The role of Maritime Clusters to enhance the strength and development of European maritime sectors

Report on results

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INTRODUCTION

In this ‘Report on results’ the key results of the study ‘The role of Maritime Clusters to enhance the strength and development in maritime sectors’ are presented. The ‘Report on results’ focuses on the study’s main goals and findings. Detailed information can be found in the Annexes (tables and graphs).

In the ‘Report on results’ firstly an overview is given of the main objectives of the study. Then, the structure and economic key figures of the maritime clusters in the EU and Norway are assessed. This assessment is carried out by analysing existing employment data in the maritime sectors and Areas in the EU and by relating these employment data to the added value created. Also an indication of the production value (turnover) is included. On the basis of the employment and added value data, cluster strength is then measured in line with the methodology followed by the European Cluster Observatory, the Star Method¹. For a clear understanding also a brief description of the key maritime sectors is included, as well as information on the main trends and support measures targeted at the sea-related sectors.

Moreover, this ‘Report on results’ includes an analysis of the role of maritime cluster organisations based on performed field research and questionnaires. Conclusions are being made by means of recommendations and maritime cluster organisations’ good practices.

¹ Detailed information on definitions of the analysed sectors and the methodology of the Star Method is provided in the separate document ‘Overview of the applied research methodology’.
I. MAIN OBJECTIVES OF THE STUDY

The maritime industries throughout Europe contribute to the well-being of all Europeans as the volume of transportation is determined by the world trade of goods. The majority of external trade of the European Union is transported by sea. European ports handle almost 3.5 billion tonnes of cargo per year and more than 350 million people pass through these ports. Consequently, maritime transport (shipping) and its related services fulfil a vital role in the European landscape.

The maritime works sector provides dredging services and land reclamation. 40 % of the oil and 60 % of the gas consumed in Europe is drilled offshore. The seas around Europe also provide a range of energy transport routes, via shipping, submarine pipeline net-works, and electricity interconnectors. They are also important for carbon-neutral energy generation, through the rapid development of offshore renewable sources of energy, and the seabed’s potential for permanent CO₂-storage. Europe's coastal regions are also home to maritime industrial activities, such as shipbuilding and among the world's top destination for tourists. With an annual average growth rate of some 10%, cruise tourism is a booming industry.² The fisheries sector provides a major food source and is an important employer in certain regions of Europe.

Europe has an important maritime industry with a strong global position in many (sub) sectors. The question is how to maintain and strengthen the competitiveness of the maritime clusters even more. Over the last decade, in most Member States there has been an increased attention for the maritime sectors and, meanwhile, many countries moved in the direction of having their maritime industries represented by a cluster organisation. In November 2005, also, a European Network of Maritime Clusters (ENMC) has been established, where the national cluster organisation meet regularly and where coordinated efforts to promote the European maritime sectors are worked out. The European Commission has recognised the importance of maritime cluster initiatives at the recent ENMC-meeting in Rome (October 2008) and, among other documents, in the Staff Working Documents on

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Maritime Clusters\(^3\) and the role of clusters and cluster policies with regard to competitiveness and innovation\(^4\), and the Blue Paper\(^5\).

The main objective of the study is to enhance the exchange of knowledge and experience: knowledge on the size, specialisation and focus of the maritime sectors or clusters (mapping) and experience within the different cluster organisations. Ultimately, this may provide building blocks for evidence-based policy development in line with the Blue Paper and its aim to contribute to sustainable development and the competitiveness of the maritime sectors.

The title of the study, ‘The role of Maritime Clusters to enhance the strength and the development of the European maritime sectors’, is foremost understood as the role of the maritime cluster organisations (as the entities to enhance the cluster awareness). Hence, an overview of the European maritime cluster organisations, their success factors and their role in developing cross-cutting approaches and tools in the maritime sphere is necessary. With this information, in addition to a clear mapping of the maritime clusters within the framework of the European Cluster Observatory\(^6\), it will become easier to work out relevant future policy initiatives.

This report presents the following key results:

- An overview of European maritime clusters showing their main economic features;
- Assessment of success factors and the future role of maritime clusters in maritime policy development.

\(^3\) SEC(2007) 1406, 17.10.07.
\(^6\) The results of this study will be included in the European Cluster Observatory. More information regarding the methodology of the European Cluster Observatory is available on www.clusterobservatory.eu.
II. OVERVIEW OF MARITIME CLUSTERS, TRENDS AND POLICIES

II.1. ECONOMIC INVENTORY OF THE EUROPEAN MARITIME CLUSTERS

A cluster is defined, by Professor Michael Porter, as a geographically proximate group of inter-connected companies and associated institutions in a particular field, linked by commonalities and complementarities (external economies). External economies that occur within a cluster are the economic and financial inter-sector relations, a common knowledge and technology base, and a shared labour market.

The European maritime cluster has a strong position in the maritime world. The following examples substantiate this claim:

− European ports handle almost 25% of world seaborne trade;
− European ship owners control almost 40% of the world fleet;
− Europe is world’s number one tourist destination with coastal tourism being one of its main attraction pools;
− European shipbuilding has been the region with the highest global turnover for most of the last decade;
− European yacht builders produce 60% of the mega yachts;
− European dredging companies have 80% market share of the open market;
− 40 % of the oil and 60 % of the gas consumed in Europe is drilled offshore;
− Europeans dominate the market for renewable offshore energy;
− European services, maritime research, inland shipping, fisheries and Navy are world leading sectors.

Regarding the economic inventory, with detailed focus on direct added value and employment, maritime sectors are divided into clusters (or Areas) in order to focus on developing a European cross-cutting policy approach for the sea-related sectors (combining offshore and coastal activities):

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- Area 1: Traditional maritime sectors;
- Area 2: Coastal (and marine) tourism and recreation;
- Area 3: Fisheries.

The direct employment and added value figures are based upon existing data sources. These data are assessed to obtain comparable economic indicators for all EU Member States and Norway. Differences between the employment figures used in this study and the employment figures originating from national maritime cluster organisations are analysed in Annex 4. Production value figures have also been analysed on a European level to allow in particular the sector’s representatives to capture the complete picture. Indirect and induced economic effects are excluded in this analysis. However, the role of a maritime cluster surpasses its own economic impact; in addition, it plays a key role in facilitating the functioning of the entire economy, e.g. by means of maritime transport facilitating international trade, and in generating indirect effects through purchases in the value chain.

Direct added value in all sea-related Areas amounts to € 186.8 billion or (an average of) 1.65% of the Gross Domestic Product (GDP) in the EU Member States and Norway. With an added value of 42% of the production value, this production value in all the sea-related sectors amounts to some € 450 billion. About 4.78 million persons are directly employed in the sea-related Areas, representing 2.25% of all European employment. The average added value per person employed is therefore approximately € 39 000. In Figure 1 the direct value added and employment of all sea-related sectors in the EU and Norway is presented per country.

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9 The direct production value of a sector is the sum of all the intermediary purchases (purchases both in a country and in a foreign country) and the added value. Direct added value in a sector consists of the sum of a sector’s labour costs, depreciations and result. The sum of direct added value of all sectors in all EU-countries equals Europe’s Gross Domestic Product (GDP).

