



Blue Growth

Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts

Annex 6 Outcomes of the Expert meeting and Stakeholder hearing

Call for tenders No. MARE/2010/01

Client: European Commission, DG MARE

Rotterdam/Brussels, 14th August 2012



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About the Consortium



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Deltares is a leading, independent, research institute and specialist consultancy in matters relating to water, soil and the subsurface. We apply our advanced expertise worldwide to help people live safely and sustainably in delta areas, coastal zones and river basins. Deltares has the knowledge and resources to tackle water and subsurface issues worldwide in an integrated fashion. This means we never focus exclusively on technological issues. Our approach invariably takes account of ecological factors and administrative constraints such as spatial planning, with all the associated policy agendas, competing interests, and legal and economic processes. The integrated application of our various areas of sophisticated know-how, produces solutions that are more sustainable, optimally endorsed by the stakeholders and often, more economical.



Oceanic Développement was founded in 1992 at Concarneau - France, at the core of the European seafood industry, in one of the main fishing ports in France. The company expertise is focused on fisheries and the fishing industry. Since its establishment in 1992, the company gained experience and references on the following areas:

- Consulting: our consulting activity is covering all the fisheries and fishing activities, from the stock evaluation and catches to the marketing via processing, including Monitoring-Control-Surveillance and fishing port management;
- Technical assistance: Oceanic Développement manages scientific observers programs, catches control programs, MCS training programs;
- Expertise and know-how of the company are focused on fisheries sector only.

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1 Conclusions of the Intermediate Hearing Blue Growth, 9-10th November 2012, Brussels

ECORYS/Deltares/Océanic Développement have been requested by the European Commission's DG MARE to conduct in-depth analysis and foresight of cutting-edge knowledge, technology and innovation as a basis for harnessing the resources of the oceans, seas and coasts scenarios, and to inform future policy strategies.

A total of 30 invited experts participated, invited by the study team as well as by Member States directly. They came from areas as diverse as marine research, small or large businesses related to the marine economy and local government. Another 10 representatives of the European Commission from 6 European Commission DGs joined in the two days Intermediate Hearing. On day 1, participants validated the key findings in 6 break-out sessions (Leisure & Transport, Food & Nutrition, Energy, Marine resources, Coastal Protection, Maritime Monitoring & Surveillance) on the potential development of the 13 sub functions identified. The break-out sessions focused on potential future development, uncertainties and synergies & tensions. The second day focused on the identification of constraints, framework conditions and areas for policy intervention.

1.1 Day 1: Validation of key findings by subfunction

Leisure and transport

In itself it should be clear that the value chain is sometimes longer than addressed by the sub-function itself. Multimodal transport connections, for instance, offered at ports providing hinterland connections are directly linked to the short sea shipping value chain. Further to that, some new trends can be observed in tourism with an increasing role of nautical tourism (including fishing, watersports and completely new activities as sea walking). In addition patterns change with a larger role for short breaks as opposed to longer holidays. Whereas general drivers and trends can be observed which are valid on a European scale it is noted that when creating employment in leisure and transport, local leadership can make a difference. Creating partnerships between different stakeholders can increase the win-win opportunities.

Uncertainty for shipping comes from the (limited) harmonisation of cross-border operations (e.g. short seashipping, cruising etc.). Pricing/external costs are a crucial determinant, and the correct incentives need to be provided. Uncertainties with regard to tourism arise from the volatile political situation in many destination countries, e.g. Northern Africa. Extreme weather conditions or oil spills further hamper growth. A full recognition of the role of ports as key nodal points is required. Many activities get together at these locations. This also means that port planning can be addressed in a wider sense – by identifying the main functionalities of ports and by building whole value chain around them - in terms of supply industry as well as tourism.

The role of marinas as a potential leverage for coastal economic development has been increasingly debated (i.e. attraction of private financing, development of infrastructures, inclusion of local enterprises and communities). Nonetheless, the lack of substantive scientific evidence across EU sea basins both at the

level of the value chains and across Member States is currently challenging any rigorous analysis of marinas' true potentials. This hampers attempts to assess the full value added of economic activities, such as cruise and marinas. Due to that, success factors and drivers can not exhaustively be quantified, from a scientific point of view. Hence any initiative promoting additional understanding and evidence on the matter is welcomed by the practitioner community.

Food & Nutrition

The session focused specifically on Algae Aquaculture and Blue Biotechnology. Algae aquaculture is extremely diverse in terms of production processes and constraints: seaweed (macro-algae) produced at sea, autotrophic micro-algae (using sunlight, in raceways or photoreactors), heterotrophic micro-algae (without sunlight, in fermenters). In the short to medium term, the potential will be strong in the health sector and food supplements – while perspectives for bio-energy from algae are likely to emerge in the longer term only. Algae aquaculture is also expected to provide proteins for the human food and the animal feed markets.

Uncertainties come from the access to finance, not only for Research but mostly for Development, allowing SMEs to grow. There is a technological and intellectual race with key competitors, today the USA and Japan, tomorrow China and India. Large-scale pollution and climatic events lowering fishoil/fishmeal production would be an important driver for the Algae Aquaculture sector. The Algae Aquaculture subfunction could also help to counter climatic events – e.g. through carbon storage or by lowering ocean acidification. A breakthrough in medication sourced from a marine organism (e.g. a cure for cancer) could provide a major boost to Blue Biotechnology.

Algae Aquaculture and Blue Biotechnology are strongly connected to a range of other maritime functions. Synergies are expected by sharing the space with other activities (including wind energy and coastal protection) – but also by reinforcing the current practice to make biologists join deep-sea mining explorations in order to look for benthic organisms and deep sea creatures.

Energy

Despite gradually depleting resources, the oil & gas technology is still an important and large sized sub-function with major investments in technology, and it thereby functions as a driver for other offshore activities (e.g. deep-sea technology). Besides, this energy supply remains important in other countries (e.g. BRIC-countries), and therefore provides an important export market for European service suppliers.

But a rapid year on year expansion of ocean renewable energy and in particular off-shore wind is very probable - also resulting in future economic and employment benefits. With more offshore wind turbines moving into deep sea waters, distances between production sites and consumer markets growing, scales will increase, the grid and port requirements will go up. These infrastructure challenges also apply to investments related to wave and tidal resources – for which potential tends to be highest in Europe's periphery. Local skills shortages are expected as well – not only for building but also for servicing and maintaining ocean renewable energy sources.

Uncertainties come from financing – as the horizon of financial markets is shorter than payback periods (and through the economic and financial crisis even shorter). Public acceptance is an uncertainty too, especially when ocean renewable energy sources do not benefit the local communities concerned. For wave and tidal, the future potential will depend on a boost in technological development and demonstration.

Important linkages and inter-dependencies exist between the above energy sources - in regard to skills, cross-over technologies and infrastructure including ports. Synergies could arise with short-sea shipping (e.g. through charging ships with electricity at wind turbines off-shore). Integrated planning is required in order to address the tensions - also onshore for ports and infrastructure. Decentralised energy storage or different energy carriers than electricity could limit the dependence on super grids.

Maritime Resources

Maritime resources provide important potential economic and employment benefits. As with off-shore wind, the trajectory for development can be long, e.g. the € 10 bln. turnover estimate could materialize in 2025 rather than in 2020. EU industry (exploration, oil & gas, offshore, shipbuilding, dredging, processing, under water robotics, etc.) plays a crucial role in the value chain, but is less dominant when it comes to providing the investments – which come from mining companies. At the EU-level, there is certainly scope for coordination over the value chain – although this appears a priority more important for policy-makers rather than for industry itself.

Uncertainties come from the need for successful demonstration projects (2013), the strategies from non-EU players (notably Canadian, Russian, Chinese), and mineral prices – shaped not only by future demand but also by on-land supply. Successful exploitation requires techniques will take full account of environmental impacts as well as the concerns of local communities.

Technological synergies (multi-functional hubs) are essential for building critical mass, but unlikely to materialise on their own. A way forward is to focus on one subfunctions with other maritime activities seen as by-catch.

Coastal Protection

The potential for coastal protection activities is strong, especially when based on long-term visions and when synergies are exploited already at the level of masterplans.

Important uncertainty is the economic situation – as dependence on public finances is strong. In this respect, the roles, responsibilities and commitments of central vis-à-vis local government need to be clarified, taking account of differences in institutional models across Europe. Short-term and erratic behaviour of local authorities is another uncertainty. Equally important is the involvement of the public, and increase the awareness of the long-term risks and benefits related to coastal protection, and the possibilities of private (co)financing.

Coastal protection activities provide important synergies with many other subfunctions, such as environmental protection, recreation, living & working, port development and ocean renewable energies. As an example: wave energy converters may help to attenuate wave attack and generate electricity. Tensions may arise between these same subfunctions in intensely used areas (often near cities), e.g. related to ports / beach tourism / desalination / water quality issues / soil subsidence. Critical here is a sustainable approach to promote tourism whilst ensuring a sufficient supply of cities with fresh water, desalination and interactions with sediments and water quality.

Maritime Monitoring & Surveillance

Whereas maritime monitoring & surveillance is at present strongly driven by public parties, it was remarked that more room exists for the roll-out of business models which incorporate a revenue stream that reflects the internalization of the costs of international maritime monitoring (e.g. through a strict introduction of the polluter pays principle). The role of public bodies in such a situation could be reduced to safeguarding the quality of data collected, setting standards and interpreting data. Contributions to data collection can also be delivered in kind, e.g. by incorporating an obligation to supply monitoring data by parties that needs to be monitored. Building-in such self funding mechanisms allows for the supply of data for free which in turn enables the development of value added services and smart applications (e.g. on mobiles). The latter enhance the social benefits of data that is collected. Efforts towards the integration of monitoring infrastructure and data also provide value-added benefits and support downstream services. However, this requires harmonization of monitoring strategies and multidisciplinary data sets, as well as streamlining of policies.

Further potential lies in the automation of monitoring and surveillance systems, which increases the cost-efficiency and reduces the need for human intervention, as a way to counteract the lack of available funds. In surveillance activities, due to the strong public interest in terms of security and safety, stakeholders may want to turn to the governments for solutions.

Uncertainties are mainly related to the reliability/quality of data (for some data streams this is essential) and the ability to standardize indicators. Enforcement is crucial as well.

Maritime monitoring & surveillance is cross-cutting in nature and provides synergies with and benefits for a wide range of maritime activities. Strong potential for synergies can be found in terms of cooperation across countries at the sea basin level, which appears easier than across sectors. Tensions arise in the liability and conflicting obligations of the various actors.

1.2 Day 2: Constraints, framework conditions and areas for policy intervention

R&D

Regarding research, the main barrier is to get from Research to Development. Financing is a major constraint, especially when getting to the last steps before commercialization. An increase in Venture Capital for Blue Growth projects is welcomed, in order to roll out larger projects and products – particularly for deep sea mining and algae aquaculture. Besides, the visibility of research is necessary to mobilise private sector, and more informal exchange is required between science and the business world. A dedicated EIT KIC (Knowledge and Innovation Community) could help in this respect.

There is a need to ensure that synergy opportunities are being captured and that sector- oriented legislation is prevented. The development of the “Oceans of tomorrow” as a strategic plan with Member States and JPI Oceans is welcomed. It is crucial to provide the opportunities for synergies in public research funding programmes (FP7) to materialize. This requires a degree of openness in the programming phase, allowing for bottom-up processes, e.g. through brainstorming on potentials for synergies prior to the selection of themes and projects.

Encouragement of Member States to use Structural Funds for Blue Growth should be aimed at in post – 2013 Cohesion Policy.

Research and development can be stimulated by public policy, through tax incentives to attract private resources also from political foundations and think tanks, e.g. US Foundation scheme.

Public acceptance

Public acceptance will largely depend on the transparency of governments and companies and a clear communication strategy towards the benefits for local stakeholders of Blue Growth. Involving the public will make better projects, as they take advantage of the added value of local knowledge, while increasing opportunities for local job generation. If not, new maritime activities will easily be halted in the face of public resistance. Leadership of the public sector and vision are critical and often a challenge, also because of the citizen's general mistrust. There is a need for support of clear and feasible methodologies of stakeholder engagement (skills, costs, long-term engagement), etc.

The EU can start those projects (e.g. on CCS), which would be more difficult to initiate at a national scale – both in terms of political leadership and financing (large-scale FP7 projects). Further concrete examples are to include marine environmental protection as a horizontal theme for the Horizon 2020. Likewise, DG ENER should include Ocean Energy into its SET plans.

Skills

Shortage of skilled is an issue in many maritime sectors in Europe. This refers both to white-collar professions (e.g. naval architects), but also to skilled blue-collar jobs. This is strongly linked to the perceived attractiveness of maritime jobs: there is a problem of image, a problem of working conditions (especially in those professions where employers are faced with cost pressures), but also problems related to health and safety especially when working at sea itself. Challenges exist not only in recruitment but also in retention. This eventually feeds back in the number of people who choose technical education, which prepares them for such professions. A more positive image of the maritime sector in general would be welcomed. Norway is seen as a positive example in this respect, where the maritime sector is perceived as an important economic sector and has reached a high level of visibility in society. An increased awareness of possible career paths is needed. One way could be to use structural funds for promoting training and increasing awareness at schools and universities. Strengthening the links between universities and companies would also be beneficial (e.g. as is done in Germany). In addition, for achieving 'Blue Growth' through the diverse character of the maritime cluster, introducing the possibility to develop careers across the value chain and stimulating horizontal mobility in the maritime cluster is crucial. This includes the perspectives for jobs on land after having spent longer periods on sea.

Access to Finance

The finance gap between available seed funding and venture capital for large operations (between ~2 to ~15 millions) will need to be closed. With potentially less public funding available in the current economic situation, efforts will need to be joint to move from grants to loans & equity based financial mechanisms. Public-private co-investment funds (the "European marine technology co-investment fund") could further contribute to smarter funding models for maritime initiatives in times of fiscal austerity, with the help of well established European organizations such as the European Investment Bank.. Through successful good practices benefitting from public support, the awareness to attract money could be further increased, allowing the sector to reach a critical mass.

Cluster support & standard setting

In terms of standard setting, regulatory bodies and classification societies may lack the level of innovativeness when it comes to defining standards and have to go for the lowest level of the common denominator. Greater harmonization of standards, e.g. in marine data mining, will help EU Member States to foster blue growth potentials. This however, can on the one hand drive the sector; on the other hand it can also hamper market growth, since buyers are waiting for entire clarity on future standards. Further positive growth potentials could be achieved by clusters gaining greater visibility amongst politicians and the general public, in particular for emerging industries (and less for established ones, such as Oil & Gas). Identifying cross-national and cross-sectorial potential of clusters along value chains and aligned to EU priorities within the Europe 2020 strategy has been stated as important element of future policy orientation.

Environmental Challenges

In terms of environmental regulation, a fine line needs to be drawn between limiting economic activities by over-regulation and applying necessary regulations to stimulate new opportunities. Regulators should try to shift the focus of environmental legislation from preventing adverse impacts towards exploiting opportunities (e.g. for wind farms). New opportunities that enable Blue Growth could be further stimulated and facilitated through the standardization of procedures. Further to that, a good mixture of different policy measures is needed to address environmental issues. If possible, the polluter-pays-principle should be applied. However, implementing environmental measures at an early stage may even prove to be cost-effective in the long run. The time scale of impact is usually longer than the typical national 4-year cycle. In this respect, the EC can contribute through the long-term enforcement of legislation. Often, knowledge related to environmental challenges is also a barrier and constraint. Innovation is instrumental to overcome these challenges, such as through the implementation of ecological designs that can for instance create new habitats and eco-engineering solutions.

Conclusions and wrap-up

After the presentation of the key findings, the two-day hearing closed with a panel discussion. Lively discussions were triggered around 4 key questions 1) Europe will be far from alone when faring on the oceans – how to be successful?, 2) Transferring potential into jobs, 3) Making smart combinations and building critical mass, 4) Need for sustainable approaches – the role of maritime spatial planning. The selected panelists were contributing to a lively debate. Ronald Vopel from DG MARE provided his reflections from the European Commission on the Blue Growth study and the outcome of the Hearing. From the project consortium's side, the invited experts echoed – with a few exceptions –the key findings identified for the micro futures presented. The received input revealed that considerable interaction is happening between the maritime activities and the micro futures.

2 Conclusions: Blue Growth stakeholder meeting 26 January 2012

Note: This part of the report is based on minutes made by the study team and have been used for purposes internal to the project only.

2.1 Key messages

- Link the report back to the non-selected sub-functions. In particular, it is important to address the relevance of fisheries and aquaculture (large size, large growth, synergies).
- Governance vs. government – external governance as framework condition to the value chains.
- Data: to better clarify sources, choices and assumptions.
- To better address innovation/development within mature sectors (e.g. short sea, cruise).
- Synergies from the problem side or the impact side: all functions deal with same technical challenges and to some extent also same impacts – R&D needs to be addressed horizontally.
- Synergies between land and sea-based maritime economic activities are important; Policy: synergies across borders, link to perception of governments (regional governments not seeing relevance of deep sea developments off their coasts).
- Sea-basins: the issues of security and immigration, in particular in the Mediterranean (and Atlantic) add to the understanding of framework conditions.
- Calls upon national governments to provide information (monitoring) as a means to reduce risks

2.2 Introduction

After a general introduction and presentation by Jan Maarten de Vet and Roelof-Jan Molemaker, enhanced with audiovisual interviews of the experts from the Intermediate Hearing Blue Growth 9-10th Nov. 2012, the audience was invited for questions.

Q&A

Some general comments on the use of data were accompanied with specific comments on the sectors, e.g. aquaculture having recorded high growth across the world (FAO 2008 report) and other recent findings on bio energy (Jacques Fuchs), currently being prepared. The participants asked for finetuning of the sector reports/findings in relation to that.

Roderick Sant (MARE) commented that MARE:

- 1) was looking at value chains, not just sectors
- 2) next stage is also link back to other economic activities, incl. synergies
- 3) there is a logic of selection based on criteria, but indeed link should be there.

2.3 Maritime economic activities

In the presentation part of the maritime economic activities, Roelof-Jan Molemaker stressed the research design limiting down from various to a few selected economic sectors. Value chains aim to look at synergies and tensions and Blue growth is considered to be wider than just the 10 economic activities.

Q&A

Joao Fonseca Ribeiro (Portugal Government) stressed that the report on 1) Short sea shipping should contain also the Blue Belt project which aims to facilitate the value chain (customs, PSC, ISPS). Besides, that 2)

surveillance is costly, but it will enable Maritime Spatial Planning and further the growth of sectors, f.i. natural resources mapping, licensing of ships, fish conditions, etc.

Janette Worm (WaterPlanetEarth) stressed that public acceptance was not just a top-down phenomenon.

Monica Martinez (Secretaria general del Mar, Spain) stated the differences of seas and coasts in Member States across Europe, e.g. Spain and UK and suggested to include a stronger geographic dimension in the report.

Loic Blanchard underlined that 1) methane hydrates is not a viable economic sector in the forthcoming years, 2) offshore wind and Renewable Energy sources need continuous research and technology development (foundations, installations, floating turbines, etc.) and continued public frameworks that allow this. 3) that governance is an issue for all functions but in particular for the emerging sectors (Maritime Spatial Planning as a solution)

Jan-Bart Calewart (European Science Foundation) 1) expressed his concerns about the rather broad definition of blue biotechnology. 2) offered his assistance with obtaining recent data on the sector 3) suggested adding the legal environment to the framework conditions

Paola Lancellotti (EMEC): industry is a technology provider, incl. f.i. equipment to measure state of the seas and impacts of policies. There are always synergies between sectors, also from outside the maritime field (example land based, aviation). Please distinguish R&D and Innovation also in mature sectors like shortsea shipping and cruise.

Waddah Saab (DG RTD) stressed the role of the EU and Member States to provide relevant data (monitoring). Besides, considerable research is compiled on eco-system services, and some other functions come at the cost of eco-systems

2.4 Synergies

Joao Fonseca Ribeiro (Portugal Government) raised the perception that synergies are driven from different conditions, 1) funding & political objectives, apparently not always economics. 2) synergies with regional projects at coastal zones, but hardly at deepsea areas (e.g. mining)

Jacques Fuchs (RTD): informed about synergies between jwind & other activities, notably since large sea areas are taken (initiative multi-offshore wind energy platforms) and stressed that DG RTD currently receives a large number of proposals.

Thomas Engelke (Hanse office) stated that the types of energies are different and the issue of communicating potential synergies to stakeholders is very important. In the Hamburg / Schleswig-Holstein region, first experiences show positive results. Activities are rather time-consuming 5-10 years to pay-off.

Joseph Casanovas (MOVE) stressed that shortsea shipping was mainly from A to B within EU internal market. Hence, he asked for adding maritime equipment and clear technologies. The title of the subsection 'reaching out to Europe's neighbourhood' does not capture all growth options. Blue Belt project is an important reference since it focuses on the EU internal market. Overall, the sector aims for a drastic reduction of shipping emissions. If things go unchanged by 2050 emissions will have tripled.

Waddah Saab (RTD): 1) research perspective. Anything that goes at sea shares some problems: corrosion, biofouling, mechanical constraints (weather events). Whatever progress is done there can benefit all functions. Same for deepsea: higher pressures, specific technologies (in which EU/Germany is very strong). Hyperbaric technologies progress will serve all deepsea resources (minerals, bio, methane hydrates). Proposal we could

think of initiative of 'sustainable deepsea factory'. 2) combined impact on marine environment, obligation of good marine environment is in place. Changes in the marine eco-systems happen at much higher speed than on land (phytoplankton, etc. – whole food chain changing in 10 years time). Need for more integrated way of research/knowledge gain.

2.5 Sea basins

Q&A

Joao Fonseca Ribeiro (Portugal Government): stressed the importance of outermost regions: Macronesia is part of Atlantic sea basin strategy – coherence would be to include them into atlantic sea strategy.

Monica Martinez (Secretaria general del mar, Spain): issues like immigration, defence, piracy, are important in Mediterranean and Atlantic. When we try to translate Baltic governance structures to other seas, these are difficulties because in the Baltic.

2.6 Lunch notions (raised in front of sea-basin maps)

- The role and contribution of higher education institutions for the maritime economic activities?
- Marine equipment – synergy not only across maritime functions but also with land based / other sectors. To be added.
- Fisheries sector to integrate more than currently – great concern among many people. Our answer seems not to convince, f.i. since they are not depicted in the scenario graph.
- CESA mentioned inconsistency between Blue Growth and Green growth study, e.g. oil & gas and offshore wind potential

2.7 Policy initiatives

Smart

Access to finance

Janette Worm (WaterPlanetEarth) assumes that investments are mostly stemming from the private sector. For monitoring ,however, there is a role for EU, in particular DG MARE.

Joao Fonseca Ribeiro (Portugal Government) challenged that opinion by stressing the global responsibility in terms of monitoring. States to preserve environment and work as facilitator for development. Central governance of MS, of EU, dialogue between MS and regions, how regions can develop macroregional plan, esp if beyond MS borders.

Jan-Stefan Fritz (KDM German Marine Research): on the private side: structural examples of how risk/venture capital has been (successfully) used. This should allow for assumptions how things would work in relation to maritime policy. Public side: EU funding with view to 2014/2020 – whilst opportunities on how to use the funds better are there, it is unclear how to use instruments for the maritime sectors.

Waddah Saab (RTD): risk capital, there are European schemes (risk sharing facility), albeit marginal compared to private sector role. The latter is mainly their responsibility. An EU role for 1) monitoring (marine observation): going offshore is risky business. Provision of information helps to reduce these risks. So EC should come with common vision on data monitoring (EmodNet is good basis). 2) guarantee schemes. Example new species in aquaculture, risk of diseases. State aid rules could be more flexible to reduce risks for innovative activities (aquaculture, blue biotech), esp to reduce the time to market. So better view of market failures needed and then define ways to reduce the risk.

Joao Fonseca Ribeiro (Portugal Government): we have to specialise funding options for these areas of businesses and tailor existing funds better to their needs. Regarding the monitoring role of governments (e.g. OSPAR actions, MSFD) to provide information also to be better able to estimate risks.

Thomas Rammelt (North Sea Foundation): states that the insurers in NL are not willing to cover risks of wind farms over 500m safety zone. Therefore discussion of multifunctional use in NL is difficult, in contrast to BE and UK where discussion has been started.

Paola Lancellotti (EMEC): P&I clubs background is a collective share. The issue here is : who is the collectiveness? Also insurance is part of the sector. Shipbuilding is now a volatile sector and insurers withdraw from the market.

Role of the EIB

Ronald Vopel (MARE) concluded that the problem of the EIB is knowledge on potential risks, hence their reluctance to enter into sector specific funding. EIB needs inside information to help the bank assess the risk. Currently, the classification societies have advanced in shipping & offshore, but still far away from biotech. The expertise has to come from current/future economic operators. If they can team up/build up the knowledge base, that would help.

Thomas Rammelt (North Sea Foundation): e.g. the Supergrid: we need high voltage grid on north sea to make big step to large scale offshore wind/other energy. However huge investment, required in next 10 years. Today, each wind park gets connection to shore, costing billions, and creating hurdle for supergrid. Therefore, a European based fund structure is needed.

RJ: conclusion that overall bundling is needed.

Loic Blanchard (independent energy consultant) reminded the audience to be more careful and specific with any recommendations, also in view of tight budgets for funding.

R&D

Waddah Saab (RTD) expressed his wish to add to the list of policy recommendations: 1) the JPI Oceans, initiative of 16 MS and associate countries to pool resources, 2) measures to create critical mass by merging EU and MS (and private) funds, 3) to invest in basic research infrastructure critical to allow knowledge development.

General remarks on funding for R&D included that Structural Funds are a real tool for innovation more so than Horizon 2020 (research in it is delocalised, virtualised, pooling resources), but innovation happens in territories. Good practice examples of RTD projects (e.g. domestication of bluefin tuna in FP6 and FP7 with Member States such as Spain now supporting the commercialisation phase). Potential synergies between RTD funds and SF funds.

Paola Lancellotti (EMEC): asked for distinguishing between R&D/prototypes and manufacturing stage. 2) open innovation, building critical mass, synergies by innovations relevant for different economic activities.

Smart infrastructure

Waddah Saab (RTD): grids are extremely important. Key concept is that if the EU aims at decarbonising, a move to renewable energy sources seems to be inevitable. The problem is the distance between production and consumption sites, and supply variations over time (wind not constant), therefore supergrid needed. Group of 30 electricity companies "friends of the supergrid" (very powerful industry players). Supergrid can be driver for blue growth.

Lidia Luca (CESA): stressed to stress the importance of shipbuilders (maritime hardware), due to their synergetic potential, e.g. the link between shipbuilding and offshore renewables.

Papadoyannakis (ENV): 1) the study should focus on perspectives that are not developed yet AND for which policy should do something. 2) Regarding the supergrid - how does it link to ambitions of energy industry, i.e. can we justify the investment? 3) not everyone understands the impacts of activities like gas installations, hence communication efforts are needed