FACTSHEET

Our Blue Future:
The integrated and sustainable development of the seas and oceans

1. THE CHALLENGE

The seas and oceans present a grand societal challenge as they are essential for the well-being and wealth of our and future generations. First, the fast growing global population and land scarcity will increase human dependence on marine food sources. Second, oceans and seas offer a large potential from underexploited renewable energy, mineral and biological resources. Third, the oceans and seas play a crucial role in developing transport modalities and tourism activities. Fourth, and as a consequence of the above, coastal urbanization and growing population threatens the productivity of coastal ecosystems already under pressure from global changes to sea temperatures and levels. Finally, maritime activities will only be able to unfold their full potential within a safe and secure environment.

The EU-institutions have recognized the healthy state and the productive use of Europe's seas and oceans as a major societal challenge. In 2011, the European Council established the Joint Programming Initiative Healthy and Productive Seas and Oceans. Similarly, the legal framework for Horizon2020 includes reference to the seas and oceans as a societal challenge.

Europe needs to overcome its 'maritime paradox'. Today, European universities and research institutions make cutting-edge contributions in almost all fields of the global maritime economy. At the same time, the maritime economy in Europe is very diverse and highly decentralized along its very long coastline. Many economic sectors are in a starting phase resulting in many gaps in the value-added chains. Further research and technology development is needed in order to explore and understand the oceans in all the breadth and depth, including the impacts of global climate change. New knowledge is the key to unlocking the enormous innovative and technological potential in the EU's maritime economy. While millions of jobs have already been created, mainly in SMEs across Europe, there are gaps:

> The **EU has excellent academic and scientific capacities in the [marine/maritime sectors] analysed, but considerably less commercial potential to embark on these**. Especially activities in the developmental stage are mostly carried out by small companies, spin-offs or suppliers which are strapped from cash, wary to share knowledge, and unable to control the value chain. EU-players tend to linger in this developmental stage longer than strictly necessary, while non-EU players (often backed by their governments) tend to invest more and faster in these developmental stages.[1]

Europe needs a flagship initiative to develop a more integrated maritime economy. The EU is well-placed to support more research and technology development, better training and education, more detailed impact assessments, as well as commercialization. However, in order to make the most of its support programmes regarding marine resources, Europe needs to explore its options and act in a proactive and

[1] Ecorys, Deltares and Oceanic Development, *Blue Growth Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts Third Interim Report*, 13 March 2012. This report is currently in development and available as part of a public consultation being held by the European Commission's DG Maritime Affairs and Fisheries.

coherent manner. For example, value-added chains could be strongly improved by linking existing, but isolated, activities in different parts of the EU or by making use of maritime spaces more efficiently. The KIC model offers a visible and structured means of promoting commercially-oriented education and RTD services.

Europe needs to promote a maritime economy based on the best available knowledge and highest environmental standards. The reality is that the seas and oceans are being exploited at an increasing rate around the world. Many maritime economic activities are environmentally unsustainable. The Deepwater Horizon case and the ensuing debate on banning deep-sea drilling illustrate this problem. Public investment can offer a valuable kick-start to a maritime economy that contributes to preserving our seas and oceans while promoting jobs and growth. Ultimately, the development of a knowledge-based maritime economy is the only path to accessing the funds necessary to understand, survey and protect marine ecosystems.

Some facts about the European maritime economy …

- The EU's maritime regions account for around 40% of its GDP and the maritime economy for as much as 5%.
- Approx. 5.6 million employees are directly involved in the maritime economy, which generates a gross value added of approx. €495 billion. (Ecorys, Deltares & Oceanic Dev 2012)
- In 2011, the French maritime economy was estimated to have a turnover of €52billion, providing more than 300,000 direct jobs and incorporating 10 of the largest maritime companies world-wide. It is one of the top three maritime economies in the world. (French Maritime Cluster – CMF)
- Business directly and indirectly connected to the oceans accounts for 11% of Portugal's GDP – some €17 billion, but it could be double that … A look at the 20 largest domestic companies involved in the seas and related activities suggest that with proper strategic policy this sector could easily double its contribution to GDP to 22% within 25 years … The economy of the sea represents a potential 60,000 new jobs. (Portuguese Hypercluster of the Sea Economy and Portuguese Prime Minister, 2011)
- The German maritime technology sector encompasses over 500 companies and almost 200 scientific institutions … [It] has a turnover of more than €11 billion annually with high growth rates that reach up to 20% annually, depending on the individual sub-sectors. (German National Maritime Technology Masterplan 2011)
- For 2005-2006, direct marine-related activities comprised 4.2% of the total UK GDP, at basic prices, to a total value of £46 billion. Of the total UK employment, 890,000 jobs (2,9 %) were marine-related. This gives a total direct and indirect contribution of marine activities to the UK economy of between 6.0% and 6.8%. (The UK Crowne Estate 2008)
- Including its outermost regions and overseas territories, the EU has the world's largest EEZ and a presence in every ocean. The development of a maritime economy in these territories contributes to the geopolitical security and resources supply of the EU.

