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Blue NET

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D2.2 State of the Art (template)

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SUMMARY

ITALY

1 INTRODUCTION

Italy is a country with a long tradition in maritime sector, during decades specific competences and knowledges has been developed in sectors like shipping, shipbuilding and boatbuilding, those helped national maritime acquiescence to grow and create a strengthened structure supporting the national economy. Nowadays maritime sector is facing constant changes with direct consequences even on national assets, redefining them and generating new growing maritime fields and are rising in the current scenario.

Actually, the country has 15 maritime regions and 10 included in the Adriatic – Ionian Region. In 2015, the Blue Economy was including 185.000 enterprises representing the 3% of the overall amount on national level[1]. In relation to this sector, two big categories could be underlined: a first one directly connected to tourism and second one closer to shipbuilding and research and innovation. The latter is a direct consequence of Italian shipyards, world leaders in the high technology sectors like cruising, passenger ships and superyachts while the nautical sector is playing a primary role in the construction and design of motor yachts. The ports are relevant at national and international level with a well-established structure supporting both cargo and passengers sectors. At the same time, touristic ports and marinas are distributed over the Italian coastline supporting leisure and touristic related activities. Fisheries, another traditional sector, is changing to deal with international competition, new regulation and new technologies. On the other side, emerging sectors like bio-technologies, aquaculture, renewable energy and offshore are growing and are achieving a strategic position in the maritime sector.

Another important issue is represented by the differences we can recognize on the national level: Italy is surrounded by seas and we could easily diversify between the Adriatic-Ionian and the Tyrrhenian side. In our project perspective and due to geographical focus of Blue NET, we have decided to concentrate our efforts on the Adriatic Ionian side, a wide area with many regions involved with specific characteristics and specific maritime sectors developed. In this way, the main aim is to give an answer for the sea basins identified in the project reference area in order to keep information and data achieved as close as possible to the other territories involved.

With reference to the regions involved and their characteristics and peculiarities, the Adriatic – Ionian side involves the following: Friuli Venezia Giulia, Veneto, Trentino Alto Adige, Lombardy, Emilia Romagna, Marche, Umbria, Abruzzo, Molise, Apulia, Basilicata, Calabria and Sicily. Each region has its own competences and characteristics that are reflecting specific RDI structure and specific production chains.

[1] Unioncamere (2016) – *V Rapporto sull'Economia del Mare*

2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Shipbuilding and boatbuilding

Design and construction of ships and boats are sectors that with a long tradition in the Italian Adriatic Ionian area with shipyards playing an important role for the interested territories. The main activities carried out are design, construction, maintenance and repair (fittings, plants and equipment. In relation to shipbuilding and ship repairing, the primary subsectors are the cruising and passenger ships, which have as reference areas the Regions Friuli Venezia Giulia (Monfalcone and Trieste shipyards), Veneto (Marghera and Adria shipyard), Marche (Ancona shipyard) and Sicily (Palermo and Trapani shipyards).

The boatbuilding sector, relies on decades of experience on the field, many small and medium shipyards and producers grew in the last decades of the past century and adapted themselves to a national production that focused on motor yachts even if sailing and workboat niches are still present in some of the interested regions. The main reference territories for this maritime sector are Friuli Venezia Giulia, Emilia Romagna, and Marche.

When comparing shipbuilding and boatbuilding becomes important to point out their importance on the respective territories generating connections with local producers about materials, plants, engines, ICT and equipment. These connections are stronger for large vessels, while on boats and yachts the producers are characterized by a higher rate of in-house production. Shipbuilding and boatbuilding sector realized 6.6 €M of value added and approximately 129.000 employed persons, both figures recognized a slight decrease in the period 2011-2015[2]. When considering the Adriatic Ionian basin, the main provinces are Gorizia, Trieste, Rimini and Forlì-Cesena in terms of value of export. These sectors are supported by tailored competences resulting from a strong network of actors supporting through RDI and technical competences providing fertile ground for collaborations among complementary sectors.

Maritime transport

Waterborne transport in Italy is a primary asset for the country in relation to transport of goods and passengers. Due to geographical position, the country is well supported by a wide network of sea ports that could be classified in relation to dimensions of the harbors and commercial purpose.

When considering the Adriatic Ionian the primary reference ports for the mentioned subsectors are the following: liquid bulk (Trieste, Augusta and Messina), solid bulk (Ravenna, Venice and Brindisi), containers (Gioia Tauro, Venice and Trieste), ro-ro (Trieste, Messina, Catania and Palermo), general cargo (Ravenna, Taranto and Venice) and passengers (Venice, Messina and Palermo)[3]. Other small port structures are present on the coast side and are supporting the transport in terms of deep-sea shipping and on short-sea shipping in relation to dimension of vessels. The port of Gioia Tauro, mentioned before, is a hub for transshipment.

Cargo routes are serving trade with other continents and other sea European sea basing, in terms of short sea shipping there are constant commercial relations with Eastern Mediterranean, Black Sea and within the Adriatic Sea. Passenger ferry services are supporting internal connections among main Italian ports and islands and there are links with Slovenia, Croatia, Montenegro, Albania and Greece.

Port structures and infrastructures are connected to other intermodal links (road, rail, sea) through specific logistic centres. The distribution of the latter on the territory, role and connections with other transport

[2] Unioncamere (2016)

[3] Source: Assoporti – National Port Association - http://www.assoporti.it/statistiche/annuali

means are relying on infrastructure net, production chains and hinterlands, crucial factors for the development. The reference logistic centres are the following: Friuli Venezia Giulia (Cervignano), Veneto (Portogruaro, Padova, Rovigo, Venezia, Verona), Trentino Alto Adige (Trento), Lombardy (Mortara), Emilia Romagna (Parma, Bologna), Marche (Jesi), Abruzzo (Pescara), Apulia (Bari), Sicily (Catania)[4].
A wide range of national and foreign businesses and enterprises are operating in shipping, port activities and transport and logistics. In 2016, in a ranking of controlled fleets of major shipping nations, Italy is ranked at the 10th place with 46 million of dwt distributed[5], even if the share in terms of ships under the Italian flag is lower.

Leisure, working and living
In this section, the activities interested are strictly connected to tourism, a primary activity for Italy with different supporting structures and related production chains. In the European Union, Italian country is at first place for number or bed-places in coastal areas with 2.729.028 units in 2014 and approximately 200.000 nights spent at touristic accommodation establishment in coastal areas in 2013[6].
The touristic ports are widespread all along the coast side and can be easily grouped in touristic ports, multipurpose ports and berthing structures. Some of them are offering marina services together with reparation, maintenance and leisure services. In particular, in the Adriatic Ionian regions there are 416 ports providing 74.410 berthing places[7]. Tailored associations are grouping the actors for supporting the sector and channelling needs and interests towards other stakeholder's categories.
The cruise tourism depends on several ports that can be classified in relation to purpose (cruise tourism and ferry services) and areas covered (internal connections and international routes). In the reference areas the most important ports for overall passengers are the following: Messina-Milazzo, Palermo, Venice, Bari and Ancona. When focusing on the cruise sector, in 2015 Veneto, driven by Venice, is the third Italian Region for cruise passengers. Other important locations are Palermo, Bari and Messina while in relation to emerging ports, Trieste has been interested by an important increase in the passenger flow in the last couple of years[8].

Energy and raw materials
This maritime sector is almost represented by offshore oil and gas, actually in the reference area there are 135 installations that can be categorized as follows: 119 exploitation plants (79 of which with producing), 8 plants supporting production (compression or connection) and 8 non-operating structures (pending the issuance of exploitation license). 122 structures are for gas exploitation while 13 for oil, during 2015 were realized 2 new platforms[9].
In relation to geographical location, the main reference area is the Adriatic Sea with 118 installations while the others are located in the Ionian and the Mediterranean bordering Sicily[10]. Emilia Romagna together with Marche Region are the most competent and experienced in offshore oil and gas, with tailored enterprises, production chains and research actors specialized in this field.

[4] Source: Unione Interporti Riuniti - http://www.unioneinterportiriuniti.org/
[5] ISL (2016), *Shipping statistics and market review 2016 – Analytical Focus*, Volume 60 – No. 11, Institute of Shipping Economics and Logistics, Bremen, Germany, p.5.
[6] Source: Eurostat
[7] UCINA – Fondazione Edison (2016), *La Nautica in Cifre – Analisi del mercato per l'anno 2015*, Edizione n. 37, Genoa – Milan, Italy, 16th September 2016.
[8] Risposte Turismo (2016), *Speciale Crociere 2016 – Il traffico crocieristico in Italia nel 2015 e le previsioni per il 2016*, Venice, 2016
[9] Ministry of Economic Development (2016), *Annual Report 2016 – Activity 2015*, Directorate General for Safety of Mining and Energy Activities – National Mining Office for Hydrocarbons and Georesources, Rome
[10] Ministry of Economic Development (2016), *Elenco delle piattaforme marine e strutture assimilabili*, Data at 31st December 2016 – Update at 12th July 2016

Research centres and universities are developing studies to evaluate feasibility of mining of marine materials but, until now, there are no enterprises or businesses established in this sector.

2.1.2 Identification of stakeholders

Provide the list of maritime stakeholders classified in the categories listed in the chapter 2.1 of the guidelines and link each of them to its main maritime sector among those selected at point 1 (at least 2 actors).

Name	***Reference maritime sector***	***Category***	***Brief description (subsectors)***	***City***
Access World	*Maritime transport*	*Private enterprise*	*Logistics linked to waterborne transport*	*Trieste*
ALOT	*Maritime transport*	*Private enterprise*	*Inland waterway transport*	*Mantova, Cremona*
Amoretti Armatori Group	*Maritime transport*	*Private enterprise*	*Shipping*	*Parma*
AM Yacht Design	*Boatbuilding*	*Private enterprise (small)*	*Design*	*Trieste*
ARZANA' NAVI	*Boatbuilding*	*Private enterprise*	*Design, Construction*	*Marghera (VE)*
Assomarinas	*Leisure, working and living*	*Marina association*	*Yachting and marina services*	*Cavallino Treporti (VE)*
Azimut - Benetti	*Shipbuilding and boatbuilding*	*Private enterprise (big)*	*Boat design and construction*	*Fano (PU)*
Cantiere Navale Pasquini Vincenzo	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Boat and Ship construction and reparation*	*Ortona (CH)*
Cantiere Navale Vittoria	*Shipbuilding*	*Private enterprise*	*Construction*	*Adria (RO)*
Cantiere Dal Pardo	*Boatbuilding*	*Private enterprise*	*Design and construction*	*Forlì (FC)*
Cantiere Noè	*Shipbuilding and boatbuilding*	*Private enterprise*	*Construction, maintenance and reparation*	*Augusta (SR)*
Cantieri Navali Vizianello	*Shipbuilding and boatbuilding*	*Private enterprise*	*Boatbuiliding – reparation and maintenance, equipment*	*Venice*
Caronte & Tourist	*Maritime transport*	*Private enterprise*	*Passenger ferry services*	*Messina*
Catania Cruise Terminal	*Leisure, working and living*	*Private enterprise*	*Cruise tourism*	*Catania*
CATAS	*Shipbuilding and boatbuilding*	*Research actor*	*Equipment*	*San Giovanni al Natisone (UD)*
Centro Formazione Offshore	*Energy and raw materials*	*Training center – Private enterprise*	*Offshore oil and gas*	*Mezzano (RV)*
Cergol Engineering	*Shipbuilding and boatbuilding –*	*Private enterprise*	*Design, equipment – Offshore oil and*	*Trieste*

Consultancy	*Energy and raw material*		*gas*	
Cergol Research Innovation Organisation	*Shipbuilding and boatbuilding*	*Research actor / Private enterprise*	*Design, construction, equipment*	*Trieste (TS)*
CETENA	*Shipbuilding and boatbuilding*	*Research actor*	*Ship design and construction*	*Trieste, Ancona, Palermo*
CETMA	*Shipbuilding and boatbuilding*	*Research actor*	*Design and construction*	*Brindisi*
CNR ISSIA	*Shipbuilding and boatbuilding – Energy and raw materials*	*Research actor – public*	*Equipment, Plants – Marine minerals mining*	*Bari*
CNR ITAE	*Shipbuilding and boatbuilding – Energy and raw materials*	*Research actor - public*	*Plants – Offshore wind, Ocean renewable energy*	*Messina*
CorseT & Co	*Boatbuilding*	*Private enterprise*	*Equipment (boatbuilding)*	*Forlì - Cesena*
CPI – ENG	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Design, plants*	*Trieste*
CRN	*Boatbuilding*	*Private enterprise*	*Boatbuilder*	*Ancona*
C.T.M. Costruzioni e Tecnologie Milan	*Shipbuilding*	*Private enterprise*	*Plants, Equipment*	*Porto Viro (RO)*
Dorica Port Services	*Maritime transport*	*Private enterprise*	*Passenger ferry services, port activity*	*Ancona*
ENEA Centro Ricerche Brindisi	*Shipbuilding and boatbuilding*	*Research Center – public*	*Construction, Equipment*	*Brindisi*
Engys	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Equipment*	*Trieste*
Ferretti	*Boatbuilding*	*Private enterprise (big)*	*Boatbuilder*	*Forlì (FC)*
Fincantieri	*Shipbuilding and boatbuilding; Energy and raw materials*	*Private enterprise (big)*	*Shipbuilder; Offshore oil and gas*	*Trieste, Monfalcone (GO), Ancona, Palermo, Marghera (VE)*
Fratelli Budai	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Fittings*	*Villa Vicentina (UD)*
Fratelli Righini	*Energy and raw materials*	*Private enterprise*	*Offshore oil and gas*	*Ravenna*
Intermarine	*Shipbuilding*	*Private enterprise*	*Shipbuilder, construction, equipment*	*Messina*
Italdraghe	*Boatbuilding*	*Private enterprise*	*Boabuilder, equipment*	*San Giovanni in Marignano (RN)*
Italia Yachts	*Boatbuilding*	*Private enterprise (medium)*	*Design, construction*	*Chioggia (VE)*
Isotta Fraschini	*Shipbuilding and boatbuilding*	*Private enterprise*	*Plants, Equipment*	*Bari*

LAMA FVG	*Shipbuilding and boatbuilding*	*Research laboratory – public*	*Design, construction, equipment, plants*	*Udine*
Lady Hawke Catamarans	*Boatbuilding*	*Private enterprise*	*Boatbuilder*	*Lecce*
Liberty Lines	*Maritime transport*	*Private enterprise*	*Passenger ferry services*	*Trapani*
Linset & Co	*Boatbuilding*	*Research actor*	*Equipment*	*Fano (PU)*
Lloyds Register EMEA	*Shipbuilding and boatbuilding – Energy and raw materials*	*Classification society*	*Design, construction, equipment – Offshore oil and gas*	*Trieste*
MBM	*Shipbuilding and boatbuilding*	*Private enterprise*	*Design, construction, equipment*	*Nervesa della Battaglia (TV)*
Meccano Engineering	*Shipbuilding and boat building – Energy and raw materials*	*Private enterprise*	*Design, construction and equipment – Offshore oil and gas*	*Trieste*
Micad	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Boat design*	*Trieste, Lecce*
Micoperi	*Energy and raw materials*	*Private enterprise*	*Offshore oil and gas*	*Ravenna, Ortona (CH)*
Minoan Agencies	*Maritime transport*	*Private enterprise*	*Passenger ferry services*	*Ancona*
MMGI Shipyard	*Boatbuilding*	*Private enterprise*	*Construction*	*Monfalcone (GO)*
Monte Carlo Yachts	*Shipbuilding and boatbuilding*	*Private enterprise (big)*	*Boatbuilder and design*	*Monfalcone (GO)*
Motonavi Andes Negrini	*Leisure, working and living*	*Private enterprise*	*Coastal – river tourism*	*Mantova*
Nanto Protective Coating	*Shipbuilding and boatbuilding*	*Research lab – Private enterprise*	*Equipment*	*Trieste*
Navalprogetti	*Shipbuilding and boatbuilding – Energy and raw materials*	*Private enterprise (small)*	*Design – Offshore oil and gas*	*Trieste*
Nidec	*Shipbuilding and boatbuilding – Energy and raw materials*	*Private enterprise (big)*	*Plants and equipment – Offshore oil and gas*	*Monfalcone (GO)*
Nuvolari Lenard	*Boatbuilding*	*Private enterprise (small)*	*Design*	*Scorzè (VE)*
Ocean Team	*Shipbuilding and boatbuilding – Maritime Transport – Energy and raw materials*	*Private enterprise*	*Maintenance an reparation – Shipping and port activities – Offshore oil and gas*	*Trieste*
Officina Navale	*Shipbuilding and*	*Private enterprise*	*Construction,*	*Trieste*

Quaiat	*boatbuilding*		*maintenance and reparation*	
OGS National Institute of Oceanography and Experimental Geophysics	*Shipbuilding and boatbuilding – Energy and raw materials*	*Research actor*	*Design – Ocean renewable energy*	*Trieste*
OPTEL High Tech Microelectronics Solutions	*Shipbuilding and boatbuilding*	*Private enterprise*	*Equipment*	*Brindisi*
Orion Valves	*Shipbuilding*	*Private enterprise*	*Equipment*	*Trieste*
Rana Diving	*Energy and raw materials*	*Private enterprise*	*Offshore oil and gas*	*Ravenna*
Ravenna cargo and shps assistance organization	*Maritime transport*	*Private enterprise*	*Shipping, port activity*	*Ravenna*
Redaelli	*Energy and raw materials*	*Private enterprise*	*Offshore oil and gas*	*Ravenna, Trieste*
RINA Services	*Shipbuilding and boatbuilding – Energy and raw materials*	*Classification society*	*Design, construction, equipment – Offshore oil and gas*	*Ancona, Bari, Messina, Ravenna, Trieste, Venice*
ROCA – Ravenna offshore contractors association	*Energy and raw materials*	*Association*	*Offshore oil and gas*	*Ravenna*
Rossetti Marino	*Energy and raw materials – Shipbuilding*	*Private enterprise*	*Offshore oil and gas - Construction*	*Ravenna*
Samer & Co. Shipping	*Maritime transport*	*Private enterprise (medium?)*	*Deep sea shipping, port activity*	*Trieste, Monfalcone, Ravenna*
SE.R.NAVI	*Shipbuilding*	*Private enterprise*	*Maintenance and reparation*	*Marghera (VE)*
SICOM TEST	*Shipbuilding and boatbuilding*	*Laboratory – Private enterprise*	*Design, construction, equipment*	*Trieste*
Sultan	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Fittings*	*Romans d'Isonzo (GO)*
Tecnopolo della Nautica	*Boatbuilding*	*Research actor*	*Design, equipment, construction*	*Ravenna*
Thetis	*Shipbuilding and boatbuilding – Maritime transport*	*Private enterprise*	*Equipment – Logistics linked to maritime transport, Port activity*	*Venice*
Trieste Terminal Passeggeri	*Leisure, working and living*	*Private enterprise*	*Yachting and marina services – Cruise turism*	*Trieste*

Trieste Yachts Berths	*Leisure, working and living*	*Network of enterprises*	*Yachting and marina services*	*Trieste*
Tripmare	*Maritime transport*	*Private enterprise*	*Port activity*	*Trieste*
TRS Trieste Refitting System	*Shipbuilding and boatbuilding*	*Business network*	*Maintenance, reparation, fittings and equipment*	*Trieste*
University of Bologna – Chemical and process engineering	*Energy and raw materials*	*Research actor – University*	*Offshore oil and gas*	*Ravenna*
University of Trieste – Faculty of Naval architecture and ship engineering	*Shipbuilding and boatbuilding – Energy and raw materials*	*Research actor – University*	*Design, construction, equipment, plants – Offshore oil and gas, Ocean renewable energy*	*Trieste*
Vecon	*Maritime Transport*	*Private enterprise*	*Port activity*	*Marghera (VE)*
Venezia Terminal Passeggeri	*Leisure working and living*	*Private enterprise*	*Cruise tourism*	*Venice*
Venice Yacht Pier	*Leisure, working and living*	*Private enterprises*	*Yachting and marina services*	*Venice*
Wärtsilä	*Shipbuilding and boatbuilding*	*Private enterprise (big)*	*Plants*	*Trieste*

Provide a brief description of the most interesting stakeholders (at least 20 actors and 5 rows per each of them). Motivate the choice of the selection and describe their characteristics.

ASSOMARINAS
The Italian Association of Touristic Ports is active since 1972 as networking actor for nautical structures on the national coastline. The Association enhances the information and services exchange among touristic port's operators supporting the associates in their main activities. It represents a reference point for the stakeholders in terms of representation at institutional levels and plays a primary role for promotion at national and international level.

Cantiere Dal Pardo
Since 1973, when it was founded, Cantiere del Pardo has produced more than 3.900 boats. It occupies a covered 40.000 square meter surface and is split into three macro-departments: millwork, using cutting-edge technology and processes; carpentry, based on tradition and the manual skills of its work force; and assembly, where everything is put together carefully up to final testing in the large test tank.

Cantiere Noè
Repairers since 1890, Noè shipyard in Augusta is specialized in sector of routine and special maintenance as one of the chief operators in the Mediterranean area. Providing a wide range of global services, flexible for carrying out all kinds of repairs and dry docking for ships with a displacement of 8,500 tons, as well as floating dock repairs of ships of any weight, even at sea, tailored according to the needs of customers, respecting the highest standards of quality, safety and environmental friendliness.

Caronte and Tourist

The company is taking care about private ferry services in the strait of Messina for the last 40 years. They are a primary player for ferry connections with other transport means and, in the last years, developed links with other ports in Sicily.

CETENA
Member company of the FINCANTIERI group, works on basic research, industrial research and development in the sector of nautical construction and propulsion and consultancy in the nautical sector. CETENA's activities are divided into three main areas: technical support and consultancy services for shipbuilders, maritime operators, suppliers in the shipbuilding sector, and technological transfer.

CNR – ISSIA
An institute of the National Council or the Research (CNR), is based in Bari and revisits the traditional background in image and signal processing, marine-maritime technology, and power electrical systems in a multi- and inter-disciplinary approach to the development of physical and software intelligent systems for monitoring of understanding and interacting with complex and uncertain environments.

Fincantieri
One of the largest shipbuilders in the world, is active in the design and construction of highly complex vessels with high added value, merchant and naval ships, and from offshore to mega-yachts. It operates in Monfalcone and Marghera shipyards for construction of high class cruise ships. In Ancona shipyard is active for reparation and maintenance of passenger vessels, while in Palermo is focused on military vessels. The company is strongly involved in collaboration with RDI clusters and aggregation players.

Lady Hawke Catamarans
Boatbuilder based in Apulia specialized in construction of catamarans. The company was founded in 1998 and in the years has become more structured with new partners, professional and highly specialized workers. The catamarans produced are recognized for high standards in terms of technology used during the construction, reason that brought the company to be a leader on the Italian market of production of cruising catamarans. The company is also active in research and innovation projects.

Linset and Co
An advanced composite material technology center in Fano performs engineering and testing activities for the optimization and materials and processes development for several industrial production chains. The center operates in particular for nautical sector, and in particular for composites and end products like sealant, coats, floors and waterproofing.

Micad
MICAD is a Design House active in all sea related industries based in Lecce and in Trieste with the R&D office born to expand international cooperation in high growth areas of the marine industry. The company is specialized in Naval Architecture, Structural Engineering and Marine Design, and provide complete Naval Architecture services from conception (GA, hull & scantling design – FEM-CFD), through building support (weight monitoring, process flow study) to running sea trials (inclining experiments, performances and vibration).

Monte Carlo Yachts

Monte Carlo Yachts is a pioneering project in the yachting world, genuinely Italian in its management, designers and artisanal skills, supported by the industrial strengths of French group Beneteau - the global leader in the production of sailboats, 2nd world boat manufacturer and among the 5 world power top players - Monte Carlo Yachts is dedicated to crafting luxury yachts. At the same time the company is keen in relation to implementation of up-to-date research and innovation solutions.

Navalprogetti
Ship Design Company of Naval Architects, Marine and Industrial Engineers and Ship Surveyors operating since 1975. Specialized in consulting, design and engineering: from small concept developments to complete engineering packages in the marine and offshore sectors. They offer services to the Marine and Offshore industries worldwide.

Nuvolari Lenard
One of the most active yacht design firm in Italy and among the largest in the world. Nuvolari Lenard is well known for its Italian Style and has opened a design center located in the surrounding of Venice, where many designers work at several tasks. Performs concept design, naval architecture, exterior styling, architecture and takes care of the yacht since the beginning of the project until the delivery. They are focused on large yachts design, serial production yachts and interior design.

ROCA – Ravenna Offshore Contractors Association
ROCA was founded in 19992 as the body in charge of coordinating the exhibition Offshore Mediterranean Conference (OMC). In the following years the association continued its activity and today works to promote and support its member companies, organizing conferences and participating in foreign exhibitions and missions in its efforts to encourage the growth of its members and secure their success in the oil and gas sector – and the energy sector in general.

Rosetti Marino
Leading international E.P.C. Contractor serving the Oil & Gas industry worldwide, providing engineering, procurement and construction of offshore platforms and topsides. Besides Offshore, its core business, Rosetti Marino provides customers with engineering, by means of its subsidiaries Basis Engineering and Fores Engineering, and project management expertise in the fields of onshore plants and shipbuilding.

Sultan
Founded in 2003 in Romans d'Isonzo (Gorizia), Sultan is now a renowned company in the international field of naval fittings. The company designs, manufactures, and provides assistance to the shipbuilding sector (plant and equipment). It has carried out projects on the most prestigious cruise ships and mega yachts, therefore qualifying as an undisputed partner for quality, technological research and innovation.

Thetis
Thetis began his activity 25 years ago which scope was to realize an excellence hub for Sea technologies inside the Arsenale of Venice, where he still has its headquarter. Converted into limited company since 1996, Thetis has developed specific expertise in sustainable development and in environmental engineering and offers, to a broad range of national and international clients, multidisciplinary engineering services such as Consulting, Design, Project Management & Control, Environmental Studies and Mobility management.

TRS Trieste Refitting System
Business network operating in Trieste grouping four companies able to provide the following services: engineering and consulting in ship design and shipbuilding, facilities for dry docking and maintenance, construction and reparation, furniture and interiors. These companies started working together providing complete refitting services to luxury yacht and mega yachts.

University of Trieste
Founded in 1924, the University of Trieste is a medium-sized university with a student population of approximately 20,000. It offers a wide range of degree programmes at bachelor, master and doctoral level as well as short vocational masters, advanced masters and specialisation programmes. One of the three national universities focused on Naval Architecture Engineering, is developing specific academic and research activities in this field.

Venice Terminal Passeggeri
Founded in 1997 by the Venice Port Authority, is responsible to manage the cruise services in the Venetian port. It manages 10 multifunctional terminals, 1 provisions storehouse, 6 parking lots and 7 quays across the areas of Marittima, St. Basilio and Riva dei Sette Martiri, providing high quality services to any ships (cruise, hydrofoils, catamarans) calling at the Port of Venice.

2.1.3 Research projects and activities to support R&I

In Italy research policy is mainly driven by the Ministry of Education, University and Research (MIUR) responsible for planning research and education, for defining programmes and instruments and to provide details on technology and innovation trajectories. The Ministry is working in accordance to national smart specialization strategies through the involvement of national technology clusters, helping to define innovation trends and to bring the contribution of stakeholders and regional aggregations and players.
Cooperative research is strongly encouraged at national and regional level and is supported through tailored programmes and tools. The latter could be focused on specific topics/sectors but could be more generally structured in a cross cutting ratio. These actions strengthen the collaboration among different stakeholders categories in order to encourage them to work together. The main actors involved in this process are: big enterprises, SMEs, aggregations, research and academic players, government bodies. Each program or tool could foresee the participation of a different group of the abovementioned actors and is generally organized on specific measures in accordance to national or regional programming strategies.
At national level the primary document is the National Research Programme, reference document for the Regions to draft Regional Operational Plans (POR), both of them are relying on smart specialization strategies defining the key areas at different territorial levels.

Another important body is the Ministry of Infrastructures and Transport (MIT) responsible to plan, finance, realize and manage infrastructures on national basis, develops activities related to transport including navigation, maritime and inland waters transport and security. The Ministry incentives innovation projects in shipbuilding, shipping operations, port and logistic infrastructures, it is active in the EU TEN-T networks and projects and represents the State at IMO - International Maritime Organisation.
Ministry of Economic Development (MISE) deals with policy related to economic development and cohesion, energy and mineral resources, telecommunications, internationalisation and business incentives. It supports the before mentioned areas through tailored national programs supporting research and development projects, both with ERDF and national funds.

List research projects and activities

Title	Project coordinator or activity responsible entity	Year	Sector and subsector
ACTIVE	Navalprogetti	2017	Shipbuilding and boatbuilding - Design
ADB multiplatform	Autonomous Region of Friuli Venezia Giulia	2012	Maritime transport – Logistics linked to waterborne transport
Adriatic Sea Forum	Risposte Turismo	From 2013 (every) 2 years	Leisure, working and living
ADRISTARTER	Abruzzo Region	2016	Maritime transport
BALMAS	Institute for Water of the Republic of Slovenia	2011	Maritime transport – Port activity
Barcamper	dPixel	2016	All sectors
BESST	Fincantieri	2010	Shipbuilding and boatbuilding
Blue TECH	UnionCamere del Veneto	2016	Shipbuilding and boatbuilding
BVX_2	Tergeste Power and Propulsion	2014	Shipbuilding and boatbuilding - Equipment
Call for ideas	mareTC FVG	2015	Shipbuilding and boatbuilding
CART	Posidonia S.r.l.	2011	Shipbuilding and boatbuilding – Equipment ; Maritime transport – port activities
Clus3	Informest	2013	All maritime sectors
Cluster Club	Association of Chambers of Commerce of Veneto Region	2011	Shipbuilding and boatbuilding – Leisure, working and living
COSMO	Iefluids S.r.l.	2014	Shipbuilding and boatbuilding - Design
CruiseCon.net	SIPRO	2014	Shipbuilding and boatbuilding – Construction and equipment
Easea-way	Autonomous Region Friuli Venezia Giulia	2013	Maritime transport
ECAB	Astra Yachts	2014	Shipbuilding and boatbuilding - Equipment
EDSS	Marine Lab	2017	Shipbuilding and boatbuilding
EMCY	Sting	2014	Shipbuilding and boatbuilding - Design
GAINN4CORE		2015	Maritime Transport – Port activity
GAINN4MOS	Port of Valencia	2015	Maritime Transport – Port activity
HFO2	Sicilia Navtec	2012	Shipbuilding and boatbuilding – Design and construction ; Maritime transport – Passenger ferry services
HYDRA	Sicilia Navtec	2012	Shipbuilding and boatbuilding - Design
Idrovia Ferrarese	Province of Ferrara	2012	Maritime transport – Inland waterway transport
Innovation Challenge	Fincantieri	2015	Shipbuilding and boatbuilding
Innovation Challenge Italy – Croatia	mareTC FVG	2016	Shipbuilding and boatbuilding
INTERMODADRIA	Marche Region	2012	Maritime transport
ISOLCOL	CSNI	2017	Shipbuilding and boatbuilding
ISWEC	Politechnic of Turin	2007	Energy and raw materials – Ocean renewable energy
ITS Intelligent Transportation System	Polytechnic of Milan	2014	Maritime transport

LESS	Tempestive	2017	Shipbuilding and boatbuilding - Equipment
MAC	CETMA	2007	Shipbuilding and boatbuilding - Design
MaCCIM	mareTC FVG	2016	Shipbuilding and boatbuilding ; Leisure, working and living
MADCROW	Trasnpobank	2017	Shipbuilding and boatbuilding
MAESTRALE	University of Siena	2016	Energy and raw materials
MAESTRI	Marinoni	2017	Shipbuilding and boatbuilding
NAV	ATENA	Every 2 years	Shipbuilding and boatbuilding ; Energy and raw materials
Navred@cruise	Marinoni S.p.a.	2014	Shipbuilding and boatbuilding - Design
Offshore Mediterranean Conference & Exhibition	OMC	From 1993 every 2 years	Energy and raw materials
OpenviewSHIP	eXact Lab	2014	Shipbuilding and boatbuilding - Design
PAN	CSNI	2017	Shipbuilding and boatbuilding
PlastiCO	Nanto Coating	2017	Shipbuilding and boatbuilding
PRELICA	Iefluids	2017	Shipbuilding and boatbuilding
Progetto Mare Friuli Venezia Giulia	ENAIP Friuli Venezia Giulia	2010	Shipbuilding and boatbuilding – Leisure, working and living – Maritime transport
Sea Flower	Fincantieri		Energy and raw materials – Offshore wind
SEAPORT	Sicilia Navtec	2012	Maritime transport
SIDRAN	Arsenal	2017	Shipbuilding and boatbuilding
SIPAN	Marinoni	2017	Shipbuilding and boatbuilding
SMART INNO	Province of Rimini	2013	Clusters – All sectors
SOPHIA	Micad	2017	Shipbuilding and boatbuilding
SSOD2	Eidon Kaires	2014	Shipbuilding and boatbuilding - Equipment
Start Cup FVG	Several actors from FVG region	2016	All sectors
TEN ECOPORT	Polythecnic Univesity of Bari	2012	Maritime transport
TESEO	Sicilia Navtec	2012	Shipbuilding and boatbuilding - Equipment
UBE	Monte Carlo Yachts	2014	Shipbuilding and boatbuilding - Design
WAITC	mareTC FVG	2014	Shipbuilding and boatbuilding
ZELAG	Alto Adriatico Custom	2017	Shipbuilding and boatbuilding

Projects

Project Title	*BLUE TECH Adrion Cluster*
Abstract	*The BLUE TECH Adrion Cluster project aims to share knowledge, good practices and relational networks to verify the feasibility of a macro-regional Cluster on green shipbuilding technologies. The project aims to strengthening the economy and social bodies in the Adriatic area, through innovation and increasing of competitiveness of the productive system, in fact, aims to improve the innovation's possibility of territorial and productive system, through cooperation opportunities and market research. The partnership intends to support the development of the green shipbuilding technologies in the sector of the Blue Growth through the promotion of clustering policies in this specific sector as a worldwide competitive advantage for the Adriatic and Ionian enterprises, fostering*

	innovative technology solutions and incentivising networking activities for the development of common strategies and projects.
Project partners	*Unioncamere Veneto (Italy), ConCentro (Italy), Provincia di Pesaro e Urbino (Italy), Friuli Innovazione Scarl (Italy), Regional Ekonomska Zajednica-REZ d.o.o. di Zenica (Bosnia-Herzegovina), Istarska Razvojna Agencija di Pola (Croatia)*
Year	*2016*
Sector	*Shipbuilding and boatbuilding*

Project Title	*BVX_2*
Abstract	*Create an innovative propulsion system, optimised for use in offshore platforms governed by DPS (Dynamic Positioning Systems), enabling a reduction in the time of use and manoeuvre, resulting in increased operational efficiency, safety and fuel economy. The basic concept of the propulsion system is the development of a turbine with low rpm and vertical propeller shaft, composed of two counter-rotating crowns on which are grafted a variable number of blades.*
Project partners	*AREA Science Park, mareTC FVG, SISSA, Tergeste Power and Propulsion S.r.l.,* *Università degli Studi di Trieste*
Year	*2015 - 2016*
Sector	*Shipbuilding and boatbuilding - Equipment*

Project Title	*CLUS3*
Abstract	*The project aims to develop project partners' capacities in managing cluster programs in line with methodologies and principles outlined within the European Cluster Excellence Initiative, the management capacities of participating clusters', to support cluster organizations in the process of acquiring the gold label of excellence, to grant sustainability to the "towards cluster excellence process" by becoming one of the crucial tools supporting the Smart Specialization Strategies of the involved territories.*
Project partners	*Informest Italia – Coordinator (Italy), INFO Murcia (Spain), Czechinvest (Czech Republic), ADR SV Oltenia (Romania)*
Year	*2013 - 2015*
Sector	*All sectors*

Project Title	*Idrovia Ferrarese*
Abstract	*The waterway of Ferrara aims to upgrade waterways for navigation by European class VA vessels between Pontelagoscuro and Porto Garibaldi. The following developments are planned for the entire waterway: embankment, support and reinforcement operations, cycling lanes and walking paths, moorings, new bridges, new docks, docking and launching facilities and green areas*
Project partners	*Province of Ferrara, Emilia Romagna Region*
Year	*2012 - ongoing*
Sector	*Maritime Transport – Inland waterway transport*

Project Title	*INTERMODADRIA*

Abstract	*The project objective is the improvement of the integration of the short sea shipping transport in the logistics chains crossing the Adriatic sea, and more specifically the provision of the best environment for the activation on intermodal railsea transport services between the ports and their own hinterlands.*
Project partners	*Marche Region (IT), Ancona Port Authority (IT), Marche Freight Village (IT), Levante Port Authority (IT), CFLI (IT), Port of Igoumenitsa (GR), National Technical University of Athens (GR), Albania Institute of Transport (AL), Luka Bar (MNE), Intermodal Transport Cluster (HR), Port of Ploce Authority (HR)*
Year	*2012 - 2015*
Sector	*Maritime Transport*

Project Title	*ISWEC*
Abstract	*The project aimed to design and build a device for exploiting wave energy. ISWEC device is designed as a sealed hull that uses a gyroscopic system to exploit wave's slopes to produce energy. The system works when the hull oscillations caused by the movement of waves induce the rotation of the gyroscope platform. The rotation is then converted to electricity by the power generator. The device is tested in the area of Pantelleria in the Siciliy Channel.*
Project partners	*Polythecnic of Turin (IT), Wave for energy (IT)*
Year	*2007 - 2014*
Sector	*Energy and raw materials – Ocean renewable energy*

Project Title	*MAC*
Abstract	*Development of new technologies and new materials facilitating introduction of facilities and components realized with materials and innovative processes with reference to functional, economic and environmental aspects, but considering also careful and reliable design methodologies for the reverse engineering of the components.*
Project partners	*CETMA, Consorzio CALEF, CETENA Spa, RINA Services S.p.A., INTERMARINE S.p.A.*
Year	*2007 - 2016*
Sector	*Shipbuilding and boatbuilding*

Project Title	*MAESTRALE*
Abstract	*The project Maestrale intends to lay the basis for a Maritime Energy Deployment Strategy in the Mediterranean. Based on a survey of existing and innovative technologies, hindrances and potentials in participating countries, it aims to widen knowledge sharing among scientists, policy makers, entrepreneurs and citizens and prompt effective actions and investments for blue growth.* *Notwithstanding the large number of academic and technical studies in the field of renewable blue energy, there is a lack of concrete initiatives and operating plants in the MED area. To fill this gap, project partners will cooperate to detect maritime renewable energy potentials in participating countries as regards their physical, legal, technological, economic and*

	social contexts. Among the issues to be faced, there are environmental sustainability, technological innovation, acceptability by citizens, and possible conflicts with marine ecosystems. *The main output will consist in the creation of Blue Energy Labs (BEL) to take place in each participating region. BELs will involve local enterprises, public authorities, knowledge institutions and citizens and will operate to support future blue energy policies and plan concrete strategies for blue growth. A number of pilot projects will serve the purpose of raising awareness among local stakeholders, facilitating social acceptance, decreasing uncertainty and increasing feasibility of concrete interventions*
Project partners	*University of Siena, CEEI Business Innovation Centre of Valencia, IRENA Istrian Regional Energy Agency L.t.d., CTAER Advanced Technology Centre for Renewable Energies ES, AUTH Aristotle University of Thessaloniki, GLEA Goriška local energy agency, Oceanography centre - University of Cyprus, INFORMEST, University of Algarve, Joint Research Centre for Renewable Energy Sources and Environmental Sustainability – Malta Intelligent Energy Management Agency MT, Autonomous Region Friuli Venezia Giulia*
Year	*2016 - 2019*
Sector	*Energy and raw materials*

Project Title	*NAVRED@CRUISE*
Abstract	*The project aims to look for innovative solutions to reduce the noise and vibration impact on humans and on the environment, through the optimization of vibro-acoustic insulations, of passive silencers and of vessel dynamic response under operative extreme conditions.*
Project partners	*Marinoni S.p.a.; Cergol Engineering Consultancy S.r.l., mareTC FVG Scarl, DLM S.r.l., FINCANTIERI Cantieri Navali Italiani S.p.A., Università degli Studi di Trieste – DIA, Università degli Studi di Udine*
Year	*2014 - 2016*
Sector	*Shipbuilding and boatbuilding*

Project Title	*SEAPORT*
Abstract	*SEAPORT project aims to energy and environmental requalification of harbour yards and areas. The activities implemented were the following: individuate all energy critical aspects within a shipyard and a harbor area, drive an experimental study concerning both the wave energy and innovative technology for the dock drainage, install a pollutant emissions monitoring system on board and investigate on energy recovery systems coming from the propeller rotation when the ship is off, and the dissipation of the rolling motions.*
Project partners	*University of Catania, University of Palermo, Cantieri Navali di Augusta Rodriquez Cantieri Navali, Caronte Tourist, CTMI, CNR (ITAE, IAMC, ISMN)*
Year	*2012 - 2015*
Sector	*Shipbuilding and boatbuilding; Maritime transport*

Activities/initiatives

Activity/Initiative name	*Adriatic Sea Forum*
Brief Description	*Adriatic Sea Forum is a meeting point for all players with interests in the cruise, ferry and nautical areas and more generally in the tourism and maritime sectors, who operate partly or exclusively in the Adriatic. The forum has made an important contribution to sharing ideas and facilitating the development of new projects, as well as launching strategies, businesses and proposals.*
Year	*Since 2013 an annual event is organized each year*
Relevance	*International*
Stakeholders involved	*Policy makers, enterprises, business aggregations and clusters*

Activity/Initiative name	*Barcamper*
Brief Description	*Barcamper is a mobile office. A scouting and education program that offers hands-on knowledge and tools to grow your startup. Looking for startups, helping them in building and launching their product. A specialized team will be onboard, meeting entrepreneurs who are launching their amazing products and are looking for mentorship, workshops and acceleration.*
Year	*2012 and 2016*
Relevance	*National*
Stakeholders involved	*SMEs, research players*

Activity/Initiative name	*Call for ideas*
Brief Description	*Technical forums designed by the Maritime Technology Cluster and relying on regional smart specialization strategy. Stakeholders have the possibility to join different working groups focused on a specific topic, in this framework they have the possibility to share RDI ideas and proposals in order to find common paths that could lead to collaborative projects.*
Year	*2015 - 2017*
Relevance	*Regional*
Stakeholders involved	*Big industry, SMEs, Universities, Research actors*

Activity/Initiative name	*Innovation Challenge Italy Croatia*
Brief Description	*The innovation challenge is the first initiative arising from the collaboration of the Italian Maritime Technology Cluster of Friuli Venezia Giulia and the Croatian Maritime Industry Competitiveness Cluster. The aim of this initiative is to enhance the development of innovative ideas related to real needs of the territories through the involvement of strategic players. The initiative considered the following steps: identification of innovation needs and priorities of big companies, Call for ideas for SMEs and research players with reference to innovation needs and priorities, evaluation of the ideas by the big companies, search for further development opportunities for the selected ideas.*
Year	*2016*
Relevance	*Region Friuli Venezia Giulia and Croatia*
Stakeholders involved	*Big enterprises, SMEs, research actors, universities*

Activity/Initiative name	*NAV*
Brief Description	*International Conference on Ships and Shipping Research, the main activities are the following: presentation of projects (evaluated by a scientific committee), thematic workshops and presentations on ship design, composite materials and shipbuilding technologies.*
Year	Every two years
Relevance	International
Stakeholders involved	Shipbuilders and ship designers, research players and universities

2.1.4 Maritime policies and initiatives in the Country

Italian research policy is under the competence of the Ministry of Education, University and Research (MIUR) responsible for preparing the National Research Programme (PNR) a document designed to drive industrial competitiveness and develop the country through knowledge tools for coordinating national research and innovation system.

This document identifies 12 specialization areas for setting up priorities for most challenging research initiatives, which are requested to be strictly connected to national smart specialization strategy, approved in 2014 in accordance to European Union guidelines and identifying the 5 key areas. Blue growth is one of the 12 areas identified in the national research program and is dealing with six intervention programs organized with specific objectives, intervention actions and resources. One of this programmes is the collaboration between public and private sector as strategic tool for development of research and innovation. For this purpose were created the National Technology Clusters, industry-driven and addressing research specialization areas and recognized as structures for interaction among universities, public research entities and enterprises and among central based structures and territories.

In relation to maritime sector, the reference is the national technology cluster “Trasporti Italia 2020” of surface and waterborne mobility, established in 2014 with the aim of promoting competitiveness of “made in Italy” of mobility chains, identify industrial and market trends and define research and innovation priorities. In addition, since 2017, the Blue Italian Growth national technology cluster is being established aimed to generating opportunities for technological development and innovation of the national marine and maritime industrial system, focusing the Blue Growth themes.

