FINAL REPORT – 1st VOLUME
STRATEGIC EVALUATION OF MARITIME ACTIVITIES

September 2006
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INTRODUCTION

The “Europe of the Sea” project is supported by 50 coastal regions and cities and coordinated by the CPMR. This initiative is the answer to the declaration adopted at the Saint-Malo General Assembly, which invites the European regions to take on their full maritime dimension and to contribute actively to the public debate on the future European Maritime Policy launched by the European Commission.

The project structure follows five thematic approaches: Economy and Employment; Transports, Logistics and Maritime Safety; Research Development and Innovation; Sustainable Development and Governance. Five focus groups, each one coordinated by an expert, work independently, while the Project Steering Committee (the CPMR together with the regions leading each thematic group and the experts) enhances and provides guidelines for cross-cutting work.

The 1st volume of the final report is the result of the work developed within each thematic working group under the respective expert coordination. It presents the main findings of the thematic approaches regarding the strategic assessment of maritime activities. The second volume of the final report provides a summary of the strategic assessment and identifies the guidelines and recommendations from the point of view of peripheries maritime regions towards the construction of a European maritime strategy and how the main European policies are concerned.

These main findings are still to be discussed and validated by the project partners. Some adjustments and developments will be introduced as a result of additional findings from the experts and comments from the partners.

MAIN FINDINGS OF THE ASSESSMENT OF MARITIME ACTIVITIES (NOTE: TO BE UP TO DATE BY THE EXPERTS)

Economy and Employment

The maritime economy encompasses a wide range of activities, including primary industries (fisheries, mining), manufacturing industries (shipbuilding, equipment), services (maritime transport, financial services, tourism), public services such as the Navy and marine science.

Maritime activities can be classified into three categories. a) Core maritime activities (e.g. fishing, shipbuilding, shipping, ports, offshore energy) are strictly maritime-related and vitally depend on the sea. b) Tangent activities (e.g. equipment manufacturing, financial services, tourism) have strong links with core activities in terms of specific products and support services as well as in terms of development c) Indirect activities (e.g. miscellaneous manufacturing industries, logistic services) include suppliers or clients of core and tangent activities.

Maritime activities are sensitive to world trade (as major exporters) and to coastal resources and environment. Their development depends on both the world economic context and the state of coastal zones. Over the recent years a steady growth of world GDP and international exchange, and a sharp increase in commodity prices, particularly oil, occurred and are still going on, with various impacts on maritime activities.

The strengths of the European maritime economy principally reside in a range of competitive marine-related manufacturing industries and services, including offshore energy, insurance and shipping. Weaknesses appear in the slow adjustment of traditional maritime industries (mainly shipbuilding and fisheries) to competition and resource constraints: overcapacity remains a problem. In addition, coastal environment is threatened by pollution and demographic pressure, inter alia through the development of tourism and urban areas.

On the other hand, employment decreased in traditional activities over the past three decades or so. An employment switch occurs towards tangent and high tech core industries.
Regional development opportunities remain numerous but vary widely across Europe, depending on region's areas of specialization and autonomy. Securing conditions for maritime regions' sustainable development critically depends on a more efficient co-ordination in terms of facility investment planning and information exchange.

Two instruments could therefore help to promote regional development opportunities. The first one would be an observatory of the European maritime economy. It would collect data on the economic and environmental situation of maritime activities. It would facilitate information exchange between regions.

The second one would be a maritime cluster observing system. Clusters in question are co-operation networks between industrial firms and research and development organisations. Few maritime clusters exist in Europe at present. The aim of an observing system would be to collect data on their working and achievements, make them available to regions, and so promote the orderly development of maritime clusters in Europe.

**Transport, Logistics and Maritime Safety**

Regarding Transport and Logistics, an initial section on the Policy and Market background presents the main facts regarding market shares of the various modes for intra-EU trade, and the overall good position of short-sea shipping (SSS), emphasizing however that this position is achieved mostly through low value goods and that EU Transport policy is determined on obtaining a higher market share for maritime transport. Recognizing the need for high quality on the door-to-door service has shifted the concept from Short-Sea Shipping to Motorways of the Sea (MoS).

Next the potential benefits for maritime regions deriving from this conquest of market share are presented, mainly in terms of location of logistics activities. Then, barriers to the commercial success of SSS are presented in a structured way, followed by the conversion of service attributes necessary for the shift from SSS to MoS. The role of regions in bringing about the critical factors for the success of MoS is then presented, with particular emphasis on the provision of land links to ports, possibly physical facilities in ports (when they depend on regional governments) and, not least, marketing and organization in favour of the concentration of cargoes. Finally practical suggestions are presented for action to promote MoS, and a brief assessment is made on the contribution of these measures to the Lisbon and Gothenburg objectives.

The second part of the report is dedicated to Maritime Safety, and starts with the identification of the main manageable sources of risk (ships, crews and Incident Management Schemes). Three brief sections provide important background information on the types of safety risks for the environment and crews, on the institutional framework for maritime safety decisions, and on the EU safety packages Erika I, II and III.

Next concrete suggestions are presented for action on those sources of risk. For both ships and crews, the suggestions point to making use of the information provided by classification societies (regarding the condition of ships) and captains (regarding the qualifications of the crew), and using the additional information provided by inspections to review the ratings of classification societies and captains. Subsequently, lower ratings imply a higher frequency of inspections, a reduced level of tolerance to risky situations, and possibly a ban on access to ports and territorial waters.

Regarding incident management, preparation of contingency plans to define places of refuge, as included in the Erika II package, is considered positive but insufficient, and the proposal is made to define the obligation of Member States to prepare Incident Management Plans for their coasts, including the regions of the same ecosystem (sea basin) in the preparation of those Plans, with an obligatory character for the regions of the same country and a non-binding consultation of regions of other countries.

The rationale for the participation of regions in the discussions of Maritime Safety issues, and the contribution of the proposed measures to the Lisbon and Gothenburg objectives conclude the section on Maritime Safety.

**Research and Maritime Innovation**

Knowledge is at the core of the Lisbon agenda to make Europe the most dynamic and competitive knowledge-based economy in the world. This applies also to marine and coastal areas and to marine and maritime activities. Marine science and technology is a diverse area with many disciplines and issues involved. The need for integration has been clearly recognised, and the scope and instruments of the EU’s 6th Framework programme
for research (FP6) have contributed to this effect. The proposed FP7 for 2007-2013 aims to continue the development towards more integrated research and to the realisation of the European Research Area.

The Ecosystem approach to management sets requirements for scientific support in the form of monitoring, assessment and advice for management measures. The proposed new Marine Strategy Directive can be seen as a legal and practical implementation of the ecosystem approach to the management of European seas and coastal areas. The core of the directive is the concept of good environmental status which is to be achieved by 2021 at the latest. The concept of environmental status is to be made operational through an initial assessment, determination, setting of targets, and establishment of monitoring programmes. Member states are to co-operate around defined geographical regions or sub-regions when they make their strategies including packages of measures to achieve good environmental status.

The regions or sub-regions prescribed in the proposed directive correspond to Large Marine Ecosystems (LMEs). They include the Baltic Sea, the North Sea, the Celtic Seas, the Bay of Biscay and the Iberian Coast, the Western Mediterranean Sea, the Adriatic Sea, the Ionian Sea, and the Aegean-Levantine Sea. The marine waters surrounding the Canary Islands are included in the Canary Current LME. It is suggested that the marine waters around the Azores should be considered a separate LME, while Madeira could be included in the Canary Current LME.

Environmental assessments draw upon results from monitoring and research, by summarising and analysing existing information. In this process gaps in knowledge are identified. It is suggested that the initial assessments to be carried out for all the LMEs of the European seas should be used to identify key research items to be incorporated in prioritised regional research agendas. These should be implemented with support from FP7. An objective should be set for good knowledge of the European seas to be reached by the same time as good environmental status, by 2021 at the latest. This could be a focus for a marine component of the next Framework programme (FP8) for the approximate period 2013-2020.

The European LMEs (or regions/sub-regions) as management units form specific arenas for co-ordination, collaboration and integration across sectors and disciplines. At this scale, practical arrangements can be set up for the scientific support and collaboration and for the integration of the finer-scale ICZM issues into the wider LME-scale framework. The International Council for the Exploration of the Sea (ICES), as a regional inter-governmental research organisation, should be given a central role in assessments of the status of the LMEs and in the process of generating the regional research agendas.

**Sustainable Development**

The maritime dimension of sustainable development can be considered within a two-sided context which serves as a framework for the work undertaken by the CPMR as part of the Europe of the Sea project.

- A political context characterised by recent initiatives taken by the European Commission in complementary areas, i.e. “marine strategy”, “integrated coastal zone management strategy”, and the priority given to the state of the environment in coastal areas by the European Environment Agency. Other initiatives are related less directly to the maritime sector, but nevertheless include a strong maritime dimension, e.g. adoption of the second Community programme on climate change (ECCP II), and the initial guidelines on the future Objective 3 of cohesion policy which provides wide scope for maritime cooperation.

- A technical context which focuses on making available information, methods and instruments to help design schemes and projects that take on board the maritime dimension. This technical aspect also includes relations between various EU policies with an impact on the sea, e.g. fisheries, regional policy and transport policy.

The regional position regarding sustainable development of coastal areas focuses on the introduction and gradual widespread application of the principles of integrated coastal zone management (ICZM), a strategy in which they intend to be fully involved during the phase due to get under way in 2006. For the maritime regions, it is therefore vitally important to publicise and promote ICZM as part of a move towards a new model of development.

The regions also support the marine strategy adopted by the Commission, especially with regard to its ecosystems approach. They do point out however, that this strategy alone is not enough to give a “sustainable
development” approach to the Green Paper. They also underline the importance of the link between the strategies and instruments designed to implement them, especially schemes that help foster transnational and interregional cooperation.

The proposals set out by the member regions of the Sustainable Development working group focus mainly on:

- The need to employ cooperation programmes to implement future Green Paper guidelines, and in this respect, the need to introduce a framework for these programmes setting out the eligible criteria, subject areas and types of partnership;

- The need to follow the guidelines put forward by the European Environment Agency to improve the links between information and the way it is used in coastal areas;

- Setting up a structure to coordinate initiatives carried out in the different sea areas, with a view to encouraging the dissemination and promotion of experiences and best practices, especially for topics included in the development of Agenda 21;

- A reform of the methods of governance so as to promote a joined-up approach in place of the sectoral approach that dominates at present.

The maritime regions stress that the Green Paper provides a good opportunity to introduce a new development model based on the principles of sustainable development. Finally, they underline the changes that are needed in terms of thinking and action both within the Commission as well as between the various institutions and their partners, the regions being at the forefront in this regard.

Governance

Governance under the Project Seas of Europe is a contribution for the development of a more coherent, consistent and efficient policy framework for the European seas’ policies. It aims at enhancing the effectiveness of participation of regions in the decision-making process for oceans - an issue deeply rooted in their national systems –, in particular their ability to influence EU’s policy-making regarding the seas future framework. The following questions synthesise the goals of this contribution:

What is the present role of regions in oceans and seas policy?
What are the potential roles of regions in the EU oceans and seas policy?

The sustainability of maritime activities, especially coastal communities’ livelihoods, is inextricably connected to the quality of the marine environment and the resources therein. Therefore, the approach for a governance system must go beyond maritime activities, and consider the oceans as a whole, including, the marine environment and sea-land interface issues. To encompass this holistic perspective, the following report is divided in the following sections:

- Ocean governance and ocean policy. Key concepts related to ocean management.

- The international context. Ocean governance and policies are deeply shaped by the international sphere, with global and geographical scope.

- Major European Community policy frameworks shaping the EU maritime policy.

- Most mature national ocean policies, to learn lessons from existing mechanisms, trends in management, challenges, and potential roles of regions in the European seas.

- Major lessons learned from the regions partners to the Seas of Europe project, aiming at identifying best practices and some of the actual and potential roles of regions across Europe. Expectations of regions regarding their role in the EU Maritime Policy. This section is based on the analysis of the questionnaires on the roles of regions, and the results from the focal group meetings.

- Recommendations for an overall governance system for the European Seas and the role of regions.
The nature of oceans policy has been deeply shaped by international relations, through both generally accepted practices and a long and complex series of instruments, not always coordinated in a coherent manner. The United Nations Convention on the Law of the Sea (UNCLOS), the constitution of oceans, lays out the major principles for the regime of use and jurisdiction of States over the ocean space. Almost all uses of oceans and seas are included, of which environmental pollution, resource management (in particular fisheries), and navigation constitute the major policy drivers. Through other international sectoral and regional instruments, UNCLOS’ goals, principles and norms are further developed and implemented.

The majority of the European seas are covered by agreements with regional scope focusing on different sectoral policies, where States are called to co-operate on global and regional basis. The EU Marine and Maritime policies constitute an additional layer of policy making for States. With the rise of the “European Seas” concept, it is also predictable that the EU will become a major actor in global oceans’ governance. There are numerous EU sectoral policies for the European seas. Their integration at EU level will be a major challenge to the conventional sectoral process of decision-making applied by policy makers and public managers within the EU and its member States.

The proposal of directive for the implementation of the EU Marine Strategy identifies a set of EU Marine Ecosystems/Regions for its implementation, recommending that the governance system should be further developed through the EU Maritime Policy. The concurrent development of both the EU Marine Strategy and the Maritime Policy creates an opportunity to ensure that the appropriate mechanisms are put in place to articulate in a coherent manner these two major frameworks. The European Marine Ecosystems/Regions should also be considered as the fundamental unit for development and implementation of the European seas policy objectives as a whole, i.e.:

- Management of the marine environment and its natural resources;
- Management of human activities in the marine environment and coastal areas;
- Marine RD&I: EU Marine Ecosystem Research Networks;
- Marine Information Systems and Marine Observatories: Monitoring, Assessment, Statistics, Policy Processes, Education and Awareness);
- Cooperation between regions (and nations) in marine and maritime affairs, without limit of distances, as long as regions are within the same EU Marine Ecosystem.

Given the importance of European Marine Ecosystems/Regions for an effective management of the European seas, it is crucial ensuring that their delimitation is the most appropriate, and that it is fully supported by States and regions. The EU Marine Strategy proposed a common region EU Marine Ecosystem/Region for the Archipelagos of the Azores, Madeira and Canary Islands, also known as Macaronesia. However, there is a general gap on knowledge regarding the marine realm of Macaronesia, which is also highlighted by the ICES. Therefore, an overall study to establish the best management unit for these archipelagos should be undertaken.

Governance of the seas concerns a wide range of sectoral policies to be coordinated at a multilevel approach, from the international sphere to the regional and local level. Across Europe coastal regions are major implementers of EU and national policies on the ground, including the WFD, Natura 2000, EIA, SEA and ICZM. Therefore, coastal regions are key partners for achieving EU Maritime Policy objectives, as well as of marine ecosystems and national ocean policies. However, their roles and mandates for participation in oceans policy development and implementation are very limited, since most powers are concentrated in the national governments and institutions. Both the overseas experiences and the cases across Europe, show a lack of clear mandate and role for the subnational levels in oceans policy, as well as the appropriate institutions and mechanisms. However, these are fundamental for a successful implementation of an EU integrated ocean policy that reflects the needs of the EU citizens.

In general, infra-state levels tend to participate in national policy simply as major implementers of issues affecting the coastal environment, but they have no mandates to develop such policies at the infra-state/regional basis, and often their participation is quite Ad hoc. Coordination between the sub-national levels and national authorities depends of the capacity of initiative and mobilization of decision-makers at both national and regional/local level. The lack of clear mandates and roles of the infra-state level poses a major threat to the effective implementation of ocean policies on the ground, both at national and at marine ecosystem levels.

Presently, nations are expanding uses of/on oceans towards offshore areas, while several sectoral frameworks and national ocean policies are still non-existent, or are at their infancies. The development of the EU maritime policy is also an opportunity for deeper reflection on the potential role of regions EU and national levels: uses have increased and diversified on coastal areas; conflicts are increasing while coastal populations and users are
increasing. In this reflection a new stakeholder category should be recognised: coastal cities, in particular, ports cities.

Both overseas experiences and the analysis of the cases across Europe show that the infra-state level is the optimal level for strategic planning and development of ICZM in articulation with the communities for concrete action. The lack of articulation and coherency between ICZM and management of large marine areas /ecosystems hinders the effectiveness of both ICZM and the management of offshore areas. For the European seas, ICZM should be included in EU Marine Ecosystems / Regions process and coherency between ICZM and offshore activities must be ensured.

Ocean policies require new mechanisms and institutions for policy implementation. The EU Commission should take the steps forward to develop an institutional framework with strong leadership, including a body and process of coordination of sectoral policies, as well as mechanisms for participation and means for policy implementation. There are two distinct levels for regions to participate in the EU marine and maritime policies: EU Commission and EU Marine Ecosystem/Region levels. The overall scheme of governance for the European seas should include:

- **A Council / Committee of Maritime Regions** to participate actively in overall the EU maritime policy process, to ensure that specificities of regions are fully reflected in the drafted policies and instruments.

- **Tripartite partnership between the EU<>States<>Regions** for the implementation of ocean policies for each EU Marine Ecosystem/Region: a **EU Marine Ecosystem/Region Committee** for the overall management of each EU Marine Ecosystem/Region by nations and EU, in a process that couples both the EU and Maritime Policies. Regions, organized in a **Council of Regions** of their respective EU Marine Ecosystem are enabled to participate on its management, focusing on the development of their ICZM plans, and ensuring coherency between ICZM plans and the development of offshore activities.

- **European Seas Forum** for Marine and Maritime Affairs, where all partners of and stakeholders to the EU Marine and Maritime policies meet to assess progress and debate further action.

Regions’ added value relies on knowing better realities and needs on the ground and mastering regional strategic planning while coordinating communities’ needs into concrete actions. Thus, regions are a centrepiece for the effectiveness of the EU and national marine and maritime policies. More than stakeholders, regions are legitimate partners in the EU Maritime Policy, and no less participation regions expect in this new and challenging process.
The “Europe of the Sea” project is supported by 50 coastal regions and cities and coordinated by the CPMR. This initiative is the answer to the declaration adopted at the Saint-Malo General Assembly, which invites the European regions to take on their full maritime dimension and to contribute actively to the public debate on the future European Maritime Policy launched by the European Commission.

The “Europe of the Sea” project aims at the following main objectives:

- To influence the consultation process and the public debate of the Green Paper on the future European Maritime Policy, presenting the essential viewpoint of the coastal regions and cities. As a result of the project, CPMR presented two contributions to the green paper: the first one was presented in October 2005 and it suggested 15 topics and 90 issues to be discussed within the green paper; The second one was presented last February and focuses on some specific points concerning directly the interest of the regions concerning maritime policy, territorial cohesion, sustainable development and governance. CRPM regions are also participating actively in the public debate of the Green Paper. Some seminars and conferences will be organised under the initiative of the regions.

- To state some proposals in favour of the development of a White Paper on maritime policy enhancing the role of the regions as legitimate actors of that policy.

- To identify relevant themes for cooperation in view of the territorial cooperation objective for the period 2007/2013;

- To build the foundations of a database on European maritime activities, identifying the main indicators and data required, most of which are unavailable at the present time.

The project is implemented within three main phases. The methodological organisation of the project has already been defined in the first phase (1st interim report); the strategic evaluation of maritime activities was carried out under the second phase (2nd interim report); guideline proposals on the role of the regions in the future European Maritime Policy was the main issues worked within the third phase (final report).

The project structure follows five thematic approaches: Economy and Employment; Transports, Logistics and Maritime Safety; Research Development and Innovation; Sustainable Development and Governance. Five focus groups, each one coordinated by an expert, work independently, while the Project Steering Committee (the CPMR together with the regions leading each thematic group and the experts) enhances and provides guidelines for cross-cutting work.

This document presents the main findings of the project (draft version). It is the result of the work developed within each thematic working group under the respective expert coordination plus the conclusions of a questionnaire sent to all the partners and the contributions of the Scientific Council meetings held under the responsibility of the Portuguese regions (Lisbon, Faro, Porto, Ponta Delgada). The Bergen Seminar and Brest Seminar held by the North Sea Commission and the Bretagne Region also provides some contributions for the present report namely concerning marine RDI and maritime technologies.

The final report is organised under two volumes. The present one (1st volume), presents de main findings of the thematic approaches regarding the strategic assessment of maritime activities. It is organised in five chapters besides the present introduction. Each chapter, written under the responsibility of the respective expert, focuses on the main strengths and weaknesses of maritime activities and they also includes the contributions got from the partners all over the project.

The second volume of the final report provides a summary of the strategic assessment and identifies the guidelines and recommendations, from the point of view of peripheries maritime regions, towards the construction of a European maritime strategy and how the main European policies and political levels are concerned. Its contents are the result of the work undertaken under the responsibility of the thematic groups and the project coordination.

The main findings of the project presented under the 1st volume are still to be completed and validated by the experts and the Steering Committee of the Project. A final version will be prepared including the result of new contributions.
II. BACKGROUND THEMATIC PAPERS
1. Conclusions of the Economy and Employment Thematic Group

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1 INTRODUCTION ET DEFINITION

1.1 Comment définir l'économie maritime ?

L'économie maritime européenne englobe l'ensemble des activités du secteur maritime, qu'elles soient commerciales ou de service public. Avec une définition aussi large, c'est une économie qui présente inévitablement une grande diversité – que font d'ailleurs apparaître les multiples approches possibles pour classer ses activités :

a) Les activités maritimes européennes se répartissent selon trois secteurs : le secteur primaire (pêche, aquaculture, énergie et exploitation des agrégats), le secteur manufacturier (construction navale, équipements portuaires, câbles sous-marins, etc.) et le secteur très vaste des services commerciaux (ports, transport, tourisme et croisière, services financiers, assurances, etc.). Les services publics englobent la Marine, la signalisation et la sécurité, l’éducation et la formation, la protection de l’environnement côtier contre la pollution et la surexploitation, les sciences marines et la recherche et le développement (R&D).

b) Les activités maritimes ont un lien avec la mer de diverses natures : elles dépendent des ressources marines (biologiques, minérales, pétrole, gaz), des routes maritimes et de leurs caractéristiques, des paysages et du patrimoine naturel côtier.

c) Les activités maritimes peuvent également être classées selon leur degré de dépendance avec la mer (diagramme 1) :

- Les « activités maritimes pures » sont strictement liées à la mer. Leur viabilité dépend du milieu marin et de ses ressources. Bien que difficiles à classer, elles entrent en majorité dans les deux catégories ci-après :
  ▪ les activités traditionnelles, comme la pêche,
  ▪ les activités de haute technologie/à valeur ajoutée, comme les services énergétiques offshore. La plupart des activités de ce type contiennent à la fois des segments traditionnels et des segments à valeur ajoutée.

- Les « activités tangentes » dépendent de l'économie maritime pure, et davantage du marché que de leur localisation. Elles ont ainsi un lien direct avec cette économie en termes de marché et de développement – comme les assurances. En revanche, elles ne sont pas totalement tributaires de l'économie maritime. Ainsi, le tourisme côtier englobe une composante purement maritime (ex. : nautisme et autres activités organisées en mer ou sur le littoral) et une composante « tangente » (loisirs sur la plage et dans l’arrière-pays).

- Les « activités indirectes » comprennent des fournisseurs ou des clients des activités pures et tangentes, mais qui n'en dépendent que partiellement du point de vue de leurs débouchés.

d) La diversité de l'économie maritime de l'UE est le miroir de la forte diversité de ses États membres en termes de spécialisation industrielle. Certaines zones côtières sont très nettement orientées sur des activités sensibles à l'environnement, comme la pêche et le tourisme ; d'autres ont pour créneau les industries lourdes ou les grands ports.

Dans ces conditions, les industries jouent des rôles très différents dans l'économie des régions maritimes :

- Par exemple, les contraintes liées à la localisation ne sont pas les mêmes pour l'industrie de la pêche et d'autres activités sensibles à l'environnement, que pour l'industrie des équipements ou les services d'ingénierie offshore.

- Certaines activités avec des applications maritimes (comme l'ingénierie, les industries de l'équipement, voire certains chantiers navals) sont indépendantes des zones côtières pour ce qui est de leur localisation.

- Comme le suggère la remarque précédente, l'économie maritime a un impact sur l'économie européenne dans son ensemble.
1.2. Quelques aspects de l'économie maritime pure et tangente

Les activités maritimes pures et la plupart des activités tangentes partagent deux caractéristiques principales : leur extrême sensibilité d'une part au commerce et à la croissance au plan international et, d'autre part, à l'environnement maritime :

- Pour diverses raisons, beaucoup d’industries maritimes sont fortement impliquées dans le commerce extérieur. Les sociétés de pêche extraient une matière première qui fait l’objet d’un intense commerce transfrontalier, tant intra-européen qu’international. Il en va de même pour différents services : le transport et les activités portuaires sont, par définition, soumis aux forces du marché international ; les assureurs maritimes européens ont conquis une solide position dans le monde ; et la même chose vaut pour un certain nombre d'industries fortement exportatrices (équipements navals, fabrique de câbles sous-marins).

- Les activités maritimes pures et, pour la plupart, les activités tangentes subissent de plein fouet les répercussions de l'état du milieu marin et des ressources maritimes : l'exploitation des ressources vivantes y est particulièrement sensible (pêche, aquaculture) ; d'autres industries minières (granulats, énergie) dépendent également de l'accès à des ressources en bon état ; le tourisme, qui représente un marché considérable pour maintes régions côtières, est lui aussi directement affecté par l'état de l'environnement.
Le poids relatif des activités maritimes pures et tangentes est extrêmement variable selon les pays de l’UE (diagramme 2), ce qui explique une approche hétérogène des questions maritimes en Europe.

Les caractéristiques susmentionnées sont les deux critères pour l’évaluation des forces et des faiblesses des activités maritimes. Celles-ci sont en effet exposées à deux sortes de risque : la perte de compétitivité et les dommages causés à l'environnement – avec des effets d'autant plus destructifs sur les activités que leur degré de dépendance à l'environnement et à ses ressources est fort.

2. CONTEXTE ECONOMIQUE GENERAL

Cette section n’entend pas brosser un tableau des développements économiques récents à l’échelle mondiale ; elle se limite aux principaux facteurs qui influent sur les tendances actuelles de l'économie maritime européenne. Les activités maritimes étant sensibles au commerce extérieur, il faut garder à l'esprit les grandes lignes du contexte économique mondial qui leur sert de toile de fond. Les voici en gros :

- une croissance économique mondiale régulière ;
- une croissance économique sans précédent dans les pays d'Extrême-Orient, notamment la Chine ;
- une montée en flèche du prix des matières premières.
On note une forte croissance économique dans de nombreuses régions du monde (Amérique, Asie), à l'exception de l'Afrique, de la plupart des pays européens et du Japon, qui ont connu un développement bien moins dynamique au cours de cette période. Les écarts de croissance entre les régions ont été très marqués ces dix dernières années (diagramme 3), le Japon et la zone Euro enregistrant les chiffres les plus bas. La Chine est devenue en 2005 la sixième puissance économique mondiale en termes de PNB ; il y a de fortes chances qu'elle se hisse au quatrième rang en 2006.

Il est frappant de constater que le commerce mondial se développe plus vite que la croissance mondiale moyenne, signe que le développement économique actuel est basé sur les échanges internationaux. De plus, ces dernières décennies, il a été largement indexé sur la croissance de l'Extrême-Orient. (Hypothèse que semble d’ailleurs retenir le FMI pour les prochaines années.) L'explication essentielle pourrait en être que la consommation américaine est le moteur de la demande mondiale de produits finis aux industries manufacturières, en particulier celles localisées en Chine.
La croissance mondiale explique un autre développement majeur intervenu ces deux dernières années : la flambée des prix des produits de base, y compris les denrées alimentaires et l'énergie. Les marchés des produits autres que les combustibles semblent avoir été relativement cycliques ces dix dernières années ; la hausse est certes forte aujourd'hui, mais la chute le fut tout autant à la fin des années 90, et le record de 2005 est comparable à celui de 1996-97. A l’inverse, le prix du pétrole n’a pas chuté de façon significative à la fin des années 90 ; il connaît même aujourd'hui une véritable montée en flèche (diagramme 4). C’est là le résultat d'une forte demande des consommateurs finals américains et des industries d'Asie orientale.

Des remarques précédentes, on peut conclure que les activités maritimes sont sensibles aux conditions économiques en général :

- Elle subissent les effets positifs de la croissance économique mondiale, en tant qu’activités fortement dépendantes du commerce (transport, ports, constructions navales et autres manufactures d'équipement) ou en tant que fournisseurs de matières premières (exploitation minière, services énergétiques, pêches, etc.). D'autre part, elles doivent faire face à la concurrence internationale. Certaines sont notamment sensibles au coût de la main-d’œuvre – paramètre dont l'Extrême-Orient peut tirer un avantage considérable.

- Selon leur dépendance au prix des matières premières, leurs frais d’exploitation subissent proportionnellement le contrecoup de sa hausse (la pêche en tant qu'activité économique sensible au prix du pétrole, par exemple). En revanche, en tant que fournisseurs de matières premières, elles peuvent tirer profit de leurs prix élevés. Pour analyser en profondeur les conditions de développement de l’économie maritime, il faut donc collecter des données secteur par secteur.

Les remarques précédentes suggèrent, qu’en terme de méthodologie, il convient d'adopter une approche des activités maritimes à la fois « verticale » (autrement dit par secteur, pour analyser les spécificités sectorielles) et « horizontale » (pour analyser des questions communes aux différents secteurs, comme les conditions de travail et les contraintes environnementales).

Cela étant, en Europe, le coût et les conditions du travail varient d'un pays à l'autre, tout comme les conditions environnementales et, plus généralement, les atouts et les faiblesses des activités. On peut donc s'attendre à ce que les activités marines en Europe n’offrent pas un tableau homogène.
2.1 Forces de l'économie maritime européenne

Les forces ou les atouts de l’Europe peuvent être évalués sur la base des critères identifiés ci-après.

ZEE


Pêche

A l’image de l’agriculture, le secteur primaire maritime de l’Europe a connu un fort développement ces dernières décennies. Concernant la pêche, même si l’Asie reste, et de loin, la première région en tonnages débarqués, d’emplois et de taille de la flotte, l’UE se défend bien : son industrie de la pêche, de taille internationale, est présente à l’échelle mondiale sur toutes les mers ; elle a produit 6% du tonnage mondial en 2000 et, selon les estimations de la FAO, représente 8,9% du nombre de navires pontés (84,6% pour Asie). C’est aussi une industrie très diversifiée en termes de variétés, de quantité et de valeur des classes de produits.

Industries manufacturières maritimes et services

Au plan de l’industrie manufacturière maritime, l’UE peut se prévaloir d’un solide niveau de compétitivité mondiale dans des activités à forte valeur ajoutée : certains segments de la construction navale (navires spécialisés du type bateaux de croisière, navires porte-conteneurs sophistiqués, etc.), construction nautique (voiliers et bateaux à moteurs), fabrication de câbles sous-marins, d’équipements navals et portuaires. Les énergies renouvelables peuvent être considérées comme relevant de cette catégorie ; les éoliennes ont des applications maritimes, et plusieurs entreprises européennes sont d’actives pionnières sur le marché.

Cela vaut également pour des services comme l’énergie offshore, les assurances maritimes et les services financiers, qui englobent des segments à forte valeur ajoutée. Ces services sont très exportateurs et compétitifs au niveau mondial.

Dans la catégorie des services, il faut aussi souligner l’importance du tourisme littoral. L’Europe est la première destination touristique du monde par le nombre d’entrées (416 millions en 2004, soit 55% du total) et par les recettes (327 milliards de dollars, soit 52% du total) selon l’Organisation mondiale du tourisme (OMT). La part du littoral dans le tourisme européen peut s’estimer à partir du cas français (35% des nuitées annuelles dans ce pays) et du tourisme méditerranéen, qui représente un tiers du tourisme mondial en entrées et en recettes, et est très majoritairement côtier. Pour l’Europe seule, les pays méditerranéens représentent environ 38% des recettes. Aussi, dans l’hypothèse vraisemblable où le tourisme littoral représenterait environ un tiers du tourisme européen, il générerait plus de 100 milliards de dollars, dont une part massive au bénéfice des régions maritimes d’Europe.

Outre l’ensemble des services stimulés par les dépenses touristiques, notons que la construction de bateaux de plaisance et de paquebots en bénéficie également.

Les industries de haute technologie bénéficient du solide potentiel de recherche des États membres dans les sciences marines. Cela fait de l’UE un sérieux concurrent international dans le domaine (notamment : RU, Allemagne, Norvège, France).

Transport maritime

D’autres éléments ajoutent à la compétitivité de l’Europe, qui tient de fortes positions dans les transports maritimes :
- Les trois plus grandes compagnies maritimes mondiales sont européennes. Elles sont parvenues à tirer profit de la phase d’intégration entamée il y a deux ans dans l'industrie des transports et qui se poursuit aujourd'hui. Elles sont actives dans le transport de marchandises, notamment conteneurisé – devenu essentiel pour le commerce maritime mondial –, et dans le transport de passagers – croisières en particulier – qui est une activité lucrative. Les entreprises européennes sont les principaux transporteurs mondiaux de produits pétroliers.

- Au plan de sa flotte, l'Europe est aussi parvenue à une solide position. La flotte de l'Espace économique européen (EEE = UE 15 + Norvège + Islande) dépasse largement les 9.000 navires, soit environ 25% du tonnage mondial. Mais, qui plus est, les armateurs résidant dans l'EEE contrôlent environ 40% de la flotte commerciale mondiale. La Grèce, l'Allemagne et la Norvège comptent parmi les dix principaux pays armateurs du monde.

- Plusieurs ports de l'Union européenne sont de dimension internationale, à commencer par Rotterdam, Anvers et Hambourg, qui se classent parmi les vingt premiers. La domination de l’Asie, pour ce qui est du nombre de très grands ports, n'est pas surprenante, vu l'importance que prend cette région dans les échanges mondiaux de matières premières et de produits manufacturés.

L'importance du transport maritime en Europe est à la mesure de celle du trafic maritime pour le commerce de l'Europe ; elle traduit de plus la capacité des compagnies de transport européennes à gérer le coût de main-d’œuvre dans un secteur où ce paramètre est critique.

2.2 Risques et faiblesses de l’économie maritime européenne

Des risques et des faiblesses sont perceptibles dans l’économie maritime : les Etats membres voire l’UE ne sont pas parvenus à promouvoir la compétitivité de certaines industries maritimes (ou de leurs segments) ou à garantir une exploitation écologiquement durable des zones côtières.

Risques pour les industries maritimes

Les industries traditionnelles de l'Europe s'ajustent lentement aux exigences de marchés internationaux concurrentiels :

- Dans certains Etats membres, la construction navale fragmentée en petites unités est mal adaptée aux grands marchés de navires standards, tandis que l’offre sud-coréenne est très concentrée dans quelques firmes et de grands chantiers navals. Cela peut sembler un avantage pour fournir des navires de petite et moyenne taille, mais un inconvénient lorsque l’on veut se positionner sur les grands marchés des navires standards.

- L’adaptation des installations portuaires aux exigences du transport conteneurisé est progressive, mais est restée lente dans certains pays ou sur certains littoraux. Elle semble en train de passer à la vitesse supérieure. L’adaptation à l’intermodalité et le développement du cabotage, pourtant nécessaires face aux risques de congestion des transports routiers et aux objectifs de Kyoto, posent également un problème de lenteur d’ajustement.

- La surpêche reste un problème critique dont l’enjeu n'est pas seulement environnemental; il en va de la durabilité de plusieurs flottes de pêche de l’UE. Dans les années 90, la capacité de pêche a été jugée trop élevée. La CE a donc entrepris d'appliquer des programmes de déclassement des navires qui, semble-t-il, n’ont pas atteint leurs objectifs puisqu’il subsiste une capacité excédentaire. Pourtant, plusieurs Etats membres sont défavorables à la poursuite de ces programmes.

- La taille de la flotte de pêche de l’UE et la productivité limitée des stocks de sa ZEE ont amené la CE à signer des accords de pêche avec des pays tiers dans le cadre de sa Politique commune de la pêche. L’UE est d’autant plus dépendante de tels accords que la productivité de ses stocks continue de diminuer. Mais cette politique se heurte à des risques induits par des conditions de marché plus difficiles : les pays producteurs de poissons, dont les conditions démographiques et économiques évoluent, voient leur consommation de poisson s'accroître ; face à cette tendance, ils s’efforcent de mieux contrôler leurs stocks et leurs marchés.
Dans des régions où les industries traditionnelles sont en déclin, et en l'absence d'entreprises alternatives au tourisme côtier, l'activité économique locale s'expose au risque de se réduire à des emplois saisonniers, faiblement qualifiés et insuffisamment diversifiés. Le risque est accru par l'offre touristique concurrente qui se développe dans l'hémisphère sud.

**Risques pour l'environnement côtier**

L'environnement côtier est menacé par divers facteurs :

- Les populations côtières connaissent une croissance constante liée à l'urbanisation. Le tourisme littoral est généralement un tourisme de masse, générateur de construction d'infrastructures et d'urbanisation intensive. Une telle évolution semble être le modèle dominant dans les zones touristiques méditerranéennes, par exemple. Or, l'OMT prévoit pour l'Europe une croissance des entrées touristiques de plus de 70% de 2004 à 2020. Cette tendance expose les zones côtières à la saturation, ainsi que le patrimoine naturel et certains usages côtiers à des risques d'altération, voire de disparition.

- Avec les bassins hydrographiques, la mer concentre la pollution générée dans l'arrière-pays par l'agriculture, l'industrie et les zones urbaines.

- En tant que petit territoire sur lequel le transport maritime joue un rôle commercial de premier plan, l'Europe est exposée aux pollutions d'origine maritime, comme les rejets d'hydrocarbures. Néanmoins, il faut noter une amélioration ces dernières années : la diminution du nombre de naufrages.

- Les stocks halieutiques sont exposés à une double menace : la pollution terrestre et la surpêche, deux fléaux d'envergure mondiale.
  - La pollution terrestre n'affecte pas que la pêche, mais tout un éventail d'activités maritimes, le tourisme pour commencer ; c'est un problème qui, parce qu'il touche de nombreuses activités – et pas seulement industrielles –, doit être abordé au niveau national et de l'UE.
  - La surpêche s'est avéré extrêmement difficile à contrôler et les instruments de gestion élaborés, comme la Politique commune de la pêche, semblent n'avoir produit que des effets limités. Comme mentionné précédemment, il conviendrait d'ajuster plus précisément la capacité de pêche. Il faudrait aussi reconsidérer la méthodologie d'allocations des quotas, car les allocations nationales ne rendent pas compte de la rareté – et donc, les pêcheurs ne se sentent pas individuellement responsables de la gestion des stocks.

- Les régions maritimes peuvent être sensibles à l'impact du réchauffement de la planète sur le niveau de la mer. D'un autre côté, le transport maritime est un moyen de diminuer la consommation d'énergie en réduisant l'acheminement des marchandises par la route – ce pourrait être une contribution positive aux objectifs du Protocole de Kyoto.

Comme évoqué précédemment, les activités maritimes européennes n'offrent pas un tableau homogène ; les atouts et les risques qui concernent chacune sont divers et variés. Par exemple, le contraste est frappant entre les nombreuses petites unités de pêche de la côte méditerranéenne en Italie, en Espagne ou en France, qui débarquent des produits frais de grande valeur, et les gros navires danois ou hollandais qui pêchent en grande quantité un petit nombre d'espèces ou qui produisent des farines de poisson. Le contraste est tout aussi fort entre les ports belges, danois et allemands, étroitement connectés au transport fluvial, et les ports méditerranéens qui jouent sur des avantages comparatifs différents.

### 3. EMPLOI ET CONDITIONS DE TRAVAIL

Dans le secteur maritime, la gestion de l'emploi et des conditions de travail est cruciale pour faire face aux problèmes identifiés précédemment ; c'est donc un champ d'action politique majeur. À ce propos, il convient de noter que l'emploi, dans le secteur, connaît des changements significatifs.

#### 3.1. Evolution de la structure de l'emploi

L'emploi dans les industries traditionnelles est en diminution.
Globalement, dans la construction et la réparation de navires, on est passé de 460.000 emplois en 1975 à 120.000 en 2004 pour l'UE 15, la Norvège, la Pologne, la Croatie et la Roumanie réunies ; et de 400.000 à 85.000 pour la seule UE 15. Pendant ce temps, les chantiers navals européens ont augmenté leur production, en tonnage, d'environ 30% entre 1980 et 2002. Pour l’essentiel, la perte d'emplois dans les chantiers navals est due à une forte croissance de la productivité qui n’a pas su être contrebalancée par des opportunités de marché.

La main-d’œuvre portuaire a également diminué. Dans le port de Rotterdam, par exemple, le nombre d'emplois aurait été supérieur à 100.000 en 1965 ; il était estimé à environ 60.000 en 2000. On peut supposer que cet exemple reflète la réalité de nombreux ports internationaux.

Dans l'industrie des transports, la même tendance s’est manifestée. Le nombre total de marins a chuté, passant d'environ 235.000 en 1985 à quelque 155.000 en 1999. A l’inverse, le nombre de marins non ressortissants de l'UE a augmenté, alors que la CEE identifiait une pénurie de main-d'œuvre en Europe (estimée en 2002 à 30.000 officiers). Actuellement, une nouvelle tendance apparaît : la croissance du commerce mondial et l'adoption de règlements internationaux de plus en plus rigoureux conduisent les entreprises à rechercher des équipages plus qualifiés et à créer des services maritimes plus sophistiqués. Les entreprises diagnostiquent un déficit d'officiers en Europe comme dans le monde. Il en manquerait environ 10 000 au niveau mondial (sur un total de 400 000 officiers employés par l'industrie maritime).


La forte progression du tourisme en Europe (quasi-doublement des recettes de 1995 à 2004 en monnaie courante selon l'OMT), est l’indice d’une forte augmentation de l'emploi touristique littoral, qui comprend une importante composante de main d'œuvre saisonnière et locale.

Les services de haute technologie, comme les services énergétiques offshore, qui enregistrent des niveaux élevés de productivité, se développent rapidement et génèrent des exigences croissantes en termes d'emplois, du fait des investissements considérables engagés dans l'exploration et l'exploitation du pétrole et du gaz. Pour des raisons tout à fait différentes, la construction navale montre la même tendance, de même que l'industrie de transformation des produits de la mer dans certaines régions. Toutes ces activités sont dites à valeur ajoutée.

Un changement semble s'opérer au niveau de l'emploi dans le secteur maritime :

- L'économie maritime pure (voir diagramme 1) a perdu et continue de perdre des emplois, tandis que les activités à valeur ajoutée et tangentes conservent, voire augmentent leur nombre d'emplois. Cependant, les catégories d'emplois qualifiés de l'économie maritime pure, y compris du transport maritime, font l'objet d'une demande croissante des entreprises. Ce qui va renforcer les besoins de formation et d'éducation, et pourrait, à terme, modifier profondément la nature des emplois dans les industries traditionnelles.

- Un autre changement est notable : l'augmentation de la main-d'œuvre non ressortissante de UE se répercute sur la composition des effectifs à bord, tant dans les activités de transport que la pêche.

D'une manière générale, ces tendances sont confirmées par les réponses des régions au questionnaire de la CRPM. Même si les évaluations concernant les industries en déclin ou en croissance reposent sur des bases de qualité variable selon les régions, la plupart d’entre elles mentionnent le déclin de la pêche du fait du manque de ressources, des problèmes liés au prix du pétrole, de la diminution de la capacité de pêche et de la diminution de l’attractivité du métier pour les jeunes. Plusieurs répondants ont également jugé que la construction navale était en déclin. Les opinions sont en revanche diverses au sujet du transport de marchandises et de passagers, et la pisciculture – même si cette dernière activité est jugée en hausse en Scandinavie. D’après les évaluations, les activités à valeur ajoutée, y compris la transformation des produits de la mer, recèlent généralement un potentiel de croissance.
3.2. Coût de la main-d'œuvre

Dans certaines industries de l'économie maritime, la capacité à gérer le coût du travail est déterminante. Dans les pays développés européens, le coût du travail ne joue pas en faveur de la main-d’œuvre employée dans les activités purement maritimes – comme le prouve le nombre d'emplois ; en revanche, il y a un impact positif sur les qualifications :

- En Europe occidentale, la plupart des chantiers navals entretiennent des liens commerciaux avec des sous-traitants d’Europe orientale à faible coût salarial, ce qui permet une certaine flexibilité au niveau des coûts de la main-d’œuvre. Les chantiers de l'UE étaient des sites d’industrie lourdes ; à présent, ils intègrent les savoir-faire d'entreprises diverses de haute technologie. En ce sens, il y a un grand changement dans les qualifications requises par la construction navale.

- Le transport est également une activité dont la rentabilité est sensible au coût de la main-d’œuvre. La plupart des navires des grandes compagnies maritimes européennes sont librement immatriculés ; elles peuvent ainsi travailler avec des équipages non européens moins onéreux. La part des navires immatriculés dans les Etats membres de l’UE a chuté de façon significative entre 1988 et 2000, même si les intérêts européens restent forts.

Le coût du travail semble donc expliquer que l'économie maritime tende à se tourner vers une main-d’œuvre non européenne. Cela ne concerne pas tous les secteurs, mais plus particulièrement certaines industries maritimes pures. La perte d'attractivité des industries maritimes traditionnelles, notamment la pêche et les transports, surtout du fait de longues périodes en mer, est un autre motif de recrutement d'équipages non européens.

3.3. Formation

Comme expliqué précédemment, les emplois dans l'économie maritime évoluent en permanence en termes de quantité, de localisation et de nature, face à la concurrence internationale, aux menaces environnementales et au développement technologique.

La question de l’adaptation des compétences aux exigences des entreprises se pose en permanence. Aussi faudrait-il aborder la question de la formation de manière régulière, aux niveaux local, national et européen.

Les Etats membres et l’UE font beaucoup d'efforts en termes de formation. Par exemple, les programmes de l’UE « Leonardo da Vinci » et « Marie Curie » visent à promouvoir l'échange transnational de compétences, le perfectionnement professionnel et le transfert de connaissances.

Il serait utile de mettre à profit les résultats de ces programmes (en particulier « Leonardo da Vinci », dont la première phase se terminera en 2006) dans l'économie maritime, et de suggérer des ajustements que les régions pourraient juger pertinents.

3.4. Conditions de vie et de travail en mer

Les conditions de travail en mer et dans les ports relèvent du temps de travail, de la protection sanitaire, de la formation, de la sécurité à bord et de la prévention des accidents. Un environnement de travail sûr et sain est généralement perçu par les gestionnaires comme un facteur-clef de la compétitivité. Les conditions de travail comprennent aussi les conditions de vie car les navires de commerce, de pêche et les plates-formes offshore sont aussi des lieux de vie. C'est pourquoi le bien-être des marins relève de cette problématique.

Nombre de questions sur les conditions de travail sont débattues au niveau international, par ex. à l'OIT (Organisation internationale du travail) et à l'OMI (Organisation maritime internationale). Les conventions et codes issus de ces organismes sont adoptés par les pays membres. Trois conventions majeures, sur lesquelles la politique de l'UE est largement bâtie sont : "Travail maritime", SOLAS (Sécurité de la vie en mer) et STCW (Normes de formation, de certification et de service de quart pour les marins). Les codes mettent en place des normes de gestion : en particulier les codes ISPS (Sûreté internationale des infrastructures pour les navires et les ports) et ISM (Gestion internationale de la sécurité).

Au niveau de l'UE, une législation a été adoptée et est périodiquement actualisée pour atteindre ces objectifs. Elle dépend des activités (marine marchande, pêche, services offshore). Les pêcheurs n'y sont pas toujours pris en compte au même titre que les autres marins.
Cependant, la législation et les conventions sont de plus en plus exigeantes en matière de tâches administratives et de maintenance. Certains experts estiment que les rapports d'enquête relatifs aux eaux européennes mettent en évidence des manquements aux règles de sécurité. Les causes tiennent aux nombreux navires aux équipages sous-numéraires, battant souvent pavillons de complaisance et parfois pavillons d'Etats européens, autorisés à opérer dans les eaux européennes, même pour du fret intra-européen, en contravention aux normes. Cela accroît les risques de pollution et de pertes de marchandises et de vies humaines.

Pour toutes précisions, on se référera à l'annexe sur les "Conditions de travail et de vie en mer et dans les ports maritimes".

4. OPPORTUNITES DE DEVELOPPEMENT REGIONAL

Les régions maritimes disposent de quantité d'opportunités de développement. Comme indiqué précédemment, leur situation économique est extrêmement variable selon leur spécialisation industrielle. Partant, les opportunités de développement qui s’offrent aux régions qui dépendent de la pêche ou du tourisme vont être très différentes de celles des régions de ports ou de chantiers navals. Les incitations mais aussi le contrôle, dans tous les domaines (soutien financier, fiscalité, régulation, gestion des connaissances), des activités touristiques d'un côté, et portuaires de l'autre, soulèvent ainsi des questions radicalement différentes.

Il faut ensuite dynamiser les opportunités de développement. A cet égard, le rôle des régions est très variable en Europe (selon les institutions des Etats membres et le degré de décentralisation, et les mesures politiques de l'UE). Dans plusieurs pays, il est limité, et le soutien au développement est essentiellement du ressort de l'Etat. Cela étant, beaucoup est fait aussi au niveau de l'UE :

- Par exemple, le programme « LeaderSHIP 2015 », mis en œuvre par la CE en coopération avec l'industrie de la construction navale, répond à la question de la compétitivité européenne sur le marché mondial avec les objectifs suivants : renforcer le soutien à la prise de risque dans la recherche, le développement et l’innovation, étudier les opportunités d'aide au développement dans le respect des règles du marché, garantir la sécurité des transports et la protection de l'environnement, harmoniser les règles du marché européen pour l’exportation du matériel de défense, soutenir et promouvoir la gestion des connaissances pour la construction navale.

Des mesures sont également prises au niveau international, comme nous l'avons vu concernant les conditions de travail.

En Europe, les opportunités de développement régional restent globalement très hétérogènes et limitées aux domaines qui relèvent de la compétence des Etats membres ou de l’UE. Cependant, une base commune d'action régionale pourrait consister à prendre les mesures appropriées au développement à long terme des activités côtières :

- en considérant que des mesures devraient être prises en faveur de la compétitivité des industries maritimes et l'environnement côtier ;
- en gérant le développement sur le long terme ; autrement dit, en limitant les impacts négatifs que génèrent les activités maritimes les unes sur les autres, autant que le permet le cadre réglementaire en vigueur. Ce type d'action supposerait des programmes de gestion des zones côtières (GZC) incluant des mesures de « développement durable »;
- en diffusant des données sur les impacts négatifs et, plus généralement, sur les indicateurs de développement durable – à définir pour les appliquer à un ensemble d'activités maritimes.

Pour contribuer à la mise en place d'une base commune de ce type, sont proposés ci-après deux types d'outils : un observatoire de l'économie maritime européenne et un système d'observation des clusters maritimes. Ces outils, coordonnés à l'échelon européen, pourraient servir les intérêts des régions maritimes, en termes non seulement d’aide aux industries maritimes mais aussi de gestion de l'environnement côtier.
5 ORIENTATION POUR LE RENFORCEMENT DE L'ECONOMIE MARITIME

5.1 Observatoire de l'économie maritime européenne

Face à cet ensemble de forces, de faiblesses et de risques, et à la disparition d'emplois, les États membres et les régions maritimes tentent d'identifier des stratégies adéquates. Les régions maritimes pourraient jouer un rôle dans la coordination de certains types d'action en relation avec la politique maritime dans deux domaines : la gestion des zones côtières (GZC) et les informations économiques et technologiques.

Dans le domaine de la gestion côtière, la base la plus appropriée pour l'action des régions est la Recommandation 2002/413/EC du Parlement européen et du Conseil du 30 mai 2002 relative à la mise en œuvre d'une stratégie de gestion intégrée des zones côtières (GIZC) en Europe. Le texte recommande que les États membres adoptent une stratégie nationale pour la gestion des zones côtières, sur la base d'une série de principes incluant une perspective globale élargie, l'association de toutes les parties intéressées et des instances administratives, la cohérence entre les objectifs des politiques sectorielles et entre l'aménagement et la gestion. Au plan pratique, la stratégie devrait viser plusieurs objectifs, dont le développement de politiques nationales et, si approprié, régionales et locales.

Ainsi, cette recommandation laisse une grande marge à l'initiative régionale s'agissant de garantir la cohérence entre les stratégies nationales et locales. Elle suggère fortement par ailleurs que cette phase de coordination soit assumée par les régions compte tenu de leur taille appropriée et de la position institutionnelle dont elles jouissent pour identifier les problèmes locaux, adapter les lignes directrices européennes et nationales aux situations locales, et rendre compte des problèmes de mise en œuvre aux institutions européennes. La mission exige l'échange d'informations au sujet de l'état des zones côtières et des résultats des stratégies en place ou en voie d'application.

Plus généralement, on a tendance à affirmer que les régions maritimes européennes et les États membres ne coordonnent pas leur stratégie maritime au plan de la politique industrielle ou de la GZC. Ils risquent de faire des investissements inappropriés, voire excessifs dans certaines industries (ex. : chantiers navals, flottes de pêche) ou encore dans la gestion de la pollution maritime et des effluents terrestres. Une nouvelle fois, il semble sage de suggérer la promotion d'une plus grande coordination entre les régions grâce à l'échange d'informations économiques et environnementales sur les activités maritimes, de manière à identifier le champ d'action pour :

- des projets européens cohérents dans le domaine de la recherche-développement et des technologies ;
- un rôle renforcé dans l'éducation et la formation, en identifiant au préalable les domaines qui exigent davantage d'efforts de la part du public ;
- promouvoir la compétitivité des industries maritimes, du moins des industries des régions qui jouissent d'une certaine marge de manœuvre, comme les équipements portuaires ;
- l'échange d'informations sur les industries à faible rendement, de manière à rationaliser les futurs investissements productifs.

Par conséquent, tout ou presque repose sur un échange d'informations plus efficace entre les régions, les industries, les instituts de recherche et les citoyens. Collecter et traiter des données économiques et environnementales précises concernant les industries maritimes est une première étape nécessaire à l'élaboration des stratégies maritimes. Un observatoire de l'économie maritime européenne devrait apporter aux régions les informations et les données économiques dont elles ont besoin pour décider de leurs investissements en termes d'équipement ou contribuer à la coordination des décisions publiques et privées sur les futurs investissements. Cela permettrait aussi aux régions d'identifier les causes du déclin de certaines activités et le besoin de les réorganiser, et de repérer les activités dotées d'un potentiel de développement local sur lesquelles doit donc se concentrer l'effort public, par exemple en termes d'éducation et de formation.

La mission d'un tel observatoire serait de collecter, de traiter et de faire la synthèse des informations et des données économiques sector par secteur, ainsi que les aspects régionaux/locaux de l'économie maritime, notamment en ce qui concerne ses impacts présents et futurs sur l'emploi. En termes pratiques, cet observatoire pourrait prendre la forme d'une base de données hébergée sur un site Web géré de façon appropriée.
### 5.2 Les clusters maritimes

Les clusters maritimes sont des entités stratégiques pour les régions maritimes d'Europe.

Un cluster maritime est défini dans ce rapport comme un réseau d'entreprises locales en coopération étroite avec des unités de recherche et des établissements de formation. L'objectif de cette coopération est l'innovation technologique, l'accroissement des performances des industries et de la recherche, la diminution des coûts de collaboration et d'échanges d'information, et la conquête des marchés internationaux. Un tel réseau regroupe des projets et des équipements novateurs communs destinés à dynamiser une coopération efficace entre les industries et la recherche. Il bénéficie parfois du soutien des institutions nationales ou locales.

Ainsi, certains États membres ou régions s'efforcent d'encourager la coopération entre la recherche-développement et l'industrie, et de développer des compétences dans le domaine maritime grâce à la formation. Les exemples de projets de clusters (Tableau 1) montrent que les expériences sont aussi diverses que le sont les secteurs de compétitivité des régions maritimes.

<table>
<thead>
<tr>
<th>Régions</th>
<th>Composantes et fonctionnement des clusters</th>
</tr>
</thead>
</table>
| Abruzzes | Le Plan maritime de l’État est à la base du travail mené, qui englobe :
- les transports maritimes, prévus par le « plan régional intégré pour les transports » ;
- le programme de surveillance des eaux côtières. |
| Allemagne du Nord (y compris Schl.-Holstein, Basse-Saxe, Brême, Hambourg, Mecklembourg-Poméranie occidentale) | Plusieurs clusters se développent dans cette région. Ils impliquent des secteurs stratégiques : marine marchande, construction navale, équipement naval, énergie offshore, instruments de surveillance des océans et recherche océanographique. L’organisation de l’ensemble vise à coordonner les différentes branches industrielles du point de vue des stratégies d’innovation et des échanges d’information en particulier. |
| Møre og Romsdal | Le cluster englobe des entreprises de transport, des chantiers navals, des fournisseurs pour la construction navale, des écoles, des parcs éducatifs, des unités de recherche, des courtiers jurés d’assurance maritime et des consultants. Face à la concurrence, la connaissance et la coordination interne sont cruciales pour le cluster. Encourager l’innovation et accroître la capacité financière sont les deux principaux défis. Le nombre de petites entreprises est relativement élevé et l’on prévoit des changements structurels qui amèneraient leur diminution au profit de plus grandes structures. Møre og Romsdal forme la plus vaste zone de pêche de la Norvège ; elle se classe parmi les cinq premières pour l’aquaculture. Le principal enjeu, pour ce secteur, est d’améliorer sa rentabilité essentiellement par le biais du recrutement, l’amélioration des connaissances et une meilleure coordination de la RDI. |
| Pays de la Loire | Des initiatives sont en cours dans les domaines de l’aide à la recherche, des transports et du développement portuaire, de la gestion de la pollution des zones côtières, de la pêche et de la gestion de l’aquaculture et de la protection de l’environnement. |
| Provence-Alpes-Côte d’Azur | Initiative en cours dans le cadre de la démarche « Pôle de compétitivité Mer », pour regrouper des industries maritimes apparentées : « Marine and submarine network » (MSN). (Ce n’est pas un cluster en tant que tel.) |
| Västerbotten | Initiative en cours des Chambres de commerce, destinée à réunir des ports et des industries portuaires du nord de la Suède et de Finlande dans le golfe de Botnie. Parmi les questions importantes, les activités de déglaçage, les investissements dans les infrastructures, les autoroutes de la mer. Projet de développer la circulation des ferries entre la Suède et la Finlande par Kvarken pour renforcer la coopération régionale. (Ce n’est pas véritablement un cluster.) |
Le cluster englobe : Kongsberg–Horten et Greenland, la construction navale, la technologie subaquatique, la technologie du positionnement, la biotechnologie. Le cluster est constitué de sociétés privées qui se chargent de la coordination de leurs activités.

Le cluster est l'un des plus importants au monde pour la construction de yachts. Il intègre des petites et moyennes entreprises de construction nautique, de fabrication d'instruments électroniques, de cartes nautiques, de sabords et hublots, d'appontements et autres matériels dont une partie est exportée. Les entreprises bénéficient de la présence de cycles de formation, de services financiers élaborés et de recherche technologique en soutien aux procédés de production, confection de matériels et capacités commerciales d'exportation des entreprises. Le cluster stimule les services de croisière en Toscane. Il est en liaison étroite avec le tourisme littoral, les ports de plaisance et le patrimoine culturel et environnemental.

Source : Réponses des États et des régions aux questionnaires de la CRPM. a) Toutes les réponses n’ont pas été fournies ; le tableau n’est donc pas exhaustif. b) Les répondants ont interprété assez librement la notion de cluster.

Outre les expériences régionales résumées dans le tableau 1, deux expériences nationales valent la peine d'être mentionnées.

- Le cluster maritime hollandais bénéficie du soutien du Réseau maritime hollandais, association d'organisations commerciales dont l'objectif est de promouvoir le cluster et de publier à son sujet (voir références). Le cluster englobe diverses activités : transport, construction navale, fourniture d'équipements maritimes, transport offshore et fluvial, dragage, ports, services maritimes, pêche, Marine et construction de navires de plaisance. Il représenterait 135.000 emplois directs et 55.000 emplois indirects. L'innovation est promue par le Forum de l'innovation maritime.

- Le cluster maritime norvégien regroupe tout un éventail d'activités : transports, construction navale, courtage, conseils, fourniture d'équipements et de moteurs, assurance, recherche, éducation et formation, classification, pêche, offshore, autorités de navigation. D'après l'analyse, les activités du cluster sont concentrées dans plusieurs régions, dont Møre og Romsdal, Oslo, Telemark (Tableau 1).

Sans surprise, les deux clusters les plus dynamiquement promus sont basés dans des pays dont les économies maritimes figurent parmi les plus fortes d'Europe en termes de part de PNB : plus de 5,5% pour la Norvège, environ 2% pour les Pays-Bas.

Mais d'une manière générale, beaucoup d'États membres et de régions manquent d'informations sur les clusters et l'intérêt qu'ils représentent. Les réponses aux questionnaires montrent que les régions souhaiteraient avoir des précisions sur les clusters et leur fonctionnement. Précisions que le tableau 1 ne présente qu'un bref aperçu des clusters et que les réponses sont plus détaillées : elles mettent en lumière la possibilité de procéder à un suivi global du fonctionnement et des réalisations des clusters.

Il serait essentiel de collecter des données sur les clusters maritimes en Europe et de suivre leur fonctionnement. Nous suggérons de confier cette mission à un « système d'observation des clusters maritimes » ; cet outil permettrait de s'appuyer sur les expériences en cours pour identifier les possibilités de renforcer les liens entre la recherche et l'industrie, et l'ampleur envisageable pour l'action publique au niveau local. Ce système devrait aussi apporter des informations sur les perspectives de la RDI (recherche-développement-innovation) et de l'industrie en relation au développement international et aux questions environnementales mondiales.

Les régions maritimes sont des acteurs de premier plan de l'organisation de ce système : conscientes des contraintes locales, elles sont idéalement placées pour identifier non seulement les ressources maritimes locales qui pourraient être développées grâce à l'intensification de la RDI, mais aussi les conditions matérielles de l'efficacité des clusters. En relation avec les institutions européennes, elles peuvent aider à traduire les exigences de développement local en stratégies européennes mieux coordonnées. D'un point de vue pratique, le système d'observation des clusters pourrait être établi à partir d'une base de données Internet accessible, comme l'observatoire mentionné ci-dessus.
La diffusion des données du système serait une dimension cruciale de son fonctionnement ; à condition que des informations soient disponibles, les caractéristiques clés de la réussite des clusters pourraient être appliquées dans d'autres régions et contribuer au développement des ressources locales.

