



Land Schleswig-Holstein



Re gião Autónoma dos Açores

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## Blue Growth: The Future of Marine and Maritime Innovation in Europe

7 December 2011, Brussels

# MINUTES

### OPENING SESSION

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**Gesine MEISSNER** opened the seminar. 40% of the European GDP comes from Oceans and Seas. The expression “Blue growth” illustrates this, and is part of the Integrated Maritime Policy. On the 29 November, the European Commission (EC) proposed a draft for a Regulation concerning the European Institute of Technology (EIT), which identifies 6 topics for Knowledge and Innovation Communities (KIC). The first KIC includes raw materials and refers to marine mining and the arctic environment. This opens the door to integrating maritime proposals in general. On 30 November, the EC proposed a draft for the Horizon 2020 programme. **Maria DAMANAKI** contributed to ensure that marine and maritime research was included in it.

**Maria DAMANAKI** ([see full speech here](#)) indicates that we need to look even more to the sea. The sea can provide energy that does not use up finite resources, and does not need to emit carbon dioxide or require land or fresh water. Wind turbines account for most of the EU’s new electricity generating power, and more is moving offshore. By 2020, 30% of the annual market for new wind capacity will be offshore, and by 2030, 60%. By 2020, wave and tidal power will join the wind platforms in providing energy to our cities. The sea can also help in providing our population with a healthy diet. There are even more opportunities and research is looking into these.

The “Blue Growth” Communication will deliver policy recommendations able to facilitate sustainable economic growth in emerging and established maritime sectors. For the first time, marine and maritime research is clearly indicated in Horizon 2020. Furthermore, the inclusion of “Ocean Energy” has equally been ensured, together with wind and solar energy. In parallel, Member States are involved through the Joint Programming Initiative “Healthy and Productive Seas and Oceans”.

Businesses are also investing, for instance in the issue of marine data. The development of a seabed map of European waters ready by 2020 is part of the “Marine Knowledge 2020” initiative. The first financial regulation for the IMP will allow the development of prototype maps, and the European Fisheries and Maritime Fund will allow the development of a more detailed sea-map. EU Marine and maritime research is one of the most important pillars of the IMP.

**Frederico CARDIGOS** ([cf. Powerpoint presentation](#)) indicated that maritime Regions are becoming wider with the expansion of territorial seas, deeper with the exploration and exploitation of seabeds, and faster with the increase and evolution of maritime transport. The Azores and islands in general are used to facing difficult situations and permanent crises, such as earthquakes, invasive species or climate change. They can also provide voluntary solutions, together with fishermen for the diversification of activities. The variety of initiatives taken in the Azores, through for instance the creation of natural areas, investment in sustainable environment, and deep-sea research shows that marine and maritime research are a priority for the whole of

Europe. There is a need for a strong marine dimension in Horizon2020, and for a Marine KIC in the framework of the EIT. We need synergies between Regions, Structural Funds and EU priorities in the field of marine innovation. Approaches to the use of Oceans should be sustainable, inclusive and equitable. Cooperation with Regions should be facilitated, avoid bureaucracy and rely on a strong political partnership with them, based on trust. Maritime Regions of Europe are an important asset.

**Jean-François TALLEC** indicated that blue growth must be underpinned by various kinds of innovation and involve all levels of stakeholders. In the maritime field, Europe has many assets including a strong tradition, technical and commercial knowhow, building capacity and a picturesque coastline. Traditional economic activities based on age-old knowhow pose a challenge in economic, social and environmental terms and in providing security for people. They now need to renew their methods and equipment.

The blue book on French maritime policy and the national strategy for French seas and oceans constitute a roadmap that stems from the European IMP. Its top priority is innovation. Corican is an interesting example of public-private partnerships. Its flagship project is the vessel of the future and is linked to European priorities. Innovation also concerns decision-making methods. Maritime boards have been set up in the Regions together with a national sea and coastal board.

Education and training are also part of the French strategy. We now need to define and streamline maritime training at European level. This point is crucial in the framework of the IMP and we should welcome the Vasco da Gama initiative based on the mobility of young Europeans in the maritime training sector in which the Regions have a crucial role to play.

The blue economy represents a great potential. A first essential step is to mention marine research in Horizon 2020.

**Dr Cordelia ANDRESSEN** recalled that the Blue economy, innovation driven economic growth and marine environmental protection are among European priorities, and are related to Schleswig-Holstein. Shipbuilding has for a long time been the backbone of the industrial and economic development in this Region. Those enterprises will only manage to survive if they are able to develop new innovative ideas and place them in the market.