10 More information about the definitions of these Areas and sectors is provided in the separate document ‘Overview of the applied research methodology’.

11 Indirect added value and employment (i.e. added value and employment resulting from intermediary purchases with other sectors within the EU made by the maritime sectors) are not taken into account in this study. More information concerning the value added-concept and the relating (indirect) effects is provided in the separate document ‘Overview of the applied research methodology’.

12 In the study Economic impact of maritime industries in Europe (2001; figures for 1997), the value added of sea-related sectors in EU-15 was also analysed. After correction for inflation and when comparing the same maritime sectors (Navy and coastguard, marine aggregates and coastal tourism were not included in the 2001-study), the total direct value added has increased by some 30% in 2006 when compared to 1997.

13 See Footnote 9.

14 In the study Economic Impact of the Maritime Industries in Europe (Policy Research Corporation, 2001), which focused on the economic analysis of the traditional maritime sectors in 15 Member States and Norway, it was found that (after correction for double counting and cross-border effects) for every euro direct added value, € 0.59 indirect added value was realised. Translating this ratio to the €186.8 billion added value in all sea-related Areas in the current study would result in an indirect value of about € 110 billion. This figure is only a rough estimate of the actual indirect economic effects – giving a first idea on the size of these effects – and should be treated as such.
Of the added value in the sea-related Areas, 66% is generated in Area 1, 25% in Area 2 and 9% in Area 3. Employment in the sea-related Areas consists of 40% generated in Area 1, 51% in Area 2 and 9% in Area 3. The traditional maritime sectors (Area 1) take a larger share in added value than in employment because of the relatively high added value per person employed in this Area (i.e. € 64 400). Consequently, the added value per person employed in Area 2 (€ 19 300) is relatively low because the share of employment in coastal tourism is larger than its share in the added value of all sea-related Areas.

The production value in the European traditional maritime sectors (Area 1) amounts to over € 300 billion. The direct added value in these sectors amounts to € 123.6 billion in all EU Member States and Norway. Direct employment amounts to 1.92 million persons. In terms of added value the traditional maritime sectors represent a share of 1.09% in the total GDP in the EU-27 and Norway. For employment this share amounts to 0.90%. A European overview of employment and added value in the traditional maritime sectors is provided in Figure 2.

Countries with the strongest traditional maritime sectors (top-4) are the United Kingdom, France, Germany and Italy. In these countries the traditional maritime sectors account for 0.5% to 2% of GDP. The value added per person employed is higher in the north-western European countries than in the more southern countries, as visualised in Figure 2.
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Figure 2: Added value and employment in EU Member States and Norway in the traditional maritime sectors (Area 1)

**Added value**
Direct (≠ direct) added value = 123.9 billion euros

**Employment**
Direct (≠ direct) employment = 1.92 million persons

Source: Policy Research Corporation

In Figure 3 an overview is provided of the added value in the traditional maritime sectors. The sectors shipping\(^{15}\), seaports and marine equipment are the largest maritime sectors in Europe in terms of added value (in Area 1). In 2000, the same sectors were also the largest European traditional maritime sectors\(^{16}\). Although European inland navigation and maritime works do not have a large share in the total sea-related sectors, these European sectors have a top-class or world leading market position.

\(^{15}\) Shipping includes only EU-resident seafarers because although non-resident seafarers receive their income from EU-based companies, they – in general – transfer a very large share of that income to non-EU countries resulting in expenditures outside the EU. E.g. Non-resident seafarers working for Dutch shipping companies amount to 13 710 (6 140 resident shipping personnel) and non-EU seafarers working for Italian based companies amount to 14 000 (22 800 resident shipping personnel), for more data on non-resident seafarers, see also the Ecotec Study http://ec.europa.eu/maritimeaffairs/studies/employment/main_report.pdf (Source: Ecotec (2006)).

The added value in coastal (and marine) tourism and recreation (Area 2) amounts to € 46.6 billion or 0.41% of the total GDP in the EU Member States and Norway. About 2.42 million persons are employed in the coastal tourism sector, representing 1.14% of total EU-employment. Production value in coastal tourism amounts to about € 110 billion. Figure 4 presents the added value and employment in the EU Member States and Norway for coastal tourism. The main countries in coastal tourism – both in terms of added value and employment – are in the Mediterranean area, i.e. Spain, Italy, France and, Greece and the countries near the Atlantic Ocean, i.e. the United Kingdom and Portugal.

Source: Policy Research Corporation
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Figure 4: Added value and employment in EU Member States and Norway in coastal (and marine) tourism and recreation (Area 2)

**Added value**

Direct (Σ direct) added value = 46.6 billion euros

- 2 000 million euros of added value

**Employment**

Direct (Σ direct) employment = 2.42 million persons

- 300 000 persons employed

Average value added/employee = € 19 300

Source: Policy Research Corporation

In fisheries (Area 3) the production value in Europe amounts to about € 30 billion. Fisheries in EU-27 and Norway generate an added value of € 16.2 billion or 0.14% of total GDP. Employment in fisheries amounts to 444 000 persons or 0.21% of Europe’s total employment. In Figure 5 the added value and employment in the EU Member States and Norway in fisheries is provided. Most employment in fisheries is situated in the Mediterranean region, whereas the average added value per person employed is higher in the more northern countries.
II.2. RESULTS OF THE STAR METHOD

The results of the Star Method\textsuperscript{17} are provided for the sea-related Areas 1, 2 and 3. The Star Method is an instrument to measure cluster strength. It is based upon the three strength indicators ‘size’, ‘specialisation’ and ‘focus’. A region can gain a star based on the employment and value added generated by a maritime cluster within a region in Europe and on the following definitions:

- **Size**: Top-10 percentile of employment (or added value) in sea-related Area in all observed regions;
- **Specialisation**: Top-10 percentile of Specialisation Index\textsuperscript{18} in an Area (cluster) in all observed regions;
- **Focus**: Top-10 percentile of share of employment (or added value) in a sea-related Area in comparison to total employment (or added value) in a region.

Figure 6 provides an overview of the star-regions in the traditional maritime sectors. The number in the middle of the star (1, 2 or 3) shows the number of strength indicators in which the region excels. However, some precaution is required when interpreting the number of stars of a region, because these stars do not always fully reflect the complexities of specific circumstances; i.e. it is possible for

\textsuperscript{17} A detailed overview of the methodology of the Star Method is explained in the separate document ‘Overview of the applied research methodology’.
a strong maritime cluster to not receive three stars because of, for example, the strong presence of other economic activities in the same region.

Figure 6: Star Method applied with regard to added value and employment in Area 1

Source: Policy Research Corporation

As shown in Figure 6, the regions receiving the most stars for employment and added value in the traditional maritime sectors (Area 1) are located in Northern and Western Europe, more specifically in the Hamburg-Le Havre Range. Stars for added value in the traditional maritime sectors shift more towards western regions when compared to stars for employment. The main reason for this trend is the higher added value per person achieved in western European countries.

The ‘three-star regions’ for value added and employment in Area 1 are the following:
- Liguria (Italy) both for added value and employment;
- Vestlandet (Norway) both for added value and employment;
- Haute-Normandie (France) both for added value and employment;
- Agder øg Rogaland (Norway) for added value;
- Mecklenburg-Vorpommern (Germany) for added value;
- Sud-Est (Romania) for employment;

18 The Specialisation Index is the sum of the squared sector shares within a cluster and departs from the Specialisation definition currently used by the European Cluster Observatory. The latter appears to be correlated with the Focus star and is therefore not withheld by Policy Research.
– Pomorskie (Poland) for employment.

In north western European countries there are no ‘three star regions’, mainly because they rarely receive stars for Focus as a result of the strong presence of other economic activities within the same region.

*Figure 7* shows the stars that are awarded for added value and employment in coastal (and marine) tourism and recreation (Area 2). ‘Three star regions’ in Area 2 are the Spanish regions Canarias and Illes Balears, and East Wales (UK). Compared to the stars for Area 1, the stars in Area 2 are more located in southern European regions. In this Area, there is no significant difference between stars for added value and employment.

*Figure 7*: Star Method applied with regard to added value and employment in Area 2

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*Source:* Policy Research Corporation

*Figure 8* gives an overview of the stars awarded to regions based on employment and added value in fisheries (Area 3). ‘Three star regions’ in terms of added value and employment are:

– Galicia (Spain) both for added value and employment;
– Bretagne (France) both for added value and employment;
– Poitou-Charentes (France) for added value;
– North-Eastern Scotland (UK) for added value;
– Algarve (Portugal) for employment.
Stars for added value in fisheries are mainly located in North-Western regions, while stars for employment are more equally spread over Europe. Again, the reason for this trend is the higher added value (GDP) per capita achieved in North West-Europe. Especially Norway, UK and France take advantage of their relatively high GDP per capita. Fourteen regions within these countries receive a star for added value and nine regions in terms of employment. The Baltic States and regions in Poland and in Romania do not receive a star for added value although they do receive stars for employment.
II.3. MAIN TRENDS AND POLICIES IN THE MARITIME SECTORS

II.3.1. MARITIME TRENDS

II.3.1.1. European maritime cross-sector trends

This paragraph firstly focuses on the most important overall trends in the maritime sectors throughout Europe. The main cross-sector trends which have been analysed in this study based upon literature and field research are the following:

- Increase in Research, Development and Innovation (RDI-activities);
- Difficulties with regard to recruitment;
- Limited public awareness of the importance of maritime sectors;
- Sustainable development.

The first maritime trend is the increase of innovation, research and development activities, especially in marine equipment manufacturing and shipbuilding. European maritime (and non-maritime) manufacturing sectors face tough challenges in competing with low-cost and subsidising countries, mainly in Asia. European Intellectual Property Rights (IPR) have a limited effect on the production volumes in these third countries of copied European-designed equipment. To maintain their competitive advantage European companies specialise in know-how and expertise and focus on niches through RDI. However, these European companies do not always produce this equipment in Europe, but also in low-cost countries (in particular the production of vessel hulls).

Another cross-sector trend in the maritime sphere are the problems the sectors face regarding recruitment. It proves to be difficult to attract potential employees and young people to the maritime sectors, in particular to the offshore professions. The main reason for this trend is the increasing importance of a work-life balance in modern society – in particular offshore employees are faced with this challenge – and the ageing of officers. Moreover, attracting people to offshore activities is not only important for the shipping and offshore sectors, but also for the onshore maritime sectors when in a later stage of their career offshore staff are of great use because of their valuable experiences and competences (e.g. port and service related). Maritime clusters have a large labour mobility within their sectors. In the Netherlands almost 30% of maritime labour intake and outflow comes from or goes to other maritime sectors.

19 In this chapter the main trends and policies are provided. More trends in the maritime sectors are listed in Annex 7 and 8.
20 The Dutch shipyard Damen, for example, has production facilities in Poland, Romania, China, Cuba and Singapore. The mother company in the Netherlands focuses on design and sales rather than on the building phase.
21 BIMCO/ISF Manpower 2005 Update.
Limited public awareness of the importance of maritime sectors is another maritime trend. Maritime transport is one of the main facilitators of the world trade of goods and is thus of great importance to economies worldwide. However, because ports and their related manufacturing and services, and consequently ships, have for practical and safety reasons been moving away from cities, the public awareness of the importance of maritime transport seems to have been fading. Maritime sector and cluster organisations often indicate that this limited public awareness of the importance of their activities leads (or could lead) to the aforementioned recruitment difficulties and a shortage of government initiatives and policy.

Finally, because of increasing know-how and awareness of negative external effects on the environment and because of increasing fuel prices in combination with further measures to reduce operational costs, investments and initiatives are made in order to (further) sustainably develop the maritime sectors.

II.3.1.2. Specific maritime sector trends

Besides the above-mentioned cross-sector trends, for the following maritime sectors some key results are explained below:

- Maritime manufacturing\(^{23}\);
- Shipping;
- Seaports and marine services;
- Maritime works;
- Recreational boating;
- Offshore supply;
- Fisheries;
- Coastal tourism and cruise shipping.

In recent years, European maritime manufacturers have been shifting their activities towards the production of specialised ships (e.g. cruise, ferry, feeder, dredging), through advanced technological solutions, rather than low costs. Low-cost non-EU competition is mainly experienced in the production of relatively less complex ships. These non-EU competitors can often rely on lower labour costs and on advanced state-supported financing instruments.

Moreover, the complex and comprehensive interaction in shipbuilding projects between the various stakeholders (e.g. yards, suppliers, and owners) increases chances for the leakage of knowledge. Because European shipbuilders and suppliers depend more on technological leadership than low costs when compared to Far East competitors, this possibility of knowledge leaking (loss of know-how) may therefore be harmful to the European shipbuilding sector.

\(^{23}\) I.e. shipbuilding and marine equipment.
In the shipping sector, the trend to flag-out ships to open register countries is persistent since the 1970s. The European fleet faces competition from vessels registered in third countries, because of the reduction of crew, safety and environmental costs and corporate tax payments under open register flags. Nevertheless, European shipping succeeds in maintaining its key role in global transport with a substantial share (controlled fleet) of 41% of the global merchant fleet. Shipping, moreover, remains a growth sector because of the continued world trade increase and the impact of road congestion.

The main trend in seaports and maritime services is the focus on technologies in enhancing processes and management practices related to port productivity, logistics and environmental performance, rather than pure increase in infrastructure. Also, European ports are increasingly competing not as stand-alone focal points handling ships but as crucial links (hub) within supply chains. In that respect, supply chain managers increasingly base port choice decisions on reliability and capacity considerations other than pure cost considerations. In the field of maritime services a concerning shift of activities to Middle and Far East countries occurs because of active government policies in those regions focusing on attracting these services by providing incentives and creating a favourable business climate.

European maritime works is a world leading sector. The main companies are located in Belgium and the Netherlands, representing a share in the sector’s total employment of 21% and 27% respectively.

The recreational boating industry has enjoyed years of steady growth. In the coming years, a further annual growth of 5 to 6% is estimated. Reasons for this growth are the baby boom generation which is reaching its retirement age, increase of wealth, and the potential in emerging economies.

The EU offshore supply industry is closely related to the offshore exploration and production of oil and gas. European offshore oil and gas are mainly extracted in Norway, the United Kingdom, France, the Netherlands and Denmark. The depletion of the oil and gas resources in the course of the next decades as well as price fluctuations will have an impact on the exploration and production activities and thus on the offshore supply industry. In that respect, a shift towards supplying alternative energy producers (e.g. wind turbine parks) is likely to take place.

The main fisheries trend is the cumbersome position in which most companies operate and the ageing of the fleet. Companies are not able to withdraw because many among them are financed externally. Another fact in fisheries is that living aquatic resources are protected and conserved (EU’s Common Fishery Policy) in order to minimise the impact of fishing activities on marine ecosystems and the TACs show a negative outlook. New buildings are virtually impossible and the inter-sector relations with other maritime sectors have almost disappeared. In order to compensate for those European restrictions, fishermen sometimes expand their territory to other continents (e.g. Africa).
Although in particular Mediterranean regions still play a major role in coastal tourism, European coastal tourism is facing increased worldwide competition. Trends in coastal tourism are the demand for higher quality at the lowest possible price, the combination of sea-related activities with the natural and cultural heritage of the hinterland in the Atlantic and Baltic regions, the increasing concern for the preservation of this heritage, and the increasing cost of maintaining basic natural resources for tourism such as beaches and other coastal amenities.

The world cruise market continues to grow and the market share of European cruise passengers is rising and currently amounts to an 11% share of the global market. The European cruise market has become the world’s second largest destination after the Caribbean. The cruise sector is a European growth industry: between 1995 and 2005 European cruise tourism has increased with 230% to 3.3 million passengers. The cruise line industry is becoming increasingly concentrated due to mergers and acquisitions.

II.3.2. MARITIME POLICY

II.3.2.1. European maritime policy initiatives

On 10 October 2007, the European Commission launched its Integrated Maritime Policy, setting out its vision for a sustainable future for the oceans and seas, in the "Blue Paper". Among its aims are raising competitiveness of Europe's maritime economic activities and making the most of Europe's potential for research and innovation. It thereby recognised the value of maritime clusters as an instrument and stated that the Commission would encourage the formation of multi-sectoral clusters and promote a European network of maritime clusters. A more in-depth description of work underway in this area was also given in a separate Staff Working Document on maritime clusters. Under the Integrated Maritime Policy, the Commission promotes the application of integrated approaches to Maritime Policy also at the level of Member States, whereby it also raises attention for the role maritime clusters. As a follow-up to this Communication, Member States will provide information on national approaches, also to maritime cluster initiatives.

Maritime cluster activities are supported by the Commission's general policy on clusters, as outlined in its recent Communication "Towards world-class clusters in the European Union: Implementing the broad-based innovation strategy" and its accompanying support measures, such as under the PRO INNO Europe and Europe INNOVA initiatives.

24 The Impact of Tourism on Coastal Areas: Regional Development Aspects, 2008.
26 European Cruise Council, Contribution of cruise tourism to the economies of Europe, 2007.
In order to ensure a strong overall competitive position in the world, the European Commission also focuses on sectoral measures to improve **competitiveness and innovation** also under specific sectoral initiatives. This includes for example for the shipbuilding sector the LeaderSHIP 2015\(^{29}\) initiative and a specific Framework on State Aid to Shipbuilding\(^{31}\).

Regarding the competitiveness for the maritime transport sector, relevant initiatives include the initiative to develop a strategy for Maritime Transport until the year 2018, announced in the Blue Paper, the Ports Policy\(^{32}\), the development of Trans-European Networks (TEN-T), and within that context the Motorways of the Seas\(^{33}\) concept, which aims at introducing new intermodal maritime-based logistics chains in Europe to ensure fuller use will be made of the maritime transport resources. Each Member State has its individual shipping policy based on the State Aid legislation and guidelines applicable to maritime transport\(^{34}\), which provides the basis for a uniform level playing field. In these guidelines Member States are allowed to support the European shipping industry by means of favourable tax environments in order to reduce flagging-out of the European fleet.

The Commission also develops policy activities in the area of **tourism**, focussing on ensuring sustainable development, as described in its recent "Agenda for competitive and sustainable tourism" setting out a medium-long term strategy for tourism in Europe.\(^ {35}\)

The **European Fisheries Policy**, through the European Fisheries Fund, supports a Common Fisheries Policy that focuses on technical (environment-friendly), economical and social endurance. Secondly, it should improve the sustainable balance of fish-supply and fleet-capacity. Enhancement of the competitive strength of companies is the third goal of the fund. Finally, the fund aims to protect the environment and natural resources and promote sustainable development and quality improvement.

**EU Financial Instruments** can also provide funding for cluster-type initiatives. This concerns the European Regional Development Funds at the level of the regions and the EU Framework Programmes for Research and Technological Development (notably the Regions of knowledge programme fostering development, across Europe, of regional ‘research-driven clusters’, associating universities, research centres, enterprises and regional authorities\(^{36}\)). In this context, the European Marine and Maritime Research Strategy, ensuring a more integrated approach to research in this area on the basis of fostering a partnership approach, is also relevant.

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\(^{33}\) See also, [http://ec.europa.eu/transport/maritime/index_en.htm](http://ec.europa.eu/transport/maritime/index_en.htm).


II.3.2.2. Main national maritime policies

National maritime policy initiatives in favour of competitiveness for maritime sectors in general focus on the following main elements:

- Stimulation of RDI;
- Increase intake of personnel and improve education;
- Promotion of the maritime clusters;
- Implementation of the State Aid Guidelines.

Stimulation of RDI is achieved through programs and subsidies. The national maritime policy aims to improve RDI within the cluster – mainly for shipbuilding (and related marine equipment) –, mostly through government programs (State Aid). However, a framework to protect the patents and licenses (Intellectual Property Rights) resulting from the stimulation of RDI is a European matter that should be discussed in the European Commission.

Initiatives taken to increase the intake of maritime personnel are for example the organisation of seminars and job-fairs. These events aim to promote working in the maritime cluster and/or industry and to attract foreign labour forces. Moreover, by establishing and further developing and promoting maritime academies and training facilities, maritime education and training can be enhanced.

The goal of promoting the maritime cluster is to improve the public awareness of the importance of the maritime sectors. As explained in paragraph II.3.1.1, to highlight and positively influence the image of the maritime sectors programs and initiatives have been elaborated, such as the Blue Denmark initiative and Seavision in the UK.

Implementation of the State Aid Guidelines on maritime transport allows national governments to install a tax environment that allows European registers to contribute to limit flagging out of vessels. Keeping ships under the European register contributes to shipping companies’ decision centres remaining in Europe (and consequent activity in the related sectors).

More detailed information on the policies in the different maritime sectors and countries is provided in Annex 7 and in the country reports.

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37 See ‘Background country reports’ for more information concerning the national maritime trends.
38 See also Annex 12.
40 The Blue Denmark (and the blue movie) is a concept to raise public awareness and to promote working in the Danish maritime cluster.
41 SeaVision is a partnership of approximately 500 companies to upgrade the image and profile of the maritime sectors.
42 More information is provided in Annex 12.
II.3.2.3. Trends and policies in the maritime clusters in Singapore and Dubai

The trend analysis also covered non-European cluster approaches, for which examples from Singapore and Dubai were selected.

In the Singaporean cluster, companies from various sectors are represented such as shipping agents, cruise lines and offshore companies. The core of the maritime cluster is the port of Singapore, being one of the largest and most efficient container ports in the world and having a strategic location on the most important seafaring routes within Asia and on the routes to and from Europe and America.

Singapore is a governmental controlled state, with the state-controlled TEMASEK-holding as operator for, among others, maritime leader firms PSA and NOL. PSA, the Port of Singapore Authority, is a global terminal operator with headquarters in Singapore and with 5 000 employees in 16 countries; its goals seems to become the maritime centre of the world. Other leader firms are Singaporean Neptune Orient Line (NOL), being one of the largest container operators in the world, and Keppel Offshore and Marine, one of the world’s largest offshore oil rig builders. The facilitator of the maritime cluster in Singapore is the Maritime Port Authority.

The maritime cluster of Dubai shows many similarities with the cluster of Singapore: it is state-controlled, has a strategic location as transhipment port for intra Asian trade and trade from and to Europe and has a major global terminal operator, DP World. Part of the port of Dubai consists of a free trade zone where the main industrial companies are located. In the future, Dubai Maritime City will host the whole maritime cluster in Dubai on a new island to be built by offering top infrastructure, services and regulations. The goal is to create an environment that will promote the networking and integration of maritime players.

For further information on this, see also Annex 8.
III. ASSESSMENT OF THE ROLE OF MARITIME CLUSTER ORGANISATIONS

III.1. ARCHETYPES AND MAIN CHARACTERISTICS OF MARITIME CLUSTER ORGANISATIONS

Maritime cluster organisations are defined as organisations that aim to enhance the strength of their maritime cluster. By definition, maritime cluster organisations capture more than one maritime sector. Besides cluster organisations that provide a platform for all companies in sectors that are related to each other, sector associations link all companies and/or organisations within a specific sector. Consequently, cluster organisations and sector associations complement each other. In that respect, sector associations often join a cluster organisation to team up with other sector associations and companies in order to cooperate on the realisation of common interests43.

In Figure 9 an overview is presented of the main differences and similarities between cluster organisations and sector associations.

43 A brief overview of the main differences and similarities between cluster organisations and sector associations is provided in Annex 10.
The role of Maritime Clusters to enhance the strength and development of maritime sectors

Figure 9: Main differences and similarities between cluster organisations and sector associations

<table>
<thead>
<tr>
<th>Maritime cluster organisation</th>
<th>Sector associations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong>: Enhance the strength and development of the members</td>
<td><strong>Purpose</strong>: Enhance the strength and development of the members</td>
</tr>
<tr>
<td><strong>Cooperation</strong>: Cooperate with sector associations, companies, government and research institutions</td>
<td><strong>Cooperation</strong>: Cooperate with sector associations, companies, government and research institutions</td>
</tr>
<tr>
<td><strong>Geography</strong>: European, national and regional level</td>
<td><strong>Geography</strong>: European and national level</td>
</tr>
<tr>
<td><strong>Scope</strong>: Provides a platform for all companies in sectors that are related to each other</td>
<td><strong>Scope</strong>: Links all companies and/or associations within a specific sector</td>
</tr>
<tr>
<td><strong>Main topics covered</strong>: Labour, exchange of know-how, innovation and research, image building, environment and, public affairs</td>
<td><strong>Main topics covered</strong>: Exchange of know-how and lessons learned, business development, lobbying</td>
</tr>
<tr>
<td><strong>Origin</strong>: Mainly established after 1990 by small group of strong promoters (often located within Shipowner’s offices)</td>
<td><strong>Origin</strong>: Mainly established before 1990 by sectoral and thematic groups (of companies)</td>
</tr>
</tbody>
</table>

- Sector associations are mostly member of cluster organisations in order to cooperate on the realisation of common interests
- To emphasize the benefits of partnering up in a cluster organization, it has proven to be useful to cooperate on specific, well-defined topics such as Waterborne and the Maritime Innovation Forum (useful additional fora for cooperation and essential partner organisations for clusters)

Source: Policy Research Corporation

After looking into the representation of maritime cluster organisations in European star-regions, the main similarities and characteristics of these cluster organisations are analysed in this chapter.

Most European maritime star-regions are represented by a national and/or a regional cluster organisation. This indicates that most European countries with a star-region in the sea-related sectors have access to those sectors through a maritime cluster organisation.

There are basically two possible approaches for maritime cluster organisations as to the initiative to establish a cluster. This initiative can be categorised in government-induced organisations (top-down) and cluster organisations induced by leader firms and/or sector associations (bottom-up).

Figure 10 provides an overview of the main characteristics of top-down and bottom-up cluster organisations.
The main goal in establishing cluster organisations is the installation of a structure that provides clear solutions for cluster-issues (e.g. labour market and innovation), regardless the initiator of that cluster organisation. The main issues at the basis of the establishment of a maritime cluster organisation are to increase competitiveness, to promote maritime sectors, and to improve coordination within the cluster.

The organisational structure of these organisations depends on a different climate and/or environment influenced by traditions, history, culture, governmental structure and driving sectors. Basically, cluster-issues need to be handled within the cluster organisations based on the following key elements:

- Transparency and communication/dialogue, both horizontally and vertically, on the mission, structure and activities of the cluster organisation;
- The presence of leading individuals within the cluster organisation who can raise enthusiasm and set up clear actions in view of a clear and supported vision.

In terms of scope, maritime clusters cover different geographical areas. The focus of the organisations can be on an international and/or European, a national, a regional (incl. cross-border) or a local level. A clear distinction between the main characteristics and activities of national and regional maritime cluster organisations can be made. Next to their geographical scope, these organisations show differences and similarities in several topics.

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### Figure 10: Classification of maritime cluster organisations (top-down vs. bottom-up)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>‘TOP-DOWN’</th>
<th>COMBINATION</th>
<th>‘BOTTOM-UP’</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g. Germany</td>
<td>E.g. Dutch Maritime Network</td>
<td>E.g. Maritime Forum in Norway</td>
<td></td>
</tr>
</tbody>
</table>

#### Characteristics

- **‘TOP-DOWN’**
  - Government induced and/or supported
  - Holistic and cluster wide approach
  - Focus on long-term strategy and policy:
    - Economy (e.g. level playing field and growth)
    - Education and recruitment
    - Research, development and innovation
    - Export
    - Common interest (e.g. environment and safety)
  - Focus on professionalism and cooperation/integration of maritime sectors

- **‘BOTTOM-UP’**
  - Induced and/or supported by strong leader firms and/or sector associations
  - Limited cluster approach based on supporting companies and sector associations
  - Focus on short-term benefits:
    - Rules and regulation
    - Tax regime
    - Labour market and job promotion
    - Innovation project support
    - Export support
  - Focus on operational problems

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Source: Policy Research Corporation

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*Policy Research Corporation*
A first **difference** is that national cluster organisations, in general, were established in an earlier stage than regional organisations. Also, their purposes differ. While national organisations focus more on establishing a strategic framework, regional organisations focus more on improving local development and operations.

Other differences are the main topics covered by national and regional maritime cluster organisations. National clusters mainly cover topics concerning the labour market, the exchange of know-how, innovation and research and, image building. Regional cluster organisations mainly cover topics like local business development and exchange of know-how. Another difference between the two cluster organisations is the higher budgets of national cluster organisations to finance activities and initiatives.

The establishment of national and regional maritime cluster organisations is driven by a similar rationale and these organisations have almost **similar** types of members that are active in the cluster organisation. Except for national top-down cluster organisations, companies and sector associations are involved as members in the activities of the cluster organisation (see Figure 11).

**Figure 11 :** Most common structure of national and regional top-down and bottom-up cluster organisations

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**Source:** Policy Research Corporation

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44 In *Annexes 9-10* an overview is provided of the main European, national, regional and local maritime cluster organisations.
National and regional bottom-up cluster organisations have on average 1 to 4 FTE employed. National and regional top-down organisations are mostly part of a ministry or a regional development agency. Moreover, both national and regional cluster organisations cooperate with the same parties, i.e. private companies, sector associations, government and research institutions. The last similarity is that these cluster organisations have their clusters almost always statistically monitored (economic significance) by an external organisation.

Most cluster organisations were founded within the last 15 years. The primary reason to establish a national and a regional maritime cluster organisation is to increase the competitiveness and the development of the maritime cluster and its organisations. Promotion and coordination are secondary reasons for establishing these organisations.

In terms of funding, there are differences in the organisation and/or associations that financially contribute to the cluster organisations. Also, significant differences exist between the level of the budgets that top-down and bottom-up cluster organisations receive. Top-down maritime cluster organisations exist in Germany and Denmark. These two organisations fund their activities with government budgets. The budgets of top-down maritime cluster organisations are far higher than those of bottom-up maritime cluster organisations, because they include the overall budgets of the government administration and RDI and/or maritime education programs as well.

The overview of the budgets of national bottom-up cluster organisations is given in Figure 12. These bottom-up organisations (mainly financed by private means) have significantly lower budgets to carry out their activities than top-down cluster organisations. Private funding, through membership contributions, own resources from activities and/or funds, is the largest in the Dutch, the French and the Swedish maritime clusters.

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45 Figure 12 gives an overview of the ten (partly) bottom-up inquired national maritime cluster organisations. More information concerning the inquiry is provided in the 'Overview of the applied research methodology'.
The role of Maritime Clusters to enhance the strength and development of maritime sectors

Figure 12: Share of private vs. public resources of national bottom-up cluster organisations

Another main difference between national maritime cluster organisations is the budget allocation of these organisations. In general, the main budget components for both national and regional cluster organisations are projects and studies, policy and framework and, data and information sharing. In Figure 13 an overview is presented of the main types of activities of national maritime cluster organisations represented as budget components. Important topics covered are labour, innovation and research, image building and marketing, and environmental performance.

Source: Policy Research Corporation based on data provided by the cluster organisations

46 The Dutch Maritime Network (NL) and Norwegian MARUT are more or less hybrid (i.e. both top-down and bottom-up) cluster organisations.
The type of members varies between maritime cluster organisations. Figure 14 shows the maritime sectors (i.e. private companies and/or sector associations belonging to that sector) that are active members of the national maritime cluster organisations. A universal method on how to define the sectors represented in a maritime cluster organisation does not exist. In this study sector definitions\(^{47}\) formulated by the European Network of Maritime Clusters are used to describe these sectors, as NACE-codes are not always present. Figure 14 indicates that the cluster organisations represent almost every traditional maritime sector – although in practice this does not (yet) always seem the case –, except for the sectors that only answer the broad definition of the maritime cluster\(^{48}\). Fisheries and coastal (and marine) tourism and recreation are sometimes members of the national cluster organisations.

\(^{47}\) The definitions of the sectors are provided in the ‘Overview of the applied research methodology’.

\(^{48}\) The members of the European Network of Maritime Clusters (ENMC) regard eight sectors as part of the maritime cluster from a narrow perspective: shipping, shipbuilding, marine equipment, seaports, maritime services, yacht building, offshore services and fishing. Three sectors can be added from a national, broader perspective: Navy and coastguard, inland navigation and maritime works.
Figure 14: Type of members of national cluster organisations in the sea-related sectors

Maritime cluster organisations cooperate on different levels. The transnational cooperation between national organisations – in Area 1 – mainly takes place on EU level through the European Network of Maritime Clusters (ENMC), although bilateral contacts with other national and regional maritime cluster organisations are also quite frequent. Regional maritime cluster organisations mainly cooperate with other regional and national cluster and sector associations. The main topics and activities of this cooperation are meetings/events, data and information sharing, exchange of lessons learned and best practices, policy initiatives, projects/studies, and publicity & promotion.

In Figure 15, an overview is presented of the main differences and similarities between national and regional maritime cluster organisations.
III.2. **Cluster benefits in theory and practice: Activities and organisational structure**

Clustering is not a goal in itself, but may be beneficial because of its link with economic prosperity: regions with a higher rate of employment in industries that belong to strong clusters appear generally more prosperous (higher GDP per capita). Other key aspects and benefits of clustering are related to⁴⁹:

- **Innovation**:
  - Clusters provide a fertile environment for innovation;
  - Clusters are a vital element of the Lisbon strategy;
  - Cluster firms benefit from the flows of tacit knowledge and the presence of skilled labour;
  - Cluster firms are more innovative than non-cluster firms;
  - Cluster firms register more trademarks (29% vs. 14%) and apply for more patents (29% vs. 12%);
  - Clusters are well aligned with the modern approach of ‘open innovation’ (innovation is created in open environments rather than by isolated organisations);

- **Specialisation**:
  - 38% of all European employees work in enterprises that are part of a cluster;
  - Individual cluster categories differ significantly in the level of employment concentration;

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The role of Maritime Clusters to enhance the strength and development of maritime sectors

- Europe lags on average behind the US in terms of cluster strength (probably due to the remaining barriers to cross-regional competition in Europe and differences in entrepreneurial cultures);
  - Outsourcing:
    - Cluster firms contract out more research (41% vs. 20%) and carry out less research in-house (44% vs. 53%).

The main theoretic benefits of cluster organisations’ activities can be divided into an increase in efficiency, an increase in level of business formations, and a higher level of innovation50.

Companies within a cluster can operate with a higher level of efficiency by drawing on more specialised assets and suppliers with shorter reaction times than they would be able to in isolation. Also, the level of business formations tends to be higher in clusters. Start-ups are more reliant on external suppliers and partners, all of which they find in a cluster. Clusters therefore reduce the costs of failure, as entrepreneurs can fall back on local employment opportunities in the many other companies in the same field. Thirdly, companies and research institutions can achieve higher levels of innovation. Knowledge spillovers and the close interaction with customers and other companies create more new ideas and provide intense pressure to innovate while the cluster environment lowers the cost of experimenting.

The main cluster benefits can be achieved through activities and initiatives and through the organisational structure of the maritime cluster organisation, which is the subject of the analysis in this paragraph.

III.2.1. ACTIVITIES AND INITIATIVES

Figure 16 indicates how the theoretic benefits of a cluster can be achieved through the activities of maritime cluster organisations. Firstly, an increase in internal and external communication with regard to the maritime clusters through promotion can enhance possibilities to cooperate efficiently. Secondly, by focusing on education, training and the labour market the level of business formations can be increased. Thirdly, focus on research, development and innovation contribute to obtaining a higher level of innovation.

### Figure 16: Good practices of national maritime cluster organisations based upon main cross-sector trends

<table>
<thead>
<tr>
<th>Cluster benefit</th>
<th>Approach</th>
<th>Main initiatives</th>
<th>Sector involvement</th>
</tr>
</thead>
</table>
| Promotion of the maritime cluster | Mainly project-based approach | – Promotion campaigns through websites, videos and presentations  
– Report on economic importance of the cluster  
– Organising promotion events | Almost all sectors are involved in these initiatives |
| Focus in maritime cluster organisation on education, training and the labour market | Project-based and structural approach | – Programs in cooperation with universities and professors  
– Recruitment campaigns and fairs  
– Platforms to exchange best practices | Almost all sectors are involved in these initiatives with leading roles for shipping and shipbuilding industry |
| Focus in maritime clusters on RDI | Project-based approach based upon (high budget) government support programs and structural approach | – On (governmental) project basis  
– Structural cooperation with RDI-institutes and universities  
– Platforms to exchange best practices | Almost all sectors are involved in these initiatives with leading roles for shipbuilding, marine equipment, offshore supply and shipping |

Source: Policy Research Corporation

Key activities and/or initiatives to support the abovementioned cluster benefits are:

− Promotion campaigns;
− Economic reports on the maritime cluster;
− Structural cooperation between cluster organisations and knowledge institutions;
− Specific (government) support programs;
− Platforms to exchange best practices.

**III.2.2. ORGANISATIONAL STRUCTURE**

Besides good practices of maritime cluster organisations based upon the type of activities they carry out, cluster organisations can optimise cluster benefits through their organisational structure. In order to optimise efficiency, to increase the level of business formations and to reach a higher level of innovation, this organisational structure should include all stakeholders which are logically linked to each other51, be it as an initiator or as a member of that organisation. These stakeholders should have an equal weight in the decision-making process within the cluster organisation. The logically linked stakeholders are governmental bodies, sectors represented by trade associations, private persons

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51 The sectors shipbuilding and shipping are, for example, logically related to each other. Shipbuilding is the supplier of shipping. Sectors that have limited logical links and/or relations with other maritime sectors experience limited cluster benefits.
and/or companies. A **public-private integrated cluster organisation**\(^{52}\) captures all these maritime stakeholders in order to have well-structured discussion between government and sector. Other important benefits of this public-private integrated maritime cluster organisation are:

- Cluster-wide approach;
- Focus on long-term growth and development as well as on (often short-term) sectors’ interests;
- Ability to create a level playing field through legislation;
- Sector involvement in the evaluation of the cluster organisation (through membership contribution);
- Improved communication both horizontally and vertically.

### III.3. SWOT-ANALYSIS OF MARITIME CLUSTER ORGANISATIONS

The SWOT-analysis of maritime cluster organisations distinguishes the strengths, weaknesses, opportunities and threats of top-down clusters and of bottom-up clusters\(^{53}\).

#### III.3.1. TOP-DOWN CLUSTER ORGANISATIONS

The main **strength** of top-down maritime cluster organisations is that they are initiated by the government and consequently aim to increase the growth of *all* maritime sectors within the cluster. This growth is supported by a long term strategy and policy, focusing on the improvement of research, development and innovation and the creation of a level playing field through legislation within the maritime cluster. Through RDI and legislation and relatively high budgets, top-down clusters can positively influence common interests (e.g. environment).

One of the identified **weaknesses** of top-down cluster organisations are the difficulties they experience in defining to which cluster(s) a sector belongs. This occurs, for example, in categorising ports. Ports belong both to the logistics cluster and to the maritime cluster. Moreover, it is not always clear which interests are at stake or how they can be aligned with other (maritime) sector interests. Another challenge is caused by the continuous balancing process between the interests of cluster organisations and those of sector associations, requiring continuous interaction. As a result of the widespread variety of interests, this often leads to a focus on more universal, softer themes. In this respect, the surplus value of the maritime cluster organisations needs to be proved constantly.

**Opportunities** for top-down cluster organisations are the increasing cooperation on European level to discuss best practices and lessons learned. A second opportunity is that cluster organisations could take the initiative (or be invited) to establish a single-point-of-entry to increase structural interactions.

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52 The organisational structure of the maritime cluster organisations of the Netherlands is an example of this public-private integrated maritime cluster. In Annex 12 an overview of this structure is provided.

53 Main characteristics of top-down and bottom-up maritime cluster organisations are provided in Paragraph III.1.
between the maritime cluster and the government. Another opportunity for top-down clusters is to increasingly involve sectors’ opinions in the structural evaluation of cluster organisations’ activities.

A possible threat for top-down clusters is the limited in-depth cooperation between the ministries involved in the maritime sectors. This limited cooperation could lead to suboptimal integrated maritime cluster policy. Another potential threat is that top-down maritime clusters have limited structural sector involvement. This may lead to focusing too much on long-term benefits for the maritime sectors that may hamper or conflict with the clusters’ companies short term interests.

### III.3.2. BOTTOM-UP CLUSTER ORGANISATIONS

The main strength of bottom-up cluster organisations is the enhancement of business efficiency and opportunities. This strength goes hand in hand with strong focus on finding solutions for operational problems. Moreover, cluster organisations are structurally evaluated by their members with implications on membership contributions. A third strength is the ability of the cluster to operate as a single-point-of-entry to the government to discuss sectors’ interests (e.g. tax and regulation). Also, bottom-up cluster organisations often take the lead in organising events (e.g. to promote working in the cluster) and in establishing issues platforms (e.g. to exchange best practices and lessons learned).

A weakness of bottom-up clusters concerns the differences in sector interests, sometimes leading to a difficult decision-making progress within the cluster organisations. This difference in sector interests often results in a rather narrow focus on softer themes (e.g. promotion). Furthermore, company and sector interests of bottom-up clusters are often not balanced. This potential imbalance is sometimes caused by differences in the weight and influence of members or supporting companies and sectors within the cluster organisations. In particular, this imbalance is often caused by the strong impact of the largest contributing members in the decision-making process. Another weakness is that bottom-up cluster organisations are sometimes not always much focused on strategy and long-term growth of the sectors involved and on the cluster as a whole.

One of the opportunities for bottom-up clusters is the increasing cooperation on European level to discuss best practices and lessons learned. A second opportunity is that bottom-up cluster organisations take the initiative to increase the government involvement (and budget) in the cluster organisation to improve mutual understanding and fine-tune policy making. Another opportunity for bottom-up cluster organisations is to focus on longer term maritime sector benefits like growth and strategy.

The main threat for cluster organisations is that the too narrow local focus may lead to the suboptimal functioning of a maritime cluster organisation. Also, the limited attention for the role of (relatively) smaller sectors and companies within the maritime cluster poses a threat to the bottom-up cluster organisations.
III.4. THE LINK BETWEEN CLUSTER POLICIES AND SECTOR PERFORMANCE

There are basically three types of cluster policies\footnote{EC, 2008, COM(2008) 652, The concept of clusters and cluster policies and their role for competitiveness and innovation: Main statistical results and lessons learned.}: 

− \textit{Facilitating policies}, which create a favourable microeconomic business environment for growth and innovation (indirect stimulation of the emergence and dynamics of clusters);

− \textit{Traditional framework policies}, i.e. industry and SME policies, research and innovation policies, and regional policies;

− \textit{Development policies}, aiming at creating, mobilising or strengthening a particular cluster category resulting in specific sectoral cluster initiatives.

In particular the development policies focus specifically on clusters and clustering. This policy focus is welcomed by the private sector, since over 68\% of companies working in a cluster-like environment agree that public authorities have a fundamental or important role to play to support the cluster. Despite the fact that clustering and cluster policy are currently receiving significant attention, the cluster policy area is still at an early stage. Reasons for this are that the use of cluster policy only started in the period 1990-1994 and that around half of the countries used cluster policy for the first time in the period from the year 2000 until today\footnote{EC, 2008, COM(2008) 652, The concept of clusters and cluster policies and their role for competitiveness and innovation: Main statistical results and lessons learned.}.

The effect of cluster policies on sector performance has, up until today, proven very difficult to measure. Reason for this difficulty is the early stage of development of cluster policies, but also the difficulty to measure the impact of cluster policies and programmes as most of their effects are only indirect and affected by many other factors. These elements make it difficult to establish clear causal links between cluster policies and programmes and their (potential) impact. Moreover, only very few cluster organisations (as in the maritime sectors) measure or assess the impact of their activities on the functioning of their clusters. Nevertheless, cluster organisations are structurally evaluated by their members with implications on membership contributions.
IV. CONCLUSIONS AND RECOMMENDATIONS

The conclusions on the economic impact of the sea-related sectors and clusters in Europe are the following:

- The maritime sectors in Europe account for about 4.8 million persons employed and turnover is about € 450 billion;
- The maritime sectors generate an added value of circa € 186.8 billion, of which 66% in the traditional maritime sectors, 25% in coastal and sea-related (marine) tourism and recreation and 9% in fisheries;
- The largest maritime sectors in terms of added value are shipping, seaports, marine equipment, Navy and shipbuilding;
- Star-regions in the traditional maritime sectors are mostly spread over north-western Europe; for coastal (and marine) tourism and recreation star regions are located more in southern Europe; stars for fisheries are spread over all European regions;
- In addition to its explicit economic value, the maritime clusters in the EU also play a key role in facilitating the functioning of the entire economy, e.g. by means of maritime transport facilitating international trade, and in generating indirect effects through purchases in the value chain.

Based upon the aforementioned characteristics, the main benefits and the SWOT-analysis of these organisations, the main conclusions of the role of maritime cluster organisations are the following:

- Maritime companies and sectors in all European countries with a maritime cluster have access to that cluster through a maritime cluster organisation;
- The main issues at the basis of the establishment of a maritime cluster organisation are to increase competitiveness, to promote maritime sectors, and to improve coordination within the cluster;
- Cluster-issues need to be handled within the cluster organisations based on transparency, communication/dialogue and on the presence of leading individuals within the cluster organisation;
- Policy (initiatives) and actions are translated to European, national and regional levels, although not in a uniform manner;
- Maritime cluster organisations are mostly historically established (and regionally grown) based upon the specific needs of the cluster and its participants and upon the country’s culture;
- In general, top-down and bottom-up initiated clusters focus on the same topics; the main topics are promotion of the maritime cluster, education, training and the labour market, and focus on RDI;
- Although the impact/success of actions of cluster organisations is only limitedly evaluated on project-basis, these organisations are indirectly evaluated through (the continuation of) membership contributions;
The role of Maritime Clusters to enhance the strength and development of maritime sectors

- There is no organisational concept of cluster organisations that intrinsically excels, because much depends on the local conditions (e.g. presence of sectors and regional spread of sectors) and the practical elaboration of activities and topics. Topics of cluster organisations concern mostly softer issues (e.g. innovation and labour market). In top-down maritime cluster organisations more opportunities are created for strategic issues;
- Cluster organisations and sector associations (most often) will complement each other.

In terms of recommendations the following suggestions are made:
- A continuous effort to build a permanent database on economic facts and figures to work towards a monitoring system in which national cluster organisations play a key role; a round table (of Ministers) could be organised in this perspective to discuss and launch the initiative;
- A clear-cut approach from the European Commission with respect to maritime clusters is recommended; this implicates that the importance and the strength of maritime clusters is well communicated, for example by integrating the results of this study in the website of the European Cluster Observatory;
- A strategy towards a future role of European, national and regional maritime cluster organisations is suggested; a platform could be installed to exchange best practices in the field of labour market; also, where possible, integration of marine and maritime affairs is recommended; another recommendation is that methods to strengthen RDI need further investigation; last but not least cluster organisations should take a leading role in environmental protection and sustainability;
- In case the government does not take the initiative to set up a cluster organisation, or does not provide incentives to do so, the industry needs to take this up on its own initiative if it wishes to set up coordinated actions; the main goal in establishing a maritime cluster organisation does not so much depend on the initiator, but on the installation of a structure that provides clear solutions for cluster-issues (e.g. labour market and innovation) using key elements such as transparency and communication and the presence of leading individuals; this transparency of the functioning of cluster organisations’ activities is emphasized and supported by the initiatives of the European Cluster Observatory56; enterprises can use the Observatory’s information and communication on cluster organisations to their advantage in order to benefit from being actively involved in clusters.

At the recent meeting of the European Network of Maritime Clusters in Rome57, the cluster organisations recognised the added value of the co-operation among clusters on a European level. This recognition was confirmed during the workshop with representatives from maritime clusters, government officials and experts in this area on 6 October 2008 during which the draft results of the current study were presented.

56 The current study has produced the information on Europe’s maritime clusters in the format of the European Cluster Observatory with the purpose of integrating the maritime sectors into this Observatory.
57 The ENMC meeting took place on 30 September / 1 October 2008.