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InfoDay call "The ocean of tomorrow" 2011

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Call "The ocean of tomorrow 2011": rationale, context

Bio-economy challenges in the context of the call

Dear Commissioners,

Ladies and gentlemen,

We all trust that EU Member states and FP7 associated countries have a high potential for research in marine science and technology. But more cooperation between all the different actors and sectors is required. As Commissioner Geoghegan Quinn stated, the "Ocean of Tomorrow" joint calls are intended as catalysts to encourage further integration.

Success last year

Last year, a total of 12 proposals were submitted to the first "Ocean of tomorrow call", 10 of which went through evaluation by 17 independent experts from all scientific horizons. At the end of the evaluation, they reported that: "the call was successful in attracting many high quality proposals, generally well addressing the multi-disciplinary and multi-sectoral aspects." Finally, 3 proposals: ACCESS for the Arctic, VECTORS for changes in marine life and ECO2 for sub-sea carbon storage have been selected for funding and are now in the process of negotiation. They involve 85 participants from 19 countries, a good example of cooperation, indeed.

Rationale/justification of the 2nd call "The ocean of tomorrow"

Following our good catch last year, four Directorates of DG RTD namely 'Environment', 'Transport', 'Energy' and my directorate 'Food , Agriculture and Fisheries, Biotechnologies ' have decided to take the plunge again and join forces for the second year in a row, with an even larger budget reaching this time 45 M€. By pulling together different research communities, we hope to promote the sustainable growth of maritime activities such as fisheries and aquaculture, biotechnologies, maritime transport and offshore energy.

In times of economic crisis, we need to direct our efforts towards efficiency and avoid duplications more than ever. In this context, the "EU 2020 Strategy" for a smart, sustainable and inclusive growth, which outlines the new frames the new political framework of the EU, puts the emphasis on the research and innovation potential and on the efficiency of resources.

"The ocean of tomorrow 2011" call bears a strong innovative and forward-looking component. Among others, bids are invited for the design of a small research vessel, of multi-use offshore platforms or on investigating new bioinformatics approaches to realize the full potential of marine biodiversity for industrial biotechnological applications.

Partly focused on the Mediterranean and Black Seas, the call for proposals will also foster closer cooperation with neighbouring countries. It will aim towards an improved scientific basis for sustainable management and better governance in these regional seas faced with tough sustainability challenges.

The call is split into four "topics", of which two are generic and two are of particular relevance to the Mediterranean and the Black Seas. Within each of

these topics, projects will cover these themes: food, agriculture, fisheries, and biotechnology, energy, environment and transport.

- Ø The first topic addresses innovative designs for multi-use offshore platforms (combining wind, aquaculture and offshore terminals for maritime transport) including their economic and environmental viability

- Ø The second topic focuses on bioinformatics approaches to foster new insights into the functioning of marine ecosystems and their biotechnological potential

- Ø The third topic deals with combined effects of natural and human pressures on the marine environment in the Mediterranean and Black Sea and the responses of ecosystems

- Ø The fourth topic deals with integrated management of regional networks of marine protected areas and wind energy potential in the Mediterranean and Black Seas.

Further details about the topics' relevance to each theme will be provided in the following speeches by the three other lead directors. Information about the implementation modalities of each topic will be given at the end of this morning session as well as during the "questions & answers" this afternoon.

Let me now say few words about the **marine Bio-economy** in the context of the call

The marine "bio-economy" is another "Eurospeak" word, you might think, but I am confident that it speaks for itself. It represents that part of the economy that

generates growth and jobs from the development, processing and use of biological resources, including resources from the seas.

In this respect, we will present in 2011 a Commission communication outlining a common strategy for developing in a coherent way the bio-economy at EU level.

Research on marine biological renewable resources has two main focuses: **first** to provide food security (to Europe and globally) by developing aquaculture and ensuring that our fisheries are sustainable and, **second** to exploit the diversity of marine organisms for industrial applications in a great variety of sectors such as pharmaceuticals, chemical and the food industry.

In this context, three topics out of the 4 "Ocean of tomorrow" topics are particularly relevant to further develop the marine bio-economy and I would like to explain you why.

First Offshore platforms:

As the Commissioner mentioned, it is likely that some activities in critical need for space and with limited public acceptance will increasingly move further offshore. This possibility needs to be carefully studied and investigated to take place in a sustainable way and at minimal cost for the marine environment. Thus, wind offshore platforms would not only contribute to reaching the EU target of 20% renewable energies by 2020, but would also serve other purposes such as aquaculture.

Seafood already represents almost 20% of global protein consumption and this proportion keeps increasing as consumers are made aware of its nutritional value. One of the most acute problems for the EU aquaculture industry is that of

licensing and access to sites, especially in the coastal areas which are already overloaded and where people are sometimes reluctant to see fish-farms in tourist areas.

However, to meet this increasing demand for seafood, we need to further develop aquaculture and ensure that our fisheries are sustainable. The EU has world class research in these areas but we need to do more to turn our research potential into industrial innovations.

We also need to consider new trends, such as the potential need to move cages offshore, and their consequences. The topic on multi-use offshore platforms takes full stock of this prospect and requires convergence between aquaculture and other maritime offshore industries. It also requires carefully investigating the containment of environmental impacts and the quality of water which is a critical element for the success of fish farming.

I would like to recall here that aquaculture does not limit itself to fish or seafood. The farming of seaweed is an expanding activity and could be beneficial for biotechnology applications. Seaweed is a source of feed, biofuels and novel biotech processes that will support the greening of the chemical industry.

As you can see from these examples, there is potential for convergence of technologies and knowledge integration everywhere.

Secondly Bioinformatics

The potential for discovery of new species and applications derived from biotechnologies is considerable, especially in the deep sea. A number of cooperation research projects in FP7 are already exploring marine resources to

enhance their industrial potential, in particular the MAMBA project. Further proposals in this area from the 2010 call are currently under negotiation.
However, in order to exploit this new frontier, we need data infrastructures and multidisciplinary studies of these complex environments which involve a large spectrum of natural and physical sciences, as well as Information Systems specialists.

The topic on novel marine bio-informatic approaches, by pulling together different research communities, will aim to increase our understanding of these complex ocean microbial communities. It will seek to investigate their role in the functioning of marine ecosystems as well as on climate change. Such advances in bioinformatics are very innovative and key for the growth of biotechnologies in Europe. It will provide the necessary support to improve the European environmental bioinformatics capacity and will thus facilitate the exploitation of marine biodiversity for more sustainable processes and eco-efficient products.

In order to make the most of our research and turn the potential of biotechnologies into innovative industrial applications, it is also necessary to ensure that the cooperation between science and end-users, in particular SMEs, is taking place from the outset. This is the approach we want to promote in our research projects. In my directorate for example, we have deliberately put a stronger focus on the participation of SMEs for the Work programme 2011. This trend is also reflected within "the ocean of tomorrow" 2011 approach.

Thirdly Networks of Marine Protected Area and assessment of wind energy potential

Back to the surface now after this short dive into our deep-ocean, I would like to explain to you why topic 4 on networks of marine protected areas, also referred to as MPAs, is of great interest to the bio-economy.

Actually, it is the strong spatial component and its impact on activities as well as on the ecosystems which makes this topic particularly relevant to the marine bio-economy. Marine protected areas' designation and operations have indeed an impact on the activities taking place in the seas as well as on the ecosystems. In this respect, they are an essential feature to take into account for the development of the marine bio-economy.

Limiting access to nursery grounds for example will protect juvenile fish from fishing gears. This will prevent these young fish to be discarded and limit further depletion of a given stock.

The implementation of regional networks of marine protected areas also generates complex research questions in particular the sizing, spacing and the definition of ecological connectivity and interdependency between protected sites. The scientific community is invited to make the best use of molecular science and multi-disciplinary approaches for the establishment of scientific guidelines for the design of the management of these protected areas.

The issue of marine protected areas is particularly acute in the Mediterranean where no economic exclusive zones exist and where collective protection of the marine environment, from both sides of the basin, lies mainly with the Barcelona Convention. While European Member States have a legal obligation to reach the good environmental status by 2020 under the marine Strategy framework directive, the requirements are currently less defined in neighbouring Mediterranean countries. Eutrophication, generated notably by agriculture and

urban waste water is particularly problematic in the Mediterranean and Black seas. It is considered to be the most significant cause of the Black Sea's environmental decline since the 1960s. Furthermore, together with the Northeast Atlantic, the Mediterranean Sea and the Black Sea are three of the seven world marine regions with fish stocks in greatest need of recovery.

The topic on marine protected areas fully contributes to the objectives of the maritime policy in the Mediterranean and the Black sea, as it seeks to promote better governance of human activities and gear up preservation actions through networks of MPAs. Furthermore, it will foster closer cooperation with neighbouring countries as required by the Conclusions by the Council of Ministers about the "EU marine and maritime research strategy". The innovative character lies in the combination of these management and protection objectives, with offshore energy production, thus contributing to the EU commitment to reach a 20% proportion of renewable energies by 2020. My colleagues from the Energy and Environment directorates will say more about this.

Ladies and Gentlemen: The marine bio-economy is a coherent ensemble of economic activities, with, at its heart, a core of knowledge and technologies related to marine biology, genomics and environment. "The ocean of tomorrow" approach, fostering synergies and integration between different sectors and disciplines is a key tool to harness this potential.

I will leave the floor now to my colleagues who will explain you why they decided, for the second year in a row, to join the crew for a second "Ocean of tomorrow" expedition.

I thank you for your attention