National technology clusters are conceived as networking tools dedicated to group stakeholders in the same working and research fields in order to, on the one hand, collect their needs and considerations , define and prioritize technology trajectories at national level and communicate them to the reference ministries. On the other hand, at regional level, research strategies are running in accordance with regional smart specialization strategies that are consistent with the national one. The latter started in 2014 and are focused on more strategic and competitive fields. In the Adriatic Ionian Region, four regions have identified Blue Growth themes (Friuli Venezia Giulia, Apulia, Calabria and Sicily).

These strategies represent the basis, for national and local government bodies (Ministries and Regions), to implement and define programmes and policies on research, development and innovation with tailored funds. At national level, some of them are intended with a cross-cutting purpose including different sectors including the maritime, whereas the Regions have prepared financing measures supporting main economic sectors and mainly through cooperative innovation and direct involvement of maritime sectors. In this case the references are linked to Regional Operative Programs connected to European Social Fund (ESF) and European Regional Development Fund (ERDF).

In relation to energy and raw materials, when considering offshore oil and gas the reference is Ministry for Economic Development, with a tailored Directorate-General for safety of mining and Energy Activities and a National Mining Office for Hydrocarbons and Georesources. They are responsible for licenses issuance, Royalties management and for safety, control surveillance and technical management of the activities.

Description of maritime policies and programs

Strategy title	***Smart Specialization Strategy*** - ***Friuli Venezia Giulia Region - MARITIME TECHNOLOGIES***
Reference	*Friuli Venezia Giulia Regional Government – Decision no. 1473, July, 10th 2015*
Issuing entity	*Friuli Venezia Giulia Autonomous Region*
Description of the background, motivations for the definition of the strategy regulation	*Main funding tools are represented by the Regional Operative Programmes for EU Structural Funds. Scientific knowledge and industrial skills and their interaction are crucial for maintaining international competitiveness. New products must be developed using regional scientific skills in topics such as engineering, naval architecture, automation, domotics, environmental technologies and mathematic applications for industrial purpouses. An important hub of European level for naval-nautical planning and design is present, along with relevant actors operating in the shipbuilding industry, marine motors and off-shore engineering, matched with one of the main port-logistics systems in Italy make the area a key player in maritime related development.*
Description and objectives of the strategy	***DEVELOPMENT TRAJECTORIES*** *1) METHODS OF PLANNING AND DEVELOPMENT OF NEW PRODUCTS, PROCESSES AND SERVICES* *Investments for research and development are foreseen for:* *- innovative approach for planning (tools and methods for alternative desing, Life Cycle Design, design for dismantling and assembling)* *- definition of new concepts for products, processes and services* *2) GREEN TECHNOLOGIES AND COST-EFFECTIVE ENERGY* *Investments for research and development are foreseen for:* *- technologies and methods for energy production* *- technologies for the reduction of carbon impact related to the construction and management of maritime products* *- reduction of environmental impact of maritime means of transport* *- domotics for on board and living areas* *- new materials/applications for sustainable materials and energy saving* *3) TECHNOLOGIES FOR SAFETY* *Investments for research and development are foreseen for:* *- technologies for safety in maritime means of transport and infrastructures* *- simulations and forecast systems for operations under extreme conditions* *- integrated on-board systems for sea-land navigation, port operations and off-shore management* *- technologies and support systems for human operators and reduction of human error.* *The development trajectories pinpointed within S3 find implementation within some of the activities funded by the Regional Operative Programme 2014-2020 of the European Regional Development Fund.*
Period of activation	*2014 - 2020*

Strategy title	***Smart specialization strategy Region Puglia – Smart Puglia 2020***
Regulatory reference	*Resolution of the Regional Council n. 1732 – "Regional strategy for smart specialization – approving the strategic document "SmartPuglia2020" and "Digital Agenda Puglia 2020".*
Issuing entity	*Puglia Regional Council*
Description of the background motivations for the definition of the strategy regulation	*The document describes the main elements that constitute the Regional Strategy for Research and innovation based on the Smart Specialisation for the period 2014-2020.*
Description and objectives of the strategy	*Smart Puglia 2020, Puglia's S3 is inspired by the Key Enabling Technologies (KETs). Aim of the strategy is to strengthen the integration between "trans-sectoral" policies for research, innovation, competitiveness, internationalisation, training and work, improving connection with "vertical" policies for the environment, transport, welfare and health, etc.* *Smart Puglia 2020 defines three priority areas of innovation:* • *Sustainable Manufacturing (smart factory, aerospace, mechatronics)* • *Health and the environment (green and blue economy, food processing, sustainable construction, cultural heritage and tourism)* • *Digital, creative and inclusive communities (cultural and creative industry, services, social innovation, design, non-R&D innovation)* *Puglia regional S3 aims to:* • *Strengthen the competitiveness of the private sector with the use of technology;* • *Promote development via the use of human capital;* • *Support to emerging social and environmental challenges linking local needs with innovation;* • *Spread digitalisation to support local communities and promote the implementation of "open government" approach;* • *Promote networking to facilitate the circulation of knowledge beyond the local dimension.*
Measures to be implemented	*Proposed measures include:* • *Implementation of a partnership process in the form of strategic interregional cooperation;* • *Give support to SMEs and other actors involved in innovation through which to identify partners;* • *Access a value chain transcending national, regional and sectoral limits;* • *Facilitate the access of research institutions, including KETs infrastructure and hubs of digital innovation.*
Period of activation	*August 2014*

Strategy title	***Smart Specialization Strategy Calabria***
Regulatory reference	*D.G.R. n. 294 28th July 2016*
Issuing entity	*Calabria Regional Council*
Description of the background motivations for the definition of the strategy regulation	*The S3 Strategy document, is the result of an ongoing process involving several stakeholders of the Calabria Region. The overall objective envisaged by the regional smart specialisation strategy is to increase the innovative capacity of the regional production system to determine a competitive shift with respect to domestic and international markets. The purpose of the S3*

	document is to design an "integrated innovation process" enhancing regional economic development, through the identification of innovative potentials and the selection of a limited set of priorities.
Description and objectives of the strategy	*The overall objective of the S3 Calabria is to increase the innovative capacity of the regional production system to determine a competitive shift with respect to domestic and international markets.* *Priority areas as defined by the strategy are:* • *Agriculture and agribusiness – food safety, sustainable production, agro-environment management,* • *Green technologies- development of new technologies,* • *Tourism and culture – Innovation in tourism,* • *Logistics – green logistics, agro-food logistics, environmental protection,* • *ICT and advanced systems – digital ecosystems,* • *Environmental and natural risks – analysis and risk assessment,* • *Life sciences – better understanding of complex diseases.*
Period of activation	*2015*

Strategy title	***Smart Specialization Strategy Sicilia***
Regulatory reference	*Regional regulation: Delibera di Giunta n.375 8.11.2016*
Issuing entity	*Sicilia Regional Council*
Description of the background motivations for the definition of the strategy regulation	*S3 for Sicily is inspired by the relevant Key Enabling Technologies. The regional strategy emphasises the concept of "related variety", focusing the available resources on stimulating technological diversification rather than sectoral diversification.*
Description and objectives of the strategy	*The general objectives of the Smart Specialisation Strategy for Sicily are:* • *Reinforce the regional economic system;* • *Support the diffusion of demand-led innovative solutions and services;* • *Promote the diffusion of innovation culture at any level of society.* *Following areas are relevant to S3 Sicily:* • *Life sciences - Energy,* • *Smart Cities and Communities,* • *Tourism and cultural heritage,* • *Sea economy,* • *Agrofood.*
Measures to be implemented	
Period of activation	*2015*

Programmes and specific operative initiatives

Title of the programme/intiative	*National program for research (PNR) 2015 – 2020*
Reference strategy	*EU cohesion policies* *National Smart Specialization Strategy (SNSI)*
Geographical area of validity	*Italy*
Issuing Entity	*Ministry for Education, University and Research*
Public funding (€)	*Overall funds: 2.500 Meuro (besides 8.000 Meuro yearly provided by the Ministry to Universities and Public Research Institutions)*
Description of the background and of the motivations for the definition of the regulation	*The National Program for Research is a platform whose aim is driving industrial competitivity and the development of the Country through the use of knowledge instruments.* *The PNR is an instrument integrating national and Eu resources, particularly those provided by Cohesion policies and Horizon 2020. PNR operates as a coherent player and implementer of the National Smart Specialization Strategy (SNSI).*
Description of objectives of the Program	*PNR has identified twelve specialization areas of competence, among which are included: Blue Growth, Energy, Smart Industry, Sustainable Mobility. Programming activities of the PNR have furthermore identified six Fundamental Programs (Internationalization, Human capital, Research infrastructures, Public-Private, Southern areas, Expense efficiency and quality.)* *Blue Growth is included in the two relevant Programs:* *a) Internationalization (Funds available for period 2015 – 2017: 80,5 Meuro)- International cooperation in strategic projects PRIMA (Partnership for research and Innovation in the Mediterranean Area) and Blue Med (development or R&D programs and drawing a Strategic Research and Innovation Agenda; PNR supports these activities in the framework of National Technology Cluster "Blue Growth")* *b) Public-Private industrial research programs – (Funds available for 2015 – 2017 period: 432,5 Meuro) Industrial research is regarded by PNR as a key economic development factor; support to innovation investments is pursued are through National Technological Clusters (CTN), which operate as platforms for fostering a permanent dialogue between public research and enterprises. Four new clusters (among which Blue growth and Energy) are laid down besides the eight existing ones (among which: Land and water mobility and Smart industry). Resources for industrial research shall include besides traditional instruments also innvative ones such as demonstrators of innovative products and processes, precommercial procurement, living labs, challenge prizes).*
Period of activation	*2015 - 2020*

Title of the programme/intiative	***Grants for financing projects in the shipbuilding sector - Italy***
Reference strategy	*Ministry for Infrastructures and Transports – Decree 10th June 2015, ref.*

	no. 196 (Official Gazette no. 222, 24th September 2015)
Geographical area of validity	*Italy; beneficiaries have to be:* *a) EU enterprises dealing with shipbuilding, ship-repair and ship conversion; these enterprises must be enrolled in special lists set by article 19, Law 14th june 1989, no. 234.* *b) Shipping firms, according to provisions of article 265 of the Codice della navigazione (Navigational code).*
Public funding (€)	*Euro 5.000.000,00 starting from year 2015.*
National funds	*Euro 5.000.000,00 starting from year 2015.*
Period of activation	*From 24th September 2015 (expiry date 60 days after publication in Offical Gazette of the Republic of Italy)*
Programming entity	*Italian Government*
Implementing actor	*Ministry for Infrastructures and Transport – Directorate General for the supervision on Port Authorities, port infrastructures, maritime and inland waterways transports*
Beneficiaries	*EU enterprises dealing with shipbuilding, ship-repair and ship conversion; these enterprises must be enrolled in special lists set by article 19, Law 14th June 1989, no. 234 (Article 1, 1st clause, Ministry for Infrastructures and Transport Decree, 10th June 2015, ref. no. 196).* *Shipping firms, according to provisions of article 265 of the Codice della navigazione (Navigational code), by themselves or jointly with other EU enterprises, research or knowledge dissemination bodies (Article 1, 2nd clause, Ministry for Infrastructures and Transport Decree, 10th June 2015, ref. no. 196).*
Description and objectives of the initiative	*Financial support, in the form of contribution to expenses, as provided by Law 23rd December 2014, no. 190 ("Budgetary stability act 2015"); funds are provided to R&D projects started by shipbuilding, ship-repair, ship conversion and shipping firm.*
Type of supported activities	*Article 1, 1st clause, Ministry for Infrastructures and Transport Decree, 10th June 2015, ref. no. 196: grants for R&D projects falling under one or more research categories:* *a) fundamental research;* *b) industrial research;* *c) experimental development;* *d) feasibility studies;* *e) organizational innovation;* *f) process innovation.* *Article 1, 2nd clause, Ministry for Infrastructures and Transport Decree, 10th june 2015, ref. no. 196: grants for projects regarding:* *a) organizational innovation;* *b) process innovation.*
Type and intensity of the public funding	*Contribution to expenses, according to EU legislation in force on State aids on research, development and innovation, with special regard to provisions of EU Regulation no. 651/2014 on eligible costs and aid intensity.*

Title of the programme/intiative	*Call for the development and the enhancement of technological clusters*

Reference strategy	*Commission Communication COM(2008) 652 def "Towards world Towards world-class clusters in the European Union"* *Commission Communication COM(2011) 808 def, regarding Horizon 2020 - The Framework Programme for Research and Innovation*
Geographical area of validity	*Italy*
Public funding (€), of which:	*408 Meuro*
EU funds	*20 Meuro (ERDF)*
National funds	*368 Meuro Research Activity Fund* *20 Rotative fund*
Period of activation	*The call has been active from June 2012 to September 2012*
Programming entity	*Ministry for Education, University and Research (MIUR)*
Implementing actor	*Ministry for Education, University and Research (MIUR)*
Beneficiaries	*The application had to be submitted by the National Cluster Coordination and Managing Body.* *Involved subjects: enterprises, universities, other public or private research institutions.*
Description and objectives of the initiative	*Fostering and developing of a National Technological Cluster, valorizing initiatives which have been activated by MIUR, regarding the establishment of eight National Technological Clusters (particularly relevant are those regarding Land and Water Mobility Systems, Energy, Smart industry).*
Type of supported activities	*Through the call the MIUR required the submission of:* *a) Economic Strategy Plans (at least five-year, highlighting the combination of processes and actions intended to the acquisition of advanced knowledges and technologies, rooting them in local, national and European scale, also fostering the regional Smart Specialization process)* *b) Industrial research projects (also including experimental development and training activities)*
Type and intensity of the public funding	*Projects minimum amount was 10 Meuro, maximum amount 12 Meuro. The duration of implementation could not exceed 36 months.* *Eligible costs:* *a. Personnel costs (researchers, technicians and other ancillary personnel)* *b. Equipment and tools costs* *c. Consultancy and equivalent services (not exceeding 10% of other eligible costs)* *d. Land and buildings costs*

Title of the programme/initiative	*POR-FESR 2014-2020 - Activity 1.3.b* *Grants of R&D activities in Public private projects - Maritime technologies and Smart health*
Reference strategy	*SMART SPECIALIZATION IN FVG (S3)* *STRATEGIC PRODUCTIVE CHAIN AREA – MARITIME TECHNOLOGIES*
Geographical area of validity	*Region FVG*
Public funding (€), of	*7.500.000,00*

which:	
EU funds	*3.750.000,00*
National funds	*2.625.000,00*
Regional funds	*1.125.000,00*
Period of activation	*2014-2020*
Programming entity	*Productive activities Department of the Region FVG*
Implementing actor	*Department of High Education – Central Direction Labour, education, training Research and University – Region Friuli Venezia Giulia*
Beneficiaries	*Industrial SMEs in Friuli Venezia Giulia* *Universities and Research Organization, Tech Parks and Tech Cluster*
Description and objectives of the initiative	*Grant to SMEs for the following Industrial Research & Development Projects, in the framework of S3 Specialization area – Maritime Technologies:* ***Standard Projects*** *Short terms projects (12-15 months),* *up to 4 partners* *budget between € 250.000,00 – € 500.000,00* *Technology Readiness Level TRL7 – System Prototype demonstration in operational environment / TRL 8 System complete and qualified* ***Strategic projects*** *Med terms projects (15-21 months)* *Up to 8 partners* *TRL 5 – TRL 6 technology validated/demonstrated in relevant environment* *Budget between € 1.000.000 – € 2.000.000,00*
Type of supported activities	*a) Costs related to staff* *b) Costs related to equipment, devices, instruments* *c) Costs related to Material goods and intangibles* *d) Costs related to consultancies for innovation* *e) Costs for the acquisition of services related to innovation*
Type and intensity of the public funding	*a) micro and small enterprises – Research 75% - Development 55%* *b) medium enterprises- Research 70%- Development 45%* *c) large enterprises - Research 60% - Development 35%* *d) University or research Organizations – R&D 80%*

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Introduction (general and for all partners)

The term cluster started being used to identify – in the industrial framework of the industrial policies -, any initiative able to enforce and implement organized efforts supporting a group of actors with common interests expressed through the action of a cluster organization providing specific support towards the reference sector.

The Smart Guide on Cluster Policy[11] define them as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are representing groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialized expertise, services, resources, suppliers and skills.
It's important to highlight that the before mentioned stakeholders and their competences are strictly connected to the territory and could be the result of a chain that includes production, education and research.
Territory's features are the result of the before mentioned elements but they could be structured in tailored cluster management organizations. The latter are legal entities supporting the strengthening of collaboration, networking and learning in innovation clusters and act as innovation support providers by providing or channeling specialised and customised business support services to stimulate innovation activities, especially in SMEs. They are usually the actors that facilitate strategic partnering across clusters but it's important to underline that role and tasks are generally recognized and defined in national and/or regional level with specific regulations defining role and competences that could be different in each territory. Each cluster management organization could have differences in the governance structure, mainly in relation to legal entity creating direct links with operation and management.
In the project activities, it will be of primary importance to focus on current state of cluster management organization, in order to provide clear details on the current national and regional situation, finding out main features necessary to share practices and details among all territories involved.

2.2.1 Cluster and Cluster management organization

Actually, in Italy clusters are developed at two different levels, the national one is based on National Technology Clusters, broad and inclusive networks made up of the major public and private entities operating throughout the country and focused on industrial research, training and technology transfer: enterprises, universities, public and private research institutions, start-up incubators and other players active in the field of innovation. Each aggregation focuses on a specific technology and application area of strategic interest to Italy, of which it represents excellence in terms of skills, knowledge, facilities, networks and potential.

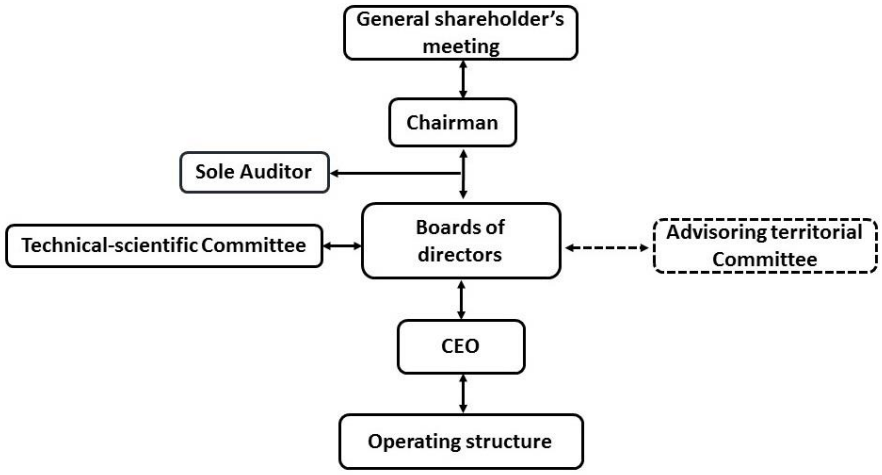
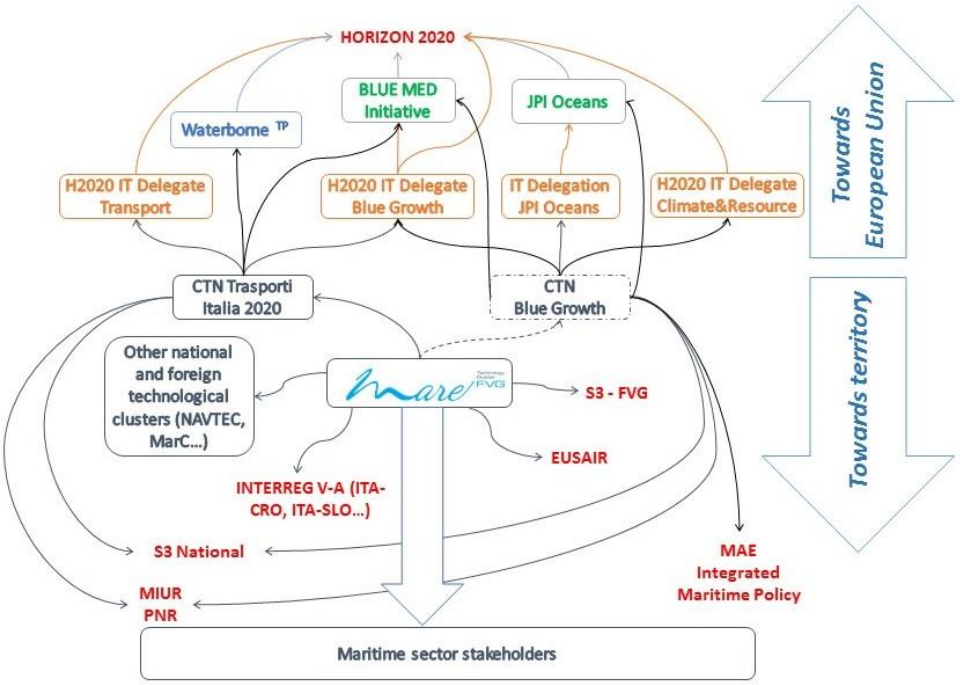
On the other side, tailored clusters are build up, developed and run at regional level in accordance and generally with a strong relation to regional smart specialization strategies and local production and innovation chains. Regional rules are regulating the before mentioned clusters, that, if compared to national clusters, are entitled to act more on the field, building up direct and concrete relation with enterprises, universities, research and aggregation players in order to boost and support the collaboration and bring value added on the reference territory.

CLUSTER

[11] European Commission (2016), *Smart Guide to Cluster Policy*, Guidebook series, How to support SME Policy from Structural Funds, Ref. Ares (2016)2507138 - 31/05/2016, European Union

Name of the cluster	*Cluster of maritime technologies of Friuli Venezia Giulia Region* *Maritime Technology Cluster FVG (Italy)*
Territorial dimension of the cluster	*Regional*
Reference economic sectors	*Technologies related to ship and boat building, offshore and respective production chains, transport, logistics, navigation services and pleasure crafting*
Initiatives for cluster development	*Innovation Challenges, participation to networking event organized by tailored institutions or actors (government bodies, chambers of commerce, development agencies), relations with other regional, national and foreign clusters*
Tools for cluster development	*Set up and continuous monitoring of maritime technologies regional forums, diffusion and dissemination on call for proposals and programs, organization of technical workshops, participation to National Technology Clusters, implementation of technological and training observatory activities, support development of research and innovation projects*

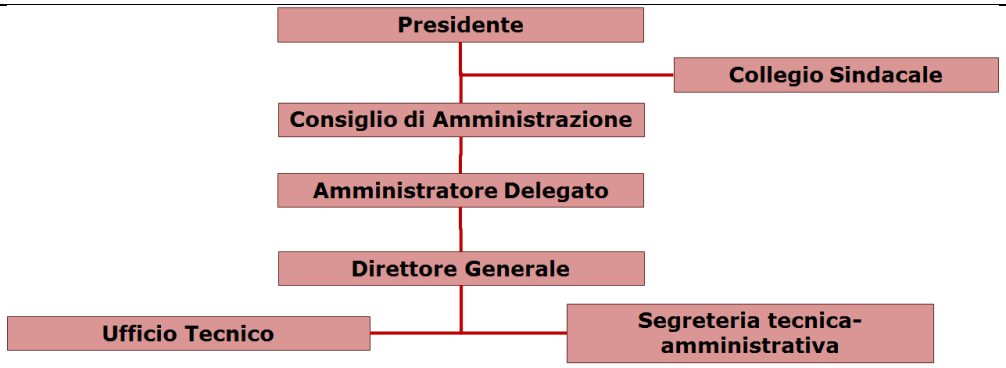
CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*Maritime Technology Cluster S.c.ar.l.*
Country	*Italy*
Region (NUTS II)	*Friuli Venezia Giulia*
Province (NUTS III)	*Gorizia*
Address	*Via Callisto Cosulich 20, Monfalcone*
Phone Number	*+39 0481 723440*
Email	info@marefvg.it
Website	www.marefvg.it
Legal entity	*Limited liability consortium*
Year of establishment	*2012*
Reference sector's dimension	*600-800*
N. of stakeholders collaborating with the cluster	*100*
N. of associates	*42 (18 second level associates grouped in a SME consortium)*
Services and tools organized for the cluster networking process	*Agreements and Memorandum of Understanding signed with other actors, participation to cluster networks, participation to technical and working groups and forums, representation role at regional, national and international level.*
Good practices for cluster management	*Conformity with cluster management recognized standards, constant relations with regional administration, balanced governance representing different stakeholder's categories, benchmarking with other regional and national clusters, technological observatory to monitor the territory, coordination and connection with education framework*

Description of governance model	 *General shareholder's meeting: associates representation body.* *Chairman: is the legal delegate of the society and supervise the management of the latter.* *Sole Auditor: actor referring to regional Administration, is responsible for controlling the correct management of the society.* *Board of Directors: management body of the Cluster, in terms of shares the majority is represented by private actors.* *Technical scientific Committee: advising body providing mandatory opinions on technical-scientific related aspects related to Cluster activities.* *Advisoring territorial Committee: advisoring body providing mandatory and not-binding opinions regarding Cluster's orientation, promotion and coordination with the aim of developing the share of opinions with local government bodies, labour categories representatives and regional administration.* *CEO: works in cooperation with operating structure of the society, has the management responsibility of the latter, has power of attorney for ordinary administration operations and supervises the correct management of accountancy and administration procedures.*
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	

Policies – cluster's role, relations and connections	*The Regional Law n. 3 of 20 February 2015 ("Rilancimpresa FVG") in the article n. 15 recognizes the importance of the regional clusters and identifies the cluster management organization mare^{TC} FVG as reference actor for the maritime technology field.* *Moreover, the regional Smart Specialization strategy recalls in the governance process the role of regional clusters (see report A "Analysis of policies and identification of reference policy makers and stakeholders at regional level"; chapter A.3.1 "Smart Specialisation Strategy (S3)")*

CLUSTER	
Name of the cluster	*NAVTEC – Distretto Tecnologico Trasporti Navali* *Sicilian Cluster of Maritime Transport*
Territorial dimension of the cluster	*Regional – Sicily (Italy)*
Reference economic sectors	*Ship, commercial and nautical (leisure) transports*
Initiatives for cluster development	*Participation to networking event organized by tailored institutions or actors (government bodies, chambers of commerce, development agencies), relations with other regional, national and foreign clusters*
Tools for cluster developments	*Set up and continuous monitoring of maritime technologies regional forums, diffusion and dissemination on call for proposals and programs, organization of technical workshops, participation to National Technology Clusters, implementation of technological and training observatory activities, support development of research and innovation projects, training and education activity in maritime technologies, applied research activity.*

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*Consorzio di ricerca per l'innovazione tecnologica Sicilia Trasporti navali, commerciali e da diporto S.c.a.r.l.*
Country	*Italy*
Region (NUTS II)	*Sicily*
Province (NUTS III)	*Messina*
Address	*c/o Centro Prove C.N.R. I.T.A.E., Via Comunale S.Lucia 40, Messina*
Phone Number	*+39 090624406*
Email	*navtecsicilia@itae.cnr.it*
Website	*www.navtecsicilia.it*
Legal entity	*Limited liability consortium*
Year of establishment	*2008*
Reference sector's dimension	---
N. of stakeholders collaborating with the cluster	*Associates*
N. of associates	*24*

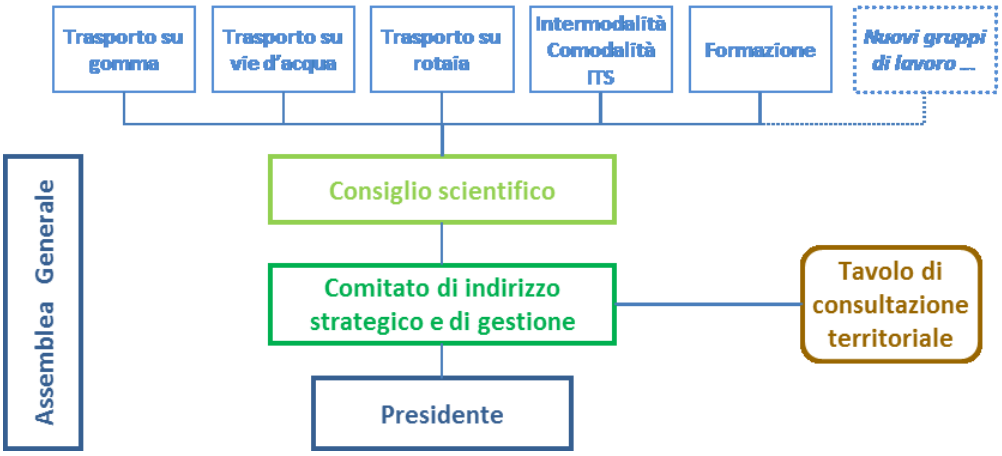
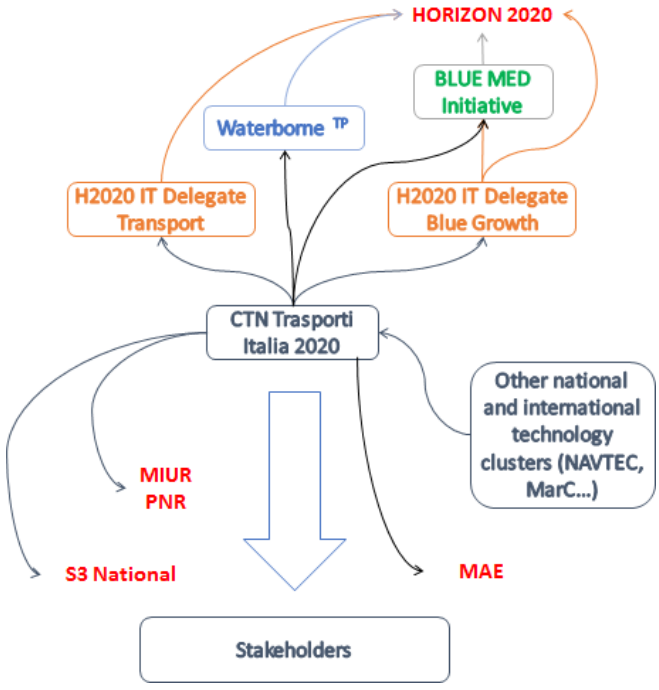
Description of governance model	 *General Assembly (Assemblea dei soci): associates representation body* *Board of Directors (Consiglio di Amministrazione): responsible for the ordinary and extraordinary administration for the achievement of the objectives;* *Technical Scientific Committee (Comitato Tecnico Scientifico): body with technical competenes, prepares research related proposals to support activity's development.* *President (Presidente): is the society legal delegate against third parties and in court, summon and chairs the General Assembly and the Board of Directors;* *CEO (Amministratore Delegato): is the society legal delegate in court and for the execution of board of directors decisions;* *General Manager (Direttore Generale): is responsible for the realization of programs and activities planned and approved;* *Board of Auditors (Collegio Sindacale): responsible for accounting control.*
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	---
Policies – cluster's role, relations and connections	*The District implement his activities mainly together with their associates; starts new connections on regional, national and EU level for setting up joint research projects relying on specific calls for proposals.*

CLUSTER	
Name of the cluster	*Apulia Nautical Productive District*
Territorial dimension of the cluster	*Sub-regional*
Reference economic sectors	*Boatbuilding and related subsectors*
Initiatives for cluster development	*Updates the industrial, scientific and educational strategies with the support of the public institutions.*
Tools for cluster development	*Implement integration and cooperation policies involving big enterprises and SMEs, promoting joint participation to regional, national and European programs supporting project-related investments*

CLUSTER	
Name of the cluster	*Marche*
Territorial dimension of the cluster	*Sub-regional*
Reference economic sectors	*Shipbuilding and boatbuilding – related subsectors*
Initiatives for cluster development	*Relations and coordination with public institutions*
Tools for cluster development	

CLUSTER	
Name of the cluster	*Cluster "Trasporti Italia 2020"* *[National Technology Cluster for Surface Mobility] - Italy*
Territorial dimension of the cluster	*National - Italy*
Reference economic sectors	*Research and innovation applied to the following sectors: rail, road and maritime transport, and intelligent transport systems.*
Initiatives for cluster development	*Networking events, relations with other regional, national and foreign clusters of aggregation platforms.*
Tools for cluster development	*Set up and continuous monitoring of forums on rail, road and maritime transport and intelligent transport systems, definition of trends and innovation trajectories at national level*

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*National Technology Cluster "Trasporti Italia 2020"*
Country	*Italy*
Region (NUTS II)	*Lazio*
Province (NUTS III)	*Rome*
Address	*Viale Pasteur 10*
Phone Number	*+39 06 54221493*
Email	*cluster.trasporti@anfia.it*
Website	*www.clustertrasporti.it*
(Legal entity)	*Recognized association*
Year of establishment	*2014*
Reference sector's dimension	*52.600*
N. of stakeholders collaborating with the cluster	*73*
N. of associates	*73*
Services and tools organized for the cluster networking process	*Specialized training activities in complementary areas to cluster's reference sectors*
Good practices for cluster management	*Constant relations with national administration, balanced governance representing different stakeholder's categories, identification of innovation trends at national level*

CLUSTER GOVERNANCE	
Description of governance model	 *Assemblea Generale (General meeting): representation body with the following competences, members appointment, accounting/financial and program documents approval, internal cluster's role appointment and resolution of issues related on internal operation.* *Presidente (President): is the legal delegate of the association, convenes and chairs the Strategic and Management support Committee, handle the decisions of the latter.* *Comitato di indirizzo strategico e di gestione (Strategic and Management support Committee): body responsible for cluster's orientation, coordination, planning and management.* *Consiglio Scientifico (Scientific Council): body responsible for planning, realization and coordination of the study and technology observatory activities.*
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	
Policies – cluster's role, relations and connections	*The Ministry of Research and Education launched in 2012 the call for the establishment of 8 National Technology Clusters (Decree n. 257/Ric. Of 30 May 2012) in the most relevant economical areas.* *Moreover, the PNR 2015 - 2020 (National Program for Research) highlights the role*

	of National Technology Clusters for fostering a permanent dialogue between public research and enterprises.

BULGARIA

1. INTRODUCTION

The length of the borders of the Republic of Bulgaria is 1456 km, of which 59% are water borders - 470 km on the right bank of the Danube River and 378 km sea border - on the west coast of the Black Sea. Four out of the six economic planning regions are situated along these borders. The exclusive economic zone is equal to approximately one third of the land territory of the country.

Maritime transport has been playing a crucial part in the commercial delivery of goods between Bulgaria and the world and via the Danube River - with the countries in Central Europe. This circumstance has led to the development of the traditional maritime sectors in the country, defined as reference sectors for the purposes of Blue.Net - sea and river transport, shipbuilding/ship repair, port activities, maritime logistics and maritime tourism.

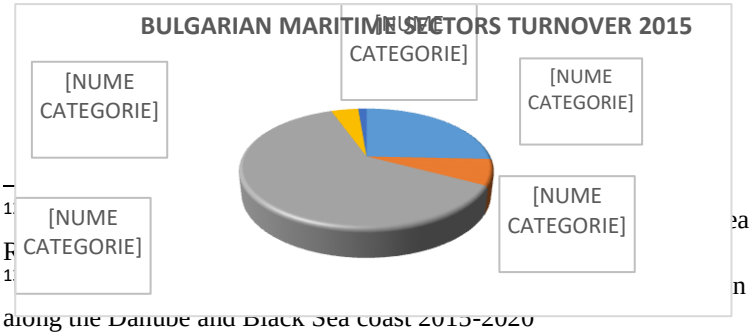
Food, nutrition, health & ecosystem services: due to the specifics of the Black Sea - internal, with less water salinity compared to the Mediterranean Sea, climate and shore specifics - commercial fishing is focused on the few local species. Fishing is mainly done by fishermen organized in local fishing communities. Farms for sea aquaculture, primarily blue mussels, have been developing over the last few years. The blue biotechnologies sector is still underdeveloped - as an example, one area that the academic research is focused on is using algae. Health services are focused on using mud for healing and spa procedures using mineral water.

Energy and raw materials: Currently in Bulgaria there is practically no oil and/or gas drilling, since the volumes are very insignificant, however international companies keep exploring potential oil/gas fields in the region. Due to the small difference in tides between high/low tides sea level (approximately 9cm) technologies for harvesting maritime energy are not currently developed. Despite the good wind conditions, the investment expenses would be really high for building wind farms in the sea, therefore they are built on the shore in the coastal areas.

Water projects: The coastal line is exclusive state property[12]. Most of the projects built along the Danube River and the Black Sea coast are realized by the government and local authorities

Coastal protection, maritime monitoring and surveillance are entirely in the competence of different state agencies. The Ministry of Regional Development is responsible for the protection of the coast[13]. The monitoring and environmental protection of the seawater is done by the Ministry of Environment and Water of Bulgaria. Border control and security is performed by the Border Police and the Customs Agency.

The results from an internal study show that in 2015 the Blue Growth sectors form 3.4% of the GDP of Bulgaria with the share of maritime tourism being 2.3% and the remaining 1.1% of economic activities distributed as per the graph below. The second graph shows the turnover shares by region.



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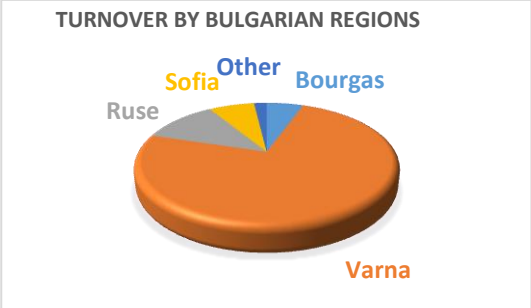


2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Shipbuilding and boatbuilding

The modern history of the traditional for Bulgaria shipbuilding and ship repair industry dates back to the end of the 19th century. Initially ship repair and maintenance activities developed and the first ship was built in 1935. In the second half of the 20th century the shipbuilding industry in the country has shown steady growth and has led to the creation of additional supporting production in the inside of the country. In that period in order to facilitate the shipbuilding industry an Institute for Shipbuilding (covering ship design needs) and an Institute for Ship Hydrodynamics were created. During these years more than 1500 ships were built for customers from 27 different countries. Additionally the production of smaller vessels and materials used in the shipbuilding process has started. The sector has been steadily growing until the end of the 20th century.

Currently the shipbuilding and ship repair industry is focused in 6 major companies in Bulgaria - 4 situated in Varna, one in Rousse and 1 in Bourgas. Their overall docks capacity is over 500,000 DWT. The main activities include ship repair, reconstruction and repurposing of the vessels. Recently the companies started focusing on the construction of specialized vessels - tankers, dredgers etc., which is a change from the previous focus of building bulk carriers and general cargo vessels.

There are more than 230[14] SMEs in the sector which operate and provide various ship repair services, maintenance activities, producing and delivering various ship equipment, occasional boat building and various classification societies. Another important part of the shipbuilding reference sector consist of SMEs primarily focusing on vessel design for international clients coming from Europe or other continents. The highly qualified workforce in these ship design companies leads to the increased demand for their services. Overall there are more than 5000 employees in the various companies the shipbuilding and ship repair reference sector in Bulgaria.

Maritime Transport

The maritime and sea transport are of extremely high importance for the economy of Bulgaria. Due to the country's specific geographic location - crossroads of many commerce corridors as well as external border of the European Union - the transport plays an integral part not only for the economic development of Bulgaria, but also for the neighboring and EU countries. More than 70% of the transportation of goods in

[14]Source: National Statistical Institute- according to request for information

Bulgaria is done on water with the maritime transport share being 85% of that figure. In 2014 the total goods transported in the country is more than 43,290 thousand tons[15].
The main sea ports - Varna and Bourgas - are designed for handling different kinds of cargoes and are included in the concept for development of the TEN-T network - the Port in Bourgas is part of the "main network" and the port in Varna is part of the "extended" TEN-T network. There are multiple specialized ports with local importance. Two trans-European corridors pass through the country - number 7 on the Danube River and number 8 on the Black Sea coast with the country's sea ports. The total volume of cargo over the last years has been quite steady with relatively minor differences over the years. The main share is the import of crude oil and gas, with a high volume of grains, bulk cargo and containerized goods are also present. The number of containers imported and exported in Bulgaria has been steadily growing over the last few years.
The river transport has a far smaller share of the transportation of goods due to its seasonal nature - the water freezing in the rivers during the winter and the lower water levels in the summer months are something that negatively affects this method of transportation.
The total gross tonnage of all vessels owned by Bulgarian companies is approximately 1,200,000 DWT. The maritime fleet consists of mainly general cargo vessels. There are also oil and gas tankers and ferries. In the Black Sea region there are a few ferry lines operating connecting the Bulgarian ports - Bourgas and Varna to ports in Russia, Georgia and Ukraine. In Varna there is a unique ferry complex for the transportation of railway carts which allows the swap of the longer axle Russian standard to the European one and vice-versa. A big number of support vessels and other floating devices are used for the additional services of the above - supply, tug services, oil spill cleanup, dredging etc. The passenger transportation sector isn't well developed either due to the local conditions - the population numbers are not that high and the road network between the respective cities provides easier access for bus or other automotive kinds of transportation.
The river transportation is mainly performed by unmanned barges requiring other vessels and tugboats or other manned vessels. The number of manned cargo vessels operating on the river is 46. Ferries are mainly used between the two banks of the Danube River.
A big share of the maritime economy in Bulgaria consists of companies, which provide supporting activities to the maritime transportation - such as agency services, brokerage, logistics, ship management, manning crew services etc. Over 220 companies are providing such services to international customers, including services for the big container lines such as Maersk, MSC, Hapag Lloyd etc. More than 8,000 employees are directly involved in the maritime transportation sector.
The naval education is traditionally very good in the country. The number of people with such an education is approximately 22,000 and represents approximately 1.5% of the world's sea community. Bulgaria has the 4th highest number of executive crew members in the European Union and takes the fifth place when it comes to sea officers.

Leisure, working and living

Tourism is an important sector in the Bulgarian economy - it is approximately 3.3 % of the country's GDP[16]. In 2013 the Ministry of Tourism was formed and it developed the long-term strategy for the development of the tourism in the Country - 2015-2030. The maritime tourism accounts for approximately 70% of the total turnover in the tourism sector.
In the maritime tourism the majority share goes to coastal tourism, which has a few focal points in bigger tourist complexes and in almost all of the cities/villages along the coast there are plenty of facilities for tourists, including guesthouses, family hotels, restaurants and tourist attractions. The number of bed-places

[15] Source: National Statistical Institute

[16] https://www.wttc.org/research/economic-research/economic-impact-analysis/country-reports/

in coastal areas of the country are 209,983 units in 2014, respectively 216,891 units in 2015 and 14,214.770/13,660.772 nights spent at tourist accommodation establishments in coastal areas in 2014 and 2015[17]. There are plenty of possibilities to combine seaside tourism with health and spa procedures in nearby areas, as well as cultural or other kinds of tourism in order to lengthen the season's duration. There is a steady increase in cruise tourism in the last years. Yacht tourism is relatively new for Bulgaria. Recently a few modern yacht ports have been built along the coast, capable of providing all the necessary services for yachts and other smaller tourist vessels. There are 1568 yachts over 4.5 meters long registered In the Maritime Administration. In 2014 and 2016 Bulgaria hosted the Tall Ships regatta - one of the most attractive events in the region and the "Cor Carolli" regatta is also organized annually.

2.1.2 Identification of stakeholders

Provide the list of maritime stakeholders classified in the categories listed in the chapter 2.1 of the guidelines and link each of them to its main maritime sector among those selected at point 1 (at least 2 actors).

