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TITLE Study to support Impact Assessment on Marine Knowledge 2020: Progress report 1

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FROM Project team/MSJ

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Contents

1 Introduction

Progress

The detailed planning of the study was presented in the inception report's chapter 9. The below provides an overview of the accomplishments at this stage compared to the envisaged planning. The key points to mention are the following:

- An introductory questionnaire inquiring on current obligations to hand-over data and on the cost of data was submitted to licensing authorities and 7 replies have been received. The complete questionnaires on the current obligations for re-use of data have been submitted to all licensing authorities and the deadline for replying is the 25th of October.

- Interviews completed with European Wind Energy Association and with International Association of Oil and Gas Producers. Questionnaires revised based on their comments and re-submitted. The associations will distribute the questionnaire to their members. Deadline is: 18 October 2012.

- The industry associations for aquaculture, aggregates and ports have been contacted and received the questionnaire for dissemination among the associations' members. The latter presented the questionnaire on a meeting with members on 2nd October.

- Pilot interviews carried out with MSFD authorities in France and Denmark. Feedback focused on the questionnaire being too complex and difficult and pointed to the risk that very few, if any would have an idea of future costs. Also, reporting fatigue in regards to the MSFD is mentioned as an area of concern. The questionnaire has been substantially simplified before submission this week. The final questionnaire has also been reviewed and commented upon by DG ENV and DG MARE:

- An initial shortlist of examples of innovation and benefits of reduced uncertainty has been developed. These have been identified based on a thorough documentary review and will be validated and elaborated upon through targeted interviews with stakeholders many of whom have been identified during the data collection phase. The target interviewees can be divided into two categories; researchers (research institutes and universities), and companies (innovative SMEs, large companies with signicant R&D unit or who have a partnership with research institutions). We also plan to undertake a number of initial interviews at the level of the European Commission, for example with DG MARE and DG Research, as well as the European federations (FEAP) and European Maritime Cluster, in order to direct our efforts towards specialists in the field. This will be complemented by interviews at the national level, particularly in the UK and France for example, in terms of their administrations, maritime clusters and research institutions.

- During the past month we have identified and collected documentation on the different EU institutional option to manage the secretariat. The review of this documentation will help finalise particularly step two of the Governance section. Interview with DG MARE is pending.

- As regards the legal analysis, this activity is mainly concentrated on the assessment phase and limited work has thus been done on this part of the study so far. Preparation of interviews is starting up and interviews are foreseen to be carried out during October.

The coming month

The coming month will concentrate on completing questionnaire submissions, conducting interviews and continued desk research. As regards interviews, we foresee that for the first three study components (marine data in the licensing process, costs of data for MSFD and cost of data for off shore wind farms), this will be on an ad-hoc basis until the deadline for questionnaire replies has expired. After the deadlines, we will take direct contact to a sample of those that have received the questionnaire in order to carry out interviews. This serves either to add information to the response received or to provide answers additional to those that have been received. We will participate in the WG DIKE meeting on 30 October and will take that opportunity to present our challenges and needs to the forum. We hope that this can add to the response rate, e.g. in the form of interviews that can be agreed in that connection.

Start	End	Week no	Activities	Output
07.09.2012	20.09.2012	1 2	Draft questionnaire to private actors ready for COM comments Draft questionnaires to authorities (MSFD and re-use of marine data) ready for COM comments Organisation of consultations of pilot MSFD authorities and of European organisations Submission of introduction mail with COM introduction letter to all national authorities to prepare them for the questionnaire Commission comments to questionnaires and submission of short introductory questionnaire Completion of questionnaires and list of questions Test of questionnaires vis-á-vis national authorities in two Member States First interviews on uncertainty/innovation	Accomplished MSFD questionnaire: feedback was that it needed substantial simplification in order to obtain responses
21.09.2012	22.09.2012		Submission of questionnaire on MSFD and on re-use of data with COM introduction letter	MSFD: Delayed due to above feedback. Go out on 2nd October. Re-use: submitted and some responses received
21.09.2112	27.09.2012		Test of questionnaires to private sector vis-à-vis European associations List of interviewees completed with inputs from European associations and organisation of interviews with private licence holders/applicants	Accomplished. Questionnaires have been tested with EWEA and OGP Associations have offered to distribute it themselves among their members. This is in process. No interviews organized yet
			Organisation of consultations (questionnaire submission and organisation of interviews)	All questionnaires launched – via associations and directly to public authorities in week 3. Detailed planning of interviews await further feedback from associations and replies to questionnaires
02.10.2012	04.10.2012	3	Interviews	Following recommendation of pilot interviews, specific interviews with authorities will take place after possible respondents have had time to consider the questionnaire

Furthermore, during October, we intend to carry out interviews with relevant legal desk officers in DG MARE and DG ENV, in order to inform the legal analysis. We will also undertake exploratory interviews with DG MARE to better understand the background of the proposed governance options in ToR and the options mentioned in the impact assessment and the roadmap. In parallel we will continue the desk review on governance and start to draft the response to Step 1 and 2 of the governance component (based on available information).

As regards the analyses of benefits due to reduced uncertainty and in terms of a positive contribution to innovation, the next month is concentrated largely on consultations with key experts.

Resource use

By 1 October, 22% of project resources have been spent. This level aligns will with the achieved progress and the detailed planning of resources described in the inception report.

2 Current practice

Work accomplished

Private sector

After the submission of the inception report including the draft questionnaire for the private sector on current licensing practices, the European industry associations were contacted via email and telephone. All industry associations received the draft questionnaire.

Face-to-face interviews were completed with the European Wind Energy Association and with the International Association of Oil and Gas Producers in Brussels. During these meetings detailed feedback on the questionnaires and the proposed data collection process was received. Based on these comments the questionnaires were revised and re-submitted to the two associations. Both associations will introduce the study and distribute the questionnaire among their members. The deadline for receiving the completed questionnaires is the 19th of October.

The European Sea Ports Organisation (ESPO) offered to disseminate the questionnaire to its members and present and discuss the study at the next meeting of its Sustainable Development committee on the 2nd of October. The most relevant ports would be selected at this meeting and would subsequently contribute to the study.

While the inception report had named Euromines as the industry association to be contracted regarding aggregates it was replaced with the European Aggregates Association (UEPG) as the more relevant association. The UEPG will forward the

questionnaire to its members and the 25th of October has been set as the deadline for receiving replies. The Federation of European Aquaculture Producers has also received the questionnaire and offered to disseminate it to its members too.

Public sector

Regarding current licensing practices in the Member States we have submitted an introductory email to licensing authorities in all relevant countries. This email introduced the study and contained two introductory questions aimed at gaining a first overview of the obligation to hand-over data and practices regarding data costs in the various countries. The replies that have been received are the following:

Country	Obligation to hand over data? Yes/No	Do operators pay for data? Yes/No
Bulgaria	Yes	Yes
Germany	Yes, for renewable energy, minerals extraction, oil exploration and exploitation and for cable and pipeline laying	Licensee has to pay for data products (e.g. specific shape files), data sets available for free via BSH web portal "geoseaportal"
England	No	No
Northern Ireland	Yes (no answer for oil exploration and exploitation)	No
Scotland	No	No
Romania	Yes (n/a for renewable energy and minerals extraction as there are no such offshore activities in Romania)	No
Norway	Yes, for oil exploration, port, harbour and marina development and for cable and pipeline laying No, for aquaculture, renewable energy, minerals extraction and oil exploitation	Yes

Based on these initial replies, a revised version of the public sector questionnaire on marine licensing has been submitted to the public authorities on the 2nd of October. The deadline for receiving replies is the 25th of October.

Focus for the next month

The focus for the next month will lie on following up on the data collection process and on collecting answers from both private and public sector actors. It is envisaged that making direct contacts will increase the response rate. Telephone or face-to-face interviews will be organized with selected stakeholders to elaborate on the answers and to collect additional information.

Challenges and risks

The main challenge lies in the short time frame available for collecting answers from the public sector as well as from private actors in the seven industry sectors. There is a risk that we will not receive sufficient replies to the questionnaires. Distributing the questionnaires through the industry associations will help mitigate this risk as we expect a higher preparedness by private operators to reply if the questionnaire is introduced by a known organisation.

3 MSFD costs

Work accomplished

A draft questionnaire on the costs relation to the MSFD data requirements were completed and send to Iain Shepherd DG MARE on 13th of September.

The questionnaire was then sent as pilot test to the WG DIKE representative from one Member States. He provided written comments and a telephone interview was undertaken to understand the comments and discuss how to revise the questionnaire. A revised questionnaire was then used as basis for a meeting with DIKE representatives from another Member State. This provided further detailed comments to the questionnaire and understanding of the data management process in relation to the MSFD.

The results of this pilot test can be summarised as the following:

- The questionnaire would be difficult to answer as the MS would not have the information at a detailed level.
- Member States have not yet defined the monitoring programmes that the MSFD calls for and hence, it will be difficult to assessment costs of such programmes.
- MS are currently finishing their first major reporting on the MSFD and therefore they are very busy. The reporting deadline is October 15.

Based on the results of the pilot test the questionnaire has been revised and after a second review, it has been submitted to the national DIKE representatives.

Focus for the next month

The next month will be used to make follow contacts. It is envisaged that making direct contacts will increase the response rate. Based on the initial replies a presentation will be made for the sixth WG DIKE meeting which takes place on the October 30-31. This will give an opportunity to present preliminary findings, to consult with Member States present at the meeting.

Challenges and risks

Given that MSs are currently working on their reporting and this take a lot of resources, the response rate could be affected. By making direct contacts to MS and by having the opportunity to present the questionnaire and preliminary results at the WG DIKE meeting will mitigate the risks of limited response.

4 Off shore wind mills

Work accomplished

A draft Questionnaire on marine data needs and costs for planning, building and operating offshore wind farms was completed on September 6th and sent to Iain Shepherd, DG MARE and David Connor, DG ENV, for comments.

On the 17th of September the draft Questionnaire was also sent to the European Wind Energy Association (EWEA) in Brussels for comments.

On 27th September we had a meeting with representatives from EWEA at their office in Brussels to present and discuss the study, to receive comments on the questionnaire and to discuss procedures for data collection and for approaching individual members.

The EWEA office strongly supports the study and offered to submit the questionnaire to their members directly. On 26 September, EWEA officials had a meeting regarding data issues with the EWEAs members where they had introduced the study. The members are hence already aware of the study. The feedback to the questionnaire was positive. However, there were a few comments. Based on these comments the questionnaire has been revised and resubmitted to the EWEA on Friday, the 28th September. EWEA will submit the revised questionnaire to its members. The deadline for answering the questionnaire is 18 October 2012.

On the meeting it was agreed that all contact with individual operators (e.g. for interviews) will go via the EWEA.

Focus for the next month

The focus for the next month is the replying of questionnaire by individual operators.

Challenges and risks

There are two main challenges and risks:

- Individual operators may not be willing to inform on data and costs. In order to mitigate this risk the questionnaire t was revised to clarify the benefits of the study for the operators
- The time frame of the study is the main challenge and risk. The EWEA is not sure it will be possible to receive answers to the questionnaire from the individual members on 18th October.

5 Legal assessment

Work accomplished

Progress so far has focused on desk study of existing examples with different legal basis/multiple legal basis of comparable EU initiatives, in order to identify the

most appropriate legal basis, as well as identification of legal officers in the different relevant DGs to interview.

Focus for the next month

During October, it is essential to plan and carry out interviews with relevant legal desk officers in order to utilise the existing knowledge on similar initiatives. We foresee that these interviews will be carried out with DG MARE and DG ENV.

The focus of the interviews will be:

- Identification of similar examples of and considerations made on the choice of their legal basis
- Discuss other examples of possible EU initiatives that could inspire the present work regarding legal basis. This could include MSFD, MSP, EMODnet, and EMFF.
- Identify and discuss legal challenges and possibilities
- Discuss the added value that an EU action in this field will bring compared to national action alone and possibility of reaching the same result with no EU action

Moreover, it is important to clarify DG MARE's position on choice of instrument.

Challenges and risks

There are no specific challenges or risks at this stage.

6 Innovation impacts and impacts from reduced uncertainty

Reminder of the objectives

One of the key objectives of improving marine knowledge is to increase competitiveness and innovation amongst users and re-users of marine data by providing wider access to quality-checked, rapidly available, coherent marine data. Knowledge is a key component of the EU's plan to integrate marine and maritime research and a contribution to the Digital Agenda.

The Impact Assessment of 2010 demonstrated that the current inability of researchers and private companies to access marine data to develop new products, services, processes or commercialisation techniques is blocking innovation, at an estimated worth of between €60 and €200 million annually.[1]

Furthermore, improved marine information regarding the behaviour of the sea or the state of the seabed and marine life has the potential to reduce uncertainty, thereby reducing costs, providing new opportunities to use resources in a sustainable manner, and encouraging innovation.

[1] European Commission, *Marine Knowledge 2011-2013: Background Document for Maritime Policy Member States' Expert Group on Marine Knowledge*, 23 February 2011

The objective of this study is to identify examples of innovation in products, services, processes and/or commercialisation techniques that will be positively impacted by improved marine knowledge. In addition, an objective is to identify how reduced uncertainty due to improved knowledge can have positive economic benefits on marine industries and for the public authorities.

Work accomplished

To date, data collection has focused on developing a first list of examples of innovation, and impacts resulting from a reduction in uncertainty. This data collection has focused predominantly on desktop research. This list will shortly be complemented by targeted interviews (see 0), in order to validate and expand upon the list of examples, and potentially uncover additional examples.

Outlined below is an initial list of examples of innovation and benefits of reduced uncertainty. These have been identified thorough documentary review and will be validated and elaborated upon through targeted interviews with stakeholders that have been identified during the data collection phase.

Examples of innovation

Area	Innovation idea	Benefits
Aquaculture production risk	• Harmful algal bloom early warning system for fish farming industry, to understand localisation and extent of blooms, and to allow producers to make timely key decisions in order to minimise the damage to aquaculture.	• Reduction of risk for aquaculture producers • Improved water quality, and its impacts on recreational marine activity and tourism
Aquaculture production risk	• Research into understanding reasons for blooming jellyfish populations and developing a system to mitigate the consequences	• Reduce negative impacts on tourism sector • Reduction of negative impact on businesses (eg. Example of nuclear power plants and desalination plants shutting down due to blockages) • Reduction of reisk to aquaculture producers
Aquaculture production risk	• Bio-sensing platforms for targets like microbes, parasites, pathogens and toxins, to determine the location where pollution originates and to take remedial action rapidly to minimise the danger to people and contamination of distribution systems	• Impacts on recreational marine activity and tourism of cleaner water
Insurance companies	• Data on past extreme events to assist in estimating the likelihood of future damage and to develop climate-proof coastal infrastructure	• Tailoring of risk premium • New insurance products, eg related to climate change • Improving site selection location • Improving infrastructure resilience
Coastal tourism	• Identification of potential dive and game fishing sites, such as shipwrecks, seamounts and sunken reefs	• Economic benefits to tourism industry
Bioeconomy	• Aquatic pharmacy: compounds to protect humans from a variety of ailments such as pain, cancer, Alzheimer's disease • Isolation of novel marine microbes (for algae, bacteria, viruses) for applications in drug discovery, biocatalysis and bio-energy	• Human health benefits • Impact on healthcare spending • Research advancements and cost savings

	• Biomimicry: emulating nature to develop new technologies and materials	
Bioeconomy	• Development of seaweed based products – data is needed on availability of the stock; how natural stocks should be managed and maintained; and the provision of clarity on licences to access and use wild stock	• Downstream benefits for processing of value-added biopharma and nutraceutical products
Other (wind energy)	• Development of software to better predict output of windfarms in order to optimise site selection, energy efficiency and energy output	• Ensure wind farm operates efficiently • Help build economic viability of projects in their development stage • Improving operations and maintenance planning • Reduced damage to infrastructure • Maximisation of energy production
Other (mineral resources)	• Offshore mineral resources, such as petroleum, hydrothermal minerals, manganese nodules and cobalt-enriched crusts, which generally occur in deep waters in the region • Discovery; mapping and exploration; new technologies for extraction; novel environmental information and management tools	• Innovative possibilities that can be developed resulting from mineral exploitation and new discoveries

Examples of benefits of reduced uncertainty

Potential result of improved knowledge	Benefits
• Analysis into improved equipment locations, such as the planning of wind and wave power station placements	• Mitigating against equipment loss
• Seabed maps along with Geographic Information System (GIS) based land resource data can assist in attracting investors to establish new tourism projects.	• Extending tourism season • Expanding tourism related infrastructure
• Assist in identifying the most efficient and safe location for underwater supply networks such as cables and pipelines, providing islands with communications, power, fuel and water.	• Mitigate against human risk • Economic benefits through efficiency
• Improved surveying and charting of maritime areas to facilitate maritime transportation of imports and exports	• Efficiencies in ship operations • Improved competitiveness of trade
• Navigational benefits of hydrographic data, including seabed mapping, to the commercial fishing sector	• Positive impacts on voyage duration, vessel speed, voyage distance, sailing flexibility – resulting in reduced shipping costs in terms of vessel operating costs and passenger time costs
• Understanding processes which impact upon inter-annual variability of natural resources such as fisheries	• Understanding of how the system works and how it is likely to be perturbed under different future climate scenarios assists in can adapting activity as required to face the challenges that a changing climate will present
• Better understanding of variability currents exhibit on different time scales. A key challenge is to quantify variability so that accurate predictions of pollution events, oil spills, algal blooms and fisheries recruitment can be provided.	• Reduced risk and impact of pollutants and events that negatively impact the marine environment
• Addressing ocean acidification adaptation is linked to the implementation of the ecosystem approach to fisheries management	• Greater research and monitoring of fish stocks, trophic interactions and socio-economics analysis on its effects on sea food productivity, the fishing industry and coastal communities.

• Assist in guiding research vessels at sea to locations of particular interest to study processes that are short-lived or dynamic in character, such as algal blooms and eddies	• Research opportunities through better observation of marine phenomena • Better protection of seas • Reduction of risk of pollution, etc
• Analysis of oceanic fronts for applications in fisheries management, marine protected areas and for site selection for renewable offshore energy	• Optimate site selection • Improved fisheries management
• Analysis into the accurate location of preferred fish habitats, giving commercial and recreational fishermen critical information as to where fish are in abundance	• Improved fisheries management • Economic benefits for fisherman
• Estimating the likelihood of future damage and develop climate-proof coastal infrastructure through observing past extreme events, such as storms, tsunamis	• Mitigate damage risk to physical infrastructures, and reduction in delays • Reduction of risk of costly errors in production operations • Mitigate risk to human population, including commercial and recreational fishermen • Reduce risk of potential losses from severe storm events (e.g. example of US offshore energy industry in Gulf of Mexico)
• Providing better information about the probabilities of weather-related events enables the emergence of specialized markets that help mitigate risk of uncertainty, such as insurance, trading in commodities futures, and weather derivatives	• Mitigate the economic and financial consequences of uncertainty

Focus for the next month

The target interviewees for identifying and validating examples of innovation and benefits of reduced uncertainty can be divided into two categories: researchers (research institutes and universities), and companies (innovative SMEs, large companies with significant R&D unit or who have a partnership with research institutions).

We plan to undertake a number of initial interviews at the level of the European Commission, such as with DG MARE and DG Research, as well as the European federations (FEAP) and European Maritime Cluster, in order to direct our efforts towards specialists in the field. This will be complemented by interviews at the national level, particularly in theUK and France, in terms of their administrations, maritime clusters and research institutions.

Through the documentary review process, we have identified possible fora, organisations and individual experts who may potentially assist in developing and validating the list examples above, and in identifying the key experts, as well as industry actors who are developing interesting innovative projects. These are presented below:

Potential organisation	Context for relevance	Themes to discuss / value provided
KIMERAA	KIMRAA (Knowledge Transfer to Improve Marine Economy in Regions from the Atlantic Area) is a European Atlantic Area project. A study about the Maritime Cluster was conducted identifying the	• Identification of innovation experts • Ideas for innovation, through projects identified in the Atlantic Area, eg in renewable marine energy

	innovation actors in the participating regions	
Research Centre for Coastal Tourism	Joint partnership of HZ University of Applied Sciences and NHTV Breda University of Applied Sciences	• Coastal tourism innovation • Identification of coastal tourism innovation experts
SusTRIP: Sustainable To urism Research & Intelligence Partnership	SusTRIP aims to carry out a series of research projects focused on the four pillars of sustainable tourism: the visitors, the entrepreneurs, the people and the environment. "Pieken in de Delta" aims to to stimulate (coastal) tourism in the Southwest of the Netherlands by helping the tourism industry using knowledge for innovation. The Socio-economic policy of the Province of Zeeland (2009-2012) is aimed at sustainable development and innovation in the tourism industry, for instance by identifying market opportunities through knowledge and by helping the tourism industry using knowledge for innovation.	• Coastal tourism innovation • Using marine knowledge for innovation • Identification of coastal tourism innovation experts
Members of SmartOcean Cluster, Ireland	SmartOcean Innovation Exchange awards recognition to participating companies in the form of sponsorships to SmartOcean Cluster members. Key criteria for innovation awards include: • Innovative development or innovative adoption of technology for marine use. • Demonstrating leverage of the innovation for significant economic benefit • Showing how innovation can be a scalable solution in one of the SmartOcean vertical market sectors. • Addresses a known global challenge and be capable of global reach. • Demonstrates partnership reach both nationally and internationally.	• Concrete innovation examples under development across a number of industries, with a focus on technological advances
French Maritime Cluster (Cluster Maritime Français)	The French Maritime Cluster is the organisation which promotes this French maritime economic sector. It was set up in 2005 by the French Institute of the Sea and began work in 2006. The purpose is to promote the French maritime industries through their professionals and their economic activities and to identify synergies between them. It brings together approximately 240 members including shipowners, ports, fishing operators, manufacturers, Marine Competitiveness Clusters, the French Navy, scientific Oceanographic research, water sports, shipping bankers, brokers, insurers, classification service providers	• Through the broad membership, seek to identify experts across different industries in terms of maritime innovation
French Competitive Maritime Clusters (Pôle Mer Bretagne and Pôle Mer PACA)	The Pôle Mer Bretagne and Pôle Mer Provence-Alpes-Côte d'Azur are marine science and technology clusters located in Brittany and Provence, whose remit is to promote economic competitiveness at a	• Understanding of the innovation process cycle • Identification of sectorial innovation experts

	global level. They have a combined membership of over 600 that includes major companies, SMEs, public and private laboratories, universities and selective HE institutions, all of which are involved in the maritime field. Their objective is to exploit innovation in order to meet the growing demands of security and sustainable development, which have the potential to generate economic activity and jobs, primarily through stimulating and supporting collaborative projects, involving both companies and research labs, in the development of innovative products and services.	• Exploration of innovative ideas

Through our desktop research to date, we have identified the following group of experts in the area of maritime innovation, across a number of sectors. The list below has been developed based on recent and future European and (particularly French conferences, for ease of organisation) addressing maritime innovation themes. It will be complemented by our initial interviews as explain above.

Potential expert	**Area of specialisation**
Geoffrey O'Sullivan, Manager, International Co-operation, Strategic Planning & Development Services, Marine Institute of Ireland	Overview of how marine knowledge can drive innovation, across sectors and identification of other experts in the innovation area He presented "New Innovations in Marine Science and Technology: Emerging Technologies… Converging on the Oceans", at EurOCEAN2010: Grand Challenges for Marine Research in the next Decade, Ostend, Belgium, 12-13 October 2010.
Jean-Paul Cadoret, Director, Laboratoire de Physiologie et Biotechnologie des algues, Ifremer ; Vice-Président, Algenics	Seaweed : Dr Cadoret is a marine and molecular biology researcher. HE was nominated Research Director for the University of Nantes. Member of the BioGenOuest scientific committee, consultant expert for Ademe and ANR, and is member of Algasud's strategic committee.
Patrick Poupon, Directeur, Pôle Mer Bretagne ; Administrateur, France Energies Marines	Marine renewable energies: Pôle Mer Bretagne is a cooperative enterprise involving major companies, SMEs, research centres and higher education institutions. Its objective is to identify and promote the emergence of innovative projects to satisfy the demands of new markets.
Yann-Hervé de Roeck – Director of France Energies Marines (FEM)	Marine renewable energies : France Energies Marines is the national technological platform for marine renewable energies. This project includes a research centre in Brest dedicated to marine energies.
Renaud Laborde - Président d'Open Ocean - TBI Brest Finistère.	Marine renewable energies : Open Ocean is a start-up that focuses on marine renewable energies. To respond to issues related to the installation of wind power generation at sea, Open Ocean offers two types of services: • Feasibility studies and environmental impact services • A tool for optimizing the performance of production farms based on daily forecasts of electricity generation and marine conditions
Jean-François Minster, Directeur scientifique, Total	Offshore oil and gas, biocarburants : since September 2006 the Scientific Director at Total. Before this, between 2000 and 2005 he was President and General Director of IFREMER and in 2005 and 2006, Dr Minster was the General Scientific Director of the CNRS.
Pierre Bahurel, Directeur général, Mercator Océan	Maritime surveillance and protection of the seas : Mercator is the joint initiative of French agencies for Global/Regional Operational Ocean Monitoring and Forecasting.

Eric Vial, Président, Ecoceane	Pollution and biodiversity : Ecoceane is a member of the French Maritime Cluster, and works exclusively in the area of research, development and construction of a range of patented vessels designed for the collection of hydrocarbons and solid waste at sea, without using any chemicals.

Limitations and mitigation strategies

The themes of innovation and reduction in uncertainty pose a number of challenges, as pointed out in our reception report. Now into the data collection phase, we wish to draw attention to the following challenges which remain relevant to this study.

- Identifying appropriate experts and contributors

Considering the innovation theme covers at least 4 sectoral areas, and reduction in uncertainty does not require examples to be drawn from a particular sector, the scope of our search is indeed very wide.

We have adopted an approach whereby the initial list of examples will provide food for though for subsequent discussions. We plan to hold high level interviews at EU level in order to identify experts and other specialist for subsequent interviews.

- Potential barriers to providing concrete information

Potential lack of availability and knowledge to provide information, or potential reluctance to divulge information (particular for private sector actors)

Undertake a continual process of identifying experts and potential contributors so that alternative interviewees can be identified in the event additional sources are required.

- Impact of better marine knowledge unknown

Identification of innovative products and services may be possible, however it may be challenging to identify the impact that better marine knowledge (a theme difficult to quantify) would have on the innovation. The industries might not have developed ideas related to improved access to high quality data and are therefore not able to estimate any benefits

With interviewees we will strive to understand impacts of better marine knowledge through making reasonable assumptions, and stating these clearly in our analysis.

- Difficulties associated with the quantification of benefits

It is worth reiterating that this exercise will necessarily be quite speculative and hypothetical – the benefits derived from improved marine knowledge may be largely indirect, and therefore difficult to define and quantify.

Furthermore, in terms of examples of economic benefits of reduction in uncertainty, it is expected to be very difficult to quantify the monetary benefits.

Finally, in terms of quantifying monetary benefits, the extrapolation of collected data will be challenging and should therefore be handled and interpreted with caution since data collection and processing costs vary significantly between Member States and sites.

Where possible we will seek to identify past examples where better marine knowledge would have had positive impacts – this may be more concrete to quantify than future developments.

The output for this question will be largely qualitative case study examples, with quantitative estimates where possible. Economic modelling is not feasible within the context of this study and its timeframe.

In terms of reduction in uncertainty, the focus will be on providing concrete examples of the (in-kind) benefits of improved marine knowledge. We will seek to quantify where possible, however the ability to do so will be limited by the data available and assumptions that need to be made.

7 Governance

In the technical proposal we presented the three step approach to address the options for "Governance of the European Marine Observation and Data Networks" (hereafter the secretariat).

- Step 1: Assess the organisation and tasks of proposed secretariat.
- Step 2: Analyse different organisational option for the secretariat.
- Step 3: identify the strength and weaknesses of each option as well as the potential monetary costs.

Work accomplished

During the first progress phase we have identified and collected documentation on the different EU institutional options to manage the secretariat. The review of this documentation will help finalise particularly step two of the Governance section.

Focus for the next month

The next activities of the governance component is to carry an out an exploratory interview with DG MARE to better understand the background of the proposed options in ToR and the options mentioned in the impact assessment and the roadmap. In parallel, we will continue the desk review and start to draft the response to Step 1 and 2 of the governance component (based on available information). We will review identified relevant governance structures through desk research and interviews with Commission officials. Among the issues to be discussed with DG MARE are:

- Why is the secretariat not a Commission core task (according to the road map there is a EU value added)?
- Have alternative secretariat options been assessed (in-house in DG MARE, GMES, EMSA, EEA)?
- Have there been any thoughts of the location of a secretariat?
- Is there more information on the PPP considered above? It is stated in the roadmap that the service delivered by the secretariat should be "at marginal costs" does this fit with a PPP solution?
- DG Enterprise is conducting a study on externalisation of work in the European Commission – this would be an important study to follow in order to utilise the same method and line of argumentation in setting up the secretariat.
- The financing of the agency was not mentioned in ToR. However in the 2012 road map it is mentioned that the Commission has proposed an annual budget of EUR 30 Million. Are there more details behind this amount?

In addition DG Enterprise is carrying out a study on the externalisation of work by the Commission. It would be advisable to have access to the outcome of this work.

Potential interviews with DG Budget and DG ADM can provide input on the financial and staff regulation and any limitations there may be.

8 Documentary sources for activity on uncertainty and on innovation

The following articles and papers have been consulted in the process of identifying the initial list of examples.

General overview

Communication from the Commission to the European Parliament and the Council: "MARINE KNOWLEDGE 2020 marine data and observation for smart and sustainable growth", COM/2010/0461

Ecorys, Deltares and Oceanic Developpement (2012) "Blue Growth : Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts", Final Report, August 2012

O'Sullivan, G. "New Innovations in Marine Science and Technology: Emerging Technologies… Converging on the Oceans", Presentation at EurOCEAN2010:

Grand Challenges for Marine Research in the next Decade, Ostend, Belgium, 12-13 October 2010.

Smart Ocean Innovation Exchange Event: "Getting more from Marine Resources through Technology", www.smartocean.org

Van den Hove, S. (2012), "Innovation: means or end?" Presentation at European Maritime Day - 22 May 2012

Aquaculture production risks

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