



# Studies to support the development of sea basin cooperation in the Mediterranean, Adriatic and Ionian, and Black Sea



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## Contents

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<b>0. General overview.....</b>	<b>3</b>
<b>1. Marine and maritime activities.....</b>	<b>4</b>
<b>2. Breakdown of maritime economic activities at regional level (NUTS 2) and selection of most relevant regions.....</b>	<b>10</b>
<b>3. List of the 7 largest, fastest growing and with most future potential marine and maritime activities.....</b>	<b>15</b>
3.1 Ranking order of the 7 largest marine and maritime activities.....	15
3.2 Ranking order of the 5 fastest growing marine and maritime activities.....	15
3.3 Ranking order of the 7 marine and maritime activities with most future potential.....	15
<b>4. Growth scenarios for the 6 most relevant and promising marine and maritime activities.....</b>	<b>19</b>
4.1 Overview of the 6 most relevant and promising marine and maritime activities .....	19
4.2 Description of the nature of each of the 6 marine and maritime activities and their value chain .	21
4.3 Description of economic and infrastructural scenario .....	23
4.4 Regulatory environment of the maritime economic activity .....	28
<b>5. Growth drivers and barriers to growth for the 6 most promising marine and maritime activities.....</b>	<b>31</b>
<b>6. Analysis of maritime strategies at regional and national level, as well as those under preparation and their links with Smart Specialization Strategies .....</b>	<b>36</b>

## 0. General overview

### Morphological structure of the coastline

- Bulgaria's coastline is 378 km in length and represents 0,30% of the total coastline length of the EU-22 coastal Member States. The coastal zone (within a range of 10 km from the coast) covers an area of 2.950 km<sup>2</sup>, representing 0,71% of the coastal zone of the EU-22 Member States.
- There are five small islands in Bulgarian territorial waters: the largest, with an area of 0,66 km<sup>2</sup>, is the St. Ioan Island, the other four islands are St. Kirik (0, 08 km<sup>2</sup>), St. Toma (0, 01 km<sup>2</sup>), St. Anastasia (0, 01 km<sup>2</sup>) and St. Peter (0,004 km<sup>2</sup>). The total area of the islands is 0,76 km<sup>2</sup>.

### Population and related social condition for maritime areas

- As of 2011, 1,081 million people – 14,67% of the country's total population of 7,348 million people, lived in Bulgarian coastal NUTS 3 regions.
- The coastal NUTS 2 regions employed 0,805 million people (EUROSTAT 2010), representing 26,74% of the total employment in Bulgaria and 0,39% of the labour force employed in all the EU-22 coastal Member States.
- The country's coastal NUTS 2 regions host 33,65% of the country's unemployed. This corresponds to 111.200 persons (EUROSTAT 2010), which is 0,55% of the unemployed in the EU-22 coastal Member States.

### Economic role of maritime areas over the national total

- The GDP per inhabitant in Bulgaria's coastal NUTS 3 regions is EUR 4.337,3 while GDP per inhabitant for Bulgaria is EUR 4.906,4. GDP per inhabitant of Bulgaria's coastal regions thus represents 88,4% of GDP per inhabitant of Bulgaria. Respectively, the GDP per inhabitant in Bulgaria's coastal NUTS 3 regions represents 19,27 % of GDP per capita of the MED coastal regions and 15,31 % of GDP per capita of the North-European coastal regions.
- Bulgaria's coastal regions are responsible for 13% of the nation's gross value added. In absolute terms the coastal regions produced EUR 4.029,8 million of gross value added compared to a national total of EUR 31.044,1 million.

Sector (NACE)	GVA (billion EUR)		Employment(1000)	
	Coastal Regions	Share of national GVA%	Coastal Regions	Share of national Employment %
Agriculture, Aquaculture and Fishing (A)	0,21	25,2%	55,7	8,74%
Manufacturing (C)	0,81	12,3%	61,4	9,9%
Construction (F)	1,31	19,9%	40,6	18,2%
Wholesale and retail trade; transport; accommodation and food service activities; information and communication (G-J)	1,66	21,6%	156,9	16,4%
<i>Total (All NACE)</i>	<i>4,03</i>	<i>13,0%</i>	<i>493,5</i>	<i>13,89%</i>

Source: EUROSTAT (2010)

- The sector **“Wholesale and retail trade; transport; accommodation and food service activities; information and communication”** generates the highest GVA value and employment in the coastal area, due to specific maritime activities development such as coastal tourism, shipping and port activities, etc.
- In terms of GVA, the second-most important sector in the coastal area is **“Construction”**, and its high value mirrors the rapid recent development of tourism and urban infrastructure. In coastal regions, many are employed in the sector **“Manufacturing”**, but this sector generates relatively low GVA implying low efficiency.
- The sector **“Agriculture, Aquaculture and Fishing”** ranks third in terms of the number employed, but produces the lowest GVA value in the coastal areas.

## 1. Marine and maritime activities

Table 1– Indicators of relevant marine and maritime activities in Bulgaria

Function/activity	GVA (EUR, billion)	Employment (*1000)	Number of enterprises	Further indicators	Source & Reference year
<b>0. Other sectors</b>					
0.1 Shipbuilding and ship repair	0,0647	5,983	190		EUROSTAT (2010)
0.2 Water projects	0,0601	3,627	170		EUROSTAT (2010)
<b>1. Maritime transport</b>					
1.1 Deep-sea shipping	0,0180	1,498	11		EUROSTAT (2010)
1.2 Short-sea shipping (incl. Ro-Ro)	0,0832	6,917	52		EUROSTAT (2010)
1.3 Passenger ferry services	0,0003	0,920	0		EUROSTAT (2010)
1.4 Inland waterway transport	0,0784	2,618	225		EUROSTAT (2010)
<b>2. Food, nutrition, health and eco-system services</b>					
2.1 Fishing for human consumption	0,0653	14,660	2.760		EUROSTAT (2010) - PRODCOM (2010) - Joint Research Centre (2012)
2.2 Fishing for animal feeding	0	0	0		EUROSTAT (2010) - PRODCOM (2010) - Joint Research Centre (2012)
2.3 Marine aquaculture	0,0002	0,218	10		EUROSTAT (2010) - Joint Research Centre (2013)
2.4 Blue biotechnology	N/A	N/A	N/A		EUROSTAT (2010)
2.5 Agriculture on saline soils	0,03	N/A	N/A		EUROSTAT (2010). The Saline and Sodic Soils Map, Joint Research Centre (2010)
<b>3. Energy and raw materials</b>					
3.1 Offshore oil and gas	0,0057	0,025	1	4 extraction points	EUROSTAT (2010)
3.2 Offshore wind	0	0	0		EWEA (2012)
3.3 Ocean renewable energy	0	0	0		EUROSTAT (2010)
3.4 Carbon capture and storage	0	0	0		EUROSTAT (2010)
3.5 Aggregates mining (sand, gravel, etc.)	N/A	N/A	N/A		European Aggregates Association (2012)
3.6 Marine minerals mining	0	0	0		EUROSTAT (2010)
3.7 Securing fresh water supply (desalination)	0	0	0		Global Water Intelligence (2011)
<b>4. Leisure, working and living</b>					
4.1 Coastal tourism	0,7694	109,519	14,934		EUROSTAT (2010)
4.2 Yachting and marinas	N/A	0,800	8		Executive Agency Maritime Administration (2011)
4.3 Cruise tourism	0,0018	2,475	99		EUROSTAT (2010)
<b>5. Coastal protection</b>					
5.1 Protection against flooding and erosion	0,0002 <sup>1</sup>	N/A	N/A	Government Bodies - Civil Protection Service (Ministry of Defense) and Basin Directorate for the Black Sea are responsible for disaster management.	European Commission (2009): The economics of climate change adaptation in EU coastal areas Basin Directorate for the Black Sea Region (2013)
5.2 Preventing salt water intrusion	0,0002 <sup>1</sup>	0,15	19	Ministry of Environment and Water, marine institutes and NGOs.	Ministry of Environment and Water (2012)
5.3 Protection of habitats	0,0005 <sup>1</sup>	0,5	44	Government body; 3 district environment inspectorate of the Ministry of Environment and Water, marine institutes, 40 NGOs.	Ministry of Environment and Water (2012)
<b>6. Maritime monitoring and surveillance</b>					
6.1 Traceability and security of goods supply chains	0,025 <sup>1</sup>	1	50	Government body- Regional Inspectorate of Food Agency; Executive Agency Maritime administrations in Varna and Bourgas; NGO-s.	Executive Agency Maritime Administration (2011)
6.2 Prevent and protect against illegal movement of people and goods	0,01 <sup>1</sup>	1	1	Government body- Interior Ministry	Interior Ministry (2012)
6.3 Environmental monitoring	0,061 <sup>1</sup>	0,6	28	Government bodies - 3 district environment inspectorates of the Ministry of Environment and Water, Basin Directorate, marine institutes and laboratories.	Ministry of Environment and Water (2013) EUROSTAT (2010)

<sup>1</sup> Public expenditure

**NOTE: In Tables 1, 2, 3 and 4 “N/A” indicates lack of available data, and “0” means that the maritime activity is absent in the country.**

**Each of the maritime activity at NUTS 0 level is analysed and described in greater detail in Table 2.** This overview is based on data (gathered in a previous step), and specific experts’ knowledge about each maritime activity in Bulgaria and its socio-economic indicators.

The results show that the different activities in Bulgaria are not uniformly represented and that one or two activities dominate certain sectors. For example, in the sector “Maritime transport” only two activities – Short-sea shipping and Inland waterway transport generate almost 90% of the total GVA and provide 86% of the employment in this sector. In the sector “Food, nutrition, health and ecosystem services”, currently the most important maritime activity is Fishing for human consumption that generates 99% of GVA and provides 98% of the job opportunities. Coastal tourism ensures 99% of GVA and 98% of the employment in the sector “Leisure, working and living”.

Several marine and maritime activities - Fishing for animal feeding, Offshore wind, Ocean renewable energy, Carbon capture and storage, Marine minerals mining and Securing fresh water supply (desalination) - are not represented in Bulgaria at all.

The maritime percentages used for estimating the share of the following NACE items are:

- a. 52.24 Cargo handling – 40%;
- b. 52.10 Warehousing and storage – 11%;
- c. 52.29 Other transportation support activities – 25 %.

Table 2 - Overview of relevant marine and maritime activities in Bulgaria

Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
<b>0. Other sectors</b>				
0.1	Shipbuilding and ship repair	The shipyards in Varna have more than 90 years of operational history during which more than 850 large ships were built. The shipyards were privatised in 1997-1999 and now they operate with smaller capacities. Currently, the sector includes five shipyards in Varna and Bourgas: Bulyard- Shipbuilding industry Ltd, Bourgass Shipyards Ltd, Dockyard Delfin Ltd, Dockyard Odessos Ltd and Terem - Dockyard Fleet arsenal – Varna Ltd. The main activities are related to dockyards and services for ships repair and equipment maintenance.	The share of this activity in the maritime sector has declined since 1993. Shipbuilding and repair is still amongst the important activities and in 2010 it provided 51,8% of GVA and jobs for 5.983 people, which is 62% of the “other sectors” employment. During 2008-2010, due to the economic crisis, this activity has shown high decline in terms of GVA value, compared with other marine activities in the coastal zone.	National Statistical Institute (2011)
0.2	Water projects	The water projects are linked with activities for waterway maintenance (especially in the Danube River sector) and improved access to maritime ports in the Black Sea. In the Danube River sector the construction and maintenance are related to dredging and refilling of material, improvement of fairway (depth and width) dimensions, designed for individual river sections, to achieve efficient navigation conditions. Investments are made for modernization of the port of Varna, and its two main terminals – Varna Iztok and Varna Zapad. In the port of Bourgas the recent construction and maintenance include new terminals and access canal with length of about 6 km.	This activity has a direct impact on the infrastructure and it contributes to employment in maritime area. The MEA provides 48,2% of GVA and jobs for 3.627 people, or 38% of “other sectors” employment.	National Statistical Institute (2011)
<b>1. Maritime transport</b>				
1.1	Deep-sea shipping	Deep-sea shipping has a relatively low share of the total sector activity. Only two large harbours operate with deep-sea ships – in the cities of Varna and Bourgas. Gross weight of goods transported to/from main ports in this shipping segment is 4.070 thousand tonnes.	This activity generates 10,5% of GVA and provides work for 1.498 people – 12,54 % of the employment in the maritime transport sector. In 2010 deep-sea shipping provided 18 % of all goods transported by seaborne transport.	EUROSTAT (2010) National Statistical Institute (2011)
1.2	Short-sea shipping (incl. Ro-Ro)	Short-sea shipping of goods is a significant economic activity in Bulgaria. It depends highly on oil transportation, as liquid cargos form 44% of the total amount of transported cargo. In total there are 22 ports related to short-sea shipping, 15 of them are under the jurisdiction of the Maritime Administration in Bourgas and the others under the Maritime Administration in Varna. This activity is focused on the maintenance of the Black Sea and Mediterranean Sea lines.	This activity generates 46% of GVA and provides jobs for 6.917 people - 58% of the maritime transport sector employment. Gross weight of goods transported to/from main ports is 18.872 thousand tonnes. In 2010, Short-sea shipping provided 82 % of all goods transported by seaborne transport. In terms of the number of twenty-foot equivalent units (TEUs) movement by short-sea shipping, a slight decreasing tendency is observed up to 2011.	EUROSTAT (2010) Executive Agency Maritime Administration (2012)
1.3	Passenger ferry services	Passenger ferry services have been narrowed to just one line across the Danube River. Passenger traffic (across the Danube) is composed of people and accompanying motor vehicles.	This activity has no significant influence on socio-economic indicators.	EUROSTAT (2010)
1.4	Inland waterway transport	Inland water transport represents an important, alternative and environmentally friendly way to transport goods, providing opportunities for reduction of gas emissions and noise, as well as of energy consumption. The Danube River is the only domestic inland waterway, identified as part of transport priority axis № 18. The Danube River is included in the general scheme of the European Inland Waterways (Pan-European Transport Corridor VII) connecting Western and Eastern Europe by the Rhine-Main-Danube Channel, thus enabling direct navigational links between the Black Sea and North Sea with convenient access to many European countries and their industrial centers.	This activity generates about 43,6% of GVA and provides work for 2.618 people -21,9% of the maritime transport sector employment. A significant number of companies operate in this activity. The total cargo amounts to 2,5 million tonnes per year.	EUROSTAT (2010) Executive Agency Maritime Administration (2011)
<b>2. Food, nutrition, health and eco-system services</b>				

Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
2.1	Fishing for human consumption	Economically important fish species include small pelagic species such as sprat, anchovy, horse mackerel, whiting etc., and bottom fish species such as turbot. In 2012 the Bulgarian fishing fleet consisted of 1.010 registered vessels, with a gross tonnage of 5 thousand GT and a total power of 33,7 thousand kW. The total income of the Bulgarian fleet increased by around 50% between 2009 and 2010, but in terms of profitability, the fleet performed negatively in 2010. The sector players (both fishing and fish processing industry) are mostly private companies. The major fish processing company is Slavianka Ltd (Bourgas) that exports products to Greece, Cyprus, and Romania etc. The production includes canned foods, fish fillets, fish delicatessen products, etc.	This activity generates 68,4% of the sector GVA, while a large number of companies in the MEA engage 14.660 people. There was a net increase of 18,3% and 5,8% in the number of vessels and total power (in kilowatts) respectively in 2010 compared with 2008.	EUROSTAT (2010) Procom (2010) Joint Research Centre (2012)
2.2	Fishing for animal feeding	This activity is not represented.	This activity is not represented.	EUROSTAT (2010) Procom (2010) Joint Research Centre (2012)
2.3	Marine aquaculture	The important species for Black Sea aquaculture include the Black Sea trout ( <i>Oncorhynchus mykiss</i> ), turbot ( <i>Psetta maxima</i> ), sea bream ( <i>Sparus aurata</i> ), sturgeons, European seabass ( <i>Morone morone</i> ) and mussels. The MA sector in the Black Sea is dominated by Turkey, where the employment is ~25.000 people and the total production is 82.481 t. Marine aquaculture is not a big sector in Bulgaria and is characterised as inefficient with fish grown extensively rather than intensively at the moment. The marine aquaculture in Bulgaria is based primarily on mussels and sturgeon farming and kelp algae growing. Two segments of marine aquaculture sector have grown rapidly over the last three years - sturgeon and mussel ( <i>Mytilus galloprovincialis</i> ) cultivation, as the EFF has been used for modernisation, reconstruction and for the construction of new mussel and fish farms. Although there is a progress in marine aquaculture which could lead to further development of this activity, it cannot be considered a viable alternative to the fishing sector.	In Bulgaria this MEA has generated limited GVA and has only 218 people employed, or 1,5% of the sector employment. Recent data (NAFA, 2012) show an increase in the number of aquaculture farms along the Black Sea coast - to 41, of the 476 farms in Bulgaria. However, from this total number of aquaculture farms in the coastal region of Bulgaria, the marine aquaculture includes 24 farms in 2013. The yield of blue mussels ( <i>Mytilus galloprovincialis</i> ) in Bulgaria from the specialised farms reached 911,84 tonnes, and show a 12,2% increase in 2010 in comparison with 2009 (Annual report of Ministry of Agriculture and Food, 2013).	EUROSTAT (2010) Joint Research Centre (2013) National Agency for Fisheries and Aquaculture (2012)
2.4	Blue biotechnology	This activity is not represented	This activity is not represented	National Statistical Institute (2011)
2.5	Agriculture on saline soils	The distinguishing characteristic of saline soils is that they contain sufficient neutral soluble salts to adversely affect the growth of most cultivated plants. Such soils are found in the Yugoiztochen NUTS 2 region of Bulgaria (near the city of Bourgas and Primorsko) but their total impact on agriculture is negligible. Saline soils amount to less than 1% of the total agriculture area in the Severoiztochen NUTS 2 region and 11% in the Yugoiztochen NUTS 2 region.	Saline soils represent a small share of the total soil in coastal area; therefore this activity has little socio economic effects.	EUROSTAT(2010) The Saline and Sodic Soils Map, Joint Research Centre (2010)
<b>3. Energy and raw materials</b>				
3.1	Offshore oil and gas	The strategic location of Bulgaria on the Black Sea has made it a transit point for Caspian Sea oil exports headed towards European refineries. Bulgaria is also a transit route for gas exports from Russia to Turkey and the EU. While oil is imported through Bulgaria's Bourgas port, oil and gas exploration in the country occurs mostly in the northern part of the Black Sea. From the Bourgas port, both the oil terminal and refinery are further connected to many cities in Bulgaria through pipelines. In 2005, Bulgaria offered the offshore Shabla block in the northern Black Sea shelf for exploration under a three year agreement. The potential reserves of the Shabla block are likely to be 200 million barrels. Currently, there is only one company which extracts offshore gas - Melrose Resources Plc, but new players are expected in the coming years. Melrose Resources Plc has received substantial funds from the IMF for offshore oil and gas exploration in Bulgaria.	This activity generates around 15% of overall gas consumption at prices 30% lower than that of imports. The employment in this activity is ca. 250 people; however a rapid increase is expected, due to the start of the new gas transportation project, South Stream. While domestic gas production in 2013 is expected to amount around 300 million cubic meters, the output is to reach up to 1.300 million cubic meters in 2015 and up to 1.520 million cubic meters in 2025.	National Statistical Institute (2010) Bulgargas (2011)



Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
3.2	Offshore wind	Currently there is no installed offshore wind capacity.	This activity is not represented	European Wind Energy Association (2013)
3.3	Ocean renewable energy	This activity is not represented	This activity is not represented	EUROSTAT (2010)
3.4	Carbon capture and storage	The technology is not applicable in Bulgaria.	The technology is not applicable in Bulgaria and there is no socio-economic impact.	Intergovernmental Panel on Climate Change (IPCC) - <a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a>
3.5	Aggregates mining (sand, gravel, etc.)	Aggregates mining has been developed in the near shore area (close to the cities Varna and Bourgas). No aggregates mining takes place offshore.	This activity has no socio-economic impact.	European Aggregates Association (2012))
3.6	Marine minerals mining	Marine mineral mining has not been developed as it requires heavy investment.	Currently this activity has no socio-economic impact.	National Statistical Institute (2010)
3.7	Securing fresh water supply (desalination)	Desalination has very limited application possibilities in Bulgaria as the country is rich in natural water sources, artificial dams and lakes, and faces no severe shortage of water in coastal areas.	Currently this activity has no socio-economic impact.	Ministry of Environment and Water
<b>4. Leisure, working and living</b>				
4.1	Coastal tourism	Bulgaria is rich in recreational and cultural tourist attractions and emerged on the international tourist market in the 60's as a sun, sea and sand destination. It used to be the most prominent foreign tourism receiving country within COMECON from the 60's to the late 80's. Later, due to the deterioration of the economic and political situation, the tourist sector fell behind developments in Southern Europe. The situation has changed since the late 90's, due to rapid development of hotels, infrastructure, availability of finance through bank loans and expansion on new markets – especially in the EU and Russia. The main players are private companies.	This activity encompasses about 60% of the total tourism sector in Bulgaria and around 10,5% of the total national GVA.	National Statistical Institute (2011)
4.2	Yachting and marinas	During the last years investments in the sector have increased due to harbour construction for small and medium sized yachts. The number of yachts and motor boats however remains very low (around 1.000) and only 14 ports are licensed.	Despite the increase in investment, the socio-economic indicators have shown only modest growth as the end users are a limited number of citizens. The total employment in this activity is estimated at 0,8 thousand people.	National Statistical Institute (2011)
4.3	Cruise tourism	Cruise tourism is represented mainly by foreign ships passing through the two main harbours on the Bulgarian Black Sea coast - Varna and Bourgas. The sector is not very important for the maritime area – it provides low GVA and employment.	This activity forms 0,23% of the GVA produced by the tourism sector and provides work positions to 2.475 people, or 2,2 % of the sector employment. Cruise tourism has little socio-economic impact as voyages are infrequent even during the season.	EUROSTAT (2010)
<b>5. Coastal protection</b>				
5.1	Protection against flooding and erosion	Currently the Basin Directorate for the Black Sea is working on the implementation of the project "Elaboration of management plans for protection against flooding" under priority axis 1 of the operational programme "Environment 2007-2013" of the ERDF. This project is ongoing and, the established endangered zones involve 18 localities in the Severoiztochen NUTS 2 region. The designation of endangered zones in Yugoiztochen NUTS 2 region is still ongoing. As regards soil erosion, the latest data show that around 60% of the soil in Bulgaria is subject to erosion.	The evaluation of damages due to flooding in coastal area shows a total of EUR 0,007 billion. A government body (Civil protection service) is responsible for the citizens' protection.	Basin Directorate for the Black Sea Region (2013)
5.2	Preventing salt water intrusion	Potentially affected zones are small seaside villages.	There is a limited number of cases of sea water intrusion on seaside villages' water supply chain and therefore the socio-economic impact is very low. The employment in this activity is 23% from the total employment in the coastal protection sector.	Ministry of Environment and Water(2012)



Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
5.3	Protection of habitats	Thirteen percent of the territory of marine areas falls into Marine Protected Areas included in NATURA 2000 protected areas. The Convention on Biological Diversity (CBD) was ratified by Bulgaria and came in to force in 1996. There are several units of the Ministry of Environment and Water involved in CBD implementation referring to aquatic resources diversity and marine habitats such as the National Nature Protection Service, Aquatic Resources and Water Quality Department and 15 Regional Inspectorates on Environment and Water (RIEW) that are responsible for following up marine protection issues as well as for cooperation with the Economic Analyses and Forecasts Agency (EAFA).	The socio-economic impact of this activity is related to the gas pipe line construction " South Stream", aggregates mining, coastal tourism, shipping and fishing for human consumption. Employment in this activity is 67% of the total employment in the coastal protection sector.	Ministry of Environment and Water
<b>6. Maritime monitoring and surveillance</b>				
6.1	Traceability and security of goods supply chains	The Executive Agency Maritime Administration is responsible for issues related to the safety of shipping, and monitors the safety of Bulgarian and foreign vessels. The Agency ensures government control of ships under the Bulgarian flag and keeps a record of vessels under the Bulgarian flag. The Agency also maintains a register of Bulgarian ports and a register of port operators in the Republic of Bulgaria and monitors the safety of port facilities. The regional structures for the Black Sea are Maritime administrations in Varna and Bourgas.	Although no substantial benefits for socio-economic indicators are expected as a result of enhanced traceability and security measures, the measures could improve overall security of goods supply for end users. The employment in this activity shows around 1000 people, or 38,5% of the total work force in maritime monitoring and surveillance, while public expenditure is estimated at 26% of the sector total.	Executive Agency Maritime Administration
6.2	Prevent and protect against illegal movement of people and goods	The responsible organisations for prevention of and protection against illegal movement of people and goods are the Police (Interior Ministry), the Bulgarian navy and the Maritime Administration.	Currently, employment figures shows around 1000 people, which is 38,5 % of the total work force in maritime monitoring and surveillance, but public expenditure is the lowest – 11% of the total of the sector.	Interior Ministry
6.3	Environmental monitoring	Since entering the EU in 2007, Bulgaria has been obliged to implement environmental monitoring related to the Water Framework Directive, Habitats Directive, Marine Strategy Framework Directive and Birds Directive. The Executive Agency Maritime Administration is responsible for the protection of the marine environment from pollution from ships and oil spills.	Environmental monitoring and control are assured by the Ministry of Environment and Water and Ministry of Transport, Basin Directorate for the Black Sea, marine institutes and laboratories. Employment is ~ 600 people – 23,1% of the total work force in maritime monitoring and surveillance. Public expenditure is estimated at 63 % of the sector total.	Ministry of Environment and Water Executive Agency Maritime Administration

## 2. Breakdown of maritime economic activities at regional level (NUTS 2) and selection of most relevant regions

The coastal NUTS 2 regions in Bulgaria include Severoiztochen (North-eastern) and Yugoiztochen (South-eastern) regions with capital cities Varna and Bourgas respectively. Both regions show almost equal levels of maritime activity development and GDP per inhabitant in 2010 comprised 36% of the average GDP per inhabitant in the EU-27 Member States.

The GDP per inhabitant in the Severoiztochen region is 31% higher than in the Yugoiztochen region. However, specific development of some marine and maritime activities such as water transport, coastal tourism, fish for human consumption and marine aquaculture is observed in the Yugoiztochen region. The main indicators used include: the loads transferred by water transport (thousand tonnes), the number of tourist bed places, the gross tonnage of the fishing fleet, and the GVA produced by the aquaculture sector.

The calculations provided in the Annex show that the total performance of the Yugoiztochen region is about 22% higher than the socio-economic indicators for the Severoiztochen region. For example in the Yugoiztochen NUTS 2 region the amount of loads, transferred by water transport form 56% of the total loads in both coastal regions. Tourist bed places in the Yugoiztochen region constitute 56 % of the total number of bed places, and the region contributes 62% of the total gross tonnage of the fishing fleet in the maritime area.

Another difference between the two regions is related to the distribution of the shipbuilding industry – the large shipyards are located in the Severoiztochen NUTS 2 region. Additionally, the main offshore gas resources are situated in the Severoiztochen region, while the Yugoiztochen region is important for the oil and gas industry – the largest oil refinery in Bulgaria is situated in the city of Bourgas.

In Tables 3 and 4 the detailed maritime activities in the NUTS 2 Yugoiztochen region are presented.

