatbuilders, equipment producers and trade & service providers.

Cruise tourism in Germany

Worldwide, as well as in Europe and Germany, the cruise market saw a rapid growth over the last decade.

The European Cruise Council indicates that employment, in German cruise lines only, was about 3,8 thousand persons in 2010 and increased by 12% from 2008 to 2010 annually. The total employment impact of the industry is quantified at 36 thousand persons. Moreover, in 2011 ports in Germany generated 375 thousand passenger embarkations. The major embarkation ports were Kiel and Hamburg, with Kiel as the second important embarkation port in the Baltic Sea region (behind Copenhagen).

Coastal protection

Coastal protection (protection against flooding and erosion, preventing salt water intrusion, protection of habitats) in Germany

The five coastal federal states of Bremen, Hamburg, Mecklenburg-Vorpommern, Niedersachsen and Schleswig-Holstein are responsible for the protection of their coasts. Capital coastal protection measures are open to co-financing of up to 70% by the national government, whereas the maintenance of existing structures is financed 100% by the respective state.

In 2010 public expenditure on coastal protection in Germany amounted to € 0,19 billion. 82% derived from the Joint Task for the Improvement of Agricultural Structures and Coastal Protection (financed by national state and federal states), 9% from EU funding and another 9% from local and regional authorities. Although due to sea level rising this MEA is of growing importance, it depends on public expenditure and is therefore not comparable with the MEAs of the private sector.

Maritime monitoring and surveillance

Maritime monitoring and surveillance (traceability and security of goods supply chains, prevention and protection against illegal movement of people and goods, environmental monitoring) in Germany

The coast guard in Germany is the responsibility of four institutions (some with other priorities than coast guarding) that have vessels: the Federal Police, the Customs Authority, the Federal Water and Shipping Administration and the Federal Agency for Agriculture and Food.

2. List of the 7 largest, fastest growing and most promising marine and maritime economic activities

2.1 Ranking order of the 7 largest marine and maritime economic activities in Germany

Table 2 - Ranking order of the 7 largest maritime economic activities in **Germany's Baltic Sea region**

Rank	Maritime economic activity	GVA (billion EUR)	Employment (*1000)	Score
1	Coastal tourism	1,01	47,85	28,97
2	Fish for human consumption	1,04	26,21	18,31
3	Short-sea shipping (incl. Ro-Ro)	1,68	10,46	13,61
4	Shipbuilding and ship repair	0,46	9,17	6,87
5	Deep-sea shipping	0,80	5,02	6,53
6	Offshore wind	0,26	2,85	2,75
7	Yachting and marinas	0,26	2,72	2,68

Table 3 - Ranking order of the 7 largest maritime economic activities in **Germany's North Sea region**

Rank	Maritime economic activity	GVA (billion EUR)	Employment (*1000)	Score
1	Short-sea shipping (incl. Ro-Ro)	4,02	25,10	32,66
2	Fish for human consumption	1,54	38,84	27,13
3	Deep-sea shipping	3,15	19,69	25,62
4	Coastal tourism	0,88	41,76	25,28
5	Offshore wind	1,41	15,15	14,60
6	Inland waterway transport	1,20	8,96	10,49
7	Shipbuilding and ship repair	0,54	10,84	8,12

- The high employment figures (in both tables) for “Fish for human consumption” derive mainly from completely including NACE Code G 46.38 “Wholesale of other food, including fish, crustaceans and molluscs”, which largely overestimates the importance of the MEA (see also above: Qualitative overview of maritime economic activities in Germany at NUTS-0 level).

2.2 Ranking order of the 7 fastest growing marine and maritime economic activities over the 3 past years

Table 4 - Ranking order of the 7 fastest growing maritime economic activities in **Germany**¹⁰ (NUTS-0 level)

Rank	Maritime economic activity	GVA (CAGR)	Employment (CAGR)	Score
1	Offshore wind	68,24	61,51	64,88
2	Fish for human consumption	15,16	21,28	18,22

¹⁰ These calculations are based on whole country (NUTS-0) level data; 7 fastest growing MEAs are therefore identical in Germany's North and Baltic Sea region.

3	Cruise tourism	11,80	11,80	11,80
4	Coastal protection	11,20	11,20	11,20
5	Coastal tourism	4,02	11,45	7,74
6	Water projects	8,75	4,60	6,68
7	Protection of habitats	6,64	6,64	6,64

- “Coastal protection” and “Protection of habitats” both depend on public expenditure and are therefore not comparable with the MEAs of the private sector. Furthermore, the employment and its CAGR are derived from a ballpark figure of EUR 100.000 expenditure/employee (CAGRs for expenditure and employment are identical). This maybe overestimates the employment CAGR.
- The CAGR of “Cruise tourism” is derived from the number of persons employed in cruise lines (ECC) and a ballpark figure is calculated from the ratio GVA/EMP from the EUROSTAT database for Cruise Tourism (CAGRs for employment and GVA are identical).
- The high CAGRs for “Fish for human consumption” derive mainly from including NACE Code G 46.38 “Wholesale of other food, including fish, crustaceans and molluscs” (see also above: Qualitative overview of maritime economic activities in Germany at NUTS-0 level).

2.3 Ranking order of the 7 marine and maritime economic activities with most future potential

Table 5 - Ranking order of the 7 maritime activities with most future potential in Germany's Baltic Sea region

Rank	Maritime economic activity	Score
1.	Offshore wind	+++++
2-4	Coastal tourism	++++
2-4	Short-sea shipping (incl. Ro-Ro)	++++
2-4	Cruise tourism	++++
5-7	Shipbuilding (excl. leisure boats) and ship repair	+++
5-7	Blue biotechnology	+++
5-7	Marine aquatic products	+++

Table 6 - Ranking order of the 7 maritime activities with most future potential in Germany's North Sea region

Rank	Maritime economic activity	Score
1.	Offshore wind	+++++
2-5	Coastal tourism	++++
2-5	Deep-sea shipping	++++
2-5	Short-sea shipping (incl. Ro-Ro)	++++
2-5	Cruise tourism	++++
6-7	Shipbuilding (excl. leisure boats) and ship repair	+++
6-7	Marine aquatic products	+++

3. Breakdown of maritime activities at regional level (NUTS-1) and selection of most relevant regions for the study

Table 10 - Overview of **GVA** (in € billion) per maritime economic activity per region in Germany (Sea basin & NUTS-1 regions¹¹)

Maritime Economic Activity		BALTIC (total)	SH Baltic (DEF)	MV (DE8)	NORTH (total)	SH North (DEF)	HH (DE6)	NDS (DE9)	HB (DE5)
0. Other sectors									
0.1	Shipbuilding and ship repair	0,46	0,24	0,21	0,54	0,01	0,13	0,28	0,11
0.2	Water projects	0,04	0,01	0,03	0,08	0,01	0,02	0,04	0,004
1. Maritime transport									
1.1	Deep-sea shipping	0,80	0,47	0,33	3,15	0	1,57	0,64	0,95
1.2	Short-sea shipping (incl. Ro-Ro)	1,68	1,01	0,67	4,02	0	2,00	0,81	1,21
1.3	Passenger ferry services	0,07	0,06	0,01	0,04	0,006	0,0004	0,04	0,0004
1.4	Inland waterway transport	0	0	0	1,20	0,30	0,36	0,42	0,12
2. Food, nutrition, health and ecosystem services									
2.1	Fish for human consumption	1,04	0,45	0,59	1,54	0,32	0	0,49	0,73
2.2	Fish for animal feeding	0	0	0	0	0	0	0	0
2.3	Marine aquatic products	0	0	0	0,003	0,001	0	0,001	0
2.4	Blue biotechnology	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.5	Agriculture on saline soils	0	0	0	0,0007	0,0005	0	0,0002	0
3. Energy and raw materials									
3.1	Offshore oil and gas	0	0	0	0,62	0,62	0	0	0
3.2	Offshore wind	0,26	0	0,26	1,41	0,36	0,15	0,63	0,26
3.3	Ocean renewable energy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	Carbon capture and storage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	Aggregates mining	0	0	0	0,02	0,02	0	0	0
3.6	Marine minerals mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.7	Securing fresh water supply	0	0	0	0	0	0	0	0
4. Leisure, working and living									
4.1	Coastal tourism	1,01	0,40	0,61	0,88	0,23	0,26	0,38	0,01
4.2	Yachting and marinas	0,26	0,10	0,16	0,23	0,06	0,07	0,10	0,003
4.3	Cruise tourism	0,17	0,09	0,07	0,11	0	0,10	0	0,02
5. Coastal protection									
5.1	Coastal protection, protection of habitats	0,06	0,024	0,03	0,11	0,024	0,02	0,06	0,01
5.2									
5.3									
6. Maritime monitoring and surveillance									
6.1	Traceability and Prevent and	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6.2	protect against illegal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹¹ For source and reference year of GVA and “Key to allocate between sea basins, NUTS-1 regions and Schleswig-Holstein North and Baltic Sea” (NUTS 1 Code: DEF; borders both sea basins) see Annex Table D.

	movement of people and goods security of goods supply chains,								
6.3	Environmental monitoring	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 11 - Overview of employment (in thousand persons) per maritime economic activity per region in Germany (Sea basin & NUTS-1 regions¹²)

Maritime Economic Activity		BALTIC (total)	SH Baltic (DEF)	MV (DE8)	NORTH (total)	SH North (DEF)	HH (DE6)	NDS (DE9)	HB (DE5)
0. Other sectors									
0.1	Shipbuilding and ship repair	9,17	4,90	4,26	10,84	0,23	2,71	5,62	2,27
0.2	Water projects	0,98	0,27	0,71	1,82	0,27	0,49	0,98	0,09
1. Maritime transport									
1.1	Deep-sea shipping	5,02	2,93	2,09	19,69	0,00	9,81	3,97	5,90
1.2	Short-sea shipping (incl. Ro-Ro)	10,46	6,28	4,18	25,10	0,00	12,51	5,06	7,52
1.3	Passenger ferry services	1,18	0,94	0,24	0,69	0,11	0,01	0,57	0,01
1.4	Inland waterway transport	0	0	0	8,96	2,24	2,69	3,13	0,90
2. Food, nutrition, health and ecosystem services									
2.1	Fish for human consumption	26,21	11,24	14,97	38,84	8,08	0	12,36	18,40
2.2	Fish for animal feeding	0	0	0	0	0	0	0	0
2.3	Marine aquatic products	0	0	0	0,01	0,01	0	0,01	0
2.4	Blue biotechnology	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.5	Agriculture on saline soils	0	0	0	0,03	0,02	0	0,01	0
3. Energy and raw materials									
3.1	Offshore oil and gas	0	0	0	2,98	2,98	0	0	0
3.2	Offshore wind	2,85	0,00	2,85	15,15	3,93	1,59	6,83	2,80
3.3	Ocean renewable energy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	Carbon capture and storage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	Aggregates mining	0	0	0	0,27	0,27	0	0	0
3.6	Marine minerals mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.7	Securing fresh water supply	0	0	0	0	0	0	0	0
4. Leisure, working and living									
4.1	Coastal tourism	47,85	18,96	28,89	41,76	10,78	12,26	18,22	0,51
4.2	Yachting and marinas	2,72	1,08	1,64	2,38	0,61	0,70	1,04	0,03
4.3	Cruise tourism	2,22	1,24	0,98	1,53	0	1,29	0	0,24
5. Coastal protection									
5.1	Coastal protection,	0,55	0,20	0,35	1,13	0,20	0,23	0,61	0,091
5.3	Protection of habitats								
6. Maritime monitoring and surveillance									
6.1	Traceability and security of goods supply chains, Prevent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6.2	and protect against illegal movement of people and goods								

¹² For source and reference year of employment and "Key to allocate between sea basins, NUTS-1 regions and Schleswig-Holstein North and Baltic Sea" (NUTS-1 Code: DEF; borders both sea basins) see Annex Table D.



6.3	Environmental monitoring	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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4. List of existing clusters

“The maritime economy in Germany is concentrated in the coastal regions and can be described as a cluster alliance with five integrated sub-clusters”¹³. The cluster accounts for almost 160 thousand employees in 4 thousand enterprises. The five regional sub-clusters are (from west to east):

- Ems-Axis¹⁴: region in the north-west of Germany along the river Ems (quite unknown but many shipping companies; important shipyards and fast growing offshore wind industry)
- Metropolitan Region Bremen-Oldenburg¹⁵: region between and surrounding Bremen and Oldenburg
- Metropolitan Region Hamburg¹⁶: Hamburg and its hinterland (most important sub-cluster including Hamburg and the surrounding NUTS-3 regions of Schleswig-Holstein and Lower-Saxony)
- Schleswig-Holstein: NUTS-3 regions of Schleswig-Holstein not included in Metropolitan Region Hamburg, almost belonging to Germany’s Baltic Sea region
- Mecklenburg-Vorpommern (NUTS-2 region in the north east)

This cluster structure has been shown by various cluster analyses, studies and expert reports¹⁷ based on extensive primary surveys carried out by the “NORD/LB¹⁸ Regionalwirtschaft” from 2007 to 2010. Within that framework almost one thousand enterprises and research institutions, active in the different maritime industries, provided inter alia information about their cooperation relationships as a basis for an extensive network analysis of the maritime economy in Germany. The special quality of the maritime cluster alliance is the existence of several regional nuclei (sub-clusters) and the various collaboration relationships within and between these nuclei. The maritime industry should therefore be strategically viewed as a whole.

To heed those findings, three of the five North German federal states (Hamburg, Lower Saxony and Schleswig-Holstein) have launched a maritime cluster management venture, which is initially running as an inter-state project for three years (starting in January 2011). The goals, tasks, focal points, structures, cost and financing arrangements were laid down in a trilateral agreement. The project is geared to the maritime economy of Northern Germany with its shipbuilding, ship supply, offshore and marine engineering industries and with its links to the shipping industry, shipping companies and the port economy. The Cluster’s main task is to initiate inter-state collaboration projects, expand the existing networks and strengthen regional competencies¹⁹.

Taking into account that the maritime economy in Germany should be viewed as one whole cluster the following table summarizes the specific competencies and main emphasis of each of the five regional sub-clusters.

¹³ Brandt, A.; Dickow, M.C.; Drangmeister, C. (2010): Entwicklungspotenziale und Netzwerkbeziehungen maritimer Cluster in Deutschland. In: Zeitschrift für Wirtschaftsgeographie. Maritime Wirtschaft. Strukturwandel und Entwicklungsperspektiven. Jg. 54 (2010), Heft 3-4, S. 238-253

¹⁴ For exact spatial delineation (NUTS 3 regions) see: <http://www.emsachse.de/52.html>; see also “Working group integrated maritime operations”: <http://www.emsachse.de/135.html> and “Maritime Cluster Ems-Axis”: <http://www.mariko-leer.de/projects/>

¹⁵ For exact spatial delineation (NUTS 3 regions) see: <http://www.frischkoepfe.de/>; due to parallel membership the district Cuxhaven (DE932) was added to Metropolitan Region Hamburg

¹⁶ For exact spatial delineation (NUTS 3 regions) see: <http://metropolregion.hamburg.de/>

¹⁷ See, for instance:

- NORD/LB et al. (2009a)
- NORD/LB et al. (2009b)
- NORD/LB (2010)
- VDI|VDE|IT et al. (2010)

¹⁸ Norddeutsche Landesbank is a German Landesbank and one of the largest commercial banks in Germany. It is a public corporation owned by the federal states of Lower Saxony and Saxony-Anhalt.

¹⁹ See: <http://www.maritimes-cluster.de/en/>

Table 13 - List and analysis of clusters

Cluster	MS	Maritime economic activities covered	Status	Strengths	Weaknesses
Ems-Axis	GER	Shipbuilding	Mature	<p>GER: Highly specialised in technologically sophisticated niche markets (cruise ships, offshore vessels, military ships, lifeboats). High export rate and international demand. High percentage of formal skilled workers in shipyards.</p> <p>Ems-Axis: Building of luxury cruise liners (MEYER WERFT GmbH); Ship repairs, maintenance, conversion, modernisation</p>	<p>GER: Low crisis susceptibility especially in container ship segment. Low order volume by domestic shipping companies. Looming shortage of skilled workers</p>
		Maritime Transport	Growing with recovery of the global economy	<p>GER: Third largest merchant fleet in the world (GER total). Modern fleet (large container ships, project vessels, heavy lift carriers, multipurpose ships. High level of sea and land personnel professional training and qualifications standards.</p> <p>Ems-Axis: Second largest region in Germany regarding shipping companies and number of ships. Maritime centre of excellence established in 2009²⁰.</p>	<p>GER: Regulatory environment, especially “crew regulation” (Schiffsbesatzungsverordnung).</p> <p>Ems-Axis: Predominantly small and medium-sized companies, only few major companies. Lack of liner shipping companies</p>
		Offshore Wind	Strong growth	<p>GER: Almost the entire value chain is covered. Technology leader for big wind turbines (5 MW and more). Big / growing domestic market and furthermore high export rate. Public funding (German Renewable Energies Act).</p> <p>Ems-Axis: Various key players located in region (e.g. Bard Engineering GmbH; SIAG Nordseewerke GmbH). Offshore Wind Port Emden. Geographical location of the region near the planned offshore wind farms.</p>	<p>GER: Stagnant investments due to lack of needed expansion of onshore high-voltage electricity grid. Low practical experience in offshore logistics and construction and little offshore service sector. Difficult oceanographic and climatic conditions on domestic market (German EEZ).</p>
		Coastal tourism	Slight growth	<p>GER: Strong and growing domestic demand.</p>	<p>GER: Low foreign demand.</p>
MR Bremen-Oldenburg	GER	Shipbuilding	Mature	<p>GER: see above.</p> <p>MR Bremen-Oldenburg: Building of navy, coastguard and offshore</p>	<p>GER: see above.</p>

²⁰ See: <http://www.mariko-leer.de/language/en/>

Cluster	MS	Maritime economic activities covered	Status	Strengths	Weaknesses
				vessels and mega-yachts; Ship repairs, maintenance, conversion, modernisation.	
		Maritime Transport	Growing with recovery of the global economy	GER: see above. MR Bremen-Oldenburg: Third largest region in Germany regarding shipping companies and number of ships. Important port sector: Second largest sea freight centre.	GER: see above.
		Offshore Wind	Strong growth	GER: see above MR Bremen-Oldenburg: Various key players located in region (e.g. AREVA Wind GmbH; REpower Systems SE; PowerBlades GmbH; WeserWind GmbH; PowerWind GmbH; Deutsche WindGuard Engineering GmbH). Offshore Wind Port Bremerhaven. Geographical location of the region near the planned offshore wind farms.	GER: see above.
		Coastal tourism	Slight growth	GER: see above.	GER: see above.
		Oceanography / Environmental monitoring (measurement and environment engineering)	Nascent	GER: High technological level and research intensity. High percentage of formal skilled workers. MR Bremen-Oldenburg: Some important public research institutions located in the region (e.g. MARUM - Zentrum für Marine Umweltwissenschaften; Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung).	GER: Predominantly small and medium-sized companies > low financial resources. Mainly domestic demand and focus on needs of public sector and national research institutions.
		Maritime process control and safety technology	Nascent	GER: High degree of system compatibility of some big enterprises active in the field of civil security. High technological level and research intensity. High percentage of formal skilled workers. MR Bremen-Oldenburg: Some key players located in the region (e.g. EADS Astrium GmbH; Rheinmetall Defence Electronics GmbH; ATLAS maritime Security GmbH).	GER: Fragmentation of national responsibilities in maritime security and safety hinders system integration. Lack of international standards in maritime security and safety.

Cluster	MS	Maritime economic activities covered	Status	Strengths	Weaknesses
MR Hamburg	GER	Shipbuilding	Mature	GER: see above MR Hamburg: Building of navy vessels and submarines and offshore, ro/ro, heavylift vessels and chemical tankers; Ship repairs, maintenance, conversion, modernisation	GER: see above.
		Maritime Transport (main deep sea shipping port and short-sea shipping hub)	Growing with recovery of the global economy	GER: see above MR Hamburg: By far the largest region in Germany regarding shipping companies and number of ships. Important port sector: By far largest sea freight centre. Many important key players located in the region (e.g. Federal Maritime and Hydrographic Agency as central agency for maritime transport; Germanischer Lloyd SE as central classification society; Hapag-Lloyd AG).	GER: see above.
		Marine aquatic products	Nascent	Strong R&D activities (especially Recirculating Aquaculture Systems) in public research institutions (GMA - Gesellschaft für Marine Aquakultur mbH in Büsum).	Low private sector activities so far.
		Offshore wind	Strong growth	GER: see above. MR Hamburg: Some key players located in the region, especially in Husum and Hamburg (e.g. Vestas Deutschland GmbH; REpower Systems AG; Federal Maritime and Hydrographic Agency as central licensing authority)	GER: see above.
		Maritime process control and safety technology	Nascent	GER: see above. MR Hamburg: Some key players located in the region (e.g. Germanischer Lloyd SE; Hamburgische Schiffbau-Versuchsanstalt GmbH; INTERSCHALT maritime systems AG)	GER: see above.
Schleswig-Holstein (North)	GER	Shipbuilding	Mature	GER: see above. Schleswig-Holstein: Building of navy vessels and submarines and passenger ship, special cargo and offshore vessels; Ship repairs, maintenance, conversion,	GER: see above

Cluster	MS	Maritime economic activities covered	Status	Strengths	Weaknesses
				modernisation.	
		Maritime Transport (especially short sea shipping and inland waterway transport)	Growing with recovery of the global economy	GER: see above Schleswig-Holstein: Kiel Canal, which links the North Sea and the Baltic Sea.	GER: see above
		Blue biotechnology	Nascent	Strong R&D activities in public research institutions (EMB – Fraunhofer Research Institution for Marine Biotechnology in Lübeck; GEOMAR Helmholtz Centre for Ocean Research in Kiel; Christian-Albrechts-Universität in Kiel).	Low private sector activities so far.
		Coastal tourism	Slight growth	GER: see above.	GER: see above.
		Oceanography / Environmental monitoring (measurement and environment engineering)	Nascent	GER: see above. Schleswig-Holstein: Some important public research institutions located in region (e.g. GEOMAR Helmholtz Centre for Ocean Research in Kiel).	GER: see above.
Mecklenburg-Vorpommern	GER	Shipbuilding	Mature	GER: see above Mecklenburg-Vorpommern: Building of offshore, passenger and cruise vessels; Ship repairs, maintenance, conversion, modernisation	GER: see above.
		Blue biotechnology	Nascent	Strong R&D activities in public research institutions (Ernst-Moritz-Arndt-University in Greifswald).	Low private sector activities so far.
		Offshore wind	Strong growth	GER: see above Mecklenburg-Vorpommern: Some key players located in the region (e.g. Nordex Energy GmbH; Industrial Services Bilfinger Maintenance Nord GmbH).	GER: see above Mecklenburg-Vorpommern: Low capacity is planned for installation in Germany's Baltic Sea.
		Coastal tourism	Slight growth	GER: see above	GER: see above
		Oceanography /	Nascent	GER: see above Mecklenburg-Vorpommern: Some	GER: see above

Cluster	MS	Maritime economic activities covered	Status	Strengths	Weaknesses
		Environmental monitoring (measurement and environment engineering)		important public research institutions located in the region (e.g. Leibniz Institute for Baltic Sea Research in Warnemünde; Ernst-Moritz-Arndt-University in Greifswald).	

5. Analysis of maritime strategies at regional and national level, as well as those under preparation and their links with Smart Specialisation Strategies

A number of national and regional level policies were found to have an impact on the maritime economic activities in Germany. These are summarised in the tables 15 and 16. Within the policies and strategies several were identified with direct correlation to Smart Specialization Strategies. The connection between policy focus of the legislations and the Smart Specialization Strategies is summarised below in Table 14.

Table 14 –Maritime policies and Smart Specialisation Strategies

MEAs	Smart Specialisation Strategies
Offshore wind	Clusters & Innovation friendly business environments for SMEs & Research infrastructures, centres of competence and science parks & Universities-enterprise cooperation & Key enabling technologies & Internationalisation & Financial engineering instruments & Green growth & Social innovation
Coastal tourism & Yachting / Marinas	Cultural and creative industries & Internationalisation & Green growth
Deep-sea shipping & Short-sea shipping	Clusters & Internationalisation & Financial engineering instruments & Green growth
Cruise tourism	Internationalisation & Green growth
Shipbuilding	Clusters & Research infrastructures, centres of competence and science parks & Internationalisation & Financial engineering instruments
Blue biotechnology	Clusters & Innovation friendly business environments for SMEs & Research infrastructures, centres of competence and science parks & Universities-enterprise cooperation & Digital agenda & Key enabling technologies & Internationalisation & Financial engineering instruments & Social innovation

Table 15 – Assessment of maritime policies²¹

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
Maritime Development Plan - Strategy for a German integrated maritime policy	Overall framework for a comprehensive maritime policy in Germany	Strengthening the competitiveness of the German maritime economy and exploiting the employment potential	Achieving a good ecological status in the North and Baltic Sea until 2020 and making them to the most cleanest and safest seas	Bearing share of the responsibility for global ecological development and supporting efforts against climate change	
National Masterplan Maritime Technologies (NMMT)	Strengthening Germany as high-tech location in maritime technologies	Increasing the competitiveness and the global market share of the related industries Bundling, strategic orientation and linking of driving forces Improving public perceptions of the maritime technologies	Identification of future potentials	Improving links between industry and research	Coordination of current and future funding programmes
National strategy for sustainable use of the seas and conservation of marine ecosystems	Achieving a good ecological status for the North and Baltic Sea until 2020 and making them to the most cleanest and safest seas	Maintaining biodiversity Reducing eutrophication Introduction of energy, including underwater noise, does not adversely affect the marine environment			
National strategy for integrated coastal region management	Formulation of guiding principles for all planning and decision-planning levels Making a contribution to	Identification of potential development and conflict as well as resolving conflicts in a non-bureaucratic manner	economic zone (EEZ), coastal sea (12 sm zone) and coastal areas onshore - as an ecologically intact and	Supporting sustainable development of coastal zones through good integration, coordination, communication and	

²¹ Please see the country fiche guidelines for the methodology

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
	the development and preservation of coastal zones - exclusive		economically prospering habitat for humankind	participation	
National concept for the sea and river ports	Strengthening the competitiveness of German ports Development of relevant transport infrastructure, superstructure and elimination of capacity bottlenecks in German ports	Securing and strengthening education, training and employment Optimizing traceability and security of goods supply chains		Sustainable support of environmental and climate protection	
LeaderSHIP Germany - The national shipbuilding future concept	Increasing the competitiveness and the global market share of Germany's shipbuilding industry Improving financing and guaranty concepts	Increasing investment in research, development and innovation Development of a worldwide level playing field Improving protection of intellectual property rights	Securing access to a high-quality labour force		
Maritime Action Plan of the Free Hanseatic City of Bremen	Create a profile for Bremen as a regional centre of excellence and European model region for maritime best practice	Integrative use of the economic potential and scientific competencies of the maritime economy in the Region, with a focus on climate change and protection of the marine environment		Regionally accentuated implementation of the IMP/EU 2020 goals of: 'Optimal and sustainable development of maritime activities' and 'Maritime Development Plan' of the Federal Government	
Maritime Action Plan Schleswig-Holstein (by initiative "Sea - our Future")	Further developing targets for maritime policy and strategic instruments Protecting people and	Promoting key maritime technologies Tapping the full potential of marine and maritime career and	Conducting maritime research Builds on the old "Masterplan for	Making responsible use of the seas and sustainable protection for the marine environment	

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
	coastal areas	job opportunities	Maritime Technologies Schleswig Holstein"		
Port development plan to 2025	Value creation in the Port of Hamburg will be consistently increased Increasing trade with other growth regions (in addition to Asia)	Development of bespoke, reliable infrastructure at the quay wall, in the port and hinterland as well as intermodal, optimised transport chains		Pursuing ambitious environmental and climate objectives and actively promoting and applying innovative technologies and ideas	
Action Plan for climate protection Mecklenburg-Vorpommern 2010	Expansion target of about 7 gigawatts of installed capacity in offshore wind farms in 2020 in Germany's / Mecklenburg-Vorpommern's Baltic Sea				
State spatial planning programme Mecklenburg-Vorpommern/ Schleswig-Holstein 2010	Usage and sustainable development of potentials of the coastal sea (12 sm zone) and coastal areas onshore	Early avoidance and minimization of sea- and land-use conflicts Supporting good integration, coordination, communication and participation			

Table16– Assessment of a broader range of policies

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
National Strategy on Biological Diversity	Achieving a good ecological and chemical status for all waters in the coastal zones until 2015 To avoid the	Application of the ecosystem approach (HELCOM, OSPAR) while observing the precautionary and polluter pays principles	Implementation of the Integrated Coastal Zone Management based on the "National strategy for integrated coastal region management" from 2006 (see	Sustainable and ecosystem-friendly development of fishery	

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
	entrainment of intensive non-native species and continue the practice of only releasing and commercially using transgenic organisms considered safe for marine and coastal ecosystems, with due regard for the particular conditions of these ecosystems		below)		
The Federal Government's Integrated Energy and Climate Programme (IEKP)	Increasing the proportion of renewable energies in electricity supply to 25-30 percent in the year 2020 with further continuous increases in the years thereafter		Including sea shipping in emissions trading Further development of the limit values in sea transport Developing a spatial plan for the German Exclusive Economic Zone with definitions for usage of sea areas, especially for offshore wind energy (priority areas)		
High-Tech Strategy for Germany	Expanding Germany into a viable high-tech location for maritime technologies	Strengthening the leading world market position of Germany's shipbuilding industry in the segment of technologically sophisticated and highly complex special ships			
Action plan for reorientation of tourism in Schleswig-Holstein	Definition of a unequivocal and differential image of Schleswig-Holstein	Focusing on high-quality tourism Modernising the tourist offers, especially concerning infrastructure Improving visitor satisfaction			

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Annex

Table A - Overview of relevant maritime economic activities in Germany at NUTS-0 and sea basin level²²

Maritime Economic Activity		MEA overview	Socio economic indicators
0. Other sectors			
0.1	Shipbuilding (excl. Leisure boats) and ship repair	Due to growing competition from the Far East, Germany's shipbuilding industry has been in decline for decades and is now focusing on technologically sophisticated niche markets to survive.	GVA (-15%) and employment (-10%) declined from 2008 to 2010 annually. In 2012 Germany's (big) shipyards delivered 26 ships with a gross tonnage of almost 450 thousand tonnes, mainly yachts, passenger ships, RoRo ships and offshore installation ships. Employment in these shipyards is nearly split half and half between North and Baltic Sea.
0.2	Water projects	This MEA includes activities in the construction of dams and dykes, harbour, river and offshore installations and waterways and is therefore of increasing importance due to population and economic growth.	GVA and employment grew about 5-8% annually from 2008 to 2010 and it is anticipated that this trend will continue in the next years.
1. Maritime transport			
1.1	Deep-sea shipping	The economic crisis led to a huge slump in the global shipping markets. In view of the interdependence of global trade and maritime transport, a rallying is expected in the medium-term.	In Germany freight volume in DSS declined from over 120 million tonnes in 2008 to 99 million tonnes in 2009 (-20%) but recovered to almost 119 million tonnes in 2011. Germany's merchant fleet is the third largest in the world and a world leader in the container shipping segment (with 4.8 Mio. TEU = one third of global capacity). Furthermore, Germany has two ports among the top 20 EU cargo ports (gross weight) and container ports (TEU). Due to better accessibility, deep-sea-shipping is concentrated on the North Sea ports (Hamburg, Bremerhaven, Wilhelmshaven) while short-sea-shipping is most relevant to Germany's Baltic Sea region.
1.2	Short-sea shipping (incl. Ro-Ro)	Due to the increasing trade relationships between Germany and the new eastern EU Member States and other eastern European states (especially Russia) continuous growth is expected, from which especially the ports in Germany's Baltic Sea region would like to profit.	The economic crises hit the SSS market hard, too. The SSS freight volume in Germany declined from 190 million tonnes in 2008 to 156 million tonnes in 2009 (-18%) and recovered slower than DSS to only 168 million tonnes in 2011.
1.3	Passenger ferry services	Regarding GVA and employment, passenger ferry services is one of the smallest under the mature MEAs.	The economic crisis did not have any effect on this MEA when referring to passenger volumes only, which were constant at about 20 million passengers from 2004 to 2011 (12,5 million in Germany's North Sea ports). Otherwise there was a heavy decline of about 30% annually from 2008 to 2010 in GVA and employment of NACE Code H55.10: "Sea and coastal passenger water

²² Includes further indicators tied to Table 1; a distinction between sea basins is given if possible; for source and reference year see Table D in this Annex.

Maritime Economic Activity		MEA overview	Socio economic indicators
			transport" (which also includes cruise passenger transport, but this MEA has been growing for years).
1.4	Inland waterway transport	In comparison with the competition (especially road and rail freight transport) freight transport on inland waterways in Germany is smaller (accounted only for 5,6% of total inland transport modes in 2012) and growing less.	The economic crisis had an impact on this MEA, too. The freight volume in Germany declined from 246 million tonnes in 2008 to 204 million tonnes in 2009 (-23%) but recovered to 223 million tonnes in 2012 (which is by the way higher than the freight volumes of DSS and SSS, due to the extensive intra-national transport of bulk cargo). Furthermore, the MEA can be totally allocated to Germany's North Sea region.
2. Food, nutrition, health and ecosystem services			
2.1	Fish for human consumption	Following the mentioned methodology to calculate this MEA, Fish for human consumption is the second largest employer of all MEAs. But this derives from completely including NACE Code G 46.38 "Wholesale of other food, including fish, crustaceans and molluscs" (about 20% would be realistic). This NACE Code accounts for approximately 73% of the MEA's GVA and Employment. Fish processing against that accounts for 13-16% and fishing itself only for 3% of the MEA's GVA and employment. The strong growth of the MEA (+15% GVA and +21% employment annually from 2008 to 2010) also derives from the strong increase of NACE Code G 46.38, which was about +23% GVA and +29% employment annually from 2008 to 2010.	Landings were about 97 thousand tonnes, representing a value of EUR 155 million in 2011. Weight and value of landings decreased by 6% and 2% annually since 2008.
2.2	Fish for animal feeding	Fish for animal feeding is not of relevance in Germany.	
2.3	Marine aquatic products	Marine aquaculture (business) in Germany is almost limited to the production of blue mussels in the North Sea only. However, there is growing scientific research on marine fish aquaculture (especially Recirculating Aquaculture Systems). In 2009 the national competence center in research on marine aquaculture was launched at Büsum (Schleswig-Holstein) to foster the industry.	21 thousand tonnes of marine aquaculture products, mostly blue mussels, were produced in the North Sea in 2011.
2.4	Blue biotechnology	The German Blue Biotechnology industry is still nascent and very much focused on research and development.	Some important research institutions with special expertise in different fields of Blue Biotechnology were identified in Germany (e.g. GEOMAR Helmholtz Centre for Oceanic Research; The Kiel Center for Marine Natural Products at GEOMAR; Fraunhofer Research Institution for Marine Biotechnology).
2.5	Agriculture on saline soils	MEA is not of relevance in Germany. In coastal regions the share of saline soils is under 0,5% of the total agricultural area. Furthermore, all saline soils are located in the North Sea	

Maritime Economic Activity		MEA overview	Socio economic indicators
		region.	
3. Energy and raw materials			
3.1	Offshore oil and gas	Despite low domestic activities, German companies are important suppliers on the global market (e.g. pump, drilling, compressor technologies and components; but no systems integrators).	With the exception of the offshore oil platform "Mittelplate" in the North Sea (1,3 million tonnes or 53% of the country's total oil production in 2011) Germany's oil and gas production takes place onshore.
3.2	Offshore wind	Due to environmental protection of the Tidelands National Park in the North Sea, offshore wind farms have to be built in the Exclusive Economic Zone (EEZ). Difficult oceanographic and climatic conditions in the EEZ require powerful turbines (5-6 MW) to make the wind farms profitable. German companies are therefore market leaders and systems integrators in this technologically sophisticated sub-segment.	Due to Germany's nuclear power phase-out and climate protection targets, the extension of offshore wind energy is a main concern of the Federal Government. In March 2013 there were 320 Megawatt (MW) in operation (50 MW in the Baltic Sea), another 1.600 MW under construction and 10.000 MW approved, most in the North Sea. The rapid growth of the last years (+68% turnover and +62% employment from 2010 to 2012 annually) is anticipated to continue. Manufacturing of turbines, supplies and large components (e.g. foundations, tower, gondola, rotor blades) accounts for about 75% of the employment followed by construction and grid connection with both approximately 10%.
3.3	Ocean renewable energy	Except for offshore wind energy, the other offshore renewable energy technologies are still at an early stage of development in Germany.	Due to the hydrographic and oceanographic conditions in the German North Sea and especially the Baltic Sea, there is scarcely any potential for domestic commercial exploitation.
3.4	Carbon capture and storage	In Germany, carbon capture and storage technologies / industry are still nascent and very much focused on research and development.	Carbon capture and storage is part of Germany's plan of action in the National Masterplan for Maritime Technologies (NMMT).
3.5	Aggregates mining (sand, gravel, etc.)	Aggregates mining only takes place in the German North Sea.	In 2010, 9 million of 535 million tonnes or 1,7% of the national aggregates production were covered by offshore mining.
3.6	Marine minerals mining	Marine minerals mining is still at an early stage of development.	Some research and development activities in research institutions.
3.7	Securing fresh water supply (desalination)	Securing fresh water supply plays no role for Germany's drinking water supply.	Some German companies are suppliers of components for the global market.
4. Leisure, working and living			
4.1	Coastal tourism	Coastal tourism is a very important industry for the somewhat structurally weak coastal regions in Germany.	The MEA is the largest employer of all MEAs in Germany and has been growing strong for years (+4% GVE and +11% employment from 2008-2010 annually). Moreover, overnights in German Coastal NUTS-3 regions increased by 2,3% from 2008 to 2010. Germany's Baltic Sea region accounted for almost 31 million overnights (corresponding to 62% of the total overnights in the coastal regions) in 2010.
4.2	Yachting and marinas	Increasing wealth led this MEA to expand over the last decades.	The economic crisis did not have any effect on this MEA, regarding the development of GVA and employment. GVA increased by 1,3% while employment was a little shrinking by -1,4% from 2008 to 2010 annually.

Maritime Economic Activity		MEA overview	Socio economic indicators
4.3	Cruise tourism	Worldwide, as well as in Europe and Germany, in the last decade the cruise market has seen a rapid growth.	The European Cruise Council indicates that employment, in German cruise lines only was about 3,8 thousand persons in 2010 and increased by 12% from 2008 to 2010 annually. The total employment impact of the industry is quantified with 36 thousand persons. Moreover, in 2011, ports in Germany generated 375 thousand passenger embarkations. The major embarkation ports were Kiel and Hamburg, with Kiel as the second important embarkation port in the Baltic Sea region (behind Copenhagen).
4.4	Working	Not applicable.	Not applicable.
4.5	Living	Not applicable.	Not applicable.
5. Coastal protection			
5.1 – 5.2	Coastal protection	The five coastal federal states Bremen, Hamburg, Mecklenburg-Vorpommern, Niedersachsen and Schleswig-Holstein are responsible for the protection of their coasts. Capital coastal protection measures are open to co-financing of up to 70% by the national government, whereas the maintenance of existing structures is financed 100% by the respective state.	In 2010, public expenditure on coastal protection in Germany amounted to EUR 0,19 billion. 82% derived from the Joint Task for the Improvement of Agricultural Structures and Coastal Protection (financed from national state and federal states), 9% from EU funding and another 9% from local and regional authorities. Although due to sea level rising there is growing importance in this MEA, it depends on public expenditure and is therefore not comparable with the MEAs of the private sector.
5.3	Protection of habitats		
6. Maritime monitoring and surveillance			
6.1	Traceability and security of goods supply chains	The coast guard in Germany is the responsibility of four institutions (some with other priorities than coast guarding) that have vessels: the Federal Police, the Customs Authority, the Federal Water and Shipping Administration and the Federal Agency for Agriculture and Food.	
6.2	Prevent and protect against illegal movement of people and goods		
6.3	Environmental monitoring		

Table B - Selection of the most important regions: Definition of the maritime economic dimension for coastal NUTS 2 – Germany Baltic Sea

NUTS 2 region	Water transport (number of persons employed, 1.000 persons)	Coastal tourism (bed places in coastal NUTS-3)	Fishing (gross tonnage)	Aquaculture (GVA, EUR million)
Schleswig-Holstein	2,3	223.348	11.285	1,1
Mecklenburg-Vorpommern	2,8	209.823	23.616	0,4
Total Germany	36,4	560.450	64.392	65,4

Table C - Selection of the most important regions: Ranking order of coastal NUTS 2 – Germany Baltic Sea

NUTS 2 region	Water transport	Coastal tourism	Fishing	Aquaculture	Total
Schleswig-Holstein	0,6	4,0	1,8	0,2	6,5
Mecklenburg-Vorpommern	0,8	3,7	3,7	0,1	8,2

Table D - Sources & Reference year

Maritime Economic Activity		Source and reference year
0. Other sectors		
0.1	Shipbuilding (excl. Leisure boats) and ship repair	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010 Ships delivered: VSM (Verband für Schiffbau und Meerestechnik e.V.) (2012): VSM-Jahresbericht 2012 Regional share: Employment in (big) shipyards by NUTS-3 regions in 2011; Source: IAW (Institut für Arbeit und Wirtschaft) (2012): Beschäftigung, Auftragslage und Perspektiven im deutschen Schiffbau
0.2	Water projects	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010 Regional share: Enterprises in construction of water projects by NUTS-2 regions in 2008; Source: NORD/LB et al. (2009): Gutachten zur Stärkung und Weiterentwicklung der Maritimen Wirtschaft in Niedersachsen und zum Aufbau maritimer Cluster; share SH Baltic Sea region: 50%, own estimation.
1. Maritime transport		
1.1	Deep-sea shipping	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010; share in total shipping based on freight volumes Freight volumes: Eurostat database (2013); tran_r_mago_nm; Data 2008-2010 Regional share: Maritime transport of freight by NUTS-2 regions; Source: Eurostat database (2013); tran_r_mago_nm; Data 2010; share SH Baltic Sea region: 100%, all main freight ports located in Baltic Sea region Recent / further development: BMWi (2013): Branchenfokus: Maritime Wirtschaft (http://www.bmw.de/DE/Themen/Wirtschaft/branchenfokus,did=196298.html)
1.2	Short-sea shipping (incl. Ro-Ro)	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010; share in total shipping based on freight volumes Freight volumes: Eurostat database (2013); tran_r_mago_nm; Data 2008-2010 Regional share: Maritime transport of freight by NUTS-2 regions; Source: Eurostat database (2013); tran_r_mago_nm; Data 2010; share SH Baltic Sea region: 100%, all main freight ports located in Baltic Sea region Recent / further development: BMWi (2013): Branchenfokus: Maritime Wirtschaft (http://www.bmw.de/DE/Themen/Wirtschaft/branchenfokus,did=196298.html)
1.3	Passenger ferry services	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010; share in total passenger water transport based on passenger volumes Passenger volumes: Eurostat database (2013); tran_r_mapa_nm; Data 2008-2010 Regional share: Maritime transport of passengers by NUTS-2 regions; Source: Eurostat database (2013); Data 2010; share SH Baltic Sea region: 90%, most passenger ferry ports located in Baltic Sea region
1.4	Inland waterway transport	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010 Freight volume: Eurostat database (2013); Data 2010-2012 (iww_go_atygo) Share of total inland transport modes: BDB (Bundesverband der Deutschen Binnenschifffahrt e.V.) (2013): Geschäftsbericht 2012/2013; Data 2012 Regional share: "For Germany, 1.4 will be totally allocated to the North-sea"; Source: methodology provided by COGEA; share by NUTS-2 regions: own estimation
2. Food, nutrition, health and ecosystem services		
2.1	Fish for human consumption	GVA; Employment; Enterprises: Eurostat database (2013), Data 2008-2010 & JRC Scientific and technical reports (2010; 2011; 2012): The 2010; 2011; 2012 Annual Economic Report on

Maritime Economic Activity		Source and reference year
		<p>the EU Fishing Fleet, Data 2008-2010</p> <p>Landings: JRC Scientific and technical reports (2010; 2011; 2012): The 2010; 2011; 2012 Annual Economic Report on the EU Fishing Fleet, Data 2008-2011</p> <p>Regional share: Landings by NUTS-2 regions in 2011; Source: BLE (Bundesanstalt für Landwirtschaft und Ernährung) (2012): Die Hochsee- und Küstenfischerei in der Bundesrepublik Deutschland im Jahre 2011; share SH Baltic Sea region by landings by sea basin: 58%, Source: Ministry of Energy Turnaround, Agriculture, Environment and Rural Development of Schleswig-Holstein (2013): http://www.schleswig-holstein.de/UmweltLandwirtschaft/DE/LandFischRaum/04_AgrarberichtStatistik/11_Fischerei/ein_node.html</p>
2.2	Fish for animal feeding	
2.3	Marine aquatic products	<p>GVA; Employment; Enterprises: JRC Scientific and policy reports (2013): The Economic Performance of the EU Aquaculture Sector – 2012 exercise (STECF-13-03); Data 2008-2010</p> <p>Regional share: Production of marine aquatic products by NUTS-2 regions in 2011; Source: destatis (Statistisches Bundesamt) (2012): Land- und Forstwirtschaft, Fischerei; Erzeugung in Aquakulturbetrieben; Fachserie 3 Reihe 4.6; share SH Baltic Sea region: 0%; MEA in Germany is limited to the production of blue mussels in the North Sea, Source: JRC Scientific and policy reports (2013): The Economic Performance of the EU Aquaculture Sector – 2012 exercise (STECF-13-03)</p> <p>Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld G - Marikultur (2013); http://www.nmmt.de</p>
2.4	Blue biotechnology	<p>GVA; Employment; Enterprises: N/A</p> <p>Recent / further development: Norgenta; dsn (2012): Masterplan Marine Biotechnologie Schleswig-Holstein – eine regionale Entwicklungsstrategie</p>
2.5	Agriculture on saline soils	<p>GVA: Eurostat database (2013); Data 2007 & 2010; Employment; Enterprises: share of coastal NUTS 2 regions in total coastal NUTS 1 regions based on corresponding GVA shares</p> <p>Share saline soils: JRC (2009): Saline and Sodic Soils Map & Corine Land Cover dataset (2006)</p> <p>Regional share: Saline agriculture area by NUTS-2 regions in 2006; Source: JRC (2009): Saline and Sodic Soils Map; Corine Land Cover dataset (2006); share SH Baltic Sea region: 0%; no saline soils in Germany's Baltic Sea region, Source: JRC (2009): Saline and Sodic Soils Map; Corine Land Cover dataset (2006)</p>
3. Energy and raw materials		
3.1	Offshore oil and gas	<p>GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010</p> <p>Offshore oil production: WEG (Wirtschaftsverband Erdöl- und Erdgasgewinnung e.V.) (2012): Jahresbericht Zahlen & Fakten 2011</p> <p>Regional share: Spatial distribution of offshore oil and gas platforms in 2011 (only one platform in North Sea which is operated from Schleswig-Holstein); Source: WEG (Wirtschaftsverband Erdöl- und Erdgasgewinnung e.V.) (2012): Jahresbericht Zahlen & Fakten 2011</p> <p>Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld A: Offshore Öl und Gas (2013)</p>
3.2	Offshore wind	<p>Turnover; Employment; Enterprises: BMU (2011, 2012, 2013): Bruttobeschäftigung durch erneuerbare Energien in Deutschland im Jahr 2012 - eine erste Abschätzung; Data 2010-2012 Megawatt (MW) in operation / under construction / approved: Offshore-Windenergie.net - Location of offshore wind farms (http://www.offshore-windenergie.net/en/wind-farms); Data March 2013</p> <p>Regional share: Spatial distribution of Megawatt capacity in operation in offshore wind farms 2013 by sea basin; Source: Offshore-Windenergie.net (2013): http://www.offshore-windenergie.net/en/wind-farms; Spatial distribution of enterprises / employees with activities in MEA by NUTS-2 regions; Source: VDI/VDE et al. (2010): Stärkung der deutschen meeresstechnischen Wirtschaft im internationalen Wettbewerb und Vorbereitung des Nationalen Masterplans Maritime Technologien. Studie im Auftrag des Bundesministeriums für Wirtschaft und Technologie; share SH Baltic Sea region: 0%, offshore wind industry is almost located in the North Sea region of Schleswig-Holstein (Husum)</p>

Maritime Economic Activity		Source and reference year
		Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld B - Offshore-Windenergie (2013); http://www.nmmt.de
3.3	Ocean renewable energy	GVA; Employment; Enterprises: N/A Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld I - Meeresenergien (2013); http://www.nmmt.de
3.4	Carbon capture and storage	GVA; Employment; Enterprises: N/A Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld A: Offshore Öl und Gas (2013); http://www.nmmt.de
3.5	Aggregates mining (sand, gravel, etc.)	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010 Absolute & share offshore aggregates production: UEPG 2013; Data 2008-2010 Regional share: Spatial distribution of sand and gravel mining fields by sea basin in 2009 and their spatial proximity to NUTS 2 regions; Source: Marggraf et al. (2012): Umsetzung der Meeresstrategie-Rahmenrichtlinie in Deutschland - Untersuchung der ökonomischen Anfangsbewertung
3.6	Marine minerals mining	GVA; Employment; Enterprises: N/A Recent / further development: NMMT - Nationaler Masterplan Maritime Technologien - Anwendungsfeld J - Marine Minerale Rohstoffe (2013); http://www.nmmt.de
3.7	Securing fresh water supply (desalination)	GVA; Employment; Enterprises: GWI (Global Water Intelligence) (2011): Global Water Market 2011, Volume 2: Europe and Africa Recent / further development: DME (Deutsche MeerwasserEntsalzung e.V.) (2013); http://www.dme-ev.de/
4. Leisure, working and living		
4.1	Coastal tourism	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010; share in total tourism based on overnights in coastal NUTS 3 Overnights in coastal NUTS 3: Eurostat database (2013); calculated from tour_cap_nuts3 & tour_occ_nin2; Data 2008-2010 Regional share: Overnights by NUTS 3 regions in 2010; Source: Eurostat database (2013); tour_cap_nuts3 & tour_occ_nin2; Data 2010
4.2	Yachting and marinas	GVA; Employment; Enterprises: Eurostat database (2013); Data 2008-2010 Regional share: Overnights by NUTS-3 regions in 2010; Source: Eurostat database (2013); tour_cap_nuts3 & tour_occ_nin2; Data 2010
4.3	Cruise tourism	Employment: ECC (European Cruise Council) (2009, 2010, 2011): The Cruise Industry. Data 2008-2010; GVA: Calculated from number of persons employed and a ballpark figure derived from the ratio GVA/EMP from EUROSTAT database for Cruise Tourism; share in total passenger water transport based on passenger volumes Regional share: Passenger volumes in (big) cruise ports by NUTS-3 regions in 2011; Source: NORD/LB (2012): Shipping Monitor - Ausgabe 02/2012
5. Coastal protection		
5.1 – 5.2	Coastal protection	Expenditure: Eurostat database (2013); Data 2008-2010 (COFOG gov_a_exp) & European Commission (2009): The economics of climate change adaptation in EU coastal areas – Summary report; Employment: Calculated from expenditure and a ballpark figure of EUR 100.000 Expenditure/EMP. Regional share: Expenditure on coastal protection by federal states in 2008-2010; Source: BMELV (2009, 2010, 2011): Berichterstattung über den Vollzug der GAK - Tabelle 15a Küstenschutz; share SH Baltic Sea region: 50%, own estimation
5.3	Protection of habitats	Expenditure: Eurostat database (2013); Data 2008-2010 (COFOG gov_a_exp) & EEA: Common Database on Designated Areas; Natura 2000; Employment: Calculated from expenditure and a ballpark figure of EUR 100.000 Expenditure/EMP. Regional share: Environmental protection expenditure on protection of biodiversity and landscapes by federal states; Source: EEA: Common Database on Designated Areas; Natura 2000; share SH Baltic Sea region: 50%, own estimation
6. Maritime monitoring and surveillance		
6.1	Traceability	GVA; Employment; Enterprises: N/A

Maritime Economic Activity		Source and reference year
	and security of goods supply chains	Recent / further development: WSV (Wasser- und Schifffahrtsverwaltung des Bundes): Sicherheitskonzept Deutsche Küste
6.2	Prevent and protect against illegal movement of people and goods	
6.3	Environmental monitoring	

Table E - 7 largest maritime MEAs in Germany's Baltic Sea region: indicative size of all maritime economic activities²³

Maritime Economic Activity		GVA (€, billion)	Employment (*1000)	Score
0. Other sectors				
0.1	Shipbuilding (excl. Leisure boats) and ship repair	0,46	9,17	6,87
0.2	Water projects	0,04	0,98	0,70
1. Maritime transport				
1.1	Deep-sea shipping	0,80	5,02	6,53
1.2	Short-sea shipping (incl. Ro-Ro)	1,68	10,46	13,61
1.3	Passenger ferry services	0,07	1,18	0,95
1.4	Inland waterway transport	0	0	0,00
2. Food, nutrition, health and ecosystem services				
2.1	Fish for human consumption	1,04	26,21	18,31
2.2	Fish for animal feeding	0	0	0
2.3	Marine aquatic products	0	0	0
2.4	Blue biotechnology	N/A	N/A	N/A
2.5	Agriculture on saline soils	0	0	0
3. Energy and raw materials				
3.1	Offshore oil and gas	0	0	0
3.2	Offshore wind	0,26	2,85	2,75
3.3	Ocean renewable energy	N/A	N/A	N/A
3.4	Carbon capture and storage	N/A	N/A	N/A
3.5	Aggregates mining (sand, gravel, etc.)	0	0	0
3.6	Marine minerals mining	N/A	N/A	N/A
3.7	Securing fresh water supply (desalination)	0	0	0
4. Leisure, working and living				
4.1	Coastal tourism	1,01	47,85	28,97
4.2	Yachting and marinas	0,26	2,72	2,68
4.3	Cruise tourism	0,17	2,22	1,94

²³ For source and reference year of data (GVA, employment) and “Key to allocate between sea basins” (regional shares) see Table D in this Annex.

4.4	Working	N/A	N/A	N/A
4.5	Living	N/A	N/A	N/A
5. Coastal protection				
5.1	Coastal protection	0,03	0,29	0,29
5.2				
5.3	Protection of habitats	0,03	0,26	0,26
6. Maritime monitoring and surveillance				
6.1	Traceability and security of goods supply chains	N/A	N/A	N/A
6.2	Prevent and protect against illegal movement of people and goods	N/A	N/A	N/A
6.3	Environmental monitoring	N/A	N/A	N/A

Table F - 7 largest maritime MEAs in Germany's North Sea region: indicative size of all maritime economic activities²⁴

Maritime Economic Activity		GVA (€, billion)	Employment (*1000)	Score
0. Other sectors				
0.1	Shipbuilding (excl. Leisure boats) and ship repair	0,54	10,84	8,12
0.2	Water projects	0,08	1,82	1,30
1. Maritime transport				
1.1	Deep-sea shipping	3,15	19,69	25,62
1.2	Short-sea shipping (incl. Ro-Ro)	4,02	25,10	32,66
1.3	Passenger ferry services	0,04	0,69	0,56
1.4	Inland waterway transport	1,20	8,96	10,49
2. Food, nutrition, health and ecosystem services				
2.1	Fish for human consumption	1,54	38,84	27,13
2.2	Fish for animal feeding	0	0	0
2.3	Marine aquatic products	0,003	0,01	0,02
2.4	Blue biotechnology	N/A	N/A	N/A
2.5	Agriculture on saline soils	0,001	0,03	0,02
3. Energy and raw materials				
3.1	Offshore oil and gas	0,62	2,98	4,59
3.2	Offshore wind	1,41	15,15	14,60
3.3	Ocean renewable energy	N/A	N/A	N/A
3.4	Carbon capture and storage	N/A	N/A	N/A
3.5	Aggregates mining (sand, gravel, etc.)	0,02	0,27	0,23
3.6	Marine minerals mining	N/A	N/A	N/A
3.7	Securing fresh water supply (desalination)	0	0	0
4. Leisure, working and living				
4.1	Coastal tourism	0,88	41,76	25,28
4.2	Yachting and marinas	0,23	2,38	2,34

²⁴ For source and reference year of data (GVA, employment) and “Key to allocate between sea basins” (regional shares) see Table D in this Annex.

4.3	Cruise tourism	0,11	1,53	1,34
5. Coastal protection				
5.1	Coastal protection	0,10	1,03	1,03
5.2				
5.3	Protection of habitats	0,01	0,10	0,10
6. Maritime monitoring and surveillance				
6.1	Traceability and security of goods supply chains	N/A	N/A	N/A
6.2	Prevent and protect against illegal movement of people and goods	N/A	N/A	N/A
6.3	Environmental monitoring	N/A	N/A	N/A

Table G - 7 fastest growing MEAs in Germany²⁵: relative growth of all MEAs

Maritime Economic Activity		GVA (CAGR)	Employment (CAGR)	Score
0. Other sectors				
0.1	Shipbuilding (excl. Leisure boats) and ship repair	-15,14	-9,88	-12,51
0.2	Water projects	8,75	4,60	6,68
1. Maritime transport				
1.1	Deep-sea shipping	1,87	5,34	3,60
1.2	Short-sea shipping (incl. Ro-Ro)	-1,67	1,68	0,003
1.3	Passenger ferry services	-33,67	-27,12	-30,40
1.4	Inland waterway transport	-11,82	-7,22	-9,52
2. Food, nutrition, health and ecosystem services				
2.1	Fish for human consumption	15,16	21,28	18,22
2.2	Fish for animal feeding	0	0	0
2.3	Marine aquatic products	-38,45	9,54	-14,45
2.4	Blue biotechnology	2,50	2,50	2,50
2.5	Agriculture on saline soils	-0,13	-3,92	-2,03
3. Energy and raw materials				
3.1	Offshore oil and gas	-14,18	-3,24	-8,71
3.2	Offshore wind	68,24	61,51	64,88
3.3	Ocean renewable energy	2,50	2,50	2,50
3.4	Carbon capture and storage	2,50	2,50	2,50
3.5	Aggregates mining (sand, gravel, etc.)	-13,40	-9,05	-11,22
3.6	Marine minerals mining	2,50	2,50	2,50
3.7	Securing fresh water supply (desalination)	0	0	0
4. Leisure, working and living				
4.1	Coastal tourism	4,02	11,45	7,74
4.2	Yachting and marinas	1,34	-1,41	-0,04
4.3	Cruise tourism	11,80	11,80	11,80
5. Coastal protection				

²⁵ CAGRs are based on NUTS-0 level data and are therefore identical for Germany's North and Baltic Sea region; for source and reference year of data (GVA, employment) see Table D in this Annex.

5.1	Coastal protection	11,20	11,20	11,20
5.2				
5.3	Protection of habitats	6,64	6,64	6,64
6. Maritime monitoring and surveillance				
6.1	Traceability and security of goods supply chains	2,50	2,50	2,50
6.2	Prevent and protect against illegal movement of people and goods	2,50	2,50	2,50
6.3	Environmental monitoring	2,50	2,50	2,50

Table H - Future potential scores for all maritime economic activities in Germany's Baltic Sea region

Maritime Economic Activity		Innovativeness	Competitiveness	Employment	Policy relevance	Spillover effects	Sustainability	Overall score
0.1	Shipbuilding (excl. Leisure boats) and ship repair	+	?	-	+	+	+	+++
0.2	Water projects	+	0	0	+	+	?	+
1. Maritime transport								
1.1	Deep-sea shipping	+	0	0	+	0	+	0
1.2	Short-sea shipping (incl. Ro-Ro)	+	+	+	+	0	+	++++
1.3	Passenger ferry services	0	0	-	+	0	+	0
1.4	Inland waterway transport	0	0	0	0	0	0	0
2. Food, nutrition, health and ecosystem services								
2.1	Fish for human consumption	0	-	+	+	0	-	0
2.2	Fish for animal feeding	0	0	0	0	0	0	0
2.3	Marine aquatic products	+	?	0	+	+	+	+++
2.4	Blue biotechnology	+	?	0	+	+	+	+++
2.5	Agriculture on saline soils	0	0	0	0	0	0	0
3. Energy and raw materials								
3.1	Offshore oil and gas	0	0	0	0	0	0	0
3.2	Offshore wind	+	+	+	+	+	+	+++++
3.3	Ocean renewable energy	+	-	-	+	+	+	++
3.4	Carbon capture and storage	+	-	-	+	+	?	+
3.5	Aggregates mining (sand, gravel, etc.)	0	0	0	0	0	0	0
3.6	Marine minerals mining	+	-	-	+	+	?	+
3.7	Securing fresh water supply (desalination)	0	0	0	0	0	0	0
4. Leisure, working and living								
4.1	Coastal tourism	0	+	+	+	+	+	++++
4.2	Yachting and marinas	+	+	+	0	+	?	++
4.3	Cruise tourism	+	+	+	0	+	+	++++
5. Coastal protection								
5.1	Coastal protection	+	0	0	+	+	+	++
5.2								
5.3	Protection of habitats	+	0	0	+	+	+	++
6. Maritime monitoring and surveillance								
6.1	Traceability and security of goods supply chains	+	0	0	+	+	+	++

Maritime Economic Activity		Innovativeness	Competitiveness	Employment	Policy relevance	Spillover effects	Sustainability	Overall score
6.2	Prevent and protect against illegal movement of people and goods	+	0	0	+	+	+	++
6.3	Environmental monitoring	+	0	0	+	+	+	++

Table I - Future potential scores for all maritime economic activities in Germany's North Sea region

Maritime Economic Activity		Innovativeness	Competitiveness	Employment	Policy relevance	Spillover effects	Sustainability	Overall score
0. Other sectors								
0.1	Shipbuilding (excl. Leisure boats) and ship repair	+	?	-	+	+	+	+++
0.2	Water projects	+	0	0	+	+	?	+
1. Maritime transport								
1.1	Deep-sea shipping	+	+	+	+	0	+	++++
1.2	Short-sea shipping (incl. Ro-Ro)	+	+	+	+	0	+	++++
1.3	Passenger ferry services	0	0	-	+	0	+	0
1.4	Inland waterway transport	0	0	0	+	+	+	0
2. Food, nutrition, health and ecosystem services								
2.1	Fish for human consumption	0	-	+	+	0	-	0
2.2	Fish for animal feeding	0	0	0	0	0	0	0
2.3	Marine aquatic products	+	?	0	+	+	+	+++
2.4	Blue biotechnology	+	0	0	+	+	+	++
2.5	Agriculture on saline soils	0	0	0	0	0	0	0
3. Energy and raw materials								
3.1	Offshore oil and gas	+	0	+	+	+	0	++
3.2	Offshore wind	+	+	+	+	+	+	++++++
3.3	Ocean renewable energy	+	-	-	+	+	+	++
3.4	Carbon capture and storage	+	-	-	+	+	?	+
3.5	Aggregates mining (sand, gravel, etc.)	0	+	0	+	+	-	0
3.6	Marine minerals mining	+	-	-	+	+	?	+
3.7	Securing fresh water supply (desalination)	0	0	0	0	0	0	0
4. Leisure, working and living								
4.1	Coastal tourism	0	+	+	+	+	+	++++
4.2	Yachting and marinas	+	+	+	0	+	?	++
4.3	Cruise tourism	+	+	+	0	+	+	++++
5. Coastal protection								
5.1	Coastal protection	+	0	0	+	+	+	++
5.2								
5.3	Protection of habitats	+	0	0	+	+	+	++
6. Maritime monitoring and surveillance								
6.1	Traceability and security of goods supply chains	+	0	0	+	+	+	++

6.2	Prevent and protect against illegal movement of people and goods	+	0	0	+	+	+	++
6.3	Environmental monitoring	+	0	0	+	+	+	++

Table J - Maritime strategies

Title of the official document	Level (regional, national, cross-national, EU level)	Responsible body (official name)	Responsible body (English name)	Maritime Strategy concerned	Kind of Strategy document and publishing date	URL
Entwicklungsplan Meer - Strategie für eine integrierte deutsche Meerespolitik (Maritime Development Plan - Strategy for a German integrated maritime policy)	National	BMVBS (Bundesministerium für Verkehr, Bau und Stadtentwicklung)	Federal Ministry for Transport, Building and Urban Development		2011	http://www.bmfv.de/pubRD/Entwicklungsplan_Meer.pdf
Nationaler Masterplan Maritime Technologien (NMMT) - Deutschland, Hochtechnologie-Standort für maritime Technologien zur nachhaltigen Nutzung der Meere (National Masterplan Maritime Technologies (NMMT))	National	BMWi (Bundesministerium für Wirtschaft und Technologie)	Federal Ministry of Economics and Technology		2011	http://www.bmwi.de/BMWi/Redaktion/PDF/Publikationen/nationaler-masterplan-maritime-technologien,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf
Nationale Strategie für die nachhaltige Nutzung und den Schutz der Meere (National strategy for sustainable use of the seas and conservation of marine ecosystems)	National	BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety		2008	http://www.bmwi.de/BMWi/Redaktion/PDF/M-O/meeresschutz-nationale-strategie
Nationale Strategie zur biologischen Vielfalt (National Strategy on Biological Diversity)	National	BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety		2007	http://www.bmwi.de/BMWi/Redaktion/PDF/M-O/meeresschutz-nationale-strategie
Integriertes Küstenzonenmanagement in Deutschland - Nationale	National	BMU (Bundesministerium für	Federal Ministry for the		2006	http://www.bmu.de/fileadmin/bmu

Strategie für ein integriertes Küstenzonenmanagement (National strategy for integrated coastal region management)		Umwelt, Naturschutz und Reaktorsicherheit)	Environment , Nature Conservation and Nuclear Safety			- import/files /pdfs/allgemein/application/pdf/kuestenzone nmanagem ent.pdf
Nationales Hafenkonzert für die See- und Binnenhäfen (National concept for the sea and river ports)	National	BMVBS (Bundesministerium für Verkehr, Bau und Stadtentwicklung)	Federal Ministry for Transport, Building and Urban Development		2009	http://www .bmvbs.de/c ae/servlet/c ontentblob/ 31316/publi cationFile/5 22/national es- hafenkonzert-fuer-die-see-und- binnenhaef en.pdf
Bericht zur Umsetzung der in der Kabinettsklausur am 23./24.08.2007 in Meseberg beschlossenen Eckpunkte für ein Integriertes Energie- und Klimaprogramm (The Federal Government's Integrated Energy and Climate Programme (IEKP))	National	BMWi (Bundesministerium für Wirtschaft und Technologie) & BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)	Federal Ministry of Economics and Technology & Federal Ministry for the Environment , Nature Conservation and Nuclear Safety		2007	http://www .bmu.de/file admin/bmu - import/files /pdfs/allgemein/application/pdf/g esamtberich t_iekp.pdf
Strategie der Bundesregierung zur Windenergienutzung auf See im Rahmen der Nachhaltigkeitsstrategie der Bundesregierung (Strategy of the German Government on the use of offshore wind energy)	National	BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)	Federal Ministry for the Environment , Nature Conservation and Nuclear Safety		2002	http://www .erneuerbar e- energien.de /fileadmin/e e- import/files /pdfs/allgemein/application/pdf/w indenergie_ strategie_br _020100.pd f
Die Hightech-Strategie für Deutschland (High-Tech Strategy for Germany)	National	BMBF (Bundesministerium für Bildung und Forschung)	Federal Ministry of Education and Research		2006	http://www .fona.de/pd f/publikatio nen/die_hig htech_strat egie_fuer_d eutschland. pdf
LeaderSHIP Deutschland - Das	National	BMWi	Federal		2008	http://www

nationale Schiffbau-Zukunftskonzept (LeaderSHIP Germany - The national shipbuilding future concept)		(Bundesministerium für Wirtschaft und Technologie)	Ministry of Economics and Technology			.bmwi.de/BMWi/Redaktion/PDF/Publikationen/leadership-deutschland,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf
Maritime Cluster Northern Germany	Regional					http://www.maritimes-cluster.de/fileadmin/user_upload/MC/PDF/Infomaterial/110714-WTSH_4037_MCN_Handzettel_e.pdf
Hafenkonzept Unterelbe (Port concept "Unterelbe")	Regional	Behörde für Wirtschaft und Arbeit der Freien und Hansestadt Hamburg	Ministry of Economic and Labour Affairs of the Free and Hanseatic City of Hamburg		2009	http://www.schleswig-holstein.de/ArchivSH/PI/MWV/PDF/2009/090821hafenkonzept_blob=publicationFile.pdf
Maritimer Aktionsplan der Freien Hansestadt Bremen (Maritime Action Plan of the Free Hanseatic City of Bremen)	Regional	Behörde für Wirtschaft und Arbeit der Freien und Hansestadt Hamburg	Ministry of Economic and Labour Affairs of the Free and Hanseatic City of Hamburg		2011	http://www.wirtschaft.bremen.de/sixcms/media.php/13/Maritimer_Aktionsplan_FINAL.pdf
Clusterstrategie 2020 für nachhaltiges Wachstum und Beschäftigung Integrierte Landesstrategie zur Entwicklung der Innovationscluster Luft- und Raumfahrt, Windenergie und Maritime Wirtschaft/Logistik (Cluster strategy for sustainable growth and employment in the Free Hanseatic City of Bremen)	Regional	Behörde für Wirtschaft und Arbeit der Freien und Hansestadt Hamburg	Ministry of Economic and Labour Affairs of the Free and Hanseatic City of Hamburg		2010	http://www.innovation.bremen.de/sixcms/media.php/13/Clusterstrategie2020%20FINAL.pdf
Maritimer Aktionsplan Schleswig-Holstein (Maritime Action Plan Schleswig-Holstein (by initiative "Sea our Future"))	Regional	Ministerium für Wirtschaft, Arbeit,	Ministry for Economy, Labour, Transport		2012	http://www.schleswig-holstein.de/MWAVT/DE

		Verkehr und Technologie des Landes Schleswig-Holstein	and Technology of Schleswig-Holstein			/Technologie/LandesinitiativeZukunftMeer/Themen/MaritimAkSH_blob=publicationFile.pdf
Masterplan Maritime Technologien in Schleswig-Holstein (Masterplan Maritime Technologies in Schleswig-Holstein)	Regional	Ministerium für Wirtschaft, Arbeit, Verkehr und Technologie des Landes Schleswig-Holstein	Ministry for Economy, Labour, Transport and Technology of Schleswig-Holstein		2007	http://www.ihk-schleswig-holstein.de/linkableblob/740818/.5./data/Masterplan_Maritime_Technologien-data.pdf
Handlungskonzept für die Neuausrichtung des Tourismus in Schleswig-Holstein - Kurzfassung. Studie im Auftrag des Ministeriums für Wissenschaft, Wirtschaft und Verkehr des Landes Schleswig-Holstein (Action plan for reorientation of tourism in Schleswig-Holstein)	Regional	Ministerium für Wirtschaft, Arbeit, Verkehr und Technologie des Landes Schleswig-Holstein	Ministry for Economy, Labour, Transport and Technology of Schleswig-Holstein		2006	http://www.kiel-marketing.de/fileadmin/media/Dateien/pdf/Roland_Berger_Kurzgutachten_zum_Tourismus_in_Schleswig-Holstein_2006.pdf
Masterplan Marine Biotechnologie Schleswig-Holstein - Eine regionale Entwicklungsstrategie (Masterplan Marine Biotechnology Schleswig-Holstein)	Regional	Ministerium für Wirtschaft, Arbeit, Verkehr und Technologie des Landes Schleswig-Holstein	Ministry for Economy, Labour, Transport and Technology of Schleswig-Holstein		2012	http://www.life-science-nord.net/fileadmin/Isn/veranstaltungen/regional/Masterplan_Marine_Biotechnologie_PDF_Version_mit_Submariner_2013-05-02.pdf
Hafenkonzept Niedersachsen (Port concept Lower Saxony)	Regional	Niedersächsisches Ministerium für Wirtschaft, Arbeit und Verkehr	Ministry for Economy, Labour and Transport of Niedersachsen		2007	http://www.mw.niedersachsen.de/download/10110/Hafenkonzept_Niedersachsen_-_Vollstaendige_Fassung.pdf

Raumordnungskonzept für das niedersächsische Küstenmeer (Spatial planning for Lower Saxony's coastal area (ROKK))	Regional	Niedersächsisches Ministerium für den ländlichen Raum, Ernährung, Landwirtschaft und Verbraucherschutz	Ministry of Regional Development, Food, Agriculture and Consumer Protection		2005	http://www.mi.niedersachsen.de/download/34269/ROKK.pdf
Landesentwicklungsplan Schleswig-Holstein 2010 (Regional development plan of Schleswig-Holstein 2010)	Regional	Innenministerium des Landes Schleswig-Holstein	Ministry of the Interior of Schleswig-Holstein		2010	http://www.schleswig-holstein.de/STK/DE/Service/Broschueren/BroschuerenLaPla/Plaene/Brosch_LEP_blob=publicationFile.pdf
Integriertes Küstenzonenmanagement in Schleswig-Holstein (Integrated Coastal Zone Management in Schleswig-Holstein)	Regional	Innenministerium des Landes Schleswig-Holstein	Ministry of the Interior of Schleswig-Holstein		2003	http://www.schleswig-holstein.de/STK/DE/Service/Broschueren/BroschuerenLaPla/IKZM-Rahmenkonzept_blob=publicationFile.pdf
Landesraumentwicklungsprogramm Mecklenburg-Vorpommern (State spatial planning programme Mecklenburg-Vorpommern)	Regional	Ministerium für Arbeit, Bau und Landesentwicklung Mecklenburg-Vorpommern	Ministry of Labour, Building and Development of Mecklenburg-Vorpommern		2005	http://service.mvnet.de/_php/download.php?datei_id=3151
Aktionsplan Klimaschutz Mecklenburg-Vorpommern 2010 (Action Plan for climate protection Mecklenburg-Vorpommern 2010)	Regional	Ministerium für Wirtschaft, Arbeit und Tourismus Mecklenburg-Vorpommern	Ministry of Economy, Labour and Tourism of Mecklenburg-Vorpommern		2010	http://service.mvnet.de/_php/download.php?datei_id=36302
Der Hafenentwicklungsplan bis 2025 (Port development plan to 2025)	Regional	Behörde für Wirtschaft und Arbeit der Freien und	Ministry of Economic and Labour Affairs of the Free and		2012	http://www.hafen-hamburg.de/sites/default/files/hep2

		Hansestadt Hamburg	Hanseatic City of Hamburg			025_englis h.pdf
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