Name	***Reference maritime sector***	***Category[18]***	***Brief description (subsectors)***	***Venue***
MTG Dolphin PLC-Shiprepair and Shipbuilding Yard	*Shipbuilding and boatbuilding*	*Private enterprise (big)*	*Shipbuilder and ship repair*	*Varna*
Bulyard Shipbuilding Industry AD	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Shipbuilder and ship repair*	*Varna*
Terem- KRZ Flotski arsenal Varna EOOD	*Shipbuilding and boatbuilding*	*State enterprise (medium)*	*Ship repair*	*Varna*
Keppel FELS Baltech Ltd	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Ship design offshore structures*	*Varna*
Smart Design Ltd	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Ship design*	*Varna*
Navigation Maritime Bulgare	*Maritime transport*	*Private enterprise (big)*	*Maritime transport*	*Varna*
Bon Marine LTD	*Maritime transport*	*Private enterprise (medium)*	*Maritime transport and related services*	*Varna*
Rubiships Ltd	*Maritime transport*	*Private enterprise (small)*	*Inland waterway transport*	*Rousse*
Dunav tours AD	*Maritime transport*	*Private enterprise (medium)*	*Inland waterway passenger transport*	*Rousse*
BMF Port Bourgas EAD	*Maritime transport*	*Private enterprise (big)*	*Port services*	*Bourgas*

[17] Source: Eurostat

[18] Source : ACCOUNTANCY ACT

Port Varna EAD	*Maritime transport*	*Public company (big)*	*Port services*	*Varna*
Marine antipollution enterprise JSCO	*Maritime transport*	*Private enterprise (medium)*	*Maintenance of good ecological status of port water areas and channels, protection from oil spills, etc.*	*Varna*
Albena AD	*Leisure, working and living*	*Private enterprise (big)*	*Tourist complex*	*Balchik*
Riviera AD	*Leisure, working and living*	*Private enterprise (medium)*	*Holiday club (coastal tourism)*	*Golden Sands (near Varna)*
Marina port Sozopol EAD	*Leisure, working and living*	*Private enterprise (small)*	*Yachting and marina services*	*Sozopol*
BSHC- Bulgarian Ship Hydrodynamics Centre	*Shipbuilding and boatbuilding*	*Research actor*	*Shipbuilding, Offshore, Aquacultures*	*Varna*
Institute of Oceanology	*Monitoring*	*Research actor*	*Maritime monitoring*	*Varna*
Institute for Fishery Resources	*Food, nutrition, health and eco-system services*	*Research actor*	*Fishery and aquaculture*	*Varna*
Naval Academy	*Maritime transport*	*Education and Research actor*	*Maritime transport, naval science, marine technology*	*Varna*
Bulgarian ports infrastructure company	*Maritime transport*	*State company*	*Management of port infrastructure of the public transport ports*	*Sofia, territorial directorates Varna, Bourgas, Rousse, Lom*

MTG Dolphin PLC- Ship repair and Shipbuilding Yard http://dolphin1.bg/ started with ship repair activity in 1991. Presently it is one of the leading shipyards in Black Sea / Mediterranean Sea with wide experience in chemical/product tankers, container vessels, bulk carriers, reefer vessels, dredgers, LPG carriers, RO-RO, car carriers and offshore vessels.

Bulyard Shipbuilding Industry AD http://www.bulyard.com - the foundations of the company have been laid in 1907. The shipyard started by building and repair of small cargo vessels with wooden hull. The construction of the first steel vessel-passenger ship 21 tons Galata, built in 1937 followed by a period of fast growing production of different types of medium-sized and large-sized vessels. Nowadays it is the largest enterprise in Bulgaria in tonnage and ship's size, technology and organization. So far the shipyard has built more than 850 ships for 27 countries, trading worldwide under the flags of over 22 countries.

TEREM-KRZ Flotski arsenal Varna EOOD http://varna.terem.bg/ was founded in 1897. It is situated on the Shore of Varna Lake at distance of 20 km from Varna and is specialized in complex repair of special and civil production. The yard offers also shipbuilding of small multi- purpose and special vessels - fire-fighting and

salvage crafts, tug- and push boats, diver's crafts, torpedo recovery boats, minesweeper, etc., as well as ship conversion of river going into sea-going ships.

Keppel FELS Baltech Ltd http://www.fels.bg was founded in the city of Varna in July 1994 to provide engineering services for marine and offshore design. Established as the first European subsidiary of Keppel FELS – Singapore, the company is a member of Keppel Offshore & Marine - global leader in offshore rig design, construction and repair, ship repair and conversion, and specialized shipbuilding. Main activities include basic design, detailed engineering and FEM of: Mobile Offshore Drilling Units (MODU), Accommodation platforms, Multi-purpose support vessels, offshore supply vessels**.**

SMART DESIGN 2006 Ltd http://smartdesign2006.com was established in January 2006 by a small team of six engineers, experienced in the field of shipbuilding design, having worked for different foreign companies. Thanks to the good quality services, relationships with STX (Aker Yards, nowadays known as VARD Group AS) and domestic shipyards, the company grew fast. Since 2015 was established a branch office in the USA – Irvine, California to meet the needs of the American clients and to offer high-quality engineering services at a very attractive price for the American market.

Navigation Maritime Bulgare JSC http://www.navbul.com **.** The company, known as (NAVIBULGAR®) is the successor to a shipping company established in 1892. Until 2008 the company was the biggest State Ship Owning Company with over a century-old tradition and experience in the shipping industry. Presently, it is a private company.

Bon Marine Ltd. http://bonmarine.com is one of the oldest maritime transportation companies in Bulgaria. It was founded in 1990 in Varna and over the years it established itself as one of the leading companies in the transportation and logistics sector, offering a very wide range of services either directly or through its subsidiaries. Bon Marine has worked in partnership with a huge number of international companies, including Texaco, British Gas, OMV Austria, Total etc. Currently it has offices in all major sea ports in Bulgaria and an office in Constanta, Romania.

Rubiships Ltd http://www.rubiships.com is a private shipping company, founded in 1996 in Rousse, acting in the field of river transport and logistics. In 2012 Imperial Shipping Group, the largest shipping company at the domestic market in Western Europe with 6200 employees and over 1.5 billion annual turnover, acquired 49% of the company. In 2007 the first regular weekly transport line from Germany/Austria to Romania/Bulgaria was introduced. One year after, the company expanded the shipping line to Turkey.

Dunav Tours AD http://www.dunavtours.bg is the successor of the government company government company “Balkantourist” created in 1948. In 1991 the company was renamed and registered as DUNAV TOURS. In August 1999 the company was privatized. Main shareholders are “Industrial Holding Bulgaria” and “Uniontours” JSC. In May 2012 “Uniongroup” JSC became the sole proprietor of 96% of company's shares. In 1985 the company has built its own mooring pontoon on the Danube, well equipped for the river passenger cruise ships. Nowadays the company owns 6 passenger ships and keeps its position on the market of the inland European cruises, offering river cruises on the board of luxury ships on the Rhein-Main-Mosel-Donau.

BMF Port Bourgas EAD http://en.navbul-portburgas.com/ was established by Navigation Maritime Bulgare JSC on 23.06.2011. The company has been appointed as concessioner of terminal Bourgas East 2 and terminal Bourgas West, part of the national public port of Bourgas. It is a private-owned port operator. To accomplish the key objectives for development and modernization of the two port terminals, BMF Port Bourgas EAD launched the implementation of an ambitious investment program.

Port Varna EAD http://www.port-varna.bg The initial registration was in 1991 as limited company, following separation of company’s assets and liabilities from Navigation Maritime Bulgare. It is a public

company (100% state-owned), operator of port facilities for public transport of national importance, and it can handle all types of cargo. The port provides services to passenger and cruise ships, scientific vessels and pleasure boats. It is a host port of major international marine events, including the Historical Seas Tall Ships Regatta in 2010 and SCF Black Sea Tall Ships Regatta in 2014.

Marine antipollution enterprise JSCO http://pchmv-bg.com was created in 1972 by order of the Council of Ministers as a state directorate. In 1993 it became a private joint stock company. The activity of the company is focused on maintaining the purity of sea water, the water area of ports and approach channels; cleaning of oil stains in the territorial waters and internal waters under accidental spills; technical support and measures to limit the risk of contamination during loading and unloading operations and maintenance; reception and processing of solid and oil waste obtained from the operation of marine vessels, ports and related activities.

Albena AD http://albena.bg was set up in 1968, at distance of 30 km from Varna aiming to become the most modern resort in the country. After its privatization in 1997, Albena began active modernization while preserving its green outlook at the same time. Now it is the biggest holiday company with more than 40 hotels, along one of the best beach areas in Europe. The resort is holder of the award "Blue Flag".

Riviera AD http://rivierabulgaria.com/ was a governmental residence with strictly limited access until 1989, but nowadays it was converted to a private company. It is a holiday gated complex that consists of five luxury hotels. It is situated 14 km northeast of Varna, on the sea coast, surrounded by a magnificent natural park of 12 hectares. Riviera offers own beaches, peaceful and quiet surroundings, and swimming pools with mineral water from thermal springs.

Marina Port Sozopol http://www.marinasozopol.com/ is a newly built contemporary yacht port with 330 berths for boats up to 25 meters, supplied with electricity and drinking water, and ground facilities. The port offers to its customers a wide range of services - everything one could require.

BSHC- Bulgarian Ship Hydrodynamics Centre http://www.bshc.bg the scientific research and experimental center in the field of hydrodynamics of ships, floating structures and marine-based facilities was founded in 1976. BSHC performs wide spectrum of fundamental and applied research in the fields of ship hydrodynamics, aerodynamics, water transport and energy saving, ocean engineering, sea and river crisis and disasters, marine ecology and coastal protection, facilities for fisheries and aquacultures, marine renewable energy sources, technology transfer, national security and defense.

Institute of Oceanology http://www.io-bas.bg The Institute of Oceanology (former name Institute for Marine Research and Oceanology up to 1985) was founded in 1973 in Varna by the Order of The Council of Ministers. The research activities of the Institute are in the field of marine physics, chemistry, geology and archaeology, biology and ecology, coastal dynamics and ocean technologies. It carries out complex monitoring of the Bulgarian area of the Black Sea, develops consulting and expert activities.

Institute for Fishery Resources http://www.ifrvarna.com The Institute was founded in 1932 as marine biological unit with Aquarium at the University of Sofia. In 1954 it was transformed in R&D for fisheries and fishing industry. Scientists from the institute played a core part in the Institute of Oceanology. Nowadays it is in the framework of Agricultural Academy. Two departments – hydrobiology and ichthyology provide research in the Black Sea economic zone.

Naval Academy http://www.naval-acad.bg Nikola Vaptsarov Naval Academy is the oldest technical educational institution in Republic of Bulgaria, founded in 1881. Its aims are to develop highly qualified

leaders for the Bulgarian Navy and the maritime industry. R&D activities are directed at forward-looking and applied science research. The academy is recognized as a center for naval science and marine technology.

Bulgarian Ports Infrastructure Company http://www.bgports.bg Bulgarian Ports Infrastructure Company (BPI Co) manages the port infrastructure of the public transport ports of national in accordance with the Maritime Spaces, Internal Waterways and Ports of the Republic of Bulgaria Act. The BPI Co is responsible for provision of information on traffic management and information services for shipping, distribution of marine information on safety and maintenance.

2.1.3 Research projects and activities to support R&I

LOCAL RESEARCH FRAMEWORK

R&D POLICY

The **National Strategy of Scientific Research to 2020** in Bulgaria[19] was adopted by Bulgarian Parliament in 2011. The strategy aims to support the development of science in Bulgaria for becoming a factor for the development of an economy based on knowledge and innovation. The target group targeted strategy is scientific organizations - universities, research institutes and other organizations involved in the research.

The main indicators for achievement of the objectives and implementation of the tasks and measures of the national scientific research development strategy are presented in Table 1.

Table.1. Main indicators of Bulgaria National Strategy of Scientific Research to 2020

Indicator	Current value, %	Target value, %
R&D expenditures as part of GDP	0.36	1.5
Public R&D expenditures as part of GDP	0.20	0.6
Private R&D expenditures as part of GDP	0.16	0.9
Turnover from innovation	10.3	13.5
Share of export of high-technology products	3.3	5.5
Percent of utilization of Structural Funds for R&D	1.0	10.0

The present strategic vision is intended not only to answer the European perspectives but also to set national objectives and indicators that will place our country in the position of a “moderate innovator” by 2020 in the European Innovation Scoreboard.

The **Innovation Strategy for Smart Specialization** (ISSS)[20] of Bulgaria comprises four priority thematic areas:

- Mechatronics and clean technologies;
- Informatics and information and communication technologies;
- Industry for a healthy life and bio-technology;
- New technologies in creative and recreational industries.

Although Bulgaria is bordered by the Danube and the Black Sea, the thematic areas do not include maritime and waterborne themes. There are only some priority directions in the above areas that could be treated

[19] http://www.strategy.bg/FileHandler.ashx?fileId=1437

[20] https://www.mi.government.bg/en/themes/innovation-strategy-for-smart-specialization-of-the-republic-of-bulgaria-2014-2020-is3-1470-287.html

appropriate for the maritime sectors. The one is from the first area and reads: " *CleanTech with focus on transport and energy sector (storing, saving, effective distribution of energy, electric vehicles and eco-mobility, hydrogen-based models and technologies, no-pollution technologies, technologies and methods for inclusion of waste products and materials in other production)".*

The second directions is from the third area: ""*blue" technologies and application of new methods and technologies in sustainable use of sea and river resources".*

INNOVATION PERFORMANCE

According to European Innovation Scoreboard 2016[21] Bulgaria is a Modest Innovator. Figure 1 presents the variation of the Innovation Index through the years for project consortium countries.

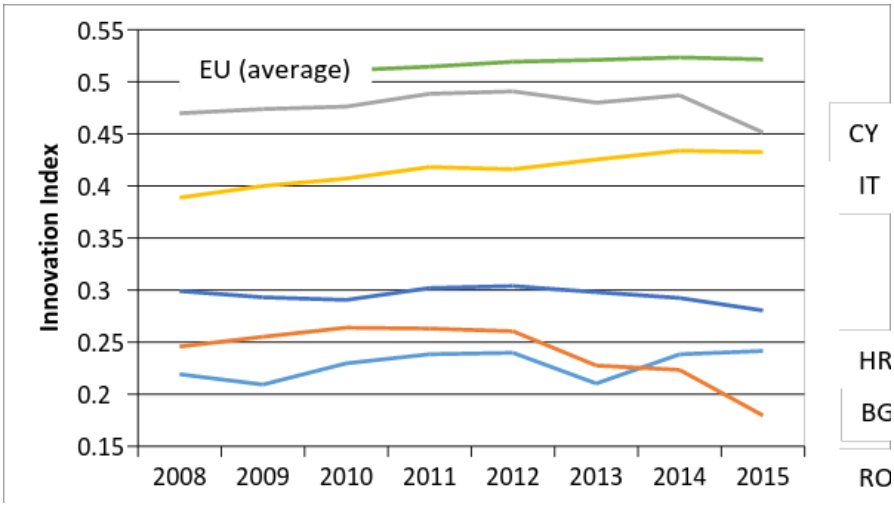


Figure 1. Innovation Index for project consortium members (to be edited)

For Bulgaria the Innovation performance for period 2009-2015 period is still growing (1.4% average annual growth rate). After 2012 it is strongly declined in 2013 (due to strong declines in Venture capital investments and Non-R&D innovation expenditures), to increase again in 2014 and 2015. Performance relative to the EU is between 41.7 % in 2009 and 46.3% in 2015. Bulgaria's relative strengths are in Human resources and Intellectual assets.

SOURCES OF FUNDING

There is no specific funding dedicated to maritime economy and most of it comes from different programs listed below.

National Sources

Two funds were created in 2004, one for science and another for innovation.

The National Science Fund (NSF) (http://nsfb.net/)
NSF aims to support projects and activities to promote research tailored to ratified framework programs with defined priorities of the European Union, as well as National Strategy of Scientific Research to 2020 in Bulgaria. NSF encourages research as:

- financially support research organizations and universities on the basis of project-program financing;
- fund projects, development and demonstration projects within the priority fields;
- fund projects, development and demonstration projects of young scientists.

[21] https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en

The National Innovation Fund (NIF) (http://www.sme.government.bg/en/?page_id=2183)
The main goal of the National Innovation Fund is to promote the scientific and research and development activities with the aim of acquiring new or improved products, processes or services designed to raise the economic efficiency, improve the innovative potential and technological level of enterprises, increase private investment and enhance the dynamics of innovative processes. The NIF is a programme under BSMEPA (Bulgarian SME Promotion Agency).
The maximum grant for scientific, research and development projects is BGN 500000 (€ 255623) for a period of implementation from 12 to 36 months. Projects for technical feasibility are funded up to BGN 50000 (€ 25562) for a period of implementation up to 1 year. The intensity of grants is calculated based on eligible project costs and should not exceed: 50% – for industrial research; 25% – for experimental development;
A peer review, prepared by Directorate-General for Research & Innovation of EC [1] highlights the main problems of these funds:

- The two funds have relatively limited resources. For example, in 2013, the NSF had a total budget of 5 million lev, the NIF of 10 million lev.;
- The NSF has an Executive Committee but currently lacks transparency, professional management and access to independent international reviewers. The system functions on an irregular basis, with unpredictable budgets and irregular calls for proposals;
- The NIF on the other hand appears only a financial dimension within the SME Promotion Agency. The NIF has also had sustained gaps in funding calls making funding very hard to predict for SMEs and it also lacks a multi-annual planning capacity;
- Neither the NIF nor the NSF appears to have designed synergy with the EU Framework Programme for Research and Innovation Horizon 2020 (H2020) into their programmes and calls.

EU Structural Funds
The most appropriate for the studied subject is the Operational Programme "Science and Education for Smart Growth 2014-2020"[22]. There are two main tasks:

- The Program to be one of the key instruments for achieving the targets adopted by Bulgaria under Europe 2020 (1.5% of GDP invested in R&D, reaching the rate of 36 % of the 30-34 year olds population with completed higher education; reduction of the share of early school leavers to 11 %; reduction of the people living in poverty with 260,000 until 2020; and increase in the employment rate to 76 %);
- To serve as an effective tool for the implementation of cohesion policies in accordance with the agenda at national and Union level.

Research is funded under this programme, governed by the Ministry of Education and Science.
Under the priority "Research and technological development" it is expected to reach a total amount of 350 million BGN (224,603,734.82 EUR) for funding following objectives:

1) Centers of Excellence - 200,000,000 BGN (102,278,376 EUR)
2) Centers of competence - 150,000,000 BGN (76,693,782 EUR)

Black Sea Basin Program
The Black Sea Basin Programme 2014-2020[23] is part of European Union's Cross-Border Cooperation (CBC) under its European Neighborhood Instrument (ENI). The Program 2007-2013 awarded 62 projects implemented in 8 countries surrounding the Black Sea Basin.
The objectives for Programme 2014-2020 are as follows:

- Promote business and entrepreneurship within the Black Sea basin;
- Promote coordination of environmental protection and joint reduction of marine litter in the Black

[22] http://archive.eufunds.bg/en/page/1017
[23] http://blacksea-cbc.net/black-sea-basin-2014-2020/

Sea basin

EEA and Norway Grants

The EEA (European Economic Area) and Norway Grants represent the contribution of Iceland, Liechtenstein and Norway to reducing economic and social disparities and to strengthening bilateral relations with 16 EU countries in Central and Southern Europe and the Baltics[24].

For Bulgaria there are 12 ongoing projects in "Integrated Marine and Inland Water Management" programme, with a total amount of € 7005432 in grants with the majority going to ecology projects.

European Projects

The H2020 country profile[25] of Bulgaria is presented in Table 2. The same indicators for FP7[26] are shown in Table 3.

Table 2. Country profile of Bulgaria in H2020

Total number of participants, total EU financial contribution, € million	203 participants, receiving €23,05 m in H2020
Total number of SME participants, total EC financial contribution, € million	38 SMEs receiving €4,79 m in H2020
Number of ERC* Principal Investigators, total EC financial contribution , € million	6 ERC grantees receiving €9,54 m in H2020
Number of Marie Skłodowska-Curie Actions Participations, total EC financial contribution, € million	28 MSCA Fellows receiving € 1,70 m in H2020
Number of applicants	2.294 (0,77% of EU-28)
Success rate (EU-28 = 13.3%)	9,5%

*European Research Council (ERC)

Table 3. Country profile of Bulgaria in FP7

Total number of participants, total EU financial contribution € million	700 participants receiving € 98,40 m in FP7
Total number of SME participants, total EC financial contribution € million	153 SMEs receiving € 27,36 m in FP7
Number of ERC Principal Investigators, total EC financial contribution € million	7 ERC grantees receiving EUR 7,78 m in FP7
Number of Marie Skłodowska-Curie Actions Fellows, total EC financial contribution € million	202 MSCA Fellows receiving € 132,15 m in FP7
Number of applicants	4.108 (0,79% of EU-28)
Success rate (EU-28 = 20,5%)	16,4%

List research projects and activities

Title	**Project coordinator or activity responsible entity**	**Year**	**Sector and subsector**
DEVOTES	FUNDACION AZTI - AZTI FUNDAZIOA- Spain	2012-2016	Environmental protection
COCONET	CONSIGLIO NAZIONALE DELLE	2012-2016	Wind energy; Environmental Protection

[24] http://eeagrants.org/Who-we-are

[25] http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=country-profiles-detail&ctry=bulgaria

[26] https://ec.europa.eu/research/fp7/index_en.cfm?pg=country-profiles-detail&ctry=bulgaria

	RICERCHE – Italy		
PERSEUS	HELLENIC CENTRE FOR MARINE RESEARCH-Greece	2012-2015	Environmental protection
ISOTRACK	ADS GROUP LIMITED LBG, UK	2007-2013	Maritime transport
MONOAS	RINA SERVICES SPA- Italy	2009-2012	Maritime transport

Project Title	*DEVOTES - DEVelopment Of innovative Tools for understanding marine biodiversity and assessing good Environmental Status*
Abstract	*The overall goal of DEVOTES is to test indicators proposed by the EC and to develop new ones for the assessment of Good Environmental Status (GES) at the species, habitat and ecosystem level, which lead to a classification status of marine waters, integrating the indicators into a unified assessment of the biodiversity and the cost-effective implementation of the indicators (i.e. by defining monitoring and assessment strategies).* *The project objectives are:* *- improve our understanding of human activities impacts (cumulative, synergistic, antagonistic) and variations due to climate change on marine biodiversity, using long-term series (pelagic and benthic) for identification of the barriers and bottlenecks (socio-economic and legislative) that prevent the GES achievement.* *- test the indicators proposed by the EC, and develop new ones for assessment at species, habitats and ecosystems level, for the status classification of marine waters, integrating the indicators into a unified assessment of the biodiversity and the cost-effective implementation of the indicators (i.e. by defining monitoring and assessment strategies), for adaptive management including strategies & measures, the role of industry and relevant stakeholders and to provide an economic assessment of the consequences of the management practices proposed.* *- develop/test/validate innovative integrative modeling tools to further strengthen our understanding of ecosystem and biodiversity changes (space & time, which can be used by statutory bodies, SMEs and marine research institutes to monitor biodiversity, applying both empirical and automatic data acquisition for innovative monitoring systems and for the integration of the information into a unique assessment.*
Project partners	*HAZEL ANNE WILSON-United Kingdom; NORSK INSTITUTT FOR LUFTFORSKNING-Norway; SUOMEN YMPARISTOKESKUS- Finland; AARHUS UNIVERSITET-Denmark; UNIVERSITY OF HULL- United Kingdom; THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS- United Kingdom; PLYMOUTH MARINE LABORATORY -United Kingdom; IMAR- INSTITUTO DO MAR- Portugal; INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES- Bulgaria; JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION- Belgium; HELLENIC CENTRE FOR MARINE RESEARCH- Greece; KLAIPEDOS UNIVERSITETAS- Lithuania; AKVAPLAN-NIVA AS- Norway; CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE- Italy; STICHTING NIOZ, KONINKLIJK NEDERLANDS INSTITUUT VOOR ONDERZOEK DER ZEE- Netherlands; AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES CIENTIFICAS- Spain; DOKUZ EYLUL UNIVERSITESI- Turkey; MARINE HYDROPHYSICAL INSTITUTE - UKRAINIAN*

	NATIONAL ACADEMY OF SCIENCES- Ukraine; MariLim Gesellschaft fur Gewasseruntersuchung mbH *Germany- CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS- France; OCEANDTM LIMITED- United Kingdom; ECOREACH SRL- Italy* *KING ABDULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY- Saudi Arabia* *SALT LOFOTEN AS- Norway*
Year	*2012-2016*
Sector	*Environmental protection*

Project Title	*COCONET - Towards COast to COast NETworks of marine protected areas*
Abstract	*The core objectives of CoCoNet are: 1 - The production of guidelines for the establishment of networks of Marine Protected Areas (MPAs) in the Mediterranean and Black Seas; 2 - A wind chart of both basins, aimed at testing the feasibility of the establishment of Off Shore Wind Farms (OWF).* *The project activities aim to enhance policies of effective environmental management, also to ascertain if the existing MPAs are sufficient for ecological networking and to suggest how to design further protection schemes based on effective exchanges between protected areas. Socioeconomic studies are focused on integration of knowledge-based environmental management of both environmental protection (MPAs) and clean energy production (OWF*).
Project partners	*University Mohammed V-Agdal-Morocco; CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE-Italy; 3E NV-Belgium; PANEPISTIMIO AIGAIOU-Greece;CLU srl-Italy; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS-France;COISPA TECNOLOGIA & RICERCA SCARL-Italy; AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES CIENTIFICAS-Spain; DANMARKS TEKNISKE UNIVERSITET-Denmark; INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU GEOLOGIE SI GEOECOLOGIE MARINA-GEOECOMAR-Romania; HELLENIC CENTRE FOR MARINE RESEARCH-Greece; INSTITUT PO BIORAZNOOBRAZIE I EKOSISTEMNI IZSLEDVANIYA BALGARSKA AKADEMIYA NA NAUKITE-Bulgaria; INSTITUTO ESPANOL DE OCEANOGRAFIA-Spain,UNIVERSIDAD DE CANTABRIA-Spain; Institut National Agronomique de Tunisie-Tunisia; INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE MARINA GRIGORE ANTIPA-Romania; ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH LIMITED-Israel; ISTANBUL UNIVERSITESI-Turkey; MIDDLE EAST TECHNICAL UNIVERSITY-Turkey; MARINE HYDROPHYSICAL INSTITUTE - UKRAINIAN NATIONAL ACADEMY OF SCIENCES-Ukraine; NATUREBUREAU LIMITED- United Kingdom; THE NATIONAL ENVIRONMENTAL AGENCY- Georgia; NENUPHAR SARL- France; STIFTELSEN NANSEN SENTER FOR MILJOOG FJERNMALING- Norway; UNIVERSITE MOHAMMED V DE RABAT-Morocco; ODESSA BRANCH INSTITUTE OF BIOLOGY OF SOUTHERNS SEAS NATIONAL ACADEMY OF SCIENCE OF UKRAINE- Ukraine; P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY OF RUSSIAN ACADEMY OF SCIENCES- Russia; University of Zadar-Croatia; FONDACIONI ZOJA E KESHILLIT TE MIRE –Albania; UNIVERSITA TA MALTA-Malta; JAVNA USTANOVA UNIVERZITET CRNE GORE PODGORICA-Montenegro; UNIVERSITAET ROSTOCK – Germany; SOFIISKI UNIVERSITET SVETI KLIMENT OHRIDSKI- Bulgaria; UNIVERSITE DU SUD TOULON VAR- France; INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES Bulgaria;*

	UKRAINIAN SCIENTIFIC CENTRE OF ECOLOGY OF THE SEA- Ukraine; A.O. KOVALEVSKIY INSTITUTE OF BIOLOGY OF SOUTHERN SEAS- Ukraine; RUSSIAN STATE HYDROMETEOROLOGICAL UNIVERSITY- Russia; SINOP UNIVERSITY SINOP FISHERIES FACULTY SNU FF- Turkey
Year	*2012-2016*
Sector	*Energy and raw materials - Wind energy, Environmental protection*

Project Title	*PERSEUS - Policy-oriented marine Environmental Research for the Southern European Seas*
Abstract	*The scientific objectives of PERSEUS are to identify the interacting patterns of natural and human-derived pressures on the Mediterranean and Black Seas, assess their impact on marine ecosystems and, using the objectives and principles of the Marine Strategy Framework Directive as a vehicle, to design an effective and innovative research governance framework based on sound scientific knowledge. PERSEUS developed a concept of an innovative, small research vessel, aiming to serve as a scientific survey tool, in very shallow areas, where the currently available research vessels are inadequate.*
Project partners	*MIDDLE EAST TECHNICAL UNIVERSITY-Turkey; INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER-France; AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES CIENTIFICAS-Spain;CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE- Italy; INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU GEOLOGIE SI GEOECOLOGIE MARINA-GEOECOMAR-Romania; PLAN BLEU POUR L'ENVIRONNEMENT ET LE DEVELOPPEMENT EN MEDITERRANNEE-France* *COSNAV ENGINEERING SRL-Italy; UNIVERSITA TA MALTA-Malta; EIR SYMVOULOI ANAPTYXIS ETAIREIA PERIORISMENIS EFTHYNIS- Greece; ASOCIACION BC3 BASQUE CENTRE FOR CLIMATE CHANGE - KLIMA ALDAKETA IKERGAI-Spain; INSTITUTO ESPANOL DE OCEANOGRAFIA-Spain;* *UNIVERSITAT DE BARCELONA-Spain; UNIVERSITAT POLITECNICA DE CATALUNYA- Spain; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS-France; UNIVERSITE D'AIX MARSEILLE-France; UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6- France; UNIVERSITE PAUL SABATIER TOULOUSE III-* *France; FONDAZIONE CENTRO EURO-MEDITERRANEO SUI CAMBIAMENTI CLIMATICI- Italy; CONSIGLIO NAZIONALE DELLE RICERCHE- Italy; AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE- Italy; JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION- Belgium; ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE- Italy; STAZIONE ZOOLOGICA ANTON DOHRN- Italy; PLYMOUTH MARINE LABORATORY- United Kingdom; UNIVERSITY OF PLYMOUTH -United Kingdom; STICHTING DELTARES –Netherlands; UNIVERSITEIT UTRECHT-Netherlands; UNIVERSITE DE LIEGE- Belgium; PANEPISTIMIO AIGAIOU- Greece; ETHNIKO KAI KAPODISTRIAKO PANEPISTIMIO ATHINON- Greece; PANEPISTIMIO KRITIS – Greece; THE CYPRUS RESEARCH AND EDUCATIONAL FOUNDATION – Cyprus; UNIVERSITY OF CYPRUS – Cyprus; NACIONALNI INSTITUT ZA BIOLOGIJO-Slovenia; INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO- Croatia; ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH LIMITED- Israel; UNIVERSITY OF HAIFA –Israel; BLACK SEA NGO NETWORK –Bulgaria; SOFIISKI UNIVERSITET SVETI KLIMENT OHRIDSKI- Bulgaria; INSTITUT PO BIORAZNOOBRAZIE I*

	EKOSISTEMNI IZSLEDVANIYA BALGARSKA AKADEMIYA NA NAUKITE – Bulgaria; INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES – Bulgaria; INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE MARINA GRIGORE ANTIPA –Romania; ISTANBUL UNIVERSITESI – Turkey; A.O. KOVALEVSKIY INSTITUTE OF BIOLOGY OF SOUTHERN SEAS- Ukraine; MARINE HYDROPHYSICAL INSTITUTE - UKRAINIAN NATIONAL ACADEMY OF SCIENCES- Ukraine; ODESSA NATIONAL I.I. MECHNIKOV UNIVERSITY-Ukraine; P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY OF RUSSIAN ACADEMY OF SCIENCES –Russia; IVANE JAVAKHISHVILI TBILISI STATE UNIVERSITY- Georgia; INSTITUT NATIONAL DE RECHERCHE HALIEUTIQUE- Morocco; CLU srl- Italy; ECOLOGIC INSTITUT gemeinnützige GmbH- Germany; SAROST SA- Tunisia; EIR GLOBAL SPRL Belgium
Year	*2012-2015*
Sector	*Environmental protection*

Project Title	*ISOTRACK - ISO Shipping Container Tracking and Monitoring System*
Abstract	*The ISOTRACK project proposed an initiative to improve the security of shipping containers. The objectives of the project were to show how dangerous and human cargo can be detected in an ISO shipping container and how that knowledge is processed, transmitted, received and relayed to security services and other stakeholders who can act to make any incident safe. The Isotrack project involved the development of an innovative composite container door which is transparent to radio frequency communication. Securely encapsulated in the composite door panel, are modular elements for detecting/sensing Volatile Organic Compounds (VOC), radioactive material and the presence of stowaways.* *This container door with integrated communications and sensor electronics will be capable to be fitted to new and existing shipping containers. The impact of this project could be significant in the areas of container security and reduced insurance premiums for operators. With this system installed, valuable time and effort may be saved in the checking of containers at ports and security services will be able to monitor suspicious cargo anywhere in the world via satellite communication. The technology is aimed at European container transport companies when they operate in other areas of the world where port security is stringent and more checks are carried out. Delays at these ports are currently excessive and can be an impact on the profits of smaller company.*
Project partners	*Clecat - European Association for Forwarding, Transport, Logistics and Customs Service- Belgium; SAIRP COMPOSITES S.A.- France; ZOCA CONTAINER SECURITY BV- Netherlands; TTS- (SHIPPING) LIMITED- United Kingdom; FLEXTRACK APS; Denmark; Containerships Ltd Oy- Finland; LLOYD'S REGISTER EMEA IPS- United Kingdom; THE UK INTELLIGENT SYSTEMS RESEARCH INSTITUTE LIMITED- United Kingdom; TEKNOLOGISK INSTITUTT AS- Norway; BULGARIAN NATIONAL FORWARDERS ASSOCIATION- Bulgaria; ASTRATA EUROPE LIMITED- United Kingdom; EMA DOO - OZNACEVANJE IN SLEDLJIVOST V INDUSTRIJI IN LOGISTIKI- Slovenia; THE DEFENCE MANUFACTURERS ASSOCIATION LIMITED - United Kingdom*
Year	*2007-2013*
Sector	*Marine transport*

Project Title	MINOAS - Marine INspection rObotic Assistant System
Abstract	*MINOAS project proposes reengineering of the overall vessel-inspection methodology, by introducing an innovative system concept that incorporates state of the art technologies, but at the same time formulates a new standardization of the overall inspection process. The innovative system concept considers the assembly of a robot fleet with advanced locomotion abilities and sets of tools to implement tasks in line with the inspection process, the development of control techniques and algorithms that provide a semi-autonomous nature to the operation of the robot-fleet. This allows providing a virtual environment for the human inspector and newly developed toolboxes give the opportunity to on-line processing of the harvested data. This withdraws the human personnel from the hazardous environment of a vessel under inspection.*
Project partners	*DEUTSCHES FORSCHUNGSZENTRUM FUR KUNSTLICHE INTELLIGENZ GMBH- Germany; CONSIGLIO NAZIONALE DELLE RICERCHE- Italy; Glafcos Marine Ltd.- Greece; UNIVERSITAT DE LES ILLES BALEARS- Spain; Rigel Engineering S.r.l.- Italy; "HORAMA, MARKETING & ENGINEERING SERVICES S.A."- Greece; LLOYD'S REGISTER EMEA IPS- United Kingdom; MARINE TECHNICAL GROUP - DOLPHIN PLC; Bulgaria; NAFPHGIKES & VIOMIHANIKES EPIXEIRISEIS SYROU- Greece*
Year	*2009-2012*
Sector	*Maritime transport*

Black Sea Basin Program

Title	**Project coordinator or activity responsible entity**	**Year**	**Sector and subsector**
BS-TOURISM NET	Municipality of Varna, Bulgaria	2013-2015	Coastal tourism
SRCSSMB SF-88	National Institute for Marine Research and Development "Grigore Antipa", Constanta - Romania	2011-2013	Fisheries and aquaculture
SYMNET	Institute of Oceanology - Bulgaria Academy of Sciences, Varna, Bulgaria	2011-2013	Environmental Protection

Project Title	*BS-TOURISM NET Creation of a Black Sea Network for Sustainable Tourism Development in Bulgaria, Romania, Ukraine and Georgia*
Abstract	*The project is aiming to establish and operate a cooperative and self-supporting BS Network for sustainable tourism, comprising data and information providers, policy and decision makers and tourism industry.* *Specific objectives of BS Tourism Net are to improve exchange of knowledge, communication and activities on environmentally sustainable tourism within the Black Sea region, to enhance the cooperation between wide range of stakeholders such as tourism information providers, consumers, policy and decision makers and the tourism industry, to increase public understanding and awareness of sustainable tourism, to stimulate and promote sustainable tourism potential within the Black Sea region and to increase exchange, availability and*

	accessibility of tourism data and information.
Project partners	*Municipality of Varna- Bulgaria; Black Sea Economic Centre- Bulgaria; Municipality of Odessa, Department of Culture and Tourism (Odessa City Council)-Ukraine; Black Sea Branch of Ukrainian Environmental Academy of Sciences, Ukraine; The European Environmental Association- Romania; Iv. Javakhishvili Tbilisi State University, Department of Human Geography of the Faculty of Social and Political Science- Georgia; AGRICOLA – Ukraine; Environmental Association for Quaternary Research "INQUA - Moldova"*
Year	*2011-2013*
Sector	*Coastal tourism*

Project Title	*SRCSSMBSF-88 - Strengthening the Regional Capacity to Support the Sustainable Management of the Black Sea Fisheries*
Abstract	*The project aims to facilitate the cooperation between Black Sea coastal states in the field of marine ecosystem and resource management. Knowledge sharing and research activities are a key element of the project implementation, serving to provide an objective analysis of fish stocks, as well as valuable strategic management advice. The project adopts a thorough approach that includes a harmonization of methods and tools to assess the present state of fish stocks, the use of analytic models to align the common methods for sampling, processing and interpretation data from fisheries, and awareness-raising with respect to the need to implement advice from research and joint-regional stock assessment in the management strategies for the fisheries; adding information sharing, knowledge and data base improvement by working visits, data survey, trainings and manuals translating in all partners languages.*
Project partners	*National Institute for Marine Research and Development "Grigore Antipa", Constanta - (RO); Institute of Fishing Resources, Varna (BG); Institute of Oceanography of the Bulgarian Academy of Science, Varna (BG); Southern Research Institute of Sea Fisheries and Oceanography, Kerch (UA); Central Fisheries Research Institute, Trabzon (TR); Black Sea Technical University, Marine Science Faculty, Trabzon (TR)*
Year	*2011-2013*
Sector	*Fisheries and aquaculture*

Project Title	*Symnet - Industrial Symbiosis Network for Environmental Protection and Sustainable Development in Black Sea Basin Project*
Abstract	*The project contributes to minimize the environmental degradation while maximizing economic and social development in Black Sea Basin by establishing industrial symbiosis system as a new and innovative approach. In biology, symbiosis means co-existence between diverse organisms in which each may benefit from the other, the term is applied about the industrial cooperation and benefiting from each other's production, trade and consumption economically and environmentally. Therefore, the overall objective aims to create a new system from which both producers and consumers will benefit while decreasing the environmental footprint on Black Sea Basin.* *Based on the current status of the manufacturing, logistics, tourism and energy industries and data of their dynamics, as well as the existing commercial networks in the Black Sea Basin, the goal is to increase the social and*

	commercial interaction between the communities of decision makers, producers and sellers in involved countries, to create an industrial symbiosis strategy that would contribute to the effective management of resources for developing strong, environmentally friendly, socially responsible local economies.
Project partners	*Institute of Oceanology - Bulgaria Academy of Sciences, Varna- Bulgaria; Özyeğin University – Center for Energy, Environment and Economy, Istanbul, Turkey; National Institute for Marine Research and Development, Constanta, Romania; Agency for Innovation and Technology Transfer, Academia of Science of Moldova, Chisinau, Moldova;Istanbul's EU Pioneers Association, Istanbul, Turkey*
Year	*2011-2013*
Sector	*Environmental protection*

EEA and Norway Grants

Project Title	*MARLEN - Marine litter, eutrophication and noise assessment tools*
Abstract	*Initial assessment of ecological state of Bulgarian marine waters showed lack of data for some descriptors of MSFD. The main goal of MARLEN is to build up tools for assessment of marine environment by implementing new technologies and best practices for addressing three main areas of interest with lack of marine data in particular: a) Marine litter detection and classification in coastal areas; b) Regular near real time surface water eutrophication monitoring on large equatorials; c) Underwater noise monitoring.*
Project partners	*Institute of Oceanology - Bulgaria Academy of Sciences, Varna- Bulgaria; Black sea Basin Directorate – Varna; Municipality of Burgas*
Year	*2015-2016*
Sector	*Environmental protection*

Main developed activities

Activity/Initiative name	*SCIENTIFIC CONFERENCE Marine science and technology with international participation -"BLACK SEA-2014", -"BLACK SEA-2016",*
Brief Description	*The working sessions of the Conference are dedicated on the topics of shipbuilding and ship repair; ship hydrodynamics; ship equipment; oceanology; ocean engineering; maritime transport and ports, maritime safety; marine environment protection, renewable energy, coastal structures*
Year	*2014, 2016*
Relevance	*International*
Stakeholders involved	*Maritime scientists, specialists and entrepreneurs mainly from EU countries*

Activity/Initiative name	*4-th Black Sea Oil and Gas Conference, Sofia , October 2016*
Brief Description	*It is annual event which covers all the key offshore E&P projects and gas infrastructure development plans in the Black Sea region. The conference brings together key decision makers from Romania, Bulgaria, Georgia, Turkey, Russia and Ukraine. Organized with the support of the Ministries of Energy of Bulgaria and Romania, the 4th edition of the Black Sea Oil and Gas Conference has provided a strategic overview of the current stage of the upstream and midstream projects in the region, debates about the challenges*

	in each sector and in-depth analysis of the industry trends, funding opportunities and technological needs presented directly by the project owners.
Year	2016
Relevance	International
Stakeholders involved	Oil and Gas industry

Reference

[1] DG RTD . Peer Review of the Bulgarian Research and Innovation System, European Union, 2015. ISBN: 978-92-79-50637-6, DOI: 10.2777/17938

2.1.4 Maritime policies and initiatives in the Country

The main documents and policies which are guiding the economic development of the country are the national programmes and strategies. Among them the main role plays the National Programme for Development 2020[27]. One of the priorities in that programme is the "Support for innovation and investment activities for the improvement of the competitiveness of the economy".
Based on the National Programme for Development 2020, a Strategy for the Development of the Transport System in the Republic of Bulgaria until 2020 was developed. The only reference concerning waterborne transport is "Improving the conditions on the Danube River and improving port terminals".
Under Operating Programme Transport it is expected that the funding for port activities and maritime transport for innovation - improving and implementing the vessel traffic monitoring infrastructure - will be 6,617,750 EUR for maritime ports and 6,617,750 EUR for river ports.
The Ministry of agriculture and food is responsible for the fisheries and aquacultures sector and the Operating Programme Maritime affairs and fisheries 2014-2020[28]. The total amount of funding for the whole programme period is 106,730,634 EUR, of which 82,782,625 EUR of the EMFF funding and 23,948,009 EUR national contribution.
The priorities and activities of Blue Growth are among the top focus themes of various different government agencies. Unfortunately this leads to fragmentation and it is increasingly more difficult to coordinate a single approach. The coordination regarding multi-sectoral activities in particular is not intensive enough and slightly problematic.

In Bulgaria there are no working strategies developed by the government and related to the maritime economy or specific policies for maritime transportation. All the measures concerning innovation and funding programmes are coordinated at a national level.
Marine Cluster Bulgaria acknowledges the lack of integrated maritime policy as one of the most problematic areas for the development of the Blue Growth technologies. Representatives of the Cluster took part in various meetings to try and develop a single integrated maritime strategy. On the 29th of December 2016 the government signed the Maritime Strategy of the Republic of Bulgaria[29] and a programme of measures to reaching a good maritime environment as per the requirements of Directive "Marine Strategy Framework" 2008/56/EC.

Strategy title	*Regional development strategy of Varna district for 2014-2020*[30]

[27] http://www.strategy.bg/StrategicDocuments/View.aspx?Id=765
[28] http://oprsr.government.bg/wp-content/uploads/2012/10/PMDR_BG_13.10.2015.pdf
[29] http://www.bsbd.org/bg/m_env_and_action.html
[30] http://www.vn.government.bg/stranici/strategii/oblast/%CE%D1%D0%20%ED%E0%20%C2%E0%F0%ED%E5%ED%F1%EA%E0%20%EE%E1%EB%E0%F1%F2%202014-2020.pdf

Regulatory reference	*Regional Development Council - Decision from 20.06.2013*
Issuing entity	*Regional administration Varna*
Description of the background motivations for the definition of the strategy regulation	*Achieve smart growth through the development of its own potential and focusing on innovation and the knowledge economy, combined with effective environmental protection is one of the strategic goals. This goal is supported by three priorities: 1. Improving scientific and technological level of the economy and the innovation potential in the field ("knowledge economy"), 2. Support the development of economic activities related to the sea ("maritime industries"), 3. Diversification of tourism supply. The aim of the priority 2 is to coordinate and achieve a synergistic effect from the actions of individual sectoral policies for maritime affairs.*
Description and objectives of the strategy	*The specific objectives of the priority are: development of regional maritime cluster; Improvement of infrastructure related to the development of the maritime industry; Development of fisheries and aquaculture and management of coastal fisheries; Improved management of the Black Sea. Measures for achieving the objectives: Enhancing the role of "Marine Cluster Bulgaria") to achieve ascending and sustainable development of the marine industry at district, regional and national level. Improve communication and cooperation between companies in the marine industry, implementation of best practices, experience and know-how of leading maritime clusters.*
Measures to be implemented	*N/A*
Period of activation	*2014-2020*

Activity/Initiative name	*Second Black Sea Stakeholder Conference, Sofia, 2015 Organized by the EC, DG Mare , co-organizer Ministry of transport, information technology and communication of Republic of Bulgaria*
Brief Description	*„Smart and Blue – new opportunities for the blue economy in the Black Sea - supporting maritime business growth“. The working sessions of the Conference are dedicated to: how to better connect maritime businesses; how to diversify and improve tourism offer in the coastal areas; where research can shape business and vice versa; how to reduce conflicts for space when developing maritime activities; how to use the sea in a sustainable manner.*
Year	*2015*
Relevance	*International*
Stakeholders involved	*Maritime practitioners and entrepreneurs of the Black Sea region*

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Cluster definition

Cluster and Cluster management organization

The process of creating business clusters in Bulgaria began in 2003 when the PHARE program funded a project to implement the cluster approach and the establishment of a pilot cluster model.
This project started the process of creating and supporting clusters in Bulgaria with financial support from public funds. The Second phase of PHARE project BG2005 / 017-586.04.02 started in 2005 with a total budget of € 3,000,000. A methodology for cluster development was developed. Following a procedure for selection of projects, out of 14 candidates 10 clusters were selected to receive funding.
The next stage was the PROCEDURE BG161PO003-2.4.01 "Supporting the development of clusters in Bulgaria" which was launched in 2010. The Association of Business Clusters (ABC), based on its analysis of the rules presented its opinion and proposed to change many of the restrictive conditions imposed by the local administration that were contrary to the objectives of the project, and also proposed changes for introducing additional requirements. Out of the 38 submitted proposals, 24 have been approved.
The next PROCEDURE BG161PO003-2.4.02 "Supporting the development of clusters in Bulgaria", started in early 2013 with a total budget of € 10,000,000. In the beginning of 2014 the amount of €5,112,919 was added to the previously allocated budget.

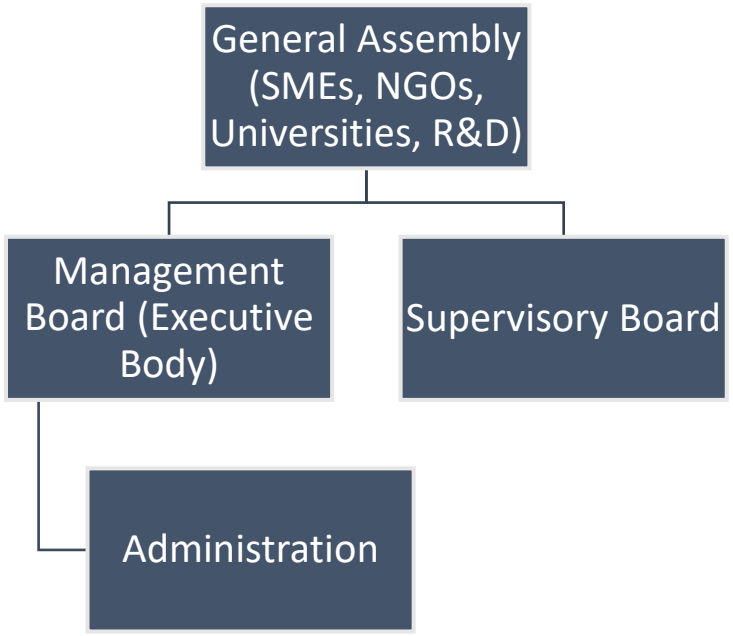
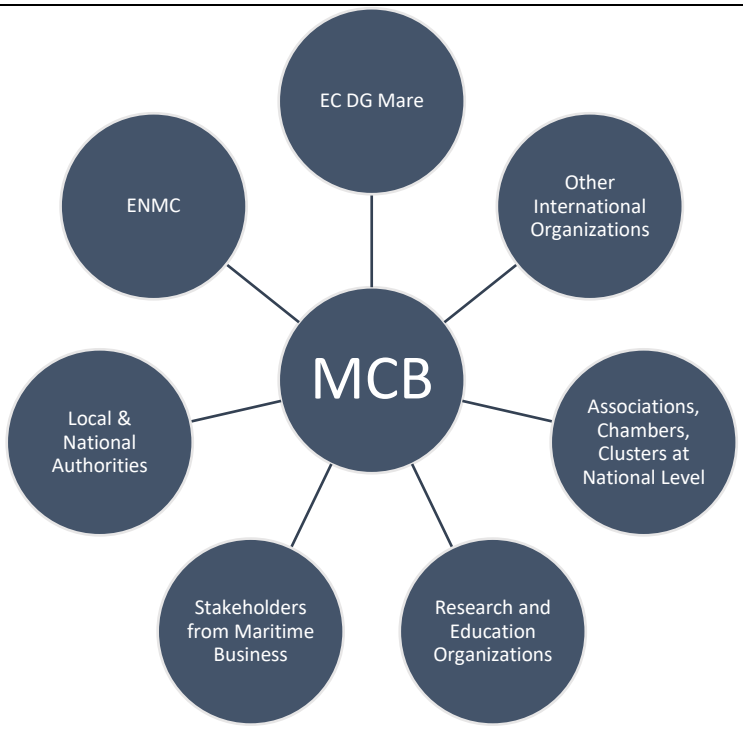
ABC performed in depth analysis of all completed procedures and announced the results. The analysis stresses the fact that many clusters were registered right before the opening of the application procedure. In 2015 there were 260 registered clusters. Even though many of those clusters fulfill the minimum requirements of the operational programs, they are often an assembly of companies owned by one or more related individuals and their objects do not always meet the stated procedures. This analysis traced not only the creation and development of clusters in Bulgaria from 2004 to 2015, but also the implementation of the projects concluded by them in the 2007-2013 programming period. The results are provided for information to the Ministry of Economy, Bulgarian Small and Medium Enterprises Promotion Agency. To overcome the gaps, an Accreditation System (categorization) of clusters in Bulgaria was developed, which meets the requirements of the national SSS for differentiated financing during the programming period 2014-2020. This proposal of ABC was sent to the Ministry of Economy and became the basis to develop a system for categorization of clusters in three categories: "newly formed / start", "developing" and "developed".

CLUSTER	
Name of the cluster	*Marine Cluster Bulgaria*
Territorial dimension of the cluster	*Regional, acting as national*
Reference maritime sectors	*Shipbuilding and ship repair, transport, logistics and supporting services related to waterborne transport, research and education*
Initiatives for cluster development	*Member of Association of business clusters in Bulgaria (ABC), European Network of Maritime Clusters (ENMC), Observer at the Balkan & Black Sea Commission of the Conference of Peripheral Maritime Regions (CPMR), active participation in events and initiatives at local, national and*

	international level, related to maritime issues.
Tools for cluster development	*Initiatives for promotion of Bulgarian maritime companies- organization and participation in specialized fairs with common stand, dissemination of information on calls for proposals, workshops.*

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*Marine Cluster Bulgaria*
Country	*Bulgaria*
Region (NUTS II)	*Northeast Planning Region*
Province (NUTS III)	*Varna*
Address	*35, Voden Street, 9000 Varna*
Phone Number	*+ 359 52 695 675*
Email	*office@marinecluster.com*
Website	*www.marinecluster.com*
(Legal entity)	*Not for profit Association (NGO) acting in public benefit*
Year of establishment	*2007*
Reference sector's dimension	
N. of stakeholders collaborating with the cluster	
N. of associates	*22 direct members and 49 indirect members through associations*
Services and tools organized for the cluster networking process	*Participation in forums, working groups, Memorandum of Understanding signed with government authorities, other clusters. Organizing round tables, discussions at national level.*
Good practices for cluster management	*Good relations with regional administration, exchange of information with branch associations and chambers, close contact with the Association of business clusters and other clusters.*

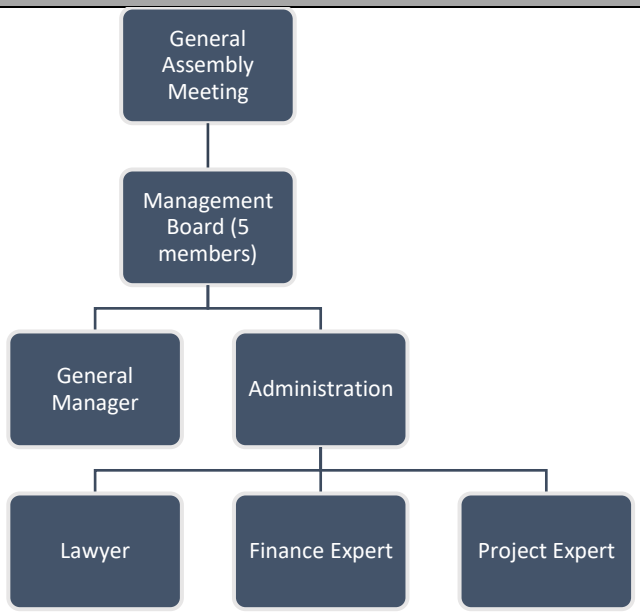
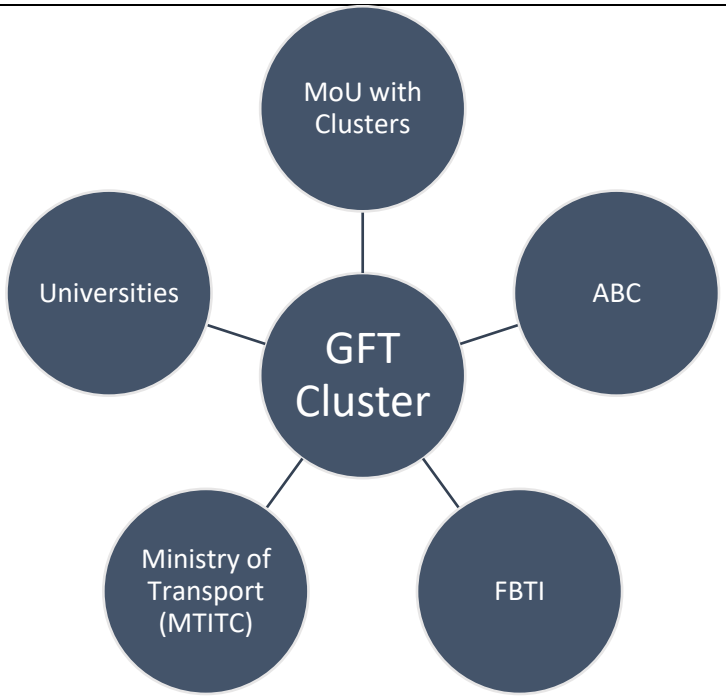
CLUSTER GOVERNANCE

Description of governance model	 *General Assembly: the supreme body of the ASSOCIATION and comprises all its members.* *Management Board: organizes the activity of the ASSOCIATION.* *Supervisory Board: controls the implementation of the resolutions of the General Assembly and of the Managing Board and the observance of the Statute.*
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	
Policies – cluster's role, relations and connections	*Chapter 1.6 of the Bulgarian Smart Specialization Strategy is dedicated to cluster's development. MCB is listed as active player within Association of business clusters.*

	In the regional strategy for the development of Varna region, MCB is identified as key actor in achieving the ascending and sustainable development of the marine industry at district, regional and national level.

CLUSTER	
Name of the cluster	*GREEN FREIGHT TRANSPORT CLUSTER*
Territorial dimension of the cluster	*National*
Reference maritime sectors	*intermodal transport services, including port terminal*
Initiatives for cluster development	*Member of Association of business clusters in Bulgaria (ABC), active participation in events at local, national and international level.*
Tools for cluster development	

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*Green Freight Transport Cluster*
Country	*Bulgaria*
Region (NUTS II)	*Southwest Planning Region*
Province (NUTS III)	*Sofia*
Address	*87 James Bourchier Blvd, 5th floor, office 13*
Phone Number	*+359 2 9709 439; +359 898 585 841*
Email	*office@gftcluster.eu*
Website	*http://gftcluster.eu/index.xsp*
(Legal entity)	*Not for profit organization acting in private interest*
Year of establishment	*2012*
Reference sector's dimension	*In terms of actors present on the territory*
N. of stakeholders collaborating with the cluster	*Stakeholders actively collaborating with the cluster*
N. of associates	*Actors with share of capital assigned to the cluster. To be indicated if there are direct members or second level members*
Services and tools organized for the cluster networking process	*Electronic journal "Railway and intermodal transport"*
Good practices for cluster management	

CLUSTER GOVERNANCE	
Description of governance model	
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	
Policies – cluster's role, relations and connections	

CYPRUS

1 INTRODUCTION

Cyprus is located in the Eastern Mediterranean Basin (Levantine Basin) and is the third biggest island in size in the Mediterranean, after Sicily and Sardinia with a coastline of 648 km. Cyprus has tremendous competitive advantages when it comes to Blue Growth potential due to fact that the marine area covers the 91.4% of the total area of Cyprus.

Maritime and coastal tourism, which is one of the major economic sectors of the island (≈20% GDP) and also the size in deadweight tonnage of the Cyprus commercial fleet which ranks 10th in the world and 3rd in Europe, render, revenue from the Blue Economy sectors extremely important for the country. According to the Central bank of Cyprus' statistical data of the past few years, despite the global financial crisis, shipping still remains one of the main economic pillars of Cyprus with annual revenue of over one billion Euros and a contribution of approximately 7% to the country's GDP.

The Sector of Aquaculture in Cyprus constitutes an important component of the primary agricultural production, showing impressive growth rates and a high quality export product. Government policies applied in the sector of aquaculture are driven by sustainable development, protection of the marine environment as well as emphasizing on quality and safety of aquaculture products. The fishery sector in Cyprus comprises principally marine capture fishery (marine subsector) and aquaculture (marine and freshwater). Recreation fishery and processing and marketing are of minor importance.

Additionally, the discovery of hydrocarbons in Cyprus' Exclusive Economic Zone (EEZ) has created new and exciting prospects for Cyprus to become an energy hub in the Eastern Mediterranean. Prospects in the energy sector are all the more promising thanks to the island's geostrategic location, connecting Europe and the Black Sea with markets in the Middle East and Asia and its role as a pole of stability and security in the region of the Eastern Mediterranean.

Finally, the most resilient of Cyprus' commercial sectors, tourism has seen a boost bringing in record-breaking numbers of tourists in over a decade. With efforts to diversify its tourism product, new foreign investment in the sector and plans for a world-class casino resort, the future of Cyprus' tourism looks bright. Tourism has been a key pillar of the Cyprus economy for decades. The sector has remained economically robust and is the only commercial sector in Cyprus to see continuous growth throughout the global financial crisis.

2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Maritime Transport: deep-sea shipping, short sea-shipping, passenger ferry services, inland waterway transport, logistics linked to waterborne transport, port activity.

The political, economic and social importance of shipping was recognised in 1963 and has shown phenomenal growth in the last years. More than 160 ship-owning, ship-management and shipping related companies maintain fully-fledged offices and conduct their international operations and activities from Cyprus. Among the ship management companies established and operating from the Republic of Cyprus, 87% are controlled by Cypriot and EU interests. Such companies employ almost 55.000 seafarers out of whom 5.000 are EU nationals. Equally important is the fact that these companies employ around 4,500 people ashore. The share occupied by the fleet managed from Cyprus in the world ship management market constitutes another interesting aspect. According to recent governmental estimates, the total fleet managed from Cyprus represents 20% of the world third–party ship management market (out of 10.000 ships in the world ship management market under a wide approach). This makes Cyprus the biggest third party ship management centre in the EU and 3rd in the world. As we mention earlier Cypriot maritime registry is one of the largest in the EU and 10th largest worldwide. Without doubt Maritime Transport is one of the two biggest sectors which lead the economy of the island.

Food, nutrition, health and eco-system services: fishing (for human consumption and for animal feeding), marine aquaculture, blue biotechnology, agriculture on saline soils.

Estimated at around € 7.4 million, the annual contribution of marine fisheries in Cyprus could be considered relatively low for the island's economy. The total annual Cypriot fish production from marine fisheries varies around 1200t. The annual per capita consumption of fishery products in Cyprus is around 20kg. Nevertheless, the fisheries sector in Cyprus is considered important, mainly because it offers economic and social benefits in coastal areas, creates jobs and offers healthy products to consumers. Cyprus employs about 1276 people directly as fishermen, of which 803 are full-time and 473 part time. The establishment of marine protected areas in Natura 2000 sites and the creation of artificial reefs are actions aimed to increase the current low fish stocks of the island.

As in comes to aquaculture, due to the low productivity of fisheries, nine fattening farms, three private marine fish hatchery stations, and a shrimp hatchery/breeding unit are operating currently in Cyprus. The total annual production of cultured species in fattening farms is 5.396t of which the 3.656t and 1.726t correspond to the production of the two most important cultured species, the seabream and seabass respectively[31]. All fattening units are based on the intensive farming technique of offshore fish cage farming. Sites for fish farms are selected with respect to marine environment protection and therefore, are developed within 1-4km distance from the shore in water depths of 20-70m. These features ensure the environmental friendly approach of the activity as well as the friendly interaction with the other economic activities of the coastal zone.

Energy and raw materials: offshore oil and gas, offshore wind, ocean renewable energy, carbon capture and storage, aggregates mining, marine minerals mining, securing fresh water supply.

[31] Annual production of Cypriot aquaculture report 2015 by the Department of Fisheries and Marine Research http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/CF42DB069283278342257E960035E13B?OpenDocument

Apart from the rich biodiversity, Mediterranean is also a crossroad of big international energy routes. Following the discovery of significant natural gas in the Eastern Mediterranean Sea, US-based energy company Nobel Energy, announced a world-class discovery of natural gas in Cyprus' Offshore Exclusive Economic Zone (EEZ) Block 12 (Aphrodite field) in 2011. Aphrodite gas field is located 34 Km west of Israel's Leviathan gas field and is believed to hold 3.6 to 6 trillion cubic feet of natural gas. The discovery of natural gas in the Eastern Mediterranean Sea has indicated enormous energy potentials in the region – especially after the discovery of the Zohr field with estimated reserves of 30 trillion cubic feet of natural gas – deeming the circumstances for exploitation and production of oil & gas in Cyprus extremely positive and attracting great international interest from major energy providers, but also existing companies to reassess their exploitation plans.
Major world-renowned companies have been assigned to carry out exploration drills in the EEZ of Cyprus. More specifically the joint venture between ENI – KOGAS for blocks 2, 3, 9, ENI – TOTAL for blocks 6 and 11, Shell – Noble – Delek for block 12, EXXONMOBIL – Qatar Petroleum for block 10 and finally ENI for block 8. All these developments create a dynamic for the establishment of a liquefaction centre in the island.

Leisure, working and living: coastal tourism, yachting and marina services, cruise tourism;
The income of the tourist arrivals in Cyprus contributes about 20% in the Gross National Product (GNP). Although Cyprus offers a multidimensional product to visitors such as a history, monuments, nature trails, etc., according to a recent tourism research about 90% of tourists come to Cyprus for its sun and beaches. Across the coastline (~300km) under the Cyprus / EU jurisdiction (~400km of coastline is under Turkish occupation since 1974) there are about 112 organised beaches in 17 different municipalities. More than half are Blue Flag awarded and 5 of them have also the "Greening Cyprus Beaches" award. Favourable climate allowing so much diversity in marine activities combine with strategies on waste prevention, management and marine litter to support sustainable coastal and maritime tourism.
The geographical location of the island, the favourable tax as well as the business growth the country has experienced particularly in the services section lead to the rapid growth of Cyprus yachting which has been developed rapidly the last few years.
Lemesos port is a weather protected port. About 220 large cruise ships visit the port yearly. Large cruise ships visiting the port enjoy a well in advance schedule and top priority for berthing. Cruise vessels calling Cypriot ports have up to 5 thousand passengers' carrying capacity and are owned by international and all over the word known cruise companies. Lemesos port as is in the middle of the coastline is close to all sight-scenes for the passengers to visit in short time[32].

[32] Cyprus Port Authority Promotion Report http://www.cpa.gov.cy/CPA/page.php?pageID=1

2.1.2 Identification of stakeholders

Provide the list of maritime stakeholders classified in the categories listed in the chapter 2.1 of the guidelines and link each of them to its main maritime sector among those selected at point 1 (at least 2 actors).

Name	***Reference maritime sector***	***Category***	***Brief description (subsectors)***	***City***
JOHN GIBBON & SONS	*Maritime Transport*	*Private Enterprise*	*Marine Supplies And Services*	*Limassol*
Marine Marketing Intl	*Maritime Transport*	*Private Enterprise*	*Premier Ship Repairers*	*Limassol*
INTERLOCK CYPRUS LTD	*Maritime Transport*	*Private Enterprise (small)*	*(Ships Repairs And Services)*	*Nicosia*
Bernhard Schulte Shipmanagement (Cyprus) Ltd	*Maritime Transport*	*Private Enterprise (large)*	*Ship Management*	*Limassol*
Safe Bulkers Management Ltd	*Maritime Transport*	*Private Enterprise (Medium)*	*Ship Managements Ship Owning*	*Limassol*
Interorient Shipmanagement	*Maritime Transport*	*Private Enterprise (large)*	*Ship Management*	*Limassol*
Cyprus Shipping Chamber	*Maritime Transport*	*Private Association*	*Promotion of Cyprus Maritime Transport*	*Limassol*
Cyprus Union of Shipowners	*Maritime Transport*	*Private Association*	*Promotion of Cyprus Maritime Transport*	*Limassol*
Department of Merchant Shipping	*Maritime Transport*	*Public Entity*	*Responsible for the development of the Cyprus Merchant Shipping*	*Limassol*
Elias Marine Consultants	*Maritime Transport*	*Private Enterprise (small)*	*Shipping Services*	*Limassol*
Mantovani & Sons Ltd	*Maritime Transport*	*Private Enterprise (small)*	*Ship Agent*	*Limassol*
Vassiliko Cement Works Ltd	*Maritime Transport*	*Private Enterprise (Medium)*		*Larnaca*
Cyprus Ports Authority	*Maritime Transport*	*Public Entity*	*Management of Cyprus Ports*	*Nicosia*
Akrotiri Port Authority	*Maritime Transport*	*Public / Semi-Public*	*Management of Akrotiri Ports*	*Limassol*
Larnaca Port Operators	*Maritime Transport*	*Private Enterprise*	*Cargo Operators in Larnaca port*	*Larnaca*
Wenzel Marine Trading	*Maritime Transport*	*Private Enterprise*	*Spare parts Supplier*	*Limassol*
Theseas Savva Ltd	*Maritime Transport*	*Private Enterprise*	*General Ship Supplier, Safety Equipment- Sigma Coatings*	*Limassol*
Wartsila Mediterranean Ltd	*Maritime Transport*	*Private Enterprise*	*Marine Equipment*	*Limassol*
MIE Group Ltd	*Maritime Transport*	*Private Enterprise*	*Marine Equipment*	*Limassol*

Metilo Maritime Ltd	*Maritime Transport*	*Private Enterprise*	*Reconditioning Services For Deck And Engine Mechanisms*	*Limassol*
Multimarine Services Ltd	*Maritime Transport & Offshore Oil and Gas*	*Private Enterprise*	*Provide Maritime and Offshore Oil and Gas Services*	*Limassol*
Agricultural Research Institute	*Food, nutrition, health and eco-system services*	*Public / Semi-Public Sector Entity*	*Marine Biotechnology*	*Nicosia*
Meneou Marine Aquaculture Research Station	*Aquaculture and Fisheries*	*Public / Semi-Public Sector Entity*	*Marine aquaculture research activities*	*Larnaca*
Shamrock Aquaculture (Shamrockoils)	*Aquaculture and Fisheries*	*Private Enterprise (small)*	*Fish Food Supply*	*Limassol*
Sagro Aquaculture Ltd	*Aquaculture and Fisheries*	*Private Enterprise (small)*	*Marine fish in cage farms*	*Limassol*
Freshwater Aquaculture Research Station	*Aquaculture and Fisheries*	*Public Entity*	*Fish stocking*	*Kalopanayiotis*
Department of Fisheries and Marine Research	*Aquaculture and Fisheries*	*Public / Semi-Public Sector Entity*	*Responsible for the development of the Cypriot fishing*	*Nicosia*
Seawave Fisheries Ltd	*Aquaculture and Fisheries*	*Private Enterprise (Small)*	*Fishing*	*Larnaca*
Blue Island	*Aquaculture and Fisheries*	*Private Enterprise (Small)*	*Aquaculture Unit*	*Nicosia*
Telia Aqua Marine	*Aquaculture and Fisheries*	*Private Enterprise (Small)*	*Aquaculture Unit*	*Nicosia*
Kimagro Fishfarming Ltd	*Aquaculture and Fisheries*	*Private Enterprise (Medium)*	*Aquaculture Unit*	*Limassol*
Eni Cyprus	*Offshore Oil and Gas*	*Private Enterprise*	*Exploration & Production*	*Nicosia*
Total Cyprus	*Offshore Oil and Gas*	*Private Enterprise*	*Exploration & Production*	*Nicosia*
NOBLE Cyprus	*Offshore Oil and Gas*	*Private Enterprise*	*Exploration & Production*	*Nicosia*
VTTV Vasiliko Terminal	*Oil and Gas*	*Private Enterprise*	*The Cyprus Energy Port*	*Larnaca*
DEFA (The Natural Gas Public Company)	*Offshore Oil and Gas*	*Public Entity*	*Responsible for the development of the Cyprus Oil and Gas Industry*	*Nicosia*
Intergaz (Liquefied Petroleum Gas Storage)	*Oil and Gas*	*Private Enterprise (Small)*	*LPGas import, storage, filling, distribution*	*Larnaca*
Petrolina (Holdings) Ltd	*Oil and Gas*	*Private Enterprise*	*LPGas import, storage, filling, distribution*	*Larnaca*

Synergas	*Oil and Gas*	*Private Enterprise*	*Port Service*	*Larnaca*
Cyprus Tourism Organisation	*Leisure and Tourism*	*Public Entity*	*Coastal tourism*	*Nicosia*
Begafigo Famagusta District Sailing Club	*Leisure and Tourism*	*Private Club*	*Yacting and Marinas*	*Famagusta*
Keryneia Nautical Club	*Leisure and Tourism*	*Civic Society*	*Coastal tourism*	*Limassol*
St Raphael Marina	*Leisure and Tourism*	*Private Enterprise*	*Provide yachting and marina services*	*Limassol*
Larnaca Marina	*Leisure and Tourism*	*Private Enterprise*	*Provide yachting and marina services*	*Larnaca*
Limassol Marina	*Leisure and Tourism*	*Private Enterprise*	*Provide yachting and marina services*	*Limassol*
Paphos International Sailing Club	*Leisure and Tourism*	*Civic Society*	*Coastal tourism*	*Paphos*
Cyprus Sailing Federation	*Leisure and Tourism*	*Civic Society*	*Coastal tourism*	*Limassol*
Limassol Nautical Club	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Limassol*
St Raphael Yacht Club	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Limassol*
Cyprus Yacht Club	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Limassol*
True North Yachting	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Limassol*
Famagusta Nautical Club	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Limassol*
Larnaca Nautical Club	*Leisure and Tourism*	*Private Enterprise / Civic Society*	*Coastal tourism*	*Larnaca*
Nicosia Sailing Club	*Leisure and Tourism*	*Civic Society*	*Coastal tourism*	*Nicosia*
Nicosia Nautical Club	*Leisure and Tourism*	*Civic Society*	*Coastal tourism*	*Nicosia*
Pafos Limanaki	*Leisure and Tourism*	*Public Entity*	*Coastal tourism*	*Paphos*
Paphos Nautical Club	*Leisure and Tourism*	*Private Enterprise*	*Coastal tourism*	*Paphos*
Dhekelia Sailing Club (DSC)	*Leisure and Tourism*	*Private Enterprise*	*Coastal tourism*	*Larnaca*
Limassol Tourism Development and Promotion Co. Ltd	*Leisure and Tourism*	*Private Enterprise (small)*	*Promote Coastal Tourism*	*Limassol*
Latchi Marina	*Leisure and Tourism*	*Private Sector*	*Marina Services*	*Paphos*
Cyprus Offshore Yacht Club (Ponatha-Larnaka Marina)	*Leisure and Tourism*	*Private Sector*	*Marina Services*	*Larnaka*

Provide a brief description of the most interesting stakeholders (at least 20 actors and 5 rows per each of them). Motivate the choice of the selection and describe their characteristics.

Maritime Transport: deep-sea shipping, short sea-shipping, passenger ferry services, inland waterway transport, logistics linked to waterborne transport, port activity;

Cyprus Shipping Chamber
The Cyprus Shipping Chamber is the trade association of the Shipping Industry in Cyprus. The main purpose of the Chamber is: "...promoting the interests of Cyprus Shipping and furthering the reputation of the Cyprus flag, whilst promoting and protecting the interests of its Members both nationally and internationally..."

John Gibbon & Sons Ltd.
John Gibbon & Sons Ltd. is a marine supplier based in Limassol that provides safety equipment, auxiliary engine, valves, ropes and hawsers, wire rope, electronic equipment, lubricants, communication, paint and fenders. Serviced locations include Limassol.

Safe Bulkers Management Ltd
Safe Bulkers Management Ltd is a ship management company incorporated in Cyprus in 2015, to provide exclusive management services to Safe Bulkers Inc., a NYSE listed company since 2008, traded under the symbol “SB”. Its core personnel has worked with Hajioannou family for several years. Safe bulkers fleet today is the largest owner by deadweight of the Cyprus flag registry.

Interorient Shipmanagement
Interorient Shipmanagement was founded in 1979 and today prides itself as being one of the leaders in quality ship management in the shipping industry with a long and successful history. The company’s infrastructure of ship management and manning agencies worldwide maintains the highest degree of operational and safety integrity over a managed fleet of more than 100 vessels with over 3,000 employees on board and ashore.

Bernhard Schulte Shipmanagement (Cyprus) Ltd
Bernhard Schulte Shipmanagement (BSM) is an integrated maritime solutions leader, with a strong heritage spanning more than 130 years in the shipping industry, and trusted as a partner by responsible and demanding customers worldwide. Managing a fleet of 600 vessels, 20,000 employees enable the delivery of safe, reliable and efficient ship management services through a network of ten ship management, 23 crew service and five wholly-owned maritime training centres across the world.

Food, nutrition, health and eco-system services: fishing (for human consumption and for animal feeding), marine aquaculture, blue biotechnology, agriculture on saline soils;

Agricultural Research Institute
The Agricultural Research Institute (ARI) is a Department under the Ministry of Agriculture, Rural Development and Environment, of the Republic of Cyprus. The ARI was founded in 1962, after the independence of Cyprus, in cooperation with the Special Development Fund of the United Nations and the Food and Agriculture and became the property of the Government of Cyprus in 1967.

Department of Fisheries and Marine Research

The Department of Fisheries and Marine Research is responsible for the development of the Cypriot fishing. Tha various programs implemented by the department are aiming at the sustainable management of fishery resources of Cyprus, the development of aquaculture and fisheries in international waters, the prevention, control and combat of marine pollution, the construction and management of shelters and the modernisation of the legislation.

Shamrock Aquaculture (Shamrockoils)
World fish food supply has outplaced global population growth, and today fish constitutes an important source of nutritious and animal protein for much of the world's population. In addition, the sector provides livelihoods and income, both directly and indirectly, for a significant share of the world's population.

Sagro Aquaculture Ltd
Sagro Aquaculture ltd was established in1983 by Mr Savvas J Agrotis. The hatchery began its operation in 1984 and its installations have been extended, improved and updated almost annually. Currently the installations and production systems are capable of a 20 million fingerling production. It has been involved in the on-growing of marine fish in cage farms and has a clear understanding and respect of the importance of high quality, fast growing and healthy fingerlings which it strives to produce and deliver on time to its valued customers both locally and overseas.

Freshwater Aquaculture Research Station
The Kalopanayiotis Research Station is responsible for the management of the biodiversity of the inland waters (fish stocking), the recreational fisheries and supplies the FW aquaculture private firms with trout and sturgeon fingerlings. In the Kalopanayiotis Research Station, it is taking place with success the reproduction of trout (Oncorhynchus mykiss, Salmo trutta) and sturgeon (Acipenser baeri). Several species of carp (i.e. Cyprinus carpio, Carassius carassius) and goldfish (Carassius auratus) are also cultured.

Energy and raw materials: offshore oil and gas, offshore wind, ocean renewable energy, carbon capture and storage, aggregates mining, marine minerals mining, securing fresh water supply;

Petrolina (Holdings) Ltd
Petrolina Holdings Public Ltd is a Cyprus-based commercial enterprise engaged in the petrochemicals field. Its activities include the import and trade of motor, industrial, domestic, marine and aviation fuels, Liquefied Petroleum Gas (LPG), lubricants, greases and other related products. Its fuel products include agriculture diesel, aviation gasoline, biodiesel, bitumen, diesel, heating/industrial gasoil, heavy fuel oil, illuminating kerosene and jet A1 among other

VTTV Vasiliko Terminal
In November 2014, the €300m VTTV terminal opened for business, designed and constructed by VTTI. Its strategic location makes it the first terminal of its kind in the Eastern Mediterranean, connecting Europe and the Black Sea with markets in the Middle East and Asia. The asset currently comprises 28 tanks and capacity of 544,000 m^3, and offers access to a deep water marine jetty as well as to road tanker loading facilities.

Eni Cyprus
Eni has been operating in the country since 1963 when it established the company Agip Cyprus Co., subsequently sold in 1972. Today Eni is engaged in the exploration and production of crude oil and natural gas and operates through Eni Cyprus Ltd.

Total Cyprus
Total is present in Cyprus in oil and gas exploration and petroleum products and related services marketing. It has a 100% interest in and operates deep offshore exploration block 11 (100%) southwest of the island. Total markets lubricants in Cyprus and also petrochemical products through third parties sources in particular from its Qatari joint venture.

Intergaz (Liquefied Petroleum Gas Storage)
Intergaz Ltd is one of the leading companies in the importing, storing, bottling and distribution of Liquefied Petroleum Gas (LPG) in Cyprus. It operates in Larnaca, Cyprus and markets its product both in cylinders and in bulk throughout the whole of the unoccupied part of the island. Also, Intergaz subsidiary company Jomaro Ltd is engaged in trading operations for LPG in other countries of the Mediterranean, Adriatic and the Black sea.

Leisure, working and living: coastal tourism, yachting and marina services, cruise tourism;

Latchi Marina
Latchi is a sleepy port of Cyprus, where the fishermen still bring in the fresh catch of the morning and supply those who are lucky enough to have got up early that day. In the past few years due to its ever-growing facilities and amenities, Latchi has become a favorite stopping point after the Greek Isles and Turkey.

Cyprus Offshore Yacht Club (Ponatha-Larnaka Marina)
PONATHA is one of the largest Nautical Clubs in Cyprus. The aims and objectives of PONATHA are to promote offshore navigation and sailing in Cyprus, as well as teaching the art of sailing to our new sailors. PONATHA runs a successful sailing school of Maritime and Offshore. They teach comprehensive courses on navigation, maritime and safety.

Cyprus Tourism Organisation
The Organisation's objective according to the law is to organise and promote Tourism within the Republic by using all possibilities and resources available. The CTO is administrated by a nine-member Board of Directors and consists of the Director – General's Office and four Departments: Administration, Marketing, Quality Assurance and Strategy.

Begafigo Famagusta District Sailing Club
The club was founded in 2002 to promote sailing in the ideal conditions of the East coast of Cyprus, giving opportunities to experience the thrill and friendship that only sailing can bring. In 2005 was awarded an athletic recognition by Cyprus Sports Organization and in 2006 was honored by the Cyprus Sailing Federation for its contribution in spreading the sport and expanding sailing tournaments in Cyprus.

Limassol Marina
Limassol Marina is situated adjacent to the old port and offers 650 berths for yachts up to 110m. It also has a commercial area comprising 14 restaurants and cafes, 40 shops, a spa, gym and cultural centre. The majority of the 211 private luxury apartments and unique 74 villas on the sea have also been built and sold.

2.1.3 Research projects and activities to support R&I

Maritime Transport: deep-sea shipping, short sea-shipping, passenger ferry services, inland waterway transport, logistics linked to waterborne transport, port activity;

According to the Cyprus National Reform Programme, one of the main policy priorities is the restructuring of the economy towards innovation, by giving incentives and by shifting the emphasis towards high-skilled, high value-added activities, including shipping and tourism. In the meantime, a Smart Specialisation Strategy for Research and Innovation (RIS3) has been prepared with a view to maximise the knowledge based development potential of the Cyprus economy through targeted support to Research and Innovation.

Cyprus governmental bodies have worked together to compile the Smart Specialisation Strategy to utilize the funds from the European Regional Development Fund (ERDF) and to support research, technological development and innovation for the Programming Period 2014 – 2020. The organizations that are involved in the R&D policies of Cyprus (Directorate General for European Programmes, Coordination and Development (DG EPCD), National Council for Research and Innovation, Cyprus Scientific Council, Research Promotion Foundation should cooperate in order to allocate the funds coming from the ERDF for providing the support needed to the sectors. In conclusion, Cyprus government has already given the authority to the above Organizations to establish a legislative framework related to R&D activities, but they have not yet implemented specific policies for this kind of activity. On the other hand, the authorities prioritize shipping as a sector having competitive advantage, in the context of the Smart Specialization Strategy for Research and Innovation. A bottleneck is the existence of a restrictive framework for the exploitation of research results and the establishment of spin-off companies in the public sector. We are expecting the implementation of a forthcoming legislative framework that will be supportive to the R&D activities of the sector.

The competent authorities of the sector, which are the Department of Merchant Shipping (DMS), Customs & Excise Department and the Cyprus Port Authorities (CPA) don't have R&D departments on the other hand they participate in R&D Projects as partners or coordinators. Furthermore, several NGOs, institutes and universities undertake R&D and Innovation projects, sometimes in collaboration with the competent authorities. The shipping companies don't have R&D departments, nevertheless they support the efforts that the aforementioned organizations-universities do in order to enhance R&D and Innovation activities within sector's operation.

The Sector has access to financing channels through European Programs that support R&D and Innovation activities. Such Programs are the EU Competitive Program: Horizon 2020 which aims to support and strengthen existing, start-ups and other companies investing in research and innovation. Another Program is the Co-Financed Program: STRUCTURAL FUNDS AND COHESION FUND which aims to maximize the value of the excellent research that the ERC funds, by funding further work. The highest percentage of EU/ National funding is absolved by DMS, CPA and Customs & Excise Department.

Food, nutrition, health and eco-system services: fishing (for human consumption and for animal feeding), marine aquaculture, blue biotechnology, agriculture on saline soils.

Cyprus regulatory authorities have fully implemented the Common Fisheries Policy and according to its regulations, the competent authorities have the capability claim funding from the European Maritime and Fisheries Fund. The Operational Programme «Thalassa» is the tool that will support R&D/Innovation activities and was prepared taking into account the consultation process held with the competent Ministries, Local Authorities, social and economic partners and bodies of the wider public and private sector and also through informal dialogue with the European Commission. There is a general interest for R&D activities in Cyprus related to the sector. Additionally a National Aquaculture Strategic Plan has been

compiled for the programming period 2014 – 2020, aiming to foster environmentally sustainable, resource efficient, innovative, competitive and knowledge based aquaculture.
The main public body for R&D and Innovation is the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Rural Development and Environment. It has a division of Aquaculture, which has two subdivisions, for Aquaculture Research and Aquaculture Development. Meneou Marine Aquaculture Research Station (MeMARS) is an Aquaculture Research Station under the management of DFMR, which is the only research station dedicated to marine aquaculture research in Cyprus and participates in numerous European and other research programs and promotes research and development in the sector of marine aquaculture. Additionally there are some private entities and NGOs that undertake research projects. There are also a number of Research entities that are able to claim funding from the EMFF. Thus, the competent authority (DFMR) and the monitoring committee of the operational programme cooperate for the approval of the proposals for the EMFF, but they don't have R&D department themselves.
The Sector of Fisheries and Marine Aquaculture in the past had access to financing channels through Co-funded measures in the framework of the European Maritime and Fisheries Fund 2004 - 2006 with 7, 7 million followed by 2007 - 2013 with 39, 5 million and finally future funding for R&D and Innovation activities is achieved from 2014 - 2020 Fund expected to reach 52, 6 million. Specifically we mention some of them: the Co-Financed Program: STRUCTURAL FUNDS AND COHESION FUND which aims to maximize the value of the excellent research that the ERC funds, by funding further work. Some of the sectors members independently or in cooperation with other members invest in R&D and also in innovative activities in order to improve their product, their services and to ensure the protection of the environment. Also the Sector through the EU Competitive Program: Horizon 2020 by the call BLUE GROWTH: UNLOCKING THE POTENTIAL OF SEAS AND OCEANS aims to forecasting and anticipating effects of climate change on fisheries, has additional funding. Marine Aquaculture stakeholders independently or in cooperation with others invest in R&D and also in innovative activities in order to improve their product and ensure the protection of the environment.

Energy and raw materials: offshore oil and gas, offshore wind, ocean renewable energy, carbon capture and storage, aggregates mining, marine minerals mining, securing fresh water supply.
Cyprus doesn't have any legislative framework related to R&D activities in the sector, but it has utilized the Commission's European Economic Recovery Plan to secure funds of 10 million euros for the development of a rural Natural Gas Network. The relevant plan and proposition for the project was arranged by the Ministry of Energy, Commerce, Industry and Tourism. Moreover the Policy makers of Cyprus should create a policy that would encourage and partially finance a long-term strategy for R&D activities between the associations, the universities and the research centres of the sector, or a law that would include R&D incentives in the form of tax breaks and matching grants for innovation projects.
The Ministry of Energy, Commerce, Industry and Tourism in cooperation with the International Renewable Energy Agency (IRENA) publicised the Renewable Energy Roadmap for the Republic Of Cyprus, in which they analyse all the possible scenarios about the development of an LNG plant in Cyprus in relation with the development of solar PV capacity under different scenarios, including their technical studies. The road map could be useful to the policy makers in order to take future decisions about energy management in consideration with Cyprus' Gas reserves.
The Oil & Gas companies that operate in Cyprus are international and some of them have their own R&D department or they collaborate with high ranked academic institutions for their R&D and Innovation activities. The public organizations function as supportive entities for the integration of R&D and Innovation activities within the sector. They also provide assistance for the planning of projects related to rural development and the transformation of existing Oil-fired power stations into Gas-fired ones (Electricity Authority of Cyprus).

The Sector has access to financing channels through European Programs that support R&D and Innovation activities. Such Programs are the EU Competitive Program: Horizon 2020 which aims to support and strengthen existing, start-ups and other companies investing in research and innovation. Another Program is the Co-Financed Program: Structural Funds and Cohesion Fund which aims to maximize the value of the excellent research that the ERC funds, by funding further work. All of the sectors members independently invest in R&D and innovative activities in order to improve their services and the protection of the environment.

Leisure, working and living: coastal tourism, yachting and marina services, cruise tourism.
The public body which is responsible for the sector's R&D and Innovation activities is the Cyprus Tourism Organization (CTO) and it has been doing lot of research, based on statistical data and facts. The government need to create a Tourism Observatory along with the legislative framework that will support its development and future activities. The Tourism Observatory would function as a mechanism for pooling, evaluation and exploiting tourism data and information and as a central processor for benchmarking studies on tourism, supporting research and innovation.
There are several other governmental bodies that support the enhancement of R&D and Innovation activities within the priority pillars for the development of the Smart Specialisation Strategy for Cyprus (S^3Cy). The S^3Cy also suggests emphasising on the integration of Key Enabling Technologies (KETs) and optimising the Tourist Experience through the use of ICT.
CTO supports the integration of R&D and innovation activities in cooperation with other private and public organizations, like the University of Cyprus, the National Council for Research and Innovation and the Research Promotion Foundation. The Sector has access to financing channels through the Co-Financed Program: Structural Funds and Cohesion Fund which aims to maximize the value of the excellent research that the ERC funds, by funding further work. Some of the sectors members independently or in cooperation with other members invest in R&D and innovative activities in order to improve their services.