Table 3 - Indicators of relevant marine and maritime activities in Yugoiztochen Region

Function/activity	GVA (EUR, billion)	Employment (*1000)	Number of enterprises	Further indicators	Source & Reference year	
<b>0. Other sectors</b>						
0.1	Shipbuilding and ship repair	0,03	2,300	70	National Statistical Institute (2010)	
0.2	Water projects	0,05	2,200	85	National Statistical Institute (2010)	
<b>1. Maritime transport</b>						
1.1	Deep-sea shipping	0,01	0,800	N/A	National Statistical Institute (2010)	
1.2	Short-sea shipping (incl. Ro-Ro)	0,07	2,900	N/A	National Statistical Institute (2010)	
1.3	Passenger ferry services	0,0001	N/A	N/A	National Statistical Institute (2010)	
1.4	Inland waterway transport	0,02	1,000	N/A	National Statistical Institute (2010)	
<b>2. Food, nutrition, health and eco-system services</b>						
2.1	Fishing for human consumption	0,041	9,700	1,680	National Statistical Institute (2010) Prodcum (2010) Joint Research Centre (2012)	
2.2	Fishing for animal feeding	0	0	0	EUROSTAT (2010) Prodcum (2010) Joint Research Centre (2012)	
2.3	Marine aquaculture	0,0001	0,126	6	National Statistical Institute (2010) Joint Research Centre (2013)	
2.4	Blue biotechnology	N/A	N/A	N/A	EUROSTAT (2010)	
2.5	Agriculture on saline soils	0,022	N/A	N/A	EUROSTAT (2010) The Saline and Sodic Soils Map, Joint Research Centre (2010)	
<b>3. Energy and raw materials</b>						
3.1	Offshore oil and gas	0	0	0	Ministry of Economics (2012)	
3.2	Offshore wind	0	0	0	EWEA (2012)	
3.3	Ocean renewable energy	0	0	0	National Statistical Institute (2012)	
3.4	Carbon capture and storage	0	0	0	Ministry of Economics (2012)	
3.5	Aggregates mining (sand, gravel, etc.)	N/A	N/A	N/A	European Aggregates Association (2012)	
3.6	Marine minerals mining	0	0	0	National Statistical Institute (2012)	
3.7	Securing fresh water supply (desalination)	0	0	0	National Statistical Institute (2012)	
<b>4. Leisure, working and living</b>						
4.1	Coastal tourism	0,4745	65,000	9,000	National Statistical Institute (2010)	
4.2	Yachting and marinas	N/A	0,06	4	National Statistical Institute (2010) Executive Agency Maritime Administration (2011)	
4.3	Cruise tourism	0,001	1,500	9	National Statistical Institute (2010)	
<b>5. Coastal protection</b>						
5.1	Protection against flooding and erosion	0,0001 <sup>2</sup>	0,200	2	Government body: Civil Protection service and Basin Directorate	Basin Directorate for the Black Sea Region (2013)
5.2	Preventing salt water intrusion	0,00005 <sup>2</sup>	0,100	N/A	Basin Directorate for the Black Sea Region	Ministry of Environment and Water (2012)
5.3	Protection of habitats	0,00014 <sup>2</sup>	0,300	N/A	Government body; District environment inspectorate of the Ministry of Environment and Water and 15 NGO's.	Ministry of Environment and Water (2012)
<b>6. Maritime monitoring and surveillance</b>						
6.1	Traceability and security of goods supply chains	0,015 <sup>2</sup>	0,600	8	Government body- Regional Inspectorate of Food Agency; Executive agency Maritime administration- Bourgas.	Executive Agency Marine Administration (2011)
6.2	Prevent and protect against illegal movement of people and goods	0,005	0,500	1	Government body- Interior Ministry	Interior Ministry (2012)
6.3	Environmental monitoring	0,024 <sup>2</sup>	0,300	17	Government body; District environment inspectorate of the Ministry of Environment and Water; regional laboratories.	Ministry of Environment and Water (2010) EUROSTAT (2010)

<sup>2</sup> Public expenditure

Table 4- Overview of relevant marine and maritime activities in Yugoiztochen Region

Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
<b>0. Other sectors</b>				
0.1	Shipbuilding and ship repair	This MEA at the selected NUTS 2 region is represented by one shipyard in the town of Bourgas, with the capacity to produce vessels up to 25.000 dwt with the following maximum dimensions: length 185 m, draught 5,5 m. The shipyard was built in 1948. Production varies from trawlers and small tankers to specialised floating workshops.	For this activity at the NUTS 2 level the shipbuilding generates 37,5% of GVA and provides 51% of the employment - 2.300 people in absolute figures. Despite the decline of this MEA during the last two decades, it still plays an important role in the local economy.	<a href="http://www.bourgasshipyards.com/">http://www.bourgasshipyards.com/</a> National Statistical Institute (2011)
0.2	Water projects	The water projects are related to implementation of general development plan of the port Bourgas for the period up to 2015. The expansion of Port Bourgas was planned by the General development scheme of the Port facilities through differentiation and construction of the so called South aquatorium with four major terminals and construction of New Eastern breakwater..	This activity generates 62,5% of GVA and provides 49% of the employment in the sector -2.200 people.	Bourgas Municipality (2013) National Statistical Institute (2011)
<b>1. Maritime transport</b>				
1.1	Deep-sea shipping	This activity is represented only in the port of Bourgas. Most of the companies in the sector are foreign owned, providing ships and equipment, while the crew and senior crew members are Bulgarians.	At NUTS 2 level this MEA generates 10% of the GVA and provides 17% of the sector employment.	National Statistical Institute (2011) Bourgas Municipality (2013)
1.2	Short-sea shipping (incl. Ro-Ro)	Fifteen ports operate in this NUTS 2 region under the jurisdiction of the Maritime Administration Bourgas. The main port is in Bourgas and dates back to 1894. The Master Plan for the port envisages four new terminals: Terminal 1 for general and liquid cargos, Terminal 2 for bulk commodities and metals, Terminal 3: Ro-Ro and ferry terminal, Terminal 4: container terminal. Currently the port is implementing three projects: Expansion project, Ecoport 8, and ESF project under the Operational programme "Human Resources Development". The sector is highly dependent on oil transportation.	This MEA is better developed than deep- sea shipping. It generates about 70% of GVA and provides 62% of employment - 2.900 people for this maritime sector at NUTS 2 level.	National Statistical Institute (2011) Executive Agency Maritime Administration (2012)
1.3	Passenger ferry services	There are several seasonal lines across the Ropotamo river using small and medium sized motor boats. The passengers are people living in or close to the area, and tourists.	This MEA has no practical influence on socio-economic indicators, because at NUTS 2 level there are no passenger ferry lines.	EUROSTAT (2010)
1.4	Inland waterway transport	Inland waterway transport operates exclusively on the Danube river and has relatively little impact on the selected NUTS 2 region, which is not bordering the river. The line Vidin/Russe – Bourgas ensures connection to the EU Transport Corridor 7.	This MEA generates 20% of GVA and provides 21% of employment - 1.000 people for the maritime transport sector at NUTS 2 level.	EUROSTAT (2010) Executive Agency Maritime Administration (2012)
<b>2. Food, nutrition, health and eco-system services</b>				
2.1	Fishing for human consumption	The Ministry of Transport, Information Technologies and Communication is responsible for fishing port policy. The main ports used by fishermen for landing catches are in Bourgas, Sozopol and Nesebar and some small landing sites and shelters - in Primorsko, Tzarevo, Ahtopol, Otmanly and Ropotamo. Port installations need to be modernised to ensure better safety, working conditions and hygiene and product quality. In particular, ice production, equipment for sanitary/safe unloading zones, space for transport logistics, etc. are areas where investments are required. One of the largest companies in the region is the Black Sea Fisheries Bourgas Plc, a privately owned Bulgarian company with several activities such as trawling, freezing, processing, cold storage, transportation and trade of frozen seafood. The largest company for fish processing is Slavianka Ltd, founded in 1948, currently exporting products to Greece, Cyprus, Russia and Ukraine.	This MEA generates nearly 65% of the sector GVA and provides 98,7% of employment - 9.700 people for this maritime sector at NUTS 2 level.	EUROSTAT (2010) Prodcom (2010) Joint Research Centre (2012)
2.2	Fishing for animal	This MEA is not represented.	This MEA is not represented	EUROSTAT (2010)

Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
	feeding			Prodcom (2010) Joint Research Centre (2012)
2.3	Marine aquaculture	The Bulgarian Black Sea coast does not have appropriate bays to protect marine aquaculture from the waves, which is a problem for marine aquaculture in cages. Thus, long-lines rather than rafts are used for the production of mussels. The land based farms on the coast and underwater net cages present an alternative solution for marine aquaculture. There are 18 farms for marine aquaculture producing Black Sea mussels (16 farms) and kelp algae ( <i>Cystoseira sp.</i> ) (2 farms). This represents 4% of the total number of aquaculture farms in the country. The main species raised in marine aquaculture in the Yugoiztochen region are mussels ( <i>Mytilus edulis</i> , <i>Mytilus galloprovincialis</i> ).	Marine aquaculture at the present moment consists only of mollusc farming and seaweed, and it accounts for less than 1 % of the total production. Production in 2005 was 170 tonnes or 5,4% of the total aquaculture production in the country. During the last 3 years there has been a steady increase in marine aquaculture along the Bulgarian Black Sea coast. This MEA generates 0,16% of the sector GVA and provides 1,6% of the sector employment -126 people.	EUROSTAT (2010) Joint Research Centre (2013)
2.4	Blue biotechnology	This MEA is not represented	This MEA is not represented	National Statistical Institute (2011)
2.5	Agriculture on saline soils	Saline soils form 11% from the total agriculture area in this region, and the main areas are near Bourgas and Primorsko. Salinification is mainly the result of the intrusion of groundwater with a high content of chlorides.	This MEA has little socio-economic effects.	EUROSTAT(2010) The Saline and Sodic Soils Map, Joint Research Centre (2010)
<b>3. Energy and raw materials</b>				
3.1	Offshore oil and gas	There is only one company which extracts offshore gas, but it is situated in the Severoiztochen NUTS 2 region.	This MEA has no impact in the Yugoiztochen NUTS 2 region.	National Statistical Institute (2010)
3.2	Offshore wind	Currently there is no installed offshore wind capacity.	Currently there is no installed offshore wind capacity.	European Wind Energy Association (2013)
3.3	Ocean renewable energy	Currently there are no marine renewable energy production sites.	Currently there are no marine renewable energy production sites.	Ministry of Economics (2012)
3.4	Carbon capture and storage	The technology is not applicable in Bulgaria.	The technology is not applicable in Bulgaria.	Intergovernmental Panel on Climate Change (IPCC) - <a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a>
3.5	Aggregates mining (sand, gravel, etc.)	Aggregates mining have been developed mainly in the Severoiztochen NUTS 2 region. Near the city of Bourgas there is a large sand bank – Koketreis, but with the status of a protected area. No aggregates mining takes place offshore.	This MEA has no impact on socio-economic climate in the selected NUTS 2 region.	European Aggregates Association (2012))
3.6	Marine minerals mining	Marine mineral mining has not been developed in Bulgaria.	This MEA has no impact on socio-economic indicators.	National Statistical Institute (2011)
3.7	Securing fresh water supply (desalination)	Desalination has a very limited application in this NUTS 2 region which is rich in natural water sources, artificial lakes, and faces no severe water shortages in coastal areas.	It currently has no impact on socio-economic indicators at NUTS 2 level.	National Statistical Institute (2011)
<b>4. Leisure, working and living</b>				
4.1	Coastal tourism	Tourism is a large and a fast growing sector, and has been an important driver of local economic growth over the last decade. After 1999, and especially after 2000, most of the tourism indicators have improved significantly and for many years featured double-digit annual growth rates. The bed-capacity of accommodation facilities increased by 22% with an average annual growth rate of 3,1% in the period 1998-2005. As a result of the privatisation process almost all	This MEA at NUTS 2 level encompasses about 55% of the coastal tourism sector in Bulgaria and 6,5% of the total national GVA. Moreover, the indirect effects are 15,9 % to GDP and 13,6% to employment. Tourism contribution in Bulgaria is slightly above the average for EU-27 (direct contribution of 3,8% to GDP and 4,1% to employment; and an indirect	National Statistical Institute (2011)

Function/activity		Activity overview	Socio-economic indicators	Source & Reference year
		accommodation is private and the structure of the tourism sector is dominated by small and medium-sized enterprises.	contribution of 10,1% to GDP and 11,5% to employment) and significantly higher than for Central and Eastern Europe (direct contribution of 2% to GDP and 1,7% to employment; and an indirect contribution of 9,1% to GDP and 7,4% to employment)..	
4.2	Yachting and marinas	The number of yachts and motor boats is 650, most of which are small boats up to 10 t. Four licensed ports are located in this region - Duni, Sunny day, Nesebar, and Sozopol.	Contrary to high investment, the socio-economic indicators have shown only modest growth at NUTS 2 level.	National Statistical Institute (2011)
4.3	Cruise tourism	Local cruise tourism is represented by summer voyages from the ancient port of Nessebar to Varna and Istanbul and also by foreign ships passing through Varna on route to Mediterranean countries. Most cruises take place only during the summer season.	There is little socio-economic impact as the voyages do not occur often. Local cruise tourism has increased in summer due to the introduction of modern fast moving ships – catamarans and ships with hydrofoils.	EUROSTAT (2010)
<b>5. Coastal protection</b>				
5.1	Protection against flooding and erosion	The main danger zones for flooding are along the river Kamchia and near some artificial lakes. It is estimated that around 60% of the soil is subject to some kind of erosion. A Government body - Civil protection service is responsible for the protection of citizens.	Although there have been many recorded floodings, devastating events involving casualties and heavy material losses are rare. Consequently, socio-economic impacts are considered low.	Basin Directorate for the Black Sea region (2013)
5.2	Preventing salt water intrusion	Potentially affected zones are small seaside cities, for instance – Primorsko and the land around the lake Vaja.	There are limited cases of sea water intrusion in to seaside villages' water supply chain and therefore the socio-economic impact is low.	Ministry of Environment and Water (2012)
5.3	Protection of habitats	Around 1% at NUTS 2 level territory has protection of habitats status. Some of the protected areas could be important sources of raw materials (for example - the Koketreis sand bank), so conflicts of interests occur in this MEA.	There are six Natura 2000 protected habitats within this NUTS 2 region.	Ministry of Environment and Water (2012)
<b>6. Maritime monitoring and surveillance</b>				
6.1	Traceability and security of goods supply chains	The Executive Agency Maritime Administration is responsible for the safety of shipping and monitors the safety of Bulgarian and foreign vessels. The Regional structure for this NUTS 2 region is the Maritime Administration in Bourgas. This organisation maintains a register of ports and a register of port operators and monitors the safety of port facilities.	In the Yugoiztochen NUTS 2 region the employment in this MEA is 42,9% of the total work positions in maritime monitoring and surveillance, while public expenditure are estimated at 34,2% of the sector's total.	Executive Agency Maritime Administration (2010)
6.2	Prevent and protect against illegal movement of people and goods	The organisations responsible for the prevention of and protection against illegal movement of people and goods are the Police (Interior Ministry), Bulgarian Navy and Maritime Administration.	Currently, the employment is 35,7 % of the total work force in the sector and public expenditure are the lowest of the sector at 11,3% .	Interior Ministry (2010)
6.3	Environmental monitoring	The organisations responsible are marine institutes and laboratories, the Basin Directorate for the Black Sea and the Ministry of Environment and Water (Sofia), Environmental monitoring includes mainly observations on air and sea water quality. The monitoring of the sea water includes measurements of the content of biological elements, heavy metals and other contaminants, plankton and benthos development, fish resources etc.	The public expenditure in this MEA is the highest – 54,5% of the total GVA data for the sector and employment is 21,4% respectively.	Ministry of Environment and Water (2010)

### 3. List of the 7 largest, fastest growing and with most future potential marine and maritime activities

#### 3.1 Ranking order of the 7 largest marine and maritime activities

The largest maritime activities are listed in the table below. The scores of each activity available in the country are presented in the Annex to Country Fiche (data for 2010).

Table 5 - Ranking order of the 7 largest maritime economic activities in Bulgaria<sup>3</sup>

Rank	Marine and maritime activities	GVA (billion EUR)	Employment (*1000)	Score
1.	Coastal tourism	0,7694	109,519	62,45
2.	Fishing for human consumption	0,0653	14,660	7,98
3.	Short-sea shipping (incl. Ro-Ro)	0,0832	6,917	4,29
4.	Shipbuilding and ship repair	0,0647	5,983	3,64
5.	Water projects	0,0601	3,627	2,41
6.	Inland waterway transport	0,078	2,618	2,09
7.	Cruise tourism	0,002	2,500	1,27

#### 3.2 Ranking order of the 5 fastest growing marine and maritime activities

The fastest growing maritime economic activities are presented in the table below, based on data for the period 2008-2010. The analysis entails the aggregation and assessment of quantitative data for every maritime activity applying the same approach as in the previous task.