… its future potential:

- Aquaculture continues to be the fastest-growing animal-food-producing sector and to outpace population growth, with per capita supply from aquaculture increasing from 0.7 kg in 1970 to 7.8 kg in 2008, an average annual growth rate of 6.6 percent. (FAO 2010)
- The offshore wind energy sector contributed €32 billion to EU GDP in 2010 creating 30% more jobs from 2007 to 2010 to reach nearly 240,000. By 2020, there should be 520,000 jobs in the sector. (European Wind Energy Association 2012)
- Deep water capital investments in oil and gas activities are set to reach $140 billion over the next 5 years. (Douglas Westwood 2010)
- World seaborne trade in 2010 bounced back from the contraction of the previous year and grew by an estimated 7%, taking the total of goods loaded to 8.4 billion tons, a level surpassing the pre-crisis level reached in 2008 (UNCTAD 2011)
- The EU maritime security market is estimated to be worth €2billion a year with the world market

being worth €6.7billion (ECORYS 2009)

… and the value of taking an integrated approach:

- Maritime safety and security are key to European interests, as:
  - 90% of global trade and about half of the world's oil are transported by sea,
  - 90% of the EU's external trade and 40% of its internal trade are transported by sea, and
  - some 350 million passengers and about 3.5 billion tons of cargo per year pass through European seaports and waterways.
- ... "according to a conservative estimate, the yearly value of non-market ecosystem services in Galway Bay (Ireland) amounted to approximately €634 million in 2007. The most valuable ecosystems per hectare were coastal lagoons and beaches and the highest valued services were eutrophication mitigation, sediment retention and recreation." (SEMRU Galway 2010)

2. RELEVANCE AND IMPACT

The combination of economic diversity as well as excellence in education and RTD offers a strong basis for European-level public investment to kick-start a more focused and strategic approach to strengthening maritime economic development. **A MarineKIC offers an ideal opportunity to link upstream and downstream initiatives existing at EU-level**; that is, to promote value-added activities along the entire value chain from precompetitive RTD, skills and education activities to competitive commercial ones.

A **MarineKIC also offers an economic dimension to the implementation of the Marine Strategy Framework Directive**. The EU's marine environmental legislation sets a clear political goal that standards need to be established for the environmentally-sustainable production, extraction, transport and use of resources from the oceans and seas. A **MarineKIC could link the economic and ecological dimensions and consequently strengthen Europe's leadership in marine environmental standards and green technologies**, in a world where most maritime activities to date have to prove their sustainability.

The development of a sustainable maritime economy comprises a strong regional dimension. A MarineKIC will provide critical means for implementing the Europe 2020 goals of smart, sustainable and inclusive growth. A strong and diversified maritime economy is an essential factor for job availability and economic growth in maritime regions across the EU including the most peripheral of them. Often faced with structural difficulties, a strategic approach to promoting high-level training/education and advanced technologies offers a path to making European maritime regions more competitive. Against this background, **the EU Committee of the Regions unanimously recommended that a MarineKIC** be set-up

> "in the near future on protection and sustainable use of marine resources. Such a KIC could cover a broad spectrum of scientific, technological, economic and educational activities in the spheres of biological and mineral resources, as well as energy, while taking account of environmental protection issues."[2]

3. SYNERGIES AND COMPLEMENTARITIES WITH EXISTING INITIATIVES

With a goal to ensuring a good upstream/downstream coordination of EU-level marine and maritime activities, MarineKIC will take account of and coordinate its activities with the following important initiatives:

[2] Committee of the Regions, *Opinion on the Development of an Integrated Maritime Policy and Marine Knowledge 2020* (Nat-V-007) paragraph 26.

JPI Oceans

A MarineKIC will develop a close working relationship with the Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans). The JPI Oceans is a coordinating and integrating long-term platform, open to all EU Member States and Associated Countries who invest in precompetitive marine and maritime research. While bringing together the interested Member States and Associated Countries the JPI Oceans aims to add value by:

- avoiding fragmentation and unnecessary duplication
- planning common and flexible initiatives
- facilitating cooperation and foresight
- establishing efficient mechanisms for interaction and knowledge transfer between the scientific community, industry & services, and policy makers at high level in order to solve the grand challenges more effectively.

Smart Specialisation within the Cohesion Policy 2014-2020

The smart specialisation strategy being proposed for the new Cohesion Policy 2014-2020 provides a useful link between structural policy-making at regional level and the development of competitive maritime economic activities. Specifically, a MarineKIC will contribute to the processes of developing a vision, identifying competitive advantages and setting strategic priorities for maritime economic development in participating regions. For this reason, the choice of strong regional nodes in a MarineKIC will be of particular importance.

The proposed European Maritime and Fisheries Fund

The current proposal for the Regulation on European Maritime and Fisheries Fund (EMFF) aims at achieving the objectives of the reformed Common Fisheries Policy (CFP) and of the Integrated Maritime Policy (IMP). It is based on these objectives, re-defined in terms of funding:

- promotion of sustainable and competitive fisheries and aquaculture;
- fostering the development and implementation of the Union's IMP, in a complementary manner to cohesion policy and to CFP;
- promotion of balanced and inclusive territorial development of fisheries areas (including aquaculture and inland fishing);
- contribution to the implementation of the CFP.

Blue Growth Strategy

"Blue growth" is a long-term strategy that is now being developed by the European Commission to support growth in the maritime sector as a whole. It aims to:

- Identify and tackle challenges (economic, environmental and social) affecting all sectors of the maritime economy
- Highlight synergies between sectoral policies
- Study interactions between the different activities and their potential impact on the marine environment and biodiversity
- Identify activities with high growth potential in the long term and support them by:
    - removing the administrative barriers that hamper growth
    - fostering investment in research and innovation
    - promoting skills through education and training

Cooperation with other KICs

The MarineKIC will cooperate closely with the existing KICs InnoEnergy and Climate as well as the proposed KICs on raw materials and food4future. The value-added of an independent MarineKIC lies in taking an integrated approach to developing the maritime economy. The aim is both to balance growth and sustainability as well as overcome the challenge of overlapping geographic space facing many maritime economic sectors. The latter is particularly important in European waters, where intense use patterns mean that competition for limited maritime space hampers growth prospects. Furthermore, the MarineKIC also

aims to promote technology transfer between markets, thus increasing market potential for smaller companies. This is of particular importance in the maritime sector since it boasts many areas of great economic potential, but has few established, sector-overarching industries.

4. CONCLUSIONS

The KIC "Our Blue Future - The Integrated and Sustainable Development of the Seas and Oceans" meets the criteria put forward for the selection of KIC themes in the EIT Strategic Innovation Agenda:

- Both European Council and European Commission have recognized that healthy and productive seas and oceans are a major economic and societal challenge for Europe.
- The EU Committee of the Regions has endorsed the idea of a MarineKIC as means to promoting environmentally sustainable economic growth in European regions. As such, it can directly contribute to the delivery of the Europe 2020 Agenda;
- A MarineKIC will address the "European maritime paradox", where Europe has a strong research base but a weak innovation performance.
- As a cross-cutting initiative, a MarineKIC can offer a unique commercially-driven umbrella for various EU-level initiatives on marine environmental protection, economic growth, education and RTD;
- A MarineKIC is primarily about establishing new and future-orientated markets;
- A MarineKIC is about solving the challenge of funding ocean protection through the exploitation of its resources
- A MarineKIC offers an incentive-based means of promoting synergies between research, education and innovation stakeholders spread across various regions in Europe;
- Most new maritime economic sectors, would profit from an integrated, trans-disciplinary approach to education, training, technology development & application as well as research.

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