Schleswig-Holstein government's policy aims at integrating all different possibilities for the exploitation of the seas. The initiative "Sea our Future" is a good governance approach to design the maritime future of Schleswig-Holstein. In 2012, this approach will focus on the preparation of the 8<sup>th</sup> National Maritime Conference, which will take place in 2013 in Kiel, and on the development of the Maritime Cluster "Northern Germany", which was initiated in Schleswig-Holstein.

Over the past years, Schleswig-Holstein has supported projects which were concerned with technological developments, for instance in the field of aquaculture through GMA (National centre for aquaculture) and Submariner (Sustainable Uses of Baltic Marine Resources). Schleswig-Holstein is the base of outstanding scientific maritime institutions, including Christian-Albrechts-Universität (CAU), the Helmholtz-Centre GEOMAR, the Helmholtz-Centre Geesthacht, two divisions of the Bremerhaven Aldred-Wegener-Institute for Polar and Maritime Science, and the Fraunhofer-Institute for Marine Biotechnology. The significance of marine research in Schleswig-Holstein is strengthened by the excellence cluster "Future Ocean".

At EU level, it is therefore logical to make the EIT a part of "Horizon 2020". The consortium German Maritime Research Institutes (KDM) has followed the proposal for a Marine KIC. The government of Schleswig-Holstein supports this initiative, and so does the Committee of the Regions.

Against this background, the proposal "Horizon 2020" should be welcomed.

## **SESSION I - WHAT KNOWLEDGE FOR BLUE GROWTH?**

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**Christophe CLERGEAU** stated that Pays de la Loire Region (France) had, together with other European Regions notably Land Schleswig-Holstein, launched an initiative called "Maritime Industries for Blue Growth". It aims to draw on the existing shipbuilding industries and their historic past, establish differentiation and diversification strategies to give a new boost to growth, and stake claim to a strong European maritime industry in a context of international competition. A conference, also hosted by the Seas and Coastal Areas Intergroup of the European Parliament, will be organised on this topic at the European Parliament on 2<sup>nd</sup> February.

It is necessary to have a major drive for research in Europe and to not only draw on the ocean to boost growth and development, but also protect it. It is to be hoped that the IMP will not just be limited to a few measures, but will constitute a real maritime agenda within each of the relevant policies, especially EU policy to support research and innovation.

The proposals related to Horizon 2020 may be interpreted in a number of ways. Some elements give the impression that the Ocean is universally present, but the marine dimension cannot be found in the list of KICs. Many Regions and actors are joining the initiative launched by KDM, which needs to be publicised by MEPs.

Things are changing rapidly in the Regions, and in two years, Pays de la Loire has become France's leading region in marine renewable energies. Shipbuilding industries can be sources of innovation for other maritime activities. Europe needs the Sea, and we can count on Europe's maritime Regions to defend marine industries.

**Patrick CARNIE** ([cf. presentation Powerpoint](#)) indicated that the IMP helped to raise awareness about the UK industries' potential in the UK. An alliance has been established and growth policy was being developed. A lot remains to be done in terms of self-confidence. UK is concerned with the fact that the public, some politicians and the media are not really aware of the importance of the maritime sector. A media campaign was launched about this. Strategic analysis of future markets needs and innovation possibilities is another objective. Subjective views gathered from experts have had an impact but more multidisciplinary analysis is needed. The UK has recognized a number of actions based on initial analysis, and working groups have been established, for instance on issues such as exports, skills, regulations, offshore renewable, shipping ports and finance. The Oceans for tomorrow initiative is a very positive development. UK welcomes the JPI Initiative on Oceans and is becoming a full member of the Era-Net Martec. A core part of the UK's work is on the technology front and the Technology Strategy Board is funding a new version of the UK's technology and innovation roadmap, and a capability study. Several actions are planned ([cf. powerpoint presentation](#)). Innovation needs to go beyond technology development, and to address issues such as maritime consulting. Greater cooperation across maritime and marine industries could produce 25 billion a year by 2020. More information is available on <http://www.ukmarinealliance.com/>.

**Christophe CLERGEAU** considered that it was essential for all Member States to implement technological roadmaps parallel to those existing at European level, especially with regard to Waterborne.

**Regis KALADAYAN** ([cf. Powerpoint presentation](#)) addressed the issues concerning knowledge of the maritime economy. Economists are faced with greatly varying levels of knowledge regarding areas such as sectors of the maritime economy, how the maritime economy works at Regional level e.g. through clusters, and the environment and its non-market value. The IMP and some initiatives such as the Marine Strategy Framework Directive require information at different levels.

Ifremer focuses on maritime sectors through a maritime database, in line with the IMP action plan supervised by Eurostat and implemented together with several partners based in different countries. There is still much data missing. The 2009 synopsis shows that coastal tourism accounts for a high share of the maritime economy. It shows growth in certain sectors such as submarine cables.

The results of the general database can be used to take action in various areas, such as oil spills for example, which is the subject of the pilot study InterRisk. Had InterRisk existed at the time of the Erika oil spill, it would have helped to monitor pollution better, facilitate response by the authorities and reduce the overall cost by about 45 million euros.

**Katrin REHDANZ** ([cf. Powerpoint presentation](#)) indicated that Oceans provide goods and services for human preferences. It is necessary to value Oceans in order to make choices possible, in areas such as fishing or exploitation of Ocean minerals for instance. Greater use of a particular environmental service or greater protection of a specific natural system results in less of something else. Valuing could be used to demonstrate that Oceans and services have value. Estimations are for instance needed to define the good environmental status that must be reached by Member-States by 2020, as a result of the Marine Strategy Framework Directive.

Economists estimate the total economic value by taking into account use values and non-use values. The economic impact of Ocean Acidification is an example of an issue that is being analyzed, and which has been gaining increasing recognition in policy circles recently, in the context of actions against climate change. There is an increasing number of studies on biological and ecological impacts of Ocean Acidification, but few

attempts of economic assessment yet. Ocean Acidification is likely to have a range of impacts on biological and ecological systems including economically important marine resources. The impact on human societies depends on the vulnerability, resilience and adaptation capacity of specific communities, but little is currently known. Major integrated assessment models based on the cost-benefit framework (FUND, DICE, etc.) haven't taken Ocean Acidification into account yet and tend to justify weak climate policy. Kiel Institute for the World Economy is involved in several projects such as ACCESS, Eco2 or Ocean der Zukunft. Much more economic research is required.

## DISCUSSION

**Damien PERISSE** asked how the speakers thought the issues raised were interlinked and what their views were on the European Commission's proposals.

**Jan-Stefan FRITZ** thought that priorities should be what Patrick Carnie explained. Many ideas were put forward and we do lack figures showing why Oceans are important, from direct and indirect values. It is extremely difficult to put these figures together.

**Patrick CARNIE** agreed that the complexity is enormous. Standard classification codes did not recognize the maritime field as an area of interest. A multidisciplinary strategic vision of the future is needed, also at European level.

**Christophe CLERGEAU** considered, as indicated by Commissioner **Maria DAMANAKI**, that now is the right time to be looking again towards the sea. The session showed the challenge facing Europe to take action in a global context, since the sea represents a very strong opportunity for growth.

## SESSION II - WHAT EU INNOVATION FUNDING FOR BLUE GROWTH?

**Peter SCHUPP** ([cf. Powerpoint presentation](#)) indicated that a global regulatory framework was needed in order to address challenges such as Ocean acidification, Overpopulation, Global warming and Overfishing. European expertise is needed to support Blue Growth and to think about how aquaculture can meet demand for fish, to evaluate the biomedical potential of marine organisms, or to develop sensors and monitoring equipment. It is necessary to close the gap between basic and applied research on numerous issues, such as sponge crude for instance. Marine sponges show interesting characteristics in terms of anticancer and antifouling activity (see powerpoint presentation for more details).

**Christina ABILDGAARD** ([cf. Powerpoint presentation](#)) indicated that 5% of EU's GDP comes from the maritime economy, a sector which account for 5 million jobs. 90% of external trade and 40% of internal trade are sea related. Maritime tourism accounts for 3 million jobs and there are great expectations from renewable energies and other emerging technologies and resources. At the same time, there are competing claims for access to the marine space. The need for R&D and Innovation is recognized through various initiatives in Norway. The National Research Council plays a great role in the Norwegian policy. Although investments in marine and maritime research across Europe are important, there is a lack of coordination. In this context, the JPI Oceans aims to achieve a responsible exploitation of marine resources and a sustainable environmental management of the seas. The JPI Oceans will create a common knowledge base and stimulate synergies across Member-States, Regions and the private sector.

The JPI Oceans will provide knowledge to achieve Good Environmental Status and Optimise mitigation of climate change impacts. It is based on three pillars (see powerpoint presentation). The JPI vision document identified broad cross thematic areas which lie at the intersections of the marine environment, climate change and human activities. Today, the JPI Oceans covers all European sea basins and involves 16 Participating countries. The EC has a non-voting member status, and the Bonus project is an observer. Synergies are created with a large number of organizations. An important part of the JPI added value lies in the involvement of Member-States and its capacity to work in synergy with a large number of EU initiatives.

**Gilles LERICOLAIS** ([cf. Powerpoint presentation](#)) indicated that the purpose of Europe must be to convince populations and governments that research can stimulate growth in Europe. Europe can develop a sustainable and environmental model. Horizon 2020 is a good start, with the integration of a societal challenge "Food security, sustainable agriculture, marine and maritime research and the bio-economy". The key priorities in marine and maritime innovation which should drive EU programmes post-2014 should take into account several challenges, including EU fisheries and aquaculture production, Marine Renewable Energy Opportunities, Marine Biotechnology, and Exploration of deep-sea and challenging exploitation of

fossil energy and mineral resources, and Sustainable monitoring of marine environment and ecosystems, marine data and information access (see. Powerpoint presentation for more details).

**Gesine MEISSNER** had to leave and thanked organizers and participants, and indicated her will to continue to defend marine and maritime research and innovation.

**Rudolf STROHMEIER** indicated that besides all issues already raised, we need to have an integrated but also a strategic approach to support the Blue Growth exercise. This approach is embedded in Horizon 2020 propositions. Marine and maritime research is part of challenge 2 “Food-security, sustainable agriculture, marine and maritime research and the bio-economy”. This issue will also be taken up in all relevant challenges. All research needs have been covered. This includes marine renewable energies, which will be covered in the Energy challenge. The challenge “Smart, green and integrated transport challenge” will support specialized high technology ships and marine platforms to support diversification of shipbuilding activities, the “Climate action, resource efficiency and raw material challenge” will cover climate change, adaptation to climate change, and sustainable management of marine ecosystems, as well as exploitation of deep-sea raw materials. The cross cutting approach which started with Oceans of tomorrow calls will be further consolidated through a strategic programming approach. Overall coordination of marine and maritime research will be ensured across all challenges and pillars of Horizon 2020 as well as through key initiative such as the JPI Oceans. For the first time, Horizon 2020 proposes a programme that brings together all EU funding for research and innovation. In addition to societal challenges, marine and maritime sectors will be covered in the industrial leadership pillar of Horizon 2020. Key enabling technologies, access to risk-finance, innovative SMEs, are all essential aspects for delivering Blue Growth. Ocean observation infrastructures play a key role, and Horizon 2020 will also provide opportunities for world class marine research infrastructures and their integration. In conclusion, Horizon 2020 should unlock potential for sustainable blue growth, but the proposal is only a first step which opens a debate.

**Frederic CARDIGOS** asked the position of Ifremer concerning patents in biotechnology, and concerning the sharing of benefits with local populations and Regions. He also asked whether Ifremer is interested in mineral exploration.

**Gilles LERICOLAIS** explained that Ifremer is firstly a research centre and not a full industrial and commercial organization. Patents validate research, even if they are a great challenge. Ifremer performs environment research and considers that populations and wealth are at the heart of its work. Raw material resources is a key issue today, even if Ifremer has been involved since the 70's in exploration of poli-metallic nodules. Ifremer is interested in new prospects at the request of the French government since the UN created new opportunities to explore international seas. Countries such as China and Russia asked for permits for exploration in the Atlantic Ocean, and France will ask for permits through Ifremer. Ifremer intends to work in the framework of a European initiative.

A participant indicated that Innovation partnerships should cover raw material and the marine environment, and consider not only deep-sea mining but also shallow waters.

**Peter SCHUPP** indicated that exploitation also benefits source-countries, and that we should rather talk about joint-ventures.

**Katherine ANGEL-HANSEN** (JPI Initiative) thanked Rudolf STROHMEIER for his clear presentation. The research Community appreciated the Oceans for tomorrow calls. Marine and maritime research is embedded in all maritime areas. This is appreciated in order to avoid sectoral fragmentation.

A participant asked whether the JPI Oceans is a possible forum for validating future policy visions.

**Christina ABILDGAARD** indicated that the JPI strategic agenda is not developed yet but that the cross-cutting approach is important and looked forward to collaborating with Horizon 2020 and also more broadly.

**Peter SCHUPP** stressed in the same way as **Rudolf STROHMEIER**, that the need for strategy and focus, and at the same time, the need for coordination between resources and infrastructures, are important.