This study provides a list of only 5 fast growing marine and maritime activities in the coastal region of Bulgaria, because since 2008, as a result of the economic crisis, even sectors that have been traditionally well represented (such as shipbuilding, inland water transport etc.) suffer from decreased investments and total income, and increased unemployment.

Table 6 - Ranking order of the 5 fastest growing marine and maritime activities in Bulgaria<sup>4</sup>

Rank	Marine and maritime activities	GVA (CAGR)	Employment (CAGR)	Score
1.	Offshore oil and gas	67,65%	-1,87%	32,89
2.	Fishing for human consumption	0,72%	15,97%	8,34
3.	Cruise tourism	5,88%	5,16%	5,52
4.	Environmental monitoring	0,76%	0	0,38
5.	Short-sea shipping (incl. Ro-Ro)	3,38%	-2,78%	0,30

For all compound annual growth rates (CAGR) and scores for all maritime activities (calculated over the last 3 years available) see the Country fiche Annex.

#### 3.3 Ranking order of the 7 marine and maritime activities with most future potential

The marine and maritime activities with the most future potential, listed in the table below are based on scores assigned to each activity by experts for the six following indicators: innovativeness, competitiveness, employment, policy relevance, spill-over effects and sustainability. (For all activities scores, see the Country fiche Annex).

Table 7 - Ranking order of the 7 marine and maritime activities with most future potential in Bulgaria

Rank	Marine and maritime activities	Score
1.	Offshore oil and gas	+++++
2.	Coastal tourism	++++
3.	Fishing for human consumption	++++
4.	Short sea shipping (incl. Ro-Ro)	++++
5.	Inland waterway transport	++++
6.	Water projects	++++
7.	Shipbuilding and ship repair	++++

<sup>3</sup> The score is the result of the following:  $[(\text{GVA billion} \times 10) + (\text{number of persons employed} / 1000)] / 2$

<sup>4</sup> The score is calculated by the average:  $[(\text{CAGR GVA} + \text{CAGR Empl}) / 2]$



**Offshore oil and gas**

- **Innovativeness:** This sector receives significant investments for development and innovation in the main drilling fields; in the area of deep-sea drilling; and in the "South stream" project. The latter will supply gas from Russia to the EU and is expected to be among the largest economic events in the Black Sea region. **Score assigned: +**
- **Competitiveness:** The presence across the entire oil and gas value chain (exploration, development and production) provide a good basis for innovativeness, competitiveness, employment and sustainability. Increasing oil and gas prices and demand are key factors affecting competitiveness in the sector. **Score assigned: +**
- **Employment:** The employment in coastal area is expected to increase with approximately 3.000 new jobs with the start of the project "South stream". **Score assigned: +**
- **Policy relevance:** Law of Sea territories, internal sea roads and harbours, and Law on Underground Resources create the legal framework for implementation of this MEA. The "Energy Strategy of the Republic of Bulgaria till year 2020" sets several objectives related to competitiveness, energy security and sustainable development. **Score assigned: +**
- **Spill-over effects:** The spill-over effects on other maritime sub-functions - coastal tourism, fishing for human consumption, protection of habitats and environmental monitoring are recognised. **Score assigned: +**
- **Sustainability:** The concept of sustainability has been defined as meeting the needs of the present without compromising the ability of the future generations to meet their needs (World Commission on Environment and Development, 1987). Thus, the sustainability of the Offshore oil and gas sector concerns the degree to which companies reduce negative impacts on the natural environment through their operations, and the investment in business practices that promote policies to ensure sustainable future development. In Bulgaria the approval of offshore oil and gas extraction activities is based on scientific estimation of the possible negative consequences on the marine environment (OVOS). The positive OVOS reports indicate that regulations of the Bulgarian and the EU legislation are abided and that effects on the marine habitats and biota, ensuing from construction work and further exploitation, are reversible and not cumulative. **Score assigned: +**

**Coastal tourism**

- **Innovativeness:** The weakest link of this MEA is its innovativeness – the sector offers sometimes uniform services and products, and alternative tourism forms and product diversification need to be developed. **Score assigned: 0**
- **Competitiveness:** High competitiveness between the sector players-private companies and tourism complexes along the Black Sea coast. **Score assigned: +**
- **Employment:** Significant impact on employment in the coastal region (Table 1, 2, 3, 4). **Score assigned: +**
- **Policy relevance:** The sector operates under strict governmental regulations. The Tourism Act, the Environmental Protection Act, as well as the National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013 are the most important legal documents, related to this MEA. **Score assigned: +**
- **Spill-over effects:** Spill-over effects can be identified with other MEAs - habitats protection, fishing for human consumption and environmental monitoring. **Score assigned: +**
- **Sustainability:** Taking into account the large current GVA generated and employment associated with the sector, its long-term traditions, well-developed markets, established infrastructure the sector received positive scores. **Score assigned: +**

**Fishing for human consumption**

- **Innovativeness:** Currently, the MEA needs more investments in innovations mainly in the fishing sector (vessels and ports). **Score assigned: 0**
- **Competitiveness:** High competitiveness between the private sector players. **Score assigned: +**
- **Employment:** The employment opportunities and livelihoods that this sector offers large numbers of people in the maritime area and the long traditions of the sector contribute to its positive scores. **Score assigned: +**
- **Policy relevance:** High policy relevance, in the light of the CFP changes at EU level. **Score assigned: +**
- **Spill-over effects:** The spill-over effects with other MEAs – water projects, offshore oil and gas, protection of habitats and environmental monitoring are acknowledged. **Score assigned: +**
- **Sustainability:** The sector sustainability evaluation implies the effects on the environment and on the status of fish stocks, and includes possibilities for improvement of working conditions and formulation of appropriate business strategies – focused on new product development, traditional fisheries promotion and artisanal fisheries through the EFF. **Score assigned: +**

**Short-sea shipping**

- **Innovativeness:** This sector currently dominates the seaborne shipping in Bulgaria, with two main ports – Varna and Bourgas, which realise around 60% of the national import-export trade. The modernisation of these two ports has already started; new terminals and facilities are in the process of construction and reconstruction. **Score assigned: +**
- **Competitiveness:** The ports of Varna and Bourgas are included in the Concept for Development of the Pan-European transport corridors, due to their strategic location at the crossroads between Europe and Asia. **Score assigned: +**
- **Employment:** Negative score/evaluation due to an unclear potential impact on regional employment. The latter is related to a loss of jobs since the beginning of the economic crisis. **Score assigned: -**
- **Policy relevance:** Merchant Shipping Code, the Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP) and the Strategy for development of transportation system of the Republic of Bulgaria till year 2020 define both policy documents and strategic visions for the development of the transport sector. **Score assigned: +**
- **Spill-over effects:** This MEA has spill-over effects on the other sectors - offshore oil and gas, protection of habitats and environmental monitoring. **Score assigned: +**
- **Sustainability:** The sector sustainability is affected by the Concept for Development of the Pan-European transport corridors (with special focus on the ports of Varna and Bourgas), and is related to the low negative impact on the environment (environmentally friendly mode of transportation). **Score assigned: +**

**Inland waterway transport**

- **Innovativeness:** The inland waterway transport sector is most seriously affected by the low level of investment for fleet renewal due to the economic crisis. **Score assigned: 0**
- **Competitiveness:** Sector competitiveness is affected by the prospects for future development of the Danube River transport corridor - TEN-T (priority axes 18). **Score assigned: +**
- **Employment:** it is estimated that the activity has a significant future potential in terms of employment, especially considering the political efforts aimed at developing the inland transportation via water. **Score assigned: +**

- **Policy relevance:** Merchant Shipping Code, the Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP) and the Strategy for development of transportation system of the Republic of Bulgaria till year 2020 define both policy documents and strategic visions for the development of the transport sector. **Score assigned: +**
- **Spill-over effects:** This MEA has spill-over effects on the other sectors - offshore oil and gas, protection of habitats and environmental monitoring. **Score assigned: +**
- **Sustainability:** Sector sustainability is related to the low negative impact on the environment - environmentally friendly mode of transport. **Score assigned: +**

### Water projects

- **Innovativeness:** Ports have developed fast during the last years, however due to the economic crisis there are delays in the implementation of planned activities. **Score assigned: 0**
- **Competitiveness:** Implementation of the MEA Water projects contributes to the economic development of the country, and strengthens the competitiveness of the coastal economy through enhanced income. **Score assigned: +**
- **Employment:** High number of jobs (Tables 1, 3,4). **Score assigned: +**
- **Policy relevance:** Water projects are pivotal for the Strategy for development of transportation system of the Republic of Bulgaria till year 2020. **Score assigned: +**
- **Spill-over effects:** This activity has close spill-over effects on the development of the transport sector and links with other sectors such as protection of habitats, fishing for human consumption, marine aquaculture, and environmental monitoring. **Score assigned: +**
- **Sustainability:** Water projects directly impact transport sector development and links to environmental and urban sustainability. **Score assigned: +**

### Shipbuilding and ship repair

- **Innovativeness:** Efforts are currently focused on optimisation of the available facilities and implementation of new technologies. The sector has therefore significant innovativeness potential **Score assigned: +**
- **Competitiveness:** modernisation of facilities undertaken by shipbuilding companies represents a good potential for increasing competitiveness. **Score assigned: +**
- **Employment:** The activity engages almost 6.000 people in the maritime area; however the sector has declined due to the economic crisis. **Score assigned: 0**
- **Policy relevance:** no significant policy efforts have been identified. **Score assigned: 0**
- **Spill-over effects:** The most pronounced spillover effects include water transport sectors. It has a significant growth potential linked to the development of inland waterway transport and short-sea shipping **Score assigned: +**
- **Sustainability:** modernisation of facilities have been undertaken in order to increase the sustainability of the activity and of production. **Score assigned: +**

## 4. Growth scenarios for the 6 most relevant and promising marine and maritime activities

Below a synoptic overview of the 7 largest, fastest growing and with most future potential activities is provided.

Table 8 - Sets of top activities ranking in order of size/growth/future potential

Top-7 current size	Top-5 recent growth	Top-7 future potential
Coastal tourism	Offshore oil and gas	Offshore oil and gas
Fishing for human consumption	Fishing for human consumption	Coastal tourism
Short-sea shipping (incl. Ro-Ro)	Cruise tourism	Fishing for human consumption
Shipbuilding and ship repair	Environmental monitoring	Short-sea shipping (incl. Ro-Ro)
Water projects	Short-sea shipping (incl. Ro-Ro)	Inland waterway transport
Inland waterway transport		Water projects
Cruise tourism		Shipbuilding and ship repair

Therefore, the activities identified as most relevant and promising in Bulgaria are the following.

Table 9 - Six most relevant and promising marine and maritime economic activities

6 most relevant and promising marine and maritime activities
Coastal tourism
Offshore oil and gas
Fishing for human consumption
Short-sea shipping (incl. Ro-Ro)
Inland waterway transport
Water projects

### 4.1 Overview of the 6 most relevant and promising marine and maritime activities

#### Coastal tourism

Coastal tourism has been chosen based on the current GVA and employment, long-term traditions, well-developed markets and established infrastructure. It is one of the most important activities and currently creates EUR 0,77 billion and provides work places for almost 110.000 people in the coastal area. Around 65% of all registered tourist beds in Bulgaria are situated in the two coastal NUTS 2 regions. Coastal tourism has a definite impact at EU level as around 55% of registered holidays are from EU or EEA countries, mainly Germany, Romania, Scandinavia, UK and others.

#### Offshore oil and gas

Offshore oil and gas has been chosen based on exploration of new drilling fields, but also due to the start of the gas transportation project South Stream, which envisages huge benefits for the maritime area, and taking into consideration the strategic importance of the energy sector for the Republic of Bulgaria. The activity has experienced significant changes in the last years. Currently, the natural gas consumption in the country is 3,14 billion cubic meters (bcm) (2011) and it is gradually increasing again after a severe decrease due to the economic crisis. Industry is by far the biggest consumer of the natural gas (56,7%) (see the detailed data in the Country fiche Annex, chapter 7 Background information).

#### Fishing for human consumption

The activity is connected with the employment opportunities that the sector offers in the coastal area; it has been considered as most relevant and promising also taking into account its established traditions and possibilities for funding from the EFF and the future EMFF. In the light of this, despite its potential for

growth appears relatively limited due to the constraints on fishing in the Black Sea (quotas for turbot and sprat), fishing for human consumption remains an important maritime activity in Bulgaria's blue economy.

The main commercial fish species is sprat (*Sprattus sprattus*, L), catches of which form 80% of the total landings in Bulgarian Black Sea waters. During 2006-2011 sprat catches varied between 2.655 and 4.551 tonnes. Another important species is the benthic gastropod *Rapana venosa*, with annual catches of around 3.900 tonnes (IA for MSFD, 2013). Other species are anchovy, horse mackerel etc., but their catches vary significantly from year to year.

### **Short-sea shipping (incl. Ro-Ro)**

The activity currently dominates seaborne shipping in Bulgaria. It generated EUR 83,2 million of GVA in 2010. It provides the necessary services associated with trade and supply chains at regional and national levels. The total number of ports in Bulgaria is 60, of which 22 are closely related to short-sea shipping. The two biggest marine ports in Bulgaria are at Varna and Bourgas (included in the Concept for Development of the Pan-European transport corridors, due to their strategic location at the crossroads between Europe and Asia). They offer a full range of services: loading, discharging, stevedoring, freight forwarding, storage, and various intermodal services. These two ports realize around 60% of the national import-export trade. The sector perspective is connected to the 2011 White Paper for the future of transport (Roadmap to a Single European Transport Area Towards a competitive and resource efficient transport system) that advocates for achieving a genuine Single European Transport Area in which all residual barriers between modes and between borders are to be eliminated. In particular, it calls for a **Blue Belt** area in the seas around Europe which shall simplify the formalities for ships travelling between the EU ports.

### **Inland waterway transport**

Inland waterway transport is related to the strategic importance of the Pan-European Transport Corridor VII, and based on forecasts of the Van Miert Report (2003), showing that removing the bottlenecks on the Rhine-Main-Danube link could transfer some 5 billion tonne-kilometers of freight each year to waterways. Inland waterway transport operates exclusively on the Danube River, which is linked to the Black Sea by a 67 km artificial canal situated in North Dobrudza (Romania) and by a 172 km artificial canal situated in Ukraine. Starting from the outfall of the Timok River and reaching the city of Silistra further downstream the Bulgarian part of the Danube has a total length of 470 km. Thus, the Bulgarian section of the Danube River is a part of the Lower Danube and it is free flowing and has no dams, however 38 critical points of navigation exists.

### **Water projects**

Providing employment for 3.627 people in the coastal area and producing high GVA - 0,06 billion EUR in 2010, the water projects in Bulgaria form an important MEA, that closely interacts and supports the water transportation sector development.