List research projects and activities

Title	**Project coordinator or activity responsible entity**	**Year**	**Sector and subsector**
LYNCEUS 2 MARKET	RTD Talos Ltd.	2015-2018	Maritime Transport
LYNCEUS	RTD Talos Ltd.	2012-2015	Maritime Transport
MEDNET	National Technical University of Athens	2012-2015	Maritime Transport - Port activity
PRODROMOS	Ministry of Transport Communications and Works	2013	Maritime Transport
PERSEUS	Hellenic Centre for Marine Research	2012-2015	Maritime Transport
STEP-EW	The Cyprus Institute	2011-2013	Maritime Transport
MERMAID	Danmarks Tekniske Universitet	2012-2016	Maritime Transport
REACT	Coventry University Enterprises Ltd – UK	2009-2011	Maritime Transport
IDREEM	Scottish Association for Marine Science	2012-2016	Food, nutrition, health and eco-system services - Fishing
CREAM	Mediterranean Agronomic Institute of Zaragoza	2011-2014	Food, nutrition, health and eco-system services - Fishing
SatCoast	Cyprus University of Technology	2011-2014	Food, nutrition, health and eco-system services - Fishing
Aqua-Planner' Project	Hellenic Centre for Marine	2006-2008	Food, nutrition, health and eco-system

	Research		services – Marine Aquaculture
Aqua Smart Feed			Food, nutrition, health and eco-system services – Marine Aquaculture
AQUABOT	Cyprus University of Technology	2013-2015	Food, nutrition, health and eco-system services – Marine Aquaculture
AQUAMOORING	Frederick Research Centre	2010-2012	Food, nutrition, health and eco-system services – Marine Aquaculture
ΟΙΚΑΠΑΒ	Marine & Environmental Research	2011-2014	Food, nutrition, health and eco-system services – Marine Aquaculture
PELAGOS	CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING	2016-2019	Blue Energy
E-WAVE	Oceanography Center of the University of Cyprus	2010-2012	Blue Energy
MED-ALGAE	THE AGRICULTURAL RESEARCH INSTITUTE - CYPRUS	2011-2014	Blue Energy
WAVE	University of Cyprus	2009-2011	Blue Energy
RAOP-MED	CYPRUS PORTS AUTHORITY	2014-2016	Energy and raw materials
DESTINATIONS	HORARIOS DO FUNCHAL-TRANSPORTES PUBLICOS SA	2016-2020	Leisure, working and living
SPA Monitor	SignalGeneriX		Leisure, working and living
CHTN	CYPRUS TOURISM ORGANISATION	1999	Leisure, working and living
ΠΟΛΤΟΥΡ – ΠΛΥΠΗ	RTD Talos Ltd.		Leisure, working and living
ΠΑΡΑΤΟΥΡ	RTD Talos Ltd.		Leisure, working and living

Describe main project and activities still active or developed in the last 5 years.
Maximum projects to be described: 10

Project Title	*LYNCEUS2MARKET*
Abstract	*LYNCEUS2MARKET is a European Union project funded under the Horizon 2020 framework, which aims at delivering product prototypes for timely and effective evacuation of large passenger ships during emergency. It was launched on June 1st, 2015, bringing together 16 partners from 8 European Countries, and will run for 3 years, with a total budget of €10.5 million.*
Project partners	*TALOS, LR IMEA, RCL CRUISES LTD, AUTRONICA FIRE AND SECURITY AS, LSM, SG, FMV, MARINEM, ATEVAL, TUD, SAFE MARINE SR, CSEM, GGD, OPTIONSNET, CANEPA & CAMPI SRL, MCW SEPVE, SFM, GGD, OPTIONS, CAMPI, ETEK, ATEVAL, FMV, LLOYDS, CSEM, TUD, MARINEM, LOUIS, SG*
Year	*2015-2018*
Sector	*Maritime Transport*

Project Title	*LYNCEUS*
Abstract	*The aim of the LYNCEUS project is to develop a distributed wireless sensor network system that will enable the ship safety officer and team to monitor the location of each passenger for safe evacuation, to monitor in real time the status and spread of the emergency (flood, fire etc) and also provide the engineers with vital information for proper maintenance and optimization of the ship operation procedures.* ▪ *People tracking in emergency* ▪ *Passenger behavior and health monitoring*

	▪ *Real time disaster management* ▪ *Optimisation of Operations Management*
Project partners	*TALOS, SEPVE, SFM, GGD, OPTIONS, CAMPI, ETEK, ATEVAL, FMV, LLOYDS, CSEM, TUD, MARINEM, LOUIS, SG*
Year	*2012-2015*
Sector	*Maritime Transport*

Project Title	*MEDNET*
Abstract	*MEDNET is a European project, co-financed by the MED Programme, aimed at simplifying and harmonizing maritime and port procedures within the Mediterranean region.* *At the end of its lifetime, the project will primarily recommend actions and measures for facilitating maritime freight exchange, speeding up logistic procedures, and reducing logistics costs. Moreover, more efficient operating maritime routes will contribute to increasing modal shift from the currently congested European road network while reducing at the same time adverse environmental impacts and enhancing social and economic cohesion of the European and Mediterranean populations.*
Project partners	*NTUA, Igoumenitsa Port Authority , CCIMP, CENIT, Valencia port Foundation, Prometni Institut Ljubljana, CUT, TIS, KIP-Intermodal Transport Cluster, Port of Rijeka Authority, AIT, Transport Malta*
Year	*2012-2015*
Sector	*Maritime Transport – Port Services*

Project Title	*MERMAID*
Abstract	*MERMAID will develop concepts for the next generation of offshore platforms which can be used for multiple purposes, including energy extraction, aquaculture and platform related transport. The project does not envisage building new platforms, but will theoretically examine new concepts, such as combining structures and building new structures on representative sites under different conditions.*
Project partners	*DTU, UniBo, UNICAN, Deltares, DHI, AUEB-RC, VLIZ, DLO. STATOIL, ISPRA, LWI, IMR, EEWRC, HORT, UR3, HSN, BB, IBW PAN, ITU, CUT, MUSH, DAK, UoD, ECN, DONG, ENEL, KF, UoA, NorWind Installer AS*
Year	*2012-2016*
Sector	*Aquaculture, renewable energy, marine environment.*

Project Title	*AQUABOT*
Abstract	*AQUABOT is an ongoing project that is conducted by the Cyprus University of Technology with collaboration of two SMEs, Seawave Fisheries Ltd. and Marine & Environmental Research Lab Ltd., in order to produce an innovative service for the Cyprus' offshore aquaculture sector. In Cyprus there are several licensed companies that operate offshore aquaculture fish farms that are mainly based on surface grid arrays.*
Project partners	*Cyprus University of Technology, Seawave Fisheries Ltd, Marine & Environmental Research Lab Ltd*
Year	*2013-2015*
Sector	*Aquaculture*

Project Title	*iDREEM*

Abstract	*iDREEM (Increasing Industrial Resource Efficiency in European Mariculture) is a European research project launched in 2012 to protect the long-term sustainability of European aquaculture by developing and demonstrating a new innovative production technology, Integrated Multi-Trophic Aquaculture or IMTA.*
Project partners	*SAMS, VFF, SSC, Suf Fish, GIFAS, DOMMRS, SW, AQUA, MER, Longline, HU, NIBIO, UNIGE, UL-CML, ETA,*
Year	*2012-2016*
Sector	*Aquaculture*

Project Title	*PELAGOS*
Abstract	*The sea represents a huge resource for renewable energy (Blue Energy, BE) such as waves, tides, and marine currents. Harnessing the economic potential of this energy in a sustainable manner has been highlighted in the Commission's BlueGrowth Strategy as one of key areas, where in order to build the necessary capacity and critical mass, it is necessary to involve a wide range of stakeholders. The project aims to increase the innovation capacities and cooperation of BE actors in MED through promoting a transnational cluster, bringing them together in order to develop a shared understanding of the challenges and collectively devise workable solutions. PELAGOS will establish a Cluster in Blue Energy that will promote novel technologies and provide a mix of support activities to beneficiaries such as technology providers, enterprises, financial operators, authorities, NGOs end citizens. The project will enhance internationalization of the Cluster members through a range of activities that will jointly identify opportunities of BE in Mediterranean insular and coastal regions.*
Project partners	*ENEA, CRES,Ualg,CTN, UC, HCMR, Mar.In.E., TVT / PMM-TVT, UNIZAG FSB, CMF*
Year	*2016-2019*
Sector	*Blue Energy*

Project Title	*DESTINATIONS*
Abstract	*DESTINATIONS will demonstrate and evaluate the effectiveness of innovative sustainable mobility solutions in 6 tourist cities with different characteristics but sharing common challenges. The solutions will address:* *•Sustainable Urban Mobility Planning for residents and visitors* *•Safe, attractive and accessible public spaces for all generations* *• Shared mobility and e-infrastructures towards zero emissions transport* *•Smart & clean urban freight logistics at tourist destinations* *•Mobility management & awareness for sustainable mobility* *• Attractive, clean, accessible and efficient public transport*
Year	*2016-2020*
Sector	*Tourism*

Maximum activities/initiatives to be described: 5

Activity/Initiative name	*5th Mare Forum Cyprus 2016 "Maritime Cyprus, the region and the world-looking ahead, challenges and opportunities"*
Brief Description	*The 5th Mare Forum Cyprus 2016 conference focused also on the on-going developments on the oil and gas exploration, production exploitation,*

	investments and finance, distribution and transportation from the Eastern Mediterranean sea to Europe and the World, the effects of the low oil price and the updates on the geopolitical global, European, and regional situation.
Year	*2016*
Relevance	*International*
Stakeholders involved	*Minister of Transport, Communications and Works, Cyprus, President, Mare Forum, President of Cyprus Union of Shipowners, Director, SCF Unicom Management Services (Cyprus) Ltd, Past President BIMCO, President Cymepa*

Activity/Initiative name	*CYPGasTech 2016*
Brief Description	*CYPGasTech 2016 aimed to bring to the rapidly-evolving East Mediterranean Oil & Gas market the latest updates in innovations technology & evolutions, the developments in infrastructure – manufacturing in transportation – logistics – storage, in consultative – legal financing - audit services, on the orietation & human resource training on market requirements.*
Year	*2016*
Relevance	*International*
Stakeholders involved	*Oil and Gas operating companies, Marine/Diving equipments & Support Services, Logistics services, Port equipments & services, Services providers, Educational programs, Training & Classification services, Consultants Oil & Gas, Investors, Audit & Law Firms, Banks, Insurance companies, Employment Agencies, Media, portal services, National/Int'l Trade & Professional Associations*

Activity/Initiative name	*Seminars to 'To promote fresh fishery and aquaculture products of Cyprus'.*
Brief Description	*The main objective is to increase consumer awareness of local Cypriot seafood products. The presenters include marine specialists from MER's team and a nutritionist who aim to inform the public audience on the: 1) biological characteristics of main seafood products (fin-fish, elasmobranchs, crustaceans, cephalopods), 2) ways of production - fisheries and aquaculture sector of Cyprus, 3) nutritional value of seafood and health benefits, and 4) on how to make correct seafood choice based on labelling and criteria of freshness quality.*
Year	*2013*
Relevance	*Regional*
Stakeholders involved	*Citizens, Students*

Activity/Initiative name	*MARINA Mobilisation and Mutual Learning (MML) Workshop, Tourism as resource and threat to the Cypriot marine environment- Nicosia, Cyprus*
Brief Description	*The workshop is organised by Cyprus Neuroscience and Technology Institute and XPRO Consulting Limited using the Structured Democratic Dialogue methodology.*
Year	*2016*
Relevance	*International*
Stakeholders involved	*Citizens, scientists, business representatives, entrepreneurs, local authorities*

	and policy makers

2.1.4 Maritime policies and initiatives in the Country

Maritime Transport: deep-sea shipping, short sea-shipping, passenger ferry services, inland waterway transport, logistics linked to waterborne transport, port activity.

The Department of Merchant Shipping ensures that the operational framework of the shipping industry in Cyprus is legally transparent, operationally functional and competitive in terms of taxation – for the smallest supply company to the biggest Ship Owner or Ship Management Company.

There are several regulations and legislations that protect the sector and place it under IMO umbrella. Cyprus has ratified most of the International Conventions and EU Safety regulations and hence it attracts more investors to join the sector regarding the fact that the supporting legislation enables it to be more reliable. On the contrary, while the Turkish embargo been still in force, a shipowner/ shipmanager may at any time find his interests seriously prejudice. Clearly, such provisions constitute an obstacle to the trade between EU ports and Turkey, affecting the owner, the charterer and all the parties involved in the carriage of goods by sea and all operations incidental to the proper operation of the ship. It is mandatory for Cypriot regulatory bodies and policy makers to size up the situation and to demand the fully implementation of the EU-Turkey Customs Union Agreement and the incorporation of its extension to the Republic of Cyprus. This mitigation measure would pressure the lifting of Turkish restrictive measures against Cyprus shipping with very positive economic effects for Cyprus, European Community and regional shipping (e.g. further development of the Cyprus Ship Register and ship management sector, increase of the Cyprus port traffic, and development of Short Sea Shipping in the region).

For strengthening the sector according to European standards, Cyprus need to set and market a clear "National Shipping Policy", which will fit in, with the "EU Integrated Maritime Policy" and the spirit of the "Limassol Declaration" which was successfully concluded during the Cyprus EU Presidency. The overall objective is to develop a comprehensive strategic development plan for the Cyprus shipping industry. A study has been recently concluded, which proposes strategic policies that would strengthen the Cyprus Merchant Fleet and the Cyprus Maritime Cluster, having as a guideline the short and long term benefits to the Cyprus Economy.

Food, nutrition, health and eco-system services: fishing (for human consumption and for animal feeding), marine aquaculture, blue biotechnology, agriculture on saline soils.

A main target of the National Aquaculture Strategic Plan for the programming period 2014-2020 is to increase annual aquaculture production from 5.482 tonnes to 10.000 tonnes.

Of great importance is also the support of the aquaculture sector by supporting productive investments, but also the creation of appropriate infrastructure for the support of the offshore aquaculture units. The new Operational Programme also includes measures for the control of fishing activities, data collection and integrated maritime policy.

Moreover, a National Advisory Committee for Aquaculture is established and institutionalized under the national legislation. Its task is to advise the Director of the Department of Fisheries and Marine Research considering policy issues in aquaculture sector.

Cyprus is supporting both the Rio+20 conference and the Common Fisheries Policy, which emphasise the promotion of the green growth of the aquaculture sector by adopting eco-friendly technologies,

administrative and legislative measures aiming at the conservation and protection of the marine ecosystem and the sustainable development of the sector.
Additionally, there is a very strict legislation for the issue of an aquaculture license in the marine space, with several steps that the issuer should follow. The Ministerial Council and the Department of Fisheries and Marine Research are involved in the approvals of the license. An Environmental Impact Assessment should also be prepared for each Aquaculture license.
The authorities should work together with the stakeholders to compile the 1st draft map of the Marine Spatial Planning in Cyprus, including the aquaculture units and any possible conflicts with other sectors that might harm the development of the aquaculture sector.
The legislation supports the development of fisheries in several ways. The authorities have been doing efforts to integrate EU Common Fisheries Policy into national law. These actions could lead to the sustainability of the fish stocks and subsequently to the development of the sector, because the catches remain in the same high levels (achieving Maximum Sustainable Yield).
The Cypriot Association for Professional Fishermen could also be considered as a beneficial driver for the development of the sector and is supported and regulated by the national law, which enacted according to regulation 104/2000/EC.
A traditional marketing system is established in the sector and the price rate is determined among the fishermen with no restrictions from the competent authority. The prices are fixed and aren't determined by supply and demand. The fact that Cypriot authorities haven't enacted a law concerning the market prices is a bottleneck for sector's development and harmful to the consumer rights.

Energy and raw materials: offshore oil and gas, offshore wind, ocean renewable energy, carbon capture and storage, aggregates mining, marine minerals mining, securing fresh water supply.
The sector is still at the first stages of development and it is compulsory for the regulatory authorities, in cooperation with the stakeholders, to compose a transparent and stable regulatory framework, which will satisfy the Community acquits and ensure the broader EU objectives for the security of supply, the consumer protection, the competition etc. and also preserve a positive investment climate for the development of infrastructures. The Department of Merchant shipping should cooperate with the Cyprus Energy Regulatory Authority (CERA), in order to enact a legislative framework regarding the regulations and restrictions during the cooperative procedures of the two sectors (Transportation of the LNG).
A regulatory framework considering the licencing for exploration, research and exploitation of the hydrocarbons is already established according to the Law N.4(I)/2007 and relevant regulations of 2007 and 2009. The transposition of the Directive 2009/73/EC concerning common rules for the internal market in natural gas of the 3rd Energy Package was completed in 2012 with the enactment of the relevant bill and publication of the amending legislation at the end of December 2012. According to Article 41 of the European Directive 2009/73/EC the Cyprus Energy Regulatory Authority (CERA), inter alia, is responsible for the determination or the approval of the methodologies, the tariff terms and conditions for access to the storage facilities of the LNG. Furthermore, according to Article 7 (b) of the regulations of the Natural Gas Market Law 2004-2007, CERA is competent to approve the terms, conditions and tariffs for access to the facilities of the LNG. Additionally, according to the Law on the regulation of the Natural Gas Market 183(I)/2004 a Natural Gas Public Company (DEFA) is also established, which will be responsible for the prices, distribution and the purveyance of the natural Gas to the consumers.
The Smart Specialization Strategy for Cyprus (S^3Cy) focuses on a limited number of priorities. Tourism and Energy were established as the major priority sectors for economic growth. Some of the objectives for Energy sector that derive from S^3Cy are the creation of infrastructures for natural gas storage and use and

the development networks for Energy Transportation and distribution. These priorities of the S^{3}Cy declare the willingness of the government to support the development of Oil & Gas sector in Cyprus.

Leisure, working and living: coastal tourism, yachting and marina services, cruise tourism;

The main legislative framework enacted by competent authorities is related to the Cyprus Tourism Organization (CTO), which is the main decision-making body that prepares strategies and priorities for further development of the sector. The CTO was established and operates according to the provisions of the Cyprus Tourism Organisation Law of 1969–2005 and the related Regulation on Structure and Terms of Employment and Administration and Finance. According to the law, the Organisation's objective is to organise and promote Tourism within the Republic by utilizing all the available capabilities and resources. The existing legal framework aims to safeguard the value and quality of these services.
There is a lack considering Marina Law and its provisions. The current Law is too old and its latest amendment was in 2002. Recently there have been some changes regarding the Marinas' infrastructures in Cyprus and regarding those changes, the law should be transformed including regulations and restrictions related to environmental protection and health and safety matters.
The government should provide financial aid for the purchase of specialized S&R vessels for rescuing Tourists that are in danger at the sea and acquire beach cleaning machines for maintaining the beaches clean. Additionally the regulatory bodies should compose a legislative framework for the creation of a coastguard in Cyprus. Among others it will be responsible for the safety of the Tourists.
Furthermore, the urban planning authority need to provide incentives, like the increase of the urban coefficient ratio for the creation of enriched projects and to skip the utilization of the coefficient for some places like game room, gym, health rooms, spa , etc..). This action would further develop the sector by providing financial facilitation to the sector's investors.
As regarding the Cruise Tourism development, the Cyprus Port Authority should provide special facilitation and incentives to Cruise Enterprises, in favour of including Cyprus destination in their cruises. An ideal scenario for Cyprus would be to become the starting point or the finish point of their cruises. According to this scenario special infrastructures for Tourists need to be developed. CPA has already planned a passenger hall at the Limassol port.
The Ministry of foreign affairs has already obtained cooperation and agreements in the Eastern Mediterranean Region that provide good relations with the neighbouring 3rd countries and the Member States. These agreements could be very fruitful for a future development of the sector. A mandatory action is to utilize European and International legislations for the termination of the bad relations and the political instability between Cyprus and Turkey by lifting the embargo, so that the Cruise Tourism sector will be able to flourish in Cyprus and broadly in the Region.
The new Legislative framework about hotels and Tourist accommodation aim at the improvement of the technical and functional specifications of the hotels and the touristic accommodation and removes any institutional barriers that are related to the improvement and the expansion of the accommodation services.
Additionally Tourism was identify as a major priority sector of the S^{3}Cy, which states that the Tourism sector is one of the main pillars of development and Blue growth.

Description of maritime policies and programs (ref. templates)

Strategy title	*Smart Specialisation Strategy for Cyprus*[33]
Regulatory reference	*The Council of Ministers approved the Smart Specialisation Strategy for Cyprus on 26.03.2015*
Issuing entity	*Council of Ministers*
Description of the background motivations for the definition of the strategy regulation	*The preparation and adoption of Smart Specialisation Strategy is an ex-ante conditionality set by the European Commission to the Member States, during the programming period 2014-2020, for the exploitation of resources from the European Structural and Investment Funds for enhancing Research and Innovation (R & I) in areas where each country has a competitive advantage. The priority areas identified through Smart Specialization Strategy are: Energy, Tourism, the Structured Environment/Construction Industry, Transport/Marine, Agriculture/Food Industry and the sector of Health. Furthermore, a number of horizontal priorities have also been identified (such as Information Technology, Environment and Human Resources).*
Description and objectives of the strategy	*The primary aim of S3Cy is the enhancement of the effectiveness of the RTDI system and its targeted interconnection with the production base in order to enhance the competitiveness of the economy and quality of life in Cyprus. To this end, it attempts to support the reformation of the priority sectors, their modernization, their technological diversification, the utilization of new forms of innovation and the penetration into new markets.*
Measures to be implemented	• *Pillar I: Smart Growth* *"Smart Growth" concerns the implementation of the primary aim of S3Cy for the enhancement of the mechanisms responsible for facing modern development challenges and prospects in the priority sectors selected.* • *Pillar II: Sustainable R&I System* *The second pillar "Sustainable R&I System" concerns the safeguarding of the development of a diachronic and dynamic RTDI system which will be capable contributing to the restructuring and post evolution of the Cyprus Economy as well towards the enhancements of the ability to face/tackle social challenges.* • *Pillar III: Support R&I System* *The third pillar "Support R&I System" relates to the enhancement of the framework, mechanisms and operational structures of the RTDI system in a way that will facilitate the efficient and effective development, utilization and promotion of its outputs and results.*
Period of activation	*2014-2020*

Strategy title	*National renewable energy action plan*[34]
Regulatory reference	
Issuing entity	*Ministry of Commerce, Industry and Tourism*
Description of the background motivations for the definition of the strategy regulation	*Article 4 of Directive 2009/28/EC requires each Member State to adopt a national renewable energy action plan. These national renewable energy action plans shall set out the national targets of Member States for the share of energy from renewable sources consumed in transport, electricity*

[33] Smart Specialisation Strategy for Cyprus http://s3platform.jrc.ec.europa.eu/documents/20182/122769/S3CY_Executive+Summary_EN.pdf/c223adae-5e44-4339-a2b3-39038456e391

[34] National renewable energy action plan http://ec.europa.eu/energy/en/topics/renewable-energy/national-action-plans

	and heating and cooling in 2020, taking into account the effects of the other policy measures relating to energy efficiency on final consumption of energy and adequate measures to be taken to achieve those national overall targets.
Description and objectives of the strategy	*Certain of the above national energy policy goals have been translated already into specific quantitative, binding targets for the country for the 2020 milestone:* • *13% contribution from renewable energy sources in the final use of energy;* • *10% contribution from renewable energy sources in the road transport consumption;* • *5% reduction of greenhouse gas emissions from 2005, for categories outside the scope of the Greenhouse Gas Emission Allowance Trading Scheme.*
Measures to be implemented	*Actions aiming to achieving Security of Energy Supply:* • *Diversification of energy sources through implementation of the strategic goal for introduction of natural gas into the country's energy mix.* • *Maximization of efficient utilisation of renewable energy sources aiming to replace energy from imported sources.* *Measures contributing to the creation of a healthy competitive energy market include:* • *Effective development of RES plants, based on spatial planning.* • *Simplification of all licensing procedures.* *Protection of the environment and sustainable development are ensured through:* • *Promotion of renewable energy sources for the generation of electricity and heat contributing to a significant reduction of pollutant and greenhouse gas emissions.* • *Promotion of the use of natural gas (when this becomes available in the domestic market) for public transport.* • *Preparation of a study on the environmental impact assessment strategy through implementation of this Scheme.*
Period of activation	*2012-2020*

Programmes and specific operative initiatives

Title of the programme/intiative	*STRUCTURAL FUNDS AND COHESION FUND:* • *The Operational Programme for "Competitiveness and Sustainable Development",* • *The Operational Programme for "Employment, Human Resources and Social Cohesion"* • *The Rural Development Programme* • *The Operational Programme for "Thalassa".*
Reference strategy	*Restructuring the Cyprus economy, preserving and creating new jobs and securing social cohesion.*
Geographical area of vaidity	*Cyprus*
Public funding (€), of which:	*955.900.000,00*
EU funds	*71.65%*

National funds	*28.35%*
Period of activation	*2014-2020*
Managing authority	*Republic of Cyprus*
Beneficiaries	*Public and Private Sector*
Description and objectives of the initiative	• *Supporting the restructuring and strengthening the competitiveness of Cyprus economy,* • *Upgrading human resources, promoting employment and social cohesion, and* • *Protecting the environment and promoting the efficient use of resources*
Type of supported activities	• *Promotion of employment* • *Preservation of social cohesion* • *Improvement of vocational education and training* • *Promotion and certification of lifelong learning* • *Enhancement of the administrative capacity of public authorities and stakeholders.*
Type and intensity of the public funding	*85% of the total eligible public expenditure through the EU Funds and 100% for the Youth Employment Initiative.* • *Central Government* • *Chambers* • *Educational Institutions* • *Large Enterprises* • *Local Authorities* • *NGOs* • *Researchers/Research Centers/Institutions* • *Small and Medium Enterprises (SMEs)* • *State-owned Enterprises* • *Trade Unions*

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Introduction (general and for all partners)

The term cluster started being used to identify – in the industrial framework of the industrial policies -, any initiative able to enforce and implement organized efforts supporting a group of actors with common interests expressed through the action of a cluster organization providing specific support towards the reference sector.

The Smart Guide on Cluster Policy[35] define them as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are representing groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialized expertise, services, resources, suppliers and skills.

Cluster bring out territory's features but they could be structured in tailored cluster management organizations. The latter are legal entities supporting the strengthening of collaboration, networking and learning in innovation clusters and act as innovation support providers by providing or channeling

[35] European Commission (2016), *Smart Guide to Cluster Policy*, Guidebook series, How to support SME Policy from Structural Funds, Ref. Ares (2016)2507138 - 31/05/2016, European Union

specialised and customised business support services to stimulate innovation activities, especially in SMEs. They are usually the actors that facilitate strategic partnering across clusters but it's important to underline that role and tasks are generally recognized and defined in national and/or regional level with specific regulations defining role and competences that could be different in each territory. In the project activities it will be of primary importance to focus on current state of cluster management organization, in order to provide clear details on the current national and regional situation, finding out main features necessary to share practices and details among all territories involved.

2.2.1 Cluster and Cluster management organization

Cyprus does not have an existing maritime cluster, the below priorities focus on a potential cluster that a series of organizations design to develop. The first priority targets of the Cyprus Maritime Cluster should be:

- Raising the Integrated approach to Maritime Affairs as a priority within the Cluster with R&D as the driving force
- The creation of a Ship Repair facility will allow Cyprus to take full advantage of its location on major shipping routes and the developments in Offshore Oil& Gas exploration therefore providing further opportunities for relevant research and innovation activities
- The development of Open Sea Aqua Culture will allow the local aquaculture industry to further expand taking advantage of the quality characteristics of the sea in the east med
- The establishment of Marine Protected Areas including artificial reefs will enhance the fish stocks and attract diving tourism at the same time
- The promotion of Short Sea shipping and the establishment of sea connections to the East Med countries will facilitate cooperation and interdependency in an area currently suffering from instability and regional conflicts
- Promotion of Underwater archeology and Maritime Heritage as a tool for enhancing the tourist product

ALBANIA

1 INTRODUCTION

General description of the interested territory together with an introduction on the maritime sector and his developments and connections[36].

Albania is a maritime nation with regional interests. Albania has a favourable maritime position linked with the Adriatic and Ionian Seas and the Central Mediterranean Sea(16) The Albanian geographical position is a factor, historically recognized by others, but occasionally properly emphasized by national policy makers.

The Sea has been and will be important for the economical development and prosperity of Albania and Albanians. Maritime space of Albania is about 60% of its land territory size(17). Maritime and seabed resources, as well as capitals moving through the sea, represent a wealth of great national value.

Any economic analysis should be funded on available official data and information. In Albania, there are strong gaps in the information systems related to marine economic activities. There are no detailed data collected or reported for most economic subsectors. There is no specialised structure to collect and report data on various aspects and nodes of each of the most important subsectors and there are legislation gaps on those issues that increase difficulties in carrying out in depth, quantified and objective analysis.
On 28th April 2011 EUROSTAT confirmed INSTAT proposal approved by Council of Ministers for regional break down of Albania in 3 regions NUTS 2 and 12 regions NUTS 3, corresponding to existing prefectures/qarks/regions1. Albania consists of 12 level 3 regions named "qarks". Prefectures are used as a synonym to qarks. Here terms qarks, regions and prefectures are used interchangeably. The qark of Tirana is considered coastal as it includes communes and municipalities that are located alongside the coast. The qark of Tirana has been considered as coastal despite the position of the city. More detailed data are not available. All 3 regions NUTS 2 include qarks (regions level 3) without access to the sea. General information on the coastal zone can be obtained aggregating the six districts with access to the sea. These six coastal qarks/regions have a total area of 12.149 km2, which is 42% of the country.

Morphological structure of the coastline
Albania's coastline length is 362 km.

Albania has six islands in the Mediterranean. All are very small and uninhabited.

Economic role of maritime areas over the national total NACE Sector	**GVA (mio EUR)**		**Employment (in 1000 persons)**	
Coastal areas	**% on Country total**	**Coastal areas**	**% on Country total**	
Agriculture, forestry and fishing	886	58%	274.689	52%
Manufacturing	608	65%	90.835	74%
Construction	731	84%	62.460	66%
Wholesale and retail trade; transport;	1.932	80%	151.899	72%

[36] Information taken from Albania Country Report

accommodation and food service activities; information and communication				
Total NACE	**5.717**	**72%**	**728.239**	**63%**

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- Gross Domestic Product of maritime areas was EUR 6.384 million in 2010, which is 72% of Albania (INSTAT).
- GDP per capita of Albania was EUR 3.080 in 2010; higher, EUR 3.419, for the maritime areas (INSTAT).
- Gross Value Added in maritime areas was EUR 5.717 million in 2010, which is 72% of national GVA.
- Persons employed in maritime areas were 728.239, which is 63% of Albania (2011).

2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Food, nutrition, health and eco-system services

The total aquaculture area (excluding land-based, artificial reservoirs and artificial lakes) consists of coastal lagoons which cover 11.000 ha. Marine cage cultures at the end of 2011 covered 70.000 m2 of marine water surface. Marine farming is identified in 2 forms:

Bivalves farming: bivalve culture has developed since the beginning of the 1960s in the coastal lagoon of Butrinti, *(Mytilus galloprovincialis)* reaching 5000 tons/year in the late 1980s. Later, mussel breeding was practically stopped, both for internal organizational reasons, but above all because of the block on exports imposed by the EC for sanitary reasons, in October 1994, for all living products of the fishery sector.

Floating cage farming of marine finfish: this activity started ten years ago in Albania. The last years about 25 private entrepreneurs were licensed to begin the cage farming of marine finfish *(Sea bream - S. Aurata and sea bass - D. Labrax)* in the 401 units in marine waters, occupying about 322.050.000 m_2 (under culture and surrounding area). Even if not yet artificially reproduced, but imported in fingerling stage, the marine cage culture is blooming in south west part of Albania which offers much more possibilities for the expansion of this activity. There has been identified a lot of good places for this activity along the littoral zone of the Ionian Sea.

Marine aquaculture in Albania has marked great growth over the last decade, despite slow recent growth constrained by slow growth in the domestic market demand and constraints in access to exports, especially towards EU (e.g. molluscs). Domestic consumption will increase in the future, in particular thanks to the increased demand triggered by tourism development that will further push the sector growth.

The sector has strongly suffered the block on exports imposed by the EC for sanitary reasons, in October 1994, for all living products of the fishery sector, and today it still suffers lack of food safety and quality assurance and poor authorities' ability to control the production and its environmental impact. However technical and economic potentials are high. We have included aquaculture between the most relevant and promising because it is expected that domestic consumption will increase in the future, in particular thanks to the increased demand triggered by tourism development.

Fishing for human consumption is expected to grow, but at lower pace compared to other activities. In the domestic market there is expected growing demand for fish products (as mentioned above in the case of marine aquaculture). However, on the supply side, despite some investments, financial and technical capacity enhancement of some fishing companies, overfishing in the last years/decades represents a supply resource constraint (particularly for species that have been over-fished).
The production is achieved through approximately 858 operators working in the fish sector. However, an indefinite number of small scale vessels is not included in the list due to the fact that they are operating sporadically and there are several small vessels which do not hold licenses, but are used for fishing. Furthermore there are 6 companies engaged in processing which employ almost 1000 people. Increasing of fish consumption in the domestic market and expansion of demand from international markets, especially those of the EU, create opportunities for the growth of the sector. Fishing can then be considerate a relatively important activity for several reasons: export, supply to the processing industry, food security, seasonal work in tourist places.
The value chain of the fish and other fishery products is simple, due to the low number of operators. There is a big number of small fishery boats (individuals) exploiting the Albanian coastal waters without being licensed and not being integrated in the formal value chain – they typically sell directly to restaurants or other final users/buyers therefore it is impossible to quantify and monitor the situation.
There is no a wholesale fish market in Albania, however fish trade is mainly concentrated in areas near the main harbours (Shengjin, Durres, Vlore and Saranda). Trade sector is composed by 45 private companies that carry out processing and/or trade activities for fish and fish products. Officially, there are 6 companies engaged in processing which employ almost 1000 people (MAFCP, 2012). They are located predominantly in the big urban centres or nearby the ports, and supply mainly the export market but also the restaurants, hotels, fishmongers, local and private markets; often they have their own means of distribution.

Leisure, working and living
Over the last years, coastal tourism has marked progress in Albania. Tourism continues to be seen as an important sector in the economy of Albania providing jobs, local incomes and making contributions to Government revenues, and is expected to receive special attention by public policies support in the future. Expectation is that coastal tourism will further increase in the coming years, because of a growing interest by international tourists and also because of the increase of sector related investments.
Tourism continues to be seen as an important sector in the economy of Albania providing jobs, local incomes and making contributions to Government revenues. The direct contribution of Travel & Tourism to the national economy in 2011 was 6,2% of GDP (gross value added between EUR 500 and EUR 600 million). Travel & Tourism directly generated 51.000 jobs in 2011 (5,5% of total employment). The reason for so substantial a contribution from tourism is that a large proportion of the tourists are in fact Albanians working in neighbouring countries such as Greece and Italy (In 2009, some 41% of visitor arrivals were Albanians living outside of Albania). The improvement of tourist facilities pushed by these arrivals and the experience gained by locals should foster the development of the sector.
Albania had very little experience of modern-day tourism. Its geographical and political isolation, combined with the political problems of the past decades, has prevented the anticipated upturn in the sector from occurring. However, over the last years, coastal tourism has marked progress in Albania. Tourism continues to be seen as an important sector in the economy of Albania providing jobs, local incomes and making contributions to Government revenues.
Data are reported at NUTS 2 level; therefore we have no official information about the situation in coastal zones of Albania. However, most tourism activities are developed in coastal areas and thereby available information can be considered as indicative for the coastal tourism too (For further deepening see Table 1 and Table 2, section 4.1).

Maritime transport
As a result of recent investments, the anchoring and processing capacities and the port efficiency have increased, accompanied with an increase in the number of passengers and volume of goods processed in

ports. The major weight of work is covered by Durres port as a result of investments in building the new passengers' terminal – its modernization and capacity enhancement will pave way for increase of the number of passengers. Also the increasing number of operators creates conditions for improvement in services making them more attractive for passengers in the future. Moreover, it is expected that tourism growth in the future will trigger increased demand for passenger ferry services.

Although most of the routes are realised by foreign enterprises, passenger ferry services can be considered a strategic activity for the development of port facilities, for the arrivals of Italian tourists, and also for assuring the movement of Albanians working in neighbouring countries (as well as citizens who are transiting through Albania to reach their landlocked countries: Kosovo and Macedonia). The investments for the building of a new passenger terminal in Durres and the improvement of business conditions are signals that make us include this activity among the most relevant and promising.

Albania is served by two primary deep-sea ports at Durres and Vlora, and two secondary ports at Shengjin and Saranda used mainly by cabotage (coastal) shipping. Port of Durres is by large the main Port in Albania (and the Gateway of Corridor VII) for manufacturing goods, containers and passengers, and also as Port Authority.

Passengers destinations include primarily Italy and Greece. More specifically, the major origin and destination are the Adriatic ports of Bari, Brindisi, Ancona, and Trieste. Most of the routes are realised by Italian companies.

Marine and maritime activities

Table 1 - Indicators of relevant marine and maritime activities in Albania Function/activity		**GVA** (EUR, billion)	**Employment** (*1000)	**Number of enterprises**	**Further indicators**	**Source & Reference year**
1. Maritime transport						
1.1	Deep-sea shipping	n.a.	n.a.	3	4.000 thousand tons manipulated (-4,5% compared to 2006)	MEFWA and INSTAT, 2011
1.2	Short-sea shipping (incl. Ro-Ro)	n.a.	n.a.	1	----	MEFWA and INSTAT, 2012
1.3	Passenger ferry services	n.a.	n.a.	Not reported	Number of passengers entered: - Foreign 195.108 - Domestic 350.592 Number of passengers departed: - Foreign 186.316 - Domestic 387.787	MPAT and, INSTAT, 2012
1.4	Inland waterway transport	n.a.	n.a.	1	- 7.888 passengers transported - 36 vehicle transported	MPAT and INSTAT, 2012
2. Food, nutrition, health and eco-system services						

2.1	Fishing for human consumption	n.a.	n.a.	n.a.	Catch: 6929 ton , with a value which exceeds EUR 10 million. Approximately 858 operators working in the fish sector. - Selective Fishing gears (No.): 67 - Pelagic Fishing gears (No.): 17 - Trawler Fishing gears (No.): 196	INSTAT, 2011 Various reports and expert assessments
2.2	Fishing for animal feeding	0	0	0	n.a.	n.a.
2.3	Marine aquaculture	n.a.	n.a.	n.a.	Coastal lagoons cover 11.000 ha. Marine cage cultures: 70.000 m_2 of marine water surface. Marine cage aquaculture in 2012: - Enterprises (No.): 23 - Surface of cages: 73 840 m2 - Volume of cages: 1 872 100 m3	Various reports and expert assessments, including: REVIEW OF THE ALBANIAN INLAND FISHERIES AND AQUACULTURE SUBSECTORS. FAO, 2013
2.4	Blue biotechnology	n.a.	n.a.	n.a.	n.a.	n.a.
2.5	Agriculture on saline soils	n.a.	n.a.	n.a.	n.a.	n.a.
4. Leisure, working and living						
4.1	Coastal tourism	0,5-0,6	51,0	n.a.	In total there are 735 hotels at country level including a total of 14.634 rooms and 28.672 beds. Data are not reported specifically for coastal areas, however most tourism capacities including rooms and beds are situated in coastal areas.	INSTAT, 2011
4.2	Yachting and marinas	n.a.	n.a.	n.a.	n.a.	n.a.
4.3	Cruise tourism	n.a.	n.a.	n.a.	n.a.	n.a.
5. Coastal protection						
5.1	Protection against flooding and erosion	n.a.	n.a.	n.a.	n.a	n.a.
5.2	Preventing salt water intrusion	n.a.	n.a.	n.a.	n.a.	n.a.
5.3	Protection of habitats	n.a.	n.a.	n.a.	797 protected areas (with a total	MEFWA, 2012
Function/activity		**GVA** (EUR, billion)	**Employment** (*1000)	**Number of enterprises**	**Further indicators**	**Source & Reference year**
surface of 379.000 Ha). Data are not reported at NUTS 2 level and thereby cannot be provided for coastal areas separately.						

2.2.2 Identification of stakeholders

Provide the list of maritime stakeholders classified in the categories listed in the chapter 2.1 of the guidelines and link each of them to its main maritime sector among those selected at point 1 (at least 2 actors).

Name	***Reference maritimesector***	***Category***	***Brief description (subsectors***	***City***
TbC	*All the maritime sectors of Albania country*	*Ministry of Transport and Infrastructure*	*All the sectors of the maritime field*	*Tirana*
Argita Totozani	*All the maritime sectors of Albania country*	*General Directorate of Integration*	*Integration policies*	*Tirana*
TbC	*All the maritime sectors of Albania country*	General Directorate of Maritime of Albania	*All the sectors of the maritime field*	*Tirana*
TbC	*All the maritime sectors of Albania country*	*General Directorate of Monitoring and Standards*	*All the sectors of the maritime field*	*Tirana*
TbC	*All the maritime sectors of Albania country*	Directorate of the Projects	*Different and the main sectors of the maritime field*	*Tirana*

Provide a brief description of the most interesting stakeholders (at least 20 actors and 5 rows per each of them). Motivate the choice of the selection and describe their characteristics.

Key Stakeholders

Generally we intend to involve a wide range of institutions in higher education, scientific research, development and technology, and the private sector. Businesses, however, have minor participation in R&D and other knowledge generation activities.

Ministries

General Directorates of the Maritime Sector

Environmental Agencies

2.2.3 Research projects and activities to support R&I

Research Agencies

Research is conducted by a number of institutions.

a) Eleven public and 31 private HEIs have a mandate for tertiary education, scientific research, development, and transfer of knowledge and technology, although the duration and level of scientific research among the universities differs. Integrated with public universities in Tirana are three Public Centers/Agencies for development and technology transfer.

b) National research centers are research-oriented academic institutions whose mission is to carry out scientific research, educate and deepen university education in the secondary and tertiary cycle, and develop and transfer knowledge and technology. In this area, the Albanologic Study Center has been established based on the reorganization of the Albanologic Institutes of the Academy of Sciences.

c) Several ministries have subordinate research institutes, including the Environment, Forests, and Water Administration; the Ministry of Tourism, Culture, Youth and Sports; the National Agency of Natural Resources; the Albanian Geological Survey; and the Ministry of Public Works and Transport. The extent of pure or applied scientific research differs among these organizations, however.

d) Private institutes or non-governmental organizations (NGOs) conduct some research in Information Technology (IT), but little is done in other fields relevant for science and technology.

Policy Formulation and System Governance

The main policy-making and advisory bodies formally include: the Albanian Parliament, the Council of Ministers; the Council for Scientific Policy and Technological development; the Ministry of Education and Science; Ministry of Innovation and ICT; Council of Higher Education and Science; Academy of Science of Albania; Rectors' Conference; Agency for Research, Technology and Innovation; and other ministries. Several of these agencies or councils do not significantly impact R&D policy. The policy formulation is mostly confined to the Ministry of Education and Science supported by the Agency for Research, Technology and Innovation, and advised by interested line agencies and universities, with overall strategic decisions ultimately validated at senior government levels and overall funding levels apparently negotiated with national finance agencies as part of normal Ministry of Education and Science and agency budget processes.

61. Core agencies include:

- ***Ministry of Education and Science (MoES)*** is the main government body responsible for R&D policy design. It transferred the administration of national S&T programs to the Agency for Research, Technology and Innovation (ARTI) in March 2010.
- ***Ministry of Innovation and ICT (MITIK)*** was established in 2009, with the key role of overseeing the new National Agency on Information Society (NAIS).
- ***The Ministry of Economy, Trade and Energy (METE)*** department on Competitiveness Policy and on Business Promotion plays an important role in designing policies to promote investment, exports, and SME development, focusing in particular on encouraging business innovation to raise competitiveness in regional and global markets. METE developed the Business Innovation and Technology Strategy (BITS) (2011 – 2016). In addition, it oversees activities of the Albanian Investment and Development Agency (AIDA) and the Business Relay and Innovation Centre (BRIC) and periodically monitors their work.
- ***Other ministries:*** As indicated above, a number of line ministries with research institutions attached to them are stakeholders in the Albanian national innovation system.
- ***The Rectors' Conference*** represents Albanian higher education institutions and has an advisory role regarding research undertaken in their universities and programs involving cooperation with the private sector.

Key agencies engaged in policy coordination and implementation of innovation programs include:

- ***The Agency for Research, Technology and Innovation (ARTI),*** which was launched in March 2010 as a public, legal institution under the auspices of the Council of Ministers, and charged to build a

modern system of science and to strengthen the role of S&T. It operates as a coordinating and funding body for national, bilateral, and international programs and projects, and cooperates with different institutions in the field of R&D and innovation. Its mission is to evaluate, finance, monitor, and manage programs and projects in the fields of science, technology and innovation. ARTI has taken over some of the coordinating functions in technology transfer and R&D support from MoES. ARTI also serves as a coordinating and guiding structure for sustainable technological and innovation development of the country. Among other activities, the Agency funds projects supporting the development of SMEs and the renewal of technological equipment used by SMEs.

- ***The Business Relay and Innovation Centre (BRIC),*** created in 2011, was designed to be an entirely independent institution delivering a wide range of services for the technological support of private enterprises based on knowledge. This agency is responsible for the implementation of the Action Plan of the Business Innovation and Technology Strategy 2011-2016,25 and therefore must engage in systematic coordination and periodic monitoring of the business innovation and technology policy.
- ***National Agency for Information Society (NAIS)*** coordinates government activities in the field of information and communication. It interfaces with other ministries and government institutions as well as the private sector ICT companies.

True levels of investment in R&D and innovation in Albania are difficult to assess. Currently, statistics are either not available or collected on a consistent basis and in line with international (OECD, Eurostat or UNESCO) standards. There are no data or studies available that would allow an estimate of the extent of innovation activity (innovation expenditure, etc.) or relevant types of output in the enterprise sector (e.g., sales from new products or services, etc.).28 This hinders both policy design and Monitoring and Evaluation of R&D activities.

Without a consistent S&T monitoring and impact evaluation system in place, the government relies on a range of different implementing bodies to evaluate project implementation and confirm that funds are allocated in line with pre-determined criteria and guiding principles. As a consequence, there is a lack of reliable statistics and other necessary information that would enable both the assessment of policy results in this area, and the measurement of progress achieved under various innovation programs (not to speak of proper impact evaluation).

ARTI, which has a mandate to support, monitor, and evaluate programs and projects in the fields of science, technology, and innovation in the entire country, seeks to accomplish this objective through preliminary evaluation, monitoring of implementation, and final assessment of RDI programs based on the existing Monitoring and Evaluation (M&E) system. The Public Agency for Accreditation of Higher Education (PAAHE) and HEIs are working together in drafting the main principles and criteria for strengthening the Internal Quality Assurance Systems in the HEIs, though it may take a while before Albania has a broader and more reliable information system relevant for monitoring of R&D activities.

Policy Reforms under Implementation

In addition to the creation of a national strategy and ARTI, Albania has undertaken other reforms that should positively impact R&D and innovation, and demonstrate its commitment to improved performance in this sector. Notable advances include:

a) The Academy of Sciences was re-organized along the model adopted by many EU countries.

b) Higher-education autonomy has been enhanced; curricula and education standards have been revised following the Bologna process; monitoring and quality auditing mechanisms have been adopted; and higher education institutions have been integrated to research institutes to enhance research. The reforms undertaken in the area of higher education and basic research, first and foremost, aimed at integrating

once entirely separate fields of research and entrepreneurship for better results in RDI and economic growth.

c) Improvements in human resources in science and technology are being pursued by: (i) raising interest in and awareness of science among youth; (ii) revising academic curricula to make science and technology more attractive to students (e.g., by expanding interdisciplinary training in science education); (iii) improving teaching in mathematics and science, including through the use of ICT in teaching content and delivery; (iv) reducing gender and ethnic minority gaps in science and technology education; (v) enhancing financing opportunities for PhD studies and post-doctorate training (such as through fellowships, funded research opportunities, etc.); and, (vi) improving the quality of university research laboratories and infrastructure. For the first time, the Albanian government implemented in 2007 a program for PhD studies. This program, "The Excellence Fund," supports the best PhD candidates to partially or fully complete PhD studies abroad. A total of 45 PhD students were supported by this fund during year 2007.

d) A brain gain program has been crated to address the diaspora (see Box 2 below). Through the medium-term plan (2008–2009) of the Brain Gain Program (co-financed by the United Nations Development Program (UNDP)), the Albanian government has, for the first time mobilized funds from the state budget and opened 550 vacancies in higher education and scientific research institutions.

List research projects and activities

According to the National Strategy of Science, Technology and Innovation as of 2009:
The budget for scientific research and higher education was 2.2 times higher than that for 2005. For the first time, the higher education budget reached USD 100 million in 2009, of which USD 6 million are for "institutional funding" of scientific research (compared to USD 800,000 in 2005).
The only research-funding program is a small scale competitive funding program (currently 56 projects for a total budget of USD 5.4 million, implemented over 2–3 years, 2008-2019), run by MoES.
The World Bank has funded the equipping of teaching laboratories, which were funded under the Education Excellence and Equity Project financed by the World Bank, the European Investment Bank and the Council of Europe Development Bank.
Through the medium-term plan (2008–2009) of the Brain Gain Program (co-financed by UNDP), the Albanian Government has for the first time mobilized funds from the State Budget and opened 550 vacancies in higher education and scientific research institutions.
For the first time, the Albanian government implemented in 2007 a program for PhD studies "'The Excellence Fund," which supports the best PhD candidates to partially or fully complete PhD studies abroad. A total of 45 PhD students were supported by this fund during 2007.
As indicated in the Strategy, the government funding of research may also be carried out through a number of other line ministries and public organizations, directly or indirectly involved in research and innovation policies or activities, or both. These, in particular, include the following:
The Ministry of Agriculture funds activities in the field of applied research and technology transfer. The activities are carried out by six Centers for Transferring Agricultural Technologies (QTTB) dependent on the ministry. The ministry has a consolidated extension program implemented through cooperation with the QTTB and other research structures.
The Ministry of Defense envisages the intensification of R&D activities for security and defense as part of a long-term plan for the Development of Military Forces 2020.
The Ministry of Health has its own research agenda related to the improvement of health services.
The Ministry of Economy is planning to establish a Center for Innovation that would provide services to enterprises related to innovation and technology transfer.
Describe main project and activities still active or developed in the last 5 years.

Maximum projects to be described: 10

Innovation budgets of the main government departments and agencies Name of the Organization	Number of staff Responsible for innovation measures (% of total)	Innovation budget Managed (2011)	Estimated share of budget earmarked for specific policy measures
Minister of Innovation, Technology, of Information and Communication (MITIC)	12 of 12 (100%)	---	----- • Digital Albania
The Albanian Investment and Development Agency (AIDA)	20 of 20 (100%)	€ 29,061,870 (201028)	AIDA € 29,061,870 • From this: • Support for SMEs €26,475 (Loan) • Institutional Support for BITS €2,587,050 (Loan)
Business Relay and Innovation Centre (BRIC)	BRIC is under AIDA 5 of 20 (25%)	• €566,500	• Awareness Raising €28,650 • Business Innovation Services €182,650 Innovation Fund €355,200
ARTI	3 of 15 (20%)	€431,65429 (2010 – 2012)	• National Research and Development Program: Information Technology €431,654
NAIS	40 of 40 (100%)	€5,065,514.28	• Computer equipment for ministries and government agencies €142,800 • VAT payment for computer equipment for ministries and government agencies €142,800 • Purchase of office equipment €14,200 • Agreement with Microsoft €750,000 • Total 2009: €1,050,000

share of available budgets by main categories of research and innovation measures Broad category of research and innovation policy measure	Approximate total annual budget for 2010 (in euro)	Commentary
Governance & horizontal research and innovation policies	RDI strategy: TOTAL € 14.45m for 2010	Total planned budget of RDI strategy for 2009- 2015 is €151.95m

		2010 breakdown: ▯ Baseline funding for HEI research institutes €8.25m ▯ Fund for research infrastructure €4m ▯ Fund for centers of excellence in research €1.5m ▯ Fund for new researchers/Research Eagles grants €0.2m ▯ Fund for transfer of technology and innovation €0.15m ▯ Agency for Research, Technology and Innovation €0.5m
Research and Technologies	ARTI: TOTAL €1m for 2010 "National Programs of Research and Development" and "Bilateral Programs" totaling 140,000,000 ALL (€1,015,965.16, of which Bilateral cooperation with Slovenia is valued at €36,284.47 in 2010)	ARTI began operating in 2010 National Programs for Research and Development Budget 2010 – 2012 (planned) ▯ Social Sciences and Albanology (€366,959.3 or 51,000.000 ALL) ▯ Information Systems and Technologies (ICT) (€575,622.4 or 80,000.000 ALL) ▯ Biodiversity and the Environment (€352,568.7 or 49,000.000 ALL) ▯ Agriculture (veterinary, zoo-technical), Food and Biotechnology (€568,427.1 or 79,000.000 ALL) ▯ Health (€330,982.9 or 46,000.000 ALL) ▯ Water and Energy (€338,178.1 / 47,000.000 ALL) ▯ Materials (€230,249 or 32,000.000 ALL)
Human Resources (education and skills)	Total €279,131 for 2010	Brain Gain program for 2010. Actual expenditures ▯ Project Total: $1,000,000, of which UNDP ▯ Contribution $300,000 & Donor Funding ▯ Sought $700,000) April 2006-Dec. 2011, to continue in 2012-2013. ▯ Also note above under NSSTI: Basic funding for HEI research institutions **€8.25m for 2010** ▯ Fund for new researchers/Research Eagles grants **€0.2m**

Promote and sustain the creation and growth of Innovative enterprises	Business Innovation and Technology Strategy (BITS): supposed to start in June 2011	€10m over a 6-year period. Budget only for 2011: Awareness Raising €28,650 Business Innovation Services €182,650 Innovation Fund €355,200 Clusters Program 2012 start-up €141,650 Incubation Program 2012 start-up €82,500 **TOTAL for 2011: €566,500**
Markets and innovation culture	No specific initiatives can be determined	See above—awareness raising – BITS as promoted by the BRIC is supposed to promote an innovation culture among SMEs

Statistical Profile ALBANIA	**WBC**		**EU-27**
ECONOMY & BUSINESS ENVIRONMENT			
GDP (2010)	€8,872 M	€15,523 M	€12,279,401 M
GDP per Capita (2011)	€3,080	€4,454	€23,400
Population (2011)	2,831,741	22,832,917	502,404,702
Exports to GDP ratio (2010)	12.0	19.2%33	-
Imports to GDP ratio (2010)	36.5	40.3%34	-
Trade to GDP ratio (2010)	48.5	60.5%35	-
Net Foreign Direct Investment, % GDP (2011)	10.25 (inflows)	4.92 (inflows)	2.86 (outflows)
HUMAN CAPITAL AND RESEARCH & DEVELOPMENT (R&D)			
Gross Domestic Expenditure on R&D, % GDP (2009)	0.15	0.3336	2.03
Researchers37 per Million Population (2010)	245	78738	3,16639
University-Industry Collaboration Rank 2012 (of 144 countries)40	139	8841	4042
TECHNOLOGY TRANSFER & INFRASTRUCTURE			
Percentage of Enterprises with Internationally Recognized Quality Certification (2009, Enterprise Survey)	24.6	19.343	-

Percentage of Firms Using Technology Licensed from Foreign Companies (2009, Enterprise Survey)	38.6	25.7	-
Royalties & License Fees Payments, % GDP (2011)	0.10	0.2344	0.58
Royalties & License Fees Receipts, % GDP (2011)	0.10	0.0945	0.42
Internet Users per 100 People (2011)	49	5446	72
Mobile Cellular Subscriptions per 100 People (2011)	96	106	125
Intellectual Property Protection Ranking 2012 (of 144 countries)47	94	9548	4049
S&T OUTPUTS AND INNOVATION PERFORMANCE			
Utility Patents Filed in the US per Million Population (2009)	0.31	2.850	117
S&T Journal Articles per Million Population (2009)	2.7	12551	496
High-technology Exports, % Manufactured Exports (2010)	0.89	4.252	15.3
Global Innovation Index Rank 2012 (of 125 countries)53	90	6054	2455
Trademark Applications per Million Population (2010, WIPO)	911	1,83256	130

2.2.4 Maritime policies and initiatives in the Country

Short introduction on national/regional policy framework

The Objectives of Albanian National Maritime Strategy

A new National Maritime Security Strategy, as we did mention above, have to be driven by National Security Strategy of the Republic of Albania and also must be its integrated part. It must be articulated by taking into account national maritime strength in the new regional security environment. In our point of view, the future National Maritime Security Strategy has to be articulated for achieving the following national objectives:

Promotion and support of the maritime economy

Economical development of the country requires the promotion and support of the new economic dimension: maritime industry. The new maritime economical trends foresee the Albanian maritime area as one of the most important gateway toward east and vice versa, as well as its increasing exploration of the maritime natural resources. Policy formulation and legislation adaption is needed for the expecting maritime economic developments.
The maritime transport has a strategic importance for the Republic of Albania. Nowadays Albanian ports processing is not in the expected figures, while their total annual processing capacities goes up to 5-6 million tons per year(38). The expecting flow of goods, through 8th and 10th Corridors will require the increasing ports processing capacities up to about 16 million tons per year. It will be a requirement for inhabitants of Albania, Kosovo, Serbia, Macedonia and transiting parts of Bulgaria and Rumania(39). The actual port processing in Albania can't allow fluent flow of the expecting regional trade. AMBO(40) project need to put into Albanian agenda, as well as TAP(41) Project(42). From geo-political and geo-economic point of view, these complex infrastructure networks "are of strategic importance for Italy"(43) also, as well as for countries of the region where the corridors pass through.
The fluent flow of the expecting regional trade requires a new balance on funding roads, rails and port infrastructures networking. Albania needs to be focused on building port processing capacities in Bay of Vlora, as an unlimited capacity and all year weather bay, rather than Durres Port(44), which has limited enlargement opportunities. Also, "Transportation infrastructure throughout most of Southeasters Europe, including Albania, has been underfunded, neglected, and not harmonized with European Union standards(45)".

Description of maritime policies and programs (ref. templates).

Despite the many initiatives, new legislation, adoption of strategies, etc., it is evident that Albania has made little tangible progress in the area of R&D capacity, technology transfer, and innovation. Undoubtedly, limited funding is a serious factor. However, reforms can still proceed in an environment of resource scarcity if there is a clearer understanding of the systemic nature of R&D and innovation and a comprehensive program to address key binding constraints.

Improving knowledge capacity (R&D) and innovation is not a simple or quick task, and it requires the active participation of all stakeholders. Challenges are inherent in the multiplicity of players, in the difficulty in aligning incentives and establishing modern legal frameworks and government policies, and in encouraging private sector actions. Overcoming ingrained cultural differences, if not distrust, between entrepreneurs and researchers, reducing red tape, or stimulating the private sector to take a more proactive interest in R&D to gain global market share require concerted and well-conceived initiatives. The weakest element can determine overall success, so ignoring key links can be costly.

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Introduction (general and for all partners)

2.2.1 Cluster management organization

In Albania, No real **maritime clusters** exist. There are emerging clusters of aquaculture activities in various parts, especially South-West Coast.
It is established though the coastal tourism clusters with full range of services available.
No real maritime clusters exist. Coordination and complementarily between the four Albanian ports should be realized.

And the 'clusters' are more centered and controlled, centralized.

CLUSTER	
Name of the cluster	***Ministry of Transport and Infrustructure***
Territorial dimension of the cluster	*In all Albanian Territory*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***General Directorate of Maritime***
Territorial dimension of the cluster	*In all Albanian Territory*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***Velipoje***
Territorial dimension of the cluster	*Shkodra Region*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***Durres***
Territorial dimension of the cluster	*Durres Region*

Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***Vlore***
Territorial dimension of the cluster	*Vlora Region*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***Sarande***
Territorial dimension of the cluster	*Vlora Region*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

CLUSTER	
Name of the cluster	***Shengjin***
Territorial dimension of the cluster	*Lezha Region*
Reference economic sectors	
Initiatives for cluster development	
Tools for cluster development	

ROMANIA

1 INTRODUCTION

Romania is situated in South-eastern Europe and borders the western shore of the Black Sea, with a coastline stretching 245 km, between Bulgaria in the south and Ukraine in the north. Romania also shares a border in the north east with Moldova, and in the west with Hungary and Serbia. With a surface area of 238,391 square kilometres, Romania is the largest country in South-Eastern Europe and is the ninth largest territory in the European Union.

Romania occupies the greater part of the lower Danube River basin and the hilly eastern regions of the middle Danube basin. The country lies on either side of the mountain systems of the Carpathians, which form the natural barrier between the two Danube River basins.

Romania sits on the crossroads of many historic trade routes. This position leads Romania to occupy a key location at the eastern border of the new enlarged Europe, which can prove instrumental in performing the role of a gateway to the countries East and West of the Black Sea and to the South, serving over 200 million consumers within a 1,000-km radius of Bucharest.

The Danube river cross throught Romania and flows into Black Sea in Danube Delta. The main romanian maritime port Constanta is linked to Danube by a canal constructed between 1976-1984. Danube is the second longest river in Europe with 2858 km length from which 1075 km is passing through Romania. Along the romanian sector of the Danube are located 15 ports amomg which four has maritime acces to Black Sea by Sulina channel (a Danube branch).

Romania has eight development regions. Among these only the South-East region is a maritime region. All romanian maritime ports are located in this region. The bigest one, Constanta, is located on Black Sea shore and is directly connected to Danube river by Danube-Black Sea canal constructed between years 1976 and 1984. Galati, Braila and Tulcea are located along the maritime sector of the Danube river and are connected to Black Sea by Sulina channel, a branch of the Danube river.

Representing about 15% of the entire teritory of the country and 13,09% of total population, the South-East region is ranked 5th according to its contribution to national GDP. The main characteristic of the region is the large economic gap between several developed urban nodes (Braila-Galati and Constanta-Navodari) and large rural areas.

The main economic sector is industry (including shipbuilding and shiprepair) followed by agriculture (including aquaculture, fishing and fish processing), transport (including maritime&inland transport and ports). Among these, enterprises with activity in „blue economy" are distributed as follows :

Blue economy sector	**no.of enterprises**
maritme&inland transport	105
ports	94
shipbuilding&boatbuilding&shiprepair	292
fishing&fishprocessing	76
aquaculture	82
total	649

2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Sector : Maritime transport

Maritime and inland waterway transport (IWT) have long tradition in Romania. With 1075 km of Rhin-Danube corridor crossing our country and 245 km of Black Sea coast Romania can be considered as EU East gateway. The transport network consist of Danube fairway, Danube-Black sea canal connecting the port of Constanta to Danube river and 16 ports (12 river ports, 3 river ports with maritime acces and 1 maritime port with IWT acces).

Subsector : Ports

All ports, with one exception, are connected to rail and road. The port of Galati is connected as well to large gauge rail network from Ukraina and Republic of Moldova.

Regarding the structure of the throughput, Romanian ports are not specialized even before ’90 all ports were. After ’90 the structure of foreign trade has changed and traditional freight flows disappeared. The centralized trade has been replaced by competition thus ports and carriers have had to face the competition and find new freight flows and clients. Generally the main category of goods is the bulk (ore, grain) followed by oil products, general cargo and containers, since 2003 in Constanta port. Taking into consideration that traffic doubled in one year after the first terminal has been opened, can be concluded that Romania is a gateway for EU link to Middle East. At the moment, there are four container terminals in Constanta and a project to construct a container terminal is ongoing in the port of Galati. As concern the Danube maritime ports , the “rising star” of the traffic are grains. The demand for silos in ports and transshipment facilities are still growing. Braila county is the second largest agricultural area in the country and Galati, Tulcea and Constanta has importat agricultural areas as well. Together are the most important agricultural region of Romania. Both, port of Galati and port of Braila have storage 50.000 to capacity for grain Proximity to Republic of Moldova (only 10 km to Galati) and Ukraina (Danube is a commom border near Tulcea) , countries with huge agricultural potential , represent an opportunity as well. The “big looser” in Danube ports are steel products after the biggest steel plant located in Galati started to close gradually production units after privatization. It dramatically affected terminals in the ports of Galati and Braila (10 km close to each other) and ore materials and stell product traffic decreased more than 70%. Industrial decline also affected the port of Tulcea but there environmental obstacles rised after Romania join to EU and had to implement new rules to protect Danube Delta. The two big industrial plants located in Tulcea (ALUM and FERAL) went through a long period of decline in activity due to refurbishment requirements for environmental protection. ALUM is the sole alumina refinery in Romania, with an average production of 500,000 tpy which is used for aluminium production. In 2009, ALUM restarted after a complex upgrading program that began in February 2007. The reopening of the plant has involved hiring 470 people, meaning that the plant now employs 700 people in total. The company has replaced part of the existing equipment in order to make the production process more efficient and also to be in compliance with the European norms on environment protection. After the implementation of the upgrading program, the technological flow has been optimized, resulting in competitive production costs. After substantial investments has been made now the production increased and port operate ore materials for it. As concerning FERAL the plant comprises two manufacturing units, able to monthly produce about 23,000 MT of ferroalloys.

The passenger traffic is present even not significant. The cruise traffic increased in the last two years in Constanta due to geo-political situation in Black sea basin. River cruise along Danube has had a constant development since 1990 and now over 100 vessels are calling yearly (during summer time) the port of Tulcea which is the gate to Danube Delta. The delta is a natural protected heritage and represent the main touristic opportunity of the region. As all villages located in delta are accessible only by water, waterway public transport as well on-demand transport services are very well developed in the area. Unfortunately waterway public transport linking other ports as Galati and Braila ceased in 1990, as long distance transport proved to be ineffective with the existing fleet.

Subsector : Waterway transport

Romanian maritime and inland fleet was one of the bigest in the AST Europe before 1989. After political regime changed in 1989 the Romanian economy turn from a regulated and centralized market to one ruled by competition. The privatization process affected the whole transport sector but from the beginning the naval sector. In 2007 Romania has the largest inland fleet from East Europe of 2.000 de nave, of different category.Today the Romanian inland fleet still is the most important on the Danube as the former state company has been bought by Romanian stakeholders which maintain operational all vessels. Unfortunately the maritime fleet is not in the same situation. The former state maritime companies (Maritime Transport Company – NAVROM Constanta and Ocean fishing Company) has not been privatized and the vessels were sold piece by piece and companies liquidated. Today maritime transport services in the Black Sea are provided mainly by russian and turkish companies but there are some romanian companies providing such services even most of them are branches of transnational companies.

Sector : Shipbuilding and boatbuilding

Before 90's shipbuilding was one of the most important sector of Romanian economy. Fortunately after 90's almost all shipyards has been privatized thus now those that remained operational are in the process of recapitalization and retefurbishment. In 2009 the shipbuilding company ranged 10 in the world as concern gross production/to. While in 1989 over 80% of production was for domestic, currently 70-80% will mainly being exported to the EU, China, South Africa and Norway. After 2008 the naval Romanian industry took seven years to recover after economic crisis. Financial statement data released by the Ministry of Finance shows that, overall, the first eight shipyards in the country recorded in 2015 revenues of 1.099.784.993 dollars, with 4.53% above the level reached in 2008. 2015 was the best year for the national shipbuilding industry from the crisis, against 2014 being recorded a 37.28% jump in revenue. Among companies which reported increased revenue compared with the previous year are: Daewoo Mangalia Heavy Industries (+ 112%), Constanta Shipyard (+ 82.50%) and Severnav (+ 20.84%). At its opposite are : Vard Braila (-42.52%) Shipyard Orsova (-20.88%) Vard SA Tulcea (-13.70%) Shipyard A.T.G. Giurgiu (-10.74%) and Damen Shipyards Galati (-10.45%). In 2015 only two units(DMHI and VARD Tulcea) reported negative financial results, the other six shipyards (SNC, Damen Galaţi, Shipyard A.T.G. Giurgiu, Severnav, Vard Brăila and SN Orşova) reported positive results. Today in Romania are in operation eight big shipyards, several medium sized shippyards and shiprepair units (Constanta, Mangalia, Midia on the Black Se coast, Galati, Braila, Tulcea on the maritime sector of the Danube and Orsova, Drobeta-Turnu Severin and Giurgiu on the inland Danube. Shipyards in Romania are generally specialized for cargo vessels building. The main types are bulk carriers, tanks, fishing vessels, container ships, pushers and barges. Mangalia shipyard is specialized on container ships, Constanta shipyard on tanks, Galati shipyard on military vessels and tugs, Braila and Tulcea on tugs and ofshore vessels, Orsova, Drobeta-Turnu Severin and Giurgiu on barges and small vessels

2.2.2 Identification of stakeholders

Provide the list of maritime stakeholders classified in the categories listed in the chapter 2.1 of the guidelines and link each of them to its main maritime sector among those selected at point 1 (at least 2 actors).

Name	Reference maritime sector	Category	Brief description (subsectors)	City
ADM LOGISTICS	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Braila
AMEROPA	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Braila
AGRO MARKET	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
AGROEXPORT	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk)	Constanta
APM Terminals Romania	Maritime Transport	Private Ltd	Port activity (transshipment and storage containers)	Constanta
Arados Shipping Co	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship Chandler)	Constanta
ACL Shipping Agency	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
ARTS	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
ADMINISTRATIA PORTURILOR MARITIME	Maritime Transport	National company (State owened company)	Port activity (water&energy supply, waste reception)	Constanta
ADMINISTRATIA PORTURILOR DUNARII MARITIME	Maritime Transport	National company (State owened company	Port activity (water&energy supply, waste reception)	Galati
ADMINISTRATIA CANALELOR NAVIGABILE	Maritime Transport	National company	Danube-Black Sea canal administrator& transshipment and storage	Cernavoda
Barwil Star Agencies	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
BRISE GROUP	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Galati Free Zone
CNFR NAVROM	Maritime Transport	Private JSC	Inland transport (freight) Shipowener, 417 vessels	Galati
CTY GAS	Maritime Transport	Private Lt	Port activity (transshipment and storage)	Galati, Free Zone
Catoni & Co	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Coremar	Maritime Transport	Private JSC	Port activity (Towage)	Constanta
Comvex	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Constanta
CASA DE EXPEDITII Phoenix	Maritime Transport	Private JSC	Port activity (transshipment and storage general cargo)	Constanta
Carmar Shipping	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
CONSTANTA SOUTH CONTAINER TERMINAL	Maritime Transport	Private Ltd	Port activity (transshipment and storage containers)	Constanta
CHIMPEX	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk - (Chemicals and	Constanta

			fertilizers)	
COSENA	Maritime Transport	Private Ltd	Maritime&Inland transport , Ship agent)	Constanta
Compania de Remorcare Maritima Coremar	Maritime Transport	Private JSC	Port activity (Towing and rescue)	Constanta
Constantugs SRL Constanta	Maritime Transport	Private Ltd	Port activity (Towing)	Constanta
Danubius	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
DELTANAV	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Tulcea
DECIROM	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Constanta
Dezrobirea SA	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Constanta
Dobroport	Maritime Transport	Private JSC	Port activity (pilotage)	Cernavoda
DOCURI	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Galati
Elhani Maritime	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
European Metal Services	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk)	Constanta
Everest Project	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Free Zone Sulina	Maritime Transport	Company owened by County Council	Port activity (water&energy supply, waste reception)	Tulcea
FRIAL	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk)	Constanta
Gedvec	Maritime Transport	Private JSC	Port activity (transshipment)	Constanta
Globe Shipstores	Maritime Transport	Private Ltd	Maritime& (Ship Chandler)	Constanta
Hiba Shipping	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
HERCULES	Maritime Transport	Private JSC	Inland transport (freight) Shipowener 28 vessels, Ship agent	Braila
Idu Shipping & Svcs	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Karina Sea 98	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship Chandler)	Constanta
Levant Maritime Services	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Liberty Agency	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
MAST	Maritime Transport	Private JSC	Port activity (transshipment and storage, towage)	Constanta
Mihei Shipping & Trade	Maritime Transport	Private Ltd	Maritime transport (Freight)	Constanta
MINMETAL	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk)	Constanta
Metaltrans SRL Galati	Maritime Transport	Private Ltd	Inland transport (freight)	Galati
MGM Marine Shipping	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Navlomar	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta

NAVROM BAC	Maritime Transport	Private Ltd	Inland transport (ferry) 8 vessels	Galati
NAVROM PORT SERVICE	Maritime Transport	Private JSC	Port activity (towing) 7 vessels	Galati
Maritime Transport	Private JSC		Port activity (transshipment and storage for bulk)	Constanta
Octogon Gas & Logistics	Maritime Transport	Private JSC	Port activity (Bunkerer - LNG)	Constanta (Midia-Navodari)
Oil Terminal	Maritime Transport	Private JSC	Port activity (Bunkerer)	Constanta
Orca Shipping	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
Ovidius Shipping Agency	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
PBN LOGISTICS	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Galati
PORT BAZINUL NOU	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Galati
ROTRAC	Maritime Transport	Private JSC	Port activity (transshipment and storage - wood products)	Constanta
Rompetrol Logistics Sucursala Transport Constanta	Maritime Transport	Private JSC	Port activity (Bunkerer)	Constanta
ROMPORTMET	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Galati
ROMANEL	Maritime Transport	Private JSC	Port activity (transshipment and storage)	Braila Free Zone
ROMCARGO MARITIM	Maritime Transport	Private Ltd	Maritime transport (RO-RO)	Constanta
ROMTRANS	Maritime Transport	Private JSC	transshipment and storage	Constanta
Romned Port Operator	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk; food)	Constanta
Romned Port Operator SA Constanta	Maritime Transport	Private JSC	Port activity (transshipment and storage containers; port equipments)	Constanta
Sargeant Marine Romania	Maritime Transport	Private JSC	Port activity (transshipment and storage – Liquid bulk)	Constanta
SICIM	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk - cement and building materials)	Constanta
Siro	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
SILOTRANS	Maritime Transport	Private Ltd	Port activity (transshipment and storage for bulk - grains)	Constanta
S.N.T.F.M. CFR Marfa Feribot Constanta	Maritime Transport	State owened JSC	Maritime (Ferry)	Constanta
SOCEP	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk and containers)	Constanta
Sol Maritime Services	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
SPET SHIPPING	Maritime Transport	Private JSC	Inland transport (ferry) 10 vessels	Bechet
TOUAX ROM	Maritime Transport	Private JSC	Inland transport (freight) Shipowener , 32 vessels	Constanta
TRANSBITUM	Maritime Transport	Private Ltd	Port activity (transshipment and storage – Liquid bulk)	Constanta
TTS Operator	Maritime Transport	Private JSC	Port activity (transshipment and storage for bulk - Chemicals and fertilizers; other)	Constanta

TRANS EUROPA	Maritime Transport	Private JSC	Inland transport (freight) 10 vessels	Galati, Braila
			Port activity (transshipment and storage)	
Transit Intelligence Agency	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
UNITED SHIPPING AGENCY	Maritime Transport	Private Ltd	Port activity (transshipment and storage for bulk - grains)	Constanta
UMEX	Maritime Transport	Private JSC	Port activity (transshipment and storage for containers)	Constanta
			Maritime transport (Ferry &RO-RO)	
Vasimar Shipping	Maritime Transport	Private Ltd	Maritime&Inland transport (Ship agent)	Constanta
AC-General Ship Repairs	Shipbuilding and boatbuilding	Private Ltd	Shipyard (construction)	Navodari
Alutus Shipping Ecologic	Shipbuilding and boatbuilding	Private Ltd	Construction and repair (cleaning services for tankers, ship painting)	Agigea
Apex	Shipbuilding and boatbuilding	Private JSC	Shiprepair	Tulcea
Armax SRL	Shipbuilding and boatbuilding	Private Ltd	Construction and repair (naval tubing)	Galati
Braila Ship-Repair	Shipbuilding and boatbuilding	Private JSC	Shipyard (construction)	Braila
Brat Impex	Shipbuilding and boatbuilding	Private Ltd	Shipyard, shiprepair	Mangalia
Den Breejen Romania	Shipbuilding and boatbuilding	Private Ltd	Construction (blasting and painting services, repair services)	Galati
Diagnose and Measurements Group	Shipbuilding and boatbuilding	Private Ltd	Construction, repair (laboratory noise, vibration (human and equipment), time and lighting. Research and desingn in the naval field. Building and repair ships	Galati
DAMEN	Shipbuilding and boatbuilding	Private JSC	Shipyard	Galati
Daewoo Mangalia Heavy Industries (DMHI)	Shipbuilding and boatbuilding	Private JSC	Shipyard	Constanta (Mangalia terminal)
DIMA SI FII	Shipbuilding and boatbuilding	Private Ltd	boatbuilding	Galati
Eekels Romania	Shipbuilding and boatbuilding	Private Ltd	Electrical equipment, machinery and automation for ships. Marine services for trubleshooting electrical/electronics. Radar , electronic navigation systems	Galati
Frigonav SRL Mangalia	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Mangalia
Heinen si Hopman Mar	Shipbuilding and boatbuilding	Private Ltd	Shiprepair, shipdesign	Galati
Helmers Romania	Shipbuilding and boatbuilding	Private Ltd	Carpentry, insulation, interior shipbuilding, shipdesign	Galati
Marinav Crewing	Shipbuilding and boatbuilding	Private Ltd	shiprepair	Constanta
Santierul Naval Constantza	Shipbuilding and boatbuilding	Private JSC	shiprepair	Constanta
Sorena	Shipbuilding and boatbuilding	Private JSC	shiprepair	Constanta
SANTIERUL NAVAL 2 MAI	Shipbuilding and boatbuilding	Private JSC	Shipyard	Constanta (Mangalia terminal)
VARD	Shipbuilding and boatbuilding	Private JSC	Shipyard	Braila
VARD	Shipbuilding and boatbuilding	Private JSC	shipbuilding	Tulcea
SPAT	Shipbuilding and boatbuilding	Private Ltd	boatbuilding	Galati

Navrom-Reparatii SRL	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Galati
Maritime Interior	Shipbuilding and boatbuilding	Private Ltd	Complete systems for naval interor design, naval tubing, plants and ventilation sytems, shipdesign	Braila
Marman Comtrans	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Mangalia
Marom Secondary Steelwork Installations	Shipbuilding and boatbuilding	Private Ltd	Naval locksmith, metal fabrications, garments, profiles and metal fitings, building and repairing ships, electrical and automation	Galati
Metacom Sandblasting Gl	Shipbuilding and boatbuilding	Private Ltd	Anticorrisive in the naval and industrial, building and repairing ships, blasting and painting for ships	Galati, Tulcea
Nasdis Consulting	Shipbuilding and boatbuilding	Private Ltd	Shipdesign	Galati
Nautic Service Constructii	Shipbuilding and boatbuilding	Private Ltd	Boatbuilding	Mangalia
Navmaro	Shipbuilding and boatbuilding	Private Ltd	Ship piping instalation , shipbuilding and shiprepair	Galati
Oana SRL	Shipbuilding and boatbuilding	Private Ltd	Naval painting, shiprepair	Mangalia
Omega Junior SRL	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Mangalia
Patec	Shipbuilding and boatbuilding	Private Ltd	Electrical equipments, machinery and automation for ships, marine services troubleshooting electrical/electronics, research and design in the naval field, shiprepair, maritime expertise, automation	Galati
P.A. Libra Co. LTD Galati	Shipbuilding and boatbuilding	Private Ltd	Shiprepair;; naval equipments	Galati
Petroserv	Shipbuilding and boatbuilding	Private JSC	Repair ships. Garments, profiles and metal fittings.	Constanta
Pro Kido	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Constanta
Sercon Maritime SRL Constanta	Shipbuilding and boatbuilding	Private Ltd	Shiprepair; equipment for vessels	Constanta
Servicii Constructii Maritime	Shipbuilding and boatbuilding	Private JSC	Shipyard, shiprepair	Constanta
Sanco	Shipbuilding and boatbuilding	Private JSC	Sandblasting, metalization, paintig for vessels	Braila
Scanyard	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Tulcea
Sea Gate	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Constanta
Servnaval	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Braila
Siaj	Shipbuilding and boatbuilding	Private JSC	Shipyard, shiprepair, boatbuilding	Tulcea
Solmaritime	Shipbuilding and boatbuilding	Private Ltd	Marine ventilation and insulation works	Braila
Trans Electro Construct Nav	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Galati
VARD Braila	Shipbuilding and boatbuilding	Private JSC	Shipyard, shiprepair	Braila, Tulcea
Vascosib 2004	Shipbuilding and boatbuilding	Private Ltd	Shiprepair	Constanta

Verblas	Shipbuilding and boatbuilding	Private Ltd	Garments manufacturer naval tubing	Galati
Vescot	Shipbuilding and boatbuilding	Private Ltd	Blasting and cleaning services, exhaust deposits, painting	Constanta
Servicii Constructii Maritime	Shipbuilding and boatbuilding	Private JSC	Hydroconstruction for ports	Constanta

Provide a brief description of the most interesting stakeholders (at least 20 actors and 5 rows per each of them). Motivate the choice of the selection and describe their characteristics.

Port services providers

Among stakeholders involved in port activities the most important are port adminstrations and port operators. Port administrations are national companies stablished as commercial enterprises in which state is the main shareholder. These administrate the public infrastructure from Romanian ports (quaywalls, basins, land) ensuring proper conditions to accommodate vessels calling the port. Also they provide public services as pilotage, towage and mooring as well reception of waste discharged by vessels and bunkering (energy and water supply). Port operators are private companies which provides services as cargo handling and storage.

National Company the Maritime Danube Port Administration was established in 1999 by state to administrate the entire public infrastructure from all ports along the maritime sector of the Danube among which the most important are Galati, Braila and Tulcea. The head office is in Galati with two branches in Braila and Tulcea Beside the port infrastructure management the company is acting as port authority and provide public services as towage and pilotage. Also the company ensure the reception of waste and used oil discharged by vessels in ports.

National Company the Maritime Port Administration was established in 1998 by state to administrate the entire public infrastructure from Constanta port which includes the port terminals from Midia and Mangalia The head office is in Constanata. Beside the port infrastructure management the company is acting as port authority and provide public services as towage and pilotage. Also the company ensure the reception of waste and used oil discharged by vessels in ports. A part of port operate under free zone regime.

PORT BAZINUL NOU JSC is one of the most important port operator from Galati port with an operational capacity of 10.000.000 tons/year. It was established in 1999. It is member of METALTRADE Group which provide also logistic and transport services. PORT BAZINUL NOU provide services for vessels and other means of transport (road and rail) such us loading/unloading, handling and stacking and storage for different types of goods as bulk (steel, coal, scrap, ore, gravel, building materials), containers, general cargo, food.

ROMPORTMET JSC is the most important port operator in Galati port with a handling capacity of app. 20.000.000 tons/year specialized for raw materials and dispatching steel products. From the beginning is has been established to serve the steel plant from Galati now fully privatized as ARCELOR MITTAL plant. The port offer also storage mainly in open spaces. Due to reduced activity of the steel plant ROMPORTMET expanded services for other categories of cargo as general cargo.

DP WORLD is the most important port services provider in Constanta specialized on container traffic. In November 2003, DP World was awarded a long-term concession to operate Constanta South Container Terminal (CSCT) and in 2004 started operations as a state-of-the-art facility with excellent deep-draft acces located near the entrance to Constanta port. CSCT is acknowledge to be the Black Sea's premier container

terminal serving both the Romanian domestic market and a wider hinterland spreading into parts of Central Europe, together with first class feeder connections to the Ukraine, Russia, Georgia and Moldova. The port's geographic location has to proved ideal as a reliable transshipment hub for the greater Black Sea region. DP World Constanta offers importers and exporters in Central Europe speedier and more cost effective access to the Far East market than movement via the traditional routing over North Continental ports by avoiding congested intermodal bottlenecks in Western Europe. To promote this routing DP World is actively developing an intermodal network reaching out from the port to assist shippers in the movement of their cargo. The current capacity of the terminal is aprox. 1,500,000 TEU and there is enough space for development up to 4,500,000 TEU.

CONVEX JSC is the biggest port operator in Constanta specialized on solid bulk handling. The terminal cover a surface of 700,386 sqm in the south area of the port. It can handle and store ore, coal, bauxite, clinker and can accommodate vessels up to 220,000 dwt.

United Shipping Agency is the most important port operator in Constanta specialized for cereals handling and storage. The total storage capacity is of 250.000 tones and operational capacity is about 3.000.000 tons/year. The terminal has been designed for high productivity and maximum flexibility of operation, being able to operate three ships simultaneously (including two Panamax sites) and can receive and simultaneously deliver goods from and to any means of transport - trains, trucks, ships and barges.

S.C. Oil Terminal JSC Constanţa is the most important port operator for bulk liquid (oil and petrochemical products). It provides loading/unloading, handling and storage services. The terminal is connected by pipelines to major rafineries from Romania. The total storage capacity is of 1.7 mil. cubic meters. Among these the storage capacity of 900,000 m^3 is the bigest from South-East Europe. The terminal have seven maritime berths which can accomodate and operate inland ships and maritime vessels up to 150.000 tdw.

APM Terminals operates a Global Terminal Network in 67 countries with interests in 71 port and terminal facilities The company provides port and terminal operations and a wide range of local inland transportation and cargo services around the world performing a central role in global trade and logistics. With world headquarters in The Hague, The Netherlands, APM Terminals is an independent business unit within the Danish-based Maersk Group, leveraging more a century of shipping industry history, and more than five decades of port and terminal operations, logistics and management. The Romanian branch named APM Terminals Romania SRL is located at the Constanta South Port – Agigea Free Zone, Enclosure 1. It becomes operational in February 2002 after it was awarded a long-term concession in Agigea Free Zone of Constanta Port

ADM (Archer Daniels Midland) , is an important grain trader , which took over in 2015 two grain terminals in Constanta port (NORTH STAR SHIPPING and MINMETAL). Both terminals are ranked second and third place in Constanta with a storage capacity of 145,000 tons respectively of 138,400 tone. Together,they can store 283.400 tones becoming the bigest one in Constanta port. Both terminals can operate grains, ore, fertilizrs, vegetal oi land biodisel. Currently the terminlals' throughput is over 5 milions tones

Shipbuilding and shiprepair sector

SANTIERUL NAVAL CONSTANTA (CONSTANTA SHIPPYARD) is ranked among the largest new buildings, shiprepairs and conversions yards in Europe, the world's first class shipbuilder for medium range products and chemical tankers. Accessible by sea through the Bosphorus Strait and by river THROUGH Danube-Black Sea canal, it provides to the worldwide ship-owners and managers the ideal location for building and repairing of sea-going vessels up to 200,000 dwt. With almost five million dwt delivered during its years of activity both to Romanian and first class European owners, new-buildings ranging both in size – from 1,100

dwt Chemical Tanker to Aframax/Suezmax Tankers or Capesize Bulk Carriers and complexity – from steel pontoons to LPG/Ammonia Carriers and Platform Supply Vessel, the Constanta Shipyards is backed up by the experience, professionalism nd teamwork of its employees. Constanta Shipyard gained over the confidence of first class owners and operators by the ability to offer to its clients either customized new-building projects complying with the latest rules and regulations of the Classification Societies and specific requirements of each owner or a wide range of ship-repair works and conversion projects performed at high quality standard and competitive rates

Damen Shipyard Galati (DSGa) is the largest of Damen Shipyards Group's of 32 shipyards, repair yards and related companies worldwide. The shipyard in Galati was founded as private company in 1893. Tthen has been expropriated and after 1989 privatized by DAMEN Shipyards Group. While Damen's international sales organisation takes care of product development, self-managed DSGa has developed into a highly efficient production shipyard with a significant output. Since joining the group in 1999, the yard's shipbuilding expertise and closely-managed supply chain have been behind some of Damen's most important deliveries to date, fully representing the group's diverse product portfolio. At the busy yard on the banks of the Danube, Damen's unique shipbuilding concept comes to life. Damen Galati has a very diversified portfolio including anchor handlers, coast guard vessels, patrol ships/navy vessels, platform supply vessels and logistic support vessels, RoRo ships, ferries, dredgers and barges. Signature Damen vessels like the ASD 2810, ASD 2913, ASD 3212 and Stan Tug 4013 regularly roll off the Galati slipway on the Danube**.** Since the merger with Damen Shipyards in 1999 until end of 2016 Damen Shipyards Galati has built over 382 vessels. On average it build around 24 vessels a year

VARD is one of the major global designers and shipbuilders of specialized vessels. Headquartered in Norway and with approximately 9,000 employees, VARD operates nine strategically located shipbuilding facilities, including five in Norway, two in Romania, one in Brazil and one in Vietnam. Through its specialized subsidiaries, VARD develops power and automation systems, deck handling equipment, and vessel accommodation solutions, and provides design and engineering services to the global maritime industry.

VARD's long shipbuilding traditions, cutting-edge innovation and technology coupled with its global operations and track record in constructing complex and highly customized vessels have earned it recognition from industry players and enabled it to build strong relationships with its customers. Vard Braila is one of the two shipyards in Romania belonging to VARD group. The shipyard was established in the year 1940 as a state company. After 1989 it has been privatized. The shipyard's facilities allow simultaneous mounting and repairing of 12 vessels, launching and lifting of vessels on a launching ramp driven by hydraulic winches, outfitting of vessels alongside quays having a total length of 1300 meters, maneuvering with cranes and travelling cranes of 15 and 50 tons. Vard Tulcea is the second shipyard of VARD Group in Romania. The shipyard was founded in 1975 as a state company and after 1989 has been privatized. The main product are offshore vessels, with high reinforcement, as supply vessels for off-shore platforms (PSV), vessels for maneuvering the anchors (AHTS), offshore vessel for underwater constructions (OSCV). Beside these the shipyard builds specialized vessels as ferry-boats powered by NLG and coast guard ships, fishing vessels, icebreakers and other commercial vessels

NAVROM REPARATII is the most important ship repair company along the maritime sector of the Danube. It was founded in 1990 from a branch of the former state company NAVROM, the former inland waterway transport services provider in Romania. Today is entirely privatized. It has a good technical capacity including four floating docks, one floating crane 100 tf, equipment for mechanical and electrical processing, welding. It is located in the port of Galati. It offers a large range of services for inland vessels and partially for maritime vessels as follows : repairs of self-propelled and non-propelled vessels, construction and furnishing of inland vessels, dry docking works, ship design, retrofitting for marine parts and equipment and interventions on board

SPAT is a company specialized in building fishing boats, leisure boats and small and medium sized inland passenger vessels. The production plant is located in Galati provided with all necessary facilities. Also the company provides ship design services, maintenance and repair services for boats and engines.

Ship Design Group Is a company of naval architects, marine engineers and consultants. SHIP DESIGN GROUP offers a complete set of design and consultancy services starting with the earlier design stages up to production information. The company is able to supervise the ship during consytuction and to iffer turn-key project solutions. The core activity is represented by offshore support ships (tugs, AHTS, supply vessel, pipe layers …) The head office is in Galati. Beginning with 2011 a branch was established in Aberden under the name SHIP DESIGN UK. Ship Design Group is member of ECMAR (rhe European Council of Maritime Applied R&D) and is certified by Romanian authority as R&D Company

Waterway transport services

CNFR NAVROM JSC is the most important inland waterway transport services provider in Romania. It was founded in 1890 as a state company providing transport and port services (handling and storage) on the entire Romanian sector of the Danube. After 1989 it has been divided in several companies specialized for transport, port operations and ship repair which has been privatized on by one. The actual NAVROM company is the most important transport services provider on the Danube. It provides freight transport services with own vessels and by brokerage, with vessels property of other Romanian and foreign shipowners The transport services can cover different routes as: Danube between Constanta/Sulina and Kelheim, Ukrainean ports (Izmail/Reni) up to Kelheim, river Sava up to Brcko, river Drava up to Osijek and as broker to inland ports located in Netherlands and France. Every year, NAVROM transports over 8 million tons of different goods: minerals, charcoal, cement, limestone, cereals, fertilizers, rolled goods, etc. For the transportation of goods, the company fleet consists of pushers of 800-3600 HP, tugboats of 560 HP, covered and open barges with capacities range between 1000 - 3000 to, schleps of 1000 to and barge-tanks of 1300 to capacity. Using these type of ships, one can assure the transportation of up to 14 500 tons of goods in a single convoy on internal routes, and 10.000 tons on external routes.

TOUAX ROM is one of the largest privately owned supplier of transport services on the Danube river. As part of the TOUAX group , the company has an advantage of more than 150 years of experience in the activity. This know how allows us to meet the particular challenges of each of our clients. With head office located in Constanta, Romania, the company has also other control centers along the Rhine Main Danube rivers. The services includes transport of dry bulk, containers, pushing, towing, door-to-door logistic services.

METALTRADE INTERNATIONAL is one the most important romanian company which provides transport services on the Danube. The fleet has a transport capacity of 20.000 tons and a power of 3.200 HP. The compani can ensure transportation for freight along the Danube to North Sea via Rhin-Danube Corridor. The company is member of METALTRADE GROUP which owns two of the port operators in Galati port such the holding can provide integrated transport services on the Danube.

ROMNAV is another important transport services provider along the Danube. The company comes from the former state company NAVROM. The head office is in Braila port. ROMNAV owns about 70 vessels for inland transport and to provide frry-boat services over Danube in Brala port.

2.2.3 Research projects and activities to support R&I

In Romania research policy is driven by the Ministry of Research and Innovation (MRI). **MCI** acts as coordinator for the Strategy and Governance Programme in scientific research, technological development and innovation implementation. In this regard organizes and leads the national system of scientific research, technological development and innovation, by exercising its powers established by laws and other normative acts in the sphere of activity.
The research activity is performed by National Institutes for research and development further mentioned as INCD. These are organized under Law no. 324/2003 approving Government Ordinance no. 57/2002 on scientific research and technological development and represent a form of specific institutional organization for research and development, established with a view to ensuring that these activities are carried out, and to strengthen scientific and technological competence in the areas of national interest, determined in accordance with the development strategy of Romania.
INCDs are involved in elaboration of development strategies in different specific field, perform research activities to reach the national strategy objectves, represent a pool of scientific and technological expertise, provide human resource training and scientific and technical documentation.

Each INCD operates under the coordination of a specialized body of central public administration. Under MRI operate a number of 43 INCDs. Another 2 INCDs operate under the Ministry of Communications and Information Society (National Institute for Research and Development in Informatics - ICI Bucharesti) respectively, under the Ministry of Agriculture and Rural Development (National Institute of Research and Development for Land Reclamation - INCDIF ISPIF Bucharest). Among these, only two are specialized on maritime sector research , the **National Institute for Research and Development "Delta" - Tulcea INCDDD** and **National Institute for Marine Research and Development "Grigore Antipa" – NIMRD**, from Constanta. Other institutes are more or less involved in „blue economy" according to their specific research area as, for example, the National Institute for research and development for tourism (INCDT).

The national research system , besides the above mentioned, includes as well universities, private research organizations and departments of other public institutions then MCI. Among these to be mentioned SHIP DESIGN GROUP and UNIVERSITY „LOWER DANUBE" from Galati by Naval Faculty.

List research projects and activities

Title	Project coordinator	Year	Sector and subsector
Prototype System for accelerating nitriding oversized parts in shipping, wind and auto industries	UTTIS INDUSTRIES Ltd	2012	Shipbuilding and boatbuilding - Equipment
EasySHIP- Improve ship design complexity	DN&T – Design Naval and Transport, Liege	2013	Shipbuilding
ADAM4EVE **- Adaptive and smart materials and structures for more efficient vessels**	CENTER OF MARITIME TECHNOLOGIES, Germany	2015	Shipbuilding
INNOVATIVE DANUBE VESSELS	DST	2013	Shipbuilding
SMARTYARDS-Developing Smart Technologies for Productivity Improvement of European Small and Medium Sized Shipyards	CENTER OF MARITIME TECHNOLOGIES EV	2016	Shipbuilding
Creation of Interuniversity centre for risk management and assessment for	University of Burgas	2015	Maritime transport

prevention of ecological and technological risks in the Black Sea" (IUCRISKMAN)			
ESaTDOR - European Seas and Territorial Development, Opportunities and Risks	University of Liverpool, UK	2013	Maritime transport
…… to be continued			

Describe main project and activities still active or developed in the last 5 years.
Maximum projects to be described: 10

Project Title	Prototype System for accelerating nitriding oversized parts in shipping, wind and auto industries
Abstract	Development of systems and innovative technologies for accelerated thermochemical processing for steels special designed for production of components for shipping, wind and auto industries
Project partners	UTTIS INDUSTRIES Ltd
Year	*2010 - 2012*
Sector	Shipbuilding and boatbuilding

Project Title	**EasySHIP- Improve ship design complexity**
Abstract	The project developed a methodology and a software to asses the complexity of ship's sections taking into consideration the type of the ship and the specific of the shipyard. The software will give the shipyard, from early stage, informations for production scheduling and to asses the necesary resources. Also it will enable the design upgrading during construction works of the ship
Project partners	DN&T – Design Naval and Transport, Liege Partners : Design Shipping Group, CNFR NAVROM
Year	2013
Sector	shipbuilding
Project Title	ADAM4EVE **- Adaptive and smart materials and structures for more efficient vessels**
Abstract	The project focuses on the development and assessment of applications of adapative and smart materials and structures in the shipbuilding industry. Materials and structures are called adaptive if they can change certain properties in a predictable manner due to the forces acting on them (passive) or by means of built in actuators (active). Those materials and structures are referred to as smart if they provide best performance when operation circumstances change. The main idea of ADAM4EVE is to explore the potentials of adaptive materials and structures in ships and pave the way for industrial application. This will allow ships to react more flexible to changing operational and environmental conditions and thus to operate more efficiently and environmentally friendly, while at least maintaining the safety level. Moreover, the use of smart and intelligent materials will allow offering new functionalities, making ships more attractive to operators and passengers.
Project partners	CENTER OF MARITIME TECHNOLOGIES, Germany; ULJANIK BRODOGRADILISTE, Croatia; RINA SERVICES, SPA RINA, Italy; Flensburger Schiffbau-Gesellschaft mbH & Co, Germany; FRAUNHOFER INSTITUTE FOR MANUFACTURING TECHNOLOGY AND ADVANCED MATERIALS, Germany; TEKNOLOGIAN TUTKIMUSKESKUS VTT, Finland; LLOYD'S REGISTER, United Kingdom; SP SVERIGES TEKNISKA FORSKNINGSINSTITUT, Sweden; AS2CON

	- ALVEUS LTD, Croatia; UNIVERSITY OF SOUTHAMPTON, United Kingdom; SHIP DESIGN GROUP SRL, Romania; UNIVERSITATEA DUNAREA DE JOS DIN GALATI, Romania; STX FRANCE, France; COMPANIA TRASMEDITERRANEA, Spain; HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH, Germany; CARNIVAL PLC, United Kingdom; NAVROM SHIPYARD SRL, Romania; MEC Insenerilahendused, Estonia; SAARE PAAT, Estonia
Year	2013-2015
Sector	shipbuilding
Project Title	**INNOVATIVE DANUBE VESSELS**
Abstract	"Innovative Danube Vessel" is a research and development (R&D) project aiming to support the modernisation of the Danube fleet in order to increase its environmental and economic performance. Elaboration and assessment of different innovative vessel and technology solutions with high potential for implementation on the Danube as well as development and assessment of vessel designs and concepts. The proposed solutions and concepts must have an added economic value in comparison to existing Danube vessels. The recommendations elaborated in the project will be used for further technology development and deployment within the framework of the Danube Region Strategy and other EU programmes and will support the identification of main goals and objectives for the upcoming EU financing schemes for the period 2014 – 2020. They will, furthermore, provide the summary of innovative solutions to be guidance for investment decisions of barge operators.
Project partners	DST, ÖIR GmbH, University of Belgrade, Faculty of Mechanical Engineering , Ship design group srl , Schiffbautechnische Versuchsanstalt in Wien GmbH
Year	2012-2013
Sector	shipbuilding
Project Title	**SMARTYARDS-Developing Smart Technologies for Productivity Improvement of European Small and Medium Sized Shipyards**
Abstract	The SMARTYards project aims to improve the productivity of European small and medium sized shipyards and related subcontractors working with them by at least 20%. This will be achieved by improving knowledge and technological skills, needed to survive in a tough global competition and to provide innovative products. This is particularly important as the technology gap between larger and smaller European yards has increased significantly over the last decades. In the technical part, the project will develop, test and validate smart technology solutions, comprising the optimum between design, equipment and work organization. All solutions shall address the specific needs and challenges of the target group, which have been clearly identified in the proposal. Seven key Technology Areas and related innovative ideas have been identified, which represent critical processes from design through production to repair and conversion. These solutions will be adapted and documented in a Technology Catalogue. The most promising solutions will be selected to build, test and validate at least six physical mock-ups, which will be demonstrated to the European maritime community, represented by a User Group. Technical developments will be accompanied by the elaboration of innovative business models, productivity and environmental assessment, the development of training schemes and a sustainable

	innovation network in close cooperation with European associations. The project comprises 17 partners from 9 European countries with SME shipyards and technology providers in a leading role. While improving the technology level of small and medium sized companies, the project will contribute to the overall competitiveness of the EU maritime sector, sustaining the wide network of large and smaller companies. Innovative ideas and business models will strengthen the role of SMEs and create new employment opportunities.
Project partners	CENTER OF MARITIME TECHNOLOGIES EV; ASOCIACION DE INVESTIGACION METALURGICA DEL NOROESTE Spain; STICHTING NETHERLANDS MARITIME TECHNOLOGY FOUNDATION; CONOSHIP INTERNATIONAL BVP; NAVROM SHIPYARD SRL; SDC Ship Design & Consult GmbH; UNIVERSITATEA DUNAREA DE JOS DIN GALATI; ULJANIK BRODOGRADILISTE DD; FRANCISCO CARDAMA, S.A; BLATRADEN AB;
Year	2013-2016
Sector	shipbuilding
Project Title	**Creation of Interuniversity centre for risk management and assessment for prevention of ecological and technological risks in the Black Sea" (IUCRISKMAN)**
Abstract	The project address common challenges related to environmental preserving, educational and research cooperation in the area of monitoring, control and protection of the Black Sea Basin from oil spills; During the project implementation has been developed models for interdisciplinary and cooperative actions for education, research, innovation, awareness and scientific partnerships in the fields of assessment and management of technological and ecological risks. The main output is the creation of a risk info point coordinated by an interuniversity centre for risk management and assessment for prevention of ecological and technological risks in the Black Sea Basin
Project partners	University of Burgas; Constanta Maritime University, Romania; Odessa National Maritime University, Ukraine; Black Sea Institute, Burgas, Bulgaria
Year	2013-2015
Sector	Maritime transport
Project Title	**ESaTDOR - European Seas and Territorial Development, Opportunities and Risks**
Abstract	The project investigates the current uses of Europe's seas through mapping current sea use patterns, typologies, dynamics and inter-linkages. It Identificates patterns of sea use and of types of coastal regions: investigate the present state of European sea areas, identify potential areas of conflict between the use of sea areas and their deterioration, distinguish different types of coastal regions, study employment patterns in sea areas and evaluate the present state of maritime clusters. An analysis and identification of development opportunities in the respective areas was performed, while taking into account issues regarding sustainability and climate change. An analysis of the relationship between terrestrial and maritime planning seeking optimal practices for maritime governance has been also performed. The main results are : data input to the ESPON database; indicators offering information on coastal areas and their development opportunities, socio-economic situation as well as level

	of competitiveness; typologies of different patterns of sea use and of coastal areas classified by territorial evidence based characteristics, strengths, weaknesses, potentials and challenges; european maps revealing the present state of sea use displaying existing and potential environmental threats, different coastal areas and the current territorial state of their development as well as the territorial potentials and challenges of different European seas and coastal areas.
Project partners	University of Liverpool, UK; **Norwegian Institute for Urban and Regional research; Mcrit, LTDO; University of Malaga – European Topic Centre on Spatial Information and Analysis; Institute for Local Development, University of Valencia; Leibniz Institute for Baltic Sea Research; Institute for Environmental Studies, VU University; University of Thessaly; Constanta Maritime University**
Year	2010-2013
Sector	Maritime transport

Maximum activities/initiatives to be described: 5

Activity/Initiative name	**International Conference SEA-CONF , Constanta, Romania**
Brief Description	The event is organized yearly by the Military Naval Academy Constanta. Main topics are : transport, naval equipmet, environment, mechanical engineering, electrical engineering, management&logistics, economic sciences, military sciences
Year	Yearly, third edition 2017
Relevance	International
Stakeholders involved	Transport services providers, shipbuilders and ship designers, research players and universities

Activity/Initiative name	**Internațional conference of students CADET-NAV**
Brief Description	During the event students can present studies and works in following fields: military sciences, navigation and maritime transport, enginnering.
Year	2017, the 39 edition, Constanta
Relevance	National
Stakeholders involved	students

Activity/Initiative name	**International Conference ACVADEPOL**
Brief Description	The event gather stakeholders involved in port and waterway transport as well in environment protection activities to present and debate subjects related to environmental impact of their activites, to share good practice and to inform about latest innovative solutions to solve problems and to reduce the negative impact of transport and port activities.
Year	Yearly, in different ports from Romania
Relevance	International
Stakeholders involved	Port operators, transport services providers, NGOs, public authorities, research bodies, professional associations

Activity/Initiative name	**Colloquia of Shipbuilders**
Brief Description	The event is organized by ANCONAV (the National Association of Shipbuilders) with the intention to achieve an overview of how the

	shipbuilding industry developed over time, to highlight the personalities who played an important role in the sector and to enable cooperation between generations of specialists. In the colloquia participants are talking about tradition, inform specialists about flagship project such as barges for Egypt or offshore drilling platforms, learn how shipyards has been developed, news in ship design, hydrodynamics andresearch, news about equipment and systems for naval shipbuilding and higher education.
Year	Yearly, in port of Galati
Relevance	National
Stakeholders involved	Specialists, shipyards, shiprepairs, universities, ship design companies, students, equipments providers, other professional associations

2.2.4 Maritime policies and initiatives in the Country

At national level, the strategic framework for reaseach, has been established by the National Strategy for Research, Development and Innovation 2014-2020 (SN CDI 2020) approved by Government Decision no. 929 of 21 October 2014. The document supports the strategic role and priority position of research as an engine of economic competitiveness growth and aims to connect the new priorities of science and technology in the European Union set by the Europe 2020 strategy, but also the main instrument for implementation - Horizon 2020. The tools for the implementation of National Strategy for RDI 2014-2020 are the National Plan for SN CDI 2020 implementation and Priority Axis "Research, Development Technology and Innovation (RDI) for competitiveness and business support" of Operational Programme Competitiveness 2014-2020.

The maritime sector strategy is developed by the Romanian Ministry of Transport. The main documents are: Sustainable Transport Strategy 2007-2013 and 2020 2030, Strategy for intermodal transport in Romania – 2020 and the General Transport Master Plan.

Besides these there are other cross cutting strategies as National Strategy for Sustainable Development in Romania - horizons 2013-2020-2030 and strategies concerning environment protection, digitalization, education and territorial strategies at local and regional level. As South Est region of Romania is located at the East EU border , the cross-border strategies should be mentioned as well.

Strategy title	**National Strategy for Research, Development and Innovation 2014-2020**
Regulatory reference	Government Decision no. 929 of 21 October 2014
Issuing entity	Romanian Government
Description of the background motivations for the definition of the strategy regulation	**The National Research, Development and Innovation 2014 - 2020** was developed based on the vision that in 2020, Romania will become competitive regionally and globally, fueled by innovative research and development, generating wealth for its citizens. In turn, compenitiveness is based on a system of innovation in research and development that supports the advance of global value-added chains. Strategy Development took place in the broader context of Europe 2020, in particular the Innovation Union initiative and the main instrument for the implementation (horizon 2020) and in correlation with cohesion policies
Description and objectives of the strategy	Based on a vision which stresses the role of R&D competitiveness, the strategy proposes: a stimulating environment for private sector initiatives (e.g. venture capital, credit guarantees, full implementation of the tax deduction); a spectrum of instruments in support of smart specialisation

	(e.g. R&D projects for different phases from ideas to market, long term public-private projects, commercialisation support, tech transfer infrastructure); activation of public demand; integration of fundamental research into international communities; and institutional R&D funding based on performance (including universities, which do not have special research funding at the moment). The general objectiv is to increase the **competitiveness of Romanian economy, of the role of science in society and** international visibility of romanian research. Specific objectives : - Creating a supportive environment for private sector initiative - **Support smart specialization** - internationalization of research in Romania - developing public sector capacity CDI to seek and adopt research results Cross-cutting objectives : - **Achieve by 2020 a critical mass of researchers** - **Develop research organization's performance**
Measures to be implemented	The strategic directions to reach the strategic objectives are : - **Support companies to become key operators in innovation especially i**nnovative SMEs, - Development of Romanian RDI sector around strategic economic areas - Take over the leadership in international R&C projects
Period of activation	2014-2020

Strategy title	**General Transport Masterplan**
Regulatory reference	Government Decision no 666/2016
Issuing entity	Romanian Government
Description of the background motivations for the definition of the strategy regulation	The need for a strategy for transport infrastructure development arise from the necessity to comply with EU Regulation 1315/2013 requirements for TEN-T implementation. The masterplan includes a software for projects' prioritization
Description and objectives of the strategy	Efficient transport system implementation (economical, sustainable, secure and with low impact on the environment) by : - Transport infrastructure projects establishment - Transport infrastructure projects prioritization - Linking project costs with the available financial resources - Establishment of the sustainable implementation mechanisms or transport infrastructure projects
Measures to be implemented	The MGT covers the romanian naval sector targeting ports (public infrastructure) and faiways. It made an assesment of the sector concluded by a SWOT analysis and identified the necessary measures to implement the romanian sections of Rhin-Danube corridor, part of core and comprehensive TEN-T. Also, MPGT includes a project prioritization. All these will guide the projects' selection under Large Infrastructure Operational Programme calls
Period of activation	2016-2030

Strategy title	**Sustainable Transport Strategy 2007-2013 and 2020 2030**
Reference	The Ministry of Transport Decision no.508/2008

Issuing entity	Romanian Ministry of Transport
Description of the background, motivations for the definition of the strategy regulation	Implementation at national level of White Paper for Romanian transport sector integration into European logistic chains. It it strategic objectives on transport sector in the country and draws the main action long term
Description and objectives of the strategy	The overall objective is to develop a national balanced system capable to ensure modern infrastructure and quality transport services, sustainable development of the economy and to improve quality of life. Achieving this objective will contribute directly to ensuring sustainable development of the transport sector, the economy and the environment , to increase accessibility , ensuring inter-modality of the transport system, promote the balanced development of all modes of transport and improving quality and efficiency. The specific objectives envisaged to achieve the General objective are as follows : - modernization and development of the national and European transport network, increase the safety and quality of services; - internal transport market liberalization - stimulating economic development and competitiveness - strengthening social and territorial cohesion at regional and national level; - compatibility with the environment
Period of activation	2008 – 2030

Strategy title	**Strategy for intermodal transport in Romania – 2020**
Reference	The Ministry of Transport Decision no. 457/20.06.2011
Issuing entity	Romanian Ministry of Transport
Description of the background, motivations for the definition of the strategy regulation	The elaboration of this strategy fits into the policy of reducing the environmental impact of transport and substantiate a sustainable development strategy, striking a balance between economic growth and environmental protection Intermodal transport is considered a safe alternative for the future as it meet the requirements on reducing congestion on national roads as well the increasing demand from beneficiaries of transport in terms of the range and quality of services Intermodal transport is able to help connect main national transport routes to European axes TEN-T
Description and objectives of the strategy	The overall objective is to develop intermodality of the national transport system in order to improve freight transport efficiency, traffic safety and to reduce the environmental impact of transport in Romania. The specific objectives envisaged to achieve the General objective are as follows : - upgrading the existing and / or building new intermodal terminal and related infrastructure; - development of intermodal services quality - implementing a tracking, planning and management system for intermodal freight transport using the available on the market intelligent transport systems - boosting the promotion of national intermodal transport system

Period of activation	2011 – 2020

Strategy title	**National Strategy for Competitiveness**
Reference	Government Decision no 752/2015
Issuing entity	the Ministry of Economy
Description of the background, motivations for the definition of the strategy regulation	Romania reached a stage of development when the so-called "trap of the countries with average income" manifests itself, characterized by the fact that the competitive advantages, even if they are relatively advanced, do not necessarily support the future growth platform. For each country in this situation there are typical factors which describe the causes and the possible solutions to overcome this obstacle. From this perspective, the National Strategy for Competitiveness offers some guidelines in order to build economical policies for development, as follows By vision, priorities and objectives, the strategy provides a solution for the economic development in Romania on short and medium term, to overcome the obstacle which harness the market recognized competitive potential but incomplete highlighted, to create value and prosperity.
Description and objectives of the strategy	The strategy draw up four priorities and for each, several specific objectives, as follows : Improving the regulatory environment 1 Improving the legal framework. 2 Improving the predictability of the government decisions regarding the business environment. 3 Improving the transparency of authorities and public undertakings. 4 Reducing the bureaucracy of the local government. 5 Reducing the tax burden and charges on companies. 6 Improving the access to funding of companies, especially SMEs. - Partnership actions between the public and the private environment 7 Long-term institutionalization of foresight centres industrial / technological / CDI under public -private collaboration. 8 Public-private partnership to improve the regulatory framework. 9 Consolidation and development of clusters / poles of competitiveness. - Factors and support services 10 *Human Resources and Education*: improving the quality of the education and training system to ensure correlation with the labour market. 11 *Research, development and innovation*: providing public funding equivalent to 1%, which could allow the driving effect on the demand for research in the private sector. 12 *Research, development and innovation*: Supporting the SMEs to launch innovative products or services through venture capital funds, grants, collaborative projects. 13 *Creativity*: stimulating entrepreneurship in creative industries by creating incubators / clusters / accelerators and by supporting the development and establishment of companies in the cultural and creative field. 14 *Road infrastructure*: Improvement of the road infrastructure linking Romania to the neighboring countries.

	15 *Digital Infrastructure*: improving the broadband digital infrastructure 16 *Energy:* reducing the losses in the electricity distribution networks. 17 *Environment:* improvement of the water infrastructure. 18 Environment: consolidation and expansion of the integrated waste management systems, including energy recovery from waste. 19 *Entrepreneurship:* improving SME density relative to the population. 20 Entrepreneurship: increase in the unit contribution of SMEs to the gross value added. - Promoting the 10 sectors of the future 21 Improving Romania's position as exporter. 22 Increasing the attractiveness of investments in the 10 sectors with potential for smart specialization. - Preparing the Generation 2050 and social related challenges 23 Provision of a sustainable economic and social balance with a better rate of participation and employment. 24 Competitive development of the agriculture and the rural space. 25 Enhancing social cohesion as basis for the competitive development. 26 Rebalancing the functional relationship between the economy, nature and society through effective management of resource consumption, able to ensure economic sustainability.
Measures to be implemented	The main directions for achieving the specific objectives are : - the Restructuring of economic sectors towards higher competitive position - forming a critical mass of competitive companies by creating an attractive transparent and innovative environment - integration big players in a coherent project of economic development. integration of society in a coherent project of economic development.
Period of activation	2014-2020

Strategy title	**Government strategy for the development of small and medium enterprises and improving the business environment in Romania – HORIZON 2020**
Reference	The Government Decision no. 859/20.06.2014
Issuing entity	Romanian Government
Description of the background, motivations for the definition of the strategy regulation	Building an ecosystem of entrepreneurship viable nationwide on 2020 allows interconnected operation of the productive enterprises chains, spread across the country at local, regional or global levels, prioritizing chains with high potential for adding value as of example, clusters and centers of excellence or industrial networks or services of high quality. The national entrepreneurial ecosystem will be based on the general consolidated sector of domestic SMEs, more numerous, more active and more competitive than they are currently, able to massively contribute to Romania's economic growth in the long term and thus, to social progress and prosperity for all its citizens. Romanian government puts enterprises in the center of its policy for sustainable economic development of the country in the period 2014-2020, adopted a series of strategic measures, allocate resources and undertake major public by authorized institutions, consistent actions,

	systematic and coordinated in order to : - encourage entrepreneurship and the establishment of new economic enterprises - stimulate small and medium businesses to boost competitiveness at national and international level
Description and objectives of the strategy	The strategy sets out the Government's policy of Romania for the next seven years on supporting the growth of extensive and intensive SME sector with a focus on increasing the number of SMEs active in local and foreign markets of interest but increased density of SMEs, particularly in areas where it is below the European average, in order to diminish existing regional disparities. The overall objective is to create a favorable environment for business, private initiative and entrepreneurship, stimulating the creation and development of SMEs and support to increase the competitiveness of the local business environment as well as development of existing businesses and creating new jobs by the end of 2020 The specific objectives are : - Creating a favorable business environment and SME development înfiinþãrii - Development of competitive capacity of SMEs - Improving SME access to finance - Improving SMEs' access to foreign markets - Promoting entrepreneurial culture and strengthening managerial performances
Period of activation	2014 – 2020

Description of programmes and specific operative initiatives

Title of the programme/intiative	**Large Infrastructure Operational Programme (POIM)**
Reference strategy	General Transport Masterplan Strategy for intermodal transport in Romania – 2020 Sustainable Transport Strategy 2007-2013 and 2020 2030
Geographical area of vaidity	Romania
Public funding (€), of which:	POIM receive an allocation of approx. 11.8 bn. Euro In order to achieve objectives within POIM it was established eight priority axes. Shipping is funded under Priority Axis 1 - Improving mobility by developing the TEN-T that is allocated am ammount of 3.404.255.320,00 Euro.
EU funds	6.94 bn. Euro Cohesion Fund/58,1%
National funds	2.46 bn. Euro Co/20,85%
Regional funds	2.48 bn. Euro European Regional Development Fund/21,02%
Period of activation	2014-2020
Managing authority	The Romanian Ministry of European Funds
Implementing actor	The Romanian Ministry of Transport
Beneficiaries	Transport infrastructure administrators, transport services providers (national companies, private companies, local authorities)
Description and objectives	POIM 2014-2020 was developed to meet the development needs

of the initiative	identified in the Partnership Romania 2014-2020 and according to CSC and the Position Paper of the European Commission. Funding priorities established by POIM contribute to the overall objective of the Partnership by directly targeting two of the five challenges identified in national development: infrastructure and resources. Given the high degree of correlation and complementarity and the 2007-2013 experience, promotion of investment in infrastructure and resources are funded under a single program with the overall objective , the development of transport infrastructure, environment, energy and risk prevention at European standards in order to create sustainable economic growth premises, safe and efficient use of natural resources. POIM address development needs in four sectors: transport infrastructure, environmental protection, risk management and adaptation to climate change, energy and energy efficiency, contributing to the Union strategy EUROPA 2020. The strategy addresses the following challenges : - Poor transport infrastructure, connectivity and low competitive services - Poor environmental infrastructure to ensure an adequate quality of life - Inadequate protection of biodiversity and ecosystems - Insufficient instruments for monitoring air quality - Large number of historically polluted sites with negative impact on environment and health - Inadequate risk management of climate change - Increased energy intensity compared to other EU countries The objectives according to interventions areas are : - Transport infrastructure • Improved mobility through development of the TEN-T and underground transport • Development of a multimodal transport system, quality, sustainable and efficient - Environmental protection and risk management • Development of environmental infrastructure in terms of efficient management of resources • Environmental protection measures for biodiversity conservation, air quality monitoring and remediation of historically contaminated sites • Promoting climate change adaptation, risk prevention and management - Clean energy and energy efficiency • Promote clean energy and energy efficiency to support a low-carbon economy • Increasing energy efficiency in the centralized heating system in selected cities • Intelligent and sustainable transport systems for electricity and natural gas
Type of supported activities	The actions to be supported by POIM : Transport : - construction / upgrading of the raod and rail TEN-T corridors - improve navigation conditions on the Danube and the Danube waterways and ports located within the TEN-T , including purchase

	of equipment and ships multifunctional Danube navigability; - Modernizing and developing the ports located on the TEN-T network, including associated components for intermodal transport; - Investment in airport infrastructure accompanied by environmental protection measures - specific actions to improve traffic safety and transport safety for all modes of transport - Actions to reducte wayting time at the stationary points of transnational communication Environmental protection and risk management : - Actions for decreasing the non compliant number of landfills and increasing the preparedness degree for recycling - Actions for increasing collection and treatment of urban waste water and the level of safety for the public drinking water supply - Actions for improvement of protection and conservation of biodiversity and restoration of degraded ecosystems - Actions for enhancing air quality assessment and monitoring at national level by developing monitoring tools - Actions for reducing historically polluted areas - Actions for reducing the population and damage caused by natural phenomena associated main risks exacerbated by climate change, mainly floods and coastal erosion Clean energy and energy efficiency - Development and / or modernization of production capacities of electricity and / or heat, from biomass and biogas - The construction and modernization of production capacities of thermal energy based on geothermal energy - Supporting investments in expansion and modernization of distribution networks for electricity, to pick up energy from renewable resources in safe RPS - Implementation of a number of systems to monitor energy consumption in industrial consumers - Implement smart distribution in a homogeneous area households electricity No budget limitation
Type and intensity of the public funding	National companies : 75% Private comnies : not yet decided

Title of the programme/intiative	**Operational Program Competitiveness (POC)**
Reference strategy	National Strategy for Competitiveness National Strategy for Research, Development and Innovation 2014-2020 Government strategy for the development of small and medium enterprises and improving the business environment in Romania – HORIZON 2020
Geographical area of validity	Romania
Public funding (€), of which:	The total budget of the programme is of 1,329,787,234 EUR, divided on the following specific budget lines: EUR 1,080,699,494 (ERDF - less developed regions);

	EUR 249 087 740 (ERDF - more developed regions)
EU funds	1,329,787,234 EUR
National funds	670,809,000 Eur/50.44%
Regional funds	803,787,234 Eur/49.56%
Period of activation	2014-2020
Programming entity	The Romanian Ministry of European Funds
Implementing actor	The Romanian Ministry of European Funds
Beneficiaries	Universities and Research Organization, Tech Parks and Tech Cluster
Description and objectives of the initiative	Operational Program Competitiveness (POC) supports investments aimed at meeting the needs and challenges of the low level of economic competitiveness, especially in respect of (a) insufficient support for research, development and innovation (RDI) and (b) poor infrastructure ICT and therefore underdeveloped services, thus positioning itself as a driver of horizontal intervention in the economy and society, likely to involve growth and sustainability. The following areas of smart specialization identified in the National Research and Innovation Strategy 2014-2020 is supported by POC : • bioeconomy. • information and communications technology, space and security. • energy, environment and climate change. • eco-nano-technologies and advanced materials. Joining the two vectors - Research and Development, Innovation and Information Technology and Communications - under the same operational program is strategic justified by the multiplier role of these areas and by the direct support that they help the objectives of smart specialization and promotes new growth opportunities in a limited number of priority areas especially focused on Romania comparative benefits. Priorities and objectives : - Promotion of R & I , developing links and synergies between stakeholders - Improving Research and Innovation (C & I)infrastructure - Expansion and development of high speed broadband communication infrastructure - Increase the contribution of ICT to economic competitiveness - Increasing the usage of e-governance - Increase the use of Internet
Type of supported activities	Indicative actions supported by POC are : - Development of networks of R & D centers, coordinated at national level and connected to the European and international networks and ensuring researchers access to scientific publications and European and international databases - Creating synergies with RDI actions under Horizon 2020 Program framework of the European Union and under other international RDI programs - Attracting staff with advanced skills from abroad to develop CD capacity - Stimulating demand for business innovation through RDI projects

<table>
<tr><td></td><td>undertaken by enterprises individually or in partnership with R & D institutes and universities for innovation of processes and products in economic sectors with growth potential
- Financing instruments and measures for risk capital for innovative SMEs and research organizations that meet market demands
- Knowledge Transfer Partnerships
- Support for growth of the added value in the field of ICT and innovation by developing clusters
- Supporting the use of ICTs for development of business, especially of the framework for electronic trade
- Ensuring cyber security of ICT systems and computer networks
- Consolidate and ensure interoperability of systems dedicated to e-government services
- Improving digital content and the systemic ICT infrastructure for e-education, e-inclusion, e-health and e-culture</td></tr>
<tr><td>Type and intensity of the public funding</td><td>Action : Investment in CD departments in business
<table><tr><th>Region</th><th>Large enterprises</th><th>Medium enterprises</th><th>Small entreprises</th></tr><tr><td>North-West, Center, North-East, South-East, South-Muntenia, South-West Oltenia</td><td>50,00%</td><td>60,00%</td><td>70,00%</td></tr><tr><td>West and Ilfov county</td><td>35,00%</td><td>45,00%</td><td>55,00%</td></tr><tr><td>Bucharest until 31 December 2017</td><td>15,00%</td><td>25,00%</td><td>35,00%</td></tr><tr><td>Bucharest during 2018-2020 period</td><td>10,00%</td><td>20,00%</td><td>30,00%</td></tr></table>Action : Innovation Clusters
<table><tr><th>Region</th><th>The maximum grant</th></tr><tr><td>North-West, West, Center, North-East, South-East, South Muntenia, South-West Oltenia</td><td>65,00%</td></tr><tr><td>Bucharest-Ilfov county</td><td>55,00%</td></tr></table>Action : Innovation activities (For SMEs)
<table><tr><th></th><th>The maximum grant</th></tr><tr><td>All regions</td><td>50,00%</td></tr></table></td></tr>
</table>

	Action : operational activities in innovation clusters The maximum grant All regions 50,00% **Action : Innovative companies (start-ups and spin off)** The maximum grant : 90% **Action : Innovative start-ups** Region / The maximum grant Bucharest-Ilfov county 1 mil Eur Other regions 1.5 mil Eur **Action : Attracting staff with advanced skills from abroad** The maximum grant : 2 mil Eur **Action : Investment projects for institutions and public CD / universities** The Grant : 1-2 mil Eur **Action : Knowledge Transfer Partnerships** The Grant : 1-3 mil Eur

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Introduction

The term cluster started being used to identify – in the industrial framework of the industrial policies -, any initiative able to enforce and implement organized efforts supporting a group of actors with common interests expressed through the action of a cluster organization providing specific support towards the reference sector.

The Smart Guide on Cluster Policy[37] define them as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are representing groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialized expertise, services, resources, suppliers and skills.

Cluster bring out territory's features but they could be structured in tailored cluster management organizations. The latter are legal entities supporting the strengthening of collaboration, networking and learning in innovation clusters and act as innovation support providers by providing or channeling specialised and customised business support services to stimulate innovation activities, especially in SMEs. They are usually the actors that facilitate strategic collaborating across clusters but it is important to underline that role and tasks are generally recognized and defined in national and/or regional level with specific regulations defining role and competences that could be different in each territory. In the project

[37] European Commission (2016), *Smart Guide to Cluster Policy*, Guidebook series, How to support SME Policy from Structural Funds, Ref. Ares (2016)2507138 - 31/05/2016, European Union

activities, it will be of primary importance to focus on current state of cluster management organization, in order to provide clear details on the current national and regional situation, finding out main features necessary to share practices and details among all territories involved.

2.2.1 Cluster management organization

The cluster was defined for the first time in Romania in 2006, by the Government Decision no. 918:/2006 - The "Impact". Thus, the cluster is a group of producers, users and / or beneficiaries, in order to implement best practices in the EU in order to increase competitiveness of economic operators. The accepted model of a cluster is the "triple helix" that meets in a cluster representatives of:

- enterprises - representing the business side of the cluster;
- Universities and research institutes - representing providers of innovative solutions applicable to the real needs of enterprises cluster;
- local authorities, regional etc.

In Romania, experience has shown, however, that the three natural partners of the model "triple helix" do not cooperating; moreover, they do not know and do not get to talk to each other. There is a need to adapt the model and transform it into a model "Four leaf clover" - the fourth actor is represented by catalyst organizations, consulting firm specializing in technology transfer and innovation, technology transfer centers, etc. It is obvious that the different categories of actors in this model have different contributions and interests to be harmonized. Therefore, the benefit of different actors in the innovative clusters may be grouped as follows:

- For enterprises :
    - cooperation between economic sectors to obtain economic benefits
    - cooperation in the acquisition of technology and production
    - facilitate an increased flow of information and technology transfer;
    - development of integrated marketing;
    - access to funds dedicated to the associations at European, national level
    - support provided by authorities
    - improved competitiveness
    - cost savings
- For public authorities :
    - supports economic and social development of the region;
    - contribute to reducing unemployment
    - It helps nationally and internationally promote the region;
    - support infrastructure development.
- For universities and R&D institutes :
    - determines adapting school curricula to the economic real needs
    - stimulate research and innovation
    - development of new and modernization of research laboratories with enterprises support;
    - stimulate applied research and technology transfer, through close collaboration with economic environment
    - foster cooperation in science, transfer of know-how.
- For catalyst organizations :
    - expanding the pool of customer
    - developing new products and services;
    - competitive advantages

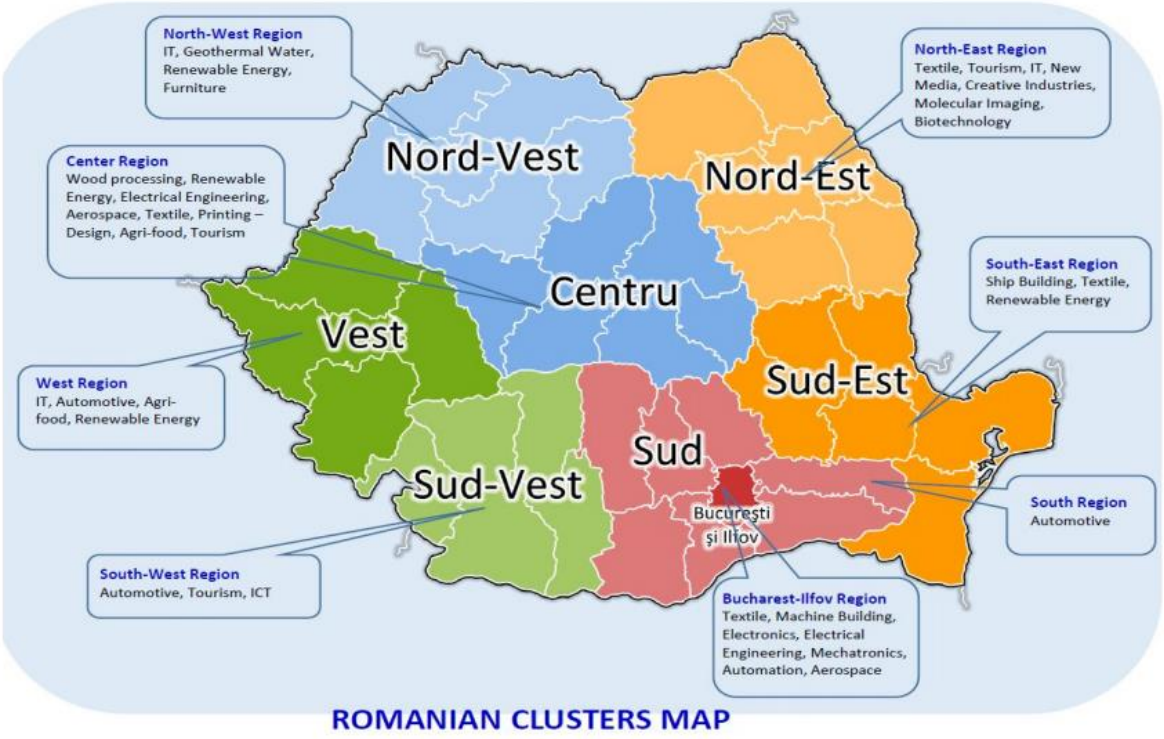
Documents required to formalize the cluster are:

- Cooperation Agreement signed by members
- Appointment of the Management Entity of the cluster that can be a company (in accordance with Law 31/1990) or a non-profit organization (association or foundation, in accordance with Law 245/2005)

Next steps (recommanded, not mandatory):

- Join the Association of clusters from Romania - ClusteRo: http://www.clustero.eu ,
- Join the European Cluster Collaboration Platform http://www.clustercollaboration.eu/about-the-platform ,

Cluster distribution by field of specialization and by region



in Romania are registered 88 clusters and poles of competitiveness and one association at national level, ClusteRo. Ammong these the following are clusters active in “Blue economy” sectors :

CLUSTER	
Name of the cluster	Romanian Maritime Cluster
Territorial dimension of the cluster	Regional
Reference maritime sectors	Shipping, ports, shipdesign
Initiatives for cluster development	Inactive
Tools for cluster development	N/A

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the	RoNoMar

cluster management organization	
Country	Romania
Region (NUTS II)	South-East
Province (NUTS III)	Constanta
Address	Baza Nautica UMC, Constanta, Romania
Phone Number	+40 241 650 026
Email	secretariat@cluster-maritim.org
Website	www.cluster-maritim.org
(Legal entity)	NGO
Year of establishment	2011
Reference sector's dimension	199
N. of stakeholders collaborating with the cluster	34
N. of associates	N/A (the cluster is not formalized)
Services and tools organized for the cluster networking process	N/A
Good practices for cluster management	N/A

CLUSTER GOVERNANCE	
Description of governance model	No available informations
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	Universities and research institutes with membership in Roamanian Maritime Cluster : • Universitatea Dunarea de Jos din Galati • Universitatea Maritima din ConstantaAcademia Navala „Mircea cel Batran" • Universitatea Ovidius din Constanta • Institutul National de Cercetare-Dezvoltare Marina „Grigore Antipa"
Policies – cluster's role, relations and connections	The declared products/services/projects : - To promote industry -oriented policy at national and European level - Strengthening cooperation between various actors in the maritime sector, exchange of ideas, information and development of joint activities - to support business and professional associations to fulfill specific objectives - support for innovation and entrepreneurship in maritime sectors - support for SMEs and their productivity - specific assistance for companies to comply with environmental requirements - attracting funding, grants and other sources of income

CLUSTER	
Name of the cluster	Romanian Rier Cluster
Territorial dimension of	National

the cluster	
Reference economic sectors	Ports, inland shipping, shipbuilding
Initiatives for cluster development	- Improvement of cluster management competences, development of cooperation with other clusters involved in “blue economy” (Blue Net project) - Set up a cooperation platform with SME’s association - Implement “one-stop-shop” concept to create a supportive environment for “blue economy” business development in Danube ports (the concept of the “one-stop-shop” Iis developed under DANUBE SKILLS project in which UPIR is partner)
Tools for cluster development	- Projects to improve the cluster management and common projects to overcome common chalenges - Events (ACVADEPOL international colloquium dedicated to environmental impact of port activity and water pollution management)

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	Union of Romanian Inland Ports (UPIR)
Country	Romania
Region (NUTS II)	South-East region
Province (NUTS III)	Galati
Address	Basarabiei st no.1 Galati
Phone Number	+ 40 236449997
Email	office@danube-ports.ro
Website	www.danube-ports.ro
Legal entity	NGO
Year of establishment	1995
Reference sector’s dimension	500-600
N. of stakeholders collaborating with the cluster	86
N. of associates	7
Services and tools organized for the cluster networking process	- Membership and Vice-President position at European Federation of Inland Ports - Member of the Rhin-Danube corridor working group - Member of Digital Transport Logistic Forum at European Commission - Advisory organization for the Romanian Ministry of Transport - Membership at Romanian Logistic services providers association - ARILOG - Membership at Romanian Intermodal Association - RIA
Good practices for cluster management	UPIR is involved in all consultancy processes concerning port activities launched at local, regional, national level and European level thus keeping members updated with all relevant informations and promote their interests at all levels.

Description of	The cluster is not formalized. Members meet on demand during ad-hoc meetings

governance model	The clusters' manager , UPIR organization : - General assembly - Board of directors among which one president and two vice-presidents
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	A cooperation platform is under discussion with SME's association There are some universities and reseach institutes which are clusters' members : - DANUBIUS Galati University - DUNAREA DE JOS Galati University - Naval Academy MIRCEA CEL BATRAN Constanta - IPA Institute Bucharest - Romanian Center for seafarers'qualification CERONAV Constanta The Municipality of Galati is member of the cluster Other relevant associations, members of the cluster : - ANCONAV – the Romanian shipbuildres association
Policies – cluster's role, relations and connections	The cluster is deeply involved in port policies and strategies at all levels by UPIR which is the catalyst.

CROATIA

1 INTRODUCTION

Shipping and shipbuilding activities in Croatia have a very long tradition. For centuries, our part of Adriatic Sea was known for its ships and fleets. Most of our major shipyards were founded in mid nineteen and beginning of twentieth century as Austrian Naval Arsenals and some of them, have over time, become major facilities with diverse activities. Through their combined knowledge and experience they achieved impressive success in construction, ranging from warships and merchant ships to floating docks and offshore installations, and in other shipbuilding related activities such as overhauling, conversions and reconstructions. During the years, major shipyards turned to construction of merchant vessels. Due to the size and complexity of the ships construction, a significant part of the Croatian industry, especially small and medium-sized enterprises, are based on sub-contracts and their operations, directly dependent on this sector of industry.

Croatian shipbuilding industry operates both on domestic and international market and export orientation is dominant feature. Open world market policy of shipyards since the beginning of shipbuilding, has helped Croatian shipyards to survive hard times and to keep high European level of quality and worldwide competitiveness. We attribute these achievements to highly skilled working force and strong design teams, ready to meet every demand by Ship-owners and to produce high quality “tailor made” ships with innovative design, and features, unique performance and extraordinary service characteristics. A variety of purposes such as fishing, transport of people and goods, energy exploitation, trade and defence, require various kinds of vessels and those necessities have dictated the development of the Croatian shipbuilding industry and its affiliates. Several smaller shipyards and repair centres build a significant number of fishing, cargo and passenger vessels and offshore structures. Additionally, tugs and patrol boats are built, and increasing nautical tourism has awakened great interest in the repair and maintenance of pleasure boats and for the construction of such vessels. Furthermore, energy exploitation is represented by offshore gas installations in the northern Adriatic around Istria, while the rest of the Adriatic will be researched for possible discovery and exploitation of hydrocarbons.

One of the most important activities in the country and one of the crucial activities in the general economy is maritime transport, which includes sea ports, transport in river and pipelines. As of recent, major plans are discussed for revitalization of river transport which is stagnant and underused. Croatia has six seaports open for international public traffic. The largest seaport with the deepest channel to a port in the Adriatic is Rijeka on the northern Croatian coast, followed by Ploče in southern Dalmatia. The largest Croatian passenger port is Split in Dalmatia, also called gateway to the islands, followed by Zadar. There are 66 inhabited islands along the Croatian coast which means there are a large number of local ferry connections.

The total length of coastline, together with numerous islands and reefs, is somewhat over 4,000 km that represents the most memorable cruising grounds with magnificent sights and majestic scenery, which is an excellent foundation for tourism and leisure activities. Recently, nautical tourism activities are increasing, which means that above mentioned potentials are being more and more recognized and exploited.

Maritime regions focused in BlueNET are following: Istarska County, Primorsko-goranska County, Ličko-Senjska County, Zadarska County, Šibensko-kninska County, Splitsko-dalmatinska County and Dubrovačko-neretvanska County.

2 STATE OF THE ART

2.1 MAIN MARITIME SECTORS DEVELOPED ON THE TERRITORY

2.1.1 Definition of reference maritime sector

Shipbuilding and boatbuilding

This branch of industry represents a significant source of employment in Croatian's regions in which major shipyards are situated (Istarska County, Primorsko-goranska County, Splitsko-dalmatinska County). Production portfolio of major shipyards mostly consists of different kind of ''tailor made'' newbuildings of various sizes, overhaul, conversion and offshore constructions, but also manufacturing ship equipment. Medium and small sized business, mostly located along the entire coastline and few in some inland regions, are oriented on design and construction of yachts, boats and ship equipment both for seagoing ships and inland ships, and on developing new solutions in shipbuilding oriented industry. Croatian boatbuilding industry offers a wide span of vessels from 4 m boats to 50 m long mega-yachts meeting the highest quality standards and produced in more than 100 shipyards or plants, employing more than 1,800 people. The shipbuilding sector is still one of the most important industrial sectors of the Republic of Croatia both by its share in last decade in employment (2% – 5%, with subcontractors up to 10%), by its GDP share (0,8% – 1,8%) and by exports (10% – 15%). Shipyards Uljanik (Istarska County), 3. Maj (Primorsko-goranska County) and Brodosplit (Splitsko-dalmatinska County) are oriented on newbuildings and offshore construction. Shipyard Brodotrogir (Splitsko-dalmatinska County) is involved in newbuildings and ship overhauling activities and Shipyard Viktor Lenac (Primorsko-goranska County) is involved in ship overhauling, conversions and reconstructions. Given the current poor market situation and specific situation of restructuring process of most of the Croatian shipyards, great challenges fall before Croatian shipbuilding industry. By the end of February 2017, Croatian shipyards have contracted delivery of vessels until the mid-2019 - 41 vessel, worth about 1.74 billion USD[38].

Working hand-in-hand with the shipbuilding industry, accompanying industries of ship equipment and related services have developed. Together they have created a depth of experience and satisfaction in the field of modern ship outfitting. High standards and exemplary quality have been achieved through close cooperation between R&D institutions and manufacturers. Various types of marine equipment products, individual components and assemblies, are manufactured, and used by local shipbuilding industry to contribute to their competitiveness. The total number of employees amounts to some 25000 with approximately 20% of manufacturing programmes dedicated to fitting-out of ships and other floating vessels.[39]

Maritime transport

Due to geographical position, the importance of maritime and land transportation is equal, and the reference for the BlueNET program is maritime transportation. Today, the Croatian ports, which are integrated into a comprehensive network of European traffic corridors, annually handle 19 million tons of cargo, and transport over 12 million passengers. Coastal shipping, ensuring the life on the islands, is carried out by total of 56 public lines of national importance which, in 2012, transported 11,1 million passengers and 2,76 million vehicles. Croatia fleet comprises 1,245 ships (GT 1,274,833.36) of which 121 ships in international waters, as well as more than 1,900 yachts and 118.000 boats[40]. The Republic of Croatia counts six ports open for public traffic of outstanding (international) economic importance and those are the

[38] Hrvatska brodogradnja Jadranbrod d.d. – www.hb.hr
[39] Source: Croatian marine equipment 2013 / Croatian Chamber of Economy, Zagreb 2013
[40] Source: Ministry of sea, transport and infrastructure; http://www.mppi.hr

ports: Rijeka, Zadar, Šibenik, Split, Ploče and Dubrovnik. Transportation of passengers is organized between all major harbours and medium sized harbours along the entire coast. Internationally, Croatia is connected with Italy by ferries and with Greece and Montenegro via cruise ships. Goods which are transported to and from these ports are following: bulk cargo (Rijeka, Ploče, Šibenik, Zadar, Split), general cargo (Šibenik, Zadar, Ploče, Rijeka), wood (Šibenik, Ploče, Rijeka), liquid cargo (Zadar, Ploče), refrigerated cargo (Split, Rijeka), containers (Rijeka, Ploče, Split) and cement (Zadar). All above listed major ports, excluding port of Dubrovnik, have good supporting railroad and road infrastructure which eases the later distribution of goods.

Leisure, working and living

Croatia is a Mediterranean country reputable all around the world for its indented coastline and islands. The island archipelago with more than a thousand islands is a distinguishing marketing symbol of Croatian tourism and a comparative advantage in its development. Because of such natural assets, nautical tourism is especially valuable and successful segment of Croatian tourism. Croatian share in the total length of coastline (including the islands) among countries of the Mediterranean is 16%, while the share of the offered berths for vessels is approximately 6,9%. Furthermore, given the length of the coastline, Croatia has 2,6 nautical berths per kilometre, which is well below France (64) and Spain (20,2), but close to Italy (3,1) and above Turkey (2,2) and Greece (1,1)[41]. There are 121 nautical tourism ports and 57 of them are categorized marinas. In addition to the marinas, boaters are still available 38 anchorages, 10 piers and three ports that are listed as unclassified. For berths during the winter as well as for other purposes, there are 13 dry docks available. Combined, all ports of nautical tourism have close to 17400 berths excluding dry marina berths, which count around 5100[42]. Another branch of tourism is cruise tourism, which covers whole coastline. Main passenger ports are Dubrovnik, Split, Rijeka, Šibenik and Zadar but also island ports, and they are most represented ports on routes of internal and international cruise ships.

Energy and raw materials

This maritime sector is represented by offshore gas installations. In the northern Adriatic in the area of Istria, Croatia has 19 gas exploitation platforms and a compressor platform which is connected to 51 exploitation wells within 3 areas of exploitation, from which annually is generated an average of around 1,2 billion m^3 of gas. When compared with Italy, Croatian part of the Adriatic is insufficiently researched. The Republic of Croatia has at its disposal an area of the Adriatic not less than the area at the disposal of Italy, but has only 10% of the number of wells and less than 10% of the discovered hydrocarbon reserves in comparison with the Italy[43]. Considering that fact, a Framework plan and program of exploration and exploitation of hydrocarbons in the Adriatic has been enacted in 2015.

[41] Source: CREN, Vol 80, April 2013
[42] Source: Croatian tourism in numbers (1/2016), Institute for Tourism
[43] Source: Okvirni plan i program istraživanja i eksploatacije ugljikovodika na Jadranu, AZU, June 2015

2.2.2 Identification of stakeholders

Name	***Reference maritime sector***	***Category***	***Brief description (subsectors)***	***City***
2pixel studio	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Exterior and interior deign*	*Pula*
3. Maj	*Shipbuilding*	*Private enterprise*	*Ship design and construction*	*Rijeka*
3. Maj TIBO	*Shipbuilding and boatbuilding*	*Private enterprise*	*Equipment production; Switch boards, control centers and consoles*	*Rijeka*
ACI Marine	*Leisure, working and living*	*Private enterprise*	*Nautical tourism*	*Opatija*
AD Boats d.o.o.	*Boatbuilding*	*Private enterprise (medium)*	*Boat design and construction*	*Solin*
Adriatic services	*Leisure*	*Private enterprise (small)*	*Yacht charter*	*Dubrovnik*
Adria-mar	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Ship design, refit, newbuildings, construction analysis*	*Zagreb*
AEDA INC	*Boatbuilding*	*Private enterprise (small)*	*Boatbuilding, refit*	*Dubrovnik*
Arba Nautika	*Boatbuilding*	*Private enterprise (small)*	*Boatbuilding*	*Zagreb*
Anorti	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings, repair, maintenance*	*Biograd na moru*
AS2CON - AVLEUS	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Boatbuilding, consulting,*	*Rijeka*
Atlantska plovidba	*Maritime transport*	*Private enterprise (medium)*	*Cargo trafficking*	*Dubrovnik*
Bandić Maritime	*Maritime transport*	*Private enterprise (small)*	*Shipping agency, transport and logistics, freight forwarder*	*Split*
Brodarski institut	*Shipbuilding*	*Research actor-institute*	*Ship design and development, ship hydrodynamics and energy plant modelling*	*Zagreb*
Brodogradilište i Marina Betina	*Boatbuilding, Leisure*	*Private enterprise (medium)*	*Boatbuilding, repair, maintenance*	*Betina*
Brodogradilište Punat	*Shipbuilding and boatbuilding*	*Private enterprise*	*Boatbuilding, refit, maintenance*	*Punat*
Brodogradnja	*Boatbuilding*	*Private enterprise*	*Yacht building*	*Split*

Monachus				
Brodospas	*Maritime transport*	*Private enterprise (big)*	*Offshore hauling and supply, heavy cargo transfer, ship hauling, ship recovery*	*Split*
Brodosplit	*Shipbuilding*	*Private enterprise (big)*	*Ship design and construction, parts and equipment manufacturer*	*Split*
Brodotrogir	*Shipbuilding*	*Private enterprise (big)*	*Repair, newbuildings*	*Trogir*
Bura Brodovi	*Boatbuilding*	*Private enterprise (small)*	*RHIB newbuildings, Inflatable boats*	*Brezovica*
Calafatus – obrt za brodogradnju	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Pula*
Certus	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Klis*
Conmar d.o.o.	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*On-board stability and cargo software, marine consulting,*	*Split*
D-Marin Borik	*Leisure, working and living*	*Private enterprise (small)*	*Berthing, maintenance, technical services*	*Zadar*
D-Marin Dalmacija	*Leisure, working and living*	*Private enterprise (small)*	*Berthing, maintenance, technical services, dry marina*	*Zadar*
Damor d.o.o.	*Boatbuilding*	*Private enterprise (small)*	*Boatbuilding*	*Kaštel Sućurac*
Dunkić d.o.o.	*Boatbuilding*	*Private enterprise (small)*	*Boatbuilding, maintenance, refit, repair*	*Šibenik*
Đuro Đaković	*Shipbuilding and boatbuilding*	*Private enterprise*	*Engine room equipment,*	*Slavonski Brod*
Eanvigo	*Shipbuilding and boatbuilding*	*Private enterprise*	*Yacht building*	*Virovitica*
ELKA kabeli	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Equipment production; Shipboard cables*	*Zagreb*
Galeb I Ja – obrt	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Šibenik*
G&V Line	*Maritime transport*	*Private enterprise (medium)*	*Local passenger transport*	*Dubrovnik*
Global agent Ltd	*Maritime transport*	*Private enterprise*	*Shipping agency, freight forwarding, logistics*	*Zadar*
Grginić Jahte	*Boatbuilding, leisure*	*Private enterprise*	*Boatbuilding, charter*	*Zadar*
iCat d.o.o.	*Shipbuilding and*	*Private enterprise*	*Ship design and*	*Zagreb*

	boatbuilding	*(micro)*	*construction*	
INA d.d.	*Energy*	*Public-private enterprise*	*Offshore gas exploitation*	*Zagreb*
Inoplast – obrt	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Rabac*
Inelteh	*Shipbuilding and boatbuilding*	*Private enterprise*	*Signalling, navigation, automation, level detecting and measurement equipment*	*Rijeka*
Istra Yachting d.o.o.	*Shipbuilding and boatbuilding*	*Private enterprise*	*Refit, repair, maintenance, non-destructive testings*	*Pula*
Jadroagent	*Maritime transport*	*Private enterprise*	*Freight forwarding, logistics, chartering and clearance*	*Rijeka*
Jadroplov d.d.	*Maritime transport*	*Private enterprise*	*Cargo trafficking, maintenance*	*Split*
Jadrolinija	*Maritime transport*	*Private enterprise*	*Local and international passenger transport, local circle cruises*	*Rijeka*
Kanula d.o.o.	*Boatbuilding*	*Private enterprise (small)*	*RHIB newbuildings, Inflatable boats*	*Split*
Katarina Line	*Maritime transport, leisure, working and living*	*Private enterprise (small)*	*Local passenger transport, charter, leisure activities*	*Opatija*
Kod Sedam d.o.o.	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Rijeka*
Kompas brodice	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Kršan*
Končar	*Shipbuilding and boatbuilding*	*Private enterprise*	*Equipment production; Electric motors and generators, power supply, electric equipment, ventilation*	*Zagreb*
Kvarner d.o.o.	*Boatbuilding*	*Private enterprise*	*Boatbuilding, minor equipment distribution*	*Rab*
Kvarnerpalstika	*Shipbuilding and boatbuilding*	*Private enterprise*	*Newbuildings, refit, repair, outfitting*	*Rijeka*
Leda	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Ship assembly and boat repair and maintenance*	*Lumbarda*
Leidi – obrt	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Pula*
Marina Hramina	*Leisure, working and*	*Private enterprise*	*Yacht charter,*	*Murter*

	living	*(small)*	*berth reservation, maintenance*	
Marina Tribunj	*Leisure, working and living*	*Private enterprise (small)*	*Leisure, charter, berthing*	*Tribunj*
Marina Veruda	*Leisure, working and living*	*Private enterprise (small)*	*Yacht charter, berth reservation*	*Pula*
Marservis d.o.o.	*Boatbuilding, leisure*	*Private enterprise (small)*	*Newbuildings, repairs, maintenance, leisure*	*Kaštelir*
MB Kapetan Luka	*Maritime transport*	*Private enterprise*	*Local passenger transport*	*Krilo Jesenice*
Morski vuk	*Boatbuilding*	*Private enterprise*	*Boatbuilding*	*Veliko Trojstvo*
NAUTIČKI CENTAR PRGIN	*Shipbuilding and boatbuilding, leisure*	*Private enterprise (medium)*	*Newbuildings, refits, conversions, yacht charters*	*Šibenik*
Navalis	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Newbuildings, ship and offshore desings, equipment production*	*Split*
Orka studio	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Zagreb*
Pičuljan Marine	*Boatbuilding*	*Private enterprise (medium)*	*Boatbuilding*	*Jurdani*
Radež	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Shipbuilding, ship design, deck equipment*	*Blato*
Rapska plovidba	*Maritime transport*	*Private enterprise (small)*	*Local passenger transport, boat maintenance, boat dry dock (winter storage)*	*Rab*
Riječki akustički inženjering	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Equipment production; Sound insulation, windows, hatches and doors*	*Rijeka*
SAS-Vektor	*Boatbuilding*	*Private enterprise (small)*	*Sailboat and motor boat manufacturing, engine service, maintenance*	*Zadar*
SCAM-marine	*Shipbuilding and boatbuilding*	*Private enterprise*	*Equipment production; Boat and yacht marine engines, hydraulics, shafts, screws, winches and various deck equipment*	*Viškovo*
Tankerska	*Maritime transport*	*Private enterprise*	*Cargo trafficking*	*Zadar*

plovidba d.d.		*(medium)*		
Tehnomont	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Ship and boat construction*	*Pula*
Tema	*Shipbuilding and boatbuilding*	*Private enterprise (small)*	*Electric motor and generator,*	*Pula*
Terra Nauta	*Boatbuilding*	*Private enterprise (small)*	*Newbuildings*	*Zagreb*
Tranzitagent d.o.o.	*Maritime transport*	*Private enterprise*	*Freight forwarding, logistics, yacht chartering, customs clearance*	*Split*
Tvornica turbina Karlovac	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Equipment production; Cargo handling system, pumps, heat exchangers*	*Karlovac*
Uljanik	*Shipbuilding*	*Private enterprise (big)*	*Shipbuilding, ship design, ship equipment*	*Pula*
Uljanik Plovibda	*Maritime transport*	*Private enterprise (medium)*	*Cargo trafficking*	*Pula*
Uljanik TESU	*Shipbuilding and boatbuilding*	*Private enterprise (medium)*	*Equipment production; Synchronous generator, switch boards, electric equipment*	*Pula*
UNIRI RITEH	*Shipbuilding and boatbuilding*	*Research actor*	*Research institution*	*Rijeka*
UNIZG FSB	*Shipbuilding and boatbuilding*	*Research actor*	*Research institution*	*Zagreb*
Viktor Lenac	*Shipbuilding*	*Private enterprise (big)*	*Ship repair, ship conversions, offshore objects construction and limited engine maintenance and machinery services*	*Rijeka*

Uljanik

Uljanik is a creative and innovative business and manufacturing group that with modern methods and synergy effect creates new values. It's leader in Croatian shipbuilding industry, engaged in newbuilding, manufacturing of ship equipment and engines. With the strength of business reputation, quality and reliability of products and services, Uljanik contributes to the development and satisfaction of their workers, as well as establishing and developing business relationships with the buyers and business partners.

3. Maj

3. Maj shipyard in located in Rijeka, founded as a naval shipyard for Austro-Hungarian navy, and as of recently a part of Uljanik group. Currently it's activity is constructing new ships and partially ship equipment. They have been catching up with the newest developments in this industry in which our tradition is many centuries old, at a pace one might hardly expect, keen to respond but to the most demanding of challenges.

Viktor Lenac

Viktor Lenac is one of the leading shipyards for ship repair, conversions and offshore in the Mediterranean. Ship repair is core of its business. Yearly they repair around 60 vessels of all types: tankers (up to Suezmax size), container carriers, LPG carriers, etc. Among the first in the world, Viktor Lenac started with ship conversions. After first lengthenings and car carrier conversions, company's expansion began with a series of successful conversions of pipe and cable-laying ships, etc. Recent offshore activity was marked by the construction of jackets, process modules and living quarters.

Brodotrogir

As designers and builders of high-quality vessels for the global market, Brodotrogir continuously strives to improve their production. Their products are constantly at the very top of the world shipbuilding industry, with their technical characteristics, reliability and low costs in exploitation. The production programme includes tankers for oil products and chemicals, floating docks, passenger and ro-ro passenger ships and various other types of ships. When not constructing new ships, the slipways take ships for reconstruction, modernization, reclassification, docking and various other repairs.

Radež

Radež d.d. founded 1954 in the town of Blato in the middle of the western part of the island of Korčula in Croatia. Since 1960 the factory fabricates ship's equipment and steel hulls for customers all over the world. Long tradition in designing and fabrication has enabled them a construction of a wide spectrum of ship's steel equipment, alluminum equipment and various steel constructions of virtually unlimited size. Their products are based on own and partner's design, own technology and production process.

Brodosplit

The innovation and expertise of engineers enables them construction and design of sophisticated ships of different types, and those are the main features and the strongest points of Brodosplit as a successful and worldly recognized shipyard. Passenger ships, containers, cargo vessels, oil product tankers are just a fraction of the shipyards production span.

AD Boats d.o.o.

Since 2002, AD Boats has been manufacturing reliable, well-built sailing boats that match racing performance of the best cruiser racers on the market with their comfortable cruising abilities. Having experts in boat design, project management and skilled labour force, their type of vessel Salona has easily been recognized all over the world as trade mark. Technological level of boat building includes the application of advanced composite materials such as epoxy based vinyl ester resins and in-house, interior computer guided production being implemented in the modern facilities.

Nautički Centar Prgin NCP
This impressive shipyard is located in the naturally sheltered St. Peter's Cove near Šibenik on an easily accessible and scenic shoreline, and covers 110,000 m2. During its one-hundred-year history, the shipyard has developed from a small shipbuilding workshop into a repair yard with all modern facilities necessary for the support and overhaul of military and naval ships, liners and tourist cruisers, and, in the past several years, even mega yachts.

Pičuljan Marine
PIČULJAN Marine d.o.o. evolved from a family company, Brodogradnja Pičuljan. All boats that they have constructed for almost 70 years are the result of our own ideas and projects. The idea remained always the same: create a boat that will be pleasing to the eye, serviceable and comfortable when sailing. Regardless of tradition, the goal is always to follow the nautical trends throughout the world, and then develop the product in our own way.

iCat d.o.o.
iCat is a company that develops innovative, energy-efficient and environmentally friendly projects of ships in, applying technologically advanced and economically efficient solutions. Main objective is to build fast, "green" and economical ships, where the only noise and vibration created by wind and waves.

Navalis
Navalis engineering was founded 2004, with the establishment of the engineering office in Split. Engineering Office provides concept design solutions, prepares class documentation for different types of smaller vessels such as fishing ships, passenger transfer boats and cruise ships and work boats, also workshop documentation for all kinds and sizes of ships and offshore structures. Furthermore, Navalis provides different kinds of calculations, also FEM analysis (Finite Element Analysis) and structure optimizations.

Istra Yachting
Istra Yachting refit and repair shipyards is located in a great protected bay port of Pula. Services that Istra Yachting provides its customers extend into all aspects of the repair and refit of yachts. Personnel that provides these services is made up of professionals who are experts in their professions, all under the supervision of trained personnel with years of experience in the refit and repair of yachts.

Eanvigo
Enavigo Yachts combine classical design features with high-spec modern equipment to build boats that boast more than the usual range of features. Using modern equipment and a large production facility, all conditions are systematically controlled, being considered as the vital part of the production process. Their mission is to produce a powerful, high-spec and traditionally designed boat that is seaworthy and has enduring visual appeal.

ACI Marine
In charge of the Mediterranean's largest chain of marinas, Croatia's leading boating tourism company is the first choice of boaters from all over the world and an ideal starting point for embarking on new adventures. Boaters know this and keep coming back to ACI, and in return ACI caters to their every wish. Whether they prefer active holidays, or relaxing far from the noise and commotion of cities, or crave new cultural, nature or food experiences, ACI can offer them the best sailing routes, complete comfort and a safe berth.

Jadrolinija
Jadrolinija is Croatia's largest liner shipping company for the maritime transport of passengers and vehicles, with a hundred-year long tradition. The basic purpose of Jadrolinija is to connect major centres along the Croatian coast as well as numerous islands with the mainland. 3 large passenger ferries in international services, 34 ferries in local passenger services, 10 catamarans and 3 conventional ships sail on the regular local car- ferry and ship lines in the Adriatic, divided into 3 districts: Rijeka, Zadar & Šibenik and Split & Dubrovnik.

Katarina line
Katarina line, founded in 1992, evolved into one of Croatia's leading cruise & travel operators with main office in Opatija and branch offices in Opatija, Split and Dubrovnik. With a fleet of more than 50 ships in 4 different categories, unique city tours and great accommodation service, Katarina line offers numerous special interest programs on land and on board.

Atlantska plovidba
Atlantska plovidba continues the centuries-old maritime tradition of Dubrovnik. The company's primary activity is maritime transport of bulk cargoes, and lately has successfully engaged in tourism. Their policy is to maintain an independent position in the markets of bulk and heavy cargos, while consistently meeting and satisfying the needs and expectations of local and international clients. The same is achieved by opting for high standards of management with emphasis on maritime safety, conducting safe operations and protection of the marine environment.

Tankerska plovidba
Tankerska plovidba was founded in 1955, by allocation of liquid cargo ships from the composition of Jugolinija, Rijeka-based company specializing in the transportation of liquid cargo by sea. The main activity of the Company is transport of liquid cargo by sea, but also the Company manages bulk carrier ships. The company is being managed considering the following objectives: long-term perspective, stability, quality, compliance with business partners, care for employees, long-term investment and environmental concerns.

SCAM marine
SCAM MARINE was established in 1985 as a workshop, manufacturing hydraulic steering equipment and repairing and reconditioning marine engines. Since then, the company has grown, and now is manufacturing and exporting marine engines, marine generators, hydraulic steering gears, boat propulsion shafts and propellers, high quality boat equipment with optimal prices for domestic and export markets.

Tema
The company was founded in 1989 with the intention of merging academic and scientific researches and engineering practical resources for offering sophisticated industrial automation products to the market. TEMA offers complete electric propulsion systems for zero emission boats, serial hybrids and parallel hybrids.
From small leisure yachts to large commercial boats, TEMA has solutions for all applications.

Brodarski institut
Brodarski Institute is an institute of applied technical sciences in the fields of maritime and green technologies. Range of activities from experimental development of products to prototype making, turn-key projects, computations, supervisions, tests and measurements are among the main Institute's activities. A high competitive capability of Brodarski Institute is ensured by its experts and scientists in the

fields of shipbuilding, marine engineering, green technologies and environmental protection, mechanical engineering, electrical engineering, industrial design and other specialized fields.

2.2.3 Research projects and activities to support R&I

Croatian institutions responsible for research, development and innovation is similar to the systems of other European countries. The level of state authorities responsible for implementation and the creation of innovation policy including the Croatian Parliament and three ministries: The Ministry of Science, Education and Sports (MSES), the Ministry of Economy, Business and Trade (MEBT). In addition, the implementation of specific activities has been delegated to the set of different stakeholders. Authorities responsible for research and innovation policy and its implementation, covering the different types of research, can be divided into research institutes (public and private), higher education institutions and other entities that are registered in the Register of scientific organizations such as businesses and technological and development centres that conduct research and development. Higher education institutions are faculties and universities.

List of research projects and activities

Title	Project coordinator	Year	Sector and subsector
Increasing development of new products and services resulting from research and development activities	Ministry of Economy, Business and Trade	2014	Small shipbuilding/boatbuilding companies, *with boats* up to 100 GT
Support for the development of Centres of competence	Ministry of Economy, Business and Trade	2014	Small shipbuilding/boatbuilding companies, *with boats* up to 100 GT
Commercialization of innovation in the enterprise	Ministry of Economy, Business and Trade	2014	Small shipbuilding/boatbuilding companies, *with boats* up to 100 GT
BALMAS	Institute for water of the Republic of Slovenia	2013-2016	Shipbuilding
Innovations of newly established SMEs	Ministry of Economy, Business and Trade	2014	Small shipbuilding/boatbuilding companies, *with boats* up to 100 GT
Sorta symposium	UNIZAG FSB	1974	Shipbuilding
Brodogradnja journal	UNIZAG FSB	1950	Shipbuilding
Mare Nostrum	Major shipping companies	1991	Maritime transport
Ships propulsion plant of high efficiency and low emissions to the environment	UNIRI RITETH	2007	Shipbuilding, Equipment production
Safety of environmentally friendly marine and offshore structures	UNIZAG FSB	2007	Shipbuilding
Croatian maritime and European union	UNIRI PFRI	2007	Maritime transport
iCat project	City of Šibenik; iCat d.o.o. Zagreb	2014	Maritime transport, shipbuilding
Competitiveness Center for Quality	CEKOM Brodogradnja d.o.o. Rijeka	2015	Shipbuilding, equipment production, maritime transport

development in Maritime Industry			
Competitiveness Center for Aluminium application in Maritime Industry	AluTech d.o.o. Šibenik	2016	Shipbuilding, equipment production

Projects

Project Title	*Increasing development of new products and services resulting from research and development activities*
Abstract	*The aim of the project is the allocation of state aid for research and development activities of the business sector in order to develop new products, services, technologies and improve business processes and increase their cooperation with scientific research institutions.*
Project partners	*Acceptable partners are micro, small, medium and large enterprises and or organizations for research and dissemination of knowledge to contribute their knowledge and research capacities in the implementation of projects of research and development.*
Year	*2014*
Sector	*Small shipbuilding/boatbuilding companies, with boats up to 100 GT*

Project Title	*Support for the development of Centres of competence*
Abstract	*The aim of the project is to improve the innovation environment and increase activities of research, development and innovation in the business sector through the development of centers of competence and implementation of research and development projects of the business sector, especially those aimed at the development and applied research and commercialization of results.*
Project partners	
Year	*2014*
Sector	*Small shipbuilding/boatbuilding companies, with boats up to 100 GT*

Project Title	*Commercialization of innovation in the enterprise*
Abstract	*The objective is to support projects aimed at new products and services with higher added value that have a positive impact on business results and growth of the company and the market potential internationally.*
Project partners	
Year	*2014*
Sector	*Micro, small and medium enterprises which includes small shipbuilding/boatbuilding companies, with boats up to 100 GT*

Project Title	*BALMAS*
Abstract	*The objective is supported development of newly created enterprises and successful transfer of their innovative ideas into successful business ventures and creating new innovation-oriented enterprises with growth and export potential, with a focus on the commercialization of products and services.*
Project partners	*Institute for water of the Republic of Slovenia*
Year	*2013-2016*

Sector	*Shipbuilding*

Project Title	*Innovations newly established SMEs*
Abstract	*The objective is supported development of newly created enterprises and successful transfer of their innovative ideas into successful business ventures and creating new innovation-oriented enterprises with growth and export potential, with a focus on the commercialization of products and services.*
Project partners	
Year	*2014*
Sector	*Micro, small and medium enterprises which includes small shipbuilding/boatbuilding companies, with boats up to 100 GT*

Activities/initiatives

Activity/Initiative name	*Sorta*
Brief Description	*Theory and practice of shipbuilding* *Demonstration that the professional and scientific component of shipbuilding can help its practice, as well as vice versa, through international guest lectures, the selection of relevant professional and scientific papers and international cooperation of the symposium participants*
Year	1974 -
Relevance	International
Stakeholders involved	Shipbuilders and ship designers, research players and universities

Activity/Initiative name	*Shipbuilding journal*
Brief Description	*The journal is devoted to multidisciplinary researches in the fields of theoretical and experimental naval architecture and oceanology as well as to challenging problems in shipping, shipbuilding, offshore and related industries worldwide.*
Year	1950-
Relevance	National
Stakeholders involved	Shipbuilders and ship designers, research players and universities

Activity/Initiative name	*Mare Nostrum*
Brief Description	*The main purpose of the Association is to promote shipping interests, to advocate for satisfactory and competitive shipping conditions as to encourage a safe, reliable and valuable shipping. As an association of employers, we participate in social dialogues with other social partners and are a signatory of the National Collective Agreement for Croatian Seafarers.*
Year	*1991-*
Relevance	*National*
Stakeholders involved	*Shipping companies*

Activity/Initiative name	*Ships propulsion plant of high efficiency and low emissions to the environment*
Brief Description	*The objective of this research program is to investigate and find a way and means for mutual harmonization of machinery, equipment and systems of*

	the ships propulsion into optimum propulsion plant.
Year	*2007-*
Relevance	*National/International*
Stakeholders involved	*UNIRI RITEH*

2.2.4 Maritime policies and initiatives in the Country

The maritime industry is focused on innovation, not only in our own production, but also by encouraging research and development and design throughout the supply chain, and therefore plays an important role integrator of innovative technology. One of the key institutions in the Croatian shipbuilding – Hrvatska brodogradnja - Jadranbrod dd - is a corporate body that coordinates the performance of privatisation process of Croatian shipbuilding and also evaluates the Croatian shipbuilding in the international shipbuilding market.

Goal of the maritime development strategy is to strengthen the role of maritime affairs in the development and competitiveness through policies and initiatives for sustainable growth of economic activities at sea and along the coast. The goal is to increase the impact of Croatian maritime sector to the European and world markets, evaluating the exceptional geographical position of the Adriatic Sea and its ecological features, as well as the development of high technologies and services in the marine on the foundations of traditional knowledge and acquired skills, taking special care of the high availability of effective and modern public services in shipping, marine environmental protection and navigation safety.

A competitiveness cluster is a sector specific non-profit organisation, identified and established on the initiative of the Government of the Republic of Croatia, which brings together the commercial, scientific and policy making communities in a formal structure. The intention is to gather the best players in their field – small, medium and large companies, public institutions and science and research institutes to develop synergies and cooperative efforts. The outcome of this synergy will be increased national sector competitiveness.

The reference for offshore gas energy is the reference is The Ministry of Economy, Business and Trade. They are responsible for licenses issuance, safety, control, surveillance and technical management of the activities.

Description of maritime policies and program

Strategy title	***MARITIME STRATEGY DEVELOPMENT AND INTEGRATED MARITIME POLICY OF THE REPUBLIC OF CROATIA***
Reference	*Government – July, 22nd 2014*
Issuing entity	*Government of Croatia*
Description of the background, motivations for the definition of the strategy regulation	*Croatian ports annually manage 19 million tons of cargo, and transport over 12 million passengers. Ports are integrated into a comprehensive network of European traffic corridors. In addition, the annual average of 60,000 foreign pleasure craft annual sail around all of coastline. Croatia has about 22,000 sailors, of which about 14,500 sailors operating in international voyages on ships of Croatian and foreign flags. Based on the above potential, and with the vision of Croatian as a developed and recognized maritime country Strategy sets two core strategic objectives.*
Description and objectives	*Objectives:*

of the strategy	*1. Sustainable growth and competitiveness of the maritime industry in the area:* *- Increase in gross tonnage Croatian fleet by 60 percent through tax and fiscal measures,* *- Increasing the share of maritime transport in relation to other types of traffic (from the current 22 to 24 percent, and all the measures for further development of the shipping industry* *- Improving the quality of public service delivery system between the mainland and between the islands, while reducing the need to subsidize the coastal liner shipping per transported passenger* *- Increasing the proportion of officers in the total number of sailors from 64 to 70 percent of the development and promotion of Croatian as well as international centres of excellence for the training of seamen* *- Furthermore, the port system through the Maritime Strategy is experiencing a radical change because for the first time seeks to specialize harbour for certain activities* *- Education, and living and working conditions of seafarers.* *2. Safe and environmentally sustainable maritime transport, maritime infrastructure and Croatian maritime space.* *- Reduction in the incidence of marine pollution from maritime facilities* *- Increasing the number of services of individual public services per employee* *- Increasing the number of public electronic services maritime administration* *- Multiple increase engagement of Croatia in the work of international maritime institutions and organizations, and significant progress in scientific research in the field of maritime affairs.*
Period of activation	*2014 – 2020*

Specific operative initiatives

Title of the programme/intiative	*National development plan of ports of special (international) economic interest for the Republic of Croatia*
Reference strategy	*Maritime strategy development and integrated maritime policy*
Geographical area of vaidity	*Maritime regions*
Public funding (€), of which:	*670 000 €*
EU funds	*569 000 €, 85%*
National funds	*101 000 €, 15%*
Regional funds	*/*
Period of activation	*2015-2016*
Managing authority	*Ministry of Maritime Affairs, Transport and Infrastructure*
Implementing actor	*Administration of maritime and inland waterways, shipping, port and maritime property*
Beneficiaries	*Maritime shipbuilding and transport industry*
Description and objectives of the initiative	*The objective is to create a business, technological, infrastructural and organizational framework that will guarantee:* *- uniform, coherent and sustainable development of ports of economic*

	interests and international importance *- to strive to achieve positive competitiveness of our ports compared to the ports in the region* *- providing of favourable conditions for the establishment and maintenance of business and financial self-sustainability of key economic entities port operations*
Type of supported activities	- *development and production of project,* - *promotion and visibility of the project,* - *project management services.*
Type and intensity of the public funding	*This contract is co-financed under the Operational Program "Transport" for the period 2007-2013. through the European Regional Development Fund in a way that Operational Program "Transport" co-finances 85% of eligible project costs while the remaining amount of 15% of eligible project costs bears the Ministry of Maritime Affairs, Transport and Infrastructure*

Title of the programme/intiative	*National plan of development of ports open to public traffic of county and local importance*
Reference strategy	*Maritime strategy development and integrated maritime policy*
Geographical area of vaidity	*Maritime regions*
Public funding (€), of which:	*802 666 €*
EU funds	*682 266 €, 85%*
National funds	*120 400 €, 15%*
Regional funds	*/*
Period of activation	*2015-2016*
Managing authority	*Ministry of Maritime Affairs, Transport and Infrastructure*
Implementing actor	*Administration of maritime and inland waterways, shipping, port and maritime property*
Beneficiaries	*Ports of Rijeka, Ploče, Šibenik, Split, Zadar, Dubrovnik and local ports*
Description and objectives of the initiative	*These national plans will determine the exact development direction of each port, the necessary investments and the dynamics of investments to realistically and responsibly monitor real needs of the ports. The adoption and implementation of the development plan will define the main guidelines for further investment in port infrastructure and services to achieve the general and specific objectives. General objective of the project is the need for creating an effective model of governance and the development of maritime passenger transport system and improvement of the efficiency of connecting the coastal and island areas and the quality of port services.*
Type of supported activities	- *development and production of project,* - *promotion and visibility of the project,* - *project management services.*
Type and intensity of the public funding	*This contract is co-financed under the Operational Program "Transport" for the period 2007-2013. through the European Regional Development Fund in a way that Operational Program "Transport" co-finances 85% of eligible project costs while the remaining amount of 15% of eligible project costs bears the Ministry of Maritime Affairs, Transport and Infrastructure*

2.2 INITIATIVES, TOOLS AND PRACTICES FOR CLUSTER MANAGEMENT

Introduction (general and for all partners)

The term cluster started being used to identify – in the industrial framework of the industrial policies -, any initiative able to enforce and implement organized efforts supporting a group of actors with common interests expressed through the action of a cluster organization providing specific support towards the reference sector.

The Smart Guide on Cluster Policy[44] define them as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are representing groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialized expertise, services, resources, suppliers and skills.

Cluster bring out territory's features but they could be structured in tailored cluster management organizations. The latter are legal entities supporting the strengthening of collaboration, networking and learning in innovation clusters and act as innovation support providers by providing or channelling specialised and customised business support services to stimulate innovation activities, especially in SMEs. They are usually the actors that facilitate strategic partnering across clusters but it's important to underline that role and tasks are generally recognized and defined in national and/or regional level with specific regulations defining role and competences that could be different in each territory. In the project activities, it will be of primary importance to focus on current state of cluster management organization, in order to provide clear details on the current national and regional situation, finding out main features necessary to share practices and details among all territories involved.

2.2.1 Clusters and Cluster management organization

Croatian competitiveness clusters were starting base process of entrepreneurial discovery during development S3. The process will be continued through the support of clusters established through the strategic project and providing the necessary information and data to understand the current status, their objectives and supported action plans to achieve the defined objectives. To stimulate the development and growth of the economy, the Government has decided to group all public, private and scientific research representatives in innovative sectors, with the aim of strengthening the competitiveness of companies, and consequently the economy and society. Clusters of competitiveness are designed as non-profit organizations that bring together all the best economists in a particular sector - small, medium and large companies, representatives of regional and local government and scientific research institutions, in order to establish synergy and mutual cooperation in order to strengthen economic competitiveness sector at the national level. Stakeholders from public, private and scientific research sectors represent the concept of 'Triple Helix', which is the fundamental structure of Croatian cluster competitiveness. The ultimate effectiveness of the cluster is determined by the quality of established communication and cooperation within the formal structure of clusters. Agency for Investment and Competitiveness and the Ministry of Economy have played a vital role in identifying, supporting and creating Croatian cluster competitiveness.

[44] European Commission (2016), *Smart Guide to Cluster Policy*, Guidebook series, How to support SME Policy from Structural Funds, Ref. Ares (2016)2507138 - 31/05/2016, European Union

CLUSTER	
Name of the cluster	*Croatian maritime industry competitiveness cluster (MarC)*
Territorial dimension of the cluster	*National*
Reference maritime sectors	*Shipbuilding and boatbuilding, equipment production, leisure working and living, maritime transport*
Initiatives for cluster development	*Participation to networking event organized by tailored institutions or actors (government bodies, chambers of commerce, development agencies), relations with other regional, national and foreign clusters*
Tools for cluster development	*Organization of various workshops and meetings in order to support development of research and innovation projects, training and education, internationally connecting with other clusters and mutual communication and cooperation within members of the cluster.*

CLUSTER MANAGEMENT ORGANIZATION	
Formal name of the cluster management organization	*Hrvatski klaster konkurentnosti pomorske industrije*
Country	*Croatia*
Region (NUTS II)	*Zagrebačka*
Province (NUTS III)	*Grad Zagreb*
Address	*Radnička cesta 80*
Phone Number	*+385 1 6286 800, +385 1 6286 801*
Email	info@marc.hr
Website	www.marc.hr
(Legal entity)	*Association*
Year of establishment	*2013*
Reference sector's dimension	*100-250*
N. of stakeholders collaborating with the cluster	*32*
N. of associates	*38*
Services and tools organized for the cluster networking process	*Agreements and Memorandum of Understanding signed with other actors, participation to cluster networks, participation to technical and working groups and forums, representation role at regional, national and international level.*
Good practices for cluster management	*Conformity with cluster management recognized standards, constant relations with regional administration, balanced governance representing different stakeholder's categories, benchmarking with other regional and national clusters, technological observatory to monitor the territory, coordination and connection with education framework*

CLUSTER GOVERNANCE	
Description of governance model	*Board of Directors:* • *President* • *Vice-president* • *Representative of scientific research sector, 1 member* • *Representatives of the private sector, 3 members*

	• *Representative professional organizations or associations, 1 member* • *Representatives of local (regional government), 2 members* *General Assembly* - *Each cluster member has 1 - 64 votes, depending on the size and legal entity¸* *Administration* - *Agency for Investments and Competitiveness – legal and administrative support*
Links and connections with territorial administrations, research centers, educational institutes, government, other clusters and networks	*Graphic presentation*
Policies – cluster's role, relations and connections	*Policy is to encourage the development of projects within certain maritime areas, by promoting innovation and competitiveness through concrete projects, and strengthening the cooperation with international clusters and new communication channels, following the market trends and innovations.*