6. CONCLUSION

L'économie maritime européenne est très diversifiée, d'où la nécessité de procéder à un classement des activités maritimes – en activités maritimes « pures » et « tangentes », par exemple. Malgré leur extrême diversité, la plupart d'entre elles dépendent largement des marchés internationaux et, partant, des conditions économiques mondiales. Qui plus est, nombreuses sont celles qui, fortement tributaires de l'état de l'environnement, sont de ce fait extrêmement sensibles à la GZC.

Les atouts de l'économie maritime européenne sont considérables : les équipements navals et portuaires, la construction nautique, certains segments de pointe de la construction navale, le transport maritime, les services offshore, les assurances maritimes et les banques, le tourisme. Dans l'ensemble, l'Europe est compétitive pour les équipements "high tech", pour de nombreux services maritimes aux entreprises et aux particuliers, ainsi que pour les activités liées directement ou indirectement au tourisme. Un atout essentiel consiste également dans la présence de plusieurs clusters innovants dans les secteurs des biens et des services. L'innovation et la recherche sont en effet déterminants pour l'économie maritime car on observe nettement un déplacement des emplois vers les secteurs de pointe.

Ses faiblesses sont liées à la compétitivité insuffisante de certaines branches, à son insuffisante spécialisation industrielle et aux menaces qui pèsent sur les environnements côtiers. Ces dernières années, les activités (et les régions) maritimes ont fait l'expérience de changements majeurs en termes d'emplois, ce qui pousse à la fois les régions et les institutions de l'UE à gérer l'emploi et les conditions de travail sur une base régulière.

Les régions disposent d’opportunités de développement qui seraient plus porteuses si elles étaient coordonnées au niveau européen. Elles auraient alors un rôle fondamental à jouer dans l'établissement et le fonctionnement d'un observatoire économique et d’un système d'observation des clusters. En tant que partenaires proches des industries locales, elles seraient en mesure de collecter pour ceux-ci les informations de base qu'il serait utile de transmettre et d'échanger au niveau des régions de l'UE ; et elles seraient en mesure de diffuser des données appropriées concernant les exigences des industries. En tant qu'entités représentées auprès des institutions de l'UE, elles seraient en mesure d'influer sur l'ajustement de la politique de l'UE dans le domaine des industries maritimes et de la GZC.

Cependant, la création de tels outils exige une certaine somme de travail et la pleine participation des régions maritimes. Reste à faire le point sur le travail que cela implique, sans perdre de vue qu’une approche étape par étape est un gage de réussite.

Une possibilité est ouverte à la discussion : celle de fusionner l'observatoire économique et le système d'observation des clusters dans la perspective de se doter d’un unique instrument.
ANNEXES TO ECONOMY AND EMPLOYEMENT REPORT

Europe of The Sea Files:

Maritime Clusters
Shipping
Shipbuilding and Repair
Fishing and Aquaculture
Offshore and Coastal Energy
Working and Living Conditions at Sea and in Maritime Ports
1. What is a "maritime cluster"?

In the framework of the « Europe of the sea » project, the term of "maritime cluster" means a network of firms, research, development and innovation (RDI) units and training organizations (universities, specialized schools, etc.), sometimes supported by national or local authorities, which co-operate with the aim of technology innovation and of increasing maritime industry's performance.

In several countries, notably Netherlands, Norway, Italy, the term of "maritime cluster" is used as meaning an association of maritime activities whose businesses are generally interconnected, e.g. shipping, ports, ship and boat building and repair, naval and port equipment, Navy, offshore energy services, etc. Such associations are helpful in providing figures illustrating the economic weight of its various components at national scale. However, this definition of clusters differs from the option adopted herein; the purpose of this note is to focus on clusters working at region scale and having tight connections with RDI entities. Such clusters may be of local, national or international scope, and be parts of larger clusters.

The networking of companies and RDI organisations, often based on state and region support, does not mean that the system is protected from market mechanisms. As shown by examples taken below, competition spurs the development of clusters at different levels: competition for outlets at national or international level, even between firms of the same cluster; competition for skill recruitment on job markets; competition for innovation. Obviously, how intense and pervasive competition is largely depends on cluster dynamics and on the situation of national economies.

Further to CPMR's call for proposals in November 2005, the present file summarises the main features of a few clusters on the basis of respondents' presentations. The file is aimed at highlighting similarities and differences between clusters and helping maritime regions and the EU to grasp the economic benefits from clusters.

The benefits in question are beyond the scope of statistics, as clusters have effects in terms of providing local jobs, enhancing traditional and historical skills as well as of promoting specific kinds of culture and heritage. The present summary is thus a limited picture of clusters.

2. Selected clusters

The maritime clusters taken into account herein (chart 1) are those of: Schleswig-Holstein (Germany), Møre og Romsdal (Norway), Nord-Pas de Calais (France), Valencia (Spain), Aquitaine (France).
The different clusters considered herein are of quite different size and scope (tables 2 and 3).

### Table 2. Clusters' targets

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Target</th>
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<tbody>
<tr>
<td>Schleswig-Holstein</td>
<td>General objective of strengthening the maritime position of S-H region, to interlink industry, politics and science</td>
</tr>
<tr>
<td>Møre og Romsdal</td>
<td>Offshore service vessels manufacturing and design. Objective of keeping up innovation capacity thanks to a critical mass of innovative firms.</td>
</tr>
<tr>
<td>Nord-Pas de Calais</td>
<td>Fish trade and processing industry. Objective of enhancing industry's enduring competitiveness through innovation, quality upgrade and technology development.</td>
</tr>
<tr>
<td>Valencia</td>
<td>Port networking, and shipping business</td>
</tr>
<tr>
<td>Aquitaine</td>
<td>Surf practice, and equipment manufacturing and design</td>
</tr>
</tbody>
</table>

3. **Firms and industries involved** (table 3)

- The Schleswig-Holstein cluster is specific among the selected clusters as it involves some 1,500 companies, and includes and interconnects several sub-clusters; e.g. ocean monitoring, land-based energy supply for ships, maritime transport and logistics. Each of the latter supports a range of maritime industries, training and RDI bodies. In general terms, the cluster is aimed at enhancing the regional economy.

- Though focused on specific products and services, M&R and Valencia clusters involve a diversity of industries, namely ports and shipping, offshore energy services, but also ship and boat building and design, marinas and fishing, as well as consultancies. However, the two clusters have quite different targets: M&R cluster focuses on the highly innovative supply chain of advanced Offshore Service Vessels (OSVs), including shipbuilding, design and equipment manufacturing; Valencia cluster is aimed at enhancing a network of 40 ports, mainly based on the three major ports of Valencia, Alicante and Castellon.
The other two clusters are targeted to smaller, but just as dynamic, industry categories: seafood processing on the one hand; surf board design and sport practice on the other. Among these two, the Aquitaine cluster is just starting up.

In terms of output and employment, clusters' significance can be appraised on the basis of a few available figures, providing an incomplete picture:
- Schleswig-Holstein: turnover estimated at 5.3-5.5 bln euros; employment at 43,500-46,800 jobs; number of companies at 1,340-1,492. Figures are related to the cluster as a whole (aggregate of the different sub-clusters).
- M&R: turnover estimated at 3.125 bln euros; employment at more than 13,000 jobs (lower bound); number of companies at about 120 (lower bound).
- Valencia: number of jobs estimated at 20,000.
- Nord-Pas de Calais: 4,985 jobs; 166 companies.
- Aquitaine: 340 firms.
Table 3. Industries involved in clusters

<table>
<thead>
<tr>
<th>Fisheries</th>
<th>Schleswig-Holstein</th>
<th>Møre og Romsdal</th>
<th>Nord-Pas de Calais</th>
<th>Valencia</th>
<th>Aquitaine</th>
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<tbody>
<tr>
<td>Aquaculture</td>
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<tr>
<td>Fish packaging and wholesale trade</td>
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<tr>
<td>Seafood processing</td>
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<tr>
<td>Offshore energy / wind turbines</td>
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<td>Offshore energy / other renewables</td>
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<td>Shipbuilding</td>
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<tr>
<td>Naval equipment</td>
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<tr>
<td>Boat building</td>
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<td>Port and shipping equipment</td>
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<tr>
<td>Civil engineering / hydraulic, coastal</td>
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<td>Offshore energy equipment and engineering</td>
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<td>Consultancy / marine equipment technology and design</td>
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<td>Consultancy / hydrography</td>
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<td>Inland navigation</td>
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<td>Freight forwarders</td>
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<td>Marine sports / associations, management</td>
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<td>Maritime press</td>
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<td>Food safety control agency</td>
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Grey box = involved  
Blank = not involved  
Schleswig-H column includes all sub-clusters.  
M&R focus: OSV equipment manufacturing and design  
NPdC focus: seafood processing, trade and safety control  
Valencia: ports and shipping  
Aquitaine: maritime materials and structure design, water sport practice and management
4. **RDI disciplines involved** (table 4)

Obviously, the RDI areas covered by clusters are illustrative of the development areas prioritised by both local authorities and industries.

The number of RDI entities and disciplines participating to the development of clusters is especially important for Schleswig-H and M&R; they principally focus on technology and engineering.

RDI is more concentrated on services and environment (transport, information technology, ecology) in the Valencia cluster; on food and fishing industries and marine biology in the case of Nord-PdC; and on maritime technology and water sport equipment design in Aquitaine cluster, which probably overlaps an area of interest for M&R cluster, namely marine material technology.

Biology, ecology, shipbuilding technologies, information technologies and offshore oil and gas engineering are disciplines shared by at least two clusters.

<table>
<thead>
<tr>
<th>Table 4. RDI domains involved in clusters</th>
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<tr>
<td>Coastal and marine ecology / biology / aquaculture</td>
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<td>Food processing</td>
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<td>Food safety</td>
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<td>Marine renewable energy</td>
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<tr>
<td>Offshore oil and gas technology</td>
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<tr>
<td>Operational oceanography / acoustic, geophysics, hydrography</td>
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<tr>
<td>Naval architecture and mechanical engineering</td>
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<tr>
<td>Shipbuilding technology, ship design</td>
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<td>Nautical sport material technology and design</td>
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<td>Ergonomics</td>
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<td>Information technology</td>
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<td>Marine structures</td>
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<td>Offshore marine industry technology</td>
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<td>Transport / shipping</td>
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<td>Logistics</td>
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<td>Boating</td>
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<td>Medical, health, safety</td>
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*Grey box = involved
Blank = not involved
Schleswig-H column includes all sub-clusters.*
5. **Education and training areas** (table 5)

In most cases, education encompasses a wide range of disciplines and courses, so as to cover the diversity of businesses directly or indirectly involved in clusters as well as RDI areas. In particular, Schleswig-H and Valencia include a wide range of education domains.

<table>
<thead>
<tr>
<th></th>
<th>Schleswig-Holstein</th>
<th>Møre og Romsdal</th>
<th>Nord-Pas de Calais</th>
<th>Valencia</th>
<th>Aquitaine</th>
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<tr>
<td>Fishing</td>
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<td>Aquaculture</td>
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<td>Seafood processing</td>
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<td>Marine science / oceanography</td>
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<td>Marine biology, ecology</td>
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<td>Renewable energy</td>
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<td>Offshore and underwater technology</td>
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<td>Hydrography</td>
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<td>Shipbuilding</td>
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<td>Ship engineering and design</td>
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<td>Marine and maritime technology and design / Naval engineering</td>
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<td>Civil (port and coastal) engineering / hydraulic</td>
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<td>Water sport equipment engineering / design</td>
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<td>Information technology</td>
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<td>Shipping</td>
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<td>Port management</td>
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<td>International transport and maritime economics</td>
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<td>Port business</td>
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<td>Stevedoring</td>
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<td>Leisure boating</td>
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<td>Marketing</td>
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<td>Corporate management</td>
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<td>Sport services management</td>
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<td>Maritime planning, supply industry, services</td>
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<td>Maritime law</td>
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<td>Maritime journalism / Communication</td>
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<td>Tourism, leisure / management</td>
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<td>Sport / Surf</td>
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<td>Arts / Culture</td>
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<td>Maritime safety</td>
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*Grey box = involved*

*Blank = not involved*

*Schleswig-H column includes all sub-clusters.*
6. Establishment of clusters

Clusters are not ex nihilo creations. All of them are based on skills existing locally for years or decades. Clusters, as such, may have replaced previous organisations or industry associations which had similar objectives at smaller scale. Innovation and networking are the key concepts for clusters to keep up competitiveness and high grade skills in the future. RDI bodies, such as universities or consultancies, participated in the establishment of all clusters (table 6).

<table>
<thead>
<tr>
<th>Table 6. Establishment of clusters</th>
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<tbody>
<tr>
<td>Schleswig-Holstein</td>
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<tr>
<td>Inception date</td>
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<td>Founding organisations</td>
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<td>Creation conditions</td>
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<td>Role of EU incentives in cluster establishment</td>
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<td>Role of region</td>
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<td>Role of industries</td>
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<td>Role of RDI</td>
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<td>Role of state</td>
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<td>Role of banks</td>
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Grey box = major role. Blank = no major role.

7. Achievements and impacts

The achievements are of various kinds. They are related to:
- innovative products and services,
- new RDI projects,
- higher competitiveness, which increases export capacity,
- job attraction, triggering a virtuous circle based on young staff's innovation capacity,
- new investments and attracting facilities.

Among achievements, knowledge dissemination is common to all clusters. The development of clusters critically depends on interconnecting firms and RDI bodies through shared knowledge.

Some achievements have resulted from industry co-operation which existed prior to the establishment of a cluster. However, they can be regarded as related to the cluster, the latter being the formal shape of such co-operative strategy.
Table 7. Clusters' achievements

<table>
<thead>
<tr>
<th>Region</th>
<th>Achievements</th>
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</table>
| Schleswig-Holstein | - Networking activities, project initiation.  
                        - Promotion of operational oceanography, offshore industry, and of RDI in ship design and logistics. Joint projects  
                        - RDI in ship energy supply facilities to improve air quality.  
                        - Maritime yearbook and data bank. |
| M&R             | - Tighter connections between different industries in the cluster; increasing number of contracts between cluster companies.  
| Nord-PdC        | - RDI projects over the past ten years, involving 30 French and 12 foreign companies.                                                          |
| Valencia        | - Innovation in port services and information system.  
                        - Innovation in environmental protection.  
                        - New training and safety EU co-funded projects.  
                        - Steady growth in shipping traffic over the past five years. Promotion of Short Sea Shipping strategy.  
                        - Development of a new marina.  
                        - Development in environmental protection and management. Several projects and companies are involved. Know-how transfer in American and Asian developing countries. |
| Aquitaine       | - Partnership in sportswear RDI and recycling just created.                                                                                 |

8. Governance of clusters

Governance takes different shapes: from the most informal organisations (M&R and Valencia), to the most formal ones under state-region contract (Nord-PdC and Aquitaine). Regions often play a part in governance, either directly or through economic incentives. RDI organisations always participate in clusters' organisation or action plans.

<table>
<thead>
<tr>
<th>Region</th>
<th>Governance and organisation</th>
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</table>
| Schleswig-Holstein | - Informal organisation made up of marine industry, technology and research associations, large firms and a local chamber of commerce.  
                        - Formal meetings with partners, the region technology agency (KERN) and the Ministry for Science, Economy and Transport.  
                        - Regional steering committee made up of political, economic and scientific advisers |
| M&R             | - No formal organisation.  
                        - Co-operative network between companies, RDI entities, universities and other training bodies.  
                        - State support for RDI through tax incentives and through Norwegian Research Council developing R&D programmes with maritime industry focus. |
| Nord-PdC        | - Establishment of the "Halieutic Network Centre" association in 1999, headed by a chairman of the board and vice-chairmen.  
                        - 19 members split into 3 groups: industry associations; RDI public organisations including scientists, specialised schools and training centres; institutional partners (chamber of commerce, local authorities).  
                        - State support through state-region multi-annual contract allocating RDI state funding. |
| Valencia        | - Informal organisation led by port authorities and industry associations.  
                        - Region support through local regulation, administration's skills and by participation of region's Port Institute for Studies and Co-operation.  
                        - Creation of informal committees on specific kinds of business (safety, short sea shipping, environment, etc.). |
| Aquitaine       | - Informal network of local industry associations. Shapers' industry association as leader of the cluster.  
                        - Cluster is placed in the framework of a state-region multi-annual contract allocating RDI state funding. |
9. Conclusion

Clusters are established on the basis of existing local economic strengths or comparative advantages in a given region. They do not create a know-how out of nothing; their goal is to enhance and extend the latter. Their critical role is to enable a stronger co-operation between industry, education and RDI. Their scope can be very broad, encompassing a range of multi-product / multi-service maritime activities; it can also be limited to niche markets where small enterprises may find it profitable to share costs, e.g. RDI and information costs.

The quick progress recorded by clusters in terms of both output and RDI projects makes it very desirable and useful to collect data on their development for the purpose of an observing system. Data should be made available to EU maritime regions as a helpful information base for further and tighter inter-regional co-operation.
1. **World seaborne traffic**

   - Steady economic growth is recorded worldwide from the start of the 90s. Seaborne trade's growth rate is strikingly parallel to that of the world economy (chart 1).

   - World seaborne trade performed very well over the past two-three years.

   - Europe remains a major player in world seaborne traffic despite Asia's expansion. Europe made 34% of world seaborne traffic in 1970, slightly less than 30% in 2003 (chart 2).

   - Asia's share of world traffic is steadily increasing. South and East Asia and Japan made a 16% share in 1970, more than 30% in 2003.

   - Unsurprisingly the traffic share of Middle East is primarily crude oil trade driven.

   - Container traffic is a key factor of world trade development. It is steadily growing worldwide, faster in Asia than in Europe (chart 3). Overall, it is seen as growing faster than harbours' capacity.

**Chart 1. World GDP and seaborne traffic trends (all goods)**

Sources: UNCTAD; IMF.
Chart 2. World seaborne trade by country groups
(All goods loaded + unloaded)

Source: UNCTAD

Chart 3. Containerized cargoes traffic growth
(including empty containers and feedering)

* Estimate
Source: Drewry Shipping Consultants Ltd

2. The European merchant fleet

- Significance of seaborne traffic for Europe: 90% of EU’s foreign trade and 40% of its internal trade are seaborne. 90% of oil product trade for European consumption is seaborne, the rest coming through pipelines, roads and inland navigation.

- The European Economic Area (EU 25 + Norway + Iceland) registered fleet totals well over 9,000 vessels at about 25% of world tonnage (chart 4).

- But ships either registered under either national or foreign (open) registries (chart 5). Resident ship owners of the EEA control some 40% of the world trading fleet (source: ECSA). The major ship owner countries are: Greece, Japan, Germany, China, Norway, US, Hong Kong, S Korea, Taiwan, Singapore.

- The number of seafarers employed on board EEA registered vessels is estimated at 355,000 including officers, rating and non-nautical staff (source: ECSA).

- The 3 world largest shipping companies are European. European shipping companies are the world major oil product carriers.
Chart 4. World trading fleet by registries as of 31 Dec 2004: 895,840 dwt

Ships of 100 grt and over
(1) Including former USSR and Turkey
(2) Cyprus and Malta included in EU 25
(3) Including Middle East
(4) Excluding Great Lakes fleets of the US and Canada and the US Reserve Fleet
(5) Including Australia and New-Zealand.
Source: Lloyd's Register-Fairplay

Chart 5. National and foreign flag tonnage shares attributable to countries of domicile as of 1 July 2004
(ships of 100 gt and over)
% of dwt

Source: ISL, 2004

3. Short Sea Shipping in the EU

- SSS is an essential component of shipping in the EU. Road congestion and global warming are the two major factors which make it more and more critical for EU's economy.

- SSS accounted for 63% of total good seaborne transport in the EU15 in 2003, i.e. 1.6 billion tonnes (chart 6). Figures exclude passenger transport.

- The UK and Italy accounted for the largest share of cargo handled in SSS.

- The Mediterranean and the North Sea are the major SSS areas for the EU (chart 7).
• Though SSS is developing in the EU, obstacles which hinder its growth have been identified by the EC, among which:
  - Door-to-door multimodality remains to be accomplished: technical limitations, overcharges, competitive distortions.
  - Administrative procedures are too complex.
  - Various kinds of shortcomings in working conditions in harbours; e.g. waiting time; access to, and availability of, harbour services; tariffs; infrastructure suitable for SSS.

• The EC promotes SSS through a range of actions, including financial instruments:
  - The intermodal support programme "Marco Polo" (2003-2006) covers rail, inland waterways and SSS, and support new non-road freight services. Marco Polo II (2007-2013) was adopted by the EC in 2004, and proposed to the Council and the Parliament.
  - Trans-European Network Guidelines as revised in 2004 include the development of "Motorways of the Sea" with the objective of reducing road congestion. Eligible projects may receive a funding of up to 20%, and preliminary studies up to 50%.
  - EC's research and technological development programmes include financing opportunities.

Chart 6. Share of SSS of goods in total tonnage turnover as of 2004

Chart 7. SSS in the EU + Norway by sea region as of 2003

* Unknown ports or rivers

Source: Eurostat

4. Intermodality

The objectives of the Marco Polo programme (see § 3) show that intermodality is a critical condition for the development of Short Sea Shipping of goods, especially intermodality between the latter and inland non-road transport modes, i.e. principally: rail and inland navigation.
• **Rail freight**: the White Paper on the EU transport policy for 2010 underscored the recent downgrade of rail freight service quality in certain member states, which deterred a number of enterprises to carry on with rail based deliveries. This was due to differences in member states’ technical standards, train or driver shortages, enduring organisation difficulties, and social conflicts. Delay compensations do not offset the costs incurred by clients, who may be lead to resort to expensive freight alternatives.

• **Inland navigation**: this mode is remarkably developed in the Netherlands, Germany and Belgium, and is largely correlated to the strong development in maritime transport on the North Range. Before enlargement, waterway freight of goods in EU 15 was third after road and rail freight, with a yearly tonnage of 440 million tonnes (3.5% of total inland freight), and made 6.5% of market shares in terms of transport performance (125 billion tonnes-kilometres), i.e. +20% over the past three decades, +50% in Belgium and +35% in France from 1997 to 2004. Total turnover in EU 15 was estimated at 4.15 billion euros in 2000, of which 80% in NL, Belgium, Germany and France. NL, Belgium and Germany alone make 113 billion tkm, i.e. 90% of waterway freight performance. In NL and certain German regions, waterway freight share is even higher than rail. Though natural conditions for inland navigation capabilities are unevenly allocated among EU countries, there exists an important development potential in a few EU 25 member states.

• Inland navigation suffers from a staff decrease. Modernisation of equipment, standardisation of facilities, training and recruitment of staff from new EU countries are the main issues that will have to be sorted out in the near future.

5. **Shipping business and EU regulatory context**

5.1. **Oil spills and "Erika packages"**

Three months after the Erika oil spill (then aggravated by the wrecking of the Prestige), the EC adopted a communication "On the safety of the seaborne oil trade" and put forward two successive packages of measures to be taken immediately and in the mid-term.

• **Erika I** package was to have immediate effects:
  - Control of ships in harbours is to be tightened; a black list of ships to be banned from EU harbours is to be release on a regular basis; directive 95/21/CE is to be modified.
  - Classification societies are to be more strictly controlled; directive 2001/105/CE is to be modified.
  - Single hull oil tankers are to be decommissioned according to an agenda similar to that of the US, depending on tonnage; action to be completed by 2015.

• **Erika II** was adopted in Dec 2000 as a second set of measures of mid-term effects:
  - Introduction of a Community monitoring, control and information system for maritime traffic.
  - Proposal for a regulation complementing the existing international regime on liability and compensation for oil pollution damage by tankers, by creating a European supplementary fund, the "COPE" Compensation Fund for Oil Pollution in European Waters, to compensate victims of oil spills in European waters. The measure did not come into effect as parties to IOPC Fund decided in May 2003 to bring the maximum compensation up to 1 billion euros.
  - Setting up of a European Maritime Safety Agency, whose tasks include providing technical assistance (amendment of Community legislation), assistance to candidate countries, organising training activities, gathering data and exploiting databases on maritime safety, monitoring navigation, evaluating and auditing classification societies, on-the-spot inspections and participation in enquiries following accidents at sea.

• **Erika III** was proposed by the EC in Nov 2005:
  - Reinforce registry conditions and control of European flags
  - Reinforce control on classification societies
  - Reinforce port state control, make regulation of under-standard ships more severe
  - Improve traffic control: identify refuge ports, develop a data base and data exchange on traffic, fit out fishing vessels with specific systems to reduce collision risks
  - Harmonise accident investigation procedures at EU level
  - Improve accident liability and compensation regime: revise protection regime by implementing provisions from Athens Convention of 2002
- Reinforce ship owners' liability: increase compensation charges paid by owners, remove upper bound on civil liability through international negotiations, make it mandatory for owners to underwrite a third party insurance.

5.2. Shipping conferences

- Shipping conferences remain one of the very few cases of agreements authorised as an exemption from antitrust regulation.

- Shipping companies have traditionally organised themselves as liner conferences whereby they would agree common or uniform freight rates in return for ensuring regular scheduled maritime transport services to shippers and freight forwarders. Such liner conferences allow shipping companies to fix the price for transporting goods between the European Union and other countries.

- "The European Union Council of Ministers adopted a Liner Conference Block Exemption Regulation (4056/86) in 1986, which exempts price-fixing, capacity-regulation, under certain strict conditions, and other agreements or consultations between liner shipping companies from the EC Treaty competition rules’ ban on restrictive business practices. The justification for the exemption was the assumption that the rate-setting and other activities of liner conferences led to stable freight rates, which in turn assured shippers of reliable scheduled maritime transport services.” (EC press release, 10 Nov 05)

- A review of the Block Exemption Regulation was undertaken in the context of the conclusions of the Lisbon European Council in 2000. Other jurisdictions, notably Australia, are also currently reviewing their legislation.

- A study was commissioned to analyse the potential impact of repealing the Block Exemption Regulation. The study’s main findings are:
  - transport prices for liner shipping services would decline,
  - service reliability on deep sea and short sea trades would be expected to improve,
  - service quality would either be unaffected or improve,
  - there would be either a positive impact or no impact on the competitiveness of EU liner shipping firms,
  - small liner shipping carriers would not experience particular problems,
  - no negative impact or even a positive impact could be expected on EU ports, employment, trade and developing countries.

- In the White Paper 2003/COMP/18, the EC concluded that it would consider repealing the exemption for liner conferences after assessing stakeholders’ suggestions.

6. World harbours: growth in Asia

- In Asia, steady economic growth is the cause of the growing number of world major harbours: Singapore, Kaoshiung (TW), Busan, Gwangyang and Ulsan (SK), Nagoya and Yokohama (J), including 9 Chinese harbours (Shanghai, Hong Kong, etc.) (chart 8).

- Asia is world leader for containerised harbour traffic: productive investment is high. The 6 largest container harbours are in Asia (chart 9). Chinese harbours have developed faster than competitors over the past three years: the trend continues.

- Container traffic "hubs" have appeared as main terminals for large container ships, and where containers are dispatched to "feeder" ports. Large container harbours necessitate specific facilities, suitable to deep-draught ships. The two largest hubs of Asia, Hong Kong and Singapore, find competitors among new Chinese hubs.
Chart 8. World major harbours as of 2004

C: China, J: Japan, SK: South Korea, TW: Taiwan, UAE: United Arab Emirates, US: United States
Source: Journal de la marine marchande (JMM), Dec 2005.

Chart 9. World major container harbours

C: China, SK: South Korea, TW: Taiwan, UAE: United Arab Emirates
Source: UNCTAD
7. **European harbours**

- There are a considerable number of harbours in Europe, those being of extremely various size and specialised on a wide diversity of traffics (charts 10 to 15).

- Maritime traffic has been dynamic over the recent past years. Rotterdam, Antwerp and Hamburg are the top 3 European harbours.

- Though outpaced by Asia, Europe has recorded a sizeable growth in container traffic over the past five years. Over the past ten years, Antwerp, Hamburg and the three Spanish ports, Valencia, Algesiras and Barcelona have recorded the most rapid traffic growth in containerised traffic in Europe.

**Chart 10. Major harbours in Europe as of 2004**

<table>
<thead>
<tr>
<th>Harbour</th>
<th>톤스</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotterdam</td>
<td>400</td>
</tr>
<tr>
<td>Antwerp</td>
<td>300</td>
</tr>
<tr>
<td>Hamburg</td>
<td>200</td>
</tr>
<tr>
<td>Le Havre</td>
<td>100</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>100</td>
</tr>
<tr>
<td>Marseille</td>
<td>100</td>
</tr>
<tr>
<td>Le Havre</td>
<td>100</td>
</tr>
<tr>
<td>Genova</td>
<td>100</td>
</tr>
<tr>
<td>Southampton</td>
<td>100</td>
</tr>
<tr>
<td>Triste</td>
<td>100</td>
</tr>
</tbody>
</table>

**Chart 11. Main container ports in Europe as of 2004**

<table>
<thead>
<tr>
<th>Harbour</th>
<th>TEU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotterdam</td>
<td>8</td>
</tr>
<tr>
<td>Hamburg</td>
<td>6</td>
</tr>
<tr>
<td>Bremerhaven</td>
<td>4</td>
</tr>
<tr>
<td>Gioia Taurio</td>
<td>4</td>
</tr>
<tr>
<td>Valencia</td>
<td>2</td>
</tr>
<tr>
<td>Le Havre</td>
<td>2</td>
</tr>
<tr>
<td>Barcelona</td>
<td>2</td>
</tr>
<tr>
<td>Genova</td>
<td>2</td>
</tr>
<tr>
<td>Southampton</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: JMM, Dec 2004
8. Passenger traffic in Europe

Passenger traffic has significantly increased over the recent past years. Traffic is influenced by transport requirements as a whole, but also by leisure consumption, including the cruise market (see "Cruise" file) which is growing.

Source: Eurostat
9. Employment in European harbours and shipping companies

- Employment in harbours and shipping is incompletely documented. Only estimates are available.
- Employment is decreasing in these two activities as labour productivity is steadily increasing. Rotterdam harbour employed more than 100,000 fte (full time equivalent) in 1965, and slightly more than 50,000 in 2000. Flemish ports employed about 65,000 fte in 1990, and about 55,000 in 2001. Meanwhile, traffic productivity increased: 5,250 tonnes/worker in Rotterdam in 2002 against 813 in 1960.

Chart 17. Direct employment impact from maritime ports and shipping

Source: Isemar (estimates).

10. Future Outlook

- Containerised traffic is expected to continue to record a steady growth in the mid-term: 5.5% per year over two decades from 2002. Increasing container terminals capacity is therefore critical.
- European harbours need capacity increase, especially in container terminals.
- According to a recent study (Drewry Shipping Consultants Ltd), container traffic bottlenecks are likely to appear, principally in European ports.
- Current and future investment projects in Mediterranean ports are to massively increase containerised cargo traffic capacity within ten years (Valencia, Barcelona, Genoa, Marseille).
- An important question mark concerns the promotion of combined transport involving short sea shipping and rail in the face of road congestion. All will depend on political will to invest in this domain.
1. Civil shipbuilding

1.1. Key figures (EU 25)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>As of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>30,400 million euros</td>
<td>2002</td>
</tr>
<tr>
<td>Gross Value added</td>
<td>8,708 million euros</td>
<td>2002</td>
</tr>
<tr>
<td>Nb of firms</td>
<td>15,840</td>
<td>2001</td>
</tr>
<tr>
<td>Nb of yards</td>
<td>238</td>
<td>2004</td>
</tr>
</tbody>
</table>

Sources: Eurostat; Institut für Arbeit und Wirtschaft (Bremen).

Chart 1. Civil shipbuilding workforce in Europe*

* Including CESA members only.

Source: Community of European Shipbuilders’ Associations (CESA)

1.2. World market trends

- Shipbuilding is currently developing at a rapid pace. After a sluggish 1999-2002 period, an upsurge in 2003-2004 followed (charts 2 and 3), due to many new orders, high prices, and S Korea's and China's significant capacity increase.
- S Korea, Japan and China made more than 85% of world production in 2004. Crushing supremacy of Asian shipyards in "standard ship" building.
- Overall, S Korea is world leader, notably on both container ship and GNL carrier markets. S Korean supply is very concentrated: only 15 yards, and three major shipbuilding firms.
• China’s market share (in terms of order book) increased from 7% in 1995 to 16% in 2004.
• Labour cost is a critical factor for competitiveness, especially for standard ship building. High value added ship building markets leave some room for manoeuvre to countries where labour is costly, notably Europe.
• GNL carriers, whose technology was originally initiated by Europe, were built in Europe and Japan until the start of the 90s. Then, S Korean yards successfully turned to this market, now secure the crushing majority of world new orders, and outpace Japan (chart 4). Design technologies of GNL containers remain European (Norwegian and French).

Chart 2. World order book, as of end of year
Europe: EU15+Norway+Poland+Croatia+Romania

Source: Lloyd's Register of Shipping

Chart 3. New orders to shipyards

Source: Lloyd's Register of Shipping
1.3. Trends in Europe

- With about 33 large shipyards (of 1,000 employees or more) and a number of medium and small size ones, the European shipbuilding industry appears to be fragmented (chart 9) though still competitive on certain segments.
- In terms of tonnage, Europe's market share dropped from more than 30% in the first half of the 90s to less than 15% in 2004.
- In 2004 and 2005 order books progressed after a long period of decrease. This was due to an excess in demand to Asian shipyards, an increase in demand for specialised ships, especially cruiseships, and a halt in the drop of the US dollar / euro rate.
- European shipyards are striving to remain competitive in specialised ship building, inter alia cruiseship. As a result, deliveries from Europe are of higher unit value than those from Asia, on average (chart 5 and table 8). Major shipyards of northern Europe can maintain competitiveness in certain segments of standard ships, especially container ships, thanks to closely located shipyards of central Europe (e.g. Poland) with low labour costs.
- Experts point out the need for more productive investment with the aim of capacity upgrade and modernisation.
- Employment: the number of staff in European shipyards sharply decreased over the past 30 years, especially over the past ten years. More than 460,000 staff in 1975; less than 120,000 in 2004 (chart 6).
- Europe's major builder countries: Germany, Poland, Romania, Croatia, the Netherlands, Italy, UK. Germany is by far the largest shipbuilding country (chart 7 and table 8).
- In 2002, the EC filed a complaint to WTO's Dispute Settlement Body against S Koreas' alleged unfair trade practices affecting trade in commercial vessels, and authorised temporary and limited state aids to the EU industry. The investigation panel found that Korea had been providing illegal subsidies to its industry for years through loans and guarantees; but it rejected some of the EC's claims concerning SK yards' debt restructuring and tax exemption. The DSB adopted the panel report in April 2005. WTO's authorisation to the EU for a provisional state aids mechanism to shipyards expired in March 2005.
Chart 5. Turnover and deliveries from large shipbuilders in 2004

Note: Europe = EU + Norway + Croatia + Romania.
Source: CESA.

Chart 6. Shipyard workforce in Europe

* Figures of 1975 not available for Croatia, Poland and Romania
Source: CESA.
Chart 7. Shipbuilding completions in 2004

Table 8. Areas of competitiveness

<table>
<thead>
<tr>
<th>Country</th>
<th>Competitiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Repair only</td>
</tr>
<tr>
<td>Croatia</td>
<td>Product tankers, car-carriers</td>
</tr>
<tr>
<td>Denmark</td>
<td>Containerships</td>
</tr>
<tr>
<td>Finland</td>
<td>Cruiseships, ferries, Ro-ros, high speed vessels</td>
</tr>
<tr>
<td>France</td>
<td>Cruiseships, LNG carriers</td>
</tr>
<tr>
<td>Germany</td>
<td>Containerships (feeders), cruiseships, Ro-ros, Ro-paxes, product tankers</td>
</tr>
<tr>
<td>Italy</td>
<td>Cruiseships, ferries, Ro-ros, car-carriers</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Cargo ships, multi-purposes, small containerships, small product tankers, offshore supply vessels</td>
</tr>
<tr>
<td>Norway</td>
<td>Offshore vessels</td>
</tr>
<tr>
<td>Poland</td>
<td>Containerships, open-hatch bulk carriers, car-carriers, Ro-ros</td>
</tr>
<tr>
<td>Portugal</td>
<td>Tankers, passenger vessels</td>
</tr>
<tr>
<td>Romania</td>
<td>Offshore vessels, product tankers, containerships.</td>
</tr>
<tr>
<td>Spain</td>
<td>LNG carriers</td>
</tr>
</tbody>
</table>

Source: CESA, BRS.
1.4. Future outlook

- Due to high world economic growth which is expected to go on, especially in Asia, demand for transport, and consequently for new commercial vessels is foreseen to continue to grow.
- In a business as usual scenario, China is likely to become a major competitor on standard ship building markets. Experts foresee a harsh competition between S Korea and China on the LNG carrier market.
- S Korea runs the risk of losing standard ship markets shares to the benefits of China. If so, it would endeavour to turn to high value added ship building, and thereby challenge Europe's area of competitiveness.
- In a context of important discrepancies in terms of labour costs, the only solution for EU shipbuilding is to maintain comparative advantage in value added segments of sophisticated ships (cruise ships, certain container ships, research vessels, etc.). Hence a critical need for RDI investments.
- Owing to the number of shipyards in Europe, there is a risk of too little capital being invested per shipyard at a time where there is a critical need for investment. The question remains open as to whether there is a need for more concentration in the business.
- Global warming and increasing oil prices will work as incentives for more energy saving ships and engines. This will be another RDI segment to be developed.
2. **Boating industry**

- The boating industry includes: A) Producers, boat builders, equipment and clothing manufacturers, sailmakers, engine builders. B) Service providers, marine operators, charter boat companies, insurance, naval architects, trade magazines, boat transportation companies, marine equipment suppliers and shops, fuel, maintenance, distributors and dealers, brokers. C) Travel agents, marine and marina hoteliers, servicing of marinas and yacht harbours, marina general store shops, food and drink provisions and stores.

- The boat building industry, whose export rate is generally high, includes advanced technology. Its economic situation is linked to the development of coastal tourism, thus to households' revenue increase. Boating as a whole is a cyclical industry, dependent on growth rate as well as on interest rates, which influence final customers' purchasing power.

- The economic situation of the industry worldwide was good over the past three years, and growth has been remarkable since the 90s. This is probably the worldwide effect of a major shift in leisure consumption towards boating: boat parks (number of persons per boat) are important in high revenue countries. The beginning of the decade was impacted by the short recession in the USA which had a negative effect on leisure boating markets.

![Chart 10. Boat park in major boating countries as of 2004 *](image)

* Nb of up to 24 m units of any type locally in use. USA: 16,130,000 units.
Source: International Council of Marine Industry Associations (ICOMIA)

- The European industry did very well in the recent past. In terms of supply, some European countries (Italy, UK, France) play a leading role in the development of the boat building and boating industries: many European countries have an important boat park in use: Finland, France, Germany, Italy, Norway, Sweden, UK (chart 10); and boating is a major component of Europe's coastal tourism, especially in Italy, UK and France (chart 11).
Chart 11. Boating industry employment as of 2004 *

* USA: 500,000 jobs.
Source: ICOMIA.

- **Italy** has a very dynamic boating activity and a major inboard and sterndrive powerboat producer. Exports (of which one third are towards Americas and two thirds towards Europe) make 48.5% of the boating industry's turnover. The boat building industry's employment is estimated at 9,200 jobs. **UK**'s boating industry has been recording a steady growth from 1998 to 2005 (+60%). UK's boat building industry is a major European producer. 68% of its revenue accrues from exports, and more than 30% from exports to the Eurozone. Its employment is estimated at about 9,000 jobs. **France** is world leader in terms of sailboat production and exports: in this segment, more than 70% of production in value terms is exported. Overall, boat building exports are estimated at 59%. The US accounts for a major market. Employment in the industry is estimated at 7,100 jobs.

Chart 12. Boat building turnover as of 2004 *

* USA: 8,800 million euros turnover.
Source: ICOMIA.

- However, the USA outdoes all its competitors in terms of supply and demand. Its boat park is more than three times as large as that of Europe (chart 10), and the US boat building industry's turnover is more than twice as high as that of Europe. Australia, Japan and New Zealand are other non Europe major players.

- The growing number of marinas in Europe and the need for available space for new ones might raise a management issue of certain coastal zones in the long run.
1. Key figures of European fisheries as of 2003

<table>
<thead>
<tr>
<th></th>
<th>EU 15</th>
<th>EU 15 + Norway, Iceland, Baltic countries, Faroe Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of landings (billion euros)</td>
<td>7.126</td>
<td>9.646</td>
</tr>
<tr>
<td>Employment on board (full time equivalent)</td>
<td>181,060</td>
<td>209,655</td>
</tr>
<tr>
<td>Volume of landings (million tonnes)</td>
<td>5.221</td>
<td>10.582 million tonnes</td>
</tr>
<tr>
<td>Number of vessels</td>
<td>79,607</td>
<td>85,134</td>
</tr>
</tbody>
</table>


2. Europe's fishing fleet

- The European fishing fleet includes a considerable number and diversity of vessels, in terms of size, activity and fish products.
- In terms of activity, the fleet is divided into several categories depending on fishing gears used on board (table 1):
  - "active" gear fleet: trawlers, seiners, dredgers
  - "Passive" activities, using passive gear: nets, pots, hooks.
  The vast majority of vessels have passive gears. In addition, a number of vessels are multi-purpose and can work, for instance, as either trawlers or dredgers. Other vessels have an exclusive activity.

**Table 1. European (EU 15) fleet structure.**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trawlers exclusively</td>
<td>2,004</td>
</tr>
<tr>
<td>Trawlers non exclusively</td>
<td>1,697</td>
</tr>
<tr>
<td>Seiners</td>
<td>2,315</td>
</tr>
<tr>
<td>Dredgers</td>
<td>1,221</td>
</tr>
<tr>
<td><strong>Total active gear fleet</strong></td>
<td><strong>7,237</strong></td>
</tr>
<tr>
<td>Total passive gear fleet*</td>
<td>59,526</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>66,763</strong></td>
</tr>
</tbody>
</table>

* Mainly netters, potters, and liners.

3. World context, world trade, and the overfishing issue

- Both world production and human consumption of aquatic food products are steadily increasing for a number of years (chart 2).
- World maritime fisheries production has reached a high, slightly over 85 million tonnes in the 90s, and is no longer increasing (chart 2). Observers often contend that it is the result of overfishing, which is a world wide issue. However, such assessment does not take account of discards and illegal unregulated fishing which are very difficult to estimate.
- By contrast, inland and marine aquaculture is steadily developing, roughly at the same pace as human aquatic food consumption (chart 2).

Chart 2. Aquatic food production, and the significance of maritime fisheries and aquaculture

![Chart 2](image)

Source: FAO.

Chart 3. Maritime and inland fisheries production as of 2000

![Chart 3](image)

* Inland production: China 2.2 million tonnes; Indonesia: 0.33; Russia 0.3.
** Maritime production only.

Source: FAO.
• China remains by far the largest producer, with reported fisheries production of 44.3 million tonnes in 2002 (16.6 and 27.7 million tonnes from capture fisheries and aquaculture, respectively), providing an estimated domestic food supply of 27.7 kg per capita as well as production for export and non-food purposes.
• According to FAO, total world trade of fish and fishery products increased to 58.2 billion dollars (export value) in 2002, up 5% relative to 2000 and showing a 45% increase since 1992. In terms of quantity, exports were reported to be 50 million tonnes in 2002, a slight decrease (1%) from the 2000 level. In tonnage, fish trade remained at the same level in the last few years following decades of strong increases, and the increase trends of pre-2000 years are considered unlikely to be repeated in the near future.
• International fish trade is steadily increasing, from about 35 million dollars in 1990 to about 63 million in 2003. With regard to marine fish, the most important commodities for international trade are shrimp, tuna and salmon (respectively 18%, 9% and 8% of world trade in 2003). EU is becoming more and more dependent on imports (tab. 4) while developing countries are playing an increasingly important role in world trade. The largest importing countries in the EU 15 are Spain, France, Italy, Germany and UK.

Table 4. International fish trade as of 2003

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>18%</td>
<td>1%</td>
</tr>
<tr>
<td>USA</td>
<td>17%</td>
<td>6%</td>
</tr>
<tr>
<td>EU 15</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>Developing countries</td>
<td>18%</td>
<td>48%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Note: statistics may contain some intra-EU effects such as landings of tuna in a non-EU port.
Source: Fishstat 2005, Helga Josupeit

4. The Common Fisheries Policy

The CFP was adopted in 1983 and revised in 2002. It rests on a set of common rules:
• Access to Community waters (up to the 12 miles boundary) is allowed only to local and small scale fisheries.
• Within the 12 miles-200 miles boundary, access is open to the EU fleet.
• Multi-annual management schemes, drawn up by the EC, foresee Total Allowable Catches (TACs) by species and by fishing area. TACs are then subdivided into quotas allocated to member states.
• The protection of juveniles is put in place through technical measures on fishing gears.
• A 32 million euros vessel scrapping funds has been put in place to help member states to regulate fishing effort. Meanwhile, entry into fleet is strictly controlled, and support to vessel construction has stopped in 2005. Support to fleet modernisation is limited to specific measure such as safety equipment or to improving working conditions on board.
• Re-conversion of fishermen leaving business is supported.
• Producers' organisations (POs), as local fishermen groupings acknowledged by the EC, participate to the Common market organisation (of seafood products) (CMO) and to local quota management. The CMO sets common levels of fish price at first stale level, under which POs are allowed buy back fisheries products. Import tariffs are also subject to a common system.
• As a major importer, the EU is entrusted with signing fishing agreements with non-EU states. This is an essential feature of the CFP, and impacts EU's foreign relationships with certain developing countries.
• The creation of Regional Advisory Councils (RACs) was an essential component of the 2002 reform of the CFP in response to the EU and stakeholders’ desire to increase the latter’s participation in the CFP process.
The RACs will prepare recommendations and suggestions on fisheries aspects in the area they cover and transmit them to the Commission or to the relevant national authorities. Submissions may be in response to a request from these bodies or on the RACs own initiative. The RACs will be made up of representatives of the fisheries sector and other groups affected by the CFP while scientists will be invited to participate in the meetings of the RACs as experts. The Commission and regional and national representatives of Member States may be present at the meetings as observers.

5. Aquaculture

5.1. General features of the world aquaculture market

- Inland aquaculture accounts for 58% of world aquaculture. Marine aquaculture comprises various kinds of production including molluscs, crustaceans and fish. Marine fish farming produces a small part of that: less than 1.5 million tonnes in 2002.
- World aquaculture is massively driven by the Chinese production (over 70% of world production), principally by its inland fresh water production.
- All continents except Europe showed increases in production from 2000 to 2002; Europe's production remained relatively unchanged (0.1% annual decrease).

Chart 5. World inland and marine aquaculture production as of 2002 (40 million tonnes, of which 58% from inland fresh water production)

Source: FAO

5.2. European marine aquaculture

- Europe's main aquaculture products are salmon, sea bass and sea bream.
- Salmon is farmed in Northern Europe (principally Norway, Scotland, Faroe Islands, Iceland, Ireland; a small production also exists in France), Canada, Chile, New Zealand, Australia. Europe's salmon production has more than doubled from 1995 to 2003 (about 760,000 tonnes), then slightly decreased in the last two years. Norway and Scotland produce more than 90% of Europe's output. Norway is the world largest atlantic salmon producer (530,000 tonnes in 2005).
- In Europe, sea bass and sea bream productions are smaller than that of salmon: respectively 80,000 and 100,000 tonnes in 2005. Markets for these two species remain of limited size. They are mostly farmed in Mediterranean countries (Greece, Turkey, Spain, Italy, Croatia, France). Greece is the largest sea bass and sea bream producer in Europe with respectively 44% and 50% of Europe's output.
- It is often considered that Turkey, which is already a strong competitor for aquaculture products, will become more and more important. Sea bream production has doubled, and sea bass production more than tripled, from 1997 to 2005.

**Chart 6. European freshwater and marine aquaculture**

<table>
<thead>
<tr>
<th>Production</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater fish: carp, catfish, eel, flatfish, sturgeon, tilapia, trout, misc.</td>
<td>Source: Federation of European Aquaculture Producers</td>
</tr>
</tbody>
</table>

6. **Outlook**

- European fisheries and aquaculture are a significant activity that makes nearly 13.5 billion euros turnover (EU15 + Norway + Iceland).
- A large number of commercial fish stocks are overexploited, and the situation is not improving, according to biologists. Quotas allocated by the EC to member states on a yearly basis are therefore unlikely to increase in the short term.
- Marine aquaculture is a growing business world wide. In Europe, atlantic salmon aquaculture recorded a considerable development in the 80s and 90s. Though growth potential in European aquaculture is seen as very important, the activity now rests on a limited number of species, and the output is slowly increasing by contrast with the rapid expansion in Asia and elsewhere.
- In the short- and mid-term, Europe is then likely to remain a net importer of seafood commodities for a significant share of its production, and to depend on fishing agreements with certain developing countries.
File

Offshore and Coastal Energy

1. The significance of marine areas for energy production
2. Offshore hydrocarbons extraction
3. Renewable energy
   3.1. Wind power
   3.2. Offshore wind power in Europe
   3.3. Other marine renewables
4. Onshore energy facilities
   4.1. Nuclear power plants
   4.2. Liquefied natural gas terminals
5. Outlook

1. The significance of marine areas for energy production

- For EU’s primary energy production, maritime areas are essential assets, especially in terms of oil and gas extraction, of electricity generation plan location (the sea being used as a cold source), of wind and sea power exploitation. Obviously, oceans are not only the location of energy sources but also a fundamental means of seaborne energy commodity transport.

- The EU largely depends on energy commodity imports: the EU25 energy dependence rate (EDR), measured as the rate of net imports on gross consumption, went up to 53.8% in 2004, from 52.4% in 2003, largely as a result of UK becoming a net importer after being a net exporter until 2003. This is happening in a context of a considerable oil and gas price increase. Member states are led to diversify energy sources and, in particular, to develop renewable energy sources.

- After the ratification of the Kyoto protocol in 2002, the EU made the commitment of reducing greenhouse gas emissions by 8% from 1990 levels by the 2008-2012 period. The target is shared between member states under the ”Burden Sharing Agreement”: e.g. Germany and Denmark have to cut their emissions by 21% from 1990 levels, UK by 12.5%; France must stabilize its emissions at 1990 level. Greenhouse gas (mainly carbon dioxide) emission control principally affects the transport sector and implies that member states adopt energy savings measures and promote renewable energy sources.

Chart 1. Primary energy production and consumption in Europe
EU 25 + Norway

<table>
<thead>
<tr>
<th>Primary production in Europe - 2003: 896 Mtoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
</tr>
<tr>
<td>Nuclear</td>
</tr>
<tr>
<td>Gas</td>
</tr>
<tr>
<td>Crude Oil</td>
</tr>
<tr>
<td>Solar, etc. Geothermal, Waste Renewables Combustibles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary consumption* in Europe - 2003: 1777 Mtoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil</td>
</tr>
<tr>
<td>Petroleum products</td>
</tr>
<tr>
<td>Geothermal, Solar, etc.</td>
</tr>
<tr>
<td>Coal</td>
</tr>
<tr>
<td>Nuclear</td>
</tr>
<tr>
<td>Gas</td>
</tr>
</tbody>
</table>

* Apparent consumption: production + imports – exports.
Source: International Energy Agency
As far as marine energy production is concerned, hydrocarbon offshore extraction and renewable energy production are then the two main topics to be examined.

Chart 2. EU primary energy balance
EU 25 + Norway
Unit: Mtoe

<table>
<thead>
<tr>
<th>Year</th>
<th>Apparent consumption*</th>
<th>Primary consumption</th>
<th>Total primary energy products imports</th>
<th>Oil imports**</th>
<th>Gas imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1,609,990</td>
<td>996,400</td>
<td>1,058,471</td>
<td>770,400</td>
<td>168,600</td>
</tr>
<tr>
<td>2003</td>
<td>1,783,621</td>
<td>1,117,161</td>
<td>1,314,902</td>
<td>873,400</td>
<td>305,400</td>
</tr>
</tbody>
</table>

* Production + Imports - Exports  
** Crude oil + petroleum products  
Source: Eurostat

2. Offshore hydrocarbons extraction

- In 2003, the European production of crude oil accounted for 43% of its requirements (692 Mtoe in 2003). The main part of the offshore oil extraction activity is concentrated in the North Sea. Norway and the UK are the main producers in Europe with significant North Sea reserves. Norway produced almost 51% of the Europe's output, and UK 36% in 2003.

- Europe largely depends on imports for its natural gas: 38% of its requirements are imported. The North Sea region is the second largest natural gas supplier to continental Europe after Russia. Two countries, Norway and the Netherlands, own more than three quarters of the North Sea proven reserves, UK being the largest producer. Except in Norway, gas production is on the decline: most UK's natural gas fields have reached a high degree of maturity.

- Employment is difficult to estimate, but Norway employed approximately 5,200 staff for extraction and 14,000 for oil and gas sector services in 2002 (source: Central Statistical Office, Oil general directorate, Norway).

- In UK, 185,000 jobs were employed in the offshore industry in 2003, including 30,000 directly employed by operators and 155,000 employed by sub-contractors and the supply chain (source: UK Offshore Operators Association, Economic Report 2004).

3. Renewable energy

After Kyoto, the EC published a White Paper in 1997 on renewables. The prime objective was to double the share of renewable energy sources (RES) in consumption from 6% in 1997 to 12% in 2010. In addition, the share of RES in EU15 primary electricity generation should increase from 14% in 1997 to 22% in 2010.

3.1. Wind power

Wind power is seen as having a determinant role to play in the development of renewables. In particular, coastal areas are advantageous sites for the development of offshore and onshore turbines.

In 2005, less than 3% of EU electricity consumption was generated by wind power plants, but generation potential is estimated at 12% at a 2020 horizon (source: EWEA).

Between 2003 and 2004, the EU’s wind power capacity increased by 20% to 34 GW, of which less than 2% is generated by offshore turbines.
3.2. Offshore wind power in Europe

The offshore wind farms constructed up to end 2005 make approximately 612 MW (331 wind turbines). Farms are located in the coastal waters of Denmark, Sweden, Netherlands and UK. EWEA has estimated that a 5 GW offshore capacity will be installed in 2010. In Denmark, wind energy has developed considerably: the amount of wind generated electricity accounts for 12% of total electricity production in 2003.

EU member states have important projects: in 2004, 7,000 MW concessions were granted in United Kingdom; 12,000 MW licenses were applied for in Germany; in France a 500 MW capacity was put out to tender.

Chart 3. Wind power capacity* in the EU

* Onshore and offshore capacity.
Source: EWEA

3.3. Other marine renewables

3.3.1. Marine current energy

In order to diversify the sources of energy, offshore renewables projects are studied, based in particular on marine currents. UK has the highest potential for the development of such energy source (75% of Europe's potential), far ahead of France. A few current turbine prototypes are already being run in Norway, Italy and UK (between 100 and 300 kW units).

3.3.2. Tidal power

The largest tidal power station in the world (and the only one in Europe) is in the Rance estuary in north west France, with 240 MW installed.

Such installations require optimal conditions. They may have important environmental impacts that may have deterred some of such projects in the world, notably in Europe.

A new technology, “tidal lagoon”, is studied by UK, based on offshore tidal power. A 60 MW project of this artificial lagoon in the Swansea Bay has been proposed in 2004.

4. Onshore energy facilities

Other energy facilities are located in coastal zones in order to take advantage of shorelines.

4.1. Nuclear power plants

Nuclear energy is an important electricity source in France, Belgium and UK. After Kyoto, this energy source is seen as CO₂ emission free. Nuclear power plants need a cold source, and for that reason coastal areas prove attractive sites. There are currently 204 nuclear power plants in Europe, making a 172 GW installed capacity (about 34% of the installed electric capacity in the EU).
In 2003, in several countries the share of nuclear in electricity generation was over 20%. In Europe, France has the largest share, with 78% in 2005 (59 units and 63 GW installed capacity).

4.2. Liquefied natural gas terminals

LNG terminal capacity is expanding rapidly in the EU. Currently, there are thirteen LNG import terminals operating in Europe. The construction of new facilities has been approved (2 in Italy, 2 in Spain, 2 in UK, and 1 in France). About 17 terminals have been proposed in Europe for a construction from 2008, nine of which are in Italy.

Chart 4. Nuclear plants and LNG import terminals in Europe

Sources: www.hist-geo.com; International Nuclear Safety Centre; for LNG terminals: IEA, Gas Transmission Europe.
5. Outlook

The Kyoto protocol as well as the sharp increase in oil prices lead consumers, especially the EU, to diversify energy sources and to gradually change their energy mix. Europe's goal is to prioritise low CO₂ emission sources, such as renewables. This trend makes the coastal and maritime areas attractive in that respect. It also raises a number of coastal management issues with regard to environmental impacts.

Chart 5. Oil and gas fields and wind power in North-West Europe

1. Working conditions in shipping
   1.1. Working time
   1.2. Training
   1.3. Safety
   1.4. Security and accident prevention
   1.5. Implementation issues
2. Working conditions in fisheries
   2.1. Working time
   2.2. Training
   2.3. Safety and health
   2.4. Implementation issues
3. Working conditions in offshore extractive industries

The file addresses the issue of "working conditions" at sea and in ports, including working time, health protection, training, safety on board, security at sea, and accident prevention. A safe and healthy working environment is generally regarded by regulators as a key factor for competitiveness. However, by "working" conditions, it is meant "working and living conditions", as a merchant ship or fishing vessel or offshore platform are also living places. This is why seafarers' welfare is also addressed herein as a component of working conditions.

A number of maritime working conditions issues are debated at international level, namely by the International Labour Organization and the International Maritime Organisation. Conventions and codes are adopted by member countries. Three major conventions, on which EU governance is largely based, are Maritime Labour, SOLAS and STCW. Codes are designed to set up management standards; they include ISPS et ISM in particular.

At EU level, a legislation has been adopted and is periodically updated to meet these objectives. It depends on activities (shipping, fishing, offshore services). The legislation concerning "seafarers" does not systematically include fishers.

The file focuses on working conditions related to shipping, fishing and offshore services. It also includes working conditions in maritime harbours. A last section is dedicated to difficulties in the concrete implementation of regulatory provisions for shipping and fisheries, especially at EU level.

1. Working conditions in shipping

1.1. Working time

Objective

Seafarers on board face harder than average working conditions. In order to ensure decent conditions, strict rules are set to organize working time and to verify and enforce compliance by ships calling at ports of Member States.

Legislation

International conventions of the ILO organize seafarer’s working time. Convention 147 concerning social standards in shipping is the ground for port state control on dwelling, food and work contracts for seafarers.

In February 2006, the International Labour Organization adopted a new maritime labour convention that sets out rights of decent work conditions for seafarers. The new Convention updates and strengthens maritime labour instruments adopted during the last 80 years regarding ship owners, seafarers and maritime nations. It is aimed at providing a comprehensive rights based charter for the workers of the maritime industry, including health, safety, minimum age, recruitment, hours of work, and other issues affecting seafarers’ lives. The labour standards will apply to 1.2 million workers who work on ships weighing more than 500 gross tonnes.
Convention provisions were translated into EU legislation by directives 1999/63/EC and 1999/95/EC. The new Convention will lead to further update EU legislation.

### International conventions and agreements

- Protocol to ILO Convention 147. Protocol to the Merchant Shipping (Minimum Standards) Convention, 1976
- ILO Convention 180 concerns Seafarers' Hours of Work and the Manning of Ships.

### European legislation

- Council directive 1999/63/EC of 21 June 1999 concerning the Agreement on the organisation of working time of seafarers’ concluded by the European Community Ship owners’ Association (ECSA) and the Federation of Transport Workers' Unions in the European Union (FST)
- Directive 1999/95/EC of the European Parliament and of the council of 13 December 1999 concerning the enforcement of provisions in respect of seafarers' hours of work on board ships calling at Community ports

#### 1.2. Training

**Objective**

In the purpose of improving safety at sea, a minimum level of training was defined for EU seafarers, in keeping with STCW Convention. In addition, the increasing shortage of seafarers forced the EU to take measures to facilitate their movement. Recognition of certificates in the Community is the response proposed by directive 2005/45/EC.

**Legislation**

The STCW international convention was amended in 1995 to prescribe mandatory minimum requirements for training and qualifications for masters, officers, ratings and other personnel on passenger ships other than ro-ro passenger ships.


### International conventions and agreements

- International Maritime Organisation Convention on Standards of Training, Certification and Watch keeping for Seafarers signed in 1978 and revised in 1995

### European legislation


### 1.3. Safety

**Objective:** ensuring maritime safety encourage prevention of accidents during onboard or ashore activities.

At international level, the major ruling regime is the Convention for the safety of life at sea (SOLAS) adopted in 1960, in force since 1965, and updated by periodic amendments. In 1974, a major amendment was adopted so as to speed up periodical updating procedures, so that the convention is often referred to as SOLAS 1974.

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1 Seafarer: any person who is employed or engaged in any capacity on board a seagoing ship to which the Agreement applies.
SOLAS includes provisions on technical safety working conditions, radio-communications, navigation safety, special precautions on special types of ships (cargoes, nuclear ships, high-speed craft), carriage of dangerous goods, special measures to enhance maritime safety and security.

Chapter IX of the Convention was designed to make mandatory the International Safety Management (ISM) Code, adopted by IMO in 1993, for the safe operation of ships and pollution prevention. The Code requires a safety management system (SMS) to be established by the ship owner or manager responsible for operating the ship, inter alia: a) provide for safe practice in ship operations and safe working environment; b) establish safeguards against identified risks; c) improve safety management skills of staff ashore and aboard ships, including environmental protection.

At EU level, the European Maritime Safety Agency was created in response to the Erika wreckage. Entrusted with the task of reducing the risks of maritime accidents, avoiding marine pollution from ships and the loss of human lives at sea, the Agency, operational since early 2003, is complementary to the investigations launched in Member states after marine casualties and incidents, e.g. by the Marine Accident Investigations Branch (MAIB) in the UK, or the BEA mer (Bureau d’enquêtes accidents-mer) in France. Such investigations occur after sea events to determine the chain of causes with prevention objectives.

<table>
<thead>
<tr>
<th>International convention</th>
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<tr>
<th>International code</th>
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<tr>
<th>European legislation</th>
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<tbody>
<tr>
<td>Council directive 1999/35/EC of 29 April 1999 System of mandatory surveys for the safe operation of regular ro-ro ferry and high-speed passenger craft services</td>
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</table>

1.4. Security and accident prevention

Objective: ensuring maritime security aims at prevention of criminal acts against people and possessions aboard ships and ashore.

Objectives of the ISPS code (International Ship and Port Facility Security)

The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities. It was adopted by IMO in December 2002 and came into effect in July 2004. It is applicable to passenger, cargo ships, mobile offshore drilling units, port facility service vessels that are engaged on international voyages. Part A contains mandatory provisions; part B is optional.

ISPS measures

Three security levels are related respectively to situations of normal, medium and high risk. They provide appropriate protective measures for ships and port facilities. For example, some measures are already applicable to ships: the identification number must be marked on the hull; alarm systems and restricted areas must be put in place on board.