This MEA is related to improvement of navigational gauges in the Danube River, and possible inception of a construction work of a 192-kilometre navigable canal Rousse–Varna, that will connect the lower Danube with the Varna lakes and the Black Sea. At present, the engineering measures for better navigation in the Bulgarian sector of the Danube River are planned in the feasibility study prepared within the project, “Technical assistance for Improvement of the Navigational Conditions on the Romanian – Bulgarian common sector of the Danube and accompanying studies”.

Water projects **are** connected to the stable funding and successful implementation of activities for modernisation and enlargement of the **large** ports in Varna - **Varna East, Varna West and Ferryboat complex -Varna** and Bourgas - **Burgas East, Bulk Cargo terminal, Burgas West and petroleum bunkering terminal – Rosenets**. Several water projects aiming to deepen the ports in Varna and Bourgas, as well as the transport channels between the ports and the surrounding lakes have been recently finished or are under implementation. Among the largest projects, for example are “The New Container Terminals Development Project at the Ports of Varna and Bourgas” that is operational through the period 2008-2015,

"WATERMODE - Transnational network for promotion of the waterground multimodal transport 2009-2011" etc.

## 4.2 Description of the nature of each of the 6 marine and maritime activities and their value chain

### Coastal tourism

Based on data from national statistics and EUROSTAT (2011) (see the detailed data in the Country fiche Annex, chapter 7 Background information), it can be seen that:

- Currently coastal tourism relies on around 1.700 hotels, distributed along the entire coastline, but mostly concentrated at the Golden Sands resort area (Severoiztochen NUTS 2 region), Sunny Beach resort area and the south seaside (Yugoiztochen NUTS 2 region).
- The number of tourist beds varies from 180 to 190 thousand with an increasing trend in the Yugoiztochen region, while in Varna and Dobrich NUTS 3 regions this number shows a slightly decreasing trend.
- After a remarkable decrease in the number of tourist overnight stays in 2009 as a result of the economic crisis, incomes from accommodation increased by 10% in 2011 compared to 2007.

It is expected the number of hotels and equivalent leisure infrastructure will increase in the following years and this activity will most probably maintain its dominant position in the economy of the maritime area.

### Offshore oil and gas

The total amount of extracted natural gas has increased since 2010 (in 2010: 74 million m<sup>3</sup> and in 2011: 443 million m<sup>3</sup>). Domestic production of natural gas is expected to increase nearly 5-fold in the next 10 years (Bulgargas, 2010). The main drilling points for natural gas are the Galata and the Kaliakra regions (Severoiztochen NUTS 2 region). Melrose Resources Plc is developing the Galata Project, situated about 20 km from the eastern port of Varna. The field lies at a water depth of 35 m and has gross proven and recoverable reserves of 49 billion cubic feet (bcf), and proven and probable reserves of 81 bcf. Melrose Resources Plc has a 100% interest in the project field through its subsidiary Petreco. The Galata gas field is now being converted into a gas storage facility, further developing Bulgaria as a key gas transit country. The field was shut down in January 2009 and about 8,5 bcf of gas reserves were left in the field. The company reported 7,4 bcf of gas from the Galata field in 2010. Daily deliveries averaged 20,2 mcf (million cubic feet) of gas. The peak production of 51 mcf per day occurred at the field in 2005.

Melrose Resources Plc is also focusing on other exploration prospects located on the northern block. The Kavarna and Kaliakra discoveries were made using subsea wells linked back to the project platform with export through existing offshore pipelines and onshore processing plants. Productions from the two discoveries replaced production volumes from Galata by 2011. The company aims to drill an appraisal well on the Kaliakra discovery, which has gas reserves of about 47 bcf.

Bulgaria also intends to become an oil producer and deep-sea drilling at the Block 1-21 Khan Asparuch point is planned by an international consortium that includes Total from France, OMV from Austria and Repsol from Spain. This field is 14.000 sq. km in size and around 50 miles off the coast of Varna.

### Fishing for human consumption

At the end of 2011 the Bulgarian fishing fleet included 2.336 vessels with a total tonnage of 6.393 GT and combined power of 61.307 kW. Of all registered vessels, only 1.009 vessels have been active during this period. Almost all vessels (96%) are up to 12 m in length, and this segment is responsible for 32% of the catches. The mean age of the fishing fleet is 19 years, which is evidence of high amortisation. The number of fishing vessels decreased by 8% compared with 2007, resulting in a 10% decrease in the gross tonnage and a 6% reduction in power. However, the registered days at sea for this period have doubled and reached



18.000, showing increased fishing activities (NAFA, 2012) (see the detailed data in Country fiche Annex, chapter 7 Background information).

In some cases the interpretation of the economic indicators by the National Executive Agency of Fisheries and Aquaculture (NAFA) differs from the evaluation of the Scientific, Technical and Economic Committee for Fisheries (STECF) as regards calculations of GDP/GVA created by the sector. For example NAFA provides positive values for 2010, while STECF reports negative results: - EUR 1,7 million.

The fish processing sector generates 10% of the sector's GVA and provides 10% of the employment. The processing industry in Bulgaria consisted of 26 companies and generated a total income of about EUR 23 million in 2010. In 2010, the sector offered 1.470 jobs, and ca. 90% of the workers are women, who are hired mostly seasonally. The fish processing sector is an important source of employment in small villages, providing 5-7 % of local jobs (Basin Directorate: IA for MSFD, 2013).

The retail sector forms the largest GVA and employment in the sector – 88% of GVA and 63% of employment.

Significant amount of funding for the sector is provided by the European Fisheries Fund (EFF), through the Operational Programme "Fisheries". The total budget of the Operational Programme "Fisheries" during 2007-2013 is EUR 106 million, of which 75% is provided by EU and 25% by national co-funding. At the end of 2011, 43 projects were signed worth a total of EUR 30 million (NAFA, 2012).

### **Short-sea shipping (incl. Ro-Ro)**

An analysis of the freight volumes for 2006-2011 shows a mean level of 22-28 million tonnes. The decrease observed during 2009-2010 is related to the economic crisis that led to a decreased wholesale level, including export/import volume. In 2011, the total freight transport levels returned to the mean value of 25 million tonnes (see the detailed data in the Country fiche Annex, chapter 7 Background information).

Liquid cargo formed 44% from the total amount of transported cargo, and was mainly related to the import of crude oil delivered to the Neftohim refinery (managed by the firm LukOil situated in the Yugoiztochen region). Non-liquid cargo amounted to about 14 million t/per year, most of which passed through the harbours of Varna (9 million t/per year) and Bourgas (3 million t/per year). The remaining 2 million t/per year are distributed among other harbours such as Balchik and Sozopol (Executive Agency Maritime Administration, 2011).

Data on cargo transported by short-sea shipping show that this activity is highly dependent on the transport of oil, and currently the only exporting country is the Russian Federation.

The two coastal NUTS 2 regions show almost similar results as regards the freight transported by short-sea shipping (in 2011: Severoitochen region – 11,66 million tonnes and Yugoiztochen region – 13,52 million tonnes).

### **Inland waterway transport**

The total cargo transported by the sector amounts to about 2 million t/year. Regarding river cargo traffic, the main EU partners are Germany and Austria. Of the non-EU countries the main partner is Ukraine. The basic imported cargo units processed in the national ports are Ro-Ro and general cargo. The exported cargo from Bulgaria to the EU member countries is predominantly quarrying products, metal ores and agricultural production. Inland waterway transport performance (in millions of tonne - kilometers) in 2011 is 28% lower than in 2010. The registered decline is stronger in the second half of 2011. In 2011, only as regards national transport, the weight of goods and transport performance increased by 10,2 % and 0,3 % respectively. In this period, the transit transport decreased by ca. 29%, and diminishing international transport performance has reflected reduced mean average distance of transportation and lower cargo weight<sup>5</sup>.

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<sup>5</sup> NIS, 2013



In the first quarter of 2013 cargos transported by inland water transport increased 4,8% in comparison to the same period in 2011-2012. In general the role of this mode of transport in the national transport system has shown a stable increasing trend over a ten-year period 2003-2013<sup>6</sup>.

### Water projects

Since 2008 and up to 2010, GVA produced by Water projects has increased by 8,48 %. The most pronounced peak was established in 2009, when GVA amounted to EUR 0,0710 billion and employment reached 4.873 people. Then, the effect of the economic crises led to employment falling to 3.627 people in 2010. That year however, the GVA of EUR 0,060 was above the value, reported in 2008 – EUR 0,055, which proves good sector efficiency.

Operational is the National Program for the Development of public transport ports 2006 – 2015 with aims to increase efficiency and quality of service through the modernization of ports and to increase the competitiveness of Bulgarian ports by increasing transit traffic through the country.

The marine ports in Varna and Bourgas implement water projects to ensure dredging of shipping routes and anchorage berths. Among the largest water projects in the period 2008-2015 is "The New Container Terminals Development Project at the Ports of Varna and Bourgas" conceived to meet the increased cargo demand and to improve efficiency of freight transport by constructing new container terminals and developing infrastructure, related to the terminals at the ports of Varna and Bourgas, and thereby contributing to economic development in Bulgaria. A Table, showing the project indicators and effects up to 2017 is presented in the Annex, Chapter 7 Background information. At the port Varna the water projects for construction, reconstruction and modernization include a deepwater container terminal and a Ro-Ro terminal on an island under the Asparuhov Bridge. Opportunities for development provides the Ferryboat complex – Varna, which is the biggest Bulgarian port for handling of Ro-Ro cargo that has arrived by railway or road transport vehicles. Currently, this port supports a Ro-Ro line towards the Black Sea ports of Ukraine, Georgia and Russia, but only 10% of its capacity is being utilized. At port Bourgas the major projects are related to construction of an eastern breakwater with a length of 1.196 m, terminal for loose cargo, consisting of three berths with a total length of 705 m and a maximum depth of 15,5 m and an access canal of 6.600 m. In the Bulgarian sector of the Danube River the two most important bottlenecks for navigation are located at Belene (rkm 576 - 561) and Batin (rkm 530 - 522) Islands. The work for improved navigation has been estimated at EUR 137 million - co-financing (30 % EU; 20 % private sector; 50 % national budget) (Bulgarian Ports Infrastructure Company, 2011).

## 4.3 Description of economic and infrastructural scenario

### Coastal tourism

Tourism is perceived as one of the priority sectors of the Bulgarian economy. Its potential is demonstrated by its contribution to GDP, export and foreign exchange receipts as well as job creation.

The sector is mostly private and is regulated by the **Ministry of Economy and Energy and the Tourism Agency**. Main players are concentrated in the big tourism complexes close to the shore and near the cities of Varna and Bourgas, where many new hotels have been built during the last 10 years. The sector players are united through several associations that maintain close relationships with the Bulgarian government - **Bulgarian Association of Tourist Agencies, Bulgarian Association of Travel Agents (BATA), Bulgarian Tourist Chamber, and Bulgarian Association for Alternative Tourism (BAAT), Bulgarian Hotel and Restaurant Association, Bulgarian Association for Rural and Ecological Tourism (BARET), Varna Chamber of Commerce, Bourgas Regional Tourism Association.**

Development of the tourism sector is expected to follow the general trend of economic development of the country with a moderate increase in sector income. Since 2010, the number of bed places and the level of

<sup>6</sup> National Institute of Statistics, 2013, see the detailed data in the Country fiche Annex, chapter 7 Background information

sector employment have increased in the Yugoiztochen NUTS 2 region, whereas in the Severoiztochen region these indicators have decreased. The southern region has better potential for future development due to improved infrastructure (highways, new wastewater plants etc) and specific climatic conditions.

The main obstacles for sector development are related to extreme territorial concentration combined with product uniformity and gaps in marketing. Product diversification, improved marketing policies, and the development of alternative tourism will ensure sustainable growth in the mid and long term.

Potential alternatives to traditional tourist products and to traditional and already overdeveloped resorts, such as cultural, eco, health, adventure tourism, etc. should be stimulated. A lot of cultural and historical attractions are still not fully exploited so the sector offers significant potential for future development.

Maritime Spatial Planning (MSP) and Integrated coastal zone management (ICZM), that are public planning of the spatial and temporal distribution of human activities in sea and coastal areas, may positively affect this MEA helping to achieve a combination of economic, environmental and social objectives. I would therefore optimise the use of maritime spaces and it should support the development of coastal tourism in close synergies with other activities.

### **Offshore oil and gas**

Currently, the offshore oil and gas sector is mostly private, but state regulated, with the main players, multinational/international companies, receiving concessions for oil and gas extraction in the territorial waters of the Republic of Bulgaria.

The sector is regulated by the **Ministry of Economy and Energy**. Within the Ministry there is the **Bulgarian Energy Holding**. It was created in 2008 by merging different national companies from the energy sector, among them the **Bulgargas EAD**, which is the main national company, dealing with business transactions for oil and gas supply in Bulgaria. The **Administration Agency-Natural resources and concessions** is responsible for organising the procedures for issuing permissions for extraction of oil and gas on the territory of the Republic of Bulgaria.

**Melrose** is the main private company that has been working in the sector since 1999. Melrose and Bulgargas conducted an assessment of the feasibility of converting the gas field Galata into a storage facility with a capacity of 1,8 bcm, which is ~ 57 % of current annual gas consumption of Bulgaria, estimated at 3,14 bcm. A capital expenditure of USD 90 million was fixed for developing the facility. Melrose has enlarged the Galata project by including new fields for gas extraction - Karvarna and Kaliakra - and gas production from there began in November 2010.

In 2012 the Government decided to permit investigations and extraction of oil and natural gas from the Block 1-22 Teres (4.032 km<sup>2</sup>) and also issued a license for oil exploration in the Block 1-19 St. Athanasius. At the beginning of 2013 the Council of Ministers approved oil and gas extraction from the Block 1-23 St. Marina (1.612 km<sup>2</sup>).

Bulgarian domestic natural gas production has witnessed a significant increase over the last years and production is expected to reach 580 mcm in 2013 and 660 mcm in 2014 ([Ministry of Energy](#), 2011). Demand for natural gas is forecast to rise on average by about 3,2% per year between 2010 and 2025, reaching 6,3 bcm by the end of the period. This will accelerate the development of gas-related infrastructure and increase the consumption of natural gas in the country.

Offshore oil and gas has future potential also due to the start of the project South Stream - a proposed pipeline to connect the Russian city Anapa and the Bulgarian city Varna through the Black Sea and to transport natural gas further to Greece, Italy and Austria. This pipeline will have total length of 2.380 km and a maximum discharge of gas of 63 bcm per annum. Bulgaria will not finance the construction of the portion of pipeline passing through its territory, leaving all expenses to Gazprom and its consortium partners. The new contracts for the supply of Russian are expected to lower gas prices. In the oil sector, Lukoil has announced that its refinery in Bulgaria will receive a EUR 1,5 billion Russian investment for the construction of a hydrocracking plant. It is estimated that 3.000 jobs will be created and, most importantly,

oil refinery products exports from Bulgaria (mostly to Eastern European markets) will increase, providing a source of additional revenue for the state.

The analysis of natural gas prices shows that despite falling consumption in the EU market since 2011, prices keep on increasing. Since 2012, some stability has been observed and the highest wholesale price estimates, most notably the price estimate of Russian gas to Bulgaria, have fallen. For the first four months of 2013 the wholesale price estimates of Russian gas to Bulgaria dropped 20% compared to the 2012 average<sup>7</sup>.

Maritime spatial planning (MSP), may positively affect this MEA helping to achieve a combination of economic, environmental and social objectives. For this MEA the benefits of maritime spatial planning include opportunities to facilitate investments in oil and gas – by instilling predictability, transparency and clear rules, that will help for resolution of potential conflicts between investors and environmentalists forces, Additionally, planning and integrated management measures will foster environmental protection and preservation.

### **Fishing for human consumption**

Bulgarian fishing fleet and fish processing industry were state owned before 1989, but the sector was privatised in the 90's and the private companies were fully functional by 1999.

The sector is regulated by the **Ministry of Agriculture and Food (MAF)**. The **National Agency for Fisheries and Aquaculture (NAFA)**, part of the MAF, is responsible for the implementation of fisheries legislation. Its activities include the conservation and reproduction of fishery resources, control of implementation of established fishing activities in inland waters, the Bulgarian coastal zone in the Black Sea and the Danube River (control of fishing activities, issuing of fishing licenses, maintaining the fishing vessels register, collecting and processing of fisheries statistics, etc.). Regional offices are responsible for implementing fisheries legislation at a regional level, and are primarily involved in control and monitoring activities.

The **Executive Agency for Fisheries and Aquaculture** and the **Executive Maritime Administration Agency** have joint responsibility for the registration and control of fishing vessels. The **Scientific and Technical Fisheries and Aquaculture Council (STFAC)** is an advisory body reporting to the Ministry of Agriculture.

**Bulgarian Fishing Association (Bourgas)** and **National Fish Producers Association** (Sofia) were established in 1998. The first covers the marine fisheries sub-sector, and the second includes freshwater fish producers.

Statistical data for the period 2005-2010 show that the activity has not shown a stable trend of development. Results for the economic balance indicators in the last years are consistent in the sense that for 2008, according to the JRC's Annual Economic report on the EU fishing fleet<sup>8</sup>, the main indicators are assigned green traffic lights, while for 2009 and 2010 they are assigned red traffic lights. GVA (as % of income) is assigned an amber traffic light in 2008 and 2010 and a red traffic light in 2009, suggesting that the Bulgarian fleet generated no gross value added in 2009. If the negative returns on investment for both 2009 and 2010 continue, there may be an element of overcapacity within this segment of the Bulgarian fleet. These indicators suggest a deteriorating situation; however data quality is a potential issue.

The fish processing companies are members of the Association of Bulgarian Fish Producers – BG Fish, which works closely with NAFA and the Bulgarian government.

In coming years, it is expected that the sector will show modest growth due to increased demand for fish products and new possibilities for investments.

The fishery sector incorporates several activities - fishing, processing, marketing, servicing and trade that are carried out by a large number of enterprises in the coastal area with significant potential for future development. The investment opportunities are related to using the European Fisheries Fund to develop artisanal, traditional and small-scale fishing, switch to environmentally sustainable fisheries (discard ban

<sup>7</sup> Quarterly report on European Gas Markets, Market Observatory for Energy, DG Energy, vol.6, issue 1, First quarter 2013

<sup>8</sup> [http://stecf.jrc.ec.europa.eu/documents/43805/366433/2012-08\\_STECF+12-10+-+AER+EU+Fleet+2012\\_JRC73332.pdf](http://stecf.jrc.ec.europa.eu/documents/43805/366433/2012-08_STECF+12-10+-+AER+EU+Fleet+2012_JRC73332.pdf)

implementation), stimulate the development of innovative products by the processing sector, improve marketing strategies, and provide innovative business advisory services. Fish quality and inspection is another area that presents potential for development as the national food (fish) quality system needs improvement. The important drivers for future development lay in the long-term traditions in fish catching and fish processing industry and the opportunities to recruit well trained staff.

The application of an ecosystem-based approach (EBA) and maritime spatial planning can strongly contribute to promoting the sustainable growth of the sector and the sustainable use of marine resources. Implementation of MSP and establishment of Marine Protected Areas, as an important tool of MSP, can assure adequate replenishment of marine resources.

### **Short-sea shipping (incl. Ro-Ro)**

Different actors are involved in this activity (as well as in Inland waterway transport):

**Ministry of Transport, Information Technology and Communications (MTITC)** – the main developer of national transport policy and priorities.

**Basin Directorate (Danube and Black Sea Regions)** – government authority within the Ministry of Environment and Water; the main functions of the Basin Directorates are the planning, controlling, informing and managing of state water sources.

**Bulgarian Ports Infrastructure Company** – a state company within MTITC. It manages the infrastructure of the public transport ports of national importance. Among the basic activities of the company are port construction, rehabilitation and reconstruction.

**Executive Agency Maritime Administration** – a legal entity drawing budgetary support from the MTITC; the Agency performs regulatory and control functions in the field of ports, and supervises shipping along inland waterways.

Important sector players include Bulgarian Association of Ship Agents (BAKBA), Association of Bulgarian Ship Suppliers (ABKS), Marine Cluster Bulgaria, Marine Alliance, etc. The main ports related to short-sea shipping belong to the state (for example, the port of Varna or port of Bourgas, which is operated on concession), while vessels are private property though 2-3 large ships are state-owned.

Future development of the transport sector is expected to be synchronous with the general economic trends in the country. The increase in cargo can be the result of increased exports, or enhanced internal consumption which leads to growing import. The net export and internal consumption are both components of the gross domestic product, thus the future prognosis for this growth indicator includes the possible development scenario for this activity. The expectations for the economic growth, up to 2016, are implemented into the actualised 3-years framework that is adopted by the government in 04/2013 (Ministry of Finance, 2013). The prognosis of the Ministry of Finance for 2013 is for 1% growth and 1,8% in 2014. Some studies forecast economic growth of 5-6% per year during 2017-2020, as was observed during the period of economic expansion from 2004 to 2008. With such a rate of increase, GDP in 2020 will be 34-39% higher than in 2011. If the alternative scenario (adverse development and slow recovery) of the Ministry of Finance is realised GDP will be 25% higher in 2020 (as compared with 2011).

Similar tendencies are expected for the future development of this MEA. For the last 5 years, short-sea shipping has been decreasing slowly due to the aging fleet and insufficient growth in GDP.

Main cornerstones of the future short-sea shipping development should include support of:

- Prosperous MEA (e.g. promoting industry innovation)
- Accessible and attractive MEA (e.g. better transport links)
- Safe and secure MEA (e.g. improving maritime safety and accident response),
- Environmentally sustainable MEA (e.g. reducing pollution in the sea).

The future development of Short Sea Shipping (SSS) relates to the objectives of the Transport White Paper, and the focus on providing more administrative simplification via the **Blue Belt initiative** of the EC. The Blue

Belt concept put forward in 2010 and endorsed through the Council Conclusions on the "Full integration of waterborne transport into the EU transport and logistics chains", is proposing the use of maritime transport monitoring capabilities to simplify the administrative procedures applicable to intra-EU maritime trade, thus promoting growth of Short Sea Shipping sector.

Application of Maritime Spatial Planning and Integrated Coastal Management will result in better coordination of maritime and coastal activities, which can provide economic benefits by increasing stability for investors and by lowering coordination and transaction costs (EU Directive 2013/0074).

### **Inland waterway transport**

The inland waterways are seen as underdeveloped and their unexploited potential as a means of transporting goods is believed to be huge. Optimisation of navigation conditions will transfer a big part of the freight traffic to waterways, which is in compliance with the established transport policy of the EU (the transport White Paper adopted by the European Commission on 12 September 2001).

Three reasons are thought key to the development of this maritime activity in Bulgaria. First is the absence of alternatives, in the short run, to transportation on overcrowded roads, except for railways and waterways. Second is that the inland waterways are the most environmental-friendly of all possible means of transport and must be exploited to reduce pollution and emissions. Third is the alleged safety, punctuality and capacity of river transportation (Pecob-Business report, 2010).

In general, the rate of increase of this activity is presumed to be similar to the expected growth of GDP (as explained above in the short-sea shipping sector), but the good prognosis for economic development in Germany and Austria – two major Bulgarian export destinations that use the Danube river as a transport corridor – will impact the future progress of inland waterway transport in the country.

During the last years, the possibility for construction of hydro-energy complexes in the common Bulgaria-Romania section of the Danube was discussed several times. If the projects are implemented, it will definitely affect the approach when planning water maintenance activities and measures for improvement of navigation. Construction works should be coordinated and should not have a negative impact on fluvial navigation.

Another challenge is that the Danube River is one of Europe's greatest landscapes, containing wetland areas and floodplain forests. Navigation projects might pose a potential threat to the river's ecosystem as a whole. To address the conflicts between inland navigation and environmental protection on the Danube, three international organisations operate in the Danube basin: the **International Commission for the Protection of the Danube river (ICPDR)**, which works on environmental protection and prepared the overall Danube RBMP; the **Danube Commission (DC)** is responsible for navigation on the river; and the **DABLAS Task Force** aim to provide a platform for cooperation for the protection of water and water-related resources in the Danube and Black Sea.

At national level, the Ministry of Transport, Information Technology and Communication regulates the activity.

The support of inland waterways will contribute strongly to diversification of the transport sector in Bulgaria. The implementation of intermodal transport conception is among the important goals related to inland water transport development. One of the main prerequisites to achieve this goal is the availability of special technical facilities and depots, in which easy and quick change of the transport mode for containerised cargoes is possible.

The coherent application of Maritime Spatial Plans and Integrated Coastal Management Strategies can improve the land-sea interface planning and management (EU Directive 2013/0074). As the geographical scope of this MEA includes marine and inland waters, the tools of Maritime Spatial Planning and Integrated Coastal Management allow focus on mapping existing and potential human activities for the purpose of identification of measures for joint management of the human activities in the both areas of the coastal regions (EU Directive 2013/0074). The MSP tools can stimulate the cross-border cooperation between the



EU countries on shipping lanes and will foster environmental protection - through early identification of impact and opportunities for multiple use of space.

### Water projects

Water projects are highly likely to increase due to the fact that the transport sector is given high priority in the “**Strategy for development of transportation system of the Republic of Bulgaria till year 2020**”.

The main stakeholders for water projects are the **Bulgarian Ports Infrastructure Company**, the **Executive Agency for Exploration and Maintenance of the River Danube** and the **Executive Agency Maritime Administration**, all within the **Ministry of Transport, Information Technology and Communications (MTITC)**.

**The Bulgarian Ports Infrastructure Company** manages the infrastructure of the public transport ports of national importance. Among the basic activities of the company are ports construction, rehabilitation and reconstruction; maintenance of existing and building of new access channels, port water areas, sea and river depots for dumping of dredging mass, piers, protective installations; organization of the ports’ activity and management of their property; securing access to the ports; realization of ships’ navigation. **The Executive Agency for Exploration and Maintenance of the Danube River (EAEMDR)** is the responsible organisation for the maintenance of the fluvial waterway infrastructure and for ensuring safe navigational conditions.

The management of ports’ infrastructure assists in the implementation of the objectives of the water transport sectors (presented by both transport maritime activities, that are most relevant and promising: short-sea shipping and inland waterway transport), thus representing an essential element of the development of the water transport sector. Innovations and competitiveness in the area of water projects is expected to increase in order to support more sustainable alternatives to conventional land transportation. Action-oriented research and activities related to port infrastructure construction and maintenance are closely connected to the need for transport sector diversification.

Significant areas of future development in port Varna include construction, reconstruction and modernization of a deepwater container terminal and a Ro-Ro terminal. In 2007, new plans were disclosed to relocate the existing container terminal from Varna East to a new larger basin on the north-eastern shore of Lake Varna and to redevelop the old port Varna East, located in the city centre, into a large marine zone with a new cruise terminal, yacht marina and tourist facilities. Further development of the Ferryboat complex Varna is planned, serving to the line Varna-Ilichevsk-Poti/Batumi as a part of the European road-network E70 - La Coruna (Spain) - Poti (Georgia). In 2008, plans were disclosed for deepwater container terminal on the south side of the island, under the Asparuhov Bridge (Varna), for vessels carrying over 2.500 twenty-foot equivalent units (TEU). Other activities that are described in the National Program for the Development of public transport ports 2006 – 2015 include: building of passenger terminal with a business centre in port terminal Varna-East; building of passenger terminal with a business centre in port terminal Burgas-East; expansion of container terminal in Varna-West; Building of terminals for handling of grain on the area of ports Varna and Ruse. For the River Danube, improved navigation at all 38 critical sectors is expected to strengthen and support inland water way transport.

For this MEA the benefits of Maritime Spatial Planning include opportunities to encourage investment and provide tools for increasing coordination between administrations structures, through the use of a single instrument to balance the development of a range of maritime activities.

## 4.4 Regulatory environment of the maritime economic activity

### Coastal tourism

*Tourism Act:* This Act regulates the social relations associated with the implementation of governance and control in tourism, the interaction of the state and municipalities in the implementation of activities related

to tourism, as well as the participation of not-for-profit legal entities. The act has been issued by the Ministry of Economy, Energy and Tourism to which belongs the Tourism Agency:

<http://www.mi.government.bg/en/themes-c240.html>.

Document web address: <http://www.mi.government.bg/en/library/zakon-za-turizma-254-c25-m258-2.html>

*Environmental Protection Act*: Environmental Protection Act, published September 25<sup>th</sup> 2002, and last amended June 3<sup>rd</sup> 2011. The law is focused on control of pollution, including those from urban/non-industrial sources, biodiversity preservation, and collection of relevant information. The act has been issued by the Ministry of Environment and Water:

<http://www.moew.government.bg/?&lang=en.ù>

Document web address:

[http://www3.moew.government.bg/files/file/PNOOP/Acts\\_in\\_English/Environmental\\_Protection\\_Act.pdf](http://www3.moew.government.bg/files/file/PNOOP/Acts_in_English/Environmental_Protection_Act.pdf)

### **Offshore oil and gas**

*Law of Sea territories, internal sea roads and harbours*: The law published February 11<sup>th</sup> 2000 and last amended March 19<sup>th</sup> 2013. The Law encompasses ownership and management of sea territories, internal sea roads and harbours. The act has been issued by the Ministry of Transport, Information Technologies and Communications:

<http://www.mtitc.government.bg/index.php>.

Document web address: <http://www.mtitc.government.bg/page.php?category=94>

*Law on Underground Resources (LUR)*: The competent authorities for the implementation of LUR are the Council of Ministers, the Minister of Environment and Water, the Minister of Economy and Energy, the Minister of Regional Development and Public Works. Mineral resources are divided into 7 groups. The Council of Ministers grants mining rights – concessions. The terms of the concessions are set out by the Ministry of Economy, if the object of the extraction is in the field of metal, non-metal, oil and gas or solid fuel and by the Ministry of Regional Development and Public Works if the object of the extraction is in the field of construction and rock-lining materials. The act has been issued by the Ministry of Economy, Energy and Tourism:

<http://www.mi.government.bg/en>.

Document web address: <http://www.mi.government.bg/en/library/zakon-za-podzemnite-bogatstva-321-c25-m258-2.html>

### **Fishing for human consumption**

*Act for Fisheries and Aquaculture*: According to the Bulgarian legislation, fish resources are the property of Bulgaria (Art. 2), foreign nationals are allowed to sport fish in fish husbandry waters after obtaining a permit issued by Authorities of the Ministry of Forest and Forest Industry; the fishing regime for the Black Sea determines a list of prohibited species, gear and seasons. (Sect. I, Arts. 1-7), and commercial fishing in the Black Sea, must be carried out by people holding a permit allowing them such activity, within the limits established by the Minister of Agriculture and Food Industry. The act is issued by the Minister of Agriculture and Food:

<http://www.mzh.government.bg/mzh/Home.aspx>

Document web site: [http://iara.government.bg/?page\\_id=119](http://iara.government.bg/?page_id=119).

### **Short-sea shipping (incl. Ro-Ro)**

*Merchant Shipping Code*: It regulates merchant shipping and the control thereof, the requirements for Bulgarian ownership in ships, the requirements for the ship's and carriage documents, the rights and duties of the masters and the crews, the contracts for carriage of cargoes, passengers and baggage, the real rights in the ships, the contracts for rental of ships, the contracts for insurance of ships and loads, the average of ships, the salvage on sea and rivers, and other relations connected to the shipping and its safety. The Code has been issued by the Ministry Transport, Information Technologies and Communications

<http://www.mtitc.government.bg/index.php>.

Document web address: <http://www.mtitc.government.bg/page.php?category=213&id=523>.



*Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP- SAP):* The Convention on the Protection of the Black Sea Against Pollution, signed April 1992; Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea, adopted April 17<sup>th</sup> 2009 in Sofia, Bulgaria.

The plan is dedicated to maintain the Black Sea ecosystem in good ecological state and its landscapes in favorable conditions; to protect, preserve and sustainably manage the biological and landscape diversity of the Black Sea in order to enrich the biological resource, the aim of the BLCP-SAP is to develop, harmonise, enforce and implement the necessary environmental policies, strategies and measures to preserve, protect and sustainably manage natural, historical, cultural and aesthetic resources and heritage of the Black Sea states for present and future generations.

Document web address: <http://www.blacksea-commission.org/od-draft-biodiversity-strategy.asp>.

### **Inland water transport**

*Law of Sea territories, internal sea roads and harbours: The Law* published February 11<sup>th</sup> 2000, and last amended March 19<sup>th</sup> 2013. The law encompasses ownership and management of sea territories, internal sea roads and harbours. It has been issued by the Ministry of Transport, Information Technologies and Communications <http://www.mtitc.government.bg/index.php>.

Document web address: <http://www.mtitc.government.bg/page.php?category=94>.

### **Water projects**

No laws/regulations identified

## 5. Growth drivers and barriers to growth for the 6 most promising marine and maritime activities

The tables below provide an overview of growth drivers and barriers to growth, summarising the benchmark and the SWOT analysis reported in detail in the Country fiche Annex.

Table 10 - Growth drivers and barriers to growth for Coastal tourism

COASTAL TOURISM	Growth drivers	Barriers to growth
<b>Maritime research</b>	The sector is very important for the maritime area and has been subject to research and analysis for many years, providing long-term trends and observations.	<ul style="list-style-type: none"> <li>- Not enough national and private funding for maritime research in the sector.</li> <li>- Funding for R&amp;D below the EU average.</li> </ul>
<b>Development and innovation</b>	<ul style="list-style-type: none"> <li>- The dominance of private property in the sector gives opportunities for incentives, development and innovation.</li> <li>- D&amp;I is close to appropriate sector standards.</li> </ul>	<ul style="list-style-type: none"> <li>- The quantity and quality of services are not evenly distributed in the maritime area.</li> <li>- Product diversification is low and alternative tourism forms need development.</li> <li>- Product uniformity and territorial concentration of services.</li> </ul>
<b>Access to finance</b>	<ul style="list-style-type: none"> <li>- Funding by banks and Operational programme "Regional development".</li> <li>- Average debt of the sector is low.</li> </ul>	<ul style="list-style-type: none"> <li>- The Operational Programme "Regional development" is a national programme and no special funding for the coastal regions is envisaged.</li> <li>- Interest rates of loans higher than the EU average.</li> </ul>
<b>Smart infrastructure</b>	<ul style="list-style-type: none"> <li>- Becoming more common.</li> <li>- Close to the sector standards.</li> </ul>	Not enough quality and not evenly distribution of smart infrastructure in the sector.
<b>Maritime clusters</b>	Tourism Cluster Varna exists.	Most companies are too competitive to form sustainable clusters.
<b>Education, training and skills</b>	<ul style="list-style-type: none"> <li>- General work force has good education.</li> <li>- Education and training are of good quality and close to the standards of the sector.</li> </ul>	Qualified work force not evenly distributed.
<b>Integrated local development</b>	<ul style="list-style-type: none"> <li>- The sector largely contributes to employment in maritime area.</li> <li>- Long traditions, high level of employment in maritime area related to coastal tourism.</li> </ul>	<ul style="list-style-type: none"> <li>- Most of the hotel infrastructure is private but fall into "grey" economy sector.</li> <li>- Conflicting interests with environmentalists.</li> </ul>
<b>Public engagement</b>	<ul style="list-style-type: none"> <li>- The "National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013" ensures high level of public engagement.</li> <li>- The sector is mostly private.</li> </ul>	<ul style="list-style-type: none"> <li>- Impact on the environment can be significant.</li> <li>- Political influence is possible (hotel buildings in protected areas, etc).</li> </ul>

Table 11- Growth drivers and barriers to growth for Offshore oil and gas

OFFSHORE OIL AND GAS	Growth drivers	Barriers to growth
<b>Maritime research</b>	University of Mining and Geology St.Ivan Rilski, Sofia, has a tradition of maritime research.	Funding for maritime research is below the EU average.
<b>Development and innovation</b>	<ul style="list-style-type: none"> <li>- Presence across the entire oil and gas value chain (exploration, development and production) provides a good basis for innovations.</li> <li>- The start of the project "South Stream" contributes additionally to D&amp;I.</li> <li>- Mature technology exploited.</li> </ul>	<ul style="list-style-type: none"> <li>- Rising energy prices.</li> <li>- Economic slowdown in Bulgaria and the EU.</li> <li>- Competition with renewable energy projects.</li> <li>- Limited natural resources.</li> </ul>
<b>Access to finance</b>	<ul style="list-style-type: none"> <li>- The private companies operating in the sector are multinational and international and have access to funding.</li> <li>- The debt of the sector is lower than average.</li> </ul>	<ul style="list-style-type: none"> <li>- Crisis in bank sector (mainly at the EU level).</li> <li>- Interest rates of loans higher than average due to higher risks.</li> </ul>
<b>Smart infrastructure</b>	The strategic geographical position of Bulgaria provides many benefits for development of infrastructure.	Limited natural resources.
<b>Education, training and skills</b>	University of Mining and Geology St. Ivan Rilski, Sofia, provides good level of education and training.	<ul style="list-style-type: none"> <li>- Aging staff at educational centers.</li> <li>- Low salaries in the sphere of education.</li> </ul>
<b>Integrated local development</b>	<ul style="list-style-type: none"> <li>- The sector is of strategic importance in Bulgaria.</li> <li>- Contribute to higher living standard in the maritime area.</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental impact can be significant.</li> <li>- Environmental regulations need better implementation.</li> </ul>
<b>Public engagement</b>	<ul style="list-style-type: none"> <li>- The "Energy Strategy of the Republic of Bulgaria 2020" ensures good level of public engagement.</li> <li>- Good level of public engagement related to the sector in the coastal area.</li> </ul>	Administrative barriers and political influence for concessions are possible.

Table 12 - Growth drivers and barriers to growth for Fishing for human consumption

FISHING FOR HUMAN CONSUMPTION	Growth drivers	Barriers to growth
<b>Maritime research</b>	<ul style="list-style-type: none"> <li>- Three main scientific institutions (Institute of Fish Resources, Varna, Institute of Oceanology, Varna, Institute of Biodiversity and Ecosystem Research, Sofia, and many universities ensure good level of marine research .</li> <li>- Standards of research equal the EU average.</li> </ul>	<ul style="list-style-type: none"> <li>- Not enough national and private funding for marine research.</li> <li>- Funding lower than average in the EU.</li> <li>- Aging staff working on marine research.</li> </ul>
<b>Development and innovation</b>	<ul style="list-style-type: none"> <li>- The fish industry sector is modernised.</li> <li>- Standards of innovation in the fish industry close to the EU average.</li> </ul>	<ul style="list-style-type: none"> <li>- Aging fleet, not enough innovation in the fishing sector.</li> <li>- Lower than average rate of penetration of D&amp;I in the fishing sector.</li> </ul>
<b>Access to finance</b>	The EFF is the main source for funding through the Operational Programme "Fisheries".	<ul style="list-style-type: none"> <li>- Low number of projects under the Operational Programme "Fisheries".</li> <li>- Administrative difficulties through the entire process – from evaluation to funding.</li> </ul>
<b>Smart infrastructure</b>	The fishing fleet information system below the appropriate sector standards.	<ul style="list-style-type: none"> <li>- Not enough investments in infrastructure.</li> <li>- Level of implementation of smart infrastructure below the EU average.</li> </ul>
<b>Education, training and skills</b>	<ul style="list-style-type: none"> <li>- Several universities and training centers exist in the country, providing good education for high and middle level staff.</li> <li>- Well educated high and middle level of the work force.</li> <li>- The increasing demand and market stimulate the development of the education system.</li> </ul>	<ul style="list-style-type: none"> <li>- The sector employs work force with low education level.</li> <li>- Low salaries in the sphere of education.</li> <li>- Not enough new investments for education.</li> </ul>
<b>Maritime spatial planning</b>	6 marine protected areas (extended to 50 m) and 9 marine NATURA 2000 sites (extended to 20 m depth) help to protect fish stocks.	The marine spatial planning is in its initial phase in Bulgaria and needs further investments and administrative capacity.
<b>Integrated local development</b>	<ul style="list-style-type: none"> <li>- The sector provides livelihoods for many people in the coastal regions.</li> <li>- Demands and markets for fish products and fish are increasing at national and regional levels.</li> </ul>	<ul style="list-style-type: none"> <li>- The GVA generated by the sector is low.</li> <li>- The salaries in the sector and GVA are lower than average in the EU.</li> </ul>
<b>Public engagement</b>	<ul style="list-style-type: none"> <li>- The Operational Programme "Fisheries" assure good level of engagement of interested stakeholders.</li> <li>- The increased interest in marine environment and in the status of fish resources in the EU.</li> </ul>	<ul style="list-style-type: none"> <li>- The sector is private, but not very active in public engagements.</li> <li>- Stakeholders not very active.</li> </ul>

Table 13 - Growth drivers and barriers to growth for Short-sea shipping (incl. Ro-Ro)

SHORT-SEA SHIPPING (incl. Ro-Ro)	Growth drivers	Barriers to growth
Maritime research	Four Technical Universities provide good level of maritime research in the sector.	<ul style="list-style-type: none"> <li>- Not enough national and private funding for maritime research.</li> <li>- Funding below the EU standards.</li> <li>- Aging of scientific staff.</li> </ul>
Development and innovation	<ul style="list-style-type: none"> <li>- Need for short-sea friendly ports that offer quicker turnaround times and procedures and increases in hinterland connections.</li> <li>- Innovation projects of ports are in the process of implementation.</li> </ul>	<ul style="list-style-type: none"> <li>- The shipping industry is known as conservative industry.</li> <li>- Insufficient investments for maintenance and development of the ports infrastructure.</li> </ul>
Access to finance	<ul style="list-style-type: none"> <li>- The sector is partly funded by the Operational programme "Transport", the other source of funding are banks.</li> <li>- Sector profit is good; private sector relies mostly on bank funding; national funding is available for state-owned ports.</li> </ul>	<ul style="list-style-type: none"> <li>- Aging fleet and need for ports modernisation.</li> <li>- The funding priorities for the period 2014-2020 are not clear.</li> </ul>
Smart infrastructure	Increases the employment level in the maritime area.	No barriers identified
Education, training and skills	<ul style="list-style-type: none"> <li>- Work force well trained.</li> <li>- Education close to EU standards.</li> </ul>	<ul style="list-style-type: none"> <li>- Aging staff of main educational and training organisations.</li> <li>- Low salaries in the sphere of education.</li> <li>- Not enough public and private funding for education.</li> </ul>
Integrated local development	<ul style="list-style-type: none"> <li>- The ports have good connections with railway and road network and provide large impact over local development.</li> <li>- Short-sea shipping contributes to the environment, the economy and to society.</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental regulations for the shipping sector which would increase costs and make the sector less competitive.</li> <li>- Economic fluctuations in the country and in EU have impact on the short-sea shipping development.</li> </ul>
Public engagement	"Strategy for development of transportation system of the Republic of Bulgaria 2020" ensures good level of public engagement.	<ul style="list-style-type: none"> <li>- The activity under the Operational programme "Transport" is not widely discussed.</li> <li>- The stakeholders' communication needs improvement.</li> </ul>

Table 14 -- Growth drivers and barriers to growth for Inland water transport

INLAND WATERWAY TRANSPORT	Growth drivers	Barriers to growth
Maritime research	Four technical universities and 5 training centers provide good level of maritime research.	Lack of interest of the ship owners to invest in maritime research.
Development and innovation	<ul style="list-style-type: none"> <li>- Optimization of navigation conditions and more intensive use of the Danube River provide basis for development and innovations.</li> <li>- Development of multimodal terminals.</li> </ul>	<ul style="list-style-type: none"> <li>- The vessels owners are private companies that do not invest in development and innovation, aiming at fast profit (aged fleet).</li> <li>- Outdated fundamental and transshipment mechanical facilities.</li> </ul>
Access to finance	The funding is possible through banks and by the Operational Programme "Transport".	<ul style="list-style-type: none"> <li>- Aging fleet and need of ports modernisation.</li> <li>- Interest rates on loans, higher than average in the EU.</li> </ul>
Smart infrastructure	<ul style="list-style-type: none"> <li>- Favorable position of the country (on the crossway between Europe and Asia) enables application of smart infrastructures.</li> <li>- Close to appropriate sector standards.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of enough resources for implementation of smart infrastructure.</li> <li>- Infrastructure is of not enough quality.</li> </ul>
Education, training and skills	<ul style="list-style-type: none"> <li>- Work force well trained.</li> <li>- Quality of education is close to EU standards.</li> </ul>	<ul style="list-style-type: none"> <li>- There is no long-term strategy for education and qualification in the sector which satisfies the requirements of the businesses.</li> <li>- Low salary for ordinary staff.</li> </ul>
Integrated local development	<ul style="list-style-type: none"> <li>- The public ports have good connections with the national road and railway infrastructure.</li> <li>- Links with European channel river shipping system by the Danube River.</li> <li>- Development of intermodal transport integration with inland waterway transport.</li> </ul>	<ul style="list-style-type: none"> <li>- Outlining the trend for reducing the ship's crews.</li> <li>- Possible construction of hydro-energy complexes might threaten the navigation corridors.</li> </ul>
Public engagement	<ul style="list-style-type: none"> <li>- The national strategy "Strategy for development of transportation system of the Republic of Bulgaria 2020" takes into account development of inland waterway transport.</li> <li>- Connections with Pan-European Transport Corridors VII.</li> </ul>	<ul style="list-style-type: none"> <li>- Not enough level of informativeness of general public about the opportunities and problems related to inland waterway transport.</li> <li>- The navigation on the inland waterways is weakly spread in the public.</li> <li>- Fluvial navigation might pose a threat for Danube river ecosystems.</li> </ul>

Table 15 - Growth drivers and barriers to growth for Water projects

WATER PROJECTS	Growth drivers	Barriers to growth
Maritime research	Four technical universities and 5 training centers provide good level of maritime research.	Funding of the maritime research is below the EU average level.
Development and innovation	Many new ports infrastructures are already developed in Varna and Bourgas, some of the critical navigational sectors in the Bulgarian part of the River Danube are improved.	Delays in implementation of water projects in relation to economic crisis effects. Low penetration of innovations in small cities.
Access to finance	The Cohesion Fund provides many opportunities for funding of water projects for ports maintenance and attending activities.	The number of projects implemented in the maritime area through the Cohesion Fund is not high.
Smart infrastructure	Offers new jobs in the coastal regions. Smart infrastructure implementation is increasing.	Infrastructure is not evenly distributed and the quality is not high enough. Quantity and quality below the EU level.
Education, training and skills	Several universities in Sofia, Varna and Russe provide good opportunities for training and high education. Quality of education is good related to the EU standards.	Aging staff in the education and training organizations. Low salaries in the sphere of education.
Integrated local development	Increased income and GVA in coastal area through implementation of water projects. Support and assistance for water transport sectors is assured.	Lack of marine spatial planning and well developed Integrated coastal zone management in Bulgaria .Water projects are concentrated in main cities.
Public engagement	----	The level of public engagement related to environmental issues and water projects is not high.



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

The evaluation of policy is carried out at the national level (NUTS 0 and Yugoiztochen NUTS 2 region) and the results are presented in:

1. List of relevant policy documents reported in the Annex. The analysis of the strategies is carried out by making use of the Logical Diagram which graphically shows links (or possible gaps) between:
  - a. national/regional policies;
  - b. most promising MEAs identified for Bulgaria;
  - c. Blue Growth focus areas.

The two tables below show logical links of the policies/interventions towards maritime economic activities and the Blue Growth objectives:

➤ **“National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013”**, adopted 2009, functional to 2013 (to be modified, with encompassing period up to year 2020), is naturally connected with Coastal tourism, which corresponds directly to Maritime, coastal and cruise tourism of Blue Growth focus areas.

➤ **“Energy Strategy of the Republic of Bulgaria till year 2020”**, adopted 2011, affects Offshore oil and gas MEA and to some extent the transport sector. It provides a vision for an adequate and realistic development of the national energy system in the long term. Consequently it is connected with Marine and mineral resources, Blue technology and Blue energy functions of the Blue Growth focus areas.

➤ **“National strategic plan for Fisheries and Aquacultures 2007-2013”**, adopted 2006, functional till end 2013, is subject to modification - to encompass the period up to 2020. It deals with the Fishing for human consumption and provides approach to sustainable sector development. Consequently it has links with Aquaculture, Maritime, coastal and cruise tourism of the Blue Growth focus areas.

➤ **“Strategy for development of transportation system of the Republic of Bulgaria till year 2020”** is presumably connected with the Inland water transport and Short sea shipping (incl. Ro-Ro), and is focused on the creation of a reliable and efficient transport system synchronised with EU transportation corridors. It is naturally connected also with Marine and mineral resources, Maritime, coastal and cruise tourism, Blue technology and Blue energy of the Blue Growth focus areas.

➤ **“Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP)”** is connected directly with Coastal tourism, Offshore oil and gas, Water projects and Fishing for human consumption, therefore Coastal and cruise tourism, Blue technology and Blue Energy, and Aquaculture of the Blue Growth focus areas are closely connected.

Table 16 - Policies/interventions towards most promising marine and maritime activities and the Blue Growth objectives

Level	Strategies	Objectives	Most relevant and promising maritime activities	Links to BG Objectives	
National	National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013	Diversification of the national tourism product, promotion of tourism-related service quality and to secure consumers protection. Implementation of energy efficiency measures and standards in the tourism industry. Strengthening of the role of tourism as a key factor for improving the professional skills and development of the labour market in the field of tourism. Conserving and giving value to natural and cultural heritage.	Coastal tourism	Increase the attractiveness of coastal areas. Diversification of coastal communities' activities. Increase the growth potential of activities. Healthy environment.	Maritime, coastal and cruise tourism
National	Energy Strategy of the Republic of Bulgaria till year 2020	Energy security for the Bulgarian industry and population. Reduction of greenhouse gas emissions and enhancement of energy efficiency. Increase of the share of renewable energy sources in the total final energy demand.. Building of a competitive energy market as a way to achievement of high priority objectives - competitiveness, energy security & sustainable development. Better utilization of the indigenous energy resources. Alternatives to the supply of natural gas.	Offshore oil and gas Short-sea shipping (incl. Ro-Ro) Inland waterway transport	Enhance the efficiency of harvesting the European energy resources. Minimise land-use requirements of the power sector. Reduce the European greenhouse emissions. Security of supply. Advance in technology.	Blue energy Marine and mineral resources,
National	National strategic plan for Fisheries and Aquaculture 2007-2013	Adaptation of the Bulgarian fishing fleet. Development of aquaculture, processing and marketing. Promotion of actions of common interest. Sustainable development of fisheries areas.	Fishing for human consumption	Contribution to an overall improvement in human diet and more quality merchandise. Preservation of fish stock-sustainable aquaculture. Diversification of coastal communities' activities. Healthy environment. Increase the growth potential of activities. Increase the attractiveness of coastal areas.	Aquaculture Maritime, coastal and cruise tourism
National	Strategy for development of transportation system of the Republic of Bulgaria till year 2020	Achieving economic efficiency. Development of sustainable transport sector. Regional and social cohesion improvement.	Short-sea shipping (incl. Ro-Ro) Inland waterway transport Water projects	Advances in technology. Security of supply. Reduce the European greenhouse emissions. Healthy environment. Increase the growth potential of activities. Healthy environment. Increase the growth potential of activities. Advances in technology.	Marine and mineral resources Blue energy Maritime, coastal and cruise tourism Maritime, coastal and cruise tourism
Cross-national	Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP)	Halt losses of currently known threatened species and destruction of their habitats. Increase protected areas and improve conservation of species, ecosystems and habitats. Introduce sustainable practices and eliminate harmful practices promoting ecosystem approach to all human activities. Restore and rehabilitate damaged areas of previously high biodiversity value. Preserve restore and maintain in good quality condition the landscapes of high nature, historical, cultural and aesthetic value. Harmonize the relationship between landscape features and socio-economic development. Develop and introduce comprehensive system for assessment of impact of human activities and rehabilitation measures on the Black Sea ecosystem.	Fishing for human consumption Coastal tourism Offshore oil and gas Water projects	Healthy environment. Preservation of fish stock-sustainable aquaculture. Provide of mass-market products. Healthy environment. Increase the attractiveness of coastal areas. Healthy environment. Increase the attractiveness of coastal areas. Healthy environment. Increase the attractiveness of coastal areas.	Aquaculture Coastal and cruise tourism Blue energy Coastal and cruise tourism

The results from the table below show that:

➤ **“National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013”** is presumably connected with “Internationalisation” and “Cultural and creative industries” of the Smart Specialisation Strategies, as coastal tourism in Bulgaria aims at giving value to natural and cultural heritage. It could also fall into the category “Creative industry” and “Innovation friendly business environments for SMEs” due to the objective to diversify the forms of tourist attractions and to stimulate sector innovativeness. The category “Clusters”, providing opportunities for cooperation between competing companies, ensures links with national objective to improve standards and products quality and to secure consumers protection. The link with “Green growth” of Smart Specialisation Strategies reveals the need to assure energy efficient measures in the tourism industry.

➤ **“Energy Strategy of the Republic of Bulgaria till year 2020”** is close to “Green growth”, “Key enabling technologies”, “Clusters”, “Research Infrastructure, Centers of competence” and “Universities – enterprises cooperation” of the Smart Specialisation Strategies as implementation of green technologies in conjunction with innovation development is envisaged. The energy sector is strongly interconnected with the development of maritime transport, because the latter emerges among the major fuel consumers, thus the presented links to Smart Specialisation Strategies impact both activities.

➤ **“National strategic plan for Fisheries and Aquacultures 2007-2013”** presumably stays close to “Innovation friendly business environments for SMEs” of the Smart Specialisation Strategies, as the SMEs are viewed as a factor in the development of fisheries and aquaculture sectors. It also has links to “Creative industries”, “Universities – enterprises cooperation”, “Research Infrastructure, Centers of competence” and “Green growth” that increase the sustainability of the sector. Better marketing strategy objective is closely connected with “Internationalisation” of Smart Specialisation Strategies.

➤ **“Strategy for development of transportation system of the Republic of Bulgaria till year 2020”** has clear link with “Internationalisation” Smart Specialisation Strategies, due to the fact that the national transportation system has to be synchronized with EU transportation corridors. The links to “Green growth”, “Key enabling technologies”, “University-enterprise cooperation”, “Clusters” and “Research infrastructures” are based on the need to ensure sustainability of the sector development.

➤ **Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP)** is a cross-national programme connected with “Internationalisation”, “Research Infrastructure, “Centers of competence”, “Universities-enterprise cooperation”, “Key enabling technologies”, “Green growth”, “Cultural and creative industries” and “Social innovation” of Smart Specialisation Strategies that affect environmental/socio-economic research, policy development and decision making and raise of public awareness for taking remediation action to protect, rehabilitate and sustainably develop the Black Sea ecosystem.

The table below shows details of the interconnections with Smart Specialisation strategies, encompassing all 12 strategies’ horizontal directions.

Table 17 - Policies/interventions towards most promising marine and maritime activities and the Smart Specialisation Strategies<sup>9</sup>

Level	Strategies	Objectives	Most relevant and promising marine and maritime activities	Links to Smart Specialisation Strategies
National	National Strategy for Sustainable development of Tourism in the Republic of Bulgaria 2009 – 2013	Diversification of the national tourism product, promotion of tourism-related service quality and to secure consumers protection. Implementation of energy efficiency measures and standards in the tourism industry. Strengthening of the role of tourism as a key factor for improving the professional skills and development of the labour market in the field of tourism. Conserving and giving value to natural and cultural heritage.	Coastal tourism	Internationalisation; Green growth; Cultural and creative industries; Innovation friendly business environments for SMEs; Clusters.
National	Energy Strategy of the Republic of Bulgaria till year 2020	Energy security for the Bulgarian industry and population. Reduction of greenhouse gas emissions. Increase of the share of renewable energy sources in the total final energy demand.	Offshore oil and gas	Green growth; Key enabling technologies; Research Infrastructure, Centers of competence; Universities – enterprises cooperation; Clusters.
			Short-sea shipping (incl. Ro-Ro)	
National	National strategic plan for Fisheries and Aquaculture 2007-2013	Adaptation of the Bulgarian fishing fleet. Development of aquaculture, processing and marketing. Promotion of actions of common interest. Sustainable development of fisheries areas.	Inland waterway transport	Innovation friendly business environment for SMEs; Creative industries; Internationalisation; Green growth; Universities – enterprises cooperation; Research Infrastructure, Centers of competence.
			Fish for human consumption	
National	Strategy for development of transportation system of the Republic of Bulgaria till year 2020	Achieving economic efficiency. Development of sustainable transport sector. Regional and social cohesion improvement.	Short-sea shipping (incl. Ro-Ro)	Internationalisation; Green growth; Clusters; Key enabling technologies; University enterprise cooperation; Research Infrastructure.
			Inland waterway transport	
			Water projects	
Cross-national	Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol (BSBLCP-SAP)	Halt losses of currently known threatened species and destruction of their habitats. Increase protected areas and improve conservation of species, ecosystems and habitats. Introduce sustainable practices and eliminate harmful practices promoting ecosystem approach to all human activities. Restore and rehabilitate damaged areas of previously high biodiversity value. Preserve restore and maintain in good quality condition the landscapes of high nature, historical, cultural and aesthetic value. Harmonize the relationship between landscape features and socio-economic development. Develop and introduce comprehensive system for assessment of impact of human activities and rehabilitation measures.	Fish for human consumption	Research Infrastructure, Centers of competence, Science parks; Universities-enterprise cooperation; Key enabling technologies; Social innovation; Internationalisation; Cultural and creative industries.
			Coastal tourism	
			Offshore oil and gas	
			Short-sea shipping (incl. Ro-Ro)	
			Water projects	

<sup>9</sup> Smart Specialisation Strategies (S3) used for this logical analysis have been defined on the basis of the S3 horizontal approaches (or RIS horizontal priorities), as defined in the Guide to Research and Innovation Strategies for Smart Specialisation, available at [http://s3platform.jrc.ec.europa.eu/en/c/document\\_library/get\\_file?uuid=e50397e3-f2b1-4086-8608-7b86e69e8553](http://s3platform.jrc.ec.europa.eu/en/c/document_library/get_file?uuid=e50397e3-f2b1-4086-8608-7b86e69e8553). See the Country fiche guide for more details at <http://www.cogeaspa.it/blue-growth-study/country-fiches/?lang=en>.

## Sources and references

This Country fiche has been compiled according to a common methodology adopted in the framework of this Study and more specifically in Task 2.

A “Country fiche Guide” and a detailed methodology (“*Methodology for identifying and estimating Maritime Economic Activities using NACE and other data*”) are available at <http://www.cogeaspa.it/blue-growth-study/country-fiches/?lang=en>

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