



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

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## 0. General overview

The coastline of Belgium extends over 307 km<sup>1</sup>. It accounts for 0.2% of the total coastline length of the EU-22 coastal Member States. Belgium has a single coastal region (at NUTS 1 level), which is Flanders. At NUTS 2 level, the provinces of West Flanders, Antwerp and East Flanders<sup>2</sup> have access to the North Sea. Within these three, 5 NUTS 3 level areas are located on the North Sea shores. The coastal zone of Belgium (are within 10 kilometres of the sea) covers 1,920 km<sup>2</sup> which is 0.5% of the total EU-22 coastal area.

Out of the total population of 11.094 million inhabitants in Belgium<sup>3</sup>, more than 2.3% of the population live in the Belgian coastal areas<sup>4</sup>.

The population density in the coastal area is 509 inhabitants per km<sup>2</sup>, which makes the Belgian coastal region rather densely populated as compared to the corresponding EU value<sup>5</sup>. Besides, the real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions (Provinces of Antwerp and West-Vlaanderen only) was growing by 2.2% and 2.5% in comparison to the national growth of GVA of 2.2% (2012).

With similar proportions, the Belgian coastal areas are accountable for approximately 27% of the total employment in the country (2012)<sup>6</sup>. In terms of unemployment rate, the coastal areas (provinces Antwerp with 5.3% and West-Vlaanderen with 3.9%) performed significantly better than the national average of 7.3% (2012). The coastal areas are accountable for about 15% of the country's unemployed population (equal to 62,000 people out of the national total of 396,000 in 2012).

Over the past five years Belgium maintained a steady employment rate with slight variations between 62.4% (2008) and 61.8% (2012). These figures of employment are somewhat below the EU27 average of 64.1% (2012). Regional figures for areas with access to the North Sea reflect higher than average employment as Antwerp registered 64%, East Flanders 67.5% and West Flanders 66.6% employment for 2012.<sup>7</sup> Unemployment figures for Belgium as a whole were 7.5% in 2012. Lower than the EU27 average of 10.4%. North Sea adjacent regions scored even lower unemployment rates with Antwerp 5.3%, East Flanders 4.1% and West Flanders 3.9% for 2012.<sup>8</sup>

<sup>11</sup> Sogetti, Eurostat, 2008: Description of the coastal and sea areas in the European Union. Chapter 2. P. 20. Available here: <https://webgate.ec.europa.eu/maritimeforum/content/498>

<sup>2</sup> The inclusion of East Flanders is not consistent across all sources. It has direct maritime access through the left bank of the Antwerp sea port. The port of Ghent – accessible through inland water only – is also considered a sea port.

<sup>3</sup> <http://statbel.fgov.be/fr/statistiques/chiffres/population/structure/agesexe/popbel/>

<sup>4</sup> 32.4%, equal to 3.4 million inhabitants in 2005. See Sogetti, Eurostat, 2008: ch. 2. P. 20.

<sup>5</sup> Around 4.7 times the average population density of the EU-22 coastal Member States.

<sup>6</sup> Equal to 1.242 million people employed in the Belgian coastal areas (provinces Antwerp and West-Vlaanderen (2012). The Belgian national total is 4.479 million people

<sup>7</sup> Eurostat (2013): Employment rates by sex, age and NUTS 2 regions (%) [lfst\_r\_lfe2emprrt]

<sup>8</sup> Eurostat (2013): Unemployment rates by sex, age and NUTS 2 regions (%) [lfst\_r\_lfu3rt]

## 1. Marine and maritime economic activities

This section provides an overview of the main maritime activities and their related socio-economic impacts of the most relevant maritime economic activities (MEAs) in Belgium **at NUTS 0 level**. These economic activities will be analysed and described and updated according to the NACE rev. 2 classifications.

Taken together, the overall employment amongst the maritime economic activities is estimated at 40.264 persons, representing a GVA of € 9.548 bln.

Please check **Annex I** for more detailed information from all relevant sources. Please follow instructions provided there and use the figure you consider to be the most reliable one to appear in Table 1.

**Table 1 - Overview of relevant maritime economic activities in a MS at NUTS-0 level**

Maritime economic activity		GVA	Employment	Number of enterprises	Further indicators	Source & Reference year + notes
		(€ million)				
<b>0. Shipbuilding</b>				<b>294</b>		
0.1	Shipbuilding (excl. leisure boats) and ship repair	70	1,270			<i>Eurostat, data for 2010. Data for ship repair NACE 33.15 only. Country expert to check national sources on new building NACE 30.11</i>
0.2	Construction of water projects	460	3,520			<i>Eurostat, data for 2010</i>
<b>1. Maritime transport</b>				<b>1135</b>		
1.1	Deep-sea shipping	547	3,306			<i>Eurostat does not provide data for all years for all NACE sectors. Therefore the most recent available year was used to estimate the size</i>
1.2	Short-sea shipping (incl. Ro-Ro)	740	4,472			<i>Eurostat does not provide data for all years for all NACE sectors. Therefore the most recent available year was used to estimate the size</i>
1.3	Passenger ferry services	367	2,349			<i>Eurostat does not provide data for all years for all NACE sectors. Therefore the most recent available year was used to estimate the size</i>
1.4	Inland waterway transport	414	3,014			<i>Eurostat, data for 2010; support sectors NACE 77.34, 52.22, 52.10, 52.24 not included (no data available in Eurostat). Employment based on Amadeus. GVA calculated based on same ratio GVA/Empl. as Eurostat (corrected using last available year)</i>

Maritime economic activity		GVA	Employment	Number of enterprises	Further indicators	Source & Reference year + notes
		(€ million)				
<b>2. Food, nutrition, health and eco-system services</b>				<b>694</b>		
2.1	Catching fish for human consumption	610	7,600			JRC (fishing), Eurostat (fish processing, wholesale & retail), PRODCOM (share of human/animal), data for 2010
2.2	Catching fish for animal feeding	0.0	0.0			JRC (fishing), PRODCOM (share of human/animal), data for 2010 (share of animal fishing is zero according to JRC)
2.3	Marine aquatic products	3.4	80			FAO
2.4	Blue biotechnology	n/a	n/a			<i>Not available in Eurostat. No alternative data on Belgium found centrally</i>
2.5	Agriculture on saline soils	0	0			Not applicable
<b>3. Energy and raw materials</b>				<b>86</b>		
3.1	Offshore oil and gas	0.0	0.0			Eurostat, data for 2010; no data on NACE 09.10
3.2	Offshore wind	34.8	1,200			Deloitte/EWEA
3.3	Ocean renewable energy	n/a	n/a			Sector not visible in Eurostat. No alternative sources found for Belgium
3.4	Carbon capture and storage	n/a	n/a		No indication that CCS projects are running	Sector not visible in Eurostat. No alternative sources found for Belgium
3.5	Aggregates mining (sand, gravel, etc.)	10	100			Eurostat, data for 2010. Offshore share based on UEPG
3.6	Marine minerals mining	n/a	n/a			DEME, G-TEC,
3.7	Securing fresh water supply (desalination)	0.0	0.0			Not present in Belgium according to Global Water Insights
<b>4. Leisure, working and living</b>				<b>1947</b>		
4.1	Coastal tourism	400	8,900			<i>Eurostat, data for 2010 (data for NACE 55.10, 55.20, 55.30, 55.90)</i>
4.2	Yachting and marinas	n/a	n/a			no reliable source found



Maritime economic activity		GVA	Employment	Number of enterprises	Further indicators	Source & Reference year + notes
		(€ million)				
4.3	Cruise tourism	131	838			<i>Eurostat does not provide complete data on NACE sectors relevant to this MEA for 2010. Therefore most recent available data is used</i>
<b>5. Coastal protection</b>						
5.1	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	300	300			Eurostat COFOG, data for 2010; PRC the Economics of Climate change, data for 2008
<b>6. Maritime monitoring and surveillance</b>						
6.1/6.2	Traceability and security of goods supply chains, prevention and protection against illegal movement of people and goods,	n/a	n/a			No data found centrally. Problem of different definitions applied across sources & countries.
6.3	environmental monitoring	n/a	n/a			No data found centrally on this MEA

## Overview of maritime economic activities in a MS at NUTS-0 level

### Shipbuilding

**Shipbuilding** (excl. leisure boats) is virtually non-existing, only small companies in Antwerp and Oostende remain. Nevertheless, there are some repair activities left. E.g. the former shipbuilding industry in Oostende has vanished, but some ship repair and maintenance is left. More than 65 companies are registered under NACE 33.15 (Repair and maintenance of ships and boats) which employ more than 1.100 people. The majority of them are rather small (more than 90 % of them had less than 50 employees in 2010).<sup>9</sup>

**Construction of water projects** in Belgium is an important activity, with strong export potential. Companies such as Jan de Nul, Dredging International, Baggerwerken Decloedt en Zoon (both part of DEME) and Herbosch – Kiere are working internationally if not globally. These companies may have only part of their activities registered in Belgium, as they can set up daughter or sister companies in the operating countries or in third countries. (e.g. Jan de Nul is headquartered in Luxembourg, where the holding employs 4.900 people).

### Maritime transport

**Maritime transport** in Belgium is centred around the ports of Antwerp, Oostende, Zeebruges and Ghent. Provisional figures of the National Bank of Belgium show that the direct added value created by the Belgian Ports of Antwerp, Zeebruges, Ghent, Oostende, Liège and Brussels in 2009 totalled 14.9 billion euro's. The total direct employment in the ports in 2009 amounted to 120,528 full time equivalents.<sup>10</sup> The ports have a high degree of complementarity. Overall tonnage has been growing with 20% in the years 2004-2012, from 217 mln. tons in 2004 to 257 mln. tons in 2012. The distribution over the various ports is as follows: 184.000 ton (Antwerp), 43.000 ton (Zeebrugge), 26.000 ton (Ghent), 3.000 (Oostende).<sup>11</sup> The direct, maritime employment (2010) of the four Flemish ports is estimated to be 38.600 and broken down as follows: the Port of Antwerp (27.410 and slightly growing), followed by Zeebruges (6.100 and growing), Ghent (3.000 and growing), and Oostende (2.100 and stable).

The biggest Belgian Sea and coastal freight water transport companies as Safmarine Container Lines or Smit Transport Belgium are located around Antwerp.<sup>12</sup> Services incidental to water transportation employ directly more than 4,500 persons in Belgium (the largest share in Antwerp).<sup>13</sup>

**Deep-sea shipping** in Belgium is estimated to be 42.5% (2010), compared to 46.5% in 2008. The overall estimated GVA is € 547 mln., and employment in

<sup>9</sup> Estimation based on Amadeus data 2010

<sup>10</sup> [www.vlaamsehavenvereniging.be](http://www.vlaamsehavenvereniging.be)

<sup>11</sup> <http://www.vlaamsehavencommissie.be/vhc/page/kwartaalcijfers-maritieme-trafiiek-totaal-ton>

<sup>12</sup> Amadeus data 2010

<sup>13</sup> Amadeus data 2010

deep-sea shipping is 3.306. This number is considered low in relation to overall direct maritime employment of the Flemish ports as stated above. The most likely reason lies in the fact that only few employees are counted in the activity sea and coastal freight water transport (NACE 5020), as only limited number of vessels sail under Belgian flag. This limited number also has a knock-on effect on the broader service activities incidental to water transportation (NACE 52.22)

**Short sea shipping** in Belgium is estimated to be of higher (in still growing) importance in comparison with deep-sea shipping. In 2008 the share of short-sea shipping was at 53.5 % and grew up to 57.5 % in 2010. In the Netherlands in comparison it grew from 2008 47.4 % to 51.3 % in 2010.<sup>14</sup> The overall estimated GVA is € 740 mln. and employment in short-sea shipping is 4,472. This number is considered low, for reasons similar to deep-sea shipping (as described above).

**Passenger ferry** in Belgium is traditionally concentrated in Oostende; this activity has seen a major reduction in recent years and decades due to the Channel tunnel construction. The latest blow was the ending of the TransEuropa Ferries service in April 2013<sup>15</sup>, which had a connection to Ramsgate. Zeebrugge is fairing better, as it has a connection to Hull (P&O) as well as to Scotland (Norfolkline). As a consequence, the overall employment and GVA figures (2010) will be on a downhill slope and the overall estimate of 2,300 employees is considered (too) high. This high employment is mostly due to a disproportionally high allocation of service activities (including ports) incidental to water transportation (related to the methodology and data found for deep-sea and short-sea shipping above). An alternative estimate points to 440 employed, which appears more realistic.

**Inland waterway transport** in Belgium: Belgium is the third largest MS in terms of economic activity, following NL and D. Our estimates show that about 3,000 persons are directly employed in Inland water transport and about 10 times more in support services.<sup>16</sup> Alternative sources point to even higher estimates (5,000 persons).

<sup>14</sup> Eurostat data 2013

<sup>15</sup> <http://www.hln.be/hln/nl/1901/reisnieuws/article/detail/1621962/2013/04/25/Geen-ferry-meer-van-Oostende-naar-Ramsgate.dhtml>

<sup>16</sup> Estimations based on Amadeus data 2010



## Food, nutrition, health and eco-system services

The **fishery sector** consists of fishing, fish processing and aquaculture, as well as wholesale and retail. Overall, employment in fishing has gone down to just over 400 employees in 2010 (650 were still employed in 2005). Employment in fish processing is about 1100.<sup>17</sup> About 90 sea-going fishing boats are registered in Belgium, over a number of fishing ports: Oostend (25), Zeebrugge (43), Nieuwpoort (9), Blankenberge (4) and the Scheldt Estuary (10).<sup>18</sup> Most employment is therefore in wholesale and retail, as high as over 5.000 jobs. This number is considered very high in relation to the wholesale and retail patterns of fish, which are largely mainstreamed through supermarket chains.

The Belgian **Marine aquaculture** sector produced 539 tonnes in 2010. This production was valued **€3.36 million** (FAO, 2012). Most of Belgian aquaculture production is freshwater.<sup>19</sup> About **80** people were employed in the sector in 2005.<sup>20</sup>

**Blue biotechnology** in Belgium is promoted by the Flanders Marine Institute (VLIZ), which has established the Flemish Marine biotechnology Platform in 2012. Private companies with an interest in marine biotechnology are ixX Pharma, Proviron, OVOLIFE.

## Energy and raw materials

**Offshore oil and gas** in Belgium. While there is no information of oil and gas production off the Belgian coastline, there are a number of companies active in the up and downstream sector of the supply chain. Belgian Oil and Gas Group includes 100 member companies who are primarily technology suppliers to the oil, gas & power generation industry, out of which 30% are Belgian offices of multinationals and the remaining 70% are Belgian SME's. With regard to their activities, 40% are dealing with energy and petroleum, 60% transport, refineries & petrochemicals. 90% conventional generation -10% nuclear generation. Most of these companies are not registered under the primary NACE codes of the sector, but can be found under other activities such as manufacturing or even administration or support services.

While there are no companies registered under the primary NACE codes 06.10 Extraction of crude petroleum and 06.20 Extraction of natural gas, there are 19 registered under 09.10 Support activities for petroleum and natural gas extraction<sup>21</sup>.

<sup>17</sup> LEI/FRAMAN (2005) Employment in the Fisheries sector. [http://ec.europa.eu/fisheries/documentation/studies/employment\\_study\\_2006\\_en.pdf](http://ec.europa.eu/fisheries/documentation/studies/employment_study_2006_en.pdf)

<sup>18</sup> [http://www.mobilit.belgium.be/nl/Resourcen/publicaties/scheepvaart/pub\\_visserij\\_ljst.jsp](http://www.mobilit.belgium.be/nl/Resourcen/publicaties/scheepvaart/pub_visserij_ljst.jsp)

<sup>19</sup> Anderson and Guillen (2012) The Economic Performance of the EU Aquaculture Sector – 2012 exercise. JRC Scientific and Policy Reports.

[http://stecf.jrc.ec.europa.eu/documents/43805/410684/2013-04\\_STECF+13-03+-+EU+Aquaculture+sector\\_JRC81620.pdf](http://stecf.jrc.ec.europa.eu/documents/43805/410684/2013-04_STECF+13-03+-+EU+Aquaculture+sector_JRC81620.pdf)

<sup>20</sup> LEI/FRAMAN (2005) Employment in the Fisheries sector. [http://ec.europa.eu/fisheries/documentation/studies/employment\\_study\\_2006\\_en.pdf](http://ec.europa.eu/fisheries/documentation/studies/employment_study_2006_en.pdf)

<sup>21</sup> Amadeus data 2010

**Offshore wind** in Belgium is a major development area; offshore wind activities are centered around Oostende. Within the wind energy sector as a whole, there were 2,615 professionals directly employed (€ 176 mln. turnover). The indirect impact on employment accounted for 3,522 (€ 139 mln. turnover). All in all, 6,136 professionals worked directly or indirectly in the wind energy sector, with an estimated turnover of € 315 mln. Employment is up 50% compared to the employment in 2008 (4,388)<sup>22</sup>. Our own estimate is that 33% of this employment relates to offshore wind, hence the direct employment expected is **870** persons (indirect employment an additional 1160), representing € 58 mln direct turnover and **€ 104 mln.** Including indirect turnover. In 2011, a total offshore capacity of 195 MW was installed in the North Sea.

Most important project is the Thorntonbank, which is constructed in 3 phases, 30 km. out of the Belgian coast. Completion is expected by September 2013, when a total of 325 MW will have been installed.

Expectations for North Sea offshore wind from the sector go up to 2,000-2825 MW installed by 2020, which would amount to 40-45% of all installed capacity. This could lead to a total GDP of € 1,359 - € 1,746 (offshore alone € 543 - 774 mln.) and up to 9,809 jobs (of which an estimated 4,300 offshore).

**Ocean renewable energy** in Belgium has been very limited until now, but new initiatives are cropping up. The Impact Assessment on Ocean Energy (Ecorys 2012) did not point to any installed capacity in Belgium. Nevertheless, a “Gen4Wave” Energy platform has been set up by the Flanders Maritime Cluster, which aims to accelerate innovations by exchanging experiences. A first estimate is that 750FTE would possibly be employed by this activity by 2020.<sup>23</sup>

**Aggregates mining** takes place through sand exploitation at sea, which started in 1976. Sand is used in the construction sector as draining and stabilisation sand or in the concrete industry where it is mixed with other aggregates. There are several zones in front of the coast for which permits for exploiting sand can be obtained.

**Marine minerals mining** in Belgium is currently being discussed in the context of federal approval of a law allowing companies to search for minerals in international waters. The law allows companies such as the Oostende-based G-Tec Sea Mineral Resources to search for copper in the Pacific Ocean. Within this context, in 2012, a new exploration vessel Simon Stevin entered into service (based in Oostende). It is the first newly built exploration ship in Flanders, which will be operated by the Flemish Institute for the Sea (and replacing the former ‘Zeeleeuw’ ship).

<sup>22</sup> Deloitte (2012) Macro-economic impact of the Wind energy sector in Belgium. Report prepared for EWEA.

<sup>23</sup> Flanders Maritime Clusters <http://www.flanders-maritime-cluster.be>

## Leisure and tourism

**Coastal tourism** A pure geographical top-down approach including only accommodation leads to 8.900 persons<sup>24</sup> and a geographical bottom-up approach to about 12.170 persons employed<sup>25</sup>. in a strict sense is estimated by local sources to amount to about 12.000. This number excludes the employment in Bruges (about 5.000 and growing fast) and in the hinterland, which is technically part of the NUTS III zone.<sup>26</sup> These estimations are based on the geographical location and only focus on accommodation. The actual magnitude of tourism can therefore be expected to be much higher.

**Yachting and marinas:** capacity of coastal yachting harbours and marina's is being expanded through new investments and maintenance, eg. In Zeebrugge, Nieuwpoort and Blankenberge.

**Cruise tourism** in Belgium is a minor but growing activity. Since 2005, Zeebrugge is Belgium's first cruise port (thanks to proximity of Brugge), with 90 annual calls per year. In 2012 Zeebrugge welcomed 333.349 cruise passengers.<sup>27</sup> New investments in a cruise terminal will be made in Zeebrugge. The number of passengers in Antwerp has increased from 6.894 in 2009 (7 calls) to 39.175 in 2011 (30 calls).<sup>28</sup> In Oostende, the number of calls declined sharply from 2009 to 2010, from 13 calls / 3814 passengers in 2009 to 6 calls / 1740 passengers in 2010.

## Coastal protection

In 2012, the Masterplan Coastal protection was approved by the Flemish government, including both hard and soft measures. Preparation activities are ongoing, and implementation of works is foreseen as from 2013 onwards.<sup>29</sup> Companies active in this area include Dredging International (part of DEME) and Jan de Nul.

<sup>24</sup> Estimations based on Eurostat data 2010

<sup>25</sup> Estimations based on Amadeus data 2010

<sup>26</sup> Flemish Institute for the Sea: <http://www.vliz.be/projects/indicatoren/grint.php?indicator=111&year=2007>

<sup>27</sup> <http://www.portofzeebrugge.be/en/node/499>; the number of cruise passengers to be verified as Zeebrugge has not provided such data to Cruise Europe.

<sup>28</sup> <http://www.cruiseurope.com/statistics>

<sup>29</sup> Jaarboek



### 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 Belgium.

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

The following sections are developed in line with the methodology of the Blue Growth study, as requested by DG MARE. A list in ranking order of the 7 largest, 7 fastest growing and 7 most promising prospective marine and maritime economic activities at NUTS 0 level will be provided. This part of the study will rely on the knowledge of the country experts.

### 2.1 Listing and ranking the largest marine and maritime economic activities

This task identifies the largest maritime economic activities with a ranking order. On the basis of the scores obtained<sup>30</sup> in relation to GVA and persons employed, the 7 largest maritime economic activities will be identified and presented as follows:

**Table 2 – Listing the 7 largest maritime economic activities in a MS at NUTS-0 level**

Rank	Maritime economic activities	GVA (million EUR)	Employment	Score
1.	Short-sea shipping (incl. Ro-Ro)	1,029	6,218	8.25
2.	Coastal tourism	400	8,900	6.45
3.	Inland waterway transport	714	5,200	6.17
4.	Deep-sea shipping	760	4,596	6.09
5.	Construction of water projects	460	3,520	4.06
6.	Passenger ferry services	367	2,349	3.00
7.	Cruise tourism	131	838	1.07

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

Objective of the current task is to select the 7 fastest growing maritime economic activities as emerged **over the past 3 years**. This part of the analysis is essential for forecasting future trends. The analysis entails the aggregation and assessment of quantitative data for the maritime economic activities, applying the same approach as in the previous task<sup>31</sup>. This part of the study will rely on the knowledge of the country experts.

As a result of the analysis the following table should be compiled and presented in the Country fiche:

<sup>30</sup> Please refer to the country fiche manual

<sup>31</sup> Please refer to the country fiche manual

**Table 3 - Ranking order of the 7 fastest growing maritime economic activities in a MS at NUTS-0 level**

	Maritime economic activities	GVA (CAGR)	Employment (CAGR)	Score
1	Aggregates mining (sand, gravel, etc.)	71.5%	69.1%	0.70
2	Construction of water projects	30.9%	24.1%	0.27
3	Catching fish for human consumption	25.4%	5.4%	0.15
4	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	4.4%	4.4%	0.04
5	Inland waterway transport	-21.6%	15.6%	-0.03
6	Coastal tourism	-2.9%	-6.3%	-0.04
7	Shipbuilding (excl. leisure boats) and ship repair	-11.1%	-7.9%	-0.09

The above table gives counter-intuitive results and is considered of limited value for the following reasons:

- 1) The time series 2008-2010 is too short, especially in light of the many missing data for 2010. As a consequence, the comparison often only involves the years 2008-2009.
- 2) Due to the economic crisis, which started to unfold towards the end of 2008, the above ranking tells more about 'resilience' to the crisis rather than
- 3) The ranking favours a range of activities which are only marginal in terms of size.
- 4) The above method fails to reflect some growing activities, such as cruise tourism (note the strong increase in number of calls in the Zeebrugge port).

Instead, a time series over a longer period (e.g. 2000-2010) would be favoured as an indicator for growth.

### 2.3 Ranking order of the 7 most promising marine and maritime economic activities

**Table 4 - Ranking order of the 7 most promising maritime economic activities in a MS at NUTS-0 level**

Rank	Maritime economic activities	Score (applying formula)
1.	Offshore wind	12
2.	Construction of water projects (incl. protection against flooding)	11
3	Deepsea shipping	10
4.	Short-sea shipping	10
5.	Inland waterway transport	10
6.	Cruise tourism	10
7.	Blue biotechnology	10

Annex II provides a table on reporting indicators and scores for each of the maritime economic activities. Strong potential is foreseen for four different types of activities:

1. Offshore wind as well as construction of water projects (including protection against flooding). This is due to the strong Belgian activity as well as foreseen activity in the further expansion of offshore wind capacity in the North Sea, in combination with the competitiveness of companies in this domain – hence future export potential as well. Within this respect, new developments and cross-overs need to



be reviewed, such as the room to allow for a private initiative to build an “Energy island” in front of the coast of Westduine or Zeebrugge.

2. Shipping remains a crucial activity in Belgium, mostly from a competitiveness, employment as well as spill-over effect. This ranking is simply derived from the fact that Antwerp is amongst the largest European ports, and that its role will be secured by the current Waasdok expansion plans (backed by EIB funding).
3. Cruise tourism has been a limited activity in Belgium so far. However, the sector is growing very fast and an increasing number of lines is now reaching out to Belgian ports (mostly Zeebrugge, due to its proximity of Brugge) in its itinerary.
4. Blue biotechnology. Perhaps not a Belgian strength so far, but the potential for growth is strong, with the VLIZ as a point of departure. Synergies with other (Oostende-based) maritime activities can be important.

### 3. Breakdown of maritime economic activities at regional level (NUTS 1 or NUTS 2) and selection of the most important maritime regions for the country

Belgian NUTS 2 regions are related to the level of provinces and for this analysis we consider three of the Flemish provinces: West Flanders, East Flanders and Antwerp:

- Antwerp; the port of Antwerp as well as the Scheldt estuary is situated within this province; it includes the main port as well as the right Scheldt bank with strong petrochemical activity.
- East Flanders includes the sea-port of Ghent. Although Ghent itself is not situated on the coast, it is accessible for sea-going vessels through the canal Gent-Terneuzen. Furthermore, the west bank of the port of Antwerp (Waaslandhaven) falls also in this province, a new expansion area for logistics and containers primarily.
- West Flanders includes the whole North Sea coast, a stretch of 60 kilometers from the North of France (Dunkerque) to Netherlands (Zeeland). This province covers the ports of Oostende and Zeebrugge.

In some analyses, the ports of Liège and Brussels are also referred to. However, these ports are not accessible by sea-going vessels and not covered here.

Table 5 – Allocation keys per maritime economic activity per region in a MS

GVA		Antwerp	East Flanders	West Flanders
<b>0.Shipbuilding</b>				
0.1	Shipbuilding (excl. leisure boats) and ship repair	67%		33%
0.2	Construction of water projects	67%		33%
<b>1. Maritime transport and shipbuilding</b>				
1.1	Deep-sea shipping	50%	25%	20%
1.2	Short-sea shipping (incl. Ro-Ro)	50%	25%	20%
1.3	Passenger ferry services			100%
1.4	Inland waterway transport	75%	25%	
<b>2. Food, nutrition, health and eco-system services</b>				
2.1	Catching fish for human consumption			100%
2.2	Catching fish for animal feeding			100%
2.3	Marine aquatic products	50%		50%
2.4	Blue biotechnology			100%
2.5	Agriculture on saline soils	Na	na	na
<b>3. Energy and raw materials</b>				
3.1	Offshore oil and gas	100%		
3.2	Offshore wind	33%		67%
3.3	Ocean renewable energy	33%		67%
3.4	Carbon capture and storage	Na	na	Na
3.5	Aggregates mining (sand, gravel, etc.)	50%		50%
3.6	Marine minerals mining	33%		67%
3.7	Securing fresh water supply (desalination)	na	na	Na
<b>4. Leisure, working and living</b>				
4.1	Coastal tourism			100%
4.2	Yachting and marinas			100%
4.3	Cruise tourism	25%		75%
<b>5. Coastal protection</b>				
5.1	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	67%		33%
<b>6. Maritime monitoring and surveillance</b>				
6.1/6.2	Traceability and security of goods supply chains, prevention and protection against illegal movement of people and goods,	67%		33%
6.3	environmental monitoring	67%		33%

**Table 6 - Overview of employment per maritime economic activity per region in a MS**

Employment		Antwerp	East Flanders	West Flanders
<b>0.Shipbuilding</b>				
0.1	Shipbuilding (excl. leisure boats) and ship repair	851	0	419
0.2	Construction of water projects	2358	0	1162
<b>1. Maritime transport and shipbuilding</b>				
1.1	Deep-sea shipping	1653	826.50	661
1.2	Short-sea shipping (incl. Ro-Ro)	2236	1118	894
1.3	Passenger ferry services	0.00	0.00	2349
1.4	Inland waterway transport	2261	754	0
<b>2. Food, nutrition, health and eco-system services</b>				
2.1	Catching fish for human consumption	0	0	7600
2.2	Catching fish for animal feeding	0	0	0
2.3	Marine aquatic products	40	0	40
2.4	Blue biotechnology	n/a	n/a	n/a
2.5	Agriculture on saline soils	n/a	n/a	n/a
<b>3. Energy and raw materials</b>				
3.1	Offshore oil and gas	0	0	0
3.2	Offshore wind	396	0	804
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.)	50	0	50
3.6	Marine minerals mining	n/a	n/a	n/a
3.7	Securing fresh water supply (desalination)	n/a	n/a	n/a
<b>4. Leisure, working and living</b>				
4.1	Coastal tourism	0	0	8900
4.2	Yachting and marinas	n/a	n/a	n/a
4.3	Cruise tourism	210	0	629
<b>5. Coastal protection</b>				
5.1	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	201	0	99
<b>6. Maritime monitoring and surveillance</b>				
6.1/6.2	Traceability and security of goods supply chains, prevention and protection against illegal movement of people and goods,	n/a	n/a	n/a
6.3	environmental monitoring	n/a	n/a	n/a

**Table 7 - Overview of GVA per maritime economic activity per region in a MS**

GVA (in €m)		Antwerp	East Flanders	West Flanders
<b>0. Shipbuilding</b>				
0.1	Shipbuilding (excl. leisure boats) and ship repair	47	0	23.1
0.2	Construction of water projects	308	0	151.8
<b>1. Maritime transport</b>				
1.1	Deep-sea shipping	274	136.8	109.4
1.2	Short-sea shipping (incl. Ro-Ro)	370	185	148
1.3	Passenger ferry services	0	0	367
1.4	Inland waterway transport	311	103.5	0
<b>2. Food, nutrition, health and eco-system services</b>				
2.1	Catching fish for human consumption	0	0	610
2.2	Catching fish for animal feeding	0	0	0
2.3	Marine aquatic products	2	0	1.7
2.4	Blue biotechnology	n/a	n/a	n/a
2.5	Agriculture on saline soils	n/a	n/a	n/a
<b>3. Energy and raw materials</b>				
3.1	Offshore oil and gas	0	0	0
3.2	Offshore wind	11	0	23.3
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.)	5	0	5
3.6	Marine minerals mining	n/a	n/a	n/a
3.7	Securing fresh water supply (desalination)	n/a	n/a	n/a
<b>4. Leisure, working and living</b>				
4.1	Coastal tourism	0	0	400
4.2	Yachting and marinas	n/a	n/a	n/a
4.3	Cruise tourism	33	0	98.3
<b>5. Coastal protection</b>				
5.1	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	201	0	99
<b>6. Maritime monitoring and surveillance</b>				
6.1/6.2	Traceability and security of goods supply chains, prevention and protection against illegal movement of people and goods,	n/a	n/a	n/a
6.3	environmental monitoring	n/a	n/a	n/a



Taken together, the breakdown of maritime economic activities differs markedly between the three provinces.

The role of Antwerp is large in traditional maritime economic activities, particularly maritime transport and petrochemical/industrial activities. There is limited expansion potential and the current activities prevent some rivalling activities.

The role of East Flanders is relatively small to date, however will be growing due to the expansion of the West Bank (Waasland project). The seagate construction activities ('Deurganckdoksluis') are in full swing, and supported by EIB loans (as part of Trans-European Networks).

The role of West Flanders is very different. Partially, it relies on mature economic activities such as tourism and maritime transport (Zeebrugge, Oostende). However Oostende has increasing difficulties to capture value from mature activities and is focusing aggressively on new and emerging activities. Offshore wind stands out in this respect (as offshore port for the construction of the Thornton bank, but also subsequent projects) as well as related activities (e.g. marine mineral mining or ocean renewable energy, as suppliers are often similar). Furthermore, Oostende is active in blue biotechnology, through the VLIZ (Vlaams Instituut voor Onderzoek der Zee).



## 4. List of existing clusters

Belgian maritime economic interests are bundled in **Flanders' Maritime Cluster**, a network organisation which promotes the maritime and marine interests in Flanders. Currently, about 80 companies and other organisations are member, and the Cluster was founded by a number of founding members, including the port authorities of Oostende and Antwerp, major dredging companies as well as the Flemish Institute for the Sea.

Within Flanders, four (sub-) clusters can be distinguished around the main ports, each with their specificities, strengths and weaknesses. Overall, these clusters are seen to be rather complementary to each other.

**Table 8 - List and analysis of clusters**

	Maritime economic activities covered	Status (mature, growing, early development)	Strengths	Weaknesses
<b>Antwerp</b>	Deep sea shipping, short-sea shipping, inland waterways, oil & gas (refineries), marine monitoring and surveillance	Mature	+Critical mass + Location	- Strong reliance on establishes MEAs - Shortage of space - Congestion hinterland
<b>Oostende (West Flanders)</b>	Short-sea shipping, ferries, offshore wind, blue biotech	Mature/growing/early develop.	+ Strong scientific cluster	- Ferry business almost dead
<b>Zeebrugge (West Flanders)</b>	Deep sea shipping (e.g. ro/ro), short-sea shipping, cruise shipping	Growing	+ Location for cruise (close to Bruges) + Space	
<b>Ghent (East Flanders)</b>	Inland waterway	Mature	+ Proximity to cargo shippers	- Only accessible through seagates

The European Cluster Observatory identifies three maritime clusters in Belgium, these are: Antwerp, Oostende and Ghent<sup>32</sup>.

<sup>32</sup> The employment information from this observatory is not presented as the data are not considered plausible (e.g 575 employees in Antwerp, 465 in East Flanders and 1090 employees in West Flanders). European Cluster Observatory (2013) available at <http://www.clusterobservatory.eu/index.html#view=regionalmapping;i=V16140;y=2011;r=CR10-NSB;rsI=2;rp=CR10-NS;s=CC20-mari;sp=CC20-STND;p=table>

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

Overall, the **Federal State has the general competency for the North Sea policy**<sup>33</sup>. Maritime economic policies are touching upon a number of federal policies, Internal Affairs, Mobility, Defence and Environment. At the **level of the Flemish government (NUTS 2)** specific competencies for maritime economic activities reside, e.g. on fisheries policy, sea ports, dredging of lanes to sea ports, pilotage, salvage and towage operations as well as coastal defence.

Besides, several cooperation agreements<sup>34</sup> have been set up between the federal and the regional level of policy-making in Belgium for issues that require more joint actions, e.g. Cooperation agreement between the federal and the regional competent authorities for “Coastguard” (2005) – “action state at sea” and a Partnership Co-ordination Centre for Integrated Coastal Zone Management (2001) – “coastal zone management”.

### 5.1 Maritime strategies and policies at federal level

The **Federal Government** embraces the Blue Economy as a concept, and takes the Limassol Declaration as the overarching framework for its policies<sup>35</sup>. Key priorities within this are:

- The preparation of the Masterplan Spatial Plan, which aims to balance between the sectors concerned.
- Offshore wind parks, in particular in relation to safety issues concerning shipping lanes; in this context the marine spatial plan aims to balance interests between the sectors concerned;
- Piracy; the need to secure the competitiveness of Belgian shipping in relation to Somalian piracy
- Fishery, in particular the safety of fishermen;
- Recreational boating; an increase in the number of registered boats (16.000 sailors now in possession of licenses) fits within the importance to support maritime tourism;
- Inland waterways: harmonisation of rules with Netherlands and attention to waste

The **Memorandum Marine Environment**,<sup>36</sup> issued by the federal parliament in 2009, refines the federal policy in the North Sea further. It aims at reconciling the values of nature with all activities at sea and the coast requires the development an integrated strategic vision based on the concept sustainable development. The Marine Environment Service of DG Environment, FPS Health, Food Chain Safety and Environment are responsible for the management of aspects of the marine environment in relation to other aspects of federal policy. It defines four main areas of actions:

1. Sustainable management of human actions in the sea
2. Protection and conservation of marine biodiversity
3. Follow-up to maintain the quality of the sea-space
4. Environmental surveillance and prevention of marine pollution

In 2003, a procedure to obtain a licence and the **obligation to carry out an environmental effect evaluation**<sup>37</sup> were introduced through the performance-oriented **Royal Decrees**.

<sup>33</sup> In 2003, the North Sea policy was specifically mentioned in the governmental agreement and a federal secretary was appointed for the management of the Belgian section of the North Sea.

<sup>34</sup> Raeymaekers, Geert, Belgium. Directorate-General for Environment. Marine Spatial Planning in Belgium: Lessons learned and the need for future context. From mapping to planning in consultation based on information. Presentation

<http://www.dorsetforyou.com/media.jsp?mediaid=140501&filetype=pdf>

<sup>35</sup> Jaarverslag FOD Mobiliteit (2012), [http://www.mobiliteit.belgium.be/nl/binaries/jaarverslag2012NL\\_tcm466-227120.pdf](http://www.mobiliteit.belgium.be/nl/binaries/jaarverslag2012NL_tcm466-227120.pdf)

<sup>36</sup> 2225/024 2225/024, BELGISCHE KAMER VAN VOLKSVERTEGENWOORDIGERS, DOC 52 DOC 52, 25 november 2009 ALGEMENE BELEIDSNOTA. Marien milieu. Available here: <http://www.dekamer.be/FLWB/PDF/52/2225/52K2225024.pdf>

<sup>37</sup> [http://www.mumm.ac.be/NL/Management/Sea-based/wm\\_arkb.php](http://www.mumm.ac.be/NL/Management/Sea-based/wm_arkb.php)

Following respective EU legislation, the zones “**Natura 2000**” define marine protected areas alongside the Belgium coast.<sup>38</sup> For these, political roadmaps have been developed and approved in July 2009.<sup>39</sup> Based on this, the objectives for the conservation of marine species and habitats in the marine protected areas will be developed, based on purely scientific indicators.

At federal level, Belgium continues to engage itself in a joint **pilot project on establishing a marine zone of shared responsibility**. Jointly developed by the North Sea adjacent countries of France, the UK, the Netherlands and Belgium the pilot action aims at establishing a shared marine protected area within the Working Group on Operational, Technical and Scientific Questions concerning Counter-Pollution Activities.<sup>40</sup> More precisely, this multilateral action asks participating EU Member State for a stronger technical and operational cooperation to reach to a stronger intervention capacity against marine pollution (including the Belgian shores).

The **Master Plan for marine spatial planning system**<sup>41</sup> is a regulatory and legally enforceable blueprint that covers Belgium’s territorial sea. It uses zoning as a technique to allocate marine space for specific maritime uses. A second planning phase will determine sites for marine protected areas. The plan allows permits and licenses for a given type of activity to be granted only within the identified zones. The plan is subject to monitoring and evaluation. It has been implemented incrementally since 2003 and has led to a more diverse zoning system for sand and gravel extraction.<sup>42</sup> Planned future initiatives concerning marine spatial planning include various different projects, e.g.

1. Protected areas, e.g. the development of a marine component for existing terrestrial protected areas, and the allocation of research zones for alternative fishing methods.
2. Spearhead projects, e.g. the planned energy island near the coast of Wenduine and Zeebrugge. The Federal Minister has stressed that the energy island is a private initiative, where the government will not invest. Studies have shown that the island will be best built close to the shore. The system consists of water pumped at low energy consumption, to be repaid with high consumption and generates electricity. The participating industry players expect a high export potential of the technology and the concept.
3. Any adverse effects for shipping according to the minister not to be expected because there are no shipping present in the shallow zone off. The island will appeal to tourism, such as excursions to demonstrate to the wind farms, but tourism will be limited to a visit and a walk around the atoll.

In terms of buy-in for the Master Plan for marine spatial planning systems from national stakeholders, include consultations with commercial and recreational fishers, marine transport, sand and gravel mining, tourism, governmental agencies, and non-governmental organizations; the public was invited to comment on master plan. At sectorial level, the stakeholder groups included in planning were: Oil and gas, sand and gravel mining, wind energy, pipelines and cables, mariculture, and protected areas (navigation and fishing not included).

<sup>38</sup> Zones for the protection of birds and habitats.

<sup>39</sup> Further reading on this: 2225/024 2225/024, BELGISCHE KAMER VAN VOLKSVERTEGENWOORDIGERS, DOC 52 DOC 52, 25 november 2009 ALGEMENE BELEIDSNOTA. Marien milieu. Available here: <http://www.dekamer.be/FLWB/PDF/52/2225/52K2225024.pdf>

<sup>40</sup> Within the Bonn agreement. More information.

<sup>41</sup> The original 2005 “Master Plan” (zoning) was developed by the Ministry of the North Sea; It has been revised in 2012 under the egis of the Federal Ministry of Environment. And will be revised every 5 years. [http://www.unesco-ioc-marinesp.be/spatial\\_management\\_practice/belgium](http://www.unesco-ioc-marinesp.be/spatial_management_practice/belgium)

<sup>42</sup> This includes activities such as, new zones with sequential rotation for the most intensive exploitation areas, seasonally closed zones in which extraction is prohibited during fish spawning seasons, and an exploration zone where potential future use is examined.

## 5.2 Maritime strategies and policies at regional level (NUTS 2)

At the **Flemish level**, the Department of Mobility is in charge of port-related policies. It coordinates the long-term vision for the Scheldt estuarium 2030 (jointly with the Netherlands).<sup>43</sup> It also supervises the **Agency for Maritime Services and the Coast** (Agentschap voor Maritieme Diensten en Kust), which is in charge of maritime security, coastal protection and integrated coastal management.

The **Flemish Institute for Maritime Research** (Vlaams Instituut voor de Zee, VLIZ) coordinates marine and coast-related research and policy advice. It also manages the marine data and information centre, the maritime library and the exploration ship Simon Stevin.

An **integrated Master Plan for Flanders Future Coastal Safety**<sup>44</sup> was developed following a thorough safety assessment. It undertook two actions, notably a comparison and analysis of existing master plans in partner countries of the Safecoast project<sup>45</sup> and the set-up of a master plan for Flanders. On an operational level, it included the following political forms of actions:

1. A methodology for the control of the coastal protection (dykes, dunes, beaches, harbours) has been established.
2. Flood risk calculations, including flood risk maps for the present and future (2050) situation have been produced as a base for the Social Cost Benefit Analysis
3. Different measures and alternatives to reduce present and future flooding and flood risks
4. Social Cost Benefit Analysis (SCBA): Costs and benefit along with possible side effects of all solutions are inventoried, quantified and evaluated to result in optimal safety levels along the Flemish coastline and the best combination of safety measures for protection against erosion and coastal flooding.
5. Environmental Impact Assessment (EIA): the global master plan along the entire coastline and local plans, which are extracted from the global plan. Possible compensation measures are also worked out.
6. The present legislation is being evaluated to define possible gaps and needs for changes. The need for a safety decree on the Flemish coastal defence is also being studied.

<sup>43</sup> <http://www.vnsc.eu/uploads/2012/01/ltv-schelde-estuarium-18-januari-2001.pdf>

<sup>44</sup> <http://www.imdc.be/projects/integrated-masterplan-flanders-coastal-safety>

<sup>45</sup> For more information on the coast-sea project, please see here:

<http://www.northsearegion.eu/iiib/projectpresentation/details/&tid=63&theme=2>

Table 9 – Assessment of maritime policies<sup>46</sup>

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
Masterplan for a marine spatial planning system (FEDERAL)	<p>Preparation of Spatial Plan by balancing interests between the sectors concerned (e.g. offshore wind parks and shipping)</p> <p>Within the marine spatial plan, by the end of 2013, an <b>energy island near the coast of Wenduine and Zeebrugge will be implemented</b>. The energy island is a private initiative, where the government will not invest. In Studies have shown that the island will be best built close to the shore The system consists in that water pumped at low energy consumption, to be repaid with high consumption and generates electricity.</p>	<p>Defining zones as a technique to allocate marine space for specific maritime economic activities</p>	<p>Positive effects for maritime monitoring and surveillance and coastal protection due to the sequential rotation for the most intensive exploitation areas and seasonally closed zones. Similarly, some of the projects (energy islands) can also attract coastal tourism; Potential adverse effects for shipping limited, due to the shipping in the shallow zone off.</p>	<p>+++ very high due to the environmental component</p>	<p>No concrete investment from EU level, federal level support for implementation and marking of zones, as well as stakeholder consultations with, e.g. the oil&amp; gas industry.</p>
Memorandum Marine Environment (FEDERAL)	<p>Integrated policy blueprint to enhance sustainable use of Belgian shores</p>	<ul style="list-style-type: none"> <li>• Sustainable management of human actions</li> <li>• Protection and conservation of</li> </ul>	<p>Facilitating the development of maritime monitoring and surveillance, protection against flooding and</p>	<p>+++ very high due to the environmental component</p>	<p>No concrete investment from EU level, federal level support for implementation of the memorandum.</p>

<sup>46</sup> Please see the country fiche guidelines for the methodology

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
		marine biodiversity <ul style="list-style-type: none"> <li>Quality of the sea-space</li> <li>Environmental surveillance</li> </ul>	erosion		
Natura 2000 (FEDERAL)	Definition of marine protected areas (zones)	Mainly related to protection of birds and other non-marine habitats	Potential tensions with fishing, coastal tourism and offshore wind that is located near-shore	O Depending on the extent of how far the zones impede on maritime economic activities' development	No dedicated funding instrument available
Integrated Master Plan for Flanders Future Coastal Safety (REGIONAL)	Integrated plan at regional level on a methodology for control of coastal protection, social cost benefits analysis, Environmental Impact Assessment (EIA)	<ul style="list-style-type: none"> <li>Flood risk calculations</li> <li>Finding measures to reduce present and future flooding</li> <li>Social Cost Benefit Analysis of all solutions that are inventoried</li> <li>Environmental Impact Assessment (EIA)</li> <li>Definition of possible gaps and needs for changes</li> </ul>	Might lead to potential tensions with pre-development maritime economic activities, since these would need to undergo additional Environmental Impact Assessments; Meanwhile, the Master Plan can provide stimulus for environmental protection service providers	O depending on the extent of how far it impedes on / fosters maritime economic activities' development	No dedicated funding instrument available
Port-related activities (REGIONAL)	Scheldt estuarium	The ScheldeMonitor is a Flemish-Dutch portal provides access to information about literature, projects, datasets, but also to		- Through data provision can lead to more sustainable policy-making in terms of the maritime economy	Supported by the VLIZ (Flemish Marine Institute), Flemish Ministry for Mobility and transport, Ministry for Infrastructure



Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
		measurements and maps under Data in the Scheldt estuarium. This set of indicators was determined in a collaboration between policy and science			
Flemish Agency for Maritime Services and the Coast <sup>47</sup> (REGIONAL)	In charge of maritime security, coastal protection and integrated coastal zone management	<p>The Flemish agency not only makes available pilots to navigate sea-going vessels safely over the Western Scheldt, it also manages the Scheldt radar chain together with various Dutch authorities.</p> <p>The Scheldt radar chain has a good view of shipping traffic from the Belgian-French border to the Kallo lock.</p>	A higher degree of safety for shipping vessels, e.g. deep-sea, short-sea, passenger and inland waterway transport; equally so coastal and cruise tourism	0 Only long-term impact on sustainable growth, due to increased safety	Flemish support of running the Agency
Antwerp Maritime Academy <sup>48</sup>	The Antwerp Maritime Academy is the only college in Belgium to provide training in Nautical Sciences and Marine Engineering. It has two departments: <b>Nautical Sciences, marine engineering department</b>	<p>In the Nautical Sciences department, deck officers are trained, which are responsible for the navigation of the ship, the voyage itinerary, maritime communication, cargo handling, etc.</p> <p>This training prepares the student for a career at sea</p>	Provides an important factor for feeding in the Antwerp port and maritime economic activities with well-skilled employees in leading positions.	Growth for shipbuilding sector, can prevent relocation of companies	

<sup>47</sup> <http://www.agentschapmdk.be/>

<sup>48</sup> [http://www.hzs.be/html\\_EN/nieuws\\_main.php](http://www.hzs.be/html_EN/nieuws_main.php)

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
		<p>which can lead ultimately to the level of Captain (Master).</p> <p>In the Marine Engineering department, engineering officers are trained. The marine engineer is responsible for the preventive maintenance and repair of all thermal, electric, pneumatic and hydraulic installations aboard the ship, as well as for safety equipment.</p>			
Flemish institute for Maritime Research (REGIONAL)	Coordination of marine and coast-related research and policy advice				

### 5.3 General policies that may foster the maritime economic activities

Table 10 – Assessment of a broader range of policies<sup>49</sup>

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
<p><b>“Flanders Investment and Trade” Initiative</b>, which supports Knowledge clusters</p>	<p><b>The Vlaams Instituut voor de Logistiek (VIL)</b>, which is part of the Flanders Investment and Trade initiative facilitates joint research projects in order to increase the competitiveness of Flemish logistics companies.</p>	<p>Supply Chain Organisation, Supply Chain Intelligence, Supply Chain Security</p> <p>It encourages innovation, conducting applied research and supporting companies with expert advice and guidance. VIL conducts studies, disseminates information and initiates pilot projects with interested companies. The institute works closely with big players from the logistics sector – such as shippers and third-party logistics providers.</p>	<p>With the Supply Chain Intelligence programme, VIL renders the logistics information flow visible and manageable, through e.g. intelligent and automated Proof of Shipment &amp; Delivery for high-quality, critical goods.</p>	<p>Can provide growth – primarily through joint research projects for the logistics and shipbuilding sector. Potential positive growth effects</p>	<p>Support of the knowledge cluster platform; EU support through the FP7 Regions of Knowledge programme <b>SoCool@EU</b> (Sustainable Organisation between Clusters of Optimised Logistics @ Europe), 2012 – 2015, total budget of around € 2.5 m.</p>
<p>Support to the <b>Flemish Strategic Research Centres</b>, e.g. VITO</p>	<p>VITO provides applied research for industry alongside several thematic core areas, e.g. transport and mobility and water management</p>	<p>The group Transport &amp; Mobility hosts a dedicated team of researchers, which provides research on transport in relation to technology, energy and environment.</p>	<p>Research into transport and mobility solutions, notably also marine related</p>	<p>Research-driven support to sustainable growth</p>	<p>Significant funding from regional government of Flanders</p>
<p>White Paper – a new</p>	<p>The prime objectives are:</p>		<p>+++</p>	<p>blueprint to also address</p>	<p>One of the direct concrete</p>

<sup>49</sup> Please see the country fiche guidelines for the methodology

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
industrial policy for Flanders	<p>lever for an <b>(innovative) industry of the future and an “industrialization” of the service economy</b>. The key to this is supporting clusters with a customized policy for innovation and productivity.</p> <p><b>Provide input to a new (implicit) social contract for sustainable growth and employment.</b> It is important to take into account the impact on the development of a modern labour market.</p>		Focus on service industry development which will also include support services for maritime economic activities	potential regional skill development	<p>decisions was setting up the <b>Industrial Transformation and Acceleration Fund TINA</b> with an initial capital of € 200m. The TINA Fund has been operational within the Participation Company Flanders (PMV) since 30<sup>th</sup> March 2011.</p> <p>This fund forms an essential part both in the future cluster policy and for the industrial transformation policy towards new value creation (cf. new value chains).</p>
<b>Action for 2020!</b> - The future Plan for Flanders in Progress	This socio-economic “business plan” aims to secure a leading position for the region among the top 5 in Europe.	The Flemish Government has developed a few strategic themes, named breakthrough activities e.g. breakthrough “Decisive (regional) Governance” and “Innovation Centre Flanders”	+ Relevant for the supply industries to maritime economic activities; relevant for the overall framework of policy actions at NUTS 2 level	Potentially rather high by focussing on selected thematic areas with a regional perspective	Flemish Government Funding
Start-up funding instruments at regional level (NUTS 2)	The ARKimedés <sup>50</sup> funds offers one euro extra for each euro invested by accredited ARKIVs in	<ul style="list-style-type: none"> <li>• ARKimedés-Fonds launched in June 2005, the size of the fund is € 111.1 million.</li> </ul>	Focussed on start-up funding; Depending on their application for the maritime economic	0 Limited remit on start-ups, most relevant to pre-development maritime	NUTS 2 level funding

<sup>50</sup> <http://www.kapitaalzoektondernemer.be/Pages/Projecten.php?ts=1374238398006>

Policy	Objectives	Priorities	Consequences for maritime activities	Impacts on sustainable growth	Investment and funding
	Flemish starters and SMEs.	<ul style="list-style-type: none"> <li>• ARKimedea-Fonds II, launched in June 2010, with a size of the fund of € 100 million.</li> </ul>	activities	economic activities	





## Annex I – Detailed description of the sources and the methodology on maritime economic activities

The following table refers to section 1 Overview of relevant maritime economic activities in a Member State (table 1). Please fill out the table with the relevant figures sourced from Eurostat, national statistics or other sources (as indicated by the columns). This comparison will support the identification of the most relevant data as we intend to create a real-time picture of the maritime industry in the given country.

Please provide a detailed reference regarding the sources of the data.

Please **bold the figure** you consider to be the most reliable and up-to-date reflection of the GVA and employment status of the specific maritime economic activity and use that figure to fill out the cells for Table 1.



		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
<b>0. Shipbuilding</b>										
0.1	Shipbuilding (excl. leisure boats) and ship repair	<b>70</b>	<b>1.27</b>	Eurostat, data for 2010. Data for shiprepair NACE 33.15 only.	<b>70</b>	<b>1.27</b>	Same data on NACE codes on national level as on Eurostat			
0.2	Construction of water projects	<b>460</b>	<b>3.52</b>	Eurostat, data for 2010	<b>460</b>	<b>3.52</b>	Same data on NACE codes on national level as on Eurostat			
<b>1. Maritime transport</b>										
1.1	Deep-sea shipping	<b>547</b>	<b>3,306</b>	Eurostat does not provide data for all relevant NACE codes for 2010. Therefore the most recent year available is used.	<b>547</b>	<b>3,306</b>	Same data on NACE codes on national level as on Eurostat	<b>760</b>	<b>4,596</b>	Employment calculated on the basis of Amadeus for 2010. GVA calculated by using the same ratio as GVA/Employment in Eurostat applied for Amadeus
1.2	Short-sea shipping (incl. Ro-Ro)	<b>740</b>	<b>4,472</b>	Eurostat does not provide data for all	<b>740</b>	<b>4,472</b>	Same data on NACE codes on national	<b>1,029</b>	<b>6,218</b>	Employment calculated on the basis of Amadeus for

		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
				relevant NACE codes for 2010. Therefore the most recent year available is used.			level as on Eurostat			2010. GVA calculated by using the same ratio as GVA/Employment in Eurostat applied for Amadeus
1.3	Passenger ferry services	<b>367</b>	<b>2,349</b>	Eurostat data for 2010; support sectors NACE 77.34, 52.22, 52.10, 52.24 are not included as there is no data available in Eurostat	367	2.349	Same data on NACE codes on national level as on Eurostat	69	440	Employment calculated on the basis of Amadeus for 2010. GVA calculated by using the same ratio as GVA/Employment in Eurostat applied for Amadeus
1.4	Inland waterway transport	<b>414</b>	<b>3,014</b>	Eurostat does not provide data for all relevant NACE codes for 2010. Therefore the most recent year	414	3,014	Same data on NACE codes on national level as on Eurostat	714	5,200	Employment calculated on the basis of Amadeus for 2010. GVA calculated by using the same ratio as GVA/Employment in

		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
				available is used.						Eurostat applied for Amadeus
<b>2. Food, nutrition, health and eco-system services</b>										
2.1	Catching fish for human consumption	<b>610</b>	<b>7,600</b>	JRC (fishing), Eurostat 2010 (fish processing, wholesale & retail), PRODCOM (share of human/animal), data for 2010	<i>610</i>	<i>7,600</i>	Same data on NACE codes on national level as on Eurostat		3,000	Estimations based on Amadeus for 2010
2.2	Catching fish for animal feeding	<b>0.0</b>	<b>0.0</b>	JRC (fishing), PRODCOM (share of human/animal), data for 2010 (share of animal fishing is zero according to JRC)	<i>0.0</i>	<i>0.0</i>	Same data on NACE codes on national level as on Eurostat			
2.3	Marine aquatic products	n/a	n/a		n/a	n/a				
2.4	Blue biotechnology	n/a	n/a		n/a	n/a				
2.5	Agriculture on saline soils	n/a	n/a	No data in Eurostat on	n/a	n/a	Same data on NACE			

		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
				agriculture production; no data on % saline soils			codes on national level as on Eurostat			
<b>3. Energy and raw materials</b>										
3.1	Offshore oil and gas	0.0	0.0	Eurostat, data for 2010; no data on NACE 09.10. Oil & gas production zero according to Eurostat	0.0	0.0	Same data on NACE codes on national level as on Eurostat			
3.2	Offshore wind	n/a	n/a		n/a	n/a				
3.3	Ocean renewable energy	n/a	n/a		n/a	n/a				
3.4	Carbon capture and storage	n/a	n/a		n/a	n/a				
3.5	Aggregates mining (sand, gravel, etc.)	<b>10</b>	<b>100</b>	Eurostat, data for 2010. Offshore share based on UEPG	10	100	Same data on NACE codes on national level as on Eurostat		490	Estimations based on Amadeus for 2010
3.6	Marine minerals mining	n/a	n/a		n/a	n/a				
3.7	Securing fresh water supply (desalination)	n/a	n/a		n/a	n/a				
<b>4. Leisure, working and living</b>										

		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
4.1	Coastal tourism	400	8,900	Eurostat, data for 2010 (data for NACE 55.10, 55.20, 55.30, 55.90)	400	8,900	Same data on NACE codes on national level as on Eurostat		12,170	Estimations based on Amadeus for 2010
4.2	Yachting and marinas	n/a	n/a		n/a	n/a				
4.3	Cruise tourism	131	838	Eurostat does not provide data for all relevant NACE codes for 2010. Therefore the most recent year available is used.	131	838	Same data on NACE codes on national level as on Eurostat			
<b>5. Coastal protection</b>										
5.1	Protection against flooding and erosion, preventing salt water intrusion, protection of habitats	300	300		n/a	n/a				
<b>6. Maritime monitoring and surveillance</b>										
6.1/6.2	Traceability and security of goods	n/a	n/a		n/a	n/a				

		Eurostat			National Statistical Sources			Alternative sources (outside official statistics)		
Maritime economic activity		GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year	GVA (€, million)	Employment	Source & Reference year
	supply chains, prevention and protection against illegal movement of people and goods,									
6.3	environmental monitoring	n/a	n/a		n/a	n/a				
<b>Total</b>										

## Annex II – Future potential of maritime economic activities

Function	Economic activity	Innovativeness	Competitiveness	Employment	Policy relevance	Spill-over effects	Sustainability	Overall score
0. Shipbuilding	0.1 Shipbuilding (excl. leisure boats) and ship repair	0	-	-	0	+	0	5
	0.2 Construction of water project	+	+	+	+	+	0	11
1. Maritime transport	1.1 Deep-sea shipping	0	+	+	+	+	0	10
	1.2 Short-sea shipping (incl. RoRo)	0	+	+	+	+	0	10
	1.3 Passenger ferry services	-	-	0	-	-	-	1
	1.4 Inland waterway transport	0	+	+	+	0	+	10
2. Food, nutrition, health and ecosystem services	2.1 Catching fish for human consumption	-	0	0	+	0	0	6
	2.2 Catching fish for animal feeding	-	0	0	+	0	0	6
	2.3 Marine aquatic products	0	0	-	0	0	0	5
	2.4 Blue Biotechnology	+	+	-	+	+	+	10
	2.5 Agriculture on saline soils	na	na	na	na	na	na	Na
3. Energy and raw materials	3.1 Offshore oil and gas	+	+	0	0	+	-	8
	3.2 Offshore wind	+	+	+	+	+	+	12
	3.3 Ocean renewable energy (wave, tidal, OTEC, thermal, biofuels, etc.)	+	+	-	+	0	+	8
	3.4 Carbon capture and storage	na	na	na	na	na	na	Na
	3.5 Aggregates mining (sand, gravel, etc.)	-	-	-	-	-	0	1
	3.6 Marine minerals mining	+	0	-	+	0	-	6
	3.7 Securing fresh water supply (desalination)	na	na	na	na	na	na	Na
4. Leisure, working and living	4.1 Coastal tourism	-	0	+	+	0	0	7
	4.2 Yachting and marinas	-	0	0	+	0	0	6
	4.3 Cruise tourism	+	+	+	+	+	0	10
5. Coastal protection	5.1 Protection against flooding and erosion	+	+	+	+	+	0	11
	5.2 Preventing salt water intrusion	na	na	na	na	na	na	Na
	5.3 Protection of habitats	na	na	na	na	na	na	Na
6. Maritime monitoring and surveillance	6.1/6.2 Traceability and security of goods supply chains, Prevent and protect against illegal movement of people and goods	+	0	-	+	0	0	8
	6.1 Environmental monitoring	+	0	-	+	0	0	7

The last column summarises the final score in terms of number of positive/negative judgements:

- "0" and "-" will have the effect of annulling "+" (e.g.: in the same row: ++++ and - and 0 will give the final score of ++).
- "?" will not affect the final score.