<table>
<thead>
<tr>
<th>ISPS Code. Part A</th>
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<tbody>
<tr>
<td>Ship related measures</td>
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<tr>
<td>Ship security plan</td>
</tr>
<tr>
<td>Ship Security Officer</td>
</tr>
<tr>
<td>Company security officer</td>
</tr>
<tr>
<td>Onboard equipment</td>
</tr>
<tr>
<td>Training, drills and exercises on ship</td>
</tr>
</tbody>
</table>
- Verification and certification for ship

<table>
<thead>
<tr>
<th>Common measures for ships and port facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Monitoring and controlling access</td>
</tr>
<tr>
<td>- Monitoring people's activities and cargo</td>
</tr>
<tr>
<td>- Ensuring security communications</td>
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</table>

**EU regulation**

The EU has adopted measures aiming at enhancing the security of ships used in international trade and domestic shipping, and of associated port facilities in the face of threats of intentional unlawful acts. Regulation 725/2004 intends to provide a basis for the harmonised interpretation, implementation and monitoring of the ISPS measures. It's scope is limited to security measures on board vessels and the immediate ship/port interface. Directive 2005/65/EC is a translation of ISPS Code that strengthens port security.

**European legislation**

<table>
<thead>
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<tbody>
<tr>
<td>Commission regulation No 884/2005 of 10 June 2005 on laying down procedures for conducting Commission inspections in the field of maritime security.</td>
</tr>
</tbody>
</table>

**1.5. Implementation issues**

- Regulations established over the recent past years, especially STCW and SOLAS conventions and ISM and ISPS codes, are demanding in terms of crews' administrative tasks and maintenance duties.

- Port State Control (PSC) is the inspection of foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with these rules. Inspections are often organised on a regional basis. IMO has encouraged the establishment of regional PSC organisations; agreements on PSC cover all of the world oceans.

- However, PSC does not control working and living conditions aboard vessels. This raises competition distortions and safety failures. For instance, in short sea shipping, the number of crew happens to be reduced aboard ships flying non-EU flags, to the detriment of monitoring capability.

- Generally, experts suggest that investigation reports relating to European waters, from agencies such as MAIB and BEA mer, have identified failures in compliance with safety rules. This results from a number of undermanned ships, often flying flags of convenience and sometimes EU member states' flags, being allowed to operate in European waters, even for intra-EU (passenger or cargo) shipping, in breach of standards in force. This increases the risks of both pollution and loss of goods or human life.

- International conventions raise difficulties especially for ships whose flag states have not ratified, or do not implement, them. PSC may happen to be in that case.

- The implementation issue is compounded by an increasing number of EU member states establishing international registries so as to reduce the gap between national flags' and open registries' rules. Such trend is encouraged by free circulation of services within the EU as provided for by Council regulation 3577/92. International registries rules are not harmonised at EU level, and may compete national flags. This is not conducive to appropriate incentives for compliance with safety rules.

**European legislation**

2. Working conditions in fisheries

The fishing industry employs about 209,000 people in Europe (EU15 + Norway + Iceland + Baltic countries and Faroe Islands). Hardness of working is one of its major features.

In the same purpose as for seafarers (working time, health protection, safety and training), specific directives have been adopted for fishermen; certain issues did not require different provisions from those applicable to seafarers (e.g. on working time).

Since 1983, the Common Fisheries Policy (CFP) has health protection and economic and social cohesion objectives. This is why, in spite of the phasing out of public aid to renewal and modernisation of fishing vessels, aid to improve security and working conditions on board remain in force.

2.1. Working time

Like seafarers, fishermen are concerned by Directive 1999/63/EC concerning the organisation of working time for seafarers (cf. above "Shipping"). However, Directive 1999/95/EC concerning seafarer’s working time on board ships excludes fishing vessels.

The organisation of fishermen's working time is also addressed by Directive 2003/88/EC, in a special article on “workers on board sea-going fishing vessels”. It provides that Member states shall take necessary steps to guarantee the minimal requirements of rest, health and safety.

In Norway, there are no official regulations concerning working and rest time on board fishing vessels. Such issues are left to negotiations between firms and employees. In Iceland, working time in the fishing industry is regulated since 1921.

<table>
<thead>
<tr>
<th>European legislation</th>
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<tbody>
<tr>
<td>Article 17b: workers on board sea-going fishing vessels.</td>
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</tbody>
</table>

2.2. Training

Due to the increasing recruitment difficulties in some countries, fishermen are led to move in the EU. National statutory legislations exist, but there is no harmonisation at EU level. E.g. concerning the minimum level of training and the recognition of certificates, directives 2001/25/EC and 2005/45/EC (cf. above 1. "Shipping") do not apply to seafarers serving on board fishing vessels.

On the international scene, STCW – F Convention was adopted by IMO but has not yet come into effect. It would encourage free movement of workers in EU. In this convention project, training provisions are aimed at 24 metre and over fishing vessels.

<table>
<thead>
<tr>
<th>International conventions and agreements</th>
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<tbody>
<tr>
<td>International Maritime Organisation Convention on Standards of Training, Certification and Watch keeping for Fishing vessel personnel adopted in 1995 (not in effect since only Denmark, Island, Russia and Ukraine had ratified the convention in January 2004).</td>
</tr>
</tbody>
</table>
2.3. Safety and health

**Objective**

To improve safety on board fishing vessels, the European Commission adopted preventive measures.

<table>
<thead>
<tr>
<th>European legislation</th>
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</table>

2.4. Implementation issues

- Experts suggest that progress in welfare rules both at international and EU levels is not always reflected on fishermen's working conditions.

- This partly results from vessels being dealt with in EU legislation either as production units or as working and living places. This is the source of two potentially conflicting approaches of vessels. As working and living places, fishing vessels are subject to safety and working condition rules. As production units, they are subject to CFP related rules which are designed to protect the resources.

- For instance, new vessels may be less secure and comfortable than they could be as CFP provisions lead to replace existing units by new units of at best the same size. A number of vessels are then made up of new equipment on ageing hulls, to the detriment of progress in safety and quality of life at sea.

- However, working conditions are impacted by many other factors. For instance, they may be threatened by fishermen increasing harvesting time or working in more risky conditions, in order to increase fishing effort in a context capacity limitation.

- EC's challenge will be to reconcile the two objectives of resource protection and progress in working conditions. For instance, by providing that any new fishing effort management measures would be subject to preliminary impact studies in terms of working conditions and safety.

3. Working conditions in offshore extractive industries

Working in offshore extractive industries (for exploitation by means of boreholes) presents a high risk. More specific directives are set to improve safety and working conditions on offshore platforms. Moreover, like for fishermen, Directive 2003/88/EC on the organisation of working time dedicates a special article to offshore work specifying that Member States have to take the necessary measures to guarantee health and safety protection.

<table>
<thead>
<tr>
<th>European legislation</th>
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2. Conclusions of the Transport, Logistics and Maritime Safety Thematic Group

COORDINATION REGION:

Generalitat Valenciana (ES)
Pays de la Loire (FR)

OTHER PARTNERS:

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Alentejo (PT)
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1. MARITIME TRANSPORT AND LOGISTICS

1.1 Policy and market background

The European Common Transport Policy inscribed in the White Paper of 2001 has defined as one of its main goals to reduce the dependency of intra-European trade on road transport, as it is recognised that the levels of congestion and of pollution caused by this mode are becoming unacceptable and would quickly begin to constitute barriers to trade and economic development in Europe.

For a substitution of road transport that is acceptable to shippers and their clients, and does not reduce the physical dimension and the level of competitiveness of the European Single Market, very well tuned intermodal transport and logistics chains must be developed, in which road transport still has a role to play for the terminal segments (up to a few hundred kilometres) but where rail or shipping must provide the long-distance links.

Rail transport is slowly reorganizing the sector and the production models, but the time lag needed to make it an effective alternative is longer than for shipping: not only has shipping been able to (roughly) accompany the growth of the road sector over the last decades whereas rail has steadily declined, but also improvement of market share for railways in an international corridor requires a synchronized and interoperable improvement of quality of service in the various national networks along the corridor whereas shipping only concerns the ports of origin and destination (with their multiple services) and the shipping line(s) involved.

But the growth of shipping volumes more or less in parallel with those of the road (43.8% for road vs. 41.3% for shipping in 2000), has been achieved with a relatively steady segmentation of the market, with shipping being used (apart from the cases where there is a clear distance advantage or a sea to cross) only for relatively low value goods, mainly bulk materials in non-scheduled services. A conquest of market share to the road implies a conquest of higher value market segments, and thus an evolution of quality of service in the direction(s) requested by the clients moving those higher value goods.

Regular container (lo-lo, i.e. lift-on / lift-off) services have their main market in transporting consumer goods in inter-continental routes, but intra-European services have been growing, sometimes on the basis of feeder services for those inter-continental routes. A wider use of dedicated intra-European container shipping is envisaged as the main means to replace road transport.

An effort for accelerated acceptance of the 45” container by the authorities, given its very good fit to the dimensions of the Euro pallets, would be welcome. Some difficulties remain with respect to its compatibility of road transport regulations, but serious consideration should be given to the costs of the strictness of this position vis-à-vis the benefits associated with a much more competitive position of intermodal transport with a strong maritime component.

Regular ro-ro services consist of transporting the goods in road-capable vehicles (mostly semi-trailers), which can speed modal transfers but also implies a much higher capital cost underway – semi-trailer vs. container – as well as much stricter requirements for quick removal of that unit from the port area as semi-trailers are not stackable.

A few examples from the literature show that short-sea shipping has been able to compete on price for transport of containers in some intra-EU routes but the relatively low market share on those routes show that there is much more influencing the choice of transport mode than the price: that much more is relative to service requirements.

Those requirements are naturally not uniform, as well as the willingness to pay for the corresponding services, but a few features are prevailing: frequency of service, competitive door-to-door time, safety and security of the shipped goods, tracking and tracing of the goods en-route. Also very important, not only through its contribution to a speedy door-to-door service, but also to the image of efficiency of the overall transport chain, is the administrative simplicity required for the door-to-door service, which in the case of intermodal chains using maritime transport means simplicity of the documentation required to go through ports.

It is the recognition of this combination of service requirements that has led to the evolution of the concept of “Short Sea Shipping” to “Motorways of the Sea”. It is not simply a change of brand, but a new, more ambitious product, which covers not only the efficient provision of the sea link, but all the necessary requirements in the land-side and in the port areas to make the sea-based intermodal chain as fluid, available and simple to use as a motorway.
In its June 2006 mid-term review of the Transport Policy approved in 2001, the European Commission recognises two major challenges to Maritime Transport: the fact that sea journeys between two members countries are still considered as external (and thus subject to heavy administrative procedures), due to international regulations; and the fact that the projected growth of maritime transport has to go through the ports, many of which are congested. Efforts are promised in both directions, under the umbrella of an integrated maritime transport strategy, to be developed building on the debate set in motion by the Green Paper on Maritime Policy, published also in June 2006.

Investments on intelligent infrastructure, as well as regulatory reform and promotion of standardisation and interoperability, should help eliminate bottlenecks and facilitate co-modality.

The major policy shift from 2001 to 2006 is that the “push” actions to induce a modal shift from road transport to other modes have disappeared, replaced by a more balanced approach to promote environmental sound and economically efficient solutions in each mode, as well as in co-modal packages. This does not go against an increased role for maritime transport – as long as its agents are capable of improving its environmental aggression levels – since it is the alternative that most readily can be in conditions to compete effectively against road transport, especially when systematic application of efficient pricing mechanisms are applied there.

1.2 Impacts for maritime regions

This intended shift of cargo from road transport to intermodal transport based on maritime transport for the long distance link has several implications at the regional scale, both for (inland) transit regions and for the maritime regions where the ports are located.

Transit regions are those that are expected to get the benefit of relief from the dense flow of trucks through their roads, where they are perceived as a source of negative impacts (noise, fumes, congestion) with very little of no generation of benefits.

For maritime regions there may be significant benefits: first in order of visibility will be an increase in the port business and related areas of support services, with the corresponding direct employment and creation of welfare. But they may also perceive this modal shift as a threat, as part of that nuisance caused by HGV (heavy goods vehicles) is simply transferred from transit regions to them.

But even if an increase of heavy-goods-vehicles road traffic should be expected in those regions whose ports manage to attract significant new traffic, this perception corresponds to a narrow view of the situation:

- The rupture of charge that a modal transfer represents constitutes an opportunity for introduction of some operations that are needed or simply convenient to obtain higher efficiency in the utilization of the transport modes (consolidation / de-consolidation) or to add some value to the goods, through transformation or integration.

Some of these operations will be quite simple, but some will be more complex and bring more added-value to the region. In both cases employment is generated. But another issue must be raised: logistic platforms may have considerable economies of scale when the performed actions on the cargo require significant fixed equipments or specialized labour, which means that, once the first units with one or both of these features install themselves in the region, a good potential exists to attract a few more and constitute a specialized development pole.

This is an opportunity that maritime regions should be able to take advantage of, if they make the right analysis of the transport scale changes and of the value-chain of the goods for which their region is situated in a potentially competitive maritime corridor. Sometimes such evolutions occur simply by the initiative of private players in the market, but sometimes the correct analysis by a public agency may lead to the detection of an opportunity and the launch of a program for the development of a specialized infrastructure (with connected services) based on bilateral negotiations with a small number of launch-support companies, which enjoy privileged conditions because of their participation in those initial steps and in the associated risks.

It is interesting to note that several maritime regions in each of the European Seas are also transit regions for main road links that run roughly parallel to the coast. This does not mean that they should be indifferent to this modal shift, for two reasons:
- First, even if the total number of trucks going through their region is kept the same, they would now be divided in more than one axis, since the (land) transit trips will be running through the motorways roughly parallel to the coast – and that with a smaller number of trucks thanks to the modal shift, and the intermodal trips will be running in multiple directions to and from the port into its hinterland;

- Second because they would also enjoy the direct and indirect benefits expected to all maritime regions with ports that capture significant volumes of cargo flows previously served by road;

So, it is in their own interest, besides their contribution to promote EU-wide policy objectives, that all maritime regions should mobilize their efforts to achieve the shift of cargo from road to maritime transport. As will be detailed below, this mobilization can be made in a number of ways.

1.3 Barriers to the commercial success of Short Sea Shipping

Various studies have been carried out, by initiative of the Commission or of Member States, to understand the reasons for the difficulties of higher commercial success of Short Sea Shipping, namely in container services. All these studies come to similar conclusions, albeit with different details given the cases which have been studied in each.

The following list tries to categorise the problems mentioned, by perceived order of general importance, giving a short explanation in each item:

- Cumbersome and Costly Administrative Procedures
  - In spite of the European Single Market, customs procedures are required in intra-community trade.
  - Despite common EU regulations, local customs officers have their own procedures and/or own individual interpretation of EU regulations.
  - Electronic manifests not accepted;
  - Electronic stamps not recognised in customs procedures in all MS.
  - Lack of IT/IS adapted to SSS requirements and in general the supply chain.

- Inadequate physical infrastructure
  - In some ports SSS has to compete for port facilities with priority given to ocean shipping.
  - Ports lacking:
    - Dedicated operational areas
    - Logistical and distribution platforms;
    - Warehousing and cargo storage;
    - Dedicated moorings
    - Rail links between ports and mainline
  - Defective access to terminals in ports.
  - Defective motorway and railway connections to TEN-T

- Highly asymmetrical requirements between modes on cargo transport and handling
  - Ships not allowed to begin unloading until the authorities have attended to the ship and reporting procedures have been completed;
  - Road transport requires less stringent regulations and documentation for dangerous cargo than is required for sea transport.

- Non-efficient (and distorting) Rules in Port Labour and Services
  - Non-flexible working conditions in the ports, both as regards calculation of waiting time, idle time, over-time etc.
  - Obligatory payment for port services not used.
  - Obligatory use of pilots in some ports.

- Inland transport is a main cost component in the SSS chain
  - According to some estimates between 1/3 and 2/3 of the total cost, thus severely hampering the competitiveness of sea-based intermodal chains

- Lack of availability of a 'global' package of insurance cover for multi-modal transport
- The present system is modal based. In spite of this fact, there are no clear indications that this is a critical issue, and that an improved intermodal liability regime would actually increase the attractiveness of multimodal transport solutions;

- Distortion of competition by national railway companies.
  - On some routes, railway companies are offering rates below cost price, in order to be able to compete with SSS.

- High costs imposed on SSS by icebreaking service
  - In Sweden and Finland, Maritime administrations have been organised on a commercial basis, which implies that the costs of icebreaking services – vital to keep year round shipping operations – must be passed on to the clients. In other countries, costs related to ensuring the permanent preparedness of infrastructure (e.g. systematic dredging) may be considered part of the landlord function and thus borne by a public entity (e.g. taxpayers)

All these factors contribute to reducing the efficiency of SSS and to reduce its capacity to compete in the market. Even if not all of them are present in all cases, the list is long enough and mentions enough heavy impacts to imply a serious and coordinated effort if a stronger role for maritime based intermodal transport in the EU is to be achieved. Besides these factors there are others that are specific to each sea basin, like for instance formation of ice (and associated costs for its breaking) in the Baltic, and scarceness of good natural ports in the Mediterranean.

1.4 From Short Sea Shipping to Motorways of the Sea

For more than a decade, there has been recognition of the potential and efforts have been made towards making short-sea shipping a capable competitor of road transport. These efforts have mostly failed, both for poor performance of the sea option and for the difficulties of enforcing regulations on road transport.

From the clients’ point of view, the main weaknesses of short-sea shipping (namely in trying to serve more requiring markets) have been related to the difficulty of guaranteeing delivery times and to low frequency of service in most routes. In this, it must be understood that low frequency of service not only is a factor, but is also very much dependent on the commercial success of those services, so some launching (public) support may be needed. This initial support has been tried with the Marco Polo program, but at least some of the early attempts seem to have been unable to sustain viable operation after the public support is gone.

So, the concept of Motorways of the Sea (already adopted in Italy for some years) has been adopted at EU scale, most visibly in the Van Miert report (27 June 2003) on Trans-European Transport networks. There it is said that “genuine motorways of the sea are therefore aimed at acting as a substitute for motorways on land, either to avoid saturated land corridors, or to give access to countries separated from the rest of the European Union by seas.”

This concept is valid for passenger as well as cargo transport for the four European maritime areas (the Atlantic, the Baltic, the Western Mediterranean, and the Eastern Mediterranean)

In the meantime it has been recognised that a wider more consistent approach is needed to make the sea-based intermodal transport concept viable. This means that the efficiency of the whole door-to-door chain has to be addressed, addressing most or all the barriers listed above, and namely:

- The land transport links to / from ports,

- The facilities – dock and terminal - for quick handling of ships and cargoes in the ports (including modal transfer when required)

- The simplification of administrative procedures, namely inspection and customs formalities in the ports, and the adoption of a single transport document, inspired by the one used for road transport

- An appropriate system of liability, covering the whole transport chain

In parallel, the issues of speed and reliability of time of delivery have to be well treated, considering the specific situation in each corridor: there will be different sea-speeds in the various Motorways of the Sea, as they are a key element in the compromise that must be reached between technical possibilities, commercial requirements
on transit time and punctuality to be competitive with road transport in that corridor, and the supply cost (mainly energy consumption) which translates into price and its competitiveness.

But all of this will not be enough if a serious effort is not dedicated to marketing and organization changes that allow provision of one-stop-shop for clients and the concentration of cargoes that make a frequent high-capacity transport viable.

Because of incompatible standards for ISO containers and Euro-pallets, and of resistance to change in either side, ro-ro is currently considered to be the most promising technique for the Motorways of the Sea, although the extension of the concept for (container) lo-lo services is envisaged at a later stage, namely as soon as a container dimension that is fully used by Europallets is adopted across sea and road.

This leap of quality in the intermodal transport chain can only be achieved with some public intervention, not only in the upgrade of the land-side infrastructure and in political decisions to simplify administrative procedures and to promote adoption of efficient container dimensions for intermodal transport, but also in reducing the commercial risk in launching these services, given the required increase in shipping volumes to allow high frequency services.

On the other hand, the need to concentrate cargoes, as well as, with a smaller weight, the need to provide high quality land-transport links to ports, imply that a relatively small number of ports is selected for integration in the Motorways of the Sea. The fact that there are multiple private interests involved in port operations makes this selection a delicate process, as there are issues of distortion of competition.

Basically two schemes to solve this tension between public support and distortion of competition are presented in the Van Miert report:

- If Member States are able to select the participating ports “on the basis of transparent criteria”, there would be a public tender for awarding a public service contract for the maritime transport service;
- If the selection of ports by Member States cannot be done in a consensual way, a joint tender for ports and maritime services, leading to a public-private partnership to support the necessary infrastructure investments.

In both cases there would be a clear ex-ante definition of the maximum level of public financial support and of the scheme for its phasing out. In

In June 2005 the first submissions for EU financial assistance for MoS projects were presented. Twelve proposals have been presented, some considered of high quality, but generally geared to the support of feasibility studies, and not yet to the support of the actual services. The description of these projects is not yet known, and so it is not clear to what extent they cover all the multiple dimensions of efficiency as listed above.

In June 2006, five projects submitted in 2005 have been contemplated with EC funding, and a new wave of submissions has been held. At the current stage, the preference of the EC is for funding careful preparation of Master Plans, although it admits that it could fund a pilot project, provided if was found that its planning stage was already well developed.

Submissions for this financial assistance so far do not cover all maritime basins: there are projects for the Baltic, West Atlantic and East Mediterranean, but not for the North Sea or West Mediterranean.

1.5 Role of regions in the mobilization of critical factors for the success of the Motorways of the Sea

The Van Miert report and the associated revision of the TEN-T regulation clearly state that the initiative for presentation of request for EU financial assistance to MoS projects lies with the member States. The proposals presented in June 2005 are not yet known, and so it is not possible to have a good idea about the range and depth of initiatives included in those proposals for the mitigation of the barriers to success of the initiatives.

However, from the lists of barriers and of success factors that have to be mobilized to make a commercially successful Motorway of the Sea, one easily sees that such success requires a concerted effort from multiple
agents, in the public and in the private sector. Mobilization of these efforts is not a simple task, and so the conditions for it must be studied carefully.

Not only are there critical success factors which fall within the competency of different entities, but also some factors can only be obtained by joint effort of more than one entity. And the region is a key partner in this.

Given the diversity of levels and types of decentralization of State powers to regions in Europe, it is impossible to give a list of the roles of regions in these processes, but some generic indications can be given. Some of the critical success factors that may require a strong engagement from the regions – by themselves or in cooperation with other entities – are:

- Land transport links to / from ports;
- Physical facilities in ports;

In these two cases, the greater or smaller engagement of regions will depend on the division of competencies between national, regional and local administration, and in most countries there is some level of delegation of road network decisions to regional authorities, and they may be in the best position to enjoy the proper geographical scale of judgement of the access requirements to ports, given all the other pressures upon the road network, be it for expansion due to congestion or for extension or deviation in order to better serve some agglomerations. So, even when the investment for land transport improvements fall on national governments, regional governments should also be involved in the assessment of the options and in the decision.

The case of port facilities is more diverse, according to the division of power between the three levels, but simpler, as the decisions will normally have to be taken within the closed area of the port domain. When ports are not in the competencies of regions they may also have to be involved when the port domain no longer suffices for the infrastructure requirements, and new land has to be appropriated for that purpose.

But regions also have an important, possibly subtle role to play in another of the critical success factors, namely:

- Marketing and organization in favour of concentration of cargoes.

This work has to be done, first and foremost by the commercial agents of shipping lines, port administrations and port operators, engaging the forwarders who frequently act as the real decision makers about transport options for their clients. But for a concerted effort in promotion of the stronger adoption of sea-based intermodal transport, the engagement of the regions as agents of aggregation may well be critical.

In fact, among the three levels of public administration, it is the regions who know best which are the relevant shippers (industries) who are active in international trade within the catchment area of each port, and also in the best position to understand what are the key factors in the modal decisions of these industries, assessing which cases are more prone to accept a serious look at the (new) offer of the Motorways of the Sea.

So, while in many cases not compulsory from a purely administrative point of view, it would seem natural that proposals for the Motorways of the Sea include the regions where the associated ports belong as key partners for that significant leap in the quality of service provided and in the expectations of a stronger role for maritime transport.

1.6 Concrete suggestions for action in promotion of the Motorways of the Sea

Besides the identification of the critical success factors, and the recognition of the need to act upon them in a concerted manner if sustainable gains in market share are to be obtained by the Motorways of the Sea, some concrete suggestions are presented next, with the aim of illustrating the type of action that may be required in some of those items:

- Launch a process for systematic simplification of administrative procedures in intra-EU Short Sea Shipping, with voluntary adhesion of interested member countries, and with technical support from the European Commission.
  - This could start with bilateral agreements (with an implicit background objective of evolution towards multilateral agreements) which implies some pressure in favour of an evolutionary approach towards as-wide-as-possible harmonised procedures;
- Identify what are the critical factors that help promote synergy of public interventions at different levels of administration (European, national, regional) with a positive impact in favour of modal decisions towards Motorways of the Sea by shippers; and open the discussion on the processes and means that can effectively mobilize those factors;

- Adopt a more aggressive promotion of the unaccompanied Ro-Ro transport model (much more efficient than the accompanied version), by treating it as a “container on wheels”, for instance through fiscal stimulus to companies owning the trailers independent of the truck cabins (and subsequent access to trailers by hauliers or logistics companies in a rental regime similar to that of containers, instead of by ownership).
  - This would significantly widen the set of road hauliers capable of participation on the land part of these intermodal operations, increase the level of competitiveness for these services, and thus reduce the risk of high prices in the land-segment of the MoS;

- In parallel with the MoS, and especially considering the recently approved sharply reduced EU budget framework in support of Trans-European Networks, it is essential that the Marco Polo program be kept along its traditional lines, bearing in mind the additional positive factor that this is a market-led initiative;

- Since only potentially economically self-sustaining MoS projects should be selected, the factor that requires public intervention is the commercial risk, especially during the first years of the project. Thus, financial support of operations should be designed under a “traffic guarantee” concept rather than under a “grant” concept. This could come on top of other (coordinated) public interventions on the improvement of the infrastructure, be it within the port area or on its land accesses, and these may indeed be a key factor for success of the whole approach.
  - The “guarantee package should be designed to avoid significant losses by the economic agents engaged but at the same time stimulate their ingenuity to achieve significant profits. Significant experience exists in design and application of incentive measures in contracts for public service obligations in other modes of transport.
  - In some special cases, the notion of economically self-sustaining MoS projects should be widened enough to accommodate the notion of external costs, namely in what concerns environmental preservation (at least as long as trucks do not bear the full costs they impose through the prices and charges they pay) and regional cohesion (for reasons of public service some services may have to be provided with a greater frequency or a lower price than what would constitute the normal market equilibrium)

1.7 Contributions of these measures to the Lisbon and Göteborg objectives

The environmental advantages of a modal shift from road to sea for significant parts of intra-EU trade has been recognised for a long time. Ships have much better fuel economy, resulting in lower CO2 emissions per ton km transported.

But for the environmental advantages to be really important, other negative factors must also be curtailed, and efforts are under way to improve the overall emissions pattern of maritime transport: the EU recently (July 2005) adopted Directive 2005/33/EC on the sulphur content of marine fuels, and discussions are taking place with the industry for large reductions of NOx and PM emissions in the near future.

In parallel with promotion of sustainable development (Göteborg) objectives, the proposed measures are also aligned with the Lisbon objectives, as they will promote a more sophisticated form of transport, implying coordinated action by authorities, shippers and operators in the launching phase, and by shippers and operators in the operational phase. New services financial and organizational services will be called upon, and a significantly increased level of Information and Telecommunication technologies will be mobilised to allow more efficient and fluid performance of sea-based intermodal transport.
2. MARITIME SAFETY

2.1 Identification of the main sources of risk in Maritime Safety

Maritime safety is a complex problem, first of all due to the hazards placed by the seas and their incertitude, but also due to a number of other factors that can be managed. Among these the main ones are:

- Manpower and their qualifications
- Condition of Ships
- Incident Management schemes

The two first ones relate to active safety (reducing the probability of accidents) and the latter to passive safety (reducing the damage causes by each accident).

In each accident, the incidence of damages may be on human life (mostly crews), on the vessels and cargo transported, on the environment and also on connected economic activities, like fisheries and tourism. Given the progress achieved in ship design and weather forecasts, most maritime accidents occurring presently are perceived as avoidable, although each accident normally occurs following an accumulation of hazards or errors in several dimensions (similar to what occurs in other transport modes).

Only by a coordinated effort for reduction of hazards in those fronts can a significant reduction of the number and severity of maritime accidents be expected. This section deals with some proposals in that direction, that are considered to have a good potential for such reduction as well as a relatively easy path towards acceptance and subsequent application.

2.2 Safety risks for the environment and for the crew members

In recent years, with the growing size of ships and volumes of trade, several accidents with very large scale of damage have occurred, and each of them has led to a political reaction at national and European level, trying to appease the populations with the promise that, with the new rules and legislation, such level of damage will not occur again.

In particular, the best known damages on the environment have been causes by large spills of several types of crude and its derivatives, as well as of very poisonous chemicals. Safety risks for the crews also exist, sometimes in association with the general condition of the ships, sometimes with the facilities and safety equipments provided on board. In case of high risk, the existing difficulties of communication among crew members of multiple nationalities only aggravate the probability of poor perception of the situation and understanding of the orders received.

Regarding the hazards for the crew members, it is important to note that an ILO convention on Work at Sea has been signed in February 2006, but fails to recognize the rights of crews to keeping their salary in case of abandonment of ship. This clearly represents a much lower level of protection of workers’ rights than the prevailing regimes in most countries for workers in fixed facilities when an accident destroys them or makes them inoperative for an extended period, and efforts should be developed by the EC for adoption of a more balanced regime.

2.3 The institutional framework for maritime safety decisions

Maritime transport largely performs its functions in international waters and has developed its own rules over the centuries, but the creation of the United Nations allowed this process to be integrated in one of its organs, the International Maritime Organization.

Changes in its general rules are thus very difficult to bring about just by the will of a nation of group of nations, even if so relevant and powerful as the European Union. Where the member states and the EU can act more effectively is in what concerns access to their territorial waters (12 miles form the coast) and to their ports, but there are significant risks for the European coasts and environment in general due to the transit of hazardous ships beyond the 12 miles from the coast line.
2.4 The EC initiatives on maritime safety: the Erika I, II and III packages

The high level of damages and the high visibility of the Erika accident off the Atlantic Coast in December 1999 have led to a quick reaction by the European Commission, which adopted a first set of measures (the Erika I package) to increase maritime safety in March 2000. A few months later (December 2000) the Erika II package was adopted.

In the Erika I package, the first measures were dedicated to ship inspections and subsequent black-listing (for access to EU ports) of ships found substandard. This list is now regularly updated in the European Maritime Safety Agency website.

The second measures were directed at ship classification societies, for which the quality requirements have been raised and whose performance is now more closely monitored. Failure to meet the standards can lead to temporary or permanent loss of EU authorisation.

The third measure was related to a quicker phasing out of single-hull tankers worldwide (instead of as late as 2026 in the previous rules), in a process that was pushed by the EU at the IMO. All these measures came into force in July 2003.

The Erika II package produced two decisions: the creation of the European Maritime Safety Agency (EMSA) responsible for improving enforcement of the EU rules on maritime safety, which entered into force in August 2002, and the creation of a surveillance and information system to improve vessel monitoring in European waters, which entered into force in February 2005.

By this system, all ships sailing in EU waters have to be equipped with identification and communication systems that automatically exchange data with coastal authorities, as well as with voyage data recorders (black boxes). Another important provision of this package is that Members States must develop contingency plans to accommodate ships in distress in places of refuge.

In November 2002, the accident with the Prestige off the coast of Galicia (Spain) called the attention for some additional measures. The Erika III package, announced in November 2005, includes seven measures partly deriving from work that was under way and partly generated by the experience of the Prestige case. This third package includes measures on both active and passive safety.

The active measures act upon:

- Improved monitoring of the application of international rules by ships sailing under the flag of any EU Member State;
- The frequency and quality of Port State control measures (inspections and targeting suspect ships);
- The legal framework for safe harbours and refuge zones for ships in distress;
- Further development of safeseanet, a data exchange network for better knowledge of movements and cargoes of vessels;
- Extending the compulsory application of Automatic Identification Systems for fishing vessels over 15 meters length;
- Increase the power of coastal Member States to restrict entry of vessels deemed unfit to cope with icy conditions;
- Improving the quality of classification societies by introducing common quality control structures and harsher penalties for those who fail to meet community requirements.

On the passive safety side, the main measures are:

- Harmonization of accident enquiries, in line with best practices used in aviation;
- Removal of rules that allow ship owners to limit their responsibilities in case of negligence, first by introducing mandatory compliance of Member States with existing international convention, and second by seeking support of Member States to negotiate review of the international convention;

- Ensure full applicability of the Athens Convention related to passenger compensation in case of maritime accidents, by incorporating it in a European regulation

This third package is not yet in force, and it will now go through the usual process of discussion and negotiation towards approval in the European institutions.

2.5 Suggestions for improvement of Transport Safety related to the sources of risk identified above

While the measures contained in the three Erika packages constitute an undeniable progress in the way to improve maritime safety, systemic analysis of the problems at stake indicate that more (or better) can be done to tackle those problems.

These issues are addressed sequentially, for the three main safety hazard factors identified above: crews and ships (on the active safety dimension) and incident management schemes (on the passive safety dimension).

Regarding the problems associated with crews, the main factors are related to Manpower Qualifications and Skills.

It is a fact that nautical school certificates are required for all crew members, and also that these schools are certified by the IMO for 5 year periods. These certified schools are inserted into a “white list” published by the IMO, but there are many rumours and cases of false certificates.

Dealing with this problem of false certificates requires action at multiple levels: the suggestion presented here is based on a combination of information, variable requirements, and accountability of ship captains and manning societies.

- National Maritime authorities should request a full list of crew members and their qualifications before entry into territorial waters, in parallel with what is already requested for the cargoes;

- There could be a legal requirement for variable minimum thresholds of alumni from certified schools according to the type of cargo;

- During Ship Inspections at port, the conformity of the crew with the list supplied would be checked, as well as the legality of the certificates
  - This may require a technological upgrade of these certificates to make them harder to forge;
  - Hard punishment and “black listing” of captains issuing false statements about their crew composition and qualification should be foreseen. A more flexible measure could be “grey listing” of captains, i.e. demoting the ship dimension and type of cargo hazard allowed to each captain, depending on the level of falsity detected in those crew lists;
  - The appropriateness of the performance of “manning agencies” in the composition of the crews should also be assessed, as they are currently the main source of those decisions, and perform their job without any kind of official supervision and evaluation. This should now be brought under the umbrella of the EMSA;

- The frequency of inspection of ships and crew certificates and composition would be random, but dependent on the past occurrence of false certificates from the schools included in the list reported for each ship, or incorrect performance by the corresponding manning agency, according to the records kept by the EMSA;

Regarding the Conditions of Ships, it is a fact that there is an internationally accepted list of requirements for seaworthiness of ships, by classes, and that ships are regularly inspected by Ship Classification societies. Following these inspections, the list of non conformities of ships with those requirements is internationally accessible.

In the maritime transport world, imposing restrictions on the Right of Harmless Passage by a ship by a national authority is considered a grave matter, so it should not be made lightly.
But it is already acknowledged in the Erika III package that there are different levels of strictness among the Ships Classification societies. The approach that it proposes to handle this problem is more towards regulation, by introducing common quality control structures in Classification societies and harsher penalties for those who fail to meet community requirements; in parallel with higher frequency and quality of Port State control measures (inspections up to 100% of visiting ships and targeting suspect ships);

These measures are probably costly and do not include the valuable information that can be available from feedback of previous inspections. We believe it would be preferable to attack the problem with an alternative approach, more oriented towards incentive and feed-back from the response:

- The EMSA would establish a dynamic Rating of Classification Societies, based on the safety performance (i.e. accidents and inspections) of the ships declared sea worthy by each of them;

- Maximum age thresholds would be defined (by the EMSA or by nations) for giving Right of Harmless Passage (and calling on Ports) to ships approved by recognised classification societies, depending on the rating of their Classification Society and to the risk levels of the cargo they carry;

- The possibility of not giving Right of Harmless Passage should be extended from the Territorial Waters to the Economic Zone, as it frequently happens that accidents occurring in this zone still are close enough to the coast to provoke major damage on the coastal ecosystems: both the Erika and the Prestige accidents occurred when the ships were navigating in the Economic Zone;

- Frequency of inspection of ships in port would be random, but also variable according to the rating of their classification society

Imposing quality standards on classification societies is useful but simply not enough if checking the application of those quality standards is done only through the procedures applied and not through their results, the classification of the ships. This feed-back is essential, both for realism and for providing the necessary incentive. Moreover, this alternative approach is more efficient, since it does not generate the costs of 100% inspection of ships, moving instead to a level of inspection of ships that is dependent on the past practice of the corresponding classification societies.

This would bring, in addition to the black-listing of ships – introduced in the Erika I package – the grey listing of classification societies, in various shades of grey, according to the past respectability of their past classifications. As mentioned above, a similar scheme should also be adopted for manning societies.

On the passive safety dimension, the key issue is Incident Management Schemes. Recent experience has shown that different ways of handling the post-accident situation may lead to very different levels of impacts. This is true in general, but especially critical for ships with crude and other contaminating cargo.

It has also been observed that the impacts of an accident along the coast of one region may easily spread to the coasts of other regions and countries in the same maritime basin.

The Erika II package already contains the obligation by Member States to prepare contingency plans to accommodate ships in distress in places of refuge, but this does not seem enough: a more comprehensive approach is necessary, which starts by a suggested obligation of Member States to prepare Maritime Incident Management Plans (and not simply designating places of refuge) along their coasts. These already exist in some cases, in some cases even covering international stretches of coast, but their preparation should be systematic.

These Plans would necessary include

- The identification of risks

- The specification, dimensioning and location of the means of contention and combat (in real time and ex-post for more effective dissipation)

- The identification of Places of Refuge and of the preparatory measures there

Because of the possible variety of risks along each coast, in connection with the presence of sea currents, diversity of the surrounding biotopes or economic activities, there may be different specific sub-plans developed
for the same coast, although preferably under a coherent strategy and making common use of the same set of contention and combat resources.

Even if these plans must be developed and approved by Member States, the nature of the ecosystem and the necessary availability of regional authorities when the incidents occur (in mobilizing logistic resources, and also in footing part of the bill), leads to a strong recommendation that they have obligatory hearing of the regions of the same coast in that country and a non-binding consultation of regions in the same ecosystem, even if in other countries.

2.6 Rationale for a stronger role of regions in some issues related to Maritime Safety

In all the three key problems identified in this chapter on Maritime Safety (crews, ships and incident management schemes), regions have no direct power.

But in all maritime safety accidents maritime regions are in the first line of suffering the impacts and mobilizing the means for contention and combat. This makes them legitimately concerned stakeholders.

By being closer to the ground, they understand that the power of reputation (rating) is as strong as the power of legislation and regulation, and easier to enforce, provided that all care is taken to ensure that there is unbiased rigorous information on the basis of that rating.

So, in the “Ship Conditions” problem, regions are only presenting concrete suggestions that try to improve the efficiency and applicability of the measures suggested by the Commission.

In the “Crews and their Qualifications” the proposals of the Commission do not seem to acknowledge the issue of false certificates, but the information received by the regions suggest this is a real problem and deserves closer analysis. If this is confirmed, the suggestion presented in this report goes in the same direction of that adopted for ships: require and use formal information, check it, and correct the level of strictness of subsequent checkings (and rating of those responsible for providing that information) depending on track records.

In the “Incident Management” problem, regions are more directly concerned and thus feel a greater legitimacy to be involved in the preparation of the corresponding Plans. Thus, the suggestion for improvement of the specifications included in the Erika III proposal, insisting on the basin approach and on the compulsory participation of regions in the preparation of those plans by national authorities.

Engagement in the planning phase ensures not only the possibility of having the regions’ points of view considered in the decision process leading to the Plans, but a much better knowledge and understanding of the measures included in the Plans, leading to much easier coordination of efforts when the accidents occur and such speedy and effective coordination is absolutely vital for a high level of effectiveness in the contention and combat measures.

2.7 Contributions of these measures to the Lisbon and Göteborg Objectives

A better management of maritime safety problems has obvious contributions to the Goteborg objectives, as these safety problems frequently generate significant environmental (as well as economic) impacts. The systemic approach proposed in this document should help establish a valid framework for this type of action, being totally compatible with the Erika packages but trying to go farther, in a more efficient way, and with a scheme favouring more direct engagement of the relevant stakeholders.

The alignment of the proposed measures with the Lisbon objectives of innovation and productivity is less clear, but still rather positive: the methods proposed for action on ships and crews favour self-regulation by the industry, by starting to fully accept the statements of classification societies (about ships) and of captains (about qualification of their crews), but reviewing the degree of trust of those statements according to past behaviour.

But it is on the proposals for Incident Management that a greater alignment with the Lisbon objectives can be found: elaboration of the Incident Management Plans based on an ecosystem approach, considering the sea basin as the relevant unit and engaging the (national and neighbouring) regions in the discussion will inevitably lead to a higher degree of understanding of the problems and to a stimulus for the search of adequate solutions, involving smarter use of technologies in parallel with better coordination of efforts among different levels of public administration.
All measures proposed have an obvious impact on overall productivity, as highly valuable environmental and economic resources will be less depleted, and more efficient ways to organize maritime transport will result.
3. Conclusions of the Research and Maritime Innovation Thematic Group

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1. MAIN FIELDS OF MARINE SCIENCE AND TECHNOLOGY

1.1 Introduction

Marine science and technology is a diverse area with many disciplines and issues involved. The marine environment has characteristics that make marine science and technology different than the counterparts for the land areas. Water has low transparency, and visual observations are limited to close range (up to a few tens of meters in the best cases). Acoustics take over as the main remote sensing method and we use reflected soundwaves with echo-sounders to “see” the seafloor and fish in the water. The ocean and seas are vast areas and space that are costly to map and study. Marine research may require large ocean going research vessels and robust oceanographic equipment that can be operated under harsh conditions.

There are different ways to categorise marine science and technology, according to scientific disciplines, issues or topics addressed, or combinations of these. The following is a breakdown according to issues or topics:

- Climate
- Marine and coastal environment
- Living resources
- Seafloor mapping and habitats
- Aquaculture
- Biotechnology
- Offshore oil and gas production
- Offshore renewable energy
- Shipping
- Ocean observing systems
- Information and communication technology (ICT)
- Socio-economic sciences
- Governance

1.2 Key scientific issues

We are not attempting to give an exhaustive overview but rather give examples of some key scientific issues relating to the main areas of marine science and technology.

Climate – Climate is weather integrated over time. The climate is notoriously variable, changing between years and over decades and centuries. Climate variability is a major driving force for ecosystem variability, affecting plankton, fish, birds and other parts of marine ecosystems. The climate is also changing due to human release of CO₂ and other greenhouse gases. The mechanisms of climate variability and change are a major research area for better understanding of effects and predictions of future developments.

Marine and coastal environment – The ocean climate expressed as the currents and changes in water masses is very much a part of the marine and coastal environment. In addition, all the living organisms in the ecosystems are also part of the marine and coastal environment. Important research tasks are to find out how the organisms relate to their physical environment and how they are interwoven in food chains and food webs. Biological interactions are along with climate the main natural drivers for ecosystem variability. The environment is also the chemical aspect, and pollution effects from contaminants and coastal eutrophication from nutrients input are major research tasks.
**Living resources** – Pelagic and demersal (bottom-dwelling) fish stocks form the basis for large fisheries in European seas and coastal areas. Overfishing and depleted stocks are common and represent a particular challenge to overcome. Large natural variability in fish stocks occur regularly due to the effects of climate variability and biological interactions (with prey and predators of the fish). This poses a particular problem in fisheries management which is faced with regulating the catches from changing fish populations, often with insufficient or delayed information on those changes. Better understanding of the causes of variability and direct measurements of the fish stocks are two elements for providing better scientific information for fisheries management. The relationships between the living resources and their physical habitats is another important research area.

**Seafloor mapping and habitats** – The gross bathymetric features are generally known, but detailed information on the finer structure of the seafloor is lacking for most areas. High resolution mapping (by acoustic methods) of the seafloor is an important task. The organisms that live in or at the seafloor influence or shape the bottom structure (e.g. deep-water corals, sponges, burrowing fauna). The seafloor habitats are therefore made up of both the physical bottom substrate and the associated organisms. Habitat classification systems are typically hierarchical with layered information. Mapping the marine and coastal habitats is therefore a very extensive task. Achieving this will, however, form a vastly improved basis for spatial ecology including descriptions and understanding of biodiversity. On the practical side, good maps will be important for spatial planning and management.

**Aquaculture** – Cultivation of marine organisms has a long tradition and has expended over recent decades, most notably for salmon farming. Aquaculture has still a large potential for expanding as an economic activity to produce high quality marine food. Important research tasks relate to cultivation methods, disease prevention, feed production, interaction with fisheries, and environmental impacts on the local environment.

**Biotechnology** – Using properties of organisms to produce products of pharmaceutical, nutritional or other values is a rapidly expanding industry with very large potential. Marine organisms represent a vast variety of groups and species, many of which have probably not yet been discovered and described. (This is because rare species, like the high numbers of rare plants and insects we know occur on land, would simply not yet have been found with the limited sampling and visual observations from the seafloor.)

**Bio-prospecting** is the search for organisms with properties that can be used for new biotechnological applications. Better mapping and inventories of biodiversity of marine and coastal areas will facilitate the systematic and directed search for new organisms and biotechnological possibilities.

**Offshore oil and gas production** – Fossil fuel production and use is likely to increase in importance over the next decades. The offshore technology has been rapidly developing and is likely to continue to do so to produce oil and gas more effectively from both economic and environmental perspectives. This includes directional (horizontal) drilling with high precision and seabed installations for production. Particular challenges lies in the production in deep water and in Arctic conditions. Separation and re-injection of CO₂ in geological reservoirs may represent a major medium-term remedial action to reduce the scale of global climate change. Gas hydrates (frozen methane) in sediments represent a large potential energy source that may be explored for future use.

**Offshore renewable energy** – Wind, waves and currents are potential renewable sources that can be used for sustainable energy production. Offshore wind mill parks are currently being constructed or planned. There are engineering and technological challenges associated with exploiting these new energy sources. There are also environmental aspects that need to be investigated. These relate to spatial ecology and will benefit from habitat mapping and biodiversity inventories.

**Shipping** – Transport by sea is a large opportunity. Building better ships from both economic and environmental perspectives remain an important technological task. Development of good operational systems to reduce the risks and consequences of accidents in relation to sea transport is another priority area.

**Ocean observing systems** - The sea state with its temperatures, currents, and waves form an important part of the ecological conditions in our seas and coasts. Storms and storm surges can have dramatic impact on maritime operations and on the coasts. Monitoring and forecasting the sea state as part of maritime operational services are therefore important for maritime safety. Algal blooms, oil spills and other events are other situations were operational systems may provide a better basis for informed decisions to combat and mitigate adverse effects. Meteorological and ecological events are also important in relation to assessments of resources and environmental conditions. There is a case for co-ordination and co-operation among science communities and
agencies involved in marine meteorology, fisheries and environment in the implementation and use of operational observing systems for our coasts and seas. Such operational systems use a combination of observations from different sources (satellites, ships, buoys, etc.) and mathematical models.

**Information and communication technology (ICT)** – Efficient and effective ICTs have the potential to improve the communication of crucial information for several purposes. Three relevant applications are: 1) alarm systems to mitigate the consequences of natural disaster and industrial accidents, 2) tools for active learning on relevant environmental topics, and 3) tools to support local democracies by making decision processes open, giving access to information and regulations, and creating virtual meeting-places for the public to discuss relevant matters.

**Socio-economic sciences** – There is a need for integrating research on the issues affecting growth, employment and competitiveness, ranging from innovation to national institutional contexts, taking into account the quality of life, sustainability and protection of the environment. This is a broad area of research with many facets. Human systems are complex in terms of their institutional and physical infrastructures and the flow and cycling within them of money and matter (from raw materials to products to waste). Thus human systems resemble ecosystems with their structures, flows and cycles. Recognizing that man is part of the ecosystem, the ultimate aim is to understand how complex human systems and complex ecosystems interact, in order to achieve sustainability in both types of systems.

**Governance** – The shift to more participatory decision processes demands knowledge on how to enable this. Relevant topics cover a broad range like how can expert knowledge from political, social and the natural sciences be integrated in a useful way for decision making? In what ways can the roles of experts, stakeholders and citizens be defined? How can decision making and management be made transparent, accountable and flexible so that the problems of a local nature can be adequately addressed?

### 2. EUROPEAN MARINE RESEARCH: INVENTORY AND MAPPING

#### 2.1 Major research programmes and initiatives

The need for integration in marine science and technology has been recognised for some time. Portugal with the support of France took in 1998 an initiative to consider the establishment of a co-ordinating mechanism such as a European Ocean Agency. A working group of European experts was convened that concluded that it was timely to encourage networks among existing national and European marine research and technology institutions, programmes and activities, and to stimulate concerted actions in marine science and technology. The working group further recognised the benefit of a focal point for information on marine science and technology.

As a result of the Portuguese-French initiative, the European Centre for Information on Marine Science and Technology (EurOcean) was established in 2002. EurOcean has developed an internet portal ([www.eurocean.org](http://www.eurocean.org)) for marine science and technology in Europe. The portal provides a directory of websites relevant to marine science in Europe, overviews of marine research infrastructures such as research vessels and experimental facilities, and compilation of other marine science and technology information.

The European Science Foundation’s (ESF) Marine Board convened a series of workshops and specialist groups during 2000-2001 to identify scientifically challenging and socio-economically important research themes in marine science and technology. This was part of the preparations for a position paper Integrating Marine Science in Europe ([http://www.esf.org/publication/146/Marinescience.pdf](http://www.esf.org/publication/146/Marinescience.pdf)). Three major strategic drivers were identified and used as the cornerstones for developing the rationale for integrating marine science in Europe:

1. Understanding and predicting the impacts and feedbacks of ocean climate change.
2. Scientific and socio-economic bases for sustainable development of European seas and their resources.
3. The ocean as an ultimate frontier for marine research.

In the position paper, a number of scientific, infra-structural and strategic recommendations are made to stimulate effective implementation of integrated marine research in Europe.

#### 2.2 EU Framework programmes for research

The European Commission proposed in 2000 to establish the European Research Area (ERA). This was seen as an analogy to the common market and described as an area for coherent and co-ordinated pursuit of research
activities and policies, and one in which researchers and knowledge can move freely. The ERA concept marked a distinction between the sixth framework programme for research (FP6) from its predecessors. Two of the objectives for FP6 were to structure and to strengthen the European Research Area. A third objective was focusing and integrating research.

The focusing was achieved by identifying 7 broad priority themes that were considered strategically important to Europe’s future:

- Life sciences, genomics and biotechnology for health
- Information Society Technologies (IST)
- Nanotechnologies and nanosciences, knowledge-based multifunctional materials, and new production processes and devices
- Aeronautics and space
- Food quality and safety
- Sustainable development, global change, and ecosystems
- Citizens and governance in a knowledge-based society

Two new instruments were introduced to help achieving integration of research. The first was Integrated Projects aimed at integrating a critical mass of activities and resources to address the priority thematic areas of FP6. The second was Networks of Excellence for tackling the fragmentation of research activities in Europe in a given thematic area. FP6 also contained special instruments for projects involving SMEs (small and medium-sized enterprises), for mobility and training (Marie Curie Actions), and for research infrastructures.

EurOcean has created a Database of the Marine Science and Technology projects funded under FP6 for the period 2002-2006 (http://www.eurocean.org/contents.php?id=346). A summary of the projects in this database by activity areas is provided in the table.

<table>
<thead>
<tr>
<th>Activity area</th>
<th>No. Of projects</th>
<th>EU Funding (million EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Change and Ecosystems</td>
<td>22</td>
<td>109,5</td>
</tr>
<tr>
<td>Food Quality and Safety</td>
<td>10</td>
<td>45,4</td>
</tr>
<tr>
<td>Sustainable Surface Transport</td>
<td>38</td>
<td>125,7</td>
</tr>
<tr>
<td>Sustainable Energy</td>
<td>7</td>
<td>15,0</td>
</tr>
<tr>
<td>Aeronautics and Space</td>
<td>3</td>
<td>0,9</td>
</tr>
<tr>
<td>Information Society Technologies</td>
<td>2</td>
<td>3,4</td>
</tr>
<tr>
<td>Research for Policy Support</td>
<td>19</td>
<td>39,5</td>
</tr>
<tr>
<td>Coordination of Research Activities - ERA NET scheme</td>
<td>10</td>
<td>26,8</td>
</tr>
<tr>
<td>Joint Research Centre Activities</td>
<td>7</td>
<td>0,0</td>
</tr>
<tr>
<td>Specific International Co-operation Activities</td>
<td>9</td>
<td>9,7</td>
</tr>
<tr>
<td>Marie Curie Actions - Human Resources &amp; Mobility</td>
<td>30</td>
<td>9,5</td>
</tr>
<tr>
<td>Specific Research Activities for Small and Medium-sized Enterprises (SMEs)</td>
<td>6</td>
<td>5,0</td>
</tr>
<tr>
<td>Research Infrastructures</td>
<td>4</td>
<td>2,1</td>
</tr>
<tr>
<td>Sum total</td>
<td>167</td>
<td>392,6</td>
</tr>
</tbody>
</table>

The total budget for FP6 was 16,27 billion EUR (16.270 million EUR). Compared to this total, the funding for marine science and technology projects constitute only about 2.5%.

Among the projects are 6 Networks of Excellence; one relating to disease in aquaculture, three relating to ecosystems and biodiversity, and two relating to structures and vessels in sea transport (table below). These 6
projects received a total funding of 51.2 million EUR, or 13 % of the funding for marine science and technology in FP6.

| **EADGENE** | European animal disease genomics network of excellence for animal health and food safety | France (Coord.) | Food Quality and Safety | Network of Excellence for Animal Health and Food Safety |
| **EUR-OCEANS** | European network of excellence for ocean ecosystems analysis | France (Coord.) | Global Change and Ecosystems | Network of Excellence for Ocean Ecosystems Analysis |
| **MARBEF** | Marine biodiversity and ecosystem functioning | Netherlands (Coord.) | Global Change and Ecosystems | Network of Excellence for Marine Biodiversity and Ecosystem Functioning |
| **MARINE GENOMICS EUROPE** | Implementation of high-throughput genomic approaches to investigate the functioning of marine ecosystems and the biology of marine organisms | France (Coord.) | Global Change and Ecosystems | Network of Excellence for Marine Genomics |
| **MARSTRUCT** | Network of excellence in marine structures | Portugal (Coord.) | Sustainable Surface Transport | Network of Excellence for Marine Structures |
| **VISIONS** | Visionary concepts for vessels and floating structures | Belgium (Coord.) | Sustainable Surface Transport | Network of Excellence for Visionary Concepts for Vessels and Floating Structures |

Sixteen of the funded projects were Integrated projects shown in the table below. These are all large projects, each receiving a funding of 6-19 million EUR. In total they received 161 million EUR, or about 40 % of the funding to marine science and technology in FP6.

| **MERSEA** | Marine environment and security for the European area | France (Coord.) | Aeronautics and Space | Integrated Project |
| **IMAQUANIM** | Improved immunity of aquacultured animals | Denmark (Coord.) | Food Quality and Safety | Integrated Project |
| **LIPGENE** | Diet, genomics and the metabolic syndrome: An integrated nutrition, agro-food, social and economic analysis | Ireland (Coord.) | Food Quality and Safety | Integrated Project |
| **SEAFOODPLUS** | Health improving, safe seafood of high quality in a consumer driven fork-to-farm concept | Denmark (Coord.) | Food Quality and Safety | Integrated Project |
| **ALARM** | Assessing large-scale environmental risks with tested methods | Germany (Coord.) | Global Change and Ecosystems | Integrated Project |
| **CARBOOCEAN** | Marine carbon sources and sinks assessment | Norway (Coord.) | Global Change and Ecosystems | Integrated Project |
| **FLOODsite** | Integrated flood risk analysis and management methodologies | United Kingdom (Coord.) | Global Change and Ecosystems | Integrated Project |
| **HERMES** | Hotspot ecosystem research on the margins of European seas | United Kingdom (Coord.) | Global Change and Ecosystems | Integrated Project |
| **MODELKEY** | Models for assessing and forecasting the impact of environmental key pollutants on marine and freshwater ecosystems and biodiversity | Germany (Coord.) | Global Change and Ecosystems | Integrated Project |
FP7 has the title **Building the Europe of knowledge**. This signals the overall objective which is to realise the goal of the Lisbon agenda to make Europe the most dynamic and competitive knowledge-based economy in the world. To achieve this, an aim has been set to increase the research effort of Europe to 3 % of the EU GDP. The total budget for FP7 has been suggested at about 70 billion EUR.

Six major objectives of FP7 have been identified:

- Creating European centres of excellence through collaboration between laboratories
- Launching European technological initiatives
- Stimulating the creativity of basic research through competition between teams at European level
- Making Europe more attractive to the best researchers
- Developing research infrastructure of European interest
- Improving the coordination of national research programmes

FP7 will cover research over the period 2007-2013 and is composed of 4 specific programmes:

1. Cooperation
2. Ideas
3. People
4. Capacities

**Cooperation** is the largest programme, with a suggested allocation of 44.4 billion EUR. Nine broad themes are identified under Cooperation:

- Health;
- Food, Agriculture and Biotechnology;
- Information and Communication Technologies;
- Nanosciences, Nanotechnologies, Materials and new Production
- Technologies;
- Energy;
- Environment (including Climate Change);
- Transport (including Aeronautics);
- Socio-economic Sciences and the Humanities;
- Security and Space.

The nine themes include research needed to underpin the formulation, implementation and assessment of EU policies, such as in the areas energy, the environment, fisheries, maritime affairs, transport, education and training, and others. For all these themes, support to trans-national cooperation will be implemented through collaborative research including networks of excellence, joint technology initiatives, co-ordination of research programmes, and international co-operation.

The Ideas programme includes setting up an autonomous European Research Council to support investigator-driven “frontier research” carried out by individual teams competing at the European level.

The People programme will continue to provide support to strengthen the human potential in research and technology in Europe, through a coherent set of Marie Curie actions. The Capacities programme aims to enhance research and innovation capacities throughout Europe and ensure their optimal use. Support under this programme includes optimising the use and development of research infrastructure, development of regional research-driven clusters, and strengthening of innovative capacities of SMEs.

It has been argued by a group of countries including Portugal, Ireland and Norway that there ought to be a specific ocean theme covering marine and maritime issues and activities in FP7. CPMR has also argued for such a marine theme. In the proposal from the European Commission concerning FP7, it is stated that: “Special attention will be paid to priority scientific areas which cut across themes, such as marine science and technologies.” This raises the issue of how and by which mechanisms the necessary coordination of research planning and implementation across themes will be carried out.

2.3 InterReg projects

There are a large number of InterReg projects that involve cooperation of regions. These projects are to a large extent directed to practical aspects of management or development of infrastructure of the regions, and they do to limited extent include RDI in a traditional sense. We will illustrate the InterReg projects by presenting one of them, the Safety at Sea project.

Safety at Sea – North Sea

The InterReg project Safety at Sea (www.safetyatsea.se) is built on a vision that there should be no serious accidents at sea in the North Sea region. It has as its objective to harmonise and materialise risk management at the national and regional levels, as well as at the strategic and operational levels for the North Sea. 22 partners from 6 countries participate in the project that is lead by the Norwegian Coastal Administration.

The project is organised into 5 strands and 6 demonstration projects. The strands are:

- Strand 1: Harmonisation of risk management strategies
- Strand 2: Routing and safe seaways
- Strand 3: Coastal zone management
- Strand 4: Risk assessment and decision
- Strand 5: Project management and technical assistance.

Each of strands 2, 3 and 4 contain two demonstration cases:

A Inventory and risk assessment of oil transport in the North Sea
B AIS data and risk assessment
C Coastal zone management – places of refugee and preparedness
D Offshore wind farm risk management
E Risk assessment and decision making
F Safety awareness

Several of the demonstration cases include R&D aspects. Thus demonstration A includes a classification system for crude oil based on environmental behaviour and toxicity, and risk assessment studies to identify high risk areas. Demonstration C includes the development of rules for classification of sensitive areas. Demonstration E involves the development of a new Incident Management System that combines data from different sources to help make informed decisions in dangerous situations.

2.4 European marine research infrastructure

The EurOcean Internet portal (www.eurocean.org) provides access through links to a wealth of information on national research agencies, marine research institutes or organisations, research vessels, experimental facilities, etc. It is beyond the scope to summarise and analyse this large amount of information here. Instead we provide some selected information emphasising some of the main features of the European marine research infrastructure.

There is a large number of marine research institutes or organisations in Europe. Some of these are government laboratories belonging to national agencies with tasks related to fisheries and environmental monitoring and assessment. Others are parts of or associated with universities and carry out marine research in addition to their teaching and educational purposes. Others again are consultancies or centres which compete for funding for both basic and applied science. Many large private companies also have their own R&D sections involved in marine research and technologies. There is thus a wide variety in size, scope and institutional arrangements for the marine research institutes in Europe.

We provide here brief accounts of some of the larger marine research institutes. The selection is not exhaustive and serves only to illustrate some of the features of the larger European marine institutes.

IFREMER (French Research Institute for Exploitation of the Sea) is one of the largest (if not the largest) marine institutes in Europe with a staff of 1380 persons, not including research vessel crew members. IFREMER is present in some 24 stations or centres along the coastlines of metropolitan France and its overseas territories and dominions. The Institute is located in 5 centres (Boulogne, Brest, Nantes, Toulon, Tahiti) and in twenty or so stations linked to those centres (Figure 1). The head office is near Paris (Issy-les-Moulineaux). Six broad topics, divided into multi-field programs, structure the totality of the activities of research and study, technological development, monitoring, expertise and valorization of the institute. IFREMER provides an example of a large national institute with broad and heavy expertise and central coordination, but with a decentralised location around the coast of France.
The Institute of Marine Research (IMAR) in Portugal was created in 1991, as a non-profit private organisation, whose founder members are the majority of universities in Portugal which undertake research in Marine Science and Technology. The general objective of IMAR is the development of Marine Science and Technology. IMAR includes about 200 researchers, belonging to institutions from all over the country, and covers the majority of research areas in Marine Science and Technology.

The National Oceanography Centre, Southampton (formerly Southampton Oceanography Centre), is an integrated Joint Centre owned by the Natural Environment Research Council (NERC) and the University of Southampton. The centre has a staff of some 450 research scientists, lecturing and support staff as well over 600 undergraduate and postgraduate students. The Centre is the national focus for oceanography in the UK with a remit to achieve scientific excellence in its own right as one of the world's top five oceanographic research institutions. It will deliver a diverse mission spanning that of both NERC and the University, which ranges from managing the national research vessel fleet and other major facilities, to a programme of strategic research for NERC as well as academic research and education in ocean and earth sciences in support of the University's mission. Its mission also encompasses major ocean technology development; sustaining long-term observations; managing international science programmes; promoting enterprise, knowledge transfer; providing advice to Government, business and charities, and the engagement between science and society.

The Center for Environment, Fisheries and Aquaculture Science (CEFAS) in the UK is an internationally renowned scientific research and advisory centre working in fisheries management, environmental protection and aquaculture. Cefas undertakes a wide range of research, advisory, consultancy, monitoring and training activities, much of it conducted for the UK Government and the European Union. Cefas has a staff complement of approximately 550 who are based at three specialist laboratories within the UK.

The Royal Netherlands Institute for Sea Research (NIOZ) is an independent research institute associated with the Netherlands Organisation for Scientific Research. Its mission is to pursue curiosity-driven multidisciplinary marine research in coastal and shelf seas as well as in the open ocean through close co-operation between physicists, chemists, geologists and biologists. Wherever possible, the institute engages also in policy-focused and society-driven research. At present NIOZ employs 250 staff.
The **Netherlands Institute for Fisheries Research** (formerly RIVO) is a research and consultancy organization that covers all stages of fish production from the sustainability of catch, up to the appreciation of fish products by the consumer. It is recognized as a Dutch research institute for marine ecology and an excellent laboratory for chemical analysis.

The **Federal Maritime and Hydrographic Agency of Germany** (BSH – Bundesamt für Seeschifffahrt und Hydrographie) is as a government agency a maritime partner to industry, science, and environmental organisations. BSH has over 900 dedicated employees. The activities of BSH include services to maritime shipping, surveys in the North and Baltic Seas, monitoring of the marine environment, production of nautical charts, and prediction of tides, water levels, and storm surges.

The **Foundation Alfred Wegener Institute for Polar and Marine Research** includes the Alfred Wegener Institute in Bremerhaven, the Potsdam Research Unit, the Biologische Anstalt Helgoland, and the Wadden Sea Station Sylt. The Foundation have 780 employees and a total budget of 100 million Euro in 2005. The German Federal Ministry of Education and Research covers 90% of financing, the state of Bremen 8% and the states of Brandenburg and Schleswig-Holstein provide 1% each. The Alfred Wegener Institute conducts research in the Arctic, the Antarctic and at temperate latitudes. It coordinates Polar research in Germany and provides both the necessary equipment and the essential logistic back up for polar expeditions. Recent additional research themes include North Sea Research, contributions to marine biological monitoring, marine pollution research, investigation of naturally occurring marine substances and technical marine developments.

The **Institute of Marine Research** (IFM) at the University of Kiel has a multidisciplinary focus and is as such one of the most diverse institutions for research and teaching in marine sciences. One of the key issues on the research agenda of the institute is a better understanding of the oceans role for climate and environmental changes. The research programme addresses physical, chemical and biological processes in determining the ocean circulation, the functions of marine ecosystems and the interaction with the atmosphere. The Institute for Marine Research cooperates closely with the research centre GEOMAR in Kiel that addresses, amongst other topics, chemical and physical investigations of the sea floor and its history.

The **Baltic Sea Research Institute Warnemünde** (IOW for Institut für Ostseeforschung Warnemünde) was founded in 1992, succeeding the Institute for Marine Research Warnemünde, which for decades was the most important institution for marine research in the former GDR. The scientific programme of the new institute is dedicated to the Baltic Sea ecosystem. IOW has a total staff of about 150 people.

The **Danish Institute for Fisheries Research** (DIFRES) is a research institution under the Ministry of Food, Agriculture and Fisheries. DIFRES performs fisheries research in order to advice the ministry, public authorities, the fishing industry and other organisations. The total staff is about 285 people.

**DHI Water & Environment** in Denmark is an independent, international consulting and research organisation. DHI Water & Environment was formed in 2000 by merging the former Danish Hydraulic Institute (DHI) and VKI – Institute for the Water Environment. DHI has a staff of approximately 450, the majority of whom are professional engineers and scientists, and offers a wide range of consultancy services, software tools, chemical/biological laboratories and physical model testing facilities.

The **Institute of Marine Research** (IMR) belongs to the Norwegian Ministry of Fisheries and Coastal Affairs. With a total staff of about 600 people, IMR is the largest marine research institution in Norway. IMR does monitoring and research on marine resources, the marine environment and aquaculture. The work of the institute is primarily concentrated on the ecosystems of the Barents Sea, the Norwegian Sea, the North Sea, and the Norwegian coastal zone. Most of its activities are based in Bergen, but the Institute also has a department in Tromsø and research stations in Matre and Austevoll near Bergen, as well as in Flødevigen near Arendal.
The European Marine Research Stations Network (MARS) (http://www.marsnetwork.org/members.php) is a foundation created by Europe's marine research stations. Currently more than 40 marine stations are members. Taken together, MARS member institutes are world leaders in fundamental marine research and have important research facilities available that allow direct access to the ocean. MARS serves as a forum and as an interest group and communicates with international organisations and the managers of European research, including the European Commission in Brussels and the Marine Board of the European Science Foundation in Strasbourg. MARS members are located all over Europe, along the shores of the Atlantic Ocean, the North, Irish, Baltic and Adriatic Seas, and the Black and Mediterranean Seas (Figure 2). Among its initiatives, MARS operates the project BIOMARE which involves networking of large scale, long term marine biodiversity research in Europe.

![Figure 2. Location of the about 40 marine stations (blue dots) which are members of MARS - The European Marine Research Stations Network. Also shown are the European Marine Biodiversity Research Sites (red dots) in the project BIOMARE.](image)

Research vessels are an important part of the infrastructure to carry out oceanographic and marine research. EurOcean has made an inventory of the vessels used for scientific purposes in Europe. 212 research vessels (RVs) from coastal to high seas have been identified and their specifications, onboard equipment and contact information have been collected and put into a database. The distribution of research vessels into size categories is shown in Figure 3 (based on data for 187 of the 212 vessels in the database). Nineteen European research vessels are larger than 70 m in length, while another 39 vessels are larger than 50 m. The majority of the vessels (90) are between 10 and 30 m in length.
Figure 3. Statistical analysis of the European research fleet. Distribution of vessels (total number 187) in different size classes. Source: Preliminary analysis of the European fleet, by Marta Entradas, EurOcean (http://www.eurocean.org/files/Flyer%20EurOceanic.pdf).

The smaller research vessels 10-30 m long are mostly used for coastal research. EurOcean has developed an interactive map showing the geographical location of these vessels (Figure 4). By clicking on the dots on the map, information on the vessel, its port and owner institution become available.

Figure 4. Homeports for coastal research vessels in Europe. The map is from the EuroCoRV database prepared by EurOcean (http://ocean.iopan.gda.pl/eurocorv/).

3. POLITICAL AND SOCIAL DRIVERS

3.1 The Ecosystem Approach

The ecosystem approach is a management principle. It has emerged as a central principle in the implementation of the UN Convention on Biological Diversity where it is described as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable manner (CBD COP Decision V/6).

In the preparatory work for the proposed EU Marine Strategy Directive, a technical definition of the ecosystem approach was provided as:

The comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.

In plain language this means that the ecosystem approach is about working together in cross-sectorial cooperation and use scientific information in the best possible way, in order to achieve the objective of sustainable use that does not compromise the integrity of nature as a life supporting system.

The principle of the ecosystem approach as integrated management of human activities can be implemented in different ways. The CBD COP Decision V/6 lists 12 principles (the so-called Malawi principles) as well as 5 items of guidance to its practical implementation. Among the principles are that management should be decentralized to the lowest appropriate level (principle 2), and that the ecosystem approach should involve all relevant sectors of society and scientific disciplines (principle 12).
The Ministers at the 5th North Sea Conference in Bergen in 2002, agreed to a framework for the ecosystem approach contained in Annex I to the Bergen Declaration (http://odin.dep.no/md/ns DECLARE/022001-990330/dok-bn.html). This framework has 5 main components that are linked in a decision cycle as shown in a simplified representation in Figure 5. The 5 components are:

- **Objectives**, set for the overall condition in the ecosystem and translated into operational objectives or targets;
- **Monitoring** and **research**, to provide updated information on the status and trends and insight into the relationships and mechanisms in the ecosystem;
- **Assessment**, building on new information from monitoring and research, of the current situation, including the degree of impacts from human activities;
- **Advice**, translating the complexities of nature into a clear and transparent basis for decision-makers and the public;
- **Adaptive management**, where measures are tailored to the current situation in order to achieve the agreed objectives.

![Framework for an Ecosystem Approach to Ocean Management](image)

Figure 5. A schematic representation of the main elements of an ecosystem approach to integrated management of marine ecosystems. The framework is a slightly simplified version of the framework adopted by the North Sea Ministers in the Bergen Declaration from the 5th North Sea Conference.

### 3.2 The proposed EU Marine Strategy Directive

The European Commission has presented a Communication on a thematic environmental strategy and a Proposal for a new directive, The Marine Strategy Directive (MSD). The proposed directive builds on the ecosystem approach as one of its key elements. As part of the preparatory work, ICES (the International Council for Exploration of the Sea) produced a guidance document on the ecosystem approach (http://www.ices.dk/pubs/crr/crr273/crr273.pdf). The proposed strategy can be seen very much as a legal and technical implementation of the ecosystem approach.

The core of the proposed directive is the concept of good environmental status, which is also the overall objective to be achieved by the year 2021 at the latest. The directive has two main parts. The first, which is called Preparation, prescribes how environmental status is to be expressed and made operational. The second
prescribes how marine strategies including programmes of measures, are to be developed to achieve the goal of good environmental status.

The proposed Marine Strategy Directive is a framework for development of marine strategies with programmes of measures by the member states. It is a dual EU/regional approach and a co-operational approach, where common approaches and co-operation among Member States (and neighbouring third countries) are set at EU level, while the planning and execution of measures are left to the regional level to take into account the diversity of conditions, problems and needs of marine regions requiring tailor-made solutions. It is also characterised as a knowledge-based approach in order to achieve informed policy-making.

The preparation part of the directive contains the elements of:

i) Initial assessment,

ii) Determination of environmental status,

iii) Environmental targets, and

iv) Monitoring programme.

These elements are to be prepared by the Member States within an indicated time frame of 4-6 years after the directive enters into force. The European Commission is to prepare generic qualitative descriptors, detailed criteria and standards for the recognition of good environmental status within 2 years after entry into force.

The type of information to be included in determination of environmental status with the associated assessment, targets and monitoring programme, is listed in Table 1 of Annex II to the proposed directive. The list includes:

- Bathymetric and hydrographic features and predominant currents
- Predominant habitat types with a description of their main features
- Identification and mapping of specific habitat types
- Other special areas
  - Biological communities associated with the predominant habitats
    ▪ Typical phytoplankton and zooplankton communities (typical species, seasonal and geographical variability, primary and secondary productivity)
    ▪ Invertebrate bottom fauna (species composition, biomass, productivity, annual/seasonal variability)
    ▪ Fish populations (abundance, distribution, age/size structure)
- Status of all species of marine mammals (population dynamics, natural and actual range)
- Status of all species of seabirds (population dynamics, natural and actual range)
- Status of all other species subject to EU legislation or international agreements
- Main threats addressed and protection/management measures in place for all species (marine mammals, seabirds and others) subject to EU legislation or international agreements
- Inventory of non-indigenous, exotic species (occurrence, abundance, distribution)
- Description of eutrophication (incidences of nutrient enrichment, nutrient cycling, spatial distribution, consequences)
- Description of the general state of chemical pollution (problem chemicals, sediment contamination, hot spots, health issues)
- Any other features (e.g. dumped munitions)
While the list is said to be non-exhaustive, it is clear that all major aspects of the marine ecosystem are to be included in the descriptions of environmental status. Much of this information is already being collected as part of monitoring programmes at international, national or sub-national levels, although access to and use of existing information may require a substantial co-ordination effort. No doubt there will also be gaps in existing data collection schemes that need to be filled as the directive is being implemented.

In implementation, the Member States are required to co-ordinate their actions around marine regions or sub-regions to which their marine waters constitute parts of (Article 5). The regions and sub-regions are defined in Article 3 of the proposed directive. There are three regions:

i) The Baltic Sea,

ii) The North East Atlantic Ocean,

iii) The Mediterranean Sea.

Each of the North East Atlantic Ocean and the Mediterranean Sea regions are subdivided into 4 sub-regions (these are described in a subsequent section of this document). The division of the European seas into regions and sub-regions is significant because it means that the ecosystem approach is implemented not as a vague principle but rather as hands-on practical management of geographically defined ecosystems.

The Marine Strategy Directive is foreseen to deliver the environmental pillar of the future Maritime Policy. As such it is the pillar supporting environmental sustainability in a maritime policy that promotes economic development to secure the livelihood and living conditions of the human population of the maritime regions of Europe.

The prescriptive determination of good environmental status and the setting of the associated targets represent the stage in the process where the balance between use and conservation is set. This is therefore an important step that needs to be transparent and open to participation of a wide range of stakeholders. Use and conservation should not be seen in sharp contrast to each other. Conservation does not preclude use, and the real issue is what types and extent of use are consistent with different levels of protection and conservation. Natural ecosystems can sustain use of their goods and services over virtually infinite time as long as the use is truly sustainable, that is within the regenerative capacity of nature and not consumptive of the natural production system.

Consumptive use of nature is when natural habitats are degraded or destroyed and/or populations are depleted or made extinct. Pollution may lead to degradation of habitats with changes in the living conditions for plants and animals. Physical alteration is another way of degrading or destroying natural habitats. Inevitably, some areas may be required for human purposes as sites for constructions or extractions. This is most common in the coastal areas where construction of harbours, breakwaters and other features to protect the coast from erosion may result in heavily modified environments. Spatial planning is required to better regulate the various uses of the sea areas, including keeping the consumptive use of natural habitats to a minimum. The spatial aspects are therefore an important part of expressions of environmental status and in setting the operational targets for achieving the goal of good environmental status.

The proposed directive is to be applicable to all European waters on the seaward side of the baseline (from which the extent of the territorial waters is measured) to the outmost reach of the area covered by the sovereignty or jurisdiction of Member States (Article 2). However, the initial assessment which is to be carried out as part of the preparation, is to produce a comprehensive assessment of the status of the marine environment, taking into account elements regarding coastal, transitional and territorial waters covered by the Water Framework Directive (Article 7).

The proposed Marine Strategy Directive mandates the Member States to use existing institutional structures where practical and appropriate, when they co-ordinate their actions within the marine regions or sub-regions. This includes building upon existing programmes and activities developed in the framework of such structures and international agreements (Article 5). The directive is furthermore seen as a contribution to the fulfilment of the obligations of the Community and the Member States under these international agreements. Specifically, the Baltic Sea region corresponds to the area for the Helsinki Convention (HELCOM), the North East Atlantic Ocean region lies (with one exception) within the area of the OSPAR Convention, while the Mediterranean Sea region lies within the area of the Barcelona Convention and its MARPOL protocol.
3.3 Regions or Sub-regions as Large Marine Ecosystems

Large Marine Ecosystems (LMEs) are geographical entities defined on the basis of ecological criteria. An LME is defined as a relatively large ocean area, typically 200,000 km² or larger, with characteristic bottom topography, hydrography and productivity, and with trophically coupled populations (that is populations dependent upon each others as prey and predators). Most LMEs are located on the continental shelves. Here the bottom topography has a strong steering of currents and water mass distribution. The physical conditions again determine the characteristics of plankton production.

The last criterion – having trophically coupled populations – distinguishes LMEs from other classification systems such as biogeographical partitioning. Commercial fish populations are usually important ecological components as prey and predators for other marine biota. Because of their large size, such fish populations require a large living space as they need to feed on the production of prey organisms over a large area. The populations at the same time need to achieve geographical life cycle closure, where spawning areas, larval drift routes, juvenile nursery areas, feeding areas, and spawning migrations form a spatial life cycle context in relation to ocean currents and circulation patterns (Skjoldal 2004). The distributions of commercial fish populations are therefore an important element to consider when delineating LMEs. Since their distributions reflect circulation and water mass distributions, this criterion is related to the other criteria of characteristic bottom topography, hydrography, and productivity.

The concept of LMEs has now been around for about 20 years, pioneered by Ken Sherman of the US NOAA. LMEs are ecosystems or ocean entities identified for the purpose of having an ecosystem approach to their management and to the science that supports such management. A total of more than 60 LMEs have now been identified globally. An interactive map and other information on the LMEs are available at: http://www.edc.uri.edu/lme. The LME concept and progress of its development have been reviewed by Sherman (1994) and Duda and Sherman (2002). The ecological characteristics of the identified LMEs have been summarised in a number of scientific symposia and published proceedings and books.

The division of the European seas into regions and sub-regions in the proposed Marine Strategy Directive is based upon advice from ICES (Figure 6) (http://www.ices.dk/products/icesadvice/Book1Part1.pdf). ICES reviewed the LME divisions as well as several different biogeographical classification systems. While none of these systems were used directly, the proposed division into ecological regions followed closely the LME divisions, with adjustments of some of the borders. The criteria used to define the ecological regions were also similar to those for identifying LMEs. The regions or sub-regions used in the proposed Marine Strategy Directive are therefore equivalent to Large Marine Ecosystems. For consistency with terminology used in other international contexts, this should be recognised.
The Baltic Sea region corresponds to the Baltic Sea LME.

The sub-regions of the North East Atlantic Ocean region correspond broadly to the existing subdivision of LMEs. The North Sea sub-region is similar to the North Sea LME with some adjustments of borders to include Kattegat and the Channel.

The two sub-regions of the Celtic Seas and of the Bay of Biscay and the Iberian Coast correspond to the two former LMEs, the Celtic-Biscay Shelf LME and the Iberian Coastal LME. There has been a border adjustment in that the border has been shifted north from the central to the northern part of the Bay of Biscay. This area has therefore shifted from being considered part of the Celtic Seas system to being part of the Iberian Coastal system. This change has been done from ecological consideration, notably distribution of fish stocks in the two areas. This adjustment should also be done to the World map of LMEs to bring consistency in these delineations.

The fourth sub-region of the North East Atlantic is the marine waters covered by the sovereignty or jurisdiction of Portugal surrounding the Azores and Madeira, and of Spain, surrounding the Canary Islands. These waters are only partly overlapping with existing LMEs.

The Canary Current LME stretches along Northwest Africa from Guinea-Bissau to the Strait of Gibraltar. It contains major upwelling areas that support large fish populations and fisheries in this region. This LME includes the Canary Islands based on ecological considerations. The Canary Current runs southwards along the coast and accelerates as it passes between the mainland and the Canary Islands. Hydrographically and in terms of productivity, the Canary Islands form part of this larger ecological unit.

The Azores are a volcanic island group located in the area of the Mid-Atlantic Ridge. The distance from the nearest mainland coasts are large, and ecologically and biogeographically these islands form a unit by themselves. The Azores with the surrounding seamounts and other seafloor features should be considered a separate ecological sub-region, the Azores LME.

The status of the waters around Maderia in ecological terms requires further reflection. There seems to be three options: i) inclusion with the Azores as a wider Northeast Atlantic archipelago sub-region; ii) inclusion in the Canary Current LME; iii) a separate sub-region or LME.
A suggestion has been made to use the Macaronesian region as a unit for management. Macaronesia is acknowledged as a biogeographical region in some EU contexts, such as Natura 2000 and the Habitats Directive. Pursuant to the latter, the Commission must, in agreement with the Member States concerned, draw up a list of sites of Community importance for each of the seven following biogeographical regions: Alpine, Atlantic, Boreal, Continental, Macaronesian, Mediterranean and Pannonian. It follows from this context, that these regions are broad areas, each spanning a wide range of environmental conditions.

The island groups that make up Macaronesia may have some common environmental conditions and common environmental issues to address. However, it is questionable if this region makes up a functional ecosystem unit, requiring coordinated and collaborative management of common resources and environment within the region. Macaronesia may therefore not qualify as an LME according to the ecological criteria used to identify such ecosystem units. However, there may be good reasons for close cooperation among these islands as ultra-peripherial maritime regions in the eastern and central North Atlantic.

Of the options for Madeira, there may be reasons to include it in the Canary Current LME (Fig. 7). The Canary Current is part of the large-scale sub-tropical gyre system of the North Atlantic. The general flow direction is eastwards towards the Gibraltar region and then south along Northwest Africa. Here there is major up-welling of nutrient-rich water that causes high production along the coast. This is again the basis for rich fish populations and fisheries in this region. Stocks of sardines and anchovies are distributed along the continental coasts. These have limited migratory dynamics and feed mainly on the shelf. Other species such as mackerel (Scomber japonicus) and skipjack tuna (Katsuwonus pelamis) are more migratory and feed both in the coastal and offshore waters (Carlos Bas, 1993. Long-term variability in the food chains, biomass yields, and oceanography of the Canary Current ecosystem. In: Large Marine Ecosystems. Stress, mitigation, and sustainability, pp.94-103. Ed. by K. Sherman, L. M. Alexander and B. D. Gold. AAAS Press).

Madeira is located in the up-stream region to the Canary Current LME. There may be sufficient ecological coherence to justify inclusion of Madeira in the Canary Current LME. Madeira is within the area of the Fishery Committee for the Eastern Central Atlantic, although Portugal is only an observer to this regional fisheries body (www.fao.org/fi/body/rfb/CECAF/).

The Global Environment Facility (GEF) is supporting an LME project in the Canary Current LME, which involves Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Morocco and Senegal. The project is
conducting a Transboundary Diagnostic Analysis (TDA), which will analyse factual and scientific information on transboundary concerns and their root causes, and set priorities for action. More information is found on the LME web-page (www.noaa.gov/lme).

The Mediterranean Sea has been considered one LME. As such it is one of the larger, and it has been recognised that there are several biogeographical subdivisions within this sea. The Mediterranean Sea is outside the formal ICES area, and ICES did not carry out a detailed analysis of the biogeography and ecology of this sea as a basis for its advise. However, based on the available information, ICES suggested a subdivision into three sub-regions, the Western Mediterranean Sea, the Adriatic-Ionian Seas, and the Aegean-Levantine Seas. The European Commission followed this advise in the proposed Marine Strategy Directive, with the exception that the Adriatic and Ionian Seas have been separated as two distinct sub-regions. Thus the Mediterranean Sea has been divided into 4 sub-regions. The status of these sub-regions with regard to LMEs warrants further examination. There are two options: i) the Mediterranean Sea should be divided into 4 LMEs; ii) the sub-regions should be considered subdivisions of the existing “large” LME.

4. ECOLOGICAL OBJECTIVES AND ASSESSMENTS

The proposed marine Strategy Directive sets the overall objective of good environmental status and prescribes how this is to be made operational by defining specific targets. This is very similar to the work in OSPAR on developing Ecological Quality Objectives (EcoQOs). A paper summarising the history of this work is attached as Annex 1 to this report.

The concepts of ecological quality, as used in OSPAR, and of environmental status, as used by the European Commission, are basically the same. The definitions of environmental status (Article 1 of the proposed directive) and of ecological quality uses some different wordings but are otherwise similar and have the same origin. Therefore, the experiences gained in OSPAR in developing EcoQOs are highly relevant in relation to the work required for all European marine areas when implementing the Marine Strategy Directive, once it has been adopted.

The Bergen Declaration from the 5th North Sea Conference contains a list of 21 ecological quality elements with objectives (EcoQOs) set for 10 of them to be tried in a pilot project. OSPAR completed this year a review of the progress of this work. A main conclusion was that the approach was seen as scientifically credible and useful. However, OSPAR decided to take a pause for reflection on the way in which the EcoQOs were to be applied in its work.

The development of the EcoQOs by OSPAR has taken a long time and a considerable amount of work (Figure 8). This reflects at least partly the complexity of the issue. ICES has provided a substantial amount of advice to support the work in OSPAR, both of general nature and specifically to the development of each of the ecological quality elements and the associated EcoQOs. ICES also contributed to the review of the status of the EcoQO work. The ICES advice on EcoQOs are contained in the reports from the ICES Advisory Committee for Ecosystems for 2001-2004 (http://www.ices.dk/pubs/crr/crr262/crr262.pdf).
History

Figure 8. Milestones in the development of Ecological Quality Objectives (EcoQOs) and the Ecosystem approach for the North Sea. Ministers at the 3rd North Sea Conference in den Haag in 1990 requested that methodology for setting ecological objectives should be elaborated. This work was started by the North Sea Task Force and continued by OSPAR. During three workshops in 1992-95, a general methodology was developed. Within OSPAR there was agreement that the further development should be specific with the North Sea as a test case. At the 4th NSC in Esbjerg, the ministers turned their attention to fisheries, and as a follow-up there was an Intermediate Ministerial Meeting on fisheries and environmental issues in Bergen in 1997. At this joint meeting of fisheries and environmental ministers, there was agreement that the Ecosystem approach (EA) should be a guiding principle for the further work. A framework for the EA was elaborated at a workshop in Oslo in 1998, and two workshops in the Netherlands in 1999 and 2001 considered the development of EcoQOs for the North Sea. These three workshops provided the foundation for the EA framework and an initial set of EcoQOs that were adopted in the Bergen Declaration from the 5th North Sea Conference in 2002. OSPAR together with ICES was requested to review progress, and OSPAR produced in 2005 a report on the state of development of the North Sea EcoQOs.

Two aspects related to the EcoQO work will be briefly mentioned here. Ecological quality is defined as the overall expression of the structure and function of the marine ecosystem. It is expressed by a number of ecological quality elements or variables, reflecting the different parts of the ecosystem, to which objectives or targets (EcoQOs) can be set. Taken together, the suite of EcoQOs can be seen as an envelope defining the acceptable state of the ecosystem compatible with sustainability. This can either be a wide outer envelope of limits which should not be exceeded due to risk of serious or irreversible damage to the ecosystem, or a more restricted inner envelope defined by targets based on some considerations of optimum use of ecosystem goods and services (Figure 9). The envelope could also be a combination of the two, with outer boundary limits in some parts and optimum target zones in others.
Types of objectives

![Diagram of types of objectives](image)

Figure 9. Illustration of two different types of Ecological Quality Objectives (EcoQOs). Ecological quality is the overall state of the ecosystem and can only be expressed by a number of different variables or indicators for different components or aspects of the ecosystem. Operational objectives set for each of these variables or indicators can either be an outer envelope of limits or an inner envelope defining a target area for the state of the ecosystem.

The second aspect to be mentioned deals with the role of natural variability and is related to the first. Marine ecosystems are dynamic and ever changing. While they may oscillate and return to similar situations as in a previous state, these are not identical. The climatic and ecological situations are constantly changing and this makes the setting of references and targets a difficult task. This is a main reason why use of objectives and targets should be closely associated with environmental assessments where the current situation is examined in relation to trends and changes from past situations.

Environmental indicators have received much attention and are seen as a way to deal with the complexity of environmental issues and situations. Through approximation, complexity can be simplified by using indicators rather than a multitude of variables. In this lies also the danger of oversimplification and inappropriate basis for decisions signalled by the indicators. Causal chain analyses are important to provide handles on what measures to take to mitigate unfavourable environmental conditions. However, in reality the causal chains are not simple and straightforward in most cases in the marine environment, but rather intertwined and interlinked and obscured by lack of knowledge. It is therefore important that analyses of causes are done as part of thorough and comprehensive analysis or assessments of the environmental situation.

OSPAR describes an assessment as both a process and its product. As a process, a marine environmental assessment is a procedure by which information is collected and evaluated. Its product is an assessment report, which is a document synthesising information, presenting the findings of the assessment and making recommendations for action for future work. The product can either be a thematic assessment dealing with one aspect of the marine environment, or a general assessment of all aspects of that environment. Thematic assessments can deal with separate issues such as eutrophication, environmental impacts of fishing, effects of shipping, etc. A general assessment addresses the pressures of all human activities and the resulting overall state or quality of the environment. The reports from general assessments have in the OSPAR system been called Quality Status Reports (QSRs).

OSPAR produced together with ICES a QSR for the North Sea in 1993. Subsequently, OSPAR in 2000 produced QSRs for 5 regions of the Northeast Atlantic: i) the Arctic region (north of 62°N including the Barents, Iceland and Norwegian Seas), ii) the Greater North Sea, iii) the Celtic Seas, iv) the Bay of Biscay and Iberian Coast, and v) the Wider Atlantic. Building upon these regional QSRs, a holistic QSR for the whole OSPAR area in the Northeast Atlantic was also produced. Subsequently, OSPAR has been working according to a schedule within its Joint Assessment and Monitoring Programme (JAMP), with several thematic assessments on selected topics before the next general assessment planned for 2010.
HELCOM has produced similar assessment reports for the Baltic Sea. The Fourth Periodic Assessment was published in 2001 based on observations from the period 1994-1998. Subsequently HELCOM has produced thematic assessment reports on selected pollution issues.


The marine ecosystems are open and dynamic systems where seawater circulates in characteristic current patterns transporting nutrients, plankton organisms, and pollutants. Fish, marine mammals and seabirds migrate within and between the Large Marine Ecosystems. This open and dynamic nature of the marine ecosystems contributes to complex patterns between stress factors and impacts in the ecosystem, being separated in time and space. Thus input of nutrients to one coastal area may lead to eutrophication effects expressed in other areas due to transport by currents. Overfishing of a fish population in one sea area may result in fewer young fish in subsequent years, affecting the feeding conditions of seabirds in adjacent coastal areas. A third example may be degradation of the quality of coastal habitats through for instance eutrophication and pollution, which may affect the size of fish populations over a wider sea area because the coastal habitats are important nursery areas for juvenile fish.

Another feature of marine ecosystems is the interconnectedness of the various components. The organisms are woven together as prey and predators in food chains and food webs. The organisms depend furthermore on the physical habitats, partly also shaping these habitats by forming structures (e.g. corals, kelp forests), digging and burrowing in sediments, and influencing light and oxygen conditions in the water column through growth and metabolism of the organisms. These mutual interdependencies among the organisms, and between them and the physical and chemical environment, are what contribute system characteristics and make us regard marine areas as ecosystems in the first place. This same feature has also important bearings on the task of assessing the state of the environment and the degree of impact by human activities on this state.

Impacts of human activities on marine ecosystems can be broadly separated into direct and indirect effects. Direct effects are the frontline effects. Thus fishing has a direct impact on the targeted stocks by removing fish and thus affecting the mortality and stock size. Indirect effects are those mediated through food chain and food web interactions or through dependencies on habitats. Thus fishing impact on small plankton feeding fish such as herring may have indirect effects on larger fish such as cod, and on seabirds, by affecting their feeding conditions. In principle, all human activities impact the same ecosystem and, directly or indirectly, the same components of the ecosystem. This can be illustrated with some examples.

Eutrophication, or extra input of nutrients from urban populations, agriculture and other sources to coastal areas, stimulates the growth of plants as the first direct effect. This again leads to changes in the marine food webs, with increases in some organisms and decreases in others. Some of these changes may be seen as positive, for example increased production of zooplankton and better feeding conditions for pelagic fish. Other changes are clearly negative, such as lowering of the oxygen conditions in bottom water, which may in the worst case result in kill of bottom-dwelling organisms including fish. The composition of benthic communities usually changes towards larger dominance of small and more tolerant opportunistic species.

Fishing has direct effects on targeted stocks and on benthic habitats physically affected by bottom trawling. Overfishing is a common phenomenon with depleted fish stocks and lowered fishery yields as a result. Stronger fishing pressure on large fish than on smaller may favour a shift towards plankton feeding pelagic fish as an indirect effect. Also the effect of bottom trawling may cause a shift towards smaller and more opportunistic benthic species. These changes are similar to those caused by eutrophication and serve to illustrate that such widely different human activities as agriculture and fisheries may have similar impacts on the marine ecosystems. Separating the effects of eutrophication from effects of fishing in heavily impacted areas such as in the southern North Sea, may be difficult and scientifically challenging.

The coastal areas are very much a part of the large marine ecosystems. The coastal habitats may be important nursery areas for fish and breeding, resting or feeding areas for seabirds and seals. Impacts such as from eutrophication, pollution or physical habitat alteration or degradation in the coastal zone may have consequences for the larger marine ecosystem. Conversely, the conditions of the larger system expressed e.g. as healthy and well-managed fish populations, may in turn have consequences for the coastal zones. Environmental assessments
Assessments play a central role in the ecosystem approach in general and specifically in the proposed Marine Strategy Directive. The purpose of the assessments is to inform policy and management decisions. Therefore it is of the utmost importance that they are correct, that is based upon and using existing scientific knowledge in the best possible way. Measures to maintain or restore good environmental status may have large socio-economic consequences in the form of short-term costs, while securing long-term benefits. Assessments form the basis for evaluations of the effectiveness of existing measures and considerations of whether changes in policies and measures are required. Policies and measures may be regarded differently at EU, national, and sub-national levels, reflecting different scales and perspectives.

For all these reasons it is important that environmental assessments as process and products are decoupled from direct political influence. The assessments are scientific in nature, and the scientific objectivity and independence must be secured. This requires clear delegation of tasks and responsibilities to scientific institutions with independent roles but secured funding to carry out their scientific advisory tasks within the institutional framework of ecosystem approach to management.

The situation today is one with many national agencies and institutions, often with a lack of national coordination and competing for funds. Within countries there is a need for streamlining the national and sub-national tasks of monitoring and assessing the environmental status, including living marine resources. This should be done as part of an international co-ordination where increased cost-efficiencies could be achieved by countries working together in the shared LMEs.

At the international level, ICES is a scientific and advisory organisation which could play a central role. The ICES area covers most of the European seas including the Baltic Sea but not the Mediterranean Sea. Most European coastal states are members of ICES which is an intergovernmental organisation that has existed for more than 100 years. ICES has a formidable scientific machinery with about 100 working or study groups that, for most of them, meet annually at national expense. ICES arranges also an Annual Science Conference with parallel sessions dealing with current topics in marine science. ICES has currently three Advisory Committees (on Fisheries management (ACFM), Environment (ACME) and Ecosystems (ACE)) which provides advise to the European Commission on quotas and other fisheries management issues, and to the EC, OSPAR, HELCOM and others on a range of environmental issues. All in all, about 1600 scientists take part annually in the work of ICES.

The ICES Advisory Committees have memberships with national representation. The members are nominated by their countries, but serve in their individual capacities as experts for ICES. This secures broad access to local and national knowledge, while maintaining an independence from national political influence on the advice.

ICES should be given a larger role in either overseeing and coordinating or carrying out assessments of environmental status. ICES could in this way more strongly support the work of regional environmental commissions like OSPAR and HELCOM, and of the EEA. This could ensure a clearer separation between independent scientific advise on environmental status, and the political considerations of programmes and measures necessary to achieve or maintain good status. It would also provide a common scientific basis for consideration of measures at the EU, national and sub-national levels.

5. RESEARCH PRIORITIES AND PRIORITISATION

5.1 Identification of gaps in knowledge

An environmental assessment is a structured process for summarising and analysing what is known about the structure and functions of a marine ecosystem and the impacts of different human activities on the ecosystem. In doing this and writing the assessment report it becomes clear what knowledge is available and where there are gaps in knowledge. If the assessment work is thorough and is done by the best experts, it also becomes clear that these gaps are genuine and not the result of ignorance on the part of the assessor(s).

A by-product of an environmental assessment is therefore a list of gaps in knowledge considered important to be filled in order to carry out a better assessment the next time around. The list of gaps in knowledge can also be prioritised, by considering how essential the information is and how difficult it would be to gain the information required. Thus the assessment of environmental status carried out by regional environmental organisations and
required according to the proposed new directive, offers a mechanism for identifying and prioritising research tasks.

This mechanism should be systematically utilised for all the European LMEs, including their coastal areas. If and when the Marine Strategy Directive is adopted, one should aim at producing prioritised lists of gaps in knowledge for each of these areas tied to the initial assessments which are to be carried out. These lists would be region- or LME-specific and should form the basis for ecosystem-specific research agendas for each of the LMEs. In preparing these research agendas, the need for knowledge at finer spatial scale in the coastal zone related to ICZM should also be incorporated. By linking these research agendas to the initial assessment of the Marine Strategy Directive and to assessments done as part of ICZM, there will be good assurance that the needs of society in achieving the dual objectives of environmental sustainability and economic development are met (Figure 10).

Figure 10. Illustration of the relationship between implementation of the proposed EU Marine Strategy Directive and development of Regional Ecosystem Research Agendas. Building on existing assessments and the initial assessments which are to be carried out for each of the regions/sub-regions (or Large Marine Ecosystems) of the European seas, priority research issues should be identified. These should be incorporated into research agendas for each ecosystem, implemented with support from FP7 and FP8. The aim should be to do better assessments and to achieve good knowledge of the European seas in parallel with achieving good environmental status.

Before the ecosystem-specific research agendas are finalised as a basis for research prioritisation, there could be regional research conferences with broad participation of scientists from government agencies and universities, managers at EU, national and sub-national levels, and other relevant stakeholders. The aim must be to prioritise so that research are carried out on what are considered to be the most important tasks and also in a given sequence if a step-wise approach is more likely to lead to result than a more arbitrary sequence.

The outcome from regional research conferences to set priorities may be anticipated to identify some research tasks which are common across several LMEs and others which are truly region-specific. The former may best be dealt with in broader collaboration across the regions.

5.2 Examples of research priorities

The European Environment Agency (EEA) convened a sequence of Inter-Regional Forum meetings some years ago with participation of European Marine Conventions, EU organisations and national agencies. At the 2nd Inter-Regional Forum meeting in Rome in 1997, one of the topics was research needs to support environmental assessments. In a paper prepared for the meeting by representatives of HELCOM, OSPAR, UNEP/MED, AMAP and BSEP, the following major research topics were identified (EEA Technical Report No. 10, 1998):
A. Ecosystem properties
- Research into methods for characterising and expressing the changing states or health of marine ecosystems;
- Research into climatic driving forces for ecosystems variability at the regional and European level;
- Research on food-webs, interactions and dynamics of marine ecosystems.

B. Species and habitats
- Research on methods for mapping and producing inventories of marine habitats;
- Research on rare habitats and rare species.

C. Transport pathways and processes in marine ecosystems;
- Basic research on transport pathways and processes;
- Research on transport models.

D. Biological effects of contaminants
- Research on quality assurance of biological effects techniques;
- Research on further development of biological effects techniques and bioindicators;
- Research on combined effects of contaminants.

While this meeting was held 8 years ago, the identified research priorities would probably still be valid. The meeting report contains further explanation and justification as to these priorities.

In the process leading up to the 5th North Sea Conference in Bergen in 2002, a scientific expert conference was held in February 2002 to consider research priorities to support the ecosystem approach to the management of the North Sea. The following priority research tasks were identified for the short-term (3-5 years) and long-term (>5 years):

**Short-term priority issues:**

1. Operational description of currents and water masses (ICES-EuroGOOS North Sea Pilot Project on Oceanography and Fish Stocks).
2. Production of the first generation habitat map of the North Sea.
3. Mapping and monitoring of spawning areas of commercial fish populations.
4. Experimental studies of the recovery of benthic species, communities and habitats following closure of areas to bottom trawling.
5. Identification of threatened, declining and rare species and habitats.
6. Further development of ecological objectives and indicators for monitoring changes in the ecosystem and for measuring the effects of management actions.

**Longer-term priority issues:**

1. The role of species richness (including the issues of key species, species redundancy, and rare species) for the functioning of benthic communities.
2. Mechanisms influencing transfer efficiencies between phytoplankton and higher trophic levels and the implications on ecosystem dynamics.

3. Food web and life history interactions among fish populations and other ecosystem components, e.g. seabirds and marine mammals.

4. Physical and biological transport and biological and ecological effects of contaminants.

The Ministers welcomed the list and invited ICES and other organisations to consider how these tasks could be taken forward. ICES and EuroGOOS are currently running the project NORSEPP which produce quarterly update reports on North Sea conditions, particularly the water circulation as physical driving force for ecosystem variability. ICES and OSPAR are working on producing the first generation habitat map of the North Sea. ICES has initiated a new spring cruise to monitor fish spawning areas.

5.3 Doing the right science and doing science right

Relevance and quality are two main criteria used when evaluating research proposals. They are often seen in opposition to each other, in the sense that dealing with known opportunities or problems that are seen as highly relevant today may draw attention away from and prevent us from seeing the new opportunities for tomorrow. This is also related to the axis or dimension from applied to basic or pure science, and the competition or struggle between applied institutes e.g. of national agencies and academic universities. This struggle is a very old and lasting phenomenon and there are probably no simple answers and solutions to it. In general terms, there is a need for both the problem-directed and freely exploratory research types and a need for broad collaboration across scientific disciplines.

The global Millenium Ecosystem Assessment which has recently been completed, as well as several regional assessments, demonstrate that the human and economic developments have resulted in a substantial loss in biodiversity and therefore have not been sustainable. Thus fulfilling the past and present needs has not sufficiently safeguarded the needs and opportunities of future generations. There is an urgency to this situation in that trends should be reversed as rapidly as possible. This calls for strict prioritisation of research that help us to achieve sustainability.

As we have touched upon earlier, marine ecosystems are complex systems with a diversity of spatial habitats, organisms and physical and ecological dynamics and variability. Man is part of the natural ecosystems, but in addition we form complex human systems with their own diversity, dynamics and variability. Thus in broad terms we are faced with understanding and managing the interactions between complex and overlapping or intertwined human systems and marine ecosystems. This requires a fundamentally different approach to our science than what has been customary up to now. It takes a systematic and integrated systems approach with coordinated research involving many scientific disciplines in broad collaborative efforts. This requires first a consensus about research priorities and secondly an agreement on how the research is to be coordinated and implemented.

While marine ecosystems are complex in their many details and dynamics, they may still be seen as fairly simple in terms of the broad features and principles of their structure and functioning. In studying and managing them as systems, it is important to start with the broad features and principles, filling in details as we go along. The sequence of research tasks is therefore an important element of a research plan. By achieving first the knowledge of the broad features and principles of the ecosystems, many of the details will fall naturally in place and good progress in describing and understanding the ecosystem can be made.

Studying and understanding complex ecosystems are at the same time cutting-edge science and a basis for wise management applying the ecosystem approach. Therefore, studies at this level of organisation of nature see no clear distinction between basic and applied research. The best basic research that provides insight into the structure and function of marine ecosystems is at the same time the best basis for expressing and examining their state and considering measures to restrain or mitigate the effects of adverse impacts.

Each LME has its specific characteristics in terms of topography, hydrography and habitats. However, they all share some common features in how they are organised with plants, “grass”-eating and predatory animals. In order to understand the dynamic interplay among the groups of organisms and the way they depend on their moving (water) or resident (bottom) habitats, it is important that this is studied in the specific context of a given LME. It is difficult to achieve an understanding of an ecosystem if the various components are studied in
different places and not in a specific spatial context. It has proven difficult to achieve a good system understanding from the multitude of disparate studies of ecological components and processes carried out in different places. In contrast, knowledge on the interrelationships among ecosystem components gained from studies in one particular ecosystem may to some extent be extrapolated to other ecosystems to help us understand how they function. In doing this, due consideration must be given to the specific features of these other ecosystems.

An example of an ecosystem study is provided from the Norwegian Sea. IMR (the Institute of Marine Research) carried out a dedicated study on this large marine ecosystem (1.1 million km²) from 1993 to 2001. The results from this study was summarised in the book “The Norwegian Sea Ecosystem” published in 2004. In a review for the journal Fish and Fisheries, the reviewer stated that scientists who read this book would be better prepared to understand their own sea areas.

6. MECHANISMS FOR RESEARCH COORDINATION

6.1. Large Marine Ecosystems as arenas for integration and coordination

The Large Marine Ecosystems (LMEs) that correspond to the geographical regions or sub-regions of the proposed Marine Strategy Directive, help us define arenas for the integration and coordination of the scientific and management components. The LMEs are specific units or ecosystems for which there is a requirement to document the overall environmental status, as well as to manage sustainably the fish stocks and other living resources within them.

The required integration on both the management side and the scientific side involves integration across sectors and disciplines, as well as integration across scales from large ocean basins (e.g. in terms of climate forcing) through the scale of the LME, to the finer scale of resolution of coastal zone issues. Mechanisms need to be put in place that facilitate and secure the necessary integration.

Regional Ecosystem Commissions may be one way to help achieve the integration. From the boundaries of a given LME, it is clear who have legitimate roles to play in the management and the scientific support for that area. This includes international and EU bodies, national agencies, institutions at sub-national level, and other stakeholders. As argued in a previous section, it is important that the scientific support and advice is common across the sectors and scales and trusted by all involved.

From a scientific perspective, the circulation in the ocean basins, such as in the North Atlantic, is continuous at the large scale. With climate change likely happening and climate variability as a conspicuous feature, the mechanisms and expressions of climate variability and change must be addressed at the ocean basin and global scales. The effects of climate variability and change, however, are most appropriately addressed at the scale of the LMEs, with the large commercial fish populations as important constituents. As already mentioned, there are strong mutual interdependencies between the coastal zone and the wider ecosystem of the LME of which the coasts form parts. At the coastal scale of ICZM, the adjoining sea and land areas are treated together, also in terms of their ecological relationships. Finally, the watersheds with rivers discharging to the coastal zone, that are managed under the Water Framework Directive, provide an important aspect and linkage between the land and the sea.

6.2. Increasing marine and maritime RDI within the 7th Framework Programme

Marine sciences and technologies are said to be a priority area cutting across the themes of the 7th Framework Programme (FP7) for European research. This is welcomed, but it calls for co-ordination mechanisms to facilitate the planning and implementation of broad integrated research initiatives of the types required to gain better understanding of the LMEs of the European sea areas.

The FP7 will run for the period 2007-2013. The specific research agendas developed for each of the European LMEs associated with the initial assessment, mentioned in a previous section (see Figure 10), could form the basis for proposals to FP7. There may be a timing problem here, in that the initial assessments prescribed by the proposed Marine Strategy Directive, are to be carried out within 4 years after the directive enters into force.

An iterative process could be a way to progress in developing the regional ecosystem research agendas. Building upon existing assessments, regional conferences for research prioritisations could be held to draw up preliminary research agendas to support ecosystem approach to management. The regional commissions of CPMR could
play a role in initiating and planning these research conferences. ICES should be invited to take part and preferably take the lead in this work to secure quality and integrity of the process. The preliminary research agendas could form the basis for development of specific research plans and proposals to FP7. The preliminary research agendas could be refined and modified as appropriate when carrying out the initial assessments for each of the LMEs.

Monitoring and research should go hand in hand when implementing the ecosystem approach. Monitoring provides updated information on status, while research provides better insight when interpreting the current status and recent trends. A practical difficulty which should be solved, is the principle of anonymity used in proposals to the EU FP6. This was done to secure fair competition, which is a good thing. However, it poses the practical difficulty in achieving the required co-ordination in planning and implementation between e.g. national agencies with given roles and funding and additional partners and new tasks.

6.3. Preparing research agendas for the 8th Framework Programme

The 8th EU Framework Programme for research is anticipated to run from about 2013 to about 2020. This overlaps with the anticipated time frame for implementation of marine strategies with programmes and measures to achieve good environmental status by 2021 at the latest.

A parallel goal should be established to have good knowledge of the European marine ecosystems by 2021. This should include the coastal zone and be linked to the implementation of the Marine Strategy Directive and to the broader EU maritime policies as they develop. The identification and prioritisation of research tasks and the preparation of research agendas for each of the European LMEs should be carried out as a basis for achieving this goal.

7. MECHANISMS FOR INNOVATION

Clusters that bring together representatives from R&D, business and authorities may be a mechanism to promote innovation and economic development based on scientific knowledge and new scientific findings and technologies. Different models exist for maritime clusters spanning a wide range of traditional and new activities. Inter-regional cooperation and sharing of best practices are ways to promote innovations.

Scientific knowledge exists in large quantities and the amount is rapidly expanding. Disseminating new scientific knowledge into non-scientific communities to promote innovative economic development, may in itself require innovative ways and means. There are a wide range of scientific symposia, seminars and conferences where scientific information is shared. These are often designed to serve as communication among scientists and may not provide easy access to information outside the scientific community. The maritime regions may set up mechanisms where they could draw upon scientific expertise in international networks to communicate with local business communities and regional authorities with an interest to stimulate innovation.

7.1. The regional dimension of RDI

The goal of the Lisbon agenda to make Europe the most dynamic and competitive knowledge-based economy in the world signifies the importance of access to knowledge for creating economic opportunities. The knowledge base to be used by the modern society is enormous and ever increasing at increasing speed. A fundamental challenge is therefore to find the right knowledge for the right people. This is a complex issue and we are not at all attempting to give an exhaustive analysis. Rather, we limit ourselves to some reflection on one aspect of this large issue, which is access to knowledge seen from a regional perspective.

The knowledge base is the data, information and insight accumulated over time from RDI activities. The knowledge is contained in a vast amount of written material as books, journals etc. kept by libraries and increasingly made available via the Internet. The knowledge is also maintained in human experts that are staff of RDI institutions. Due to the sheer amount of information and its rapid expansion with new knowledge generated, it is difficult for scientific experts, individually and collectively, to keep up to the dual tasks of maintaining the old knowledge while learning about new findings.

Access to knowledge is a necessary step to successful use of knowledge. It is difficult or impossible to see opportunities in knowledge if the knowledge has not been revealed. While it is difficult enough for scientists to stay informed within their areas of expertise, this is much more difficult for non-experts within a given field. While it is possible to search and learn from written sources of information, the most effective way is no doubt through direct communication with experts.
There are a large number of scientific and technological conferences, symposia and exhibitions that serve as meeting places for communication of knowledge. However, these may often be designed for experts meeting other experts, and it may be difficult for non-experts to navigate around in the overwhelming amount of information presented. Often what is required is more informal and frequent meetings between experts and non-experts where interesting knowledge from a perspective of opportunity may be spotted and explored.

Large companies often have their own R&D divisions that constantly explore opportunities to improve and stay ahead within their business areas. This provides an in-house opportunity for communication and interaction between R&D specialists and other company personnel. Small companies and local entrepreneurs may not have this opportunity.

A solution often sought is to establish regional research organisations. A research organisation or unit may be an asset in several respects. It may provide employment and income to the local community where the organisation is based. It also provides opportunities in terms of specialist education and development of economic activities. For these reasons, such research units are welcomed and there is often competition and lobbying when it comes to localisation of regional research organisations.

There are some fundamental aspects related to the size and location of research units. In research there is often a large difference in the capabilities of the best and the ordinary researchers. Excellence is promoted by national research councils and the EU, for example through the establishment of “centres of excellence”. While the criteria for successfully achieving excellence may vary with circumstances, the core elements are to recruit the best people and give them sufficient resources and long-term stability to develop in-depth expertise. This may involve collaboration of scientific and technical personnel often in multi- and interdisciplinary research teams.

Small research units with peripheral location are often at a disadvantage when it comes to excellence. They may have difficulty in attracting the best scientists and in creating a stimulating and dynamic research environment. This can be a reflection of the lack of a critical mass necessary to deal with complex environmental or societal issues. It is also a reflection of the issue of fragmentation of science into narrow disciplines and small units, and the difficulty to mobilise the broader initiatives and efforts to deal with the complex issues confronting us in achieving sustainable development of our modern societies.

Seen from a regional perspective, the main challenge is to get access to the best scientific expertise to address the research needs of the regions. These research needs are often not clearly defined, and as we have pointed out, there should be more consciousness and a prioritisation of the specific research needs of the regions. Part of the solution is through networking where the regions can get access to a wide range of expertise for consultations and activities to address the research needs. One task of regional RDI units should be to act as facilitators for this networking and communication. Regional research conferences, dialogue meetings and possibly other means should be used to increase the communication between a wider scientific community and the entrepreneurs, administrators and other stakeholders from the regions. The key to success is to find a form of communication that is oriented towards actions and results, and is seen as meaningful for the participants from both outside and within the regions.

7.2. Innovation – two cases of clusters in Norway

It is generally recognised that clusters may provide mechanisms for knowledge-based innovation. The general mechanism is to provide an environment where different actors with different roles can meet and work together to translate knowledge into economic activities.

Two cases from Norway are used to illustrate some RDI aspects of innovative and successful clusters. These two cases are the maritime cluster related to shipbuilding in the county of Møre and Romsdal, and the biotechnology cluster in Bergen. The aim is not to provide an exhaustive examination of these cases, but rather to identify some factors important for success in translating knowledge into economic opportunities. Both cases were presented at the Europe of the Sea seminar in Bergen 16-17 January 2006 (workshop 6 – Innovation).

The maritime cluster of shipbuilding in Møre and Romsdal

The maritime cluster is located in a region of Norway with long maritime history. It builds on a more than 1000 years old tradition of shipbuilding and fisheries in this area. It has developed from a basis of close interaction between shipbuilders and fishermen, which was later expanded to more diversified shipping activities and
offshore services for the oil industry. A key element in the development of the cluster was the innovative design and technology of advanced Offshore Service Vessels (OSV) that was used by the oil industry in the North Sea. Today the maritime cluster consists of ship-owners, shipyards, manufacturers of ship equipment, and ship design companies, with a yearly turnover of about EUR 3 billions.

The maritime cluster consists today of 10 shipping companies, 10 shipyards (including Aker Yards, the largest shipbuilding group in Norway (and in Europe)), about 100 vendors of ship equipment and services, and 5 ship-design companies. The cluster makes up 70 % of Norwegian shipbuilding and 50 % of marine equipment production. Offshore Service Vessels (OSV) continue to be a core element, constituting 60-70 % of new shipbuilding contracts. There has been a growing internationalisation, with 50 % of production now for export. Outsourcing of ship-building tasks to low-cost countries has been associated with an increase in the supply of ship equipment from suppliers in the cluster. Involvement of Norwegian companies in oil activities in other parts of the World has lead to an increased demand for OSVs. Maintaining an innovation process to keep the leading edge of advanced OSV is important for the cluster. Another innovative area is the construction of ferries with modern gas engines.

The five ship-design companies in the cluster play a key role in the innovation process. So does a large research institute, MARINTEK, located in Trondheim in the neighbour county to Møre and Romsdal. MARINTEK is a research company in the SINTEF Group that delivers marine technology research and development services. MARINTEK, together with the Faculty of Marine Technology at the Norwegian University of Science and Technology (NTNU), constitutes the Marine Technology Centre in Trondheim. While MARINTEK and NTNU are not directly part of the maritime cluster in Møre and Romsdal, their collaboration and access to their expertise by the cluster, are no doubt of importance for the success of the cluster.

The Norwegian government has recently provided a tax incentive system where enterprises get a tax deduction on external R&D services from approved R&D institutions, as well as a reduction on their own internal R&D expenses. This has led to an increase in R&D by the maritime cluster in Møre and Romsdal. The Norwegian Research Council operates maritime R&D programs in which companies of the maritime cluster now take part.

In the region of the maritime cluster in Møre and Romsdal there are local R&D institutions, notably the local college in Ålesund, Møreforsking (a consultant company), and the local Molde University College. These institutions contribute to the education and competence development of the local work force, which then are recruited into the ship designing, ship building and shipping companies of the cluster.

The maritime cluster seems to have passed “critical mass” concerning the ability to innovate, and many companies of the cluster are very active in the innovation system. The future challenge to remain the competitive edge will be to continue to release new potential through strong cooperation within the cluster, and continued and active networking and cooperation with knowledge centres outside the cluster such as MARINTEK, SINTEF and NTNU in Trondheim.

Biotechnology cluster in Bergen

The High-Technology Centre Ltd. (Høyteknologisenteret) is a science park and innovation centre in close proximity to the University of Bergen, established as a result of private and public enterprise. The primary goal is to bridge the gap between academic research and business development, and to promote entrepreneurial culture to the region of Western Norway.

The centre consists of two buildings, the first completed in 1990, with a total area of 26,000 m² of offices, laboratories, lecture rooms, etc. The park is fully occupied, and the number of private tenants is currently 18. The science park is organised as a joint ownership with the University of Bergen. Some 700 people have their daily work in the buildings of the centre.

The University of Bergen is represented with three departments located in the centre. These are the departments of Biology, Biotechnology, and Informatics. In addition the centre houses the Sars International Centre for Marine Molecular Biology (www.sars.no) that was established in 1997. It is a part of Unifob A/S (University Research of Bergen, ltd.) and a partner of European Molecular Biology Laboratory (EMBL). The Sars Centre is organised in independent research groups, subject to turn-over after 6 years, and each group is headed by an internationally recruited Group Leader. All groups currently appointed carry out basic research acting on the research programme "comparative molecular biology of marine animals". Other programmes will be established
in the future as new groups are hired. The program is defined in collaboration between the Centre's Director, Sars Scientific Advisory Committee and the Research Council of Norway.

Sarsia Innovation (http://www.sarsia.com/) was established in 2001 as part of the High-Technology Centre with the overall task to turn "science into business". Sarsia Innovation invests in life science and energy related startup companies. From the offices in Bergen, they invest in seed stage companies nation wide, and in venture stage companies throughout the Nordic region. An overview of Sarsia Innovation is shown in Fig. 11.

**Sarsia Innovation group**

![Diagram of Sarsia Innovation group]

Fig. 11. Structure and activities of Sarsia Innovation.

Marine biotechnology, or so-called “Blue biotech”, has been one key area for the research and business environment at the Bergen High-Technology Centre. Within this area the following items are identified:

- Marine bioprospecting – new enzymes and bioactive compounds from marine organisms
- Alginites - food ingredient-tool in molecular biology - “delivery system” for medicines
- Aquaculture - new species in culture - vaccines for new and existing species
- New resources for fish and animal feed
- New food products based on marine resources - taste enhancer - source of "healthy fat"- safe gelatine

The venture portfolio of Sarsia Innovation comprises:

- NorDiag - produces DNA based test Genefec for detection of colorectal cancer (listed on Oslo Stock Exchange, December 2005)
- PlasmAcute - Early infectious disease detection
- UniTargetingResearch AS - Protein therapeutics - Protein production in mammalian cell
- MediMush - Mushroom based ingredients for pharma/nutraceuticals
- Biolink Group - Pure natural substances for pharmaceuticals, foods and supplements

The seed project portfolio includes:

- TipoGen AS - identifies biomarkers that assist in the diagnosis and prognosis of neuro-psychiatric diseases
- PhotoSense AS - skin cancer diagnostics - new instrument for skin anomaly screening
- Pattern Recognition Systems (PRS) - software programmes for multivariate analysis of large chemometric datasets
- Molmine AS - User-friendly, yet advanced software to analyse, organise and present data from microarray, protein array and other sources
- Epsis AS - software systems, instruments and expertise for increased yields from oil fields
- Ballast Water Sanitation for Shipping Industry

It may be early to evaluate the success of the Bergen biotechnology cluster and we will not attempt that. It appears however that the basic idea of turning science into business is working fairly well. In summary, the Bergen model includes the following elements:

- a physical setting (a building) that houses university scientists and students, applied scientists, and businessmen
- a strong emphasis on in-depth, frontier research in basic biology and biochemistry
- small private biotechnology companies
- an organisation (Sarsia Innovation) with professional personnel on business development
- investment funds to finance research-based early stage projects and companies through their development into businesses of a quality and size interesting for venture capital and industry investors.
ANNEX TO RESEARCH AND MARITIME INNOVATION PAPER

PAPER IN MEPS 2005
Implementing the ecosystem approach: experiences from the North Sea, ICES, and the Institute of Marine Research, Norway

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The ecosystem approach. The ecosystem approach is a management principle which builds on the recognition that nature is an integrated entity and that we must take a holistic approach to nature management. The science to support ecosystem approach to management must also be integrated and holistic. A core element of this science is ecology, with a focus upon the properties and dynamics of ecosystems (Fenchel 1987). Many scientists and managers have recognised the need for an ecosystem approach for a long time (Likens 1992), although it is only during the last 10 to 15 yr that a broader awareness of this has developed.

The increased awareness and formalisation of the ecosystem approach have emerged as a result of international environmental agreements within the framework of the United Nations, and a fundamental description of the basis of an ‘ecosystem approach’ was first formalised in the Stockholm Declaration in 1972 (Turrell 2004). The most authoritative account of the ecosystem approach is probably in Decision V/6 from the meeting of the Conference of the Parties to the UN Convention on Biological Diversity in Nairobi, Kenya, in 2000. This decision has an annex with a description, principles and operational guidance for application of the ecosystem approach (www.biodiv.org/decisions/fm=corp-05).

The Large Marine Ecosystem (LME) concept has been the basis for a practical development of the ecosystem approach to the management of marine resources and environment (Sherman 1995, Duda & Sherman 2002). Currently, 64 LMEs have been identified, dividing mainly the shelf regions of the globe into management units. Scientific and management issues concerning these LMEs have been the subject of a large number of symposia and books (see www.edc.uri.edu/ime).

In many fisheries science institutions, advisory communities and management bodies, practical implementation of the ecosystem approach has been a central issue for the last years. There is no unified understanding or protocol on how to deliver scientific advice for management of fish stocks under the broad scope of the ecosystem implications of fishing, as compared to the traditionally narrow consideration of the population dynamics of single fish stocks. The FAO Expert Consultation on Ecosystem-based Fisheries Management in Reykjavik in 2001 (FAO 2003, Garcia et al. 2005) produced an overall, pragmatic solution for implementing the ecosystem approach to fisheries (EAP) by merging ecosystem management and fisheries management. The EAP principles are yet to be implemented by most of the fisheries scientific and advisory bodies around the world.

The ecosystem approach has been a central issue in political processes such as the Fifth International Conference on the Protection of the North Sea held in Bergen in 2002 (NSC 2002), and the development of a governmental white paper on integrated marine management in Norway in 2002 (Anonymous 2002). Similarly, the ecosystem approach was a basis for the development of the strategic plan of the International Council for the Exploration of the Sea (ICES 2002), and in the reorganisation of the Institute of Marine Research (IMR), Norway (Anonymous 2001, Misund et al. 2005). We reflect here on our experiences from the political processes for the North Sea and in Norway on developing the ecosystem approach to management. We go on to give our views on the development of the ecosystem approach within 2 scientific organizations that must deliver scientific advice according to the ecosystem approach, ICES and our home institute (IMR) in Norway.

Development of the ecosystem approach for the North Sea. The first International Conference on the Protection of the North Sea was held in Bremen in Germany in 1987, followed by the 2nd and 3rd Conferences in London in 1988 and The Hague in 1990. The Ministers at the 3rd Conference in The Hague requested that OSPAR (the Convention for the Protection of the Marine Environment of the North-East Atlantic) and ICES should establish a North Sea Task Force (NSTF), for producing a Quality Status Report (QSR) for the North Sea. This QSR was completed in 1993 (NSTF 1993) and identified fisheries as having major impacts on the North Sea ecosystem. At the 4th Conference in Ørslø and Bergen in 1995, these fisheries impacts were discussed by the Ministers responsible for the environment.

As host for the 5th Conference, Norway arranged an Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues in Bergen in March 1997. In their Statement of Conclusions (IMM 1997), the Ministers responsible for fisheries and the environment in the countries bordering on the North Sea agreed that an ecosystem approach should be developed and implemented as a guiding principle for the further integration of fisheries and environmental management measures. This was followed by a workshop in Oslo in 1998 where a framework for an eco-
system approach was drawn up (Anonymous 1998). This framework was adopted with slight modifications by the Ministers at the 5th Conference in Bergen 2002 (NSC 2002).

The framework for an ecosystem approach to management consists basically of 5 major elements or modules in a management cycle (Fig. 1). Objectives should relate to the state of the ecosystem. Monitoring and research should be performed to provide updated information about status and trends (monitoring) and insight into mechanisms and causal relationships (research). Assessments should use information from monitoring and research to evaluate whether objectives are being met or whether progress is being made towards meeting them. Scientific advice should be formulated clearly to translate the natural complexity into a clear and transparent basis for decisions. Finally, management should respond to the advice and to the needs for actions to meet the agreed objectives.

The Ministers at the 3rd Conference in The Hague had requested that methodology for setting ecological objectives should be developed. This work was initiated by the NSTF and continued by OSPAR after 1993. Workshops were held at Bristol in 1992, Geilo in 1993, and Ulvik in 1995 to consider terminology, feasibility and selection criteria for formulating Ecological Quality Objectives (EcoQOs). This resulted in a general methodology or approach for setting EcoQOs (Skjoldal 1999). In 1997 OSPAR agreed to apply this methodology to the North Sea as a test case. This work was subsequently linked to development of the ecosystem approach, filling the need for ecological objectives in the latter. Based on the outcome of 2 workshops held at Scheveningen in 1999 and Schiphol in 2001, and considerable input from ICES (Advisory Committee on Ecosystems, ACE Reports for 2001, 2002, 2003, available at www.ices.dk/products/cooperative.asp), a set of 10 EcoQOs were agreed by the Ministers at the 5th North Sea Conference (NSC 2002, Annex 3).

The ICES Study Group on Ecosystem Monitoring and Assessment proposed the following definition of the ecosystem approach (ICES 2000): 'Integrated management of human activities based on knowledge of ecosystem dynamics to achieve sustainable use of ecosystem goods and services, and maintenance of ecosystem integrity.' This formed the basis for the technical definition of ecosystem approach used in a statement from the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (JMM) in Bremen in June 2003 (www.ospar.org), and in the work on developing the thematic Marine Strategy within the EU (http://europa.eu.int/comm/environment/water/consult_marine.htm):

The comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.

It is worth stressing the emphasis on integrated management of human activities in this definition. Integration between different sectors of the society is a key element of the ecosystem approach, and this has scientific and institutional implications. Scientifically, we need the ability to assess the combined impacts from different sectors on the marine ecosystems, and institutionally the sectors need to work closely together. This means for instance that close collaboration between the fisheries and environmental conservation sectors is a prerequisite for an effective ecosystem approach to management.

In the Norwegian Government's White Paper 'Clean and Rich Sea', which shaped Norwegian marine policy (Anonymous 2002), the ecosystem approach is seen as the means of achieving better sector integration. The marine areas under Norway's jurisdiction constitute parts of the North Sea, the Norwegian Sea and the Barents Sea LMEs. The description of the ecosystem approach in the White Paper was modelled very much after the framework developed for the North Sea. In addition to continuing the international work in the North Sea, the Norwegian Government has started to develop a management plan for the Barents Sea. This includes development of EcoQOs and assessments of the key impacts on the Barents Sea ecosystem: fisheries, mariculture, offshore oil and gas production, shipping, long-range transport of pollutants, and climate change.
Developments within ICES. ICES is an independent scientific and advisory organisation that has existed for more than 100 yr (Rozwadowski 2002). It has traditionally provided governments of the North Atlantic region with advice on harvesting of fish stocks and on environmental issues such as pollution monitoring, aggregate extraction, algal blooms, or mariculture. Recognising the focus on ecosystems and the need for stronger integration, ICES initiated in 1999 a process to develop a functional strategic plan. This plan includes the ecosystem approach as a foundation for the work of ICES, and it was signed by delegates from the 19 participating countries in 2002 (ICES 2002). Since then, the 7 scientific committees of ICES have developed specific action plans to implement the new strategy.

Responding to the foreseen need for more integrated advice on ecosystems, ICES established in 2000 a new Advisory Committee on Ecosystems (ACE) in addition to its 2 existing advisory committees, ACFM (Advisory Committee on Fisheries Management) and ACME (Advisory Committee on the Marine Environment). ACE is the ICES body for providing scientific advice and information on the status of and outlook for marine ecosystems, and on the exploitation of living marine resources in an ecosystem context.

The fishery science and the environmental science within ICES represent 2 different scientific traditions and cultures. Bridging them has not been easy. The fishery science is very computational using models and sophisticated statistical tools to estimate the current and future sizes of fish stocks as a basis for advising on catch quotas. The environmental science covers a much broader spectrum of disciplines with stronger emphasis on processes and descriptions, and less on formalised and standardised computations. The fisheries scientists work on a tight annual schedule with data collection, stock assessments at working group meetings, and provision of advice on next year’s quotas to fisheries management institutions. Environmental scientists usually have less time pressure from the management system, with environmental assessments carried out at more irregular and less frequent intervals. The difference between the 2 traditions materialises clearly, for example, in the difficult issue of integrating information about oceanographic variability into the regular fish stock assessment process (Ulthang & Blom 2003).

The ground layer of the ICES structure consists of >100 working or study groups that meet annually or work by correspondence to produce reports addressing specific terms of reference given to them by the ICES Council. These groups cover virtually every aspect of the marine environment. This structure has evolved over the decades in response to past needs, and it has been partly overhauled to meet the current and future needs for information on the status of and outlook for the marine ecosystems in the North Atlantic region.

Integrated assessments of the status and outlook of the marine ecosystems could provide a focus and incentive for ICES to become more operational. ICES activities in the Baltic Sea and the North Sea are serving as test cases. A Regional Ecosystem Study Group for the North Sea (REGNS) was established in 2003 and is now coordinating efforts to produce an assessment of the recent status and trends in the North Sea ecosystem, to be finalised in 2006 (ICES 2004).

There is an increasing awareness that ecosystems are not abstract concepts, but real entities in nature. They are open systems and their boundaries may be fuzzy and to some extent pragmatically determined, depending on the purpose of their delimitation. Nevertheless, there are more or less sharp discontinuities in physical features and distribution of organisms, and these are a help when drawing the boundaries of LMEs based on ecological criteria (Skjøth 2004a,b).

Compiling and assessing information and advising on the status of and outlook for marine ecosystems requires a geographical focus consistent with the boundaries of the identified LMEs. This means in practice that experts on different aspects within each ecosystem, e.g. physical oceanography, plankton, benthos, fish, must work together to provide the integrated analyses and a synthesis of the information. Some rearrangement of the ICES working groups is required to account for regional aspects. Thematic groups to deal with general issues (e.g. methods, climatic driving forces) common to all or several specific ecosystems must be maintained. We therefore support development of a streamlined and ecosystem-oriented advisory function with regional working groups, much along the lines proposed by the ICES Study Group on the Advisory Committees and Working Group Protocols (ICES 2003), to enable ICES to deliver scientific advice according to the ecosystem approach.

Developments at IMR. The leaders of the Institute of Marine Research (IMR), Norway, considered that the organization of the institute was not strategically suited to deliver holistic ecosystem-based science and advice to support the ecosystem approach to management. The IMR had 4 science centres (for living resources, environment, aquaculture, and coastal studies) that acted to some extent as separate entities within the institute. The centres conducted their activities within advisory and science programmes that were specific to each centre. The centres were, furthermore, managed as separate economic units, each
with the responsibility to manage the budget with a positive balance in the long run. Cooperation between the centres was less than would be desirable, both scientifically and administratively, and it was difficult to achieve the level of cooperation between centres that is required for dealing with ecosystem issues.

Based on a recommendation from the directors of IMR, and its acceptance by the Ministry of Fisheries and Coastal Affairs, the IMR Board initiated in spring 2002 a process to develop a new organisation for the institute. The introduction of the ecosystem approach in the White Paper of the Norwegian Government, in the Bergen Declaration of the 5th North Sea Conference, and the new strategic plan for ICES were triggers of the reorganization of IMR. During a 1.5 yr internal process initiated by the leader group and extended with representatives from the major labour unions, a new organisation was developed (Misund et al. 2005). The classical, discipline-oriented structure with centres for marine environment, marine resources, coastal zone and aquaculture was abandoned. The former programme structure with 4 advisory programs following the centre structure, and up to 10 science programmes across the centre structure, was also abandoned.

The new organization has 3 ecosystem-based programmes and 1 thematic science and advisory programme, 19 research groups, a technical department divided into 9 research technical groups, an administrative department that includes the former centre administrations, and an unchanged research vessel department to operate the fleet of the institute (Fig. 2). These programmes provide a structure for the scientific and advisory activity of IMR by defining all activities into projects that are carried out by the research and technical groups.

The 3 ecosystem-based programmes are set up according to the division of LMEs in the North-Eastern Atlantic (Sherman 1995, Sherman & Skjoldal 2002). There is one programme that covers the Barents Sea LME and one that covers the Norwegian Sea and the North Sea LMEs together. A 3rd programme covers the coastal zone of Norway. The 4th programme is thematic and covers the aquaculture activities of the institute.

The ecosystem programmes build on a common, simplified understanding of the ecosystem approach to focus on 3 main operational goals: (1) a clean sea (monitoring and advice to secure the lowest possible level of contamination of anthropogenic pollutants in the marine environment and seafood); (2) better advice for sustainable harvest of marine resources (single species models are still applied, but multispecies considerations and ecosystem information will be taken more into account); (3) reduced ecosystem effects of fishing (improvement of the size and species selectivity of fishing gears and reduction of impacts on bottom fauna).

Parts of the Barents, Norwegian and North Seas LMEs are within Norwegian jurisdiction. Norway is only one of the countries that have the right to harvest the living marine resources within these ecosystems. International cooperation at the political, scientific and management levels is important for effective implementation of an ecosystem approach. The natural and anthropogenic drivers that influence the ecosystem

![Diagram](image-url)
structure, productivity and major living resources within these LMEs are different. The science and advisory programmes therefore have taken somewhat different approaches in building up their project portfolios.

Within the new organization of IMR, the science and advisory programmes are still in an early phase of development. In the years to come, attention will be given to further refine and develop the ecosystem approach as their central element. Surveys in the Barents Sea and the Norwegian Sea now have a clear ecosystem focus, including simultaneous monitoring of hydrographic conditions, plankton, fish stocks and marine mammals. The North Sea surveys, however, are still focused on single aspects such as demersal (IBTS surveys) or pelagic fish stocks (e.g. the herring surveys). These activities have a long tradition of ICES coordination, and it will take some time to adjust the various activities coordinated by ICES to support an effective ecosystem approach to North Sea management.

In developing the new organization and structuring the scientific and advisory activities within IMR, we have chosen a pragmatic strategy. Our philosophy is that we will further develop the ecosystem approach within our scientific and advisory activities ‘as we go along’. The choice of a new structure and way of functioning of the institute lowers the effect of the ‘resistance to change’ inherent in any organisation, and forces all persons involved to consider the new requirements by an ecosystem approach free from the constraints and empowerments from the previous structure. In the years to come, the objectives of the ecosystem approach to management of fisheries and marine ecosystems will be clarified and made more explicit, and we believe our new organization is well suited to deliver the scientific support for achieving those objectives.

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4. Conclusions of the Sustainable Development Thematic Group

COORDINATION REGION:
Schleswig-Holstein (DE)

OTHER PARTNERS:
Abruzzo (IT)
Azores (PT)
Aquitaine (FR)
Basse-Normandie (FR)
Campania (IT)
Central Macedonia (GR)
Devon (UK)
Lazio (IT)
Murcia (ES)
North Aegean Region (GR)
Provence-Alpes-Côte d'Azur (FR)
Poitou-Charentes (FR)
Shetland Islands (UK)
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Développement Durable

Voilà maintenant près de vingts ans que le terme et le concept de développement durable sont entrés dans les documents et la pensée politique. Voilà près de dix ans que le terme et le concept de gestion intégrée sont, eux aussi, entrés dans cette même sphère. Ces termes et ces concepts sont ils pour autant compris et si oui sont ils analysés de façon homogène par les différentes catégories d’acteurs concernées ?

A en croire les responsables des politiques et des programmes communautaires, ceux qui ont en charge la conception et l’application des programmes de développement régionaux ou ceux dont la mission consiste à fournir des outils pour la mise en œuvre de ces programmes il est permis d’en douter.

Il n’est pour s’en convaincre que d’analyser les demandes formulées lors des évaluations des politiques et des programmes : elles débutent presqu’invariablement par une demande de clarification des concepts. Ainsi lors de l’évaluation de la Recommandation sur la gestion intégrée des zones côtières les représentants des Etats membres ont-ils souhaités en priorité que des précisions soient apportées à ce concept et ce pour deux raisons. D’abord afin que les différents acteurs chargés de mettre en œuvre cette approche puissent parler un même langage ensuite pour que les responsables politiques aux niveaux régional et local soient suffisamment « armés » pour « vendre » ce concept à des populations auxquelles ils doivent rendre des comptes.

C’est avec toutes ces réserves que doit être abordée la partie de ce rapport consacrée au développement durable laquelle sera orientée volontairement sur le volet « environnement » de la trilogie « économie, environnement, social ».

L’objectif du présent rapport est de parvenir à formuler la position des régions maritimes sur ce que devrait être une politique de la mer et d’étayer cette position par des propositions. Si l’on devait résumer en une phrase cette position et ces propositions en matière de développement durable elle serait celle-ci : « Les Régions maritimes sont d’accord pour considérer que seule une approche intégrée pourra véritablement mettre en valeur les atouts que constitue leur situation littorale. Elles attendent donc des pouvoirs publics communautaires et nationaux qu’ils mettent en place une conception du développement régional qui s’appuie sur une structure de financement reflétant cette orientation, à défaut de quoi elles seront contraintes de continuer à concevoir leur développement sur une base sectorielle ».

1. L’Environnement Politique

1.1 Etat actuel des initiatives communautaires

La stratégie européenne de gestion intégrée des zones côtières (ICZM).

Depuis l’adoption par le Parlement et le Conseil de la Recommandation sur la stratégie européenne de gestion intégrée des zones côtières les travaux animés par la DG ENV. se sont concentrés sur l’adoption de stratégies nationales qui ont été présentées à la Commission début 2006. Les travaux entrepris à cette fin entre l’adoption de la Recommandation (2002) et le début 2006 ont été menés avec l’appui d’un groupe d’experts nationaux représentant les Etats membres et, dans ce processus, seuls les Etats ont été concernés. Les régions n’ont été associées que marginalement dans quelques Etats où elles disposent de compétences dans ce domaine, Belgique et Espagne notamment.

Suite à la transmission par les Etats de leur stratégie en application de la recommandation, les travaux engagés par la Commission portent sur l’évaluation des stratégies nationales et, sur la base de cette évaluation, devront déboucher sur la formulation de recommandations pour l’avenir. La phase d’évaluation doit se dérouler durant les six premiers mois de l’année 2006 et devrait se traduire, fin 2006, par une prise de position de la Commission concernant le développement de la stratégie ICZM sous une forme qui reste à définir : nouvelle Recommandation ou autre instrument réglementaire.

Ces travaux sont conçus de façon à permettre aux différents partenaires d’exprimer leur position par le biais d’un site Internet. Les régions sont donc amenées à préciser leur demandes et leurs besoins pour que la stratégie ICZM puisse se développer »grandeur nature ».

Les premières indications que l’on peut retirer de la phase d’évaluation sont les suivantes :
seuls 10 États côtiers sur 20 – représentant un peu plus de 50% du linéaire côtier de l’Union - ont transmis leur « stratégie » à la Commission ; quatre autres États étant dans un processus de transmission ;

les éléments fournis montrent une grande diversité dans les approches, les rapports reflétant davantage l’état actuel d’un processus de réflexion sur le sujet qu’une véritable stratégie ;

il importe de disposer au niveau communautaire d’un instrument sur lequel appuyer la dynamique engagée ; la forme que doit prendre un tel instrument reste à préciser (voir ci après la position de la CRPM) ;

les éléments communs portent sur i) le besoin d’une évolution sensible des formes de gouvernance pour les zones littorales, ii) le besoin de disposer d’informations adaptées aux exigences de l’action concrète ainsi que d’indicateurs de suivi et d’aide à la décision, iii) le besoin de disposer d’un argumentaire solide permettant d’informer et de sensibiliser les partenaires et les populations sur les avantages de l’approche intégrée. Il y a donc un réel besoin de communication qui se dégage autour de ces questions et iv) le besoin de continuer de disposer de soutiens financiers pour lancer de nouveaux projets de démonstration et d’expérimentation (voir liens avec la future période de programmation 2007-2013) ;

Les expériences de gestion intégrée des zones côtières menées jusqu’à présent l’ont été soit dans le cadre d’initiatives ponctuelles, soit dans le cadre des instruments financiers communautaires et notamment du programme INTERREG III (volets B et C notamment).

L’analyse des résultats obtenus par la mise en œuvre de ce type de projets n’est pas exhaustive ; elle montre cependant que :

- Très peu de projets portent sur des réalisations de terrain, la plupart en sont encore au stade des études préalables, de la stratégie ou de la programmation ;
- La sensibilisation à ce type d’approche reste encore à faire auprès des responsables du développement des régions et des collectivités locales ;
- La valeur ajoutée de ces approches doit être davantage mise en évidence ;
- Les initiatives sont inégalement réparties sur le territoire communautaire : leur répartition montre une plus grande attention en baltique et en mer du nord que dans les autres bassins maritimes.
- Sauf exception – notamment dans le cadre du projet « coast atlantic », le partage des expériences n’a pas été effectué au niveau régional.

Deux conclusions majeures peuvent être tirées de cette analyse :

- L’approche intégrée constitue, pour les régions maritimes, une voie d’avenir qu’il importe de promouvoir et de développer dans le cadre de la politique de cohésion ;
- Les collectivités régionales et locales n’ont pas été jusqu’à aujourd’hui suffisamment associées à cette démarche.

Cette orientation des régions, résolument en faveur de l’approche de GIZC, requiert cependant que soient mis en place plusieurs conditions afin de tenir compte des caractéristiques de cette approche : elle est complexe, elle demande du temps, elle nécessite des instruments nouveaux de mise en œuvre et elle doit s’appuyer sur une gouvernance au sein de laquelle les compétences de chaque entité soient reconnues.

Concernant le type d’instrument à promouvoir dans le futur proche, les régions sont en principe favorable à un instrument contraignant comme étant la seule voie à même de faire progresser ce type de démarche. La lenteur d’un processus volontaire tel qu’il a été engagé par la Recommandation est sans doute un passage obligé dans la mesure où il entraîne une véritable « révolution » des esprits. Mais la nécessité de mettre en place un nouveau mode de développement doit impérativement s’accompagner d’une perspective claire que seul un instrument contraignant est à même de fournir.
Les régions maritimes sont donc en faveur d’un instrument contraignant en tant que perspective à moyen terme, sous réserve bien évidemment d’éviter que se multiplient les instruments de cette nature (directive « eaux », directive stratégie marine, possible directive liée à l’adaptation au changement climatique……). Une telle multiplication ne pourrait que générer une perte de lisibilité et donc de crédibilité de l’action politique communautaire et risquerait de rester « lettre morte ».

Les régions maritimes demandent que les années qui viennent, et en particulier la période 2007-2013, soit mises à profit pour développer, diffuser et communiquer sur cette approche intégrée. Elles souhaitent en particulier que des priorités maritimes nettes soient données au futur Objectif 3 portant sur la coopération. Elles demandent également qu’un accent particulier soit mis sur la valorisation effective et la diffusion des initiatives déjà engagées et réalisées.

Elles proposent que soit mis en place un « forum régional des initiatives maritimes » (FRIM) qui permettrait, chaque année, d’établir un bilan des projets lancés au titre des différents programmes et instruments communautaires, de formaliser les nécessaires échanges d’expériences et de bonnes pratiques et d’organiser la confrontation entre les différentes politiques impliquées.

La « Stratégie marine »


Ceci étant trois points doivent être soulignés à ce sujet :

- La stratégie marine ne saurait, à elle seule, constituer l’apport de la dimension environnementale au Livre vert et encore moins prétendre à couvrir la problématique du développement durable ; essentiellement liée à la protection des écosystèmes et à la restauration de la biodiversité marine, cette stratégie ne saurait servir de base unique au développement durable des zones côtières qui constitue, pour les régions ; un des points majeurs de cette initiative ;

- La stratégie marine s’appuie, pour sa mise en œuvre, sur les Conventions régionales de type OSPAR pour l’atlantique du nord est et la mer du nord et HELCOLM pour la Baltique. Or il s’agit de structures qui font exclusivement appel à la coopération entre les Etats riverains des mers régionales et où les régions ne prennent leur place que sous la forme d’observateur. Elles n’ont donc pas la capacité d’influer sur les décisions alors même qu’elles exercent dans plusieurs des domaines couverts par ces conventions, des compétences partagées avec les Etats ;

- La stratégie marine sera appliquée en s’appuyant sur des espaces maritimes homogènes du point de vue de la biodiversité (approche écosystémique). Cette approche, pour aussi pertinente qu’elle soit, devra être combinée avec l’existence des autres types d’espaces existants, et en particulier avec les espaces de coopération définis dans le cadre du futur Objectif 3 de la politique de cohésion.

Sous réserve que ces trois points soient dûment pris en considération cette stratégie marine constitue un des points forts de la dimension maritime dont l’Union européenne entend se doter et auquel les régions maritimes adhèrent.

Les propositions formulées par la CRPM dans ce cadre portent avant tout sur une évolution des formes de gouvernance quant à la mise en œuvre de cette directive. L’objectif réside dans la mise en place des moyens permettant une participation effective des représentants des régions maritimes aux travaux des conventions régionales.

Le second programme communautaire sur le changement climatique - ECCP II -

Le changement climatique est en cours. Il est devenu un sujet de préoccupation des citoyens sensibilisés ces dernières années par une série d’événements climatiques extrêmes. Les destructions de l’ouragan Katrina, la sécheresse en France, les incendies au Portugal, les inondations en Europe centrale ou les canicules de 2003 et les tempêtes de 1999 ont montré que nos territoires et nos sociétés, y compris les plus puissantes, ne sont pas toujours préparés à affronter ces événements.
Mais au-delà de ces phénomènes extrêmes, il convient de prendre la juste mesure du réchauffement climatique. Il est aujourd’hui reconnu que ce phénomène est inéluctable pour les cinquante ou cent prochaines années. Si son ampleur ne peut être définie avec une complète certitude, les scénarios scientifiques démontrent que l’Europe sera particulièrement concernée. Cette évolution induira des changements régionaux de température, de régime des pluies, de niveau de la mer... et ceux-ci auront des conséquences sur toute la biosphère, les activités humaines, la biodiversité etc….

Or, si les effets du réchauffement n’épargnent aucune zone de la planète, les territoires proches des mers et des océans, et notamment les îles, présentent une vulnérabilité particulière à ces phénomènes. Cela est dû notamment à leur exposition en façade des océans et à l’influence de ces derniers sur la météorologie et la climatologie. Cette vulnérabilité est d’autant plus grande que les zones littorales concentrent souvent population, infrastructures lourdes et activités économiques liées à la dimension maritime.

Jusqu’à maintenant les efforts et les initiatives de la communauté internationale ont porté pour l’essentiel sur le volet « atténuation » par l’adoption puis l’application du protocole de Kyoto. Or la lutte contre le changement climatique comporte un second volet qui concerne au premier chef les régions maritimes : il s’agit du volet « adaptation » pour lequel très peu d’efforts ont été consentis jusqu’à aujourd’hui alors même que les conséquences se font déjà sentir sur les territoires et les économies maritimes.

L’adoption du second programme communautaire sur le changement climatique (ECCP II) corrige en partie cette lacune dans la mesure où il comporte un volet « adaptation » que les régions maritimes accueillent avec satisfaction et auquel elles entendent participer pleinement.

Au-delà de la seule problématique du réchauffement climatique, les régions mettent l’accent sur la problématique générale des risques qui menacent les territoires et les économies des zones littorales. Qu’il s’agisse des risques d’érosion ou des risques liés à la pollution des eaux côtières et marines.

Dans ce cadre elles rappellent que les initiatives existantes telles que le projet « EUrosion » devraient être poursuivies.

Les propositions des régions maritimes dans ce domaine portent sur les points suivants :
- Lancer des analyses de vulnérabilité des économies et des territoires régionaux ;
- Construire des mécanismes de transmission des données utilisables au niveau régional ;
- Elaborer des stratégies régionales ;
- Mener des projets de coopération interrégionale et transnationale en particulier sur les thèmes suivants :
  ▪ stratégie et planification territoriale,
  ▪ échanges d’expériences dans les domaines du tourisme, de l’agriculture et des forêts, de la planification et de la gestion des infrastructures,
  ▪ gestion des ressources naturelles,
  ▪ gestion des ressources en eau,

Les informations sur la situation des côtes européennes


Il s’agit là d’un progrès notable à l’orientation des décisions de développement et d’un outil pertinent pour la conception et l’orientation des stratégies de développement de ce type d’espaces. Ce progrès reste néanmoins pour le moment limité aux politiques communautaires voire aux politiques nationales bien qu’il faille noter la volonté de relier l’élaboration des informations et des données avec les questions de développement régional.

En l’état actuel des données élaborées, il serait possible de s’appuyer sur ce type d’informations pour bâtir des programmes de coopération à mener à l’échelle des bassins maritimes. Il n’est pas encore envisageable de les utiliser pour servir de support à des programmes et des projets menés à plus petite échelle.

Cette question de la disponibilité de données sur le littoral et les eaux côtières constitue néanmoins une demande forte de la part des régions maritimes qui ont besoin de ces informations pour mettre en place des stratégies
régionales et interrégionales. Il est donc nécessaire de confirmer cette orientation de l’AEE en tenant compte des besoins des régions qui peuvent se traduire de la manière suivante :

- Élaborer des données à l’échelle des bassins maritimes ;
- Développer des données utilisables dans le cadre de systèmes d’informations géographiques (SIG), qui constituent les outils de référence des décideurs régionaux et locaux ;
- Prévoir des mesures d’accompagnement telles que la formation des utilisateurs régionaux et locaux.

**Les instruments de coopération**

Les différentes initiatives rappelées ci-dessus trouvent leur capacité de mise en œuvre dans les instruments financiers mis à disposition des opérateurs de terrain, qu’il s’agisse des opérateurs publics ou privés. Le groupe de travail entend rappeler que les orientations et les stratégies adoptées ne constituent qu’une phase préalable nécessaire mais ne sauraient se suffire à elles-mêmes : l’adoption d’une stratégie ne signifie pas que cette dernière sera mise en œuvre, sauf à disposer d’instruments contraignants de type réglementaire ou législatif et des moyens de contrôle et de sanctions appropriés.

En ce qui concerne les initiatives maritimes – et pour ne parler que des instruments communautaires - leur mise en œuvre passe principalement par les instruments de la politique de cohésion, et, à un degré moindre, par ceux de la politique de l’environnement et ceux de la politique de la recherche. Pour les Régions, les aspects maritimes peuvent en théorie être couverts par tous les objectifs de la politique de cohésion, le principe voulant que la Commission ouvre des opportunités et que les États membres et les Régions utilisent ces possibilités ouvertes.

Force est de constater que, dans la pratique, ce système ne fonctionne pas. Très peu de projets ont été lancés dans le domaine maritime au cours de la période de programmation actuelle au titre des différents objectifs. Pour les objectifs 1 et 2 les données disponibles ne permettent pas de se faire une idée précise de la situation. Ainsi les services de la Commission ne sont pas en mesure aujourd’hui d’identifier les projets menés en respectant les principes du développement durable. Au-delà du simple affichage, aucune méthode et aucun critère opérationnels ne sont disponibles pour évaluer la réalité de la prise en compte de ces principes de développement durable.

Pour l’instrument de coopération INTERREG plusieurs projets ont été lancés en matière de gestion intégrée des zones côtières. Il s’agit pour l’essentiel de projets théoriques et/ou méthodologiques, rarement de projets de terrain.

**1.2 Les relations entre la politique environnementale et les politiques de développement : politique régionale, politique commune de la pêche, politique des transports.**

L’environnement politique est aussi caractérisé par la manière dont les politiques de développement font face à l’exigence d’intégration de la dimension environnementale et des principes du développement durable dans la conception et la mise en œuvre de leur propre politique.

Cette exigence d’intégration est la réponse au modèle de développement basé sur l’approche sectorielle ; aussi bien ses résultats que la réalité de cette approche sont aujourd’hui très difficiles à qualifier et à évaluer. En effet l’adoption de stratégies et d’orientations politiques ne signifie pas obligatoirement que ces stratégies et ces orientations seront traduites dans les faits.

En matière de politique commune de la pêche (PCP) la CRPM attire l’attention sur la complémentarité des actions ressortant de l’axe 4 du Fonds Européen pour la Pêche (FEP) qui porte sur le « développement durable des zones de pêche », et la mise en place de l’approche de gestion intégrée des zones côtières. Cette complémentarité devra se traduire par un renforcement de la coordination entre les DGS concernées.
2. L’ENVIRONNEMENT TECHNIQUE

2.1. Les outils « informatifs »

La disponibilité d’informations géo-référencées est un préalable nécessaire à la conception de stratégies et de programmes de développement durable. La situation régionale à cet égard présente une grande diversité tant du point de vue du format et de la nature des informations collectées qu’en ce qui concerne leur mode de traitement et de présentation.

Dans ce contexte les zones côtières sont encore dans la plupart des cas traitées de façon sectorielle alors même qu’elles constituent des interfaces terre-mer qui requièrent une approche intégrée. Il en résulte des difficultés pour les régions de concevoir des programmes et des projets basés sur une approche intégrée.

Au niveau communautaire les développements récents intervenus au sein de l’Agence Européenne de l’Environnement se sont traduits par l’élaboration d’un rapport sur l’état de l’environnement dans les zones côtières d’Europe qui, pour la première fois, tente de présenter une situation plus conforme à la complexité des territoires traités. Cette direction de travail présente, pour les Régions maritimes, un progrès important dans l’aide dont elles ont besoin afin de concevoir des stratégies et des programmes intégrés.

Sur un plan technique ce rapport de l’AEE doit être considéré comme un point de départ allant dans la bonne direction et le Livre vert maritime devrait prendre acte de cet axe de travail afin d’encourager son développement.

Il serait notamment nécessaire d’aborder la question de l’information en s’appuyant sur les bassins maritimes afin de fournir une base solide aux projets de coopération transnationale et interrégionale.

Un tel développement devrait aussi s’appuyer sur les résultats des projets en cours tels que INSPIRE, RISE, ORQUESTRA, EU-FLOOD-GIS, DEDUCE et COREPOINT. Autant de projets qui montrent à la fois l’intérêt porté à ces questions mais qui démontrent aussi la nécessité urgente de les coordonner. Il ne faut pas en effet minimiser les effets pervers de la multiplication des initiatives et des projets qui, s’ils ne sont pas mutualisés et coordonnés, génèrent un maque de visibilité préjudiciable. C’est la situation qui prévaut aujourd’hui dans la plupart des cas.

2.2 Les outils « réseaux »

La dimension maritime se caractérise par le dépassement des cadres territoriaux classiques. Dès lors la nécessité de travailler avec d’autres s’impose. Cette nécessité s’exprime le plus souvent dans le cadre de réseaux transnationaux et/ou interrégionaux qui servent aussi de support aux actions de coopération.

La situation actuelle du fonctionnement en réseaux montre à la fois des avantages et des inconvénients :

- Avantages dus à la mutualisation des expériences et au renforcement de la capacité de concevoir des projets globaux ;
- Inconvénients dus à la multiplication de ces réseaux dont la représentativité baisse du fait du nombre élevé de partenaires. Il en résulte des difficultés de dialogue avec les instances nationales et communautaires dans le choix des partenaires avec lesquels le dialogue doit être engagé.

La demande générale des Régions au regard de ces réseaux va vers le renforcement de la représentativité et la formalisation du dialogue avec les partenaires institutionnels et professionnels. Les Régions estiment notamment que l’initiative prise par la Commission dans le cadre de la Politique Commune de la Pêche avec l’instauration de Conseils Consultatifs Régionaux pourrait représenter une voie à suivre pour les affaires maritimes dans leur ensemble.

3. LES PROPOSITIONS

3.1. ICZM et politique de cohésion.

La mise en œuvre des principes de gestion intégrée des zones côtières ne pourra être pleinement réalisé qu’avec le soutien des instruments communautaires de la politique de cohésion. L’application de la Recommandation sur
l’ICZM prévoit que la stratégie européenne doit se décliner en stratégies nationales qui doivent être prêtes début 2006 puis faire l’objet d’une évaluation par les services de la Commission.

La position des Régions maritimes sur ce point est qu’un instrument de nature contraignante devrait être envisagé au niveau communautaire qui prenne en considération les stratégies nationales adoptées. En l’absence d’un tel instrument contraignant l’application de ces principes risque de rester lettre morte dans la mesure où cela sera laissé au bon vouloir des États bénéficiaires des fonds.

Or le maintien des avantages comparatifs et la valorisation des atouts des zones côtières dépend pour une large part du modèle de développement qui sera retenu. Les effets négatifs de l’approche sectorielle sont aujourd’hui démontrés et se traduisent, ainsi que le rapport de l’AEE l’a montré, par une perte de biodiversité, un renforcement des risques naturels et un appauvrissement en terme d’activités dans ces territoires. C’est également avec ce type d’approche que les problématiques liées aux risques naturels et à l’adaptation aux conséquences du changement climatique pourront le mieux être prises en compte.

Les Régions maritimes plaident donc pour la substitution d’un modèle de développement basé sur les principes de l’approche intégrée en lieu et place du modèle actuel basé sur l’approche sectorielle.

La situation actuelle au sein des services de la Commission en matière de gestion intégrée des zones côtières se caractérise par une attribution de cette dimension à la seule DG de l’Environnement. Les autres DGs concernées, notamment la DG REGIO, n’acceptent comme espaces différents que les Régions Ultra Périphériques, les zones à basse densité de population et les zones à handicaps naturels permanents comme les zones de montagne et les îles. Les zones côtières ne rentrent pas aujourd’hui dans le champ de préoccupation de la politique de cohésion.

Cette situation empêche de facto une généralisation des principes de l’approche intégrée.

Pour y remédier les Régions maritimes proposent de faire évoluer les relations de travail entre les DGs concernées et suggèrent que soit mise en place, en interne à la Commission, une task force « zone côtière » réunissant les DGs ENV, REGIO, FISH, TREN et RECHERCHE. Le mandat de cette task force serait de parvenir à un traitement spécifique des zones côtières en s’appuyant sur les orientations du Livre vert et sur les principes de gestion intégrée.

3.2 Renforcement du partenariat et de la représentativité des Régions

En matière maritime, la gouvernance actuelle dans le domaine du développement durable se caractérise par un éclatement des structures de dialogue. Ces aspects sont traités le plus souvent par des organes représentant des politiques sectorielles telles que l’OMI et ses antennes régionales (REMPEC en Méditerranée) en ce qui concerne le transport maritime.

La coopération passe pour l’essentiel par des structures regroupant les organisations régionales (Conventions régionales) et internationales d’une part, les États riverains des bassins maritimes d’autre part. Les Régions estiment que cette organisation ne tient pas suffisamment compte de la répartition des compétences et surtout de l’exercice des responsabilités sur le terrain.

Il serait donc utile d’entreprendre une réflexion approfondie sur les structures de dialogue et de coopération en matière de gouvernance maritime. Ainsi que cela a été mentionné ci-dessus, l’exemple des Conseils Consultatifs Régionaux mis en place dans le cadre de la Politique Commune de la Pêche constituent un exemple dont il serait possible de s’inspirer.

3.3. Identifier les priorités des programmes de coopération

Les instruments financiers disponibles pour les actions de coopération - INTERREG et, pour la prochaine période de programmation l’Objectif 3 et l’instrument de voisinage - constituent pour les Régions un puissant incitatif à concevoir des projets allant dans le sens d’une application renforcée des orientations politiques. L’expérience des programmes précédents (Interreg 1 ; II et III en particulier) montre qu’après une période d’apprentissage, les autorités régionales sont prêtes à utiliser ces instruments de façon plus cohérente que dans le passé.

Les difficultés rencontrées jusqu’alors dans la mise en œuvre de ces instruments proviennent de l’approche retenue qui favorisait trop une démarche « bottom up » sans que cette démarche ne soit suffisamment encadrée.
par des orientations communautaires autres que des axes généraux de coopération. Cela est à l’origine de double emploi, de chevauchement des initiatives, de risques d’incompatibilité entre des systèmes, des méthodes ou des indicateurs développés sans coordination dans les différents espaces de coopération ou parfois même au sein d’un même espace.

Cela est aussi à l’origine du faible intérêt porté par ces programmes à la dimension maritime si l’on en juge par le nombre relativement faible de projets lancés dans ce domaine, à l’exception notable des questions de sécurité maritime.

La période de programmation qui s’ouvre (2007-2013) devrait se caractériser par une montée en puissance des priorités maritimes dans les espaces concernés. Il importe donc de préparer au mieux la mise en œuvre de ces instruments de coopération en identifiant la valeur ajoutée de la coopération transfrontalière, transnationale et interrégionale au regard des politiques menées et des orientations qui seront retenues par le Livre vert.

Pour cela il est proposé d’identifier de façon précise les projets structurants qui devraient être retenus au titre de la coopération ; il s’agit de fournir aux opérateurs de terrain les critères, les partenariats et les thématiques qui apportent une véritable valeur ajoutée à leur action de coopération :

- Les critères seront à retenir de façon à assurer la cohérence et la compatibilité avec l’action des organismes existants en charge de certains aspects de la politique maritime ou dont l’action inclut une dimension maritime ;
- Les partenariats à monter doivent permettre aux différents acteurs concernés de travailler ensemble ;
- Les thématiques prioritaires doivent quand à elles s’appuyer sur une analyse préalable des compétences dans le domaine maritime et venir en appui de l’action menée par les autres niveaux de gouvernance.

3.4. Renforcer la capacité d’action des Régions

Il s’agit de préparer les régions maritimes à prendre la place qu’elles revendiquent et à exercer les responsabilités que leur confèrent leurs compétences. Un tel renforcement implique les actions suivantes :

**Se doter des outils appropriés en termes de méthode de travail et d’informations.**

Deux directions sont à suivre pour y parvenir :

i) Qu’une réflexion s’engage sur les moyens de mutualiser l’expérience acquise dans le domaine maritime en général et dans un modèle de développement intégré (ICZM) en particulier ; à cette fin des priorités d’actions pourraient être suggérées dans le cadre du volet interrégional du futur Objectif 3. Il importe en effet que ce type d’instrument puisse venir pleinement en appui des orientations qui seront retenues en matière de dimension maritime de l’Union ;

ii) Qu’une réflexion s’engage sur les modalités relatives aux relations de travail entre les différents partenaires impliqués dans le domaine maritime, qu’il s’agisse des partenaires techniques comme l’AEE, administratifs comme les différentes DGs ou institutionnels comme les différents niveaux de gouvernement : international, national, régional et local. Les régions maritimes estiment que l’adoption de perspectives nouvelles dans le domaine maritime doivent s’accompagner d’une évolution dans les modalités de coopération interne à la Commission et en terme de coopération avec les autres partenaires.

En ce qui concerne plus spécifiquement les informations sur l’état des côtes européennes, les besoins d’harmonisation sont tels qu’il pourrait s’avérer nécessaire de lancer une action particulière dans le domaine maritime en s’appuyant sur l’Agence Européenne de l’Environnement.

Les informations aujourd’hui disponibles visent pour l’essentiel à fournir un appui informatif sur l’état de certains indicateurs à l’échelle européenne. Les efforts engagés par l’AEE concernant les liens entre indicateurs d’état et mise en œuvre des politiques de développement doivent être approfondis ; il importe notamment :

- D’entreprendre des travaux particuliers afin de tenir compte des spécificités de chaque bassin maritime ;

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- De lancer une réflexion sur la nature des informations à fournir par les autorités nationales et régionales dans le cadre des programmes cofinancés par la politique de cohésion pour les régions maritimes;

- De renforcer la mise à disposition des informations auprès des autorités régionales dans le cadre d’une action globale comprenant un volet formation, un volet méthode de traitement et un volet harmonisation des données.

**Echanger les expériences et les bonnes pratiques en matière de développement durable des zones littorales**

Les régions maritimes rappellent que de très nombreux résultats existent aujourd’hui dans le domaine de la protection/gestion des problèmes littoraux et marins. Ces résultats, qui sont le fruit de l’application de programmes communautaires tels que LIFE Environnement et LIFE Nature n’ont pas été efficacement valorisés ni diffusés ce qui limite en pratique la valeur ajoutée de ces programmes.

Une action d’envergure coordonnée entre les différents services impliqués de la Commission pourrait s’avérer utile pour les responsables des régions et les autorités locales.

Dans le domaine de la programmation et de la stratégie de développement, les Agenda 21 prévus lors du Sommet de la Terre de 1992 de Rio de Janeiro ont été principalement mis en œuvre au niveau urbain, rares sont encore les régions à disposer de tels outils de stratégie. Au sein même des services concernés de la Commission il est encore impossible, au-delà des simples déclarations d’intention, d’identifier les programmes qui sont conçus sur la base des principes de développement durable.

Un renforcement de l’implication du niveau régional dans ce domaine apparaît donc nécessaire. Pour cela les régions maritimes proposent que soit lancé une action spécifique sous une forme à définir (Observatoire, fédération de réseaux existants, orientation des travaux de l’ORATE….. ) afin que l’expérience acquise soit partagée.

**3.5. Engager les Régions maritimes dans la mondialisation.**


Parmi les priorités de travail de ce réseau figure la dimension maritime qui constitue un fil directeur commun à toutes ces régions et qui sera développé lors de la prochaine Assemblée Générale de ce réseau qui se tiendra en Bretagne (FR) au printemps 2008.

La mondialisation des échanges est une réalité qui s’impose à tous. Les régions se sont engagées dans cette voie en suivant la route du développement durable et en commençant à construire des relations avec les organisations spécialisées des Nations Unies, notamment avec la CSD (Commission for Sustainable Development). Elles attendent de la Commission un soutien institutionnel à leur engagement.
5. Conclusions of the Governance Thematic Group

The Role of Regions in the EU Maritime Policy

COORDINATION REGION:
Toscana (IT)

OTHER PARTNERS:
Aquitaine (FR)
Lazio (IT)
Lisboa e Vale do Tejo (PT)
North Aegean Region (GR)
Provence-Alpes-Côte d'Azur (FR)

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The use of this material must be referenced.
1. INTRODUCTION

Governance under the Project *Seas of Europe* aims at contributing for the development of a more coherent, consistent and efficient policy framework for the European Seas. This analysis focuses at policy development and implementation from the infra-State level (i.e. regions) perspective, and its final objective to provide a tool to empower CPMR and its members to participate with policy and political positions within the process of development of the EU Maritime and Marine Policy, including the draft positions developed by CPMR during the process development of the EU Green Paper in Maritime Policy.

The project main assumption is the major concern of the CPRM members on their ability to effectively participate in the process of decision-making, a matter which is deeply rooted in their governance systems - and to improve their ability to influence the EU level of policy-making. Being true that the CPRM's members are part of a heterogeneous variety of governmental systems, and consequently, their policy making and implementation strategies vary widely, it is of fundamental importance to picture both the sub-national and national levels of governance, together with the EU level, in order to identify the opportunities, weaknesses, and strengths of the governance system (European, national and sub-national levels) regarding the development of an overarching, and integrative maritime policy framework for the *Seas of Europe*.

The governance approach for a governance system must go beyond maritime activities, and consider the oceans as a whole, including, the marine environment and sea-land interface issues. To encompass this holistic perspective, the governance approach is reflected on the analysis of the following distinct aspects of ocean governance and policy:

- The international context. Ocean governance and policy are deeply shaped by the international sphere. Therefore, it is of fundamental importance to understand such instruments from both legal and policy points of view, in order to identify the major policy drivers and the legitimacy of regions in ocean management, as well as to identify existing opportunities of participation for the subnational levels.
- Overseas experiences. Through the analysis of some of the most mature cases of national ocean policies (they are all overseas experiences), trends in management, and lessons will be extracted regarding the potential role of regions in Europe, as well as challenges, failures and successes related to policy the implementation and formulation processes, and best practices, in order to highlight opportunities and threats in the role of the subnational level.
- The role of regions: The analysis of the questionnaires on ocean governance sent out to the project partners regarding their role and process of participation in ocean management will provide some of the actual roles of regions across Europe, mechanisms for participation in oceans policy;
- Major European Community policy frameworks and the participation process of regions will be highlighted in order to foresee the major challenges regions will be facing.
- Finally the identification of expectations of regions regarding their role in the EU Maritime Policy as well as recommendations for a possible EU governance framework are presented.
- Overall conclusions and recommendations, including recommendations for an overall governance system for the European Seas.
Governance and ocean governance are relatively new concepts. In order to ensure a common language amongst the project partners, the present section defines the concepts related to ocean governance.

**Governance** is an umbrella concept built on a set of aspects, such as the governmental and public administration system interacting with the civil society and non-governmental organisations (NGOs), as well as the existence of several different processes regarding each actor. Therefore, Governance encompasses processes, and formal and informal institutions.

**Good government** implies a high level of organisational effectiveness in relation to policy-formulation and the policies actually pursued, especially in the conduct of economic policy and its contribution to growth, stability and popular welfare (John Healey and Mark Robinson [http://www.gdrc.org/u-gov/governance-understand.html]). Good government also implies the implementation of principles such as:

- Accountability;
- Transparency;
- Participation;
- Openness;
- The rule of law

However, good governance does not necessarily presuppose a value judgement, for example, a healthy respect for civil and political liberties, although good government tends to be a prerequisite for political legitimacy ([http://www.gdrc.org/u-gov/governance-understand.html](http://www.gdrc.org/u-gov/governance-understand.html)).

Governance transcends the collective meaning of related concepts like the state, government, regime and good government ([http://www.gdrc.org/u-gov/governance-understand.html](http://www.gdrc.org/u-gov/governance-understand.html)).

In the EU policy development, good governance and the rule of law are considered decisive in strategies to reduce poverty. EU Development Policy programmes work to strengthen partner countries’ institutional capacities, including the capacity of the government to effectively manage public resources, to implement sound policies and to control corruption ([http://www.euractiv.com/Article?tcmuri=tcm:29-117500-16&type=LinksDossier](http://www.euractiv.com/Article?tcmuri=tcm:29-117500-16&type=LinksDossier)).

For the project Seas of Europe, the definition of governance adopted encompasses the above mentioned aspects:

- Governance involves the interaction between the formal institutions and those in civil society;
- Governance refers to a process whereby elements in society wield power, authority and influence and enact policies and decisions concerning public life and social upliftment.

**Ocean governance** is also an umbrella term, which encompasses the different kinds of marine waters: seas, oceans and coastal areas (including transitional waters). The concept of ocean governance reflects both concepts discussed previously:

- Governance, and
- Good governance

Therefore, Ocean governance refers to the architecture of make-up of the regime use to govern behaviour, public and private, relative to an ocean (or seas) area, and the resources and activities contained therein (Cicin-Saint & Kneckt, 1998).

In the past decades, the conflict of users over the resources and services provided by the coastal, seas and oceans space has been intensified by a crescent demand and degradation of the marine environment. These circumstances have raised awareness for ocean management issues, and numerous sectoral policies, aiming at solving such problems have been widely developed, where:
• **Ocean management**, can be defined as the process by which specific resources or areas are controlled to achieve desired objectives (Cicin-Saint & Kneckt, 1998);

• **Policy** refers to the purposive course of action, followed by government or non-governmental actors, in response so set of perceived problems (Miles, 1992).

However, the increase of environmental problems and awareness, the emergence of new uses and problems, numerous transboundary problems (e.g. migratory species and pollution), as well as deeper scientific knowledge, as revealed how complex are the interrelationships between the marine environment and the set of human uses. The international community and nations have concluded that the marine space ought to be managed in an integrated way, as well as encompassing whole marine ecosystems. These have led to two new important concepts for ocean governance:

• **National Ocean Policies** (NOPs), which can be defined as policy frameworks to manage uses and resources within jurisdictional waters, as well as compliance with international commitments, aiming at sustainable (and equitable) development of oceans (Noronha, 2004). These policies tend to have an intersectoral or cross-sectoral approach (Cicin-Sain & Knecht, 1998), for the management of the different uses and resources of oceans (Noronha, 2004);

• **Marine ecosystem** which is a relatively large marine area, which encompasses a geographically distinct set of marine communities, while sharing common environmental conditions (ecosystem), and interact ecologically in ways that are critical for their long-term subsistence. This definition is based on scientific knowledge (WWF, s/d).

Nowadays, ocean management aims at integration of sectoral policies with the protection and conservation of the marine environment. Additionally, the ocean has no physical borders: oceans’ goods, services and problems flow, irrespectively of political boundaries. Consequently, problems are often are shared by more than one region or nation. Thus the need for management of wider areas with common features: marine ecosystems.

The above set of definitions reflects the present trends for ocean governance and management. The development and implementation of an overarching ocean policy is a complex process, as it requires:

• Special measures for implementation, such as institutional arrangements, new institutions and collaborative efforts and well as conflict resolution measures;

• Integration of international commitments;

• The accommodation and integration of different policies and often conflicting interests (intersectoral integration);

• Problems require to be managed to the scale / unit of their effects: it requires vertical integration, from the community level, to the global sphere of governance;

• Integration of the public in policy making;

• Integration of environmental and development concerns.

• Integration of science.

2. INTERNATIONAL CONTEXT OF OCEAN GOVERNANCE

2.1. Introduction

International law incorporates a set of generalized practices and norms by states, thus many practices formulated in multilateral treaties have been practiced for many years by states and citizens even before becoming law. Although international law is in its principle limited in its application to States and other entities of recognized international personality, it has immediate effect on citizens.

When adopted by nations, international law becomes the **law of the land**, which is applied and enforced by national laws (Blaksley, 2001). International law affects citizens livelihoods in a subtle way. Often citizens do not even realize that they are applying international norms, as they simply perceive that they are abiding by national laws. However, as national laws implement and enforce international norms, their daily lives are often affected by the international system. For the common citizen international law usually becomes perceivable when there is a controversy or breach on the implementation of some
international instrument, either between other parties of the treaty, of because of their member state. It is therefore mistakenly perceived that international law does not work.

The present chapter presents a brief overview of the international context on ocean governance through the identification of its major policy drivers. This chapter will stress the relation of these instruments to the governance of the seas of Europe, namely its relation to the national and subnational levels of governance.

Public international law of the sea, i.e., the rules and principles that bind states in their international relations concerning maritime matters, does not discuss, except incidentally, the rules of private maritime law, which concern matters such as marine insurance, carriage of goods by sea and marine liens (Churchill & Lowe, 1999). It is therefore concerned with the laws of peace, and not with matters related to war and therefore issues concerning maritime neutrality and prize law (Churchill & Lowe, 1999).

UNCLOS constitutes the backbone for oceans governance and management, laying out the major principles for management and how states relate. Along its 320 articles it touches almost all uses of oceans. Through other international instruments related to its goals, its principles and norms are further developed and implemented, in particular regarding the management and exploitation of natural resources (with exception of the seabed) and environmental management. Finally, national law produced by States is also a source of law for the management of oceans.

Oceans governance is therefore affected by a long and complex series of instruments, not always in a coherent and coordinated manner, from which environmental pollution; resource management (in particular fisheries) and navigation constitute the major policy drivers (Table 1).

The treaties identified in Table 1 are a small subset of numerous multilateral agreements drafted in recent decades at the global level. The table indicates the year that a country has either signed or ratified a particular agreement. By signing a treaty, a state recognizes the authentic text, intends to complete the procedures for becoming legally bound by it, and is committed not to act against the treaty's objectives before ratification. Ratification (or its equivalents of acceptance, approval, or accession) binds the state to observe the treaty. Depending on a country's system of governance, signing the treaty may be simply an executive decision while ratification requires legislative approval. Treaties vary both in international levels of participation and the extent to which they are legally binding. To a large extent, compliance lies with the individual countries and depends on informed self-interest, peer pressure from other countries, and public opinion. Effectiveness of any international convention or treaty is determined not only by the number of country ratifications, but also by the rigor of its implementation, monitoring, and enforcement (Earth Trends, 2005).
# Table I – Major multilateral treaties relevant to CPMR members States

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<tr>
<th>Treaty Description</th>
<th>Year of Agreement</th>
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Legend: P= Party Ratified; S= Signatory; * Legend: P= Party Ratified; S= Signatory; Sources: Convention texts at official sites. Sources: Convention texts at their respective Official webpages. Last visited on 17.November.2005
### Table I (Cont.) – Major multilateral treaties relevant to CPMR members States

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Legend: P= Party Ratified; S= Signatory; Sources: Convention texts
In the light of its relationship to the holistic scope of national and regional management of oceans, the most relevant legally binding instruments are:

- UN Law of the Sea
- Convention on Biological Diversity
- UN Framework Convention on Climate Change
- MARPOL Conventions

Additionally, relevant political declarations and plans of action have moved forward the ocean’s agenda. Such is the case of the Agenda 21, emanated from the Earth Summit (1992) and the Johannesburg Plan of Action, (JPoA), emanated from the Word Summit on Sustainable Development (2002). Though they are non-legally binding instruments, they constitute customary fundamental drivers of nowadays ocean policy worldwide, at both international and local levels.

The following sections provide brief overview of the most relevant (or influential) international instruments affecting global ocean policy, in particular UNCLOS.

2.2. Multilateral Treaties

2.2.1. Background on the Law of the Sea

Taken into account the importance of UNCLOS (1982) on ocean’s governance, it is useful to understand its evolution. Until the end of first half of the XXI century, more precisely the end of the WWII, the dominant paradigm governing world’s oceans was the notion of freedom of the seas, pioneered by Hugo Grotious, a Dutch jurist, in 1608. Goritius treatised, Mare Liberum, that because continents of the world were separated by the sea into a number of distinct land areas that could not develop without intercourse with the others, there is a “natural law” to the effect that the oceans were meant to be perpetually open for free trade and communication between nations (Grotious, 1633). Additionally, because it was practically impossible to apportion, divide or occupy the fluid and mobile sea, Grotious argued that the ocean could not be considered property and own as such (Friedheim, 1979).

Coastal nations supported the concept of freedom of the seas, but they also saw the need to control the band of sea immediately adjacent to their shorelines, otherwise armed ships could sail close to a nation’s shoreline and interfere with its security and commerce. Thus, the concept of territorial sea arouse, which breath became the distance cannons from land could target a ship: 3 nm (Churchil & Lowe, 1999). The control over the territorial seas became a customary practice by all nations, where states could exert their police powers, set customs, and control fishing. Simultaneously, it was understood that coastal nations would not interfere with “innocent passage” of foreign vessels in their territorial seas, which indicates the paramount importance for nations of the freedom of the seas principle (nowadays called right of innocent passage). This policy remained stable for over 150 years, and by the WWII, coastal nations possessed only a relatively narrow territorial seas, while firmly supporting the freedom of the seas doctrine.

After the WWII, the “enclosure” movement by coastal states of ocean space adjacent to their coastlines was initiated (Friedheim, 1979). This movement was triggered by U.S., which unilaterally, proclaimed jurisdiction over “the natural resources of the subsoil and of the continental shelf beneath the high seas but contiguous to coasts of the US as pertaining to the US, subject to its jurisdiction and control. The character as high seas of the waters above the continental shelf and the right to their free and unimpeded navigation are in no way thus affected” (U.S. Presidential Proclamation 2667, 28 September 1945). This claim precipitated extended-jurisdiction claims by several nations, some of them extending it towards 200 nm offshore.

These extensive claims led to pressures for an international conference to restore the order, leading to the first Law of the Sea conference, in Geneva 1958. From this conference resulted four Geneva conventions on the Law of the Sea which dealt respectively with the high seas, the territorial sea and contiguous zone, fisheries and the continental shelf. The full agreement of major provisions of some of those conventions, namely the breath of the territorial sea and economic exclusive zone culminated after a long negotiation process in the third conference on the Law of the Sea, in 1982, where the UN Convention on the Law of the Sea, UNCLOS, 1982 was agreed.
UNCLOS, 1982 addresses most ocean issues. It is a package deal, i.e., its parties are not allowed any reservations when joining it.


Described by then United Nations Secretary-General in 1982 as "possibly the most significant legal instrument of this century," the United Nations Convention on the Law of the Sea (UNCLOS) represents the first attempt by the international community to regulate all aspects of ocean resource uses, including navigational rights, territorial sea limits, and protection of the marine environment.

The Convention itself establishes a comprehensive framework for the regulation of all ocean space. It is divided into 17 parts, with 320 articles, and nine annexes, containing provisions governing, *inter alia*, the limits of national jurisdiction over ocean space, access to the seas, navigation, protection and preservation of the marine environment from vessel-source, land-based, and seabed-mining related pollution and from ocean dumping, exploitation of living resources and conservation, scientific research, sea-bed mining and exploitation of other non-living resources the marine environment. UNCLOS also creates several new international institutions and provides binding dispute settlement in most instances.

The major aspect of UNCLOS is the notion that the enjoyment of rights and benefits involves a concurrent undertaking of duties and obligations, so that an overall equitable order is created. The paramount duty of all States Parties is to respect the rights of others, as well as good faith in the fulfillment of obligations, and proscribing the abuse of rights (Art. 300). Some of these duties involve executory acts, such as the duty to give notice of hazards.

UNCLOS establishes the 12 NM territorial seas, and legitimates the 200 NM exclusive economic zones (EEZ), while protecting most navigational freedoms. While UNCLOS regulates the rights and duties of states in the management of oceans along zonal lines, recent international treaties have been concerned with particular uses of the seas, such as pollution, fishing (which was also subject of the 1958 Geneva conference) and navigation. Therefore, the analysis of UNCLOS falls under two broad categories:

- The most relevant maritime zones recognised internationally and respective major applicable rights and duties (spatial regimes),
- Functional linkages to other international instruments and institutions on global issues (pollution, conservation of marine living resources, research and transfer of technology, dispute settlement).

The first six parts of the Convention deal generally with the issues of areas under national jurisdiction. Another paramount aspect is the establishment of the area of sea-bed and ocean floor beyond the limits of national jurisdiction as Common Heritage of Mankind, “the precise limits of which are yet to be determined”. However the convention sets out the guidelines for the determination of such limits. The following box describes the major aspects of the Convention related to the regimes of spatial regulation:

**Box1. Regimes of spatial regulation**

**Territorial seas:** The Convention allows the establishment of a territorial sea of up to 12 nautical miles (NM) in breadth (Article 2), providing various methods for determining baselines and distinguishing from internal waters (Part II, Section 2). Within this zone the coastal State has full jurisdiction and sovereignty over resources.

**Contiguous Zone:** The Convention allows the establishment of a Contiguous zone to the territorial sea which may not extend beyond the 24 nautical miles from which baselines the Territorial sea is measured, for the prevention and enforcement of customs infringement, immigration and sanitary laws and regulations within its territory and territorial sea (Section 4, Article 33)

**Right of innocent passage:** The traditional right of innocent passage through territorial waters is recognised, and what kinds of activities will contravene innocent passage are identified (Part II, Section 3).
**Transit passage:** Transit passage for international navigation waters of States bordering straits, draws more from the concept of necessity than innocent passage derives (Part III).

**Archipelagic waters:** Sovereignty of waters within an island group is recognised, through a set of conditions (Part IV). Archipelagic sea-lanes are also provided.

**Economic Exclusive Zones (EEZ):** Part V is particularly important since it lays out a specific regime for the use and exploitation of marine resources within the EEZ. Coastal States have certain rights in the EEZ for the purpose of economic advantage, most notably rights over fisheries and exploitation of non-living resources, as well as limited jurisdiction to exercise such rights. Concurrently, States must allow land-locked and geographically disadvantaged States access and exploitation of the resources which are not exploited by the coastal State. Furthermore, the traditional freedoms of the seas are to be maintained by the coastal State. The recognition of the rights of others in this zone is however without prejudice to the coastal State. To accommodate the protection of so many interests, all States must undertake to respect and accommodate the rights and legitimate uses of other States in the zone, which framework is laid out by the Convention (Part V). Additionally, this part of the Convention sets out fisheries and living resources management and conservation measures (Art.s 62 and 63), as well as co-operation between States which share living resources (straddling and highly migratory stocks, marine mammals, diadromous stocks) (Art.s 61 to 64). Activities on the seabed and in the subsoil of the EEZ are regulated by the provisions of the continental shelf (Part VI).

**Continental shelf:** Activities on the seabed and in the subsoil of the continental shelf may fall under national jurisdiction beyond the EEZ if the formation of the continental shelf meets certain criteria, which may not extend beyond 350 nautical miles of the baseline of the territorial sea (Part VI, Art. 76). These criteria are provided under the Convention, and its application is supervised by the Commission of experts on the delineation of the edge of the outer edge of the continental margin, i.e., the limit of national jurisdiction (Part VI, Art. 76). The exploitation of the sea-bed and subsoil beyond the 200 nautical miles implies payments and contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond the 200 nautical miles.

**High Seas:** The activities on the surface and in the water column beyond the limits of the EEZ are laid out by the provisions of the high seas, which usually follow international customary law of the high seas, but augmented by provisions regarding pollution and safety regulations, scientific research and conservation and prevention of illicit traffic and drugs.

**Area:** Beyond the jurisdictional national limits of the continental shelf, the Convention sets the regime for the exploitation of the deep sea bed, ocean floor and subsoil – the Area- (Art. 1a and Art. 133) as Common Heritage of the Mankind (Part XI, Art. 136). The administration and exploitation of this zone is regulated by the International Sea-Bed Authority (Part XI), which has major responsibilities on sea-bed mining activities, and its body for the regulation of commercial activities, the Enterprise (Part XI).

Apart from the regimes of spatial regulation, UNCLOS also deals with matters of global concern. The following box displays the issues of global concern addressed by UNCLOS:

**Box 2. Issues of global concern**

- **Protection of the marine environment:** Protection of the marine environment (Part XII) is based in principles of prevention, reduction and pollution control throughout the marine environment (Art.s 194); conservation of the living resources (Art.s 61 to 64, 192, 196), and specific rights and duties of States concerned with the achievement of their ecological and environmental goals (Art. 192, 193, 235). States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment, and they shall be liable in accordance with international law (Art. 235). The allocation of rights and duties varies according to the location and or type of pollution involved, and specific safeguard and enforcement provisions are included. The Convention is intended to be compatible with existing treaties on these issues and to provide a broad framework for the conclusion of future more specific frameworks (Art. 237). Additionally, States are called to co-operate on global and regional basis, as appropriate directly or through international institutions.
for the preservation and protection of the marine environment, taking into account regional features (Art. 197).

- States are called to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from: Land-based sources, which shall endeavour harmonized at the appropriate regional level (Art 207). This objective has been pursued by regional conventions for the protection of the marine environment and the UNEP Global Programme of Action for Land-based Activities;

- Sea-bed activities subject to national jurisdiction (Art. 208);

- Activities in the Area (Art. 209);

- Pollution from dumping (Art. 210);

- Pollution from Vessels (Art. 211). In this respect, the International Maritime Organization (IMO) has been entrusted for the development of standards and best practices for the prevention and reduction of vessel pollution. The Convention includes detailed provisions with due regard flag and port States rights and duties (Section 2, Part XII, Section 7), as well enforcement measures for both flag (Art 217) and the jurisdictional power of the port State (Art 218, 220).

- Additional measures for States entrusted with ice-covered areas (Art 234).

- Research and transfer of technology: The Convention includes provisions with due regard to the right to conduct marine research (Art. 238) as well as general principles of conduct of marine research (Part XIII) and to facilitate the transfer of all kinds of marine technology (Part XIV).

- Settlement of disputes: The Convention provides a real international regime by providing a set of provisions governing the settlement of disputes (Part XV). The Convention obliges for the peaceful settlement of disputes, through a set of methods. States may make a prior determination to which fora they would have to abide, and for this purpose the Convention allows to choose between the International Court of Justice, the International Tribunal for the Law of the Sea, or arbitration. In certain cases where the convention does not call for a binding method of settlement, the parties can submit their dispute to conciliation.

Additionally two other agreements were developed regarding the implementation of UNCLOS provisions:

- The Agreement relating to the implementation of Part XI of UNCLOS, 1982 to address certain difficulties with the seabed mining provisions contained in Part XI of UNCLOS (exploitation of the Area), on 28 of July of 1994.


UNCLOS lays out the rights and duties of the use of ocean space and its natural resources by States, as well as how States shall relate with other States and international and regional organisations. It lays out the foundations for the development of further frameworks related to oceans policies. And this is the reason for being recognised as the constitution of oceans. The following sections will briefly discuss the major legally binding and soft law instruments which relate furthering UNCLOS objectives for the management and preservation of marine resources and its environment.
2.2.3. Convention on the Biological Diversity (CBD)

The United Nations Convention on Biological Diversity is one of the key agreements adopted at the 1992 Earth Summit in Rio de Janeiro. The Convention establishes three main goals: conservation of biodiversity, sustainable use of the biodiversity components, and "fair and equitable sharing of the benefits arising out of the utilization of genetic resources." The treaty defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Parties to the Biodiversity Treaty "affirm sovereign rights over the biological resources found within their countries, while accepting responsibility for conserving biological diversity and using biological resources in a sustainable manner" (IUCN, 1999).

The Jakarta Mandate is a program of action for implementing the CBD with respect to conservation and sustainable use of marine and coastal biodiversity. The Jakarta Mandate was adopted in 1995 and a formal program of work was later adopted in 1998, focusing on integrated marine and coastal area management, the sustainable use of living resources, protected areas, mariculture and alien species.

The Biosafety Protocol was adopted in January 2000 as a subsidiary agreement to the CBD, the Cartagena Protocol on Biosafety. It allows governments to signal whether or not they are willing to accept imports of agricultural commodities that include Living Modified Organisms (LMOs). Living Modified Organisms (often referred as genetically modified organisms, GMOs) are becoming part of an increasing number of products, including foods and food additives, beverages, drugs, adhesives, and fuels. In addition, the treaty deals with access to and sharing of the benefits from commercial use of genetic material, such as pharmaceutical products (http://www.biodiv.org/doc/publications/guide.asp).

The convention is legally binding; countries that join it are obliged to implement its provisions, such as reporting on what has been done to implement the accord and the effectiveness of these activities. The national reports, particularly when seen together, are one of the key tools for tracking progress in meeting the Convention's objectives, and are public in nature (http://www.biodiv.org/doc/publications/guide.asp).

2.2.4. UNFCCC

The United Nations Framework Convention on Climate Change (UNFCCC) is the centre piece of global efforts to fight climate change. Adopted in 1992 at the Rio Earth Summit. Its ultimate objective is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." (Article 2, UNFCC, 1992 at http://unfccc.int/2860.php)

The UNFCCC secretariat supports all institutions involved in the climate change process, particularly the Conference of Parties (COP), the subsidiary bodies and their Bureau.

The Kyoto Protocol was established in 1997 by the third session of the COP to the UNFCCC. With ratification, developed countries commit themselves to reducing their collective emissions of six greenhouse gases (GHGs) by at least 5 percent from 1990 levels in the commitment period of 2008-2012. Compared to emissions levels that would be expected by 2010 without emissions control measures, the Protocol target represents a 30 percent cut. Both developed and developing countries agree to limit emissions and promote adaptation to future climate change impacts, submit information on their national climate change program and inventories, promote technology transfer, cooperate on scientific and public research, and promote public awareness and education. The Kyoto Protocol necessitated ratification by 55 Parties to the Convention, including Annex I Parties accounting for 55 percent of that group’s carbon dioxide emissions in 1990, before it could enter into force. This occurred on February 16th, 2005, with ratification by 152 Parties, summing an emission percentage of 61.6 percent by Annex I States (http://unfccc.int/essential_background/kyoto_protocol/items/2830.php).

Recalling also the provisions of General Assembly resolution 44/206 of 22 December 1989 on the possible adverse effects of sea-level rise on islands and coastal areas, particularly low-lying coastal areas, the UNFCCC refers to adaptation to climate change related to the effects on coastal areas (coastal zone
management taking into account the effects of sea-level rise and increased occurrence of extreme meteorological effects) in several of its articles:

Article 4.1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

All Parties shall “Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.” (Article 4.1(e));

All Parties shall “Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change.” (Article 4.1(f));

http://unfccc.int/essential_background/convention/background/items/1349.php

There are currently ten agenda items that address vulnerability and adaptation in the context of climate change negotiations. For example, adaptation is addressed under topics such as non-Annex I national communications, methodologies, technology transfer, education, training and public awareness (Article 6), and research and systematic observation. In the future, adaptation may be an important element of work under the Kyoto Protocol, for example, with financing from the clean development mechanism (CDM) and the provision of guidance to the GEF on the operation of the Adaptation Fund (http://unfccc.int/adaptation/items/2973.php)

2.2.5. International Maritime Organization (IMO) Convention

The IMO Convention was adopted by the United Nations Maritime Conference in Geneva on 6 March 1948. The original name of "Inter-Governmental Maritime Consultative Organization" was changed by IMO Assembly resolutions (A.358(IX) and A.371(X), adopted in 1975 and 1977 respectively). IMO is primarily concerned with the safety of shipping and the prevention of marine pollution, but the Organization has also introduced regulations covering liability and compensation for damage, such as pollution, caused by ships. IMO object is summarized by Article 1(a) of the Convention:

"to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships".

IMO is also empowered to deal with administrative and legal matters related to these purposes. IMO is explicitly mentioned in only one of the articles of UNCLOS (article 2 of Annex VIII), and several provisions in that convention refer to the "competent international organization" in connection with the adoption of international shipping rules and standards in matters concerning maritime safety, efficiency of navigation and the prevention and control of marine pollution from vessels and by dumping. In such cases the expression "competent international organization", when used in the singular in UNCLOS, applies exclusively to IMO, bearing in mind its global mandate as a specialized agency within the United Nations system established by the Convention on the International Maritime Organization (the "IMO Convention").

Several provisions of UNCLOS require States to "take account of", "conform to", "give effect to" or "implement" the relevant international rules and standards developed by or through the "competent international organization" (i.e. IMO). The latter are variously referred to as "applicable international rules and standards", "internationally agreed rules, standards, and recommended practices and procedures", "generally accepted international rules and standards", "generally accepted international regulations", "applicable international instruments" or "generally accepted international regulations, procedures and practices". Such provisions clearly establish an obligation on UNCLOS States Parties to
apply IMO rules and standards. The specific form of such application relies to a great extent on the interpretation given by Parties to UNCLOS to the expressions "take account of", "conform to", "give effect to" or "implement" in relation to IMO provisions. A distinction should be also made between the two main types of IMO instruments that contain such provisions: on the one hand, the recommendations adopted by the IMO Assembly, the IMO Maritime Safety Committee (MSC) and the IMO Marine Environment Protection Committee (MEPC), and on the other the rules and standards contained in IMO treaties.

2.2.6. MARPOL

The MARPOL convention is the main international convention concerned with the prevention of pollution from accidental and operational causes in ships. The original MARPOL convention, the International Convention for the Prevention of Pollution from Ships, was adopted by the International Conference on Marine Pollution convened by the International Maritime Organization in 1973. This convention was subsequently modified by the Protocol of 1978, which was adopted by the International Conference on Tanker Safety and Pollution Prevention. The Convention, as modified by the 1978 protocol, is commonly known as MARPOL 73/78.

The Convention is implemented through six technical annexes that regulate various pollutants. States Parties must accept Annexes I and II, but the other Annexes are voluntary:

- Annex I Regulations for the Prevention of Pollution by Oil
- Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk
- Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form
- Annex IV Prevention of Pollution by Sewage from Ships (entry into force date 27 September 2003)
- Annex V Prevention of Pollution by Garbage from Ships
- Annex VI Prevention of Air Pollution from Ships

2.2.7. The International Convention on Oil Pollution Preparedness, Response, and Cooperation (the OPRC Convention)

The International Convention on Oil Pollution Preparedness, Response, and Cooperation (the OPRC Convention) aims to assist governments in combating major oil pollution incidents. The Convention calls for the establishment of oil spill emergency plans to be developed for all ships, ports, and oil handling facilities. The Convention also established a framework for international cooperation in responding to pollution emergencies in order that resources are mobilized as quickly as possible; this includes a requirement for Parties to the convention to provide assistance to others in the event of a pollution emergency. A Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (HNS Protocol) provides similar guidelines for HNS marine spills.

The OPRC Convention entered into force on May 13, 1995 and included 73 parties by August 2003. The HNS Protocol was adopted in March of 2000 and has not yet entered into force.

2.3. Regional Agreements

2.3.1. Introduction

Regional agreements reflect the need of nations – at a geographical scale - to cooperate towards achieving certain goals, allowing developing economy of scales through collaborative work and sharing knowledge, means and often methodologies to solve transboundary issues. Needless to say, regional conventions abide the principles of international law in general, as well as issue related multilateral agreements.

The nature of the subject of cooperation of a regional agreement can be quite diverse: as long as a group of nations have a common objective and their own actions can influence others, such issue is transboundary one, and thus it can become a subject of a regional agreement. Such is the case of environmental issues as well as natural resource management. Other kinds of issues are subject to regional conventions, such economic organisations, aiming at providing common political procedures or frameworks.
Regional conventions also have an important political value. Whilst reflecting international cooperation and understanding between groups of contracting parties, they provide a stronger, more visible, and coherent position while negotiating in other forums.

Taking into account geographical features, States co-operate on global and regional basis, directly or through international institutions, for the preservation and protection of the marine environment. These regional conventions pursue UNCLOS’ objectives for the protection and conservation of the marine environment (UNCLOS, 1982, Part XIII), where States are called to co-operate on global and regional basis, as appropriate directly or through international institutions for the preservation and protection of the marine environment, taking into account regional features (Articles 197). The regional agreements are based in principles of prevention, reduction and pollution control throughout the marine environment; conservation of the living resources (UNCLOS, 1982, Articles 61 to 64, 192, 196), and specific rights and duties of States concerned with the achievement of their ecological and environmental goals (UNCLOS, 1982, Articles 192, 193, 235). The allocation of rights and duties varies according to the location and or type of pollution involved, and specific safeguard and enforcement provisions are included.

Regional agreements further develop and implement objectives of international conventions, and also add new or more stringent ones, according to geographical specificities. These agreements provide a platform to address setup common overall goals and frameworks, and may produce economy of scales and synergies through collaborative work, sharing science, technology and information, and often methodologies or common procedures. These regions do not necessarily overlap to marine ecosystems. They can also apply to a set of countries, or organisations, which have agreed in common rules to manage a particular area.

The following table displays some of the most relevant regional agreements for the European maritime waters.
Table II - Ratification status of major regional agreements by EU member States and EU

<table>
<thead>
<tr>
<th>Year of Agreement</th>
<th>Year of Entry into Force</th>
<th>Austria</th>
<th>Belgium</th>
<th>Cyprus</th>
<th>Czech Republic</th>
<th>Denmark</th>
<th>Estonia</th>
<th>Finland</th>
<th>France</th>
<th>Germany</th>
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<th>Malta</th>
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<th>Norway*</th>
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<th>Portugal</th>
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<th>United Kingdom</th>
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<tbody>
<tr>
<td>Convention on the Protection of the Black Sea against Pollution</td>
<td>1992</td>
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<td>Convention on multilateral cooperation in North-East Atlantic fisheries</td>
<td>1980</td>
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<tr>
<td>General Fisheries Commission for the Eastern Central Atlantic</td>
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</table>

Legend: P= Party Ratified; S= Signatory; * Legend: P= Party Ratified; S= Signatory; * Present name of the conventions. Both conventions were amended and renamed to new conventions; for details see details in the text. Sources: Convention texts at official sites. Sources: Convention texts at their respective Official webpages. Last visited on 17.November.2005
The agreements above mentioned (Table II regional) fall under three major categories:

1- **Protection of the marine environment.** The regional conventions for the protection of the marine environment represent the most holistic mechanisms for the management of the sea, as they deal with both marine conservation, and the impacts of human activities in the marine environment, in particular from pollution (except for fisheries and shipping, which are dealt by the competent bodies). Taking into account the importance of these conventions, they will be analysed in a separate section.

2- **Fisheries management.** There are several regional fisheries agreements. Some focus on maritime units for fisheries management as a whole, and some others focusing of the geographical area of distribution of specific species (e.g. tuna and salmon). The ones presented relate specifically to the EU maritime waters and its units of management.

3- **Shipping and maritime security**, deeply related to marine environmental management through pollution issues. These regional agreements are dealt under the specific section regarding the chapter of maritime transportation and inter-modality of the *Seas of Europe* Project and briefly referred in the EU policy frameworks.

Due to project constraints, this report solely focuses on the “proper European waters”, i.e., waters surrounding European continent. Thus, European outermost maritime regions outside the European continent will not be subject of analysis.

The analysis of regional agreements will focus on identifying the linkages of these instruments with policy development and implementation at national and regional level, as well as the participatory processes will be identified, in particular the ones which may enable the regions to participate. The analysis of the international context of oceans governance aims at identifying:

- What is the participation of the states, regions and cities
- The coherency between these instruments
- Effectiveness of these instruments
- Opportunities for better participation, from the perspective of the EU principle of subsidiarity

In order to answer to the following questions:

- What is the participation of the states, regions and cities?
- Main weaknesses that constraints the governance and how to fill them?

**2.3.2. Regional conventions for the protection of the marine environment**

Unlike global conventions (or multilateral treaties) regional conventions have a geographic scope, to address the needs of particular regions as perceived by the governments concerned. A wide range of inter-linked issues is addressed, ranging from chemical wastes and coastal development to the conservation of marine animals and ecosystems. This also makes them valuable for the regional implementation of multilateral environmental agreements and other relevant mandates. (UNEP, 2004. [http://www.unep.org/regionalseas/](http://www.unep.org/regionalseas/))

Regional Seas Conventions are a family of conventions for the protection and sustainable development of the marine environment. Altogether there are 18 regional seas conventions, and more than 140 countries participate in at least one Regional Seas Convention. Geographically, the majority of the EU European seas are encompassed by:

- Barcelona Convention (Mediterranean Sea)
- Helsinki Convention (Baltic Sea)
- OSPAR Convention (Northeast Atlantic)

With the accession of Bulgaria and Romania the European seas will also extend to the Black Sea, i.e., to the **Bucharest Convention**.
The marine areas of the European regional seas conventions cover EU and non-EU member States, thus these conventions cover marine areas beyond the EU waters, and imply relations with non-EU member States. The following map displays the geographical coverage of regional seas conventions:

Map 1 – Regional seas conventions geographical areas. Source: UNEP, 2006. (http://www.unep.org/regionalseas/)

The above mentioned conventions fall under two categories of Regional Seas Conventions:

- Independent regional seas conventions, such as Helsinki and OSPAR, mobilised by a group of countries. These conventions have a secretariat and a set of subsidiary bodies which varies with the convention;
- Regional Seas Programme from UNEP, such as Barcelona and Bucharest conventions. The UNEP Regional Seas Programme aims at promoting the development of regional seas conventions, in order for the nations bordering such regional sea formally commit and support such action plans and further its sustainable conservation and management. Therefore, the UNEP Regional Seas Programme is an alliance between Regional Seas Conventions and Action Plans. Thirteen Conventions and Action Plans have been established under UNEP. UNEP act as the coordinator/secretariat for such conventions and respective action plans, which is outlined in the following box:

Box 3. UNEP Regional Seas Programme Major Features

<table>
<thead>
<tr>
<th>The Regional Seas Programme of the UN Environment Programme (UNEP) was established in 1974 to tie coastal nations together in a common commitment to mitigate and prevent degradation of the world's coastal areas, inshore waters, and open oceans. Each programme is tailored to the specific needs of its coastal states, but is made of similar components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Action Plan for co-operation on the management, protection, rehabilitation, development, monitoring, and research of coastal and marine resources;</td>
</tr>
<tr>
<td>• Intergovernmental agreement of a framework convention embodying general principles and obligations (although in some instances there are no legally binding agreements);</td>
</tr>
<tr>
<td>• Detailed protocols dealing with particular environmental problems, such as oil spills, dumping, emergency co-operation, protected areas, and land-based activities.</td>
</tr>
</tbody>
</table>

Funds for these activities come initially from UNEP and then from trust funds set up by the governments involved. This programme is open to coastal states in the respective regions. In some cases, upon invitation, open to other states and intergovernmental integration organizations. Although the conventions are presented under the umbrella of the UNEP Regional Seas Programme, they are independent separate juridical entities. (UNEP, 2004. http://www.unep.org/regionalseas/)
The programme is under the overall co-ordination of the UNEP Division of Environmental Policy Implementation, but working with specialized agencies and co-operating intergovernmental organizations and centres dealing either with specific regions covered by the programme or with specific subjects common to most or all of the regions (http://www.unep.ch/seas).

2.3.2.1. Barcelona Convention


The Barcelona Convention aims at promoting individual action, and achieving bilateral and international co-operation (Articles 3.2, 3.4, Article 3) for a co-ordinated and comprehensive approach to "prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area, and to protect and enhance the marine environment in that Area so as to contribute towards its sustainable development".

The Barcelona convention, though juridically independent, is part of the UNEP’s regional seas program (http://www.unep.ch/regionalseas/regions/med/t_barcel.htm). Thus, Contracting Parties of Barcelona Convention “pledge themselves to take appropriate measures to implement the Mediterranean Action Plan, to pursue the protection of the marine environment, and the natural resources of the Mediterranean Sea Area as an integral part of the development process” (Article 4.2).

To protect the marine environment and achieve the sustainable development of the Mediterranean, a set of major principles were adopted:

**Box 4. Principles of the Barcelona Convention.**

- **Precautionary principle** (Article 4.3.a), by virtue of which where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;
- **Polluter pays principle** (Article 4.3.b), by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter, with due regard to the public interest;
- **Environmental impact assessment** for proposed activities that are likely to cause a significant adverse impact on the marine environment and are subject to an authorization by competent national authorities (Article 4.3.c);
- **Cooperate** between and among States in environmental impact assessment procedures related to activities under their jurisdiction or control which are likely to have a significant adverse effect on the marine environment of other States or areas beyond the limits of national jurisdiction, on the basis of notification, exchange of information and consultation (Article 4.2. d);
- **Promote the integrated management of the coastal zones**, taking into account the protection of areas of ecological and landscape interest and the rational use of natural resources;
- **Utilize the best available techniques and the best environmental practices** and promote the application of, **access to and transfer of environmentally sound technology**, including clean production technologies, taking into account the social, economic and technological conditions (Article 4.4.d).

The implementation of the overall objectives of the Barcelona Convention are further developed and regulated through the adoption of a set of protocols and amendments, prescribing agreed measures, procedures and standards. The following box displays The Barcelona Convention Protocols:
Box 5. Protocols of the Barcelona Convention

- Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft (Dumping Protocol) (Article 5), which entered into force on 12 the February 1978. This Protocol has been modified by amendments adopted on 10 June 1995, and renamed as Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea, however, these amendments are not yet into force;

- Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources (LBS Protocol) (Article 8), which entered into force on 17 June 1983. This Protocol has been modified by amendments adopted on 7 March 1996, and renamed as Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, however, these amendments are not yet into force;

- Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity (SPA and Biodiversity Protocol) (Article 10). It entered into force on 12 December March 1999. This protocol reflects the amendments to the replaced protocol, adopted in 1982.

- Protocol Concerning Co-operation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (prevention and emergency Protocol) (Article 6). It entered into force on 17 March 2004. This protocol reflects the amendments to the replaced protocol, adopted in 16 February 1976

- Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Offshore Protocol) (Article 7). Adopted on 14 October 1994, however it’s not yet into force;


The following table displays the parties to Barcelona’s Convention and it’s protocols, as well as their status as of 5 of December of 2005.
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Acceptance of Amendments</td>
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<td>Acceptance of Amendments</td>
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<td>Acceptance of Amendments</td>
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<tr>
<td>Bosnia &amp; Herzegovina</td>
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<td>Lebanon</td>
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<tr>
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<td>Serbia &amp; Montenegro</td>
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<table>
<thead>
<tr>
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<th>In Force</th>
<th>Not In Force</th>
<th>In Force</th>
<th>In Force</th>
<th>Not In Force</th>
<th>In Force</th>
<th>In Force</th>
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<th>In Force</th>
<th>In Force</th>
<th>Not In Force</th>
<th>In Force</th>
<th>In Force</th>
<th>Not In Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parties</td>
<td>22</td>
<td>16</td>
<td>22</td>
<td>15</td>
<td>22</td>
<td>7</td>
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<td>13</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>Signatory</td>
<td>15</td>
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<td>16</td>
<td>22</td>
<td>da</td>
<td>11</td>
<td>17</td>
<td>11</td>
<td>11</td>
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</tr>
</tbody>
</table>

The Barcelona Convention governance system is quite complex taking into account the aspects covered, as well as the extension and the diversity of countries encompassed within the Mediterranean basin. The following Box summarises the governance system of the Barcelona Convention:

**Box 6. Governance system of the Barcelona Convention**

<table>
<thead>
<tr>
<th><strong>Legal scope</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Convention and Protocols are legally binding to parties</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Decision-making bodies and Institutional Arrangements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordination and Secretariat by UNEP – Mediterranean Action Plan Unit (MAPU): Additional functions:</td>
</tr>
<tr>
<td>• Reporting to the Bureau and contracting parties</td>
</tr>
<tr>
<td>• Coordination with international organisations</td>
</tr>
<tr>
<td>• Convene diplomatic meetings;</td>
</tr>
<tr>
<td>• Establish working groups;</td>
</tr>
<tr>
<td>• Assisting, upon request, a Party in the drafting related compliance environmental legislation.</td>
</tr>
<tr>
<td>2. Bureau: Political coordination formed by elected Contracting Parties;</td>
</tr>
<tr>
<td>3. Diplomatic Conference: Decision –making body</td>
</tr>
<tr>
<td>4. National competent authority for monitoring areas (focal point);</td>
</tr>
<tr>
<td>5. <em>Ad hoc</em> Working groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Implementation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Legislation: Contracting Parties shall adopt legislation implementing the Convention and the Protocols (Article 14);</td>
</tr>
<tr>
<td>• Mediterranean Plan of Action;</td>
</tr>
<tr>
<td>• Regional Activity Centres (RACs) for implementing particular aspects of the regional action plan such as marine emergencies;</td>
</tr>
<tr>
<td>• Independent programmes and projects;</td>
</tr>
<tr>
<td>• Reporting: every two years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Review, Compliance, Assessment, and Control (Articles 26, 27)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contracting Parties transmit to the Organization reports on (each two years):</td>
</tr>
<tr>
<td>• Legal, administrative or other measures taken by them for implementation;</td>
</tr>
<tr>
<td>• Effectiveness of the measures implemented</td>
</tr>
<tr>
<td>• Problems encountered in the implementation;</td>
</tr>
<tr>
<td>• Assess the compliance with the Convention, the Protocols, measures and recommendations.</td>
</tr>
<tr>
<td>2. Diplomatic conference of the parties every two years:</td>
</tr>
<tr>
<td>• Recommendations for the necessary steps to bring about full compliance or to promote the implementation of decisions and recommendations;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Monitoring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Complementary or joint programmes, including a bilateral/multilateral system for an area;</td>
</tr>
<tr>
<td>• National competent authority for monitoring areas under national jurisdiction, as well as to participate in international arrangements for monitoring areas beyond national jurisdiction;</td>
</tr>
<tr>
<td>• May require to undertake cooperation in the formulation, adoption and implementation of the annexes;</td>
</tr>
<tr>
<td>• May be required to prescribe common procedures and standards for pollution monitoring (Art 12);</td>
</tr>
<tr>
<td>• Regional Activity Centres (RACs) responsible for information management and pollution monitoring</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Scientific and Technological cooperation (Article 13)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Directly, or through competent regional or other international organizations (fields of science and technology; exchange data; other scientific information);</td>
</tr>
<tr>
<td>• Research on access to and transfer of environmentally sound technology, including clean production technologies;</td>
</tr>
<tr>
<td>• Formulation, establishment and implementation of clean production processes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Dispute settlement (Article 28)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Negotiation, arbitration, or compulsory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Public Participation, Information and Observer status (Article 15 and 20)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provided by their Competent authorities:</td>
</tr>
<tr>
<td>• Access to information on the environmental state in the field of application of the Convention and the Protocols;</td>
</tr>
<tr>
<td>• Activities or measures adversely affecting or likely to affect it;</td>
</tr>
<tr>
<td>• Activities carried out or measures taken in accordance with the Convention and the Protocols;</td>
</tr>
<tr>
<td>• Ensure that the opportunity is given to the public to participate in decision-making processes relevant to the field of application of the Convention and the Protocols;</td>
</tr>
</tbody>
</table>
| • Observers may be admitted (other non-contracting parties; IGOs, NGOs). Observers may present relevant
information and reports. (Article 20).

<table>
<thead>
<tr>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To cooperate in the provision of technical and other possible assistance in fields relating to marine pollution, with priority to be given to the special needs of developing countries in the Mediterranean region (Article 13).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How can regions participate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provision which can allow cooperation between regions across the Mediterranean</td>
</tr>
<tr>
<td>• Observer status: Regions can participate within the umbrella of an organisation, such as the Geographic Intermediterranean Commission of CPMR or others.</td>
</tr>
<tr>
<td>• Regions will be indirectly implementing the objectives of the convention related to the control of land based pollution (point and diffuse sources based on land)</td>
</tr>
</tbody>
</table>

Source: Based on the convention text at http://www.unepmap.org

The work of most of the Regional Seas programmes is managed by a Regional Coordinating Unit (RCU), in this case MAPU, often aided by Regional Activity Centres (RACs) for implementing particular aspects of each regional action plan such as marine emergencies, information management and pollution monitoring.

Source: Based on the convention text at http://www.unepmap.org


The Convention covers the whole Baltic sea area, including inland waters, the sea itself and the sea-bed. The major objective of the Convention is taking “all appropriate measures, individually or by means of regional co-operation, to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea area and the preservation of its ecological balance.” (Article 3.1). All sources of pollution around the Baltic sea are subject to this convention.

2.3.2.2. Helsinki Convention


The Convention covers the whole Baltic sea area, including inland waters, the sea itself and the sea-bed. The major objective of the Convention is taking “all appropriate measures, individually or by means of regional co-operation, to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea area and the preservation of its ecological balance.” (Article 3.1). All sources of pollution around the Baltic sea are subject to this convention.
To protect the marine environment and achieve the sustainable development of the Baltic, a set of major principles were adopted:

**Box 7. Principles of the Helsinki Convention.**

- **Precautionary principle** (Article 3.2), i.e., to take preventive measures when there is reason to assume that substances or energy introduced, directly or indirectly, into the marine environment may create hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea even when there is no conclusive evidence of a causal relationship between inputs and their alleged effects.

- Promote the use of **Best Environmental Practice** and **Best Available Technology** (Article 3.3) to prevent, reduce and eliminate pollution.

- **Polluter-pays principle** (Article 3.4).

- Use of science based knowledge: for the proper **assessment** of sources of pollution the state of the marine environment of the Baltic Sea Area and ascertain the implementation of this Convention. (Article 3.5)

- **Good neighbourhood**, notification and consultation (Article 3.6, 7.1): **Do not cause transboundary pollution** in areas outside the Baltic Sea Area. In situations which a contracting party may affect another, notification and consultation procedure should take place.

- **Environmental impact assessment** and **Cumulative impacts** (Article 7.1, 7.2, 7.3): Two or more Contracting Parties share transboundary waters within the catchment area of the Baltic Sea, shall cooperate to ensure that potential impacts on the marine environment of the Baltic Sea Area are fully investigated within the **environmental impact assessment**, and shall jointly take
appropriate measures in order to prevent and eliminate pollution including \textbf{cumulative deleterious effects}.

- **Reduction of environmental and human health impacts** (article 3.6) Relevant measures shall not lead either to unacceptable environmental strains on air quality and the atmosphere or on waters, soil and ground water, to unacceptably harmful or increasing waste disposal, or to increased risks to human health. Applicatio of
- **Integration with watershed management** (Article 6.1, 6.4): to control of all diffuse and point sources of pollution that may affect the Baltic sea.
- **Liability** (article 6.4): If \textbf{the input from a watercourse}, flowing through the territories of two or more Contracting Parties or forming a boundary between them, is liable to cause pollution of the marine environment of the Baltic Sea Area.

The implementation of the overall objectives and principles of the Helsinki Convention are further developed and regulated through a set of Annexes, which are fully part of the convention, prescribing agreed measures, procedures and standards. The following box displays Helsinki Convention Annexes:

**Box 8. Annexes to Helsinki Convention**

- Annex I, on harmful substances to be controlled;
- Annex II, on criteria for the use of best environmental practice (BEP) and best available technology (BAT);
- Annex III, on criteria and measures concerning the prevention of pollution from land-based sources;
- Annex IV, on prevention of pollution from ships;
- Annex V, on exemptions from the general prohibition of dumping of waste and other matter in the Baltic Sea area;
- Annex VI, on prevention of pollution from offshore activities;
- Annex VII, on response to pollution incidents.

The following table displays the parties to Helsinki’s Convention, as of July of 2004.

**Table IV. Parties to Helsinki’s Convention**

<table>
<thead>
<tr>
<th>Contracting Parties</th>
<th>Status</th>
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</thead>
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<tr>
<td>Estonia</td>
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<td>Finland</td>
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<td>Slovak Republic</td>
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<td>Sweden</td>
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</tr>
</tbody>
</table>

Legend: S= Signatory; P=Party. Source: Convention text.

The Helsinki Convention governance system summarised in the following Box:

**Box 9. Governance System The Helsinki Convention**

<table>
<thead>
<tr>
<th>Legal Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convention and Annexes are legally binding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convention and protocols legally binding to contracting parties, states are liable</td>
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</table>

<table>
<thead>
<tr>
<th>Decision-making Bodies and Institutional Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Decision-making body composed by the contracting parties: The Baltic Marine Environment Protection Commission—Helsinki Commission (HELCOM)</td>
</tr>
<tr>
<td>- Secretariat of HELCOM</td>
</tr>
<tr>
<td>- Programme Implementation Task Force (contracting parties)</td>
</tr>
<tr>
<td>- Subsidiary bodies (Strategy Group, )</td>
</tr>
<tr>
<td>- Working groups</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Through subsidiary working groups:</td>
</tr>
<tr>
<td>- Programme Implementation Task Force, which co-ordinates the implementation of the Baltic Sea Joint Comprehensive Environmental Action Programme (updated in 1998).</td>
</tr>
<tr>
<td>- Policy and strategy for the protection of the Baltic Sea (Strategy group)</td>
</tr>
<tr>
<td>- a Maritime Group, which ensures that adopted regulations are carried out in an efficient and harmonized way, including close co-operation in enforcing violations of the regulations. The Group works to identify</td>
</tr>
</tbody>
</table>
and promote actions to limit sea-based pollution while ensuring safe navigation. To cater for the international nature of shipping, HELCOM MARITIME promotes the adoption of international regulations at regional and international level;

- a Response Group, which ensures national and international coordination, surveillance, preparedness and response to maritime pollution;
- Land-based Pollution Group, which identifies current and emerging issues related to point and diffuse sources of land-based pollution, proposes actions, and promotes investment activities in order to reduce emissions and discharges.
- Nature Conservation and Coastal Zone Management Group, which works towards conservation of natural habitats, biological diversity, and protection of ecological processes. It promotes ecosystem approaches and fosters the development of Coastal Zone Management Plans

<table>
<thead>
<tr>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring and Assessment Group: identifies and quantifies the anthropogenic discharges/activities and their effects on the marine environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scientific and Technological cooperation (Article 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in the working groups</td>
</tr>
<tr>
<td>Complementary working groups and projects to the permanent groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review, Compliance, Assessment, and Control (Articles 26, 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HELCOM meets every year</td>
</tr>
<tr>
<td>Strategy group: Monitors and assesses the implementation by the Parties of the Convention and HELCOM Recommendations;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dispute settlement (Article 28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negotiation; Request of mediation; Ad hoc arbitration tribunal; permanent tribunal or the International Court of Justice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Public Participation, Information and Observer status (Articles 15 and 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the involvement and support from the business communities and financial institutions in both the private and the public sector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltic Sea Joint Comprehensive Environmental Action Programme approved in 1992 and updated in 1998. It focuses on investment activities for point and non-point pollution sources and on planning and investment activities related to management programmes for coastal lagoons and wetlands</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How can regions participate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in the implementation of the Baltic Sea Joint Comprehensive Environmental Action</td>
</tr>
<tr>
<td>Observer status: Regions can participate within the umbrella of an organisation, such as the Geographic Baltic Commission of CPMR or others.</td>
</tr>
<tr>
<td>Regions will be indirectly implementing the objectives of the convention related to the control of land based pollution (point and diffuse sources based on land) and coastal zone management</td>
</tr>
</tbody>
</table>


2.3.2.3. OSPAR Convention

The Convention for the protection of the marine environment of the North-East Atlantic (OSPAR Convention) was adopted in 22 of September of 1994, and entered into force in 23 of July of 1998.

The OSPAR Convention replaces the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo Convention), adopted on 15 February 1972 in Oslo, which entered into force on 6 April 1974, and the Convention for the Prevention of Marine Pollution from Land-based Sources (Paris Convention), adopted on 4 June 1974 in Paris, which entered into force on 6 May 1978. Decisions, recommendations, and all other agreements adopted under the former Oslo and Paris Conventions continue to be applicable, and unaltered in their legal nature, unless they are superseded by new measures adopted under the OSPAR Convention. OSPAR has 16 parties, including the European Community:
The OSPAR Convention aims at (Article 2.1):

1. Safeguarding human health and to conserve marine ecosystems and, when practicable, to restore marine areas which have been adversely affected;
2. Taking all possible steps to prevent and eliminate pollution and enact the measures necessary to protect the sea area against the adverse effects of human activities.
3. Individually and jointly, adopt programmes and measures and harmonise policies and strategies between Contracting Parties.

To further apply these goals, a set of major principles were adopted:

**Box 12. Principles of the OSPAR Convention**

- **Precautionary principle** (Article 2.2.a): Preventive measures are to be taken when there are reasonable grounds for concern that substances or energy introduced, directly or indirectly, into the marine environment may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the inputs and the effects.
- **Polluter pays principle** (Article 2.2.b): The costs of pollution prevention, control and reduction measures are to be borne by the polluter.
- **Harmonisation** (Article 2.1.b): individually and jointly, adopt programmes and measures and shall harmonise their policies and strategies.
- **Best available techniques, best environmental practices and clean technology** (Article 2.3.b): ensure the application of these principles in carrying out programmes and measures.
- **Transboundary pollution** (Article 21): When pollution originating from a Contracting Party is likely to prejudice the interests of one or more of the other Contracting Parties to the Convention, the Contracting Parties concerned shall enter into consultation, at the request of any one of them, with a view to negotiating a cooperation agreement.
- **Compliance** (Article 22): reporting to the OSPAR Commission, which evaluates Contracting parties compliance.
- **Regionalisation** (Article 24) a decision or recommendation adopted by it shall apply to all, or a specified part, of the maritime area and may provide for different timetables to be applied, having regard to the differences between ecological and economic conditions in the various regions and sub-regions covered by the Convention.
- **Ecosystem based approach** (Annex V, Article 3.b): for the purpose of the protection and conservation of ecosystems and biological diversity of the maritime area, the programmes and measures for the control of the human activities identified shall apply an integrated ecosystem approach.

The implementation of the overall objectives and principles of the OSPAR Convention are further developed through a set of Annexes, dealing separately with the different sources of pollution. These annexes are integral part of the Convention:

**Box 11. Annexes to the OSPAR Convention**

- Annex I, On the Prevention and Elimination of Pollution from Land-based Sources;
- Annex II, On the Prevention and Elimination of Pollution by Dumping or Incineration. This Annex, in conjunction with OSPAR Decision 98/2 on Dumping of Radioactive Wastes, which entered into force on 9 February 1999, prohibits the dumping of low and intermediate level radioactive waste;
- Annex III, On the Prevention and Elimination of Pollution from Offshore Sources;
The Convention also has three appendices which provide criteria for implementation of such Annexes. There are integral part of the Convention:

- **Appendix 1**: criteria for the definition of practices and techniques mentioned in paragraph 3(b)(i) of Article 2 of the Convention use of best available techniques and environmental practices;
- **Appendix 2**: criteria mentioned in paragraph 2 of Article 1 of Annex I and in paragraph 2 of Article 2 of Annex III (precautionary principle);
- **Appendix 3**: criteria for identifying human activities for the purpose of Annex V.

The following box displays OSPAR’s governance structure:

**Box 12. Governance System of the OSPAR Convention**

<table>
<thead>
<tr>
<th>Legal Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventions, annexes and appendices are legally binding, it’s mostly softlaw</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographical Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland waters and NE Atlantic (except the Baltic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decision-Making Bodies and Institutional Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSPAR Commission (representatives of contracting parties): Decision-making body</td>
</tr>
<tr>
<td>Ministerial Declarations are binding. Decisions concerning any Annex or Appendix shall be taken only by the Contracting Parties bound by the Annex or Appendix concerned</td>
</tr>
<tr>
<td>Coordination body: Executive Secretariat</td>
</tr>
<tr>
<td>Subsidiary bodies: thematic Committees and technical groups which support the development of such work</td>
</tr>
<tr>
<td>Committees, one for the implementation of each thematic strategy:</td>
</tr>
<tr>
<td>1. Environmental Assessment and Monitoring Committee (ASMO)</td>
</tr>
<tr>
<td>2. Eutrophication Committee (EUC)</td>
</tr>
<tr>
<td>3. Biodiversity Committee (BDC)</td>
</tr>
<tr>
<td>4. Hazardous Substances Committee (HSC)</td>
</tr>
<tr>
<td>5. Offshore Industry Committee (OIC)</td>
</tr>
<tr>
<td>6. Radioactive Substances Committee (RSC)</td>
</tr>
<tr>
<td>o-ordination with related instruments</td>
</tr>
<tr>
<td>The OSPAR Commission (see Decision-making bodies, below) works with other regional seas conventions, such as the 1974 Helsinki Convention, the Barcelona Convention, the Convention on Long-Range Transboundary Air Pollution, the Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and other Harmful Substances (Bonn Agreement), and bodies such as IMO and ICES.</td>
</tr>
<tr>
<td>The declarations of the ministerial-level North Sea Conferences have laid down principles and targets for the reduction of marine pollution in the North Sea, including dumping. Some of these have been implemented within the framework of the former Oslo and Paris conventions or included in the work programmes of OSPAR Committees.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through the thematic Strategies:</td>
</tr>
<tr>
<td>1. Protection and Conservation of Marine Biodiversity and Ecosystems</td>
</tr>
<tr>
<td>2. Eutrophication</td>
</tr>
<tr>
<td>3. Hazardous Substances</td>
</tr>
<tr>
<td>4. Offshore Oil and Gas Industry</td>
</tr>
<tr>
<td>5. Radioactive Substances</td>
</tr>
<tr>
<td>6. Monitoring and Assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment and Monitoring Committee (ASMO)</td>
</tr>
<tr>
<td>Each Party has a national contact point</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scientific and Technological cooperation (Article 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish complementary or joint programmes of scientific or technical research</td>
</tr>
<tr>
<td>Support the work of the subsidiary bodies in the context of the strategies under monitoring/implementation</td>
</tr>
</tbody>
</table>
2.3.3. Fisheries management

For the purpose of monitoring, assessment and management, seas and oceans are divided in statistical areas, corresponding to the regional fisheries agreements (RFAs).

On a side note, in general, FAO is the United Nations organisation in charge of overseeing world’s fisheries. FAO coordinates the data system, but the Regional Fisheries Bodies (RFBs), may be external to FAO, and may have different functions, from fisheries management, to management or scientific advice.

There are numerous regional fisheries agreements. The RFAs referred in this report relate specifically to the EU maritime waters and to the geographical area covered by the regional seas conventions of Barcelona, Helsinki and OSPAR. The following maps display world’s regional fisheries geographical scope (Figure 2), as well as the statistical and management areas (Figure 3).
Figure 2. Geographical scope of Regional Fisheries Bodies (FRBs). Source: FAO Coordinating Working Party on Fishery Statistics (http://www.fao.org/figis/servlet/static?dom=org&xml=cwp_inst.xml)


FAO’s Coordinating Working Party on Fishery Statistics (CWP) provides a mechanism to coordinate fishery statistical programmes of regional fishery bodies (RFB), and other inter-governmental organizations with a remit for fishery statistics, including harmonization of data collection (since 1960). The CWP’s purpose is to continually review fishery statistics requirements for research, policy-making and management; agree on standard concepts, definitions, classifications and methodologies for the collection and collation of fishery statistics; make proposals for the coordination and streamlining of

The majority of EU maritime waters are included in the Northeast Atlantic and the Mediterranean areas. Additionally Canary Islands and Madeira Archipelago are located in the Central East Atlantic. Thus the regional fisheries bodies (RFBs) are:

**ICES.** Is a RFB for the production scientific information and advice. ICES is the organisation that coordinates and promotes marine research in the North Atlantic. This includes adjacent seas such as the Baltic Sea and North Sea. ICES is a RFB external to FAO, and cooperates with it. According to CWP, ICES corresponds to the statistical fisheries region number 27.

**GFCM.** Is a RFBs that directly establishes management measures, and covers the whole Mediterranean sea. This is a FAO RFB. According to CWP, GFCM corresponds to the statistical fisheries region number 05.

**CECAF.** This RFB provide members with scientific and management advice, and to assist. According to CWP, CECAF corresponds to the statistical fisheries region number 34.

### 2.3.4. Regional Management: Key facts and Conclusions

Regional Conventions are international agreements with a geographical scope, whose parties are the member States encompassed by such geographical area, as well as other regional organisations with relevance in the subject of common interest. Regional conventions allow further implementing and developing more stringent and adapted measures and objectives to regional specificities laid out by multilateral agreements. They can also be effective in terms of developing overall strategies and harmonization of frameworks, as well as establishing mechanisms for cooperation, thus saving time, human resources and for producing economies of scale.

The Parties of each of these regional conventions are member States of the EU, non-EU members, and amongst other international organisations, the EC. Additionally, Helsinki and OSPAR conventions have the particularity of including not only coastal States bordering the maritime area, but also States located upstream of watercourses reaching such maritime area, i.e., these two conventions extend to inland waters, as a way of controlling land-based sources of marine pollution. The regional conventions referenced in this document cover the majority of European waters:

- The archipelagos of Canary Islands (Spain) and Madeira (Portugal), which are part of the biogeographic region of Macaronesia, are the only EU-European waters not included in any regional seas agreement for the protection of the marine environment (see Map 3). Additionally, they belong to a different Regional Fisheries Body (Map 4).

- Taking into account the three major maritime areas of management for European waters: the Baltic, the Mediterranean and the Northeast Atlantic, these two archipelagos can be considered highly peripheral and isolated:

- They do not benefit from the processes of participating in a process where there is cooperation on science and technology, sharing information and resources, thus missing the benefits of networking, such as economies of scale and the development of synergies.

An important feature of the regional conventions is the inclusion of a common set of **principles**, reflecting concerns of the international community (thus nations), which shape management actions, and which are also reflected in EU’s policies:

- Precautionary principle
- Integration of environmental concerns in the management of human activities
- Ecosystem-based approach
- Best Available Technologies (BAT)
Since 80% of the marine pollution is originated from land-based sources, at global scale there is trend for the integration of freshwater management with coastal waters. This concern is also embedded in Helsinki and OSPAR conventions, contributing to the emergence of a new globally accepted principle:

The Principle of integrating freshwater management with marine waters

Activities such as fisheries are out of the scope of regional seas conventions for the protection of the marine environment, mostly because they were already regulated through other institutions and other political processes. They are managed through specific fisheries bodies and conventions. However, regional seas conventions have mechanisms of coordination with the competent institutions for fisheries to whom they deliver recommendations for fisheries concerning its relations to the management of the marine environment.

Regarding technical and scientific implications of the application of the ecosystem approach to the marine environment, setting aside fisheries from these agreements and frameworks constitutes a major difficulty/obstacle on achieving or maintaining ecosystem’s equilibrium, since:

- Fish stocks have important dynamic functions in the food web, and therefore in the ecosystem balance processes; and that
- Fisheries management reflects deeply rooted private economic objectives and interests, which in the past have had prime weight on management decisions.

Therefore, integrating fisheries with the reminder components of marine ecosystems remains one of the biggest challenges of the EU maritime policy and it’s nations.

Implementation of regional conventions relies on the effective action of the different State parties. Certain measures and objectives can be achieved through national regulations which may affect directly individuals. But in other situations, such as land management and the control of sources land based sources of pollution, such tasks are often related with subnational authorities and planning and management of resources and uses. Additionally, national authorities often formally or indirectly delegate monitoring functions to infra-national authorities.

2.4. Enhancing the role of regions at international and regional level

The role of regions (or infra-state level) at international and regional conventions level is quite limited, since international agreements aim at establishing rules for the relations between nations. Regarding the conventions discussed above, usually infra-state levels are not mentioned in such convention texts (the Helsinki Convention (ICZM) is an exception). Nevertheless, as observers, NOGs, including organisations of regions, can participate in the works of such conventions.

International multilateral and regional agreements have complex frameworks, requiring high level of technical and political expertise. Politically, member States meet at diplomatic conferences (Conferences of the Parties (COPs), Heads of Delegation, or other denomination). Additionally, such conventions usually involve a set of subsidiary bodies to further develop and implement objectives, frameworks and technical and scientific means of the conventions.

Any interested organisation or citizen can follow some of the developments through the information produced made available on-line. The amount of information can actually be considered overwhelming, and its availability doesn’t imply full understanding of the processes, since it would require an enormous
financial and human resources effort for all regions to be fully updated and participate. Thus they become difficult and time consuming to be followed by experts, and even less, by non-experts, such as the institutions at regional/infra-state level.

UNCLOS is acknowledged to be an umbrella convention because most of its provisions, being of a general kind, can be implemented only through specific regulations in other international agreements. Therefore, issues related to UNCLOS are debated and further implemented at international and UN level on different processes. UNCLOS is an exception to the above mentioned classic structure of international frameworks. Instead of a classical secretariat, the UN has the Division of the Law of the Sea (UNDOALOS) which coordinates the processes related to the implementation of UNCLOS, including articulating with other international conventions and processes. Instead of dedicated diplomatic conferences, parties meet at UNICPOLOS, the UN Informal Consultative Process on the Law of the Sea. UNICPOLOS is an “informal” forum for nations, international organisations related to the seas, as well as NGOs, to debate progress achieved in ocean management as a whole, including the progress and needs of articulation with other international agreements. The developments and findings at UNICPOLOS are then delivered to the UN General Assembly which deliberates.

At UN Level, the Commission of Sustainable Development (CSD) organises yearly meetings were ocean issues are also debated, in particular the ones related to the implementation of related international agreements and sustainable development (implementation of Agenda 21). These two UN forums congregate and summarise the latest progress in a multidisciplinary perspective, and allow some interaction with the different actors.

The international and regional seas scale involves important frameworks, programmes of action, and research related to management of coastal areas, which may affect the coastal marine environment which is fundamental for many economic activities of coastal communities. Such is the case of the development of networks of marine protected areas on the coastal area, programmes for the protection of the marine environment from land-based pollution, port activities, the potential hazardous effects of climate change (sea level rise, coastal erosion) and its connection to land management and planning of the shoreline. On the other hand, activities related to marine pollution such as shipping and exploitation of non-living marine resources (e.g., oil, gas, sand), and fisheries management affect the livelihoods of local communities and their economic activities, such as tourism (bathing water, e.g.). Activities that use the marine space, such as aquaculture facilities, sea lanes, and the installation of artificial reefs may also have implications on coastal communities’ livelihoods and economic activities. For these and other matters, the overall principles are decided at international level and regional seas level and usually implemented by national level.

Infra-state levels know best the reality and needs on the ground, however usually they are not consulted in such implementation and research programmes, and no practical articulation mechanisms are available. Therefore, there is a common complain that such overall programmes, though improving the quality of the marine environment could be more effective if they were articulated with management at regional (infra-state levels) in the matters where regions interact and use the marine environment. Additionally, there is lack of communication and awareness of the works at international and regional seas levels, therefore, the outputs of such works have limited used, and such situation could in fact be improved, namely if regions were called to participate on shaping and developing such projects. Some of the causes of such lack of articulation are:

- Lack of institutional bodies for regions to participate;
- Complexity of the political processes and stakes;
- Technical complexity and the range of issues international and regional seas conventions deal with;
- Poor articulation and communication between national level and regions.

To overcome such challenges, alternatives for participation can be pointed:

1- **Vertical integration**: International/Regional Seas ↔ National level ↔ Infra-state/Regions:
   a. Infra-state levels have delegated competences which can contribute to achieve some of the national and regional seas objectives. Thus, it is crucial that they are aware of national international commitments, objectives and processes where competences are shared or overlap. National governments, and often some of its experts, participate
actively in such processes, thus being highly informed. A formal process of reporting and consultation with regions, before and after regional seas meetings, could address such developments and debate how to better implement such objectives with regions.

b. Coordinating activities, as well as the development of national plans for implementation of regional conventions objectives in articulation with infra-state levels objectives could contribute for the efficiency of policy implementation, since
c. Establishing coordinated actions between regional seas programmes and programmes of actions (namely projects) with infra-state levels (regions) could be a source of synergies for implementation regarding strategic planning, research and efficiency of use of financial and human resources.

2- Observer status at regional seas: Non governmental organisations (NGOs) with interests in the subjects can participate in the developments with observer status. Therefore, regions congregated in NGOs, can participate in such developments. Geographic Commissions of CPMR or other NGOs, and having an efficient communication, consultation and report system between such observers and the regions under such geographic commissions is of paramount importance;

3- Observer status at international level: as mentioned previously there are numerous international agreements, and related forums. Given the amount of effort necessary regarding the benefits regions would draw from participation, for ocean policy, UNCIPOLOS and CSD seem the most suitable forums for regions organised under the umbrella of CPMR or other international organisation to participate.

These proposals could help boosting:

- Making coherent policies, by matching / articulating regional seas’, national and regions’ objectives;
- Increasing the efficiency of regional seas implementing and meeting objectives;
- Contributing with means and skills to achieve regions’ objectives
- Articulation between the management of coastal areas with offshore management;

3. MAJOR EU FRAMEWORKS WITH RELEVANCE FOR THE EU MARITIME POLICY

Apart from the international commitments taken individually by EU member States and the EC, the EU itself has set up a set of policies related to shipping and maritime security, pollution, management of natural resources such as fisheries and the environment, as well as a set of principles which are relevant for shaping EU Maritime policy.

The present section highlights some of the EU principles, as well as some of the major frameworks the EU Maritime Policy. The environment constitutes the fundamental basis for economic activities, and such vision is reflected in the EU Marine Strategy which will be the baseline for the development of the EU Maritime Policy.

Taking into account the integrative nature of both the EU Marine Strategy and the EU Maritime Policy, apart from integrating different sectoral legislation, the major challenges will be coordinating actions between the numerous EU sectoral institutions into a spirit of common mission to develop umbrella frameworks such as the Marine and the Maritime Policies.

3.1. Treaty Establishing the European Community

This section highlights some major aspects that should shape the EU Maritime Policy (based on the consolidated version of 24.12.2002):

1. Environment and Sustainable Development

“Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.” (Article 6). Where, the activities of the European Community include (Article 3):

- e) a common policy in the sphere of agriculture and fisheries; and
• 1) a policy in the sphere of the environment.

The most relevant the principles of the Community Policy for the Environment are set in Article 174: “The Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.”

The efforts of the Commission to integrate environmental concerns in all Community policies and for these actors to establish their own strategies for giving effect to environmental integration and sustainable development within their respective policy areas are highlighted in the conclusions of the Council in Cardiff (1998).

2. Subsidiarity

The subsidiarity principle aims at ensuring that “decisions are taken as closely as possible to the citizen” (Article 5). The Protocol on the application of the principles of subsidiarity and proportionality codifies the guidelines adopted by the Edinburgh European Council (Dec., 1992) and gives them force in law so that constant checks are made as to whether action at Community level is justified in the light of the possibilities available at national, regional or local level. This principle is tied with the principles of proportionality and necessity, which require that any action by the Union should not go beyond what is necessary to achieve the objectives of the Treaty. (based on: http://europa.eu.int/scadplus/leg/en/lvb/a27000.htm)

3. Delimitation of competences

The delimitation of competences between the European Union and its Member States is one of the main points for consideration identified by the Declaration on the Future of the Union annexed to the Treaty of Nice and by the Laeken Declaration. The aim is to establish a clear and precise distribution of the Union’s competences, respecting the principles of subsidiarity and proportionality whilst meeting, as far as possible, the expectations of European citizens. The system for monitoring compliance with this delimitation must also be stepped up. The aim is to better identify what comes under Community, regional or even local competence.

Note: The proposal of the European Constitution clarified the delimitation of powers between the Union and the Member States, and established a classification of Union powers in three categories: exclusive powers, shared powers, and supporting, coordinating or complementary powers. (based on: http://europa.eu.int/scadplus/glossary/)

4. Foreign Relations

Within their respective spheres of competence, the Community and the Member States shall cooperate with third countries and with the competent international organisations. The previous subparagraph shall be without prejudice to Member States’ competence to negotiate in international bodies and to conclude international agreements. Fisheries issues are competence of the EC, while environmental international relations are competence of the individual member States. When possible, i.e., when members States share the same position, EC coordinates and develops common positions for its member States at international forums.

5. The following institutions exist to perform the tasks entrusted to the Community (Article 7):

• European Parliament. Consisting of representatives of peoples of the States. The European Parliament, after seeking an opinion from the Commission and with the approval of the Council acting by a qualified majority, shall lay down the regulations and general conditions governing the performance of the duties of its Members.
• Council. Consisting of a representative of each Member State at ministerial level, authorised to commit the government of that Member State.
• Commission;
• Court of Justice;
• Court of Auditors.

The Council and the Commission are assisted by an Economic and Social Committee and a Committee of the Regions acting in an advisory capacity. The Council, acting in accordance with the procedure referred in Article 251 and after consulting the Economic and Social Committee and the Committee of the Regions, decide what action is to be taken by the Community:

• The Economic and Social Committee consists of representatives of the various economic and social components of organised civil society, and in particular representatives of producers, farmers, carriers, workers, dealers, craftsmen, professional occupations, consumers and the general interest.

• The Committee of the Regions (CoR) consists of representatives of regional and local bodies who either hold a regional or local authority electoral mandate or are politically accountable to an elected assembly, is hereby established with advisory status. (Article 263). The Committee of the Regions shall be consulted by the Council or by the Commission where this Treaty so provides and in all other cases, in particular those which concern cross-border cooperation, in which one of these two institutions considers it appropriate. The Committee of the Regions may be consulted by the European Parliament. It may issue an opinion on its own initiative in cases in which it considers such action appropriate.

The CoR does not have a specific working group /committee on Maritime Affairs. Given the strategic importance of oceans, seas, coasts and islands for the EU and maritime regions as well as the present developments, it would be advisable the creation of such body to create a new dedicated space of European debate for maritime regions. In this matter, the CPMR can be a major catalyst and contributor for the maritime affairs in CoR.

3.2. European Economic cooperation

There are several agreements and conventions which establish relationships between the EU and some non-EU neighbouring countries. Regarding the EU maritime waters the European Economic Agreement (EEA) is of fundamental relevance.

Through the Agreement on the European Economic Area (EEA), non-EU member States cooperate with EU in environmental and fisheries policies (amongst others). Therefore, this agreement becomes relevant regarding both EC’s marine and maritime policy as Iceland and Norway share common marine realms, and are important partners of EU member States in the management of the Northeast Atlantic area (pollution, fisheries), being partners of several EU policies. Additionally, Norway is part of the Seas of Europe project, therefore it becomes relevant mentioning this agreement.

The Agreement on the European Economic Area (EEA) as adopted in 1992 and entered into force in 1994. The current contracting parties are, in addition to the EFTA states: Iceland, Liechtenstein, Norway and Switzerland, the European Community and the 25 EC Member States (http://secretariat.efta.int/Web/EuropeanEconomicArea/EEAAgreement/EEAAgreement/#_Toc21163282 ). The Agreement of association aims at promoting a continuous and balanced strengthening of trade and economic relations between the Contracting Parties with equal conditions of competition, and the respect of the same rules, with a view to creating a homogeneous European Economic Area (EEA)( Article 1).

This agreement is mostly focused on economic, employment, and flow of commercial goods and services. The scope of EEA extends beyond such matters, through the cooperation framework of the Community’s activities in the fields of (Article 78):

- Research and technological development;
- Information services;
- Environment (Article 73);
- Education, training and youth;
- Social policy;
- Consumer protection;
- Small and medium-sized enterprises;
- Tourism;
The cooperation provided normally takes one of the following forms (Article 80):

- Participation by EFTA States in EC framework programmes, specific programmes, projects or other actions;
- Establishment of joint activities in specific areas, which may include consertation and coordination of activities, fusion of existing activities and establishment of ad hoc joint activities;
- Formal and informal exchange or provision of information;
- Common efforts to encourage certain activities throughout the territory of the Contracting Parties;
- Parallel legislation, where appropriate, of identical or similar content;
- Coordination, where this is of mutual interest, of efforts and activities via, or in the context of, international organizations, and of cooperation with third countries.

3.3. Water Framework Directive


- There are diverse conditions and needs in the Community which require different specific solutions. This diversity should be taken into account in the planning and execution of measures to ensure protection and sustainable use of water in the framework of the river basin. Decisions should be taken as close as possible to the locations where water is affected or used. Priority should be given to action within the responsibility of Member States through the drawing up of programmes of measures adjusted to regional and local conditions. (paragraph 16);
- Further integration of protection and sustainable management of water into other Community policy areas such as energy, transport, agriculture, fisheries, regional policy and tourism is necessary. This Directive should provide a basis for a continued dialogue and for the development of strategies towards a further integration of policy areas. This Directive can also make an important contribution to other areas of cooperation between Member States, inter alia, the European spatial development perspective (ESDP). (paragraph 17);
- An effective and coherent water policy must take account of the vulnerability of aquatic ecosystems located near the coast and estuaries or in gulfs or relatively closed seas, as their equilibrium is strongly influenced by the quality of inland waters flowing into them. Protection of water status within river basins will provide economic benefits by contributing towards the protection of fish populations, including coastal fish populations. (paragraph 17).

The directive, aims all territorial and marine waters, river, lakes, coastal waters and groundwater, procures the prevention of further deterioration of the status of aquatic ecosystems and terrestrial areas and wetlands directly dependent on the aquatic ecosystem, and the promotion of sustainable water use based on a long-term protection of available water resources. Additionally, Member States shall take all appropriate steps at river basin actions not to increase pollution of marine waters, i.e. the application of measures to reduce river pollution may on no account lead, either directly or indirectly to increased pollution of surface waters.

The following ecoregions for transitional waters and coastal waters are identified:
Figure 4. Ecoregions for transitional waters and coastal waters identified under the WFD (Source: WFD text).

The Community and Member States are party to various international agreements containing important obligations on the protection of marine waters from pollution. The WFD is to make a contribution towards enabling the Community and Member States to meet the obligations of the following agreements in particular (paragraph 21):

- The Protocol to the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources, signed in Athens on 17 May 1980 and approved by Council Decision 83/101/EEC.

3.4. Euro-Mediterranean Partnership: Co-Operation in the Mediterranean

The Barcelona Declaration (or Barcelona Process) launched, in 1995, a co-operation with the countries of the eastern and southern Mediterranean in the context of the Euro-Mediterranean Partnership (EMP), which is deeply related to the implementation of the Barcelona Convention Objectives. It consists of either bilateral agreements or regional co-operation, including the environment.
The European Commission Directorate-General for Environment is contributing to environmental protection and sustainable development in the Mediterranean in several initiatives and instruments, and by participation in other multilateral Programmes:

- Short and Medium Term Priority Environmental Action Programme (SMAP);
- The Mediterranean Action Plan (MAP);
- The Mediterranean Environmental Technical Assistance Programme (METAP); and
- Funding by the LIFE-Third Countries.

### 3.5. Combating Marine Pollution

IMO conventions do not accept regional organisations therefore, the EC is not a member of IMO conventions (see chapter on international multilateral agreements). Several agreements affect the area in the European Union in what concerns shipping, marine safety and related marine pollution. Nevertheless, within the EC policies have and directives have been agreed regarding this subject, since the protection of marine resources and coastal assets is of fundamental importance for coastal communities livelihoods. Of particular importance for this matter are the Erika packages, which are discussed in the Seas of Europe Section related to maritime transportation.

The European Community is party to the following most relevant regional agreements, covering the majority of European seas:

- The Agreement of 1983 for cooperation in dealing with pollution of the North Sea by oil and other harmful substances (website: Bonn Agreement).
- The cooperation Agreement signed in 1990 for the protection of the coasts and waters of the North-East Atlantic against pollution (not yet in force) (Lisbon Agreement).

Regarding prevention of maritime pollution, several regional agreements have been developed where the EC is a member. Not all EU countries are involved in the same agreements, as may be seen in the next figure:
The European Maritime Safety Agency adopted in 2004 an action plan for preparedness in case of a large scale oil spill. Four priority areas have been identified, requiring additional action:

- The Baltic Sea;
- The western approaches to the English channel;
- The Atlantic coast;
- The Mediterranean sea, in particular the routes to the black sea.

![Map of Europe with priority areas identified for additional action regarding Oil Pollution Preparedness and Responses](image)

The action plan recognises that an individual coastal state is seldom prepared to cope with a large oil spill and that regional agreements such as HELCOM and Bonn, have been effective in co-ordinating national capabilities. EMSA also attaches great deal of importance to regular multi-national exercises.

### 3.6. Natura 2000


The aim of this Directive is to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies, and an European ecological network of special areas of conservation were set up under the title Natura 2000, to be maintained or restored.

For special areas of conservation, any plan or project likely to have a significant effect on the site, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public. Otherwise, in the absence of alternative solutions, if a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected.

Though initially developed focusing on the protection of the terrestrial and transitional environments, Natura 2000 network and its related directives have an increasing importance for the conservation and protection of the marine environment. The development of networks of marine protected areas in marine
waters, deeply influenced by the OSPAR Convention process (Annex V), is now a major objective, and members States have been identifying such areas, having started in their territorial seas and presently having extended it to their EEZs. Additional information about this process should be found in the sustainable development chapter of the Seas of Europe Project.

The Habitats Directive also considers geographical differences. The Commission must, in agreement with the Member States concerned, draw up a list of sites of Community importance for each of the seven following biogeographical regions:

- Alpine
- Atlantic
- Boreal
- Continental
- Macaronesian
- Mediterranean
- Pannonian.

Assessment of plans and projects significantly affecting Natura 2000 sites:
The EC provides Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.


This Directive relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies. It covers the protection, management and control of these species and lays down rules for their exploitation. Considering that the preservation, maintenance or restoration of a sufficient diversity and area of habitats is essential to the conservation of all species of birds.

Member States shall take the requisite measures to maintain the population of the selected species (Annex I to the Directive), and also, take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for the same species. Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species, and also, for regularly occurring migratory species. Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds.

3.8. The EU Marine Strategy

The Thematic Strategy on the Protection and Conservation of the Marine Environment, under proposal by the Commission after the Sixth Community Environment Action Programme, will constitute the environmental pillar of the future maritime policy and pretends to achieve good environmental status of the EU’s marine waters by 2021 and to protect the resource base upon which marine-related economic and social activities depend.

Marine Regions will be established on the basis of geographical and environmental criteria as the management units for implementation, and strategies will need to be developed for these regions, in cooperation with other MS or third parties if necessary.

As a first step in that preparation, Member States across a Marine Region should undertake analyses of the characteristics of their marine waters, identifying the predominant pressures and impacts on those waters, their economic and social use and the cost of degradation of the marine environment. The next step towards achieving good environmental status should be the establishment of environmental targets and monitoring programmes for ongoing assessment, enabling the state of the waters concerned to be evaluated on a regular basis.

The following Regions and sub-regions are proposed:
Box 13. Sub-regions proposed for the implementation of the EU Marine Strategy.

<table>
<thead>
<tr>
<th>(A) the North-East Atlantic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) in the Greater North Sea, including the Kattegat, the English Channel, the marine waters covered by the sovereignty or jurisdiction of Belgium, Denmark, France, Germany, the Netherlands, Sweden and the United Kingdom;</td>
</tr>
<tr>
<td>(ii) in the Celtic Seas, the marine waters covered by the sovereignty or jurisdiction of Ireland and the United Kingdom;</td>
</tr>
<tr>
<td>(iii) in the Bay of Biscay and the Iberian Coast, the marine waters covered by the sovereignty or jurisdiction of France, Portugal and Spain;</td>
</tr>
<tr>
<td>(iv) in the Atlantic Ocean, the marine waters covered by the sovereignty or jurisdiction of Portugal surrounding the Azores and Madeira, and of Spain, surrounding the Canary Islands;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(B) the Mediterranean:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) in the Western Mediterranean Sea, the marine waters covered by the sovereignty or jurisdiction of Spain, France and Italy;</td>
</tr>
<tr>
<td>(ii) in the Adriatic Sea, the marine waters covered by the sovereignty or jurisdiction of Italy and Slovenia;</td>
</tr>
<tr>
<td>(iii) in the Ionian Sea, the marine waters covered by the sovereignty or jurisdiction of Greece, Italy and Malta;</td>
</tr>
<tr>
<td>(iv) in the Aegean-Levantine Sea, the marine waters covered by the sovereignty or jurisdiction of Greece and Cyprus.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(C) Baltic Sea</th>
</tr>
</thead>
</table>

The Canary Islands (Spain) and Madeira Archipelagos (Portugal) are not under any regional seas convention. Thus they do not benefit from the synergies and economies of scale, derived from the concentration of financial and human resources, and development of common frameworks. Therefore, these archipelagos constitute an exception regarding the reminding European marine waters. This particularity constitutes a vulnerability and disadvantage for the efficient management of this maritime area. The above mentioned archipelagos and the archipelago of the Azores form the biogeographical region of Macaronesia (as recognised by the Habitats and Species Directive), which extends further south until and of the republic of Cape Verde (non-EU State). Additionally, the above mentioned archipelagos are classified as EU outermost regions, thus, from the sustainable development of oceans they can be considered doubly isolated: geographically and politically. It can be considered that this situation poses a major disadvantage for the implementation of the EU Maritime Policy. To overcome such situation, and given the similarities of these archipelagos, it is recommended that not only this maritime region for management is considered by the EU Marine Strategy (the Archipelagos of the Azores, Canary Islands and Madeira), but also support further development of mechanisms for cooperation between these archipelagos, in order to benefit from the networking synergies and economies of scale, at the image of other regional seas conventions that cover the European seas.

The Archipelagos of the Azores, Canary Islands and Madeira are part of Macaronesia, a biogeographic region which extends until Cape Verde, both on the terrestrial and marine environment. This biogeographic region is recognised in the Natura 2000 process, and the Habitats directive. However, from the marine perspective, the management of this biogeographic region is quite fragmented: the Azores is at the southern limit of geographical scope of the OSPAR convention and the ICES fisheries areas. Both Madeira and Canary islands are not part of any regional seas conventions for the protection of the marine environment, and are in a different fisheries area -CECAF-, together with northern African countries. Finally, the Canary Islands are part of the LME of the Canary Current. This fragmentation of frameworks brings more isolation for these regions.

These archipelagos have cooperated in projects on common marine resources and the environment of their marine waters. However, no holistic study has been developed to assert the marine realm of Macaronesia. Given the gap on knowledge, a study is needed to determine the extent of such commonalities, as well into what extent, creating an institutional process to promote a common framework for both the marine and maritime policy would be beneficial for promoting sustainable development of these archipelagic regions. This proposal is in agreement with the ICES advice to the EU, which argues that further scientific information is required, as well as with the chapter on Research and Maritime Innovation:
A more detailed examination of biogeographical similarities and ecological connectivity is required before a recommendation based on ecological considerations can be made to create one or more EU Marine Ecosystems/Regions for the marine areas of the Archipelagos of the Azores, Canary Islands, and Madeira.

This study should include the archipelago of Cape Verde, a non-EU member state, since it is part of Macaronesia. On the other hand, the Azores, Canary Islands and Madeira have many other features in common: all of them are islands and outermost regions, though relatively close to each other, sharing common features and challenges on development. Establishing a Macaronesia as region for cooperation could help overcoming some of the ultraperiphery threats (isolation, small markets) and develop economies of scale amongst the archipelagos, namely on maritime affairs.

3.9. The Common Fisheries Policy

The scope of the Common Fisheries Policy (Council Regulation (EC) No 2371/2002 of 20 December 2002) extends to conservation, management and exploitation of living aquatic resources and aquaculture, and the processing and marketing of fishery and aquaculture products, and, given that many fish stocks continue to decline, the Common Fisheries Policy pretends to improved the long-term viability of the fisheries sector through sustainable exploitation of living aquatic resources based on sound scientific advice and on the precautionary approach (Article 174 of the Treaty).

The Council establishes access to waters and resources and the sustainable pursuit of fishing activities, taking into account available scientific, technical and economic advice and in particular of the reports drawn up by the Scientific, Technical and Economic Committee for Fisheries (STECF).

Management plans shall be adopted by the Council as far as necessary to maintain stocks within safe biological limits for fisheries exploiting stocks at/or within safe biological limits. Management plans shall be drawn up on the basis of the precautionary approach to fisheries management, and take account of limit reference points recommended by relevant scientific bodies.

Regional Advisory Councils (RACs), consisting of fishermen, such as representatives of the fisheries and aquaculture sectors, environment and consumer interests and scientific experts, shall be established to contribute for the achievement of the objectives of and in particular to advise the Commission on matters of fisheries management in respect of certain sea areas or fishing zones.

For conservation and management of fisheries resources and to minimise the effect of fishing on the conservation of marine eco-systems within 12 nautical miles of its baselines. If measures to be adopted by a Member State are liable to affect the vessels of another Member State, such measures shall be adopted only after the Commission, the Member State and the Regional Advisory Councils concerned have been consulted on a draft of the measures accompanied by an explanatory memorandum.

3.9.1. EU Participation in Regional Fishery Organisations (RFO)

The EU is concerned with the development and definition of establishing and determining a regulatory framework to govern fishery Resources, and considering that RFOs are the main vehicles for international co-operation, prevent conflicts of interest between nations in exploiting marine resources and the attainment of a sustainable balance between the exploitation of resources and their conservation. In a few years from now virtually all of the high seas will be covered by RFOs (The Commission Communication COM(1999)613 concerning RFOs).

The RFOs have an important role to play then in establishing measures that can be carried out by states to prevent unilateral action on the high seas. They work to define and implement points of international law covering an extremely wide range of areas. Issues currently being dealt with by the RFOs include access to ports and the ban on the landing of unlawful catches, as well as access to markets with the possibility of imposing trade sanctions on states which refuse to cooperate, and measures involving the establishment and scope of the jurisdiction of States over their nationals.

Because of the traditional involvement of the fleets of some Member States in distant-water fishing (Presented in next table as in 1999), the overall scale of these fleets which together represent the world's fourth-ranking fishing power, and because the EC is a contracting party to ten regional fisheries
organisations and its involvement in SEAFO, the EC considers to have a fundamental role to play within the RFOs.

ANNEX

LIST of REGIONAL FISHERIES ORGANISATIONS

in respect of which the Community is a contracting party or holds observer status

<table>
<thead>
<tr>
<th>Name</th>
<th>FR acronym</th>
<th>EN acronym</th>
<th>Status held by the Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest Atlantic Fisheries Organisation</td>
<td>OPANO</td>
<td>NAFO</td>
<td>Member</td>
</tr>
<tr>
<td>Commission for the Conservation of Antarctic Marine Living Resources</td>
<td>CCAMLR</td>
<td>CCAMLR</td>
<td>Member</td>
</tr>
<tr>
<td>Northeast Atlantic Fisheries Commission</td>
<td>CPANE</td>
<td>NEAF</td>
<td>Member</td>
</tr>
<tr>
<td>Indian Ocean Tuna Commission</td>
<td>CTOI</td>
<td>IOTC</td>
<td>Member</td>
</tr>
<tr>
<td>International North Sea Fishery Commission</td>
<td>CIDMB</td>
<td>IBSSC</td>
<td>Member</td>
</tr>
<tr>
<td>North Atlantic Salmon Conservation Organisation</td>
<td>OCSAN</td>
<td>NASCO</td>
<td>Member</td>
</tr>
<tr>
<td>International Convention for the Conservation of Tunas</td>
<td>CICTA</td>
<td>ICCAT</td>
<td>Member</td>
</tr>
<tr>
<td>General Fisheries Commission for the Mediterranean</td>
<td>CGPM</td>
<td>GFMC</td>
<td>Member</td>
</tr>
<tr>
<td>Fishery Committee for the Eastern Central Atlantic</td>
<td>COPACE</td>
<td>CECAF</td>
<td>Member</td>
</tr>
<tr>
<td>Inter-American Tropical Tuna Commission</td>
<td>CIATT</td>
<td>IATTC</td>
<td>Observer</td>
</tr>
<tr>
<td>Indian Ocean Fishery Commission</td>
<td>COPII</td>
<td>IOTC</td>
<td>Member</td>
</tr>
<tr>
<td>International Whaling Convention</td>
<td>CBI</td>
<td>IWC</td>
<td>Observer</td>
</tr>
</tbody>
</table>

Figure 10. List of Regional Fisheries Organisations. Source: Commission Communication COM(1999)613).

3.10. ICZM


A proposal for a European Parliament and Council Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe (COM/00/545 of 8 Sept. 2000). This Recommendation was adopted by Council and Parliament on 30 May 2002, which recommended States to develop national ICZM strategies to be delivered by the Commission on February of 2006, additional details on ICZM should be available in the section of Sustainable development of the Seas of Europe Report.

3.11. R&D&T and 7th Programme Framework

There are numerous sources of funding for R&D&T in EU, as it can be seen if the Seas of Europe R&D&T Section. The 7th Programme framework for research is under discussion. Given the complexity of marine issues and the needs for better understanding marine processes, as well as the range of issues to be dealt under the umbrella of the EU Marine and Maritime Policies, it is fundamental that supporting R&D&T to support the implementation of these policies is included. One of the major aspects is developing networks for cooperation in R&D&T under the EU Marine Ecosystem ecosystem based-approach.
3.12. Conclusions and Recommendations

Taking into account the above mentioned principles, there is no doubt that:

- The EU Environmental Strategy must constitute the baseline for the EU Maritime Policy;
- The diversity of situations, such as geographical environmental differences, must be reflected in policies. Thus, it can be considered that the delimitation of EU Marine Ecosystems and the implementation of ecosystem-based approach falls under the implementation of this principle;
- EC action can be considered necessary (or justified) in the light that marine issues are transboundary by nature and that its member States, regions and citizens may benefit the development of synergies and economies of scale by networking and cooperating within the fundamental unit of the marine ecosystem, as well as from harmonising several procedures.

There are numerous EU policies affecting or related the Europeans seas. The frameworks presented are just a sample of the policies involved. On a side note, as it can be perceived from the above section, the EU Maritime Policy will have a major challenge coordinating:

- Sectoral policies
- Public Administration Institutions (General Directorates)
- Independent Agencies

Therefore, no less than a formal coordination mechanism, with clear role and mandate is expected, in order to be empowered with the necessary leadership to mobilise intersectoral integration, as well as mobilization of the different policy partners.

Additionally, the several EU policies above mentioned, as well as regional agreements such as the ones mentioned in their respective section have a geographical scope. The implementation of the EU Maritime Policy will require coordination of areas included in such mechanisms, and should bare such in mind while designing regional EU bodies, in order to aggregate such functions and international commitments.

4. NATIONAL OCEAN POLICIES: OVERSEAS EXPERIENCES

Due to the spur of technology development, during the past century, nations have been expanding the uses of marine resources and oceans’ space towards offshore areas. As the number of uses and users increase, environmental degradation and resource depletion is raising, as well as conflicts of users. As oceans have no borders, its resources, uses and environmental problems are transboundary in nature, forcing nations to co-operate. These circumstances made nations realize the need to develop holistic policies, which encompass the ocean areas under their jurisdiction, and the international community, in particular neighbouring nations sharing common marine ecosystems, i.e., National Ocean Policies (NOP).

NOPs can be defined as policy frameworks to manage uses and resources within jurisdictional waters of the country to which they are tailored, as well as compliance with international commitments, aiming at sustainable (and equitable) development of oceans (Noronha, 2004). These policies tend to have an inter-sectoral or cross-sectoral approach (Cicin-Sain & Knecht, 1998) for the management of the different uses and resources of oceans.

The European Union (EU) is an International Organization, where different treaties are abided by States, regarding the economy, environment and management of natural resources, and security.

The EU has developed numerous sectoral policies and regulations, which affect the oceans’ realm. One important aspect of these simultaneous policies is the development of sectoral policies within oceans such as the Common Fisheries Policy, the Water Framework Directive, the Marine Conservation Strategy, and several shipping regulations and directives.

However, EU is still missing an overall policy, which brings together all policy efforts, in a coherent and integrated way, as well as a coordinating institutional body. Likewise, most of its member states have not developed their own NOP. EU interests and pressures over its own EEZ are increasing, as well as conflicts of interests between EU Nations and beyond them. EU and its member states face a compelling urge to address and develop its own oceans’ policy.
With the Accession of the European Eastern Nations, in the May of 2004, the EU Commission expanded, and the new Presidency of the EU (as of June 2004), separated Agriculture and Fisheries policies, and nominated the first EU Commissioner for fisheries and maritime affairs. This situation created a window of opportunity to start a Common Oceans Policy Strategy. At present, the EU is also drafting its own policy for the EU’s oceans and seas, in the form of a Green Paper, to be delivered by 2006: The Green Paper on Maritime Policy.

Ocean policies are relatively recent policy frameworks. At present, only a few states are developing and implementing NOP. The first States implementing a NOP were Australia (1998), and Canada (1997). Most States have developed several sectoral policies to manage oceans’ uses and marine resources, such as a fisheries, navigation and marine pollution, but these lack both cross-sectoral and vertical integration. Since then, others have followed the trend: over 20 nations are at an early stage of NOP development or implementation their NOP, by defining strategies, principles and intersectoral policies or approaches. Such is the case of Portugal and the USA, which policy strategies have been delivered in 2004. The following table displays the examples of nations which are in the process of developing a NOP:

<table>
<thead>
<tr>
<th>Implementation stage</th>
<th>Formulation stage</th>
<th>Preparatory stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>India</td>
<td>Brazil</td>
</tr>
<tr>
<td>Canada</td>
<td>South Korea</td>
<td>Colombia</td>
</tr>
<tr>
<td>China</td>
<td>New Zealand</td>
<td>France</td>
</tr>
<tr>
<td></td>
<td>Norway</td>
<td>Indonesia</td>
</tr>
<tr>
<td></td>
<td>Portugal</td>
<td>Japan</td>
</tr>
<tr>
<td></td>
<td>Russian Federation</td>
<td>Malaysia</td>
</tr>
<tr>
<td></td>
<td>United Kingdom</td>
<td>Philippines</td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td>Thailand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vietnam</td>
</tr>
</tbody>
</table>


NOP implementation is a complex process, as it requires the accommodation and integration of different policies and conflicting interests. Additionally, it requires special governance measures for implementation, such as institutional arrangements, new institutions, collaborative efforts and a strong sense of adaptive management, together with new regulatory frameworks. Australia and Canada are in the initial stages of implementation of their NOP and precisely facing these challenges.

Although with different governance systems, the EU and its member States can learn important lessons from other nations experience developing ocean policies. Important aspects relate to the principles underlying those policies, institutional arrangements and forms of implementation such as regulatory and collaborative processes.

The present section makes a brief analysis of the most mature cases of NOPs: Australia and Canada. Additionally, the U.S.A. case will be briefly analysed, since it is one of the oldest nations in ICZM experience. The present analysis will contribute for answering the following questions:

- What is the potential role of the subnational level? How to reinforce the articulation between the central, regional and local levels: Weaknesses and strengths.
- What can be the potential role of the subnational levels on ocean governance?
- What is the participation of the states, regions and cities?
- Main weaknesses that constraints the governance and how to fill them?
4.1. Most Mature Cases

Australia (1998), and Canada (1997) were the first nations implementing NOP. They are both Federal Nations, with governing powers for oceans distributed at Federal and state/provincial levels, and they encompass different marine realms. The implementation of their NOP has been carried out at Federal and state/province levels. Simultaneously, regional plans, encompassing whole marine ecosystems, are being developed, in order to adjust management to the particular features of each ecosystem. The following tables display the most relevant features of their NOPs.
Table 3. Main Features of the Australian National Ocean Policy

<table>
<thead>
<tr>
<th>Motivation for NOP (Maritime zones claimed, issues addressed, etc.)</th>
<th>Current Governance Structure</th>
<th>Efforts Toward a National/Regional Ocean Policy</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEZ area: 6,664,107 km² (6.5%)</td>
<td>- National: Federal (Commonwealth): Exclusive jurisdiction from the 3 NM-EEZ (200NM) up to the edge of the adjacent continental shelf, and concurrent power with the states up to the 3 NM from the baseline; has jurisdiction over reserved territories for activities such as defense and transport services.</td>
<td>The National Oceans Policy framework is a set of co-operative non-legislative arrangements (1998).</td>
<td>Intersectoral co-ordination Set of co-operative non-legislative arrangements between sectors. The principles have been integrated into legislative and other</td>
</tr>
<tr>
<td>Need for coordination and consistency of policy following UNCLOS.</td>
<td>- Subnational Levels: State level. Shared jurisdiction with commonwealth up to 3 NM</td>
<td>Australia has developed a comprehensive legal sectoral framework, which deals with the EEZ and continental shelf, where the main basis is sharing jurisdiction between Commonwealth and state governments.</td>
<td>The policy recognizes that ocean and ecosystem health is fundamental to ecologically sustainable development, where environmental, economic and social dimensions need to be integrated.</td>
</tr>
<tr>
<td>Economic value and industry and fisheries regarding Australia’s economy</td>
<td>- Commonwealth management activities, such as frameworks and other non-legislative measures, and the development of codes of practice.</td>
<td>Regional plans are under development only for the Commonwealth waters</td>
<td>Principles:</td>
</tr>
<tr>
<td>Maritime boundaries with several nations</td>
<td>- Set of co-operative non-legislative arrangements, where Commonwealth and States share authority, underlyng under the Offshore Constitutional Settlement (OCS) where Commonwealth and States share authority over marine resources and the Intergovernmental agreement on environment, which establishes the roles of the parties and a set of principles, “ground rules”, in an integrated and cooperative manner.</td>
<td></td>
<td>- Accountability ²</td>
</tr>
<tr>
<td></td>
<td>National Oceans Office (1999): Administrative support for the implementation of NOP</td>
<td></td>
<td>- Adaptive management ²</td>
</tr>
<tr>
<td></td>
<td>Regional Plan Steering Committees: One per region; expert based, assist the other NOP bodies on the development of the plan.</td>
<td></td>
<td>- Best available science ²</td>
</tr>
<tr>
<td></td>
<td>Council of Ministers of the Environment:</td>
<td></td>
<td>- Indigenous rights ²</td>
</tr>
<tr>
<td></td>
<td>The Australia New Zealand Environment and Conservation Council (ANZECC) is a coordination mechanism for Commonwealth-State consultations and implementation constituted by the environment ministers from N. Zealand and all Australia federal states and territories. Another ministerial council is the Natural Resources Management Council (NRMC), which is responsible for the National guidelines of marine environmental management.</td>
<td></td>
<td>- Intergenerational and intragenerational equity ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Multiple use ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Protection of biodiversity ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Stewardship ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Subsidiarity ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Sustainability ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Timeliness ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Transparency ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Participation of communities ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Integration of decision making ²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Precautionary principle / approach ²</td>
</tr>
</tbody>
</table>


The management of coasts and oceans in Australia began much earlier than its NOP, in 1998. In the decade of 70, the Commonwealth (CW) and coastal states agreed on the Offshore Constitutional Settlement (OCS), where the
commonwealth devolved jurisdiction to states over the first 3 nautical miles of the territorial seas. Since the OCS, several local bottom-up initiatives were developed, including coastal zone management initiatives, as well as co-management in local fisheries.

The Australian policy was an initiative of the commonwealth government, and coastal states were involved in the process at a later stage. Perhaps also related to the engagement process of the subnational levels – states-, coastal states did not ratify the Australian ocean policy, therefore, this policy became binding only to commonwealth waters. As a consequence, to implement such objectives, the Australian government operates through a set of co-operative non-legislative arrangements, where under the OCS, Commonwealth and States share authority over marine resources, and the intergovernmental agreement on environment, and cooperate through the Council of Australian Government (CAG), in particular the Ministerial Resource Management Council, which establish the roles of the parties and a set of principles, “ground rules”, in an integrated and cooperative manner. Through these institutions and mechanisms, several sectoral policies have been developed, and case-by-case cooperation has been established between coastal states and the CW. Input in the policy process is through consultation of states, communities and civil society, as well as building support and awareness.

One of the major goals of Australian NOP is to implement policies through regional management, based in marine ecosystems. However, as it only has jurisdiction over CW waters, the NOP does not provide mechanisms for coastal zone management, nor coastal waters can be included in such plans (under state jurisdiction). As a consequence, at this moment there is no connection between the existing coastal zone management plans. Taking into account the degree of awareness of Australia for oceans management, articulating or linking the management of the coastal zone with regional planning is probably the major challenge, which can only be achieved between the agreement of states and commonwealth. The development of a comprehensive coastal zone management program and plans could be an incentive for the development of such cooperation between CZM and regional management.
Table 4. Main Features of the Canadian National Ocean Policy

<table>
<thead>
<tr>
<th>Motivation for NOP (Maritime zones claimed, issues addressed, etc.)</th>
<th>Current Governance Structure</th>
<th>Efforts Toward a National/Regional Ocean Policy</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEZ area: 3,006,236 km²</td>
<td>Legislation:</td>
<td>- Federal Interdepartmental Committee on Oceans (ICO) was reactivated in March 2003. It is focusing on Oceans Strategy implementation and is involved in the preparation of an Oceans Action Plan.</td>
<td>National/sub-national interactions are addressed through various mechanisms including: federal-provincial ministerial committees (such as the Canadian Council of Ministers of the Environment and Canadian Council of Fisheries and Aquaculture Ministers);</td>
</tr>
<tr>
<td>Coastline: 202,800 km</td>
<td>- National Oceans Policy exists through the Oceans Act of 1996, which came into force in January 1997</td>
<td>- Federal-provincial boards such as the Canada-Nova Scotia Offshore Petroleum Board and Canada-Newfoundland and Labrador Offshore Petroleum Board where joint regulation of oil and gas exploration and development activities occurs;</td>
<td>- Federal-provincial MOUs, e.g., the federal government has delegated aquaculture leasing and licensing powers to most coastal provinces (with exception of Prince Edward Island) through memoranda of understanding;</td>
</tr>
<tr>
<td>Motivating factors:</td>
<td>- Oceans Strategy for Canada was issued in 2002</td>
<td>- Joint environmental impact assessment review processes;</td>
<td>- Integrated coastal/ocean planning initiatives;</td>
</tr>
<tr>
<td>- Includes increasing coastal and ocean development pressures, the collapse of fish stocks and the emerging international oceans agenda</td>
<td>Structure: Integrated Oceans Governance Regime</td>
<td>- Principles applied: Sustainable development, integrated management and precautionary approach</td>
<td>- Principles applied: Sustainable development, integrated management and precautionary approach</td>
</tr>
<tr>
<td></td>
<td>- Department of Fisheries and Oceans Canada is the Federal agency responsible for the management of ocean related issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Governs its oceans through a series of sectoral ocean policies coordinated under DFO through different workshop and expert committees</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Consists of a comprehensive sectoral legal system that deals with the EEZ and Continental shelf resources</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Canada’s ocean policy is a regulatory framework (Oceans Act, 1996), which implementation is carried out by one single focal institution, the Department of Fisheries and Oceans (DFO). The jurisdiction over coastal waters varies according to the province. While internal waters (between jaws of land) are under province’s jurisdiction, only provinces which had coastal waters under their jurisdiction before joining the confederation have maintained such powers. The remaining provinces have no coastal waters under their jurisdiction. Jurisdiction is shared between the federal and provincial levels, according to a set of agreements.

The implementation of the Canadian NOP and articulation with the provincial level is achieved through a set of mechanisms and processes:

- Federal-provincial ministerial committees and bodies;
- Federal-provincial boards for joint regulation and development of activities;
- Federal-provincial Memoranda of Understanding (MOUs) to delegate certain competencies to provinces;
- Workshops and expert committees;
- Joint environmental impact assessment review processes;
- Cooperation between the different levels of government;
- Consultation, allowing input from States and communities, as well as building support and awareness;
- Regional Plans for offshore waters.

Through these mechanisms, even prior to the Canadian NOP, there were several bottom-up initiatives running prior to NOP, including small scale ICZM initiatives (21).

One of the major goals of Canadian NOP is to implement policies on a regional basis, where the functional unit is marine ecosystem. There are several plans under development and implementation, such as:

- Eastern Scotia Shelf Integrated Management (ESSIM) project off of Nova Scotia on the Atlantic coast of Canada. This plan is a collaborative effort between the federal and provincial levels, to manage the offshore waters of Nova Scotia, involving different levels of administration, different sectors, and civil society and its communities in the ESSIM Forum, where stakeholders are able to give input in the planning process. Unfortunately, coastal waters were left out of the plan, with the justification that the coastal area involves a more complex effort, since the number of uses and issues to deal with, namely the number of stakeholders and conflict of users;
- Gulf of Maine Council on the Marine Environment province and US state’s lead. This plan is a bottom up initiative by the Canadian provinces and US states to found the need to cooperate on the management of a common ecosystem – the Gulf of Maine- to achieve their CZM goals. It is therefore a useful example of bottom up cooperation across borders.

A major challenge remains regarding how regional plans will be implemented. The DFO’s “Policy and Operational Framework” suggests that it will be to the existing federal and provincial authorities to empower plans, i.e., there is no clear mandate for implementation. Additionally, the Oceans act provides no specific regulation to give effect on plans, and it does not provide any powers over coastal lands (ICZM issues). There are no coastal management plans, just small scale initiatives, therefore, the major challenge is how to link coastal management to regional management and who will lead both this process and regional management implementation. More recently, the Central coast integrated management initiative (CCIM) off of British Columbia on Pacific Coast of Canada, is trying to develop a mechanism to articulate the regional management with the CZM initiatives.
Table 5. Main features of the USA Ocean Policy

<table>
<thead>
<tr>
<th>Motivation for NOP (Maritime zones claimed, issues addressed, etc.)</th>
<th>Current Governance Structure</th>
<th>Efforts Toward a National/Regional Ocean Policy</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management of the maritime area through the adoption of a long term policy that embraces all aspects of the ocean, an intersectoral, interdisciplinary and cross-cutting approach to ocean affairs and reinforcing the US position on science and in the international system</strong></td>
<td>Shared jurisdiction: Federal (3-200 NM) States (0-3NM) National ocean policy adopted in 2004: U.S. Ocean Action Plan (OAP, 2004) Coastal Zone Management Act, 1972: Federal program with financial incentives for states to develop and implement comprehensive ICZM plans Focal Institutions: Cabinet-level Committee on Ocean Policy and NOAA</td>
<td>Voluntary regional plans through the formation of Regional Ocean Councils (ROCs). Coastal Zone Management Plans CZM States Organisation</td>
<td>Principles: - Integrated Management; - Sustainable Development; - Ecosystem approach; - Precautionary Principle; - Regional management; - Adaptive management; - Participation; - Stewardship of oceans</td>
</tr>
</tbody>
</table>

Sources: U.S. Ocean Action Plan (OAP, 2004); Coastal Zone Management Act (CZMA, 1972)

The US ocean policy is quite recent. The U.S. Ocean Action Plan was issues in 2004 (OAP, 2004) and its mechanisms and new institutions for implementation are still under development. The focal institutions for implementation are the newly created cabinet-level “Committee on Ocean Policy” and NOAA. Under the OAP, NOAA’s competencies have been extended in order to coordinate the implementation of marine environmental issues with other sectors. The USA has shared jurisdiction over coastal waters, where states have jurisdiction over the first 3 nautical miles.

The OAP implementation system involves a mix between co-operative legislative arrangements, and integration of sectoral policies in a case-by case basis. Additionally, it promotes regional management through voluntary initiatives for regional planning. The mechanism for integration of the OAP (2004) at federal level and coastal waters under state’s jurisdiction in provided by the provision of federal consistency in the Coastal Zone Management Act (CZMA, 1972), which is one of the most important lessons to extract from the US policy.

Although the US has a quite recent Ocean Policy, it has a long experience in integrated coastal zone management. Through the U.S. CZMA (1972) the federal government acknowledges that states are the appropriate level to develop CZM plans. Therefore it developed a voluntary program (CZM program) with incentives - federal grants-, for states to develop and implement CZM plans according to the CZMA (1972) goals and objectives. Additionally, the CZMA (1972), provides the above mentioned mechanism – the Federal Consistency Provision – which prevents the federal action in federal waters that may jeopardise the objectives and CZM plans in state’s waters:

“Federal action within state coastal areas, or in adjacent areas that may affect those under state's plans, must be consistent with state's CZM plans.”

Regional management in the US has always been a voluntary initiative, and the U.S. OAP 82004) did not change this situation, with the creation of the Regional Ocean Councils. The cooperation between states has always tense and difficult, due to conflicts of interests between federal sectoral policies and objectives. The voluntary character of regional management does not promote leadership, nor create the mechanisms and incentives for an improved regional management and governance, leaving to the discretion and good will of its managers to proceed with such initiatives. Nevertheless, there are some interesting cases of volunteer regional initiatives such as the Gulf of Maine Council on the Marine Environment (canada’s province and US state’s led, i.e. crossborders cooperation), the Pacific Basin Development Council and the Great Lakes Commission, both state-led. Additionally there are federal led regional programs such as the Gulf of Mexico Program (EPA-led).
The US presents important lessons for the subnational level potential roles under regulatory schemes:

- A comprehensive CZM program, which allows drawing synergies, and the development if
  significant bottom-up initiatives;
- A program which goals, objectives and incentives have been increasing, merging the
  management of coastal wetlands, participating in the management estuarine areas, and diffuse
  pollution, together with EPA;
- Bottom-up initiatives for regional management both with US federal institutions and with
  neighbouring nations (e.g. Gulf of Maine);

4.2. Lessons learned

NOP development and implementation is a complex process. It requires the accommodation and
integration of different policies and often conflicting interests. Additionally, it requires special
governance measures for implementation, such as new institutional arrangements, new institutions,
collaborative and participatory processes, and adaptative management, together with new regulatory
frameworks. The major lessons extracted from overseas cases include:

- Regional management. There is a major management trend where major marine ecosystems are
  considered as the fundamental functional unit for regional management;
- The sub-national / local levels are the appropriate scale for management of coastal areas (U.S.
  CZMA, 1972);
- There is a “divorce” between national and regional management and coastal zone management.
  CZM plans are often local initiatives and no mechanisms are provided for the coordination and
  management between of coastal waters and offshore waters, and therefore this articulation/integration
  is often set aside in regional plans, posing a threat to the effective implementation of both regional
  and coastal zone plans and policies. Therefore, the development of comprehensive CZM programmes
  and plans is a major tools to achieve regional and national policy objectives;
- Several mechanisms can be used to ensure coherency between coastal waters policies and
  offshore waters management, both in regional management and in coastal-offshore waters
  management:
  o The US CZMA (1972) Federal consistency provision provides a very useful mechanism
    to articulate and ensure consistency between offshore regional management with coastal
    zone management plans, if future regional plans are designed;
  o Case by case agreements to deal with offshore issues that may affect coastal waters;
- In the policy frameworks analysed it is clear that clear roles and mandates for the subnational
  levels have not always been fully considered in the design of their respective NOPs, which poses
  a threat to an effective development and implementation of national and regional policies.
- Collaborative and participatory planning to involve stakeholders, the different levels of
  governance, and citizens, at early stages is of paramount importance to bring awareness and
  political support to the policy process.

There are clear roles for the subnational levels to participate in ocean policy. However, currently
their participation seems to be scattered and ad hoc, and such roles and means for policy development
and implementation are not fully developed and explored in the actual ocean policies:

- Comprehensive coastal zone management programmes (instead, they are local initiatives);
- The connection between watershed management and coastal waters;
- Interface ocean areas: activities occurring in offshore waters which may affect the coastal
  environment or their communities’ livelihoods;
- Regional management;
- Cooperation between adjacent regions;
- Good neighbourhood policies.

There are no unique solutions, in particular regarding vertical integration, but ecosystem / regional
management seems to be a major trend, where coastal role regions needs to be fully acknowledged.
To ensure an effective development and implementation of national and regional policies, there is an urgent need to develop a vision for the role of the subnational levels, ensuring:

- Clear mandates and roles for both the subnational and national levels. The subnational levels roles and mandates in NOP should include its participation on policy making at the different levels:
  - National
  - Regional;
  - Local.
- Coordination mechanisms and institutions between “local” coastal management with the national level;
- Means for policy implementation. Instruments and mechanisms which constitute incentives (including financial instruments) for the subnational levels to engage and support NOP, as well as for implementation at subnational / local level.;
- Adaptive management
- Involve stakeholders and communities at an early stage.

5. MAIN FINDINGS FROM THE FIELD

5.1.1. Goals and Objectives of the Questionnaires

The questionnaires where developed to make a rapid assessment on the roles of regions in oceans policy, as well as their realities, needs, problems and aspirations regarding the EU ocean policy (both the Green Paper and EU Marine Strategy).

- The questionnaires provide a set of direct and open-ended questions aiming focusing on the several aspects of integration, as well as the articulation of the national and subnational levels of governance within the EU.

The questionnaires aimed at gathering information from different levels of government. Therefore, it was comprised by two parts, which were sent to different types of respondents:

- Part 1: National level questionnaire. Answers to be coordinated by a CPRM member regarding the national level of its country of origin. to establish a snapshot of the national governance system and identifying the relationships at EU <> National level and at <> National <> Subnational / local level;
- Part 2. Regional questionnaire. To be answered by each CPRM member regarding its own subnational level representation (either regional, or local). This questionnaire, initially planed just for governance was expanded to other subjects. Being governance an overall subject, many of the governance questions were incorporated in a general section “Cross-cutting issues”. Most respondents of the regional questionnaire represented the infra-state level, i.e., the level immediately below the national level.

Additionally, another questionnaire was made for the Geographical Commissions of the CPRM, aiming at identifying specificities and common issues within each geographical region and commission as well as special features.

The questionnaires were sent to CPMR’s project partners. Therefore, the cases presented herewith can be considered a sample, or subset of European nations and regions,

The information gathered from the questionnaires was completed with the results provided from some case studies undertaken on several partner regions’ as highlighted within the chapter.

When available, the information on the national questionnaires was complemented with the answers provided to the questionnaires developed by the EU Research Task Force for the Maritime Policy.
5.2. Country Fact Sheets

The present section highlights the major features and roles of the national and regional governments in the light of the development of ocean management and policy. This section results from the treatment of the answers to the questionnaires provided by respondents. This section is divided in two parts:

1. Fact sheets of national structure and formal roles of regions, focusing on the analysis of the national questionnaires;
2. Identification of various roles of regions through the analysis of the regional questionnaires. These reflect in a more precise way the role of regions on the ground, as well as their aspirations, concerns and challenges faced.

In both sections, countries and respective regions are analysed in alphabetic order.

5.2.1. France

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Role of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National:</td>
<td>National:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exclusive jurisdiction over the EEZ</td>
<td>National Policy under development by the Secretariat general de la Mer</td>
<td></td>
</tr>
<tr>
<td>Legislative powers concentrated at the national level</td>
<td>National Council for the Littoral (2005), for the development of a National ICZM Strategy</td>
<td></td>
</tr>
<tr>
<td>Sectoral approach by the different competent ministries</td>
<td>Regional:</td>
<td></td>
</tr>
<tr>
<td>The CPER determines which are the shared competencies</td>
<td>Exclusive competences:</td>
<td></td>
</tr>
<tr>
<td>Regional Level:</td>
<td>Fisheries</td>
<td></td>
</tr>
<tr>
<td>Administrative regions with decentralized competencies</td>
<td>Aquaculture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vessels with less than 18 meters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maritime awareness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shared:</td>
<td>Development of some quasi-regional policies</td>
</tr>
</tbody>
</table>

Source:

Best Practices:

- Though France has administrative regions, through several regional initiatives such as partnerships and agreements with the central government, decentralisation of several competences and roles has happened.
- There are several local and regional initiatives in partnership with the central government for ICM and strategic planning. Across France, several regional forums have been created for the discussion of maritime issues.
## 5.2.2. Germany

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Role of Regions (Länders)</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National:</strong></td>
<td></td>
<td><strong>National:</strong> Exclusive competences:</td>
</tr>
<tr>
<td>Exclusive jurisdiction over the EEZ beyond the 3MN</td>
<td></td>
<td>- deep sea and short sea shipping, aids to navigation, inland navigation, waterways of maritime character and inland waterways used for general traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Monitoring compliance with environmental protection provisions outside territorial waters;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Designating Natura 2000 sites beyond the territorial seas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Research</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Developed objectives and principles of spatial planning for its area of responsibility in the EEZ (2004).</td>
</tr>
<tr>
<td><strong>Federal state structure:</strong></td>
<td></td>
<td><strong>Länders:</strong></td>
</tr>
<tr>
<td>Federal states normally have both legislative and administrative responsibility, unless powers have been specifically assigned to the Federal Government (Article 30 of the Basic Law).</td>
<td></td>
<td>Competencies within the territorial seas, include development of regional policies:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fisheries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Environment, including designating Natura 2000 sites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ICZM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ID&amp;T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Permits for mineral extraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Permits for wind farms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Spatial planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Shared Powers:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maritime transport and use of the sea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Articulation of monitoring of the marine environment</td>
</tr>
<tr>
<td><strong>Länders:</strong></td>
<td></td>
<td><strong>Principles:</strong></td>
</tr>
<tr>
<td>Can participate in the preparation of the federal laws</td>
<td></td>
<td>- Best available science</td>
</tr>
<tr>
<td>Consultation and or co-decision of federal laws and policies with Landers</td>
<td></td>
<td>- Intergenerational and intragenerational equity</td>
</tr>
<tr>
<td>Implementation of federal law</td>
<td></td>
<td>- Multiple use</td>
</tr>
<tr>
<td>Administrative and legislative responsibility over maritime businesses, in the territorial seas.</td>
<td></td>
<td>- Protection of biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sustainable development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Integration of decision making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Precautionary principle / approach</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Ecosystem approach</td>
</tr>
</tbody>
</table>


**Best Practices:**

- Germany participates in a set of initiatives aiming at the integration of maritime and marine conservation policies, namely through cooperation with bordering nations for the spatial planning of
On the regional level, the coastal states of Lower Saxony and of Mecklenburg-Western Pomerania have included legally binding statements in their State Spatial Planning Programs for their coastal areas.

See case-study in the regional section.

5.2.3. Greece

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Role of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National:</td>
<td>National:</td>
<td>Regular meetings for cooperation between ministries</td>
</tr>
<tr>
<td>Legislative powers concentrated at the national level</td>
<td>ICZM</td>
<td>Principles:</td>
</tr>
<tr>
<td>Sectoral approach by the different competent ministries</td>
<td>Regional level: Exclusive competences: Aquaculture, Tourism</td>
<td>- Adaptive management</td>
</tr>
<tr>
<td>Maritime sectoral policies are coordinated by the general-secretariat of the region</td>
<td></td>
<td>- Multiple use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sustainable development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Integration of decision making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Precautionary principle / approach</td>
</tr>
</tbody>
</table>

Source: Regional questionnaire

Best Practices:

- “Local Contingency Plans describing the level of activation and deployment of resources and personnel following a marine oil pollution-related emergency were adopted and are fully implemented.”
- Bilateral Agreement “Greece has also concluded a bilateral agreement with Italy with the aim of protecting the marine environment of the Ionian Sea and its coastal areas, ratified by Greece with Law 1267/82(Gov.Gaz.85A).”
- Networking and coordination: “Within the framework to promote Short Sea Shipping at national level, the Ministry of Mercantile Marine at regular basis organizes round tables with the participation of all the parties involved (maritime industry, other competent Authorities) so as to achieve a better co-ordination of the issues to be discussed and flexible mechanisms for their improvement.”
### 5.2.4. Italy

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Roles of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusive jurisdiction over territorial waters. EEZ not delimited</td>
<td><strong>National:</strong></td>
<td>• L.R. 17.12.1997, n. 141 – Maritime State Plan (maritime cluster); Fisheries competences (national) are disputed be the regional levels</td>
</tr>
<tr>
<td>Sectoral approach by the different competent ministries</td>
<td><strong>Regional:</strong></td>
<td><strong>Exclusive competences:</strong> monitoring marine pollution on the 1st three km of the coastal marine waters. Aquaculture management.</td>
</tr>
<tr>
<td>Legislative powers shared between national and regional levels:</td>
<td></td>
<td><strong>Shared competences:</strong> Development of strategies and enactment of regional laws on:</td>
</tr>
<tr>
<td>National laws and Guidelines</td>
<td></td>
<td><strong>Sustainable development</strong></td>
</tr>
<tr>
<td>Councils for the consultation with infra-state levels:</td>
<td></td>
<td><strong>ICM</strong></td>
</tr>
<tr>
<td><strong>Permanent Conference for the relations between State and Regions and the Permanent Conference for the relations among State, Regions, Departments and Councils</strong></td>
<td></td>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td><strong>Regions:</strong></td>
<td></td>
<td><strong>Aquaculture</strong></td>
</tr>
<tr>
<td>Implementation of national policies</td>
<td></td>
<td><strong>Ports and transports</strong></td>
</tr>
<tr>
<td>Development of regional strategies</td>
<td></td>
<td><strong>Nature conservation</strong></td>
</tr>
<tr>
<td>Enactment of regional legislation on:</td>
<td></td>
<td><strong>RD&amp;I</strong></td>
</tr>
<tr>
<td>Share some competences with provinces</td>
<td></td>
<td><strong>Regional maritime clusters</strong></td>
</tr>
<tr>
<td><strong>Regional competences shared with the local level:</strong></td>
<td></td>
<td><strong>CZM, land-based pollution</strong></td>
</tr>
</tbody>
</table>

Source: National questionnaire and Interviews to Public Administration Managers from region of Tuscany

#### Best Practices:

- There are two important fora to articulate, coordinate and consult in the development of national polices: the Permanent Conference for the relations between State and Regions and the Permanent Conference for the relations among State, Regions, Departments and Councils, for non-legislative acts.
- Articulation between regional policies and local/provinces level
• Regions participate into national and international policy making through the National Net of the environmental Authorities, including on programming of the Communitarian Structural Funds constituted by the representatives of the Authorities.
• See case-study in the regional section.

5.2.5. Norway

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Efforts Towards Ocean and Seas Management and Role of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National:</td>
<td>National: National Policy under development</td>
<td>Cross-sectoral approach: Coordination process between regional institutions representing the state</td>
</tr>
<tr>
<td>Legislative powers</td>
<td>Norwegian maritime policies are linked with the EU mainly</td>
<td>Principles:</td>
</tr>
<tr>
<td>concentrated at the national</td>
<td>through the framework set up by the EEA agreement.</td>
<td>- Adaptive management</td>
</tr>
<tr>
<td>level</td>
<td>Role of regions: Mostly implementation</td>
<td>- Best available science</td>
</tr>
<tr>
<td>Sectoral approach by the</td>
<td>- Regional government operates strongly through formal</td>
<td>- Intergenerational and intragenerational equity</td>
</tr>
<tr>
<td>different competent ministries</td>
<td>partnerships between sector agencies and regional government</td>
<td>- Sustainability</td>
</tr>
<tr>
<td>Strategies and programmes</td>
<td>to develop regional programmes: fishing, energy, tourism,</td>
<td>- Participation of communities</td>
</tr>
<tr>
<td>developed at national level</td>
<td>shipbuilding, distribution of funds, education.</td>
<td>- Integration of decision making</td>
</tr>
<tr>
<td>Regional level:</td>
<td>- Can participate in law making but there is no formal</td>
<td>- Precautionary principle / approach</td>
</tr>
<tr>
<td>Regional sectoral institutions representing the state</td>
<td>process</td>
<td>- Ecosystem approach</td>
</tr>
<tr>
<td>Implementation of laws and</td>
<td>- Local communities do not normally participate in preparation of maritime policies.</td>
<td></td>
</tr>
<tr>
<td>regulations carried out by</td>
<td>Exclusive competences of regions: Littoral planning</td>
<td></td>
</tr>
<tr>
<td>sectoral directorates and</td>
<td>Municipalities with competences on:</td>
<td></td>
</tr>
<tr>
<td>regional offices</td>
<td>- Fighting small oil discharges</td>
<td></td>
</tr>
<tr>
<td>(independent from political</td>
<td>- Municipalities by delegation are given the right to make</td>
<td></td>
</tr>
<tr>
<td>bodies) and regional offices</td>
<td>coastal zone plans/shoreline plans that have a binding effect</td>
<td></td>
</tr>
<tr>
<td>belonging to the respective</td>
<td>within certain boundaries</td>
<td></td>
</tr>
<tr>
<td>sectors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: National questionnaire

Best Practices:

• “Partnerships between sector agencies and regional government have been implemented and work well in many regions. These partnerships are formalised and their main function is to make regional development programmes that integrates different policies on regional level”.

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Challenges:

- “Sectors are different. They have separate agendas, skills, means, ends etc, etc, and their focus is not a geographical delimited region but an industry or a set of issues. **Major challenges are to establish a regional approach within sectors, that the delegation of decisions varies from one sector to another and that administrative borders differs between sectors and often not consistent with the delimitation of regions. However, the main challenge is to get representatives from different sector to work together on issues of importance for the regions”**
- “In general the communication between national and regional government have a great potential for improvement. This due to the fact that the **policy forming process is carried out without involvement of the region level, or the regional level is involved on a late stage. The formation of maritime policies is not a single or well coordinated process. This makes it more difficult for regional authorities to maintain an overview and engage themselves. There are of course a lot of nuances in this.”
- The regional governments have no formal role in developing, approving or monitoring the contingency plans to fight oil pollution.
### 5.2.6. Portugal

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Role of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
</table>
| **National:**              |                | **Principles:**  
| Exclusive jurisdiction over the EEZ | National: National Oceans Strategy (NOS), 2004  
|                             | Legislative powers concentrated at the national level | NOS implementation plan under development: Informal consultation process (hearings) to the different regions and administration institutions  
|                             | Sectoral approach by the different competent ministries | Regional level: Exclusive competences: Permits and fiscalisation in the freshwater domains  
|                             | Regional Level: Administrative regions. Coordination of the implementation of national policies at regional level: diagnosis and implementation of national sectoral policies and programmes at regional scale | Oversight aquaculture activity, Shared competences: Promoting management of the shoreline and integrated watershed management  
|                             | Licensing and monitoring entity for environmental policies. | Monitoring of water quality  
|                             | **Autonomous regions (exceptions):** | RD&I  
|                             | Archipelagos of the Azores and Madeira have exclusive competences for managing the environment and natural resources in territorial seas, when not subject to international law and thus, the central government. Administrative and legislative responsibility over maritime businesses in the territorial seas. | Tourism  
|                             |                                  | Ports  
|                             |                                  | Aquaculture  
|                             |                                  | Fisheries  
|                             |                                  | Seafood products transformation  
|                             |                                  | EIA  
|                             |                                  | Inventories  
|                             |                                  | Articulation with civil protection services |

Source: Regional questionnaires (Algarve, Alentejo, Centro, Azores, Madeira)

**Best Practices:**

- Portugal delivered its National Oceans Strategy (NOS) in 2005, which was developed in coordination with major sectors. Presently, the plan for implementation of the NOS is under development, for which an informal consultation process was carried out, including hearings to the different regions and administration institutions.

**Challenges:**

- Integrating sectoral policies, and delegating more powers to the administrative regions so they can act more proactively on ocean management.
• NOS under a sectoral Ministry - the Ministry of Defence and Maritime Affairs-, rather than an independent/overarching institution, such as the Prime Minister or the Council of Ministers.

5.2.7. Spain

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Role of Regions</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National:</strong></td>
<td><strong>National:</strong></td>
<td><strong>Principles:</strong></td>
</tr>
<tr>
<td>Exclusive jurisdiction over the EEZ</td>
<td>Overarching policy for the protection of the marine environment (Ministry of the Environment)</td>
<td>- Adaptive management</td>
</tr>
<tr>
<td>Shared competences in interior waters</td>
<td>No intersectoral coordination</td>
<td>- Best available science</td>
</tr>
<tr>
<td>Maritime Terrestrial Public Domain under national jurisdiction</td>
<td>Public Maritime Domain under national jurisdiction (includes interior waters)</td>
<td>- Intergenerational and intragenerational equity</td>
</tr>
<tr>
<td>Legislative powers shared between national and regional levels:</td>
<td>Regional:</td>
<td>- Multiple use</td>
</tr>
<tr>
<td>Sectoral policies</td>
<td>Exclusive competences:</td>
<td>- Protection of biodiversity 2</td>
</tr>
<tr>
<td>Degree of legislative powers concede by national government varies with the region: in certain cases may share powers and competencies within the 3 NM</td>
<td>Freshwaters, transport and fishing, tourism, littoral planning, aquaculture, ports of local interest, energy</td>
<td>- Sustainability</td>
</tr>
<tr>
<td><strong>Regions:</strong></td>
<td>Shared:</td>
<td>- Integration of decision making</td>
</tr>
<tr>
<td>- Within the 3NM regional policies are implemented according to national directives,</td>
<td>Regional strategies implementing national laws and directives (transport, ports, fisheries)</td>
<td>- Precautionary principle / approach</td>
</tr>
<tr>
<td>- Development of regional strategies</td>
<td></td>
<td>- Ecosystem approach</td>
</tr>
<tr>
<td>- Enactment of regional legislation on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Exclusive powers over inland waters</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: National questionnaire

**Best Practice:**

• Exclusive competences are coordinated at Governmental councils, which congregate the regional bodies “Consejerías”, and Councils of Directors which congregate General directors of each regional body “Consejería”.

**Challenges:**

Major concern:
• “Integration of sectorial policies in the management and conservation of the Terrestrial Public Maritime Domain (free translation from the Spanish “Dominio Público Marítimo Terrestre”).

Major problem:
• Intersectorial coordination at national level: lacking cooperation, communication and information exchange
5.2.8. Sweden

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Infraastate/Regional Efforts Toward a National/Regional Ocean Policy</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative powers concentrated at the national level</td>
<td>Regional: N/A</td>
<td></td>
</tr>
<tr>
<td>Sectoral approach by the different competent ministries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination and implementation of national policies through regional institutions representing the state</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: National questionnaire, Morgane XPTO, I.T. Noronha (s/d), http://www.regeringen.se/sb/d/5659/a/47254

**Best Practice:**

- Sweden has developed a Marine Environment Strategy (2005), with a strong focus on marine pollution and enhancing government coordination on the marine environment more effective. Coordinating and advisory groups are to be set up under the environmental protection authority (EPA) charged with drawing up action plans (http://www.regeringen.se/sb/d/5659/a/47254)
### 5.2.9. United Kingdom

<table>
<thead>
<tr>
<th>Current Governance Structure</th>
<th>Infra-state/Regional Efforts Toward a National/Regional Ocean Policy</th>
<th>Implementation Strategy (Intersectoral Approach, Intergovernmental Approach, Other Strategies, Principles Applied)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National: Exclusive jurisdiction over the EEZ and the UK continental shelf where it extends further.</td>
<td>National: The Environment Agency is the responsible authority for the Water Framework Directive in England and Wales out to 1 nautical mile. Regional: Exclusive competences: - Nature conservation in territorial waters (by the Administrations in Scotland, Wales and N. Ireland) - Administrations are responsible issuing of marine dredging consents. - A range of national planning policy guidance for England (PPG20), Wales (PPW) and Scotland (NPPG13) is available. - Activities which take place below the mean low water mark (MLWM) are regulated by central Government.</td>
<td>No formal coordination process. Policy is coordinated by the lead department for a policy area, working closely with other interested Departments at both official and Ministerial level, to ensure that UK policy is inter-departmentally agreed.</td>
</tr>
<tr>
<td>- The Crown Estate owns approximately: - 55% of the foreshore (between high and mean low water mark); - 50% of the bed of estuarial areas and tidal rivers in the UK;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-The seabed out to the 12 nautical mile limit, including the rights to explore and exploit the natural resources of the UK continental shelf, excluding oil, gas and coal. The water column, oil, gas, and coal, and governing public rights such as navigation and fishery over tidal waters are independent from the crown.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sectoral approach by the different competent ministries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative powers concentrated at the national level, with the exception to the various powers devolved to each the devolved administrations of Scotland, Wales and Northern Ireland territorial waters. The UK Government retains responsibility for English territorial waters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regions: Devolved powers and decentralised distribution of competences to regions and counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The Town and Country planning Act provides the management framework for the control of coastal development but only above the MLWM. - Marine heritage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Source: Regional Questionnaire by Cornwall.

**Best Practices:**

- **Vertical coordination:** “The Environment Agency and Local Authorities share responsibility for different aspects of coastal management (e.g. maintaining, operating and improving flood defences).”

- **Delegating powers:** “Coastal management and planning, lies with the relevant authorities within the devolved administrations of Scotland, Wales and Northern Ireland. **Memoranda of understanding** exist between the UK government, Scottish Ministers, the cabinet for the National Assembly of Wales and the Northern Ireland Executive Committee. These agreements have been drawn up to ensure that procedures and rules for cooperation and policy coordination are met – particularly where there is shared competence for coastal management or planning, or where the actions of one administration will impact on the policies of another.”

- **Public and local participation in ICZM:** “In preparing a national strategy on ICZM the need of legislative action is under consideration to ensure an accountable, participatory approach to coastal management. This approach will also ensure that coastal communities have a say in local decision-making. This will not necessarily mean changes to existing responsibilities or structures, but will help to ensure that coastal management decisions take account of all relevant activities, and are derived in an open and transparent way.”

- **Participation in strategic planning:** The Marine Sector Technology Plan identifying the key technologies and R&D requirements. Its aim is to stimulate collaboration for R&D projects between the marine engineering sub-sectors and also other industries (including construction, automotive, rail and aerospace) where there may be common technology requirements. To produce a maritime Strategic Research Agenda under the EU Waterbourne Technology Platform”

**5.3. Regional level: The Role of regions**

The present section illustrates some of the role of regions, which are either in law (and therefore highlighted in the fact sheet section) or entrusted or delegated by less formal procedures. This section complements and illustrates some of the roles of regions. Additionally, when considered relevant examples of best practices related to ocean governance are mentioned. Finally, a section illustrating aspirations, recommendations and concerns by regions deriving from the questionnaires is presented.

**5.3.1. France**

5.3.1.1. Aquitaine and PACA

Aquitaine and PACA have few competences on maritime and coastal activities, which are usually shared with the national government. They share competences on local/artisanal fisheries and aquaculture, as well as on sea food processing. Regarding port activities their competences are mostly related to funding certain activities. In spite of having no formal competences in the coastal area, they have developed local political initiatives, thus contributing with financial means for these domains. Aquitaine and PACA are involved in several initiatives:

- **Littoral d’Aquitain.** In 2005, aiming at developing a regional vision for maritime policy, Aquitaine created the group working group « Littoral Aquitain » to develop and implement a shared strategy for de sustainable development of the littoral area, which includes the different levels of government (State-regions-municipalities), as well as stakeholders, citizens and experts, and developed the strategic document **Littoral d’Aquitain**

- **Guidelines for the Regional Maritime Policy of PACA, 2005:** In 2005, aiming at developing a regional vision for maritime policy, PACA developed the strategic budgetary document: “Orientations pour la Politique Regionale de la Mer”

- **Aquitaine’s Stakeholder forum:** Every two year, Aquitaine organises a stakeholder forum to debate maritime issues;

- **Conseil Consultatif Régional de la Mer of Aquitaine: Creation of a Regional Consultative Council for Maritime Affaires by the end of 2005.**

- **To address common management issues Aquitaine is a member of:**
- The Association Aglia consacrée à la pêche qui réunit les régions du grand ouest Français (Aquitaine, Poitou-Charentes, Pays de la Loire, Bretagne);
- Management of the estuary of river Gironde (2 regions, 2 departments under a Leader programme);
- RAMOGE for the exchange of governance experiences between a French and an Italian region.

5.3.1.2. Nord et Pas de Calais (NPDC)

NPDC has more shared competences with the national government and agencies related to seas than PDL: fisheries, seafood transformation products, tourism, and coastal protection. Related to the decentralization process the transference of port management competences is being studied. Under constitution is the Littoral Mission, which will be in charge of ICZM, where NPDC has land planning competences and is part of the steering committee. Finally, NPDC finances R&DI projects and participates in several initiatives:

- Responsible for the implementation of the Littoral Plan for Coastal Erosion Projection (PLAGE).
- Joint policy development between State, Region, Tourism Regional Committee, and department of tourism of Nord et Pas de Calais
- Projects for integrated management and ecosystem approach:
  - Projet SAIL II (Schéma d’Aménagement Intégré du Littoral) Promouvoir des démarches de gestion intégrée des littoraux dans les collectivités partenaires du Sud Mer du Nord
  - Projet EMDI : vision stratégique globale pour l’espace Manche, Objective: Elaborer une vision stratégique partagée pour l’espace Manche autour des thématiques : pêche/ressources halieutiques

5.3.1.3. Pays de la Loire (PDL)

PDL has very few competences, which are shared with the national government and agencies: fisheries, aquaculture and seafood transformation products. These are managed through commissions. Though presently, neither regional nor municipalities have a direct role in the plan POLMAR, the next plan, to be published soon will include a chapter addressing the role of regions. Nevertheless, the role of municipalities will still not under consideration. PDL participates in a set of activities and projects related to ocean issues, namely:

- Research and development, and ecological and financial recovery from the Erika disaster.
- Integrated strategy for maritime development under the regional scheme for economic development
- “Les Assises régionales en Pays de la Loire” is a project aiming at developing a diagnostic and develop strategic axis of development through a Thematic Commission « Façade maritime », in order to develop the basis of discussion for a maritime policy for PDL.

5.3.2. Germany

5.3.2.1. Schleswig-Holstein: Case-Study

Länders are responsible for the 12 nautical mile zone. The Ministry of the Interior in Schleswig-Holstein has set up a coordination and information unit for ICZM within its Regional Planning Directorate. This unit supports the regional and local authorities in Schleswig-Holstein and liaises with neighbouring federal states, the Federal Government and other countries.”

Two relevant initiatives have been developed by Schleswig-Holstein

- Initiative “Sea our Future”: to debate the economic and scientific approach of the maritime sector.
- Spatial Planning Report ‘Coast and Sea’ 2005: An example for maritime spatial planning in an European region.
The Regional Planning Directorate extended its regional and sub-regional planning to cover the offshore areas, through the preparation of a regional planning report on the coast and sea of Schleswig-Holstein to identify conflicting uses and find ways to deal with them. Meanwhile Schleswig-Holstein has presented its proposal of maritime Spatial Planning. Given the fact that this plan includes a relevant component related to governance, where partners have clear roles and mandates, some details of this project are presented:


The plan applies to both traditional and emerging uses, and takes into account:
- Cross sectional spatial planning and integrated coastal zone management (ICZM);
- Applying to both traditional and emerging uses, such as offshore wind-energy; and taking into account:
  - Uses of the sea; and
  - Potential conflicts between users within the EEZ.
- Capturing the scope of the different levels of plans by integrating local, regional, national and international level.

The structure of the plan is depicted in the following network scheme of Schleswig-Holstein:

The nature of Schleswig-Holstein’s initiative demonstrates the benefits of having clear mandates for the management of activities and environmental issues in the marine side of the coastal area allowing developing real ICZM plans. Additionally this governance structure also allows coordination with the federal government of activities on offshore areas which may impact the coastal marine environment as well as communities’ livelihoods.
5.3.3. Greece

5.3.3.1. Region of Central Macedonia (RCM)

RCM has several competences at regional level. Maritime sectoral policies are coordinated by the general-secretariat of the region.

RCM is programming the creation of an informal body composed by institutions with competences in the strategy for integrated management of RCM. This body will include the following institutions:

Box 15. Composition of the informal body for integration management of maritime affairs of the Region of Central Macedonia.

| 1) Organization of the Master Plan and Environmental Protection of Thessaloniki; |
| 2) Region of Central Macedonia, which includes the: |
|   - Directorate of Programming and Development |
|   - Directorate of Regional planning and Environment |
|   - Directorate of Agricultural Development |
| 3) PS; |
| 4) Universities; |
| 5) Cost Guard Authority. |

5.3.4. Italy

5.3.4.1. Abruzzo

Coastal cities have exclusive competences on seafood processing and licensing activities which use maritime space (aquaculture), ICZM related until the shoreline, including coastal defence, as well as environmental certification. Additionally, they have shared competences related to the implementation of the WFD: monitoring water quality within the first 3 Km and waste water disposal. Benefiting from the regional powers Italian regions have, Abruzzo has already developed regional frameworks and legislation related to ocean management in the interface area:

- Maritime Transportation: Transportation Regional Integrated Plan
- Coastal Monitoring Program of Abruzzo Region: Sea Project (A.R.T.A.)

Abruzzo has been involved in several initiatives related to coastal management. However the region has faced several difficulties on continuing the implementation of such objectives, since such projects have been funded through non-continuous funding – EU demonstration programs and INTERREG:

- Abruzzo’s competences are coordinated through the Sicora plan the Informative Support for the Management of the Coastal zone of the Abruzzo, which is an attempt to integrate a territorial, environmental, productive strategy involving the entire coastal area for sustainable development.

- R.I.C.A.M.A. has been one of the 35 “case studies” foreseen in the “Demonstrative European Program ICZM”, launched in the 1995 by EU. It was inspired by the requirement to face the phenomenon of the erosion of the Abruzzo coasts and, at the same time, to start a correct policy for integrated coastal management. Moreover, it has been implemented in order to start a relationship between all stakeholders that, with their own activities, influence the development or the degradation of the coastal zones, involving not only civil employees and officials of the local government, but also local populations, NGOs and, above all, enterprises.

- Adriatic-Transborders (Italy – Adriatic, Interreg IIIA)
5.3.4.2. Tuscany: Case-Study

The Tuscan region kindly offered to serve as a case-study on governance given the projects which are being carried out. Therefore, interviews to public managers of Tuscany related to the Sustainable Development Planning Division were conducted focusing on:

1- Vertical integration between national and the various subnational levels (summarized in the Italian National Fact Sheet);
2- The role of Tuscany in maritime policy, constraints and expectations, and in the present section, the governance system of the Pilot Project for Maritime System.

1. National <> Regional Integration.

As mentioned in the national fact sheet section, Italian regions have political and administrative autonomy, and formal mechanisms for coordination with the national government, as well as with lower levels of government (provinces). Regions plan and implement policies at regional level, and enact regional legislation to further implement national policies. However regarding the maritime space, they have quite limited competences, which are mostly related with shoreline management, licensing aquaculture, ports and marinas, and monitoring water quality. These competences are basically the same as in other EU regions, i.e., planning and managing uses in maritime space for now is not subject to legislation nor planned.

2. Tuscan region.

The Regional Environmental Action Plan of Tuscany is the main sustainable development plan. It aims at applying the principle of SD to local reality, which is periodically reviewed. The principle of integration is a major axis with its own strategy, which is characterized, on one hand as a directional plan for sectoral policies (energy, water, waste, etc.), and on the other, as a programme of transversal actions (incentives, communication, environmental education, environmental taxes, research and technological innovation, among others). The Tuscan region at this point is reviewing its sustainable development plan, which encompasses a section for the mountains and another towards the seas, and reflecting its own role on the maritime policy. From the maritime perspective, the SD plan comprises mostly environmental issues: implementation of objectives of international conventions, such as the CBD, and EU directives, such as the WFD, including monitoring coastal water quality and wastewater.

As other Mediterranean regions, Tuscany faces severe coastal erosion problems, which as in other Italian regions, spurred the development of local ICZM/shoreline initiatives to manage land uses of the shoreline, and the development of structures to protect premises located on land, and to prevent further erosion.

These initiatives have been funded by the Region of Tuscany, under the lead and lead, and coordination of the Planning division, which in collaboration with the university conducted an analysis of the region’s coastline, and strategically identified the major issues, areas of intervention and proposed solutions. On a second stage provinces were consulted for agreement, and collaboration for the implementation of such projects/interventions. Additionally, in certain cases communities have informed the region of needs for the protection of the shoreline.

The mechanism of this initiative as whole originated the development of the Pilot Project for the Maritime System: Proposta di Progetto Pilota Integrato: Coordinamento e Sviluppo degli Interventi del Sistema Mare della Toscana, adopted the in November of 2005 by a formal decision of the Regional Government of Tuscany. This project developed an institutional tool for the participation of local actors (infra-region levels and stakeholders) on the elaboration and implementation of the actions of an integrated maritime strategy aiming at sustainable development for sea and coast of Tuscany.

The strategy is based on the integration of different regional policies and resources: tourism, fisheries and aquaculture, shipbuilding and repair, training, ports and mobility, environment, culture, innovation and technology. For this purpose, Tuscany has defined a cluster of maritime activities. The final decision about the content of the strategy belongs to Regione Toscana.
To coordinate the regional and local planning and to guarantee the coherence between these two levels, Tuscany is testing a new tool for cooperative governance: a Contractual Tool called Plan for the Local Development, which was set up by the regional administration in order to share decisions with all the local levels (provinces and cities) and the main stakeholders (companies associations, trade unions, centres of research and innovation) with a bottom-up approach and a continue dialog with the main actors of the system.

**Box 16. How does the Contractual Tool Plan for the Local Development work?**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st phase</td>
<td>Region and Province sign a protocol where they define the priorities for the development of those provincial areas;</td>
</tr>
<tr>
<td>2nd phase</td>
<td>The Province coordinates a local governance process with the participation of all the local actors, public and private, to establish the major projects in a bottom-up process. At the end of this phase, an agreement is signed between all the actors who share the final document;</td>
</tr>
<tr>
<td>3rd Phase</td>
<td>The Province negotiates with the Region coordination of the regional and provincial planning, such as coordinating the main objectives of the local Plan of a coastal province with the objectives of the regional Pilot project. At the end of this phase, upon agreement, the Region and all the actors sign the final version of the Pact (contract). An inter-provincial Plan for the development of the coastal area can be built as a synthesis of the coastal provincial Plans.</td>
</tr>
</tbody>
</table>

The Contractual Tool Plan seems a promising tool to achieve consensus and improve political support by the different interested parties and partners of the future strategy for Tuscany; thus increasing the chances of success on implementation. However, given the limitation of competences of the regional government of Tuscany regarding its maritime space, a set of aspects and activities related to the management of the marine environment are not included.

As with other EU regions, this reflects lack of coordination between the national government and institutions with the regional level, as well the lack of lead roles and mandates. A possibility to improve such plan would be the development of a coordination mechanism with the national level on the subjects Tuscany has no competences, in order to allow for the planning and management of the maritime area, thus allowing the developing of a truly ICZM plan (i.e., integrating maritime waters management with its respective coastline). This kind of mechanism of coordination between regional <> infra-regional levels should also be considered for a partnership with the national government and its institutions for the expansion of such plan into the marine waters.

This lack of integration between the shoreline /littoral zone with planning of uses, and management of marine resources, as well as biodiversity, is probably one of the major threats to ICZM across Europe. The further development and implementation of the Contractual Plan should be monitored with interest.

### 5.3.5. Norway

#### 5.3.5.1. More and Romsdal, Nordland and Telemark

More and Romsdal, Nordland and Telemark have shared competences on fisheries, aquaculture, risk management, and ICZM/shoreline planning, which are coordinated through formal partnerships between regional government and sector agencies. The main function of these partnerships is to pool policies, funds and other resources and coordinate them within the framework of a regional development programme. In addition there is a case by case coordination in particular in matters of high complexity. Examples of regional thematic strategies are:

- Quality of life as a platform for commercial development
- Development of tourism
- Culture and adventure services
- Transformation an innovation in agriculture
- Energy – new ways of production

There is not one single plan that covers all aspects of maritime security; wrecking, fire, oil spill, rescuing etc. The most elaborated plan is related to oil spill where the cooperating municipalities are in charge of handling minor outlets and The National Coastal Administration is in charge of larger incidences or oil
spills that may take place off the coast. The regional government has no formal role in developing, approving or monitoring the plans.

More and Romsdal participate in several private-public partnerships and close cooperation with the private sector, as well as in national processes on an informal basis, such as:

- Northern Maritime Corridor, Nordic Transport Political Network, Safety @ Sea, Seaplane (example of private-public partnership).
- Though not a formal process, the County council also participate actively in the "National Transport Planning" process.

Some initiatives are:

- "Green Port", an Interreg IIC project to give input to the new European Directive on port reception facilities for ship-generated waste and cargo. This can be considered a best practice of how regions can give input/shape the EU policy development.
- Stakeholders forum related to seas and oceans management:
  - Ship-owners association of Ålesund
  - Maritime Forum of Southern Sunnmøre
  - Norwegian fishermens' association, regional branch

### 5.3.6. Portugal

Portuguese regions from mainland are administrative regions, while the archipelagos of the Azores and Madeira are political and administrative autonomous regions. Therefore, they are treated in two separate sub-sections.

#### 5.3.6.1. Alentejo, Algarve and Centro Regions

Alentejo, Algarve and Centro have very limited competences on policies regarding the sea side of the coastal zone. By law, regions are consulted by the central government when national policies are being developed. Their competences focus on the implementation of national policies and regional planning accordingly, issuing permits and fiscalisation of a wide range of matters related to industrial activities, land and environmental management, in particular regarding water resources management, such as the implementation of the WFD: issuing permits, control of land-based pollution, monitoring water quality and control of waste water disposal. Additionally, they have shared competences (enforcement, licensing, monitoring) for littoral plans. Legally speaking, the shoreline plans encompass the maritime waters delimited by the bathymetric of 30 meters. However, none of the littoral plans has developed plans for such maritime areas. They actually focus on land, beach planning and management and coastal hazards/erosion.

Natural parks are under direction of the National Institute for Nature Conservation. Licensing economic activities within natural parks (which would usually be attributed by the regional institutions) depends on the consent of the direction of such natural parks. The regions of Alentejo and Algarve have very significant portions of their coastal areas under natural park jurisdiction. Concurrently, they are subject of high levels of pressure by several economic activities, in particular tourism and urban development. As a consequence, the coastal areas of Alentejo and Algarve display several conflicts of users particularly related to urban development and construction on the shoreline and wetlands in protected areas.

The absence of competences for maritime affairs in general, namely regarding ports and fisheries, as well as the poor coordination with other levels of power, constitute a major threat to development and to strategic planning of the maritime areas of the Portuguese regions.

The Portuguese regions face difficulties of coordination between the different regional institutions, as well as with national institutions, in particular with the management bodies of natural parks that are under jurisdiction of the National Institute for Nature Conservation. Additionally, they face challenges regarding long-term planning, namely ICZM, and watershed management and marine water quality
monitoring; as a consequence, some regions face serious challenges regarding sustained funding for activities such as marine pollution monitoring. These regions participate in several initiatives, including:

- Alentejo participates in several regional projects focusing on the protection of transitional systems of the coastal area: protection of dunes, restoration of lagoons and land-based pollution.
- Working group to develop a Strategic Fisheries Plan for the Algarve to deal with regional transversal aspects of fisheries.

**Figueira da Foz, municipality of Região Centro:**

Portuguese municipalities have very few competences related to the maritime area: planning tourism, and territorial management. Its competences relate to the transportation and networks of infrastructures inland. Policy implementation is articulated with its regional institution (Região Centro). As other municipalities across Europe, **Figueira da Foz does not have a local maritime emergency plan.**

To overcome some of the constraints related to competences the municipality of Figueira da Foz is currently involved in several initiatives and organisations:

- The municipality of Figueira da Foz in partnership with private institutions is developing a plan aiming at creating a logistic platform to work with the port authority for the enhancement of transport logistics and intermodality in the region.
- Convénio de Colaboraçã o entre a Conselheria de Fomento da Junta de Castela e Leão e a Autoridade Portuária da Figueira da Foz
- Project PROPESCA SÉCULO XXI – Studies for the European strategy for the fisheries social economic diversification and local plans
- SAL – Salt pans of the Atlantic ( Interreg III B )
- Conference of Atlantic Arc Cities
- European Association of Municipalities with Marina / Yatching Harbour

### 5.3.6.2. Autonomous regions

The Archipelagos of the Azores and Madeira are autonomous regions of Portugal. Unlike the regions from mainland, they have political and administrative autonomy, with a high degree of competences related to decision-making, enacting regional laws and programmes. Policy development at regional scale articulated and observing national overall policies and laws. They have exclusive competences for managing the marine environment and natural resources in territorial seas, when these issues are not subject to international law and thus, coordinated by the central government. Such is the case of maritime pollution. Through agreements established with the central institutions they articulate the budget to implement regional policies on water resources and other natural resources, and land planning. They have fisheries management exclusive competences on the management in the 12nm and specific competences beyond derived from the fisheries boxes. They also have administrative and legislative responsibility over maritime businesses in the territorial seas. Madeira owns a shipping flag.

Regarding freshwater management and the implementation of the WFD, the regional directorate for land planning and water resources of the regional secretary for the Environment and Sea developed a protocol with the National Institute for Water Resources which allows sharing information and financial resources. The same situation applies to the littoral plans.

The Azores have delivered their Natura 2000 proposal to the EU Commission, which includes marine protected areas within the 12nm. The management of the seas is under the regional secretary of the environment, allowing some cross-sectoral coordination.
These two archipelagos Atlantic and Canary Islands, from Spain, are part of the biogeographic region of Macaronesia. Through INTERREG they have developed several projects for sharing information and experiences, as well as for developing approaches and procedures for Macaronesia, such as the project MACAIS for shipping operations; and ATLANTIC LOGISTIC, to create shipping connections between these archipelagos (project under analysis).

Since ultraperipheral regions share many similar features (great distance to Europe, small land area, extensive EEZ, isolation to markets and low economies of scale) mechanisms for cooperation between these regions should be enhanced.

5.3.7. Spain

5.3.7.1. Astúrias and Múrcia

Astúrias and Murcia manage fisheries within interior waters, and shares competences with the national government on territorial waters. The regional government share competences with local and the national governments on tourism, power generation, transports, ICZM, land-based pollution, and risk management.

The competences and management of aquaculture and seafood processing are directly articulated between local governments, privates and the national government. Competences for port activities are shared between both national and regional levels.

There are no formal mechanisms for participation in policy development at national and European level. Regions participate in the open consultation process lead by the competent authority.

Asturias and Murcia have developed several initiatives related to ocean management:

**Murcia:**
- The region of Murcia developed a **Regional Strategy for the Conservation and Sustainable Use of Biological Diversity**. This policy initiative aims at developing a network of marine protected areas and artificial reefs.

**Asturias:**
- **Asturias ICZM Regional Plan** (2003): **POLA** – **Plan de Ordenación del Litoral Asturiano** – Littoral Management Plan of Asturias, aiming at coordinating the different Local, Regional and National administrations, in a group of initiatives aimed to clean, restore, and refurbish structures that were erected in previous years diminishing the environmental quality of the coastline
- The Asturias EU Regional Office is conducting actions with its public officers in Asturias in order to raise awareness on the EU processes and Policies, in order to enhance articulation between the regional and EU policy processes.

Gijon Council (region of Asturias)

Spanish Cities can not adopt any ICZM initiative by themselves. Hence, they have to cooperate with the regional administration and port authorities to develop them. There are several ICZM initiatives along the Asturian coast:

- The coastline of Gijon Council is 30 km, about 10% of Asturias coastline. The Gijon city with the Gijon Port Authority (GPA) and the Asturias Regional Administration are pursuing several spot initiatives aiming at improving the maritime front of the City and the coast under its responsibility. The city has one strategy in the matter of sustainable development relating to the Local Agency 21.
- Gijon Port Authority (GPA) has included the ICZM framework in their R&D and Environmental activities, covering the coast line of the Port itself within Gijon council, and the coast in the maritime front of the 8 lighthouses along the 150 kms of Eastern Asturias coast.
- Sustainability analysis, an Atlantic Arc INTERREG project.
5.3.8. UK

5.3.8.1. Cornwall

Cornwall shares competences for the management of several maritime activities, often coordinated or in partnership with national and regional authorities. Cornwall has no coordination competences. Most of its competences relate to regional planning and development, often articulating with regional agencies (e.g. South West Regional Development Agency). Cornwall participates in emergency planning for maritime accidents according to the contingency plans. The process for participation is mostly done via response to direct consultation or pro-active lobbying singly or via regional or interregional networks. At present there is a Draft South West Regional Spatial Strategy, which contains maritime and coastal policies.

Cornwall participates in a set of processes through partnerships:

- For fisheries and aquaculture Cornwall participates the Cornwall Sea Fisheries Committee, which is a partnership between the national government/ Cornwall County Council (local authority) / industry, for fisheries and aquaculture:
  - Enforcement
  - Regulation
  - Development
  - Conservation
- Cornwall participates in ICZM, on a voluntary basis, shared with national agencies and local actors. Funding: need continuous funding rather then projects for ICZM.

5.3.8.2. Shetlands

Shetlands have few competences on maritime affairs: environmental and health monitoring of fisheries, aquaculture and sea food processing, as well as supporting R&DI related to such activities. Recently, the Shetlands received status of independent transport authority. Coordination between regional agencies is done in a case by case situation.

- The Shetland Transport Partnership, comprising the Shetland Islands Council and other stakeholders, will develop a transport strategy for Shetland with financial support by the central government.
- The North Atlantic Fisheries College aims at undertaking and co-ordinate activities related to the fisheries and maritime industries. This includes training and education, research and development, environmental and quality monitoring and inspection, and advice and management.
- The Shetlands are part of the Scottish Executive’s Sustainable Marine Environment Initiative (2005). This initiative is looking at coastal zone management and marine spatial planning over 3 years aiming at developing marine coastal plans for Shetland.

Challenges:
Transport networks in small, dispersed rural communities require expensive solutions but there is a need to make rural communities sustainable. It’s difficult to attract funding for major capital projects. Funding for work in the marine environment has historically been very low. Almost no funds left in current EU FIFG scheme and no provision in the rst of the Highlands & Islands Special Transitional Programme for marine activities.
5.3.9. Lessons Learned

5.3.9.1. National Level

Following the result from the national questionnaires the present section displays an overall analysis of how marine and maritime policies are set up in the countries which have replied to the national questionnaire.

National Ocean Policies

1. Most Nations have not yet developed overarching policies for the management of their maritime affairs. Within the EU and EEA space, so far, only Portugal has developed a National Oceans Strategy (2004), which implementation strategy is to be delivered by September of 2006.

2. Marine conservation policies are of particular relevance for ocean management and governance, since, management for human activities should build upon environmental and conservation baselines. The implementation of marine conservation policies implies interaction and coordination with sectoral policies. Thus, they can be considered the second level of complexity after a NOP.

3. Though, without having national ocean policies, several nations have developed national broad policies, in particular for the protection of the marine environment, such as Sweden (2005) and UK (Marine Strategy and Marine Bill under discussion).

Sectorial Policies

4. The kind and number of national sectoral policies varies according to the major interests and availability of marine of natural resources of each country, as well as the major problems they have faced. National policies for fisheries, aquaculture and shipping activities are common to all, reflecting not only the antiquity of the activities, but also their transboundary nature and its roots in international relations (UNCLOS, e.g.). These polices involve cooperation and participation in international and regional fora, such as UNCLOS, IMO, EU, amongst others. Only a few countries have overall sectoral policies targeting activities in the marine environment, and usually they do not involve the allocation of maritime space for activities:
   a. Sand and mineral extraction;
   b. Marine environmental conservation, though some have policies specifically targeting the identification of marine protected areas;
   c. Oil and gas extraction, in this case, because only some countries have such natural resources;
   d. Water quality and prevention of marine pollution is often related to the implementation of international or regional seas conventions. Since 2002, through the implementation of the EU water framework directive, countries have the duty to monitor waters in a systematic way in the territorial seas;
   e. Emerging uses such as energy (e.g. offshore wind power, waves) and bioprospecting lack frameworks as well, and the expansion of such activities is advancing in a case-by-case situation.

Policy Instruments

5. In most countries policies associated to methodologies and instruments for ocean management, such as Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA), (Integrated) Coastal Zone Management (CZM), and Spatial Planning (Spatial Planning), are not applied yet to the EEZ. These policies are instrumental to inform and support the analysis of cumulative effects, uses of the marine environment including space, and support decision-making on resource and space allocation, as well as to reduce user conflicts:
   a. EIA and legislation has been developed mostly focusing on projects based on land, estuarine areas and the shoreline;
   b. CZM: Initiatives are usually related to local/regional activities, often to solve shoreline and land management issues, such as coastal erosion or risks, as well as beach management. Though ICZM was often mentioned by respondents, most ICZM plans target the land side of the coastal zone, i.e., it seems no concrete management is made for the coastal marine environment. Thus, it would more precise to call such management plans, shoreline or littoral plans. According to the information provided by respondents, there are several plans at regional scale for the shoreline. While this report
was being developed, EU nations have been delivering their ICZM National Strategies to the EU Commission, but this was not considered for this report;
c. SEA and SP involve having policies and a vision for the maritime activities developed.
It is therefore not surprising that these tools are not in place, since usually there are not overall policies and strategic plans for the maritime areas. Schleswig-Holstein recently concluded the spatial plan for its maritime area. At the present there are initiatives to develop spatial plans at the level of the Baltic Sea, the North sea and the Scottish seas.

**Intersectoral/cross-sectoral integration:**

6. Coordination and communication between institutions from different sectors is a major challenge, and one of the major concerns that nations have reported. Institutions and policies are developed in a sectoral basis, as well as its implementation, and usually there are no formal mechanisms for integration of coordination at national level. **Consequently, there are no formal lead institutions for the coordination of maritime policies.**

7. Some countries, in ad hoc and case-by-case basis, attempt some coordination and intersectoral integration through ad hoc processes of consultation and coordination with other sectors. Such is the case of UK, which during policy development promotes coordination and consultation between sectors by the leading institution of such policy, in order to reduce conflicts and build intersectoral political support. To deal with the different aspects of environmental issues, Spain created the Sectoral Conference for the Environment (*Conferencia Sectorial de Medio Ambiente*). The leading institutions for the ocean policies of Portugal and France have been consultation sectors to achieve some level of cross-sectoral integration.

8. At regional level Greece and Norway attempt formal intersectoral integration for the implementation of the policies under their competences. In Greece (Thessaloniki), the general secretary of the region coordinates maritime policies, Norwegian regions have developed successful formal partnerships between regional sectoral institutions develop regional programmes.

**Vertical Integration:**

9. Countries have very different distributions of powers, and different processes of dialog with their different levels. The federal government of Germany has jurisdiction over the EZZ and its Landers over the territorial seas; whilst for the majority of other European regions the whole maritime area is under national jurisdiction. UK has also devolved some powers to its countries, enabling them to manage resources and enact legislation in certain matters, such as fisheries and coastal zone management. The archipelagos of the Azores and Madeira (Portugal) are political and administrative autonomous regions, with powers in certain domains to manage their territorial waters.

10. As a consequence of the reduced competences over the maritime water, regions have reduced space of manoeuvre for innovation, and management of issues on coastal maritime waters which affect coastal communities livelihoods or having regional specificities reflected in national policies;

11. Vertical integration suffers from the same threats as intersectoral integration:

a. Lack or poor communication and coordination between the different levels of government for policy making. Usually regions are involved at a late stage of policy development, or they are not involved at all, i.e., they are simple implementers of national policies;

b. Few nations have formal mechanisms for the consultation of regions. A successful example is Italy, where there is a regular process of consultation through the Permanent Council of Regions and National government, and also through the Council between National-Regions-Provinces. In these forums national policies, specificities and the role of regions are debated during policy formation process. Since Italy does not have an ocean policy, so far such mechanism has not been applied for this policy domain. Germany through the consultation procedures at National<>Länder also involves Länders at an earlier stage of policy making;

c. The most common processes of Regional<>National interaction are:

i. Consultation

ii. Inquiry

iii. Technical workshops

iv. Conferences

212
v. Public consultation statements

*Participation of Regions in Policy Development:*

d. The usual forms are public consultation and enquire. Few nations have formal mechanisms for the consultation of regions and provinces (see above the Italian case). Additionally, some countries have developed extensive lobbying action within their own governments. Such is the case of the UK councils, and Italian regions, which observe and lobby directly at the central government, in particular regarding funding, and policies of particular interest for them.

12. Coastal cities, in particular, ports cities, have particular needs, and a particular relationship with the seas. Good articulation with their regional level is important. However, they also aim at a more active role in the EU maritime policy. Thus, coastal cities should be considered a new stakeholder category in the debate of the EU Maritime Policy.

**Principles:**

The questionnaire attempted to identify a set of principles applied by countries regarding maritime policies. Most of these principles are recognised internationally, as well as by the EU. Since maritime policies are often underdeveloped within the EU and its member States, some principles are implied, or embedded in their actions, while implementing policies, but they are not necessarily legally formulated. Precautionary principle, intra and intergenerational equity, sustainable development and subsidiarity are the most frequently identified principles. Other principles are often applied, though not mentioned. This might indicate that certain principles are becoming as given or natural fact, i.e. customary law.

Integration of environmental concerns in all sectoral policies is consecrated under the EC Treaty since 1997:
"environmental protection requirements must be integrated into the definition and implementation of the Community policies [...] in particular with a view to promoting sustainable development". (Article 6, EC Treaty). Thus, requiring consideration in all EU sectoral policies as reinforced in the Council of Cardiff (1998), and being key on achieving the Lisbon and Gothenburg councils’ objectives.

The principle of ecosystem approach diffused from the international sphere, in particular through the implementation of UNCLOS objectives, the regional seas conventions, and the CBD. This principle is particularly important for regional seas conventions, where often EU member States are parties, and therefore, though not stated, it can be considered as national principles. Ecosystem approach is also included in the Common Fisheries Policy (CFP) and in the EU Marine Conservation Strategy.

Surprisingly, CPMR regions did not mention the polluter pays principle, included in several policies and in the Treaty (EC Treaty, Art.174, 2). Conversely, they pointed the user pays principle.

Intersectoral or cross-sectoral integration in policy is considered a “new” and key principle but, the questionnaires reveal that usually is not applied nor formalised, neither legally nor institutionally. Intersectoral integration occurs sporadically in Ad hoc coordination meetings, and other non formal procedures.

5.3.9.2. Regional level: The role of regions

The present section summarizes the major findings on the roles of European regions members of the Seas of Europe Project in both the maritime and marine policies

1. Distribution of Powers

Regions across Europe have different roles in ocean management reflecting differences on how governments and distribution of powers are structured and organised:
Table VI. Governments and distribution of powers to regions

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<th>Federal</th>
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* Administrative regions in the mainland of Portugal. The Archipelagic regions of the Azores and Madeira are autonomous regions.

Other features which strongly shape the role of regions in policy development and implementation are:

- Public administration structure and culture
- Economic development
- Culture
- Strength and tradition of the participatory process

2. Present roles in ocean management

In spite the diversity of distribution of powers, regions share common competences related to policies that affect the coastal zone and its marine environment. As displayed in the following table (Table VII), these competences are mostly land-based:

- Freshwater and estuarine management (implementation of the water framework directive, WFD)
- Beach management (including water quality)
- Shoreline issues
- Land use and planning
- Nature conservation
- Regional planning (usually on the land side)
- Social and economic development.
Table VII. The Roles of Regions: Fields where regions have competences.

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<tr>
<th>Regions</th>
<th>Marine conservation</th>
<th>Fisheries</th>
<th>Water Quality</th>
<th>Aquaculture</th>
<th>Coastal Zone Management (CZM)</th>
<th>Litoral Plans</th>
<th>Shipping building and Repair</th>
<th>Sand and mineral extraction</th>
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Legend: = With competences
???= management competences under dispute between the regional and national levels
The majority of competences identified in the previous table relate to monitoring and licensing economic activities. Usually, there are no competences for planning activities occurring within the marine space. The exceptions are beach and shoreline planning, monitoring for the implementation of the WFD on coastal waters; and only some regions have powers to manage the marine coastal environment, namely local fisheries.

Traditionally, regions have a major role on implementing national economic and social policies through strategic planning, as well as articulation with local communities. This infra-state level is often considered the optimal level for strategic planning. In the past, with exception of shoreline issues, port and marinas, strategic planning by regions did not include the marine area. Regional planning was focused in activities taking place on land. However, the making process of the Green Paper on Maritime Policy spurred the development of maritime strategies by regions. However, the common lack of relevant competences for planning the maritime space bordering their coastlines is a major threat for efficient implementation of such strategies. Deep involvement and articulation with central governments is necessary (there are exceptions, such as Germany and UK).

Though the EU recommends ICZM, most nations do not have a comprehensive regulatory framework nor program. Therefore, ICZM is mostly achieved at local level with voluntary initiatives, and usually it stops at the water mark.

Several regions have developed agreements with neighbouring and cross border regions for the management of sectoral maritime issues.

3. Participation in maritime policy making

The regions that have answered the questionnaire have very different national systems and distribution of powers, but their participation in the development of national maritime policies is quite similar. With exceptions, there are not institutional bodies of regions or cities, to participate in developing maritime policies at national level. Fisheries and transportation are the major sectors where, some nations have regional or local management bodies, however, mechanisms for pro-active participation at early stages of policy making are scarce, as well as stakeholders forums. Participation and input into maritime policy-making usually is done through:

- Consultative process and inquiry;
- Delivery of positions/statements, in oral or written form;
- Public consultation;
- Direct lobby singly or via regional or interregional networks;
- Participation in technical working groups;
- Declarations and participation in conferences and seminars;
- Delivery of results of demonstration and research projects, in particular related to ICZM.
- Regional Strategies which can also be considered political instruments for negotiation of some innovation with central governments.

Participation of regions in Policy Development at national and EU Levels is often made through extensive lobby strategies, at different levels:

a. Public consultation enquires, and the delivery or communication of results of demonstration, pilot and cooperation projects to both national and EU levels, by feeding the policy process with background, expertise and innovation.

b. Some countries have developed extensive lobbying strategies within their own governments. Such is the case of the UK councils, and Italian regions, which observe and lobby directly at the central government, in particular regarding funding, and policies of particular interest for them;

c. At EU level, many regions have also developed extensive techniques of lobbying: regions are represented at several infra-state / regional bodies of the EU, with emphasis to the CoR. Their offices in Brussels are a major point of collecting and disseminating information amongst regions, developing cooperation projects, and coordinating lobby within EU and also back at their home countries. Within the network of regions, as well as by membership in non-governmental organisations and associations (e.g. CRPM),
regions exchange information and experiences, contributing for their development and delivery of their own positions to the EU.

4. Implementation and financial mechanisms:

For coastal initiatives, in particular ICZM, most regions are funded through national and EU short-term grant schemes for ‘voluntary’ co-operation, such as Interreg. Funding through interregional transregional cooperation is very useful for advancing EU and national maritime policies, amongst others. This funding can be considered a major tool for the empowerment of regions, enabling them to test new methodologies, develop new knowledge and skills, exchange experiences, and solve problems within a limited period of time. It’s also useful to raise awareness and deliver policy recommendations in other forums, such at national and EU level.

The Marine and Maritime policies are complex, transversal and holistic, requiring the implementation and development of new long-term frameworks. The short term nature of Interreg funds for cooperation should not be considered as a major source for the implementation of maritime policies by regions, since it is not a source of continuous funding, as required for the implementation of ICZM and other long term policies. Appropriate financial mechanisms is a major concern for the implementation of both the EU Maritime Policy and Marine Strategy.

1) Lobbying and participation on marine /maritime policy;
2) Education and awareness for oceans through cooperation;
3) Exchanging experiences and lessons learned (best practices, failures, challenges) on governance regarding the various available tools;

However, the short term nature of Interreg funding should not be considered as a major source for the implementation of maritime policies by regions, since it is not a source of continuous funding, as required for the implementation of ICZM and other long term initiatives. For such long term initiatives appropriate funding for maritime policies needs to be provided.

5. Regional Management

Several regions and cities claim lack articulation between their respective regional seas convention or scope of the programme with their local realities, and would rather be part of a smaller management area, which would better reflect their needs and local realities. Regions do recognise marine ecosystems/marine basins as the fundamental units for management of maritime affairs due to the transboundary nature of oceans. The key is to find a mechanism within this wide marine ecosystems/regions where regions can participate in the development and implementation of objectives and programmes, as well as a better communication with their respective governments and their respective regional seas secretariats.

5.3.10. Aspirations and concerns of regions for ocean management

The major aspirations and concerns of regions regarding the EU Maritime Policy relate to governance issues. The most frequently questions fall under the following categories:

- Legitimacy of regions in the maritime (and marine policy): the role of regions;
- Policy objectives;
- Vertical Integration;
- Intersectoral Integration;
- Financial instruments to support the implementation of this new policy;
- Science and Technology;
- Instruments for policy implementation.

Legitimacy of Regions:

- Recognition of the legitimate role of the regions as the voice of the coastal community, their deep knowledge of reality on the ground, making them the suitable for ICZM development;
• Recognition of the legitimate role of the regions as major implementers on the ground, by developing a culture of sharing powers and duties in coastal areas, through defining regional interests and stakes in the coastal zone to be shared, i.e., the national levels delegating, devolving or sharing powers with infra-national levels

Policy Objectives:
• A commitment to achieving global targets for sustainable use of marine resources: It is required to get a healthy marine environment in terms of biodiversity and living resources, able to coexist with humans and their needs. It is therefore required that marine, coastal and lagoon environments enjoy good health, the marine biodiversity is preserved undamaged without harmful effects of the human activities, the marine resources overstay in good preservation and finally all the marine human activities maintain their socio-economic functionality without exit from the borders of the environmental sustainability.

Vertical Integration:
• Obligation on MS’ and regions to co-operate in preparing and implementing European regional and sub-regional sea plans (ecosystem-based approach in the EU Marine Regions);
• Stronger presence of maritime cities on the implementation of maritime policy;

Intersectoral Integration:
• Coherent and effective sectoral policy coordination and integration at EU and National levels;
• Mandatory coordination and integration of the EU sectoral policies and programmes for the sea and national levels;
• Definition of criteria for the coordination of the EU maritime policy with regulatory effect on the different levels of national public administration;

Financial Instruments:
• Providing the adequate financial instruments to regions and communities is of paramount importance for the further development and implementation of the EU maritime policy. It is of major importance that this issue is reflected in the Green Paper;
• Long-term funding programme for ICZM rather than demonstration or collaboration short-term projects;

Roles for Science:
• Research programmes linked to the real needs of public managers and users: support to the public administrations in order to find solutions to the scientific, socio-economic, legal difficulties for the implementation of a policy of sustainable development of the sea resources. In such effort, the role of the science is of major importance;

Instruments and policies for Implementation:
• Economic evaluation Feasibility and environmental impact study concerning maritime developments;
• Increased focus on cooperation with neighbouring countries;

6. OVERALL SCHEME OF GOVERNANCE FOR THE EUROPEAN SEAS AND THE ROLE OF REGIONS

The present section highlights some of the key aspects that should be taken into account under both the Green Paper and the future EU Maritime Policy (White Paper, etc). The overall governance scheme presented does not aim at covering all aspects of the EU Maritime policy. Instead, it identifies key aspects related to new institutional arrangements required for vertical and intersectoral integration from the regional/infra-state perspective, i.e. the role of regions.

This proposal is based in some fundamental “rules”:

1. The EU Marine Strategy provides the baseline for the EU Maritime Policy (integration of the environment in sectoral policies, EC Treaty, Article 5);
II. The diversity of situations, such as geographical, ecological, and political differences, must be reflected in policies. Thus, it can be considered that the appropriate delimitation of EU Marine Ecosystems / Regions and the implementation of the ecosystem-based approach, falls under the implementation of this principle (diversity in environmental policies, EC Treaty Article 174);

III. EC action can be considered necessary (or justified) in the light that marine issues are transboundary by nature and that its member States, regions and citizens may benefit the development of synergies and economies of scale by networking and cooperating within the fundamental unit of the marine ecosystem, as well as from harmonising several procedures. (Subsidiarity Principle, Article 5), thus vertical integration;

Taking into account key issues of national jurisdiction and sovereignty, as well as the key roles of the national and regional levels for an efficient ocean policy, only a tripartite partnership between EU <-> National <-> Regions seems to be effective for the implementation of ocean policies grounded in local reality.

The following proposal for the role of regions and scheme of governance is built on the above mentioned assumptions and tripartite partnership.

6.1. Overall Principles for the EU Maritime Policy

A holistic management approach offers the only feasible and appropriate way of dealing with an open and tridimensional space such as the sea. The development and implementation of an integrated maritime policy represents a challenge to the traditional processes of policy making and implementation, as it challenges the conventional sectoral policy and administration system towards cross-sectoral and vertical integration processes. Additionally, this process implies bringing together stakeholders and civil society, to raise support and cooperation to undertake such tasks.

The EU Maritime Policy will constitute a new layer of policy making, where international developments play a major role on national policies, and where (European) national ocean policies are still at their infancies. Rather than increasing the gap between the EU and its citizens, the EU Maritime Policy presents an optimal opportunity to approach citizens to the EU institutions, as aimed by the EU White Paper on Governance.

This section's shaped taking into account that the EU Marine Strategy is the fundamental baseline for the Maritime Policy.

Principles of Integration and Articulation: Developing an integrated maritime policy for the seas of Europe consists of a major challenge, as this policy will require the integration of:

- Intersectoral or Cross-sectoral Integration: The EU sectoral policies to achieve the sustainable development of seas and oceans, as proposed by the Cardiff (1998) and Lisbon (2000) Councils;
- Integration/Articulation with the Environment: Integration of environmental concerns in sectoral policies (as proposed by the Cardiff Council (1998)), in particular with the EU Marine Strategy which should be the baseline for the development of maritime policies;
- Vertical Integration: The different levels of government and administration, in order to fully involve and reflect the reality, needs and aspirations of citizens, as set out in the Laeken (2001) and Lisbon (2000) councils, which as a whole, aspire at sustainable development (of oceans) in a more competitive and equitable society;
- Articulation / Integration of differences: The EU Maritime Policy faces additional challenges due to the variety of forms of government, distribution of powers and public administration of its member States; Different priorities; Different economic speeds; Cultures, including the tradition of civil society participation in decision-making processes.
- Geographical Articulation/Integration: Distinct marine ecosystems and sectoral policies with different spatial areas will require a policy which articulates such differences;
- Articulating with Non-EU member States: The European seas share marine ecosystems with non-EU member States. In order to achieve sustainable development of seas and oceans articulation, coordination, cooperation and good neighbourhood policies with non-EU member States are required.
These issues are aspects of ocean’s governance, some of which require the establishment of new formal processes, mechanisms and/or institutions to proceed with such integration process. Additionally, there a set of principles widely accepted and/or applied by the EU and its member States, as well as in some international forums should be considered.

6.2. Ecosystem based approach and EU Marine Ecosystems: The Fundamental Unit for the implementation of EU Maritime and Marine Policy

European oceans and seas comprise large marine areas, which encompass a geographically distinct set of marine communities, while sharing common environmental conditions, and interact ecologically in ways that are critical for their long-term subsistence (i.e., ecosystems).

Ecosystems, due to their relatively homogenous characteristics consist on the optimal unit for the management of human activities, which is commonly referred as ecosystem-based approach. The major advantages of the ecosystem-based approach consist on the development of common principles, guidelines and standards for the management of human activities, which in a cumulative way affect the ecosystem productivity and health.

The ecosystem approach implies that all users within its area ought to be managed by a common policy, objectives and standards, regardless of their nationality. Saying this, all users and regions bordering such ecosystems are major stakeholders or partners in the management process of such marine ecosystems.

Ecosystem based management allows for the development of common work, boosting taking advantages and synergies of common methodologies and data gathering, in particular, regarding planning, establishing objectives and research within each area, between bordering regions and nations.

The EU Marine Strategy proposes major marine EU ecosystems as the basic unit for marine environment management and conservation. The integration of this spatial vision with the EU maritime policy, and as a consequence with the various sectoral policies is fundamental, as these units have common features and therefore require common management goals and standards. Therefore, integrating the economic and social dimension with ecosystem approach makes sense from a practical perspective.

Taking into account the practical advantages of ecosystem-based approach, European marine ecosystems should be considered as the fundamental unit for development and implementation of policy objectives on:

- Management of the marine environment and its natural resources;
- Management of human activities in the marine environment and coastal areas;
- Marine RD&I (EU Marine Ecosystem research networks);
- Marine Information Systems and Marine Observatories (Monitoring, Assessment, Statistics, Policy Processes, Education and Awareness);
- Cooperation between regions (and nations) for marine and maritime affairs, without limit of distances between them (as long as regions are within the same EU Marine Ecosystem).

To manage such regions individual bodies for the coordination of marine and maritime activities within the geographical scope of each EU Marine Ecosystem/Region should be created. These bodies should aim at: developing a common framework (coordination, articulation, harmonization, etc) between the EU, nations, regions, stakeholders, and civil society. For the purpose of this project -Seas of Europe- they will be named EU Marine Ecosystem Committees.

6.3. The role of Regions in the EU Maritime and Marine Policies

Overall governance of maritime areas currently comes under the responsibility of nations and international organisations, and it manifests itself on the creation of intergovernmental bodies that exclude local and regional communities living alongside the EU’s seas. Despite the great diversity of situations amongst the subnational levels of government across the EU, regions share a set of common roles:

- Representation of their citizens in the democratic process;
- Managing of the coastal zone and the economic activities occurring therein (e.g. tourism);
• Implementation of other EU policies that affect the coastal marine environment, such as the water framework directive, biodiversity and nature conservation, including the Natura 2000 network, local shoreline/ICZM voluntary initiatives;
• Interregional and transnational cooperation for innovation, exchange of experiences, good neighbourhood policies (thus, contributing for peace and security);
• Participatory process through improving access to information, translating science to citizens, and promoting education and awareness.

The major interests of regions in the policy-making process of the marine and maritime policies aim at ensuring that:

• Their specificities are fully reflected in the drafted policies and instruments;
• Ensure adequate programmes and funding for policy implementation;
• Promote the social and economical mobilization of maritime regions.

Additionally, regions have interests on the management of offshore activities which specifically may impact the coastal area and the livelihood of its communities.

Given the above mentioned, regional/infra-state authorities are major implementers of national and EU policies on the ground, being key for the successful and efficient implementation of EU and national policies, along with many international targets. Therefore:

Regions are legitimate partners in the EU marine and maritime policies. As underscored by the Laeken Council (2001), and in compliance with the subsidiarity principle, it is crucial that:

• Regions, in cooperation with local authorities, are enabled to participate proactively in the definition of priorities, programmes and strategies for the development and implementation of the EU maritime policy;
• The appropriate opportunities, means and tools are made available for an effective policy implementation. Otherwise, there is a risk of widening the gap between EU institutions and its citizens with a new complex policy process.

To further participate in the previous actions, maritime regions face major challenges:

• Developing and allocating adequate human resources for the integrated management of seas and oceans, with a multidisciplinary view of maritime issues such as: conflict resolution and negotiation skills; networking; collaborative and cooperative processes; public participation process and EIA/SEA of oceans;
• Specific and sustained funding for the implementation of these new policies;
• Creating new mechanisms and institutions for cross-sectoral and vertical integration, within the EU institutions and the national and subnational levels. All levels will need to adjust and adapt to their new role on ocean/coastal management.

6.4. Possible mechanisms for Regions to participate in the development of the EU Maritime Policy

There are two distinct levels of participation of regions in the EU marine and maritime policies:

• EU Commission to ensure that their specificities are fully reflected in the drafted policies and instruments.
• EU Marine Ecosystems/Regions: Marine ecosystems/regions are the fundamental unit for the further development and implementation of the EU marine and maritime policies, where regions have a key role in the respective coastal areas.

6.4.1. The Role at the EU Level

The EU Commission should take the steps forward to develop an institutional framework with strong leadership, including a body and process of coordination of sectoral policies, as well as mechanisms for participation and means for policy implementation (ICZM, EU Marine Ecosystems/Regions). As
legitimate partners, coastal regions should participate in such processes and bodies to enhance policy effectiveness:

- **Council / Committee of Maritime Regions** to participate actively in the overall maritime policy debate, ensuring that their specificities are fully reflected in the drafted policies, and instruments. Given the specificities of the marine and maritime policies it should be pondered if such body should be created within the CoR, or as an autonomous body to collaborate directly with the Commission;
- **EU Marine Ecosystem Committee** to manage the EU Marine Ecosystems/Regions, in a process that couples both the EU and Maritime Policies, and where **regions, organized in a Council of Regions**, can participate on its management. The major role for regions is the development of ICZM plans, and ensuring that planning of offshore activities is coherent with their ICZM plans (see explanation on the following section);
- **EU Forum for Marine and Maritime Affairs**, where all partners of the EU Marine and Maritime policies (EU institutions, member States, regions, civil society, stakeholders, etc) meet to assess and debate progress and further action.

6.4.2. The Role of Regions at the EU Marine Ecosystem / Marine Biogeographical Region

As stated previously, EU Marine Ecosystems/Regions are the optimal fundamental unit for the implementation of the maritime and marine policies. At implementation level, regions should participate in the mechanism of management of their respective EU Marine Ecosystems/Regions in conjunction with their **EU Marine Ecosystem Committee**. The appropriate delimitation of these EU Marine Ecosystems/Regions it is very important.

The EU Marine Ecosystem should be managed according to common major environmental objectives/baselines and guidelines, set out by EU environmental principles (e.g. EU marine strategy) for each marine ecosystem, along with harmonized standards and criteria developed within the maritime and sectoral policies. Both national and subnational (regional levels) should be part of the bodies of management of their ecosystems. The articulation process between the Regional Seas Programmes is not object of this report. However, it is important to highlight that these EU Marine Ecosystem Regions should articulate and take on board all the good work already developed by these bodies, preventing duplication and overlapping.

The participation by regions could be coordinated through a **EU Marine Ecosystem Council of Regions**, while the National and EU representatives would coordinate the overall marine ecosystem management through the **EU Marine Ecosystem Committee**. The participation of regions should take into account their interests and roles on the coastal zone area, and ICZM. Additionally, they should be given the possibility to participate/give input in the management of offshore maritime activities which may affect their coastal areas, and their communities’ livelihoods: a mechanism of coherency between ICZM plans and offshore activities.

At the Council of Regions analysis and diagnosis of the management needs for regions is coordinated and assessed, and further action and decisions can be formalized by the EU Marine Ecosystem Committee. Additionally, representatives of the civil society and stakeholders of these regions should be allowed to participate through the establishment of a **EU Marine Ecosystem Forum**, to ensure transparency and input by the civil society.

The following scheme attempts to depict the overall scheme of management and participation of regions in the EU Marine Ecosystem management system: a **tripartite partnership for management between the EU <> States <> Regions.**

Given key issues of national jurisdiction and sovereignty, as well as the roles of each levels, the terms of such partnership would require to be subject of specific agreements by the involved parties in each EU Marine Ecosystem / Region, including appropriate funding (e.g. tripartite agreements between EU <> States <> Regions).
Figure 10. Model for a tripartite EU<>National<>Regional governance of the European seas based on ecosystem based management.

The theoretical model displays a view from top of a EU Marine Ecosystem/Region, bordered by several regions (sub-national level). The EU Marine Ecosystem Committee congregates national and EU levels, to deal with the development of an overall framework, programmes and funding, creating a network between the nations and regions encompassed by the EU marine ecosystem to deal with both marine and maritime policies.

The development of the common framework for the EU Marine Ecosystem/Region should include:

- Objectives, Standards and Targets
- Management of the Marine Environment
- Management of the Human Activities
- Cooperation network between regions and nations in marine and maritime affairs, without limit of distances between them (as long as regions are within the same EU Marine Ecosystem).
- EU Marine Ecosystem Research Network;
- Marine Information System
- Marine Observatory
- Monitoring
- Evaluation Process
- Financial programme

In this model, the overall framework includes a ICZM programme, which major principles were agreed at EU and National levels. Each region is responsible for its own ICZM plan, encompassing land and coastal areas, as well as including both coastal waters and its freshwater catchments. Through a long-term incentive scheme shared by the EU, States, and Regions, regions develop and implement their ICZM plans.

These regions cooperate and articulate work with the body responsible for the management of the EU Marine Ecosystem (in the scheme simply named as regional sea committee, or EU Marine Ecosystem Committee) to achieve the proposed management objectives, as well as to ensure that the management of offshore waters and activities are coherent with the approved ICZM plans.
6.5. Integrated Coastal Zone Management

One of the biggest expectations as far as the Green Paper is concerned is the development of real integrated coastal zone management (ICZM) at European level, as recommended by the Rio Conference in 1992. The development of ICZM strategies in the Member States has already been dealt with by the European Recommendation of 30 May 2002. The aim is to improve existing instruments and increase the extent of their ambition through a long-term programme.

Maritime regions have powers in clearly identifiable areas (education/training, monitoring and control of the environment, conservation of cultural and natural heritage, spatial planning) and they are major stakeholders in areas where states have primary responsibility (economic development, energy, fisheries and aquaculture, etc). The true dimension of such issues can only be perceived in the framework of sea basins such as the Baltic, the North Sea or the Mediterranean. Transnational and interregional cooperation are particularly appropriate instruments for implementing provisions targeted at European seas.

The ICZM concept should be clarified, and be part of the strategic planning and management of regions, both in land and marine waters, but it needs to be analysed as such, and not only for nature conservation purposes (which, at this point many managers confuse).

ICZM is a very useful and widely used tool for management and conflict resolution. Therefore the EU through its Marine and Maritime Policies should provide incentives for regions to develop and implement comprehensive regional ICZM, such as a Directive on ICZM that could be a EU Voluntary Program based on:

- Overall guidelines, principles and objectives;
- Ensuring that EU and national policies and actions are coherent with the funded regional ICZM plans;
- Financial Incentives;
- The development and implementation of such ICZM regional programmes could be articulated between EU <> National <> Regional <> Local levels through a tripartite mechanism.

6.6. Other Recommendations for the EU Maritime Policy

1. Access to information is an important step for participation in democratic processes. The EU Maritime Policy will involve a set of complex processes and sectors to which partners, stakeholders and citizens must have full aware in order to support the Maritime Policy. To support such participation, there is a need for the development of an Observatory for the EU Marine and Maritime Policies, concentrating all marine and maritime components within EU, such as:

- Legislation, frameworks and processes
- News
- Education and Awareness
- Monitoring Information: Economy, Environmental, Social
- Research and data
- Translating science to citizens
- Clearing House Mechanism
- Project;
- Meetings
- Jobs
- Participation

2. Means of Implementation. Skilled human resources and financial Human and financial resources will be required for the implementation of the EU maritime policy, not only at national but also at EU level.

3. Capacity building for public managers to develop a holistic and multidisciplinary view on ocean management, as well as skills for the integration of policies, collaborative processes, conflict resolution and leadership, at both regional, national and EU levels.
4. **Evaluation of Policy Implementation.** Ensuring an valuation and policy review mechanism to assess progress of implementation, as well as to adjust policy as knowledge evolves and to deal to new emergent issues.

5. **Participation.** Create a process similar to UNICPOLOS to raise awareness, motivate and enhance participation of EU partners, stakeholders and citizens to forward the Agenda for the European Seas.

6. **Stewardship of oceans.** Create a campaign to develop stewardship of oceans and raise awareness to the public in general, i.e; to create an *European Ocean Ethics.*

7. **Geographical scope of policy implementation: EU Marine Ecosystems/Regions.** Ensuring that the delimitation is the most appropriate, and fully supported by States and regions. The EU Marine Ecosystem/Region proposed a common region for the Archipelagos of the Azores, Madeira and Canary Islands. However, there is a general gap on knowledge regarding the realm of this marine region, which is called Macaronesia. Therefore, an overall study should be undertaken to establish the best management unit for these archipelagos.

**6.7. The Role of Regions: Conclusion**

Regions’ added value relies on knowing better realities and needs on the ground, and coordinating concrete actions with local communities while developing and implementing strategic plans. Regions should be considered the fundamental operational unit for implementation of the EU Maritime and Marine policies on the coastal zone, which potential roles could be summarized in developing at regional level:

- Regional Strategies and Plans for ICZM: coupling both the objectives of the EU Marine Strategy and the EU Marine Policy into concrete action (following national and EU overall principles and guidance);
- Articulating, and when necessary supporting with technical skills, initiatives with local communities;
- Cooperating with other regions in transboundary issues;
- Cooperating and articulating ICZM with regional seas programmes and the EU Marine Ecosystems / Regions in the implementation of the ecosystem based-approach by means of a tripartite partnership between EU<>National<>Regional levels, to fully implement the ecosystem-based approach applied to the EU Marine Ecosystems.

7. **OVERALL CONCLUSIONS AND RECOMMENDATIONS**

The green paper provides a window of opportunity for innovation and improvement of the EU governance system, as proposed by the EU White Paper of Governance. The EU Maritime policy has the possibility of laying out new mechanisms to reduce the gap between citizens, local communities and regions and the EU, thus contributing for the good governance of the EU, as laid out in the chapter related to the overall scheme for governance and the role of regions.

Governance of the seas concerns a wide range of sectoral policies to be coordinated at a multilevel approach, from the international sphere to the regional and local level, which in EU is reflected in the principle of subsidiarity.

The nature of oceans policy has been deeply shaped by international relations, through both generally accepted practices and international treaties. Although international law is in its principle limited in its application to States and other entities of recognized international personality, it has immediate effect on citizens, and therefore by the same logic regions. Through the analysis of most cases, ocean management is entrusted and centralized by national governments and national institutions, and often done in a sectoral and case-by-case situation.

Ocean policy development and implementation is a complex process, as it requires the accommodation and integration of different policies and conflicting interests. Additionally, it requires special governance measures for implementation, such as institutional arrangements, new institutions, collaborative efforts,
adaptative management, together with new regulatory frameworks, and financial means for implementation.

Ocean policies should follow a number of key principles which are essential for the development of an efficient and complex policy: vertical and cross-sectoral integrated policies; sustainable development; marine ecosystem/sea basin approach; and informed and active participation by partners and stakeholders. Finally, they require strong leadership and perseverance sustained with the adequate financial means to drive such complex processes. Without these last two items, it would be very difficult to implement such policies.

The management of a policy for the sea requires some important tools: Integrated planning for a maritime coherent policy, developing instruments for better decision making, adequate programs and human resources, funding, and mechanisms for participation; Monitoring and evaluation of policies; Observatory to collect the relevant data and information for monitoring process. Regions within their own competencies are one relevant level to participate in design and implementation of the tools for management policy of the sea.

The instruments that have been developed to date (on legislation, databases, statistics, monitoring and surveillance, spatial management and planning, and EIA) are primarily focused on the terrestrial environment. Therefore, action in the marine environment has been mostly based on specific or case-by-case initiatives that, due to their very own nature, are not always successful using conventional land-based approaches.

Appropriate means for implementation – human resources with holistic views in ocean management– as well as funding are fundamental for a successful policy. Traditionally funding programmes have been designed to deal with the management of the environment, economic activities and the social dimension of land. This holistic policy touching the different dimensions of ocean’s management requires long term dedicated financial means.

The European Marine Ecosystems/Regions should be considered as the fundamental unit for development and implementation of the European seas policy objectives as a whole. Cooperation between regions can have an important role to play within the EU Marine ecosystem/Region approach, as a major tool to forward the EU maritime policy for the implementation of ecosystem approach coupled with ICZM, and the development EU Marine Ecosystem Research Networks. Given the importance of European Marine Ecosystems/Regions for an effective management of the European seas, it is crucial ensuring that their delimitation is the most appropriate, and that it is fully supported by States and regions. Given the general gap on knowledge, an overall study should be conducted to establish the best management unit (one or more EU marine ecosystems) for the Archipelagos of the Azores, Madeira and Canary Islands belong.

R&TD plays a major role regarding supporting better informed decision-making for the sustainable exploration and exploitation of marine resources and the support to innovation and technology transfer for SME are relevant objectives that can be reached with the active participation of regions and cities. The future cooperation programs and RD&I programs provide some ground to increase cooperation on maritime issues. RD&I should also be a considered as tool for the development of research meeting direct needs public managers, thus enabling regions to create their own research goals and programs.

Coastal regions have major interests in the EU maritime policy related to:

- The management of the coastal environment and several economic activities;
- The management of offshore activities which may impact the coastal area and its communities;
- Cooperation and good neighbourhood policies;
- Representation of their citizens in the democratic process.

On the other hand, coastal regions are major implementers of EU and national policies on the ground (EU and national), including: WFD, Natura 2000, EIA, SEA and ICZM (e.g). Coastal regions are therefore of major importance to achieve efficiently the EU Maritime Policy objectives, as well as of marine regions and national ocean policies. However, their roles and mandates for participation in oceans policy

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development and implementation is quite limited, since most powers are concentrated in the national
governments and institutions.

Regions know better the reality on the ground, and are the major implementers of EU and national
Policies. Thus they are key piece to ensure effectiveness of national and EU policies. The their
participation at early stages of policy development is crucial to ensure that overall policies reflect the
diversity of situations across Europe, and that programs and instruments meet their needs. Given the
roles of regions on ocean and seas related policies, and the principle of subsidiarity, more than
stakeholders, regions are legitimate partners of the EU Maritime (and marine) policy.

Both in the analysis of the overseas case-studies, and from the analysis of the questionnaires, it is clear
that there is a lack of clear mandate and role for the subnational levels in oceans policy, as well as the
appropriate institutions and mechanisms. However, these are fundamental for a successful
implementation of an EU integrated ocean policy, which reflects the needs of the EU citizens.

Though it seems obvious that coastal regions are legitimate partners in the development of such policies,
since they master regional planning and articulation with local communities, somehow, it seems that their
roles have been some what forgotten, i.e., it is not clarified in such policies, as mechanisms, mandates and
roles have not been specified, often being left to the discretion and own initiative of managers. These are
the same roles which regional management, both within the nation or at cross borders level is required for
a good articulation and implementation of regional management objectives, and a gap between the reality
on the ground of coastal areas and the goal and actions of regional management plans may increase. It is
therefore of major importance for the subnational levels to:

• Reinforce their legitimacy in the policy making and decision making process through the
  participation on the process at earlier stages of policy development;
• Be given mandates, lead roles and means for development and participation in the process and
  with institutions responsible for oceans management, in particular the ones related to coastal
  management and also in activities on offshore areas which may affect the coastal marine
  environment, or its citizens livelihoods;
• Ensure consistency of regional/EU Marine Ecosystems and national planning with coastal zone
  planning and management;
• Ensure that the appropriate mechanisms and means are made available for the subnational levels
  to participate both in national and EU maritime policy.

The transference or delegation of powers between the national government and national institutions to
subnational levels is a matter of internal order of each nation, rather than a subject of EU policy.
Therefore, there are two aspects to take into consideration while searching for a role in the EU Maritime
policy:

• The actual mandates to which regions are entrusted, and by which they are entitled to participate
  in the development of the EU maritime policy, most notably the principle of subsidiarity;
• New roles not yet planned by national governments, but for which regions may claim taking into
  account their roles in ocean management and social-economic development of coastal areas;
• Legitimate national powers, which can only be delegated by their national governments to its
  regional or local governments. The EU cannot regulate such changes in its member States.

To ensure an effective development and implementation of EU, national and regional policies, there is an
urgent need to develop a vision for the role of the subnational levels, ensuring:

• Clear mandates and roles for both the subnational and national levels. The subnational levels
  roles and mandates in NOP should include its participation on policy making at the different
  levels:
  ▪ National
  ▪ Regional;
  ▪ Local.
• Coordination mechanisms and institutions between “local” and regional coastal management
  with the national level;
• Means for policy implementation. Instruments and mechanisms which constitute incentives (including financial instruments) for the subnational levels to engage and support NOP, as well as for implementation;
• Adaptive management
• Involve stakeholders and communities at an early stage of the processes.

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• Legitimate national powers, which can only be delegated by their national governments to its regional or local governments. The EU cannot regulate such changes in its member States.

Ocean policies require new mechanisms and institutions for policy implementation. The EU Commission should take the steps forward to develop an institutional framework with strong leadership, including a body and process of coordination of sectoral policies, as well as mechanisms for participation and means for policy implementation. In this process, it is important to identify who are the partners, and the stakeholders, and in which processes and at what stage of policy making they should participate. Given the special relationship of cities, in particular, ports cities, with coastal environment, a new stakeholder category should be recognised in the EU maritime policy: coastal cities, in particular, ports cities. Taking into account the major EU frameworks and principles, the governance framework of the EU Maritime policy, the major drivers should be:

• The EU Environmental Strategy constitutes the baseline for the EU Maritime Policy (integration of the environment in sectoral policies);
• The diversity of situations, such as geographical environmental differences, must be reflected in policies. Thus, it can be considered that the delimitation of EU Marine Ecosystems and the implementation of ecosystem-based approach falls under the implementation of this principle (Diversity of situations in environmental policies);
• EC action can be considered necessary (or justified) in the light that marine issues are transboundary by nature and that its member States, regions and citizens may benefit from the development of synergies and economies of scale by networking and cooperating within the fundamental unit of the marine ecosystem, as well as from harmonising several procedures. (Subsidiarity).
• Taking into account that the fundamental roles for oceans policy at national and regional level, only a tripartite partnership between EU<>National<>Regions for the implementation of ocean policies for each EU Marine Ecosystem, and respective ICZM.

Regions’ added value relies on knowing better realities and needs on the ground, mastering regional strategic planning while coordinating concrete actions with local communities. Regions are a centrepiece for successful EU and national marine and maritime policies. Thus, more than stakeholders, regions are
legitimate partners in the EU Marine and Maritime Policies, and no less participation regions expect in this new and challenging process.

8. REFERENCES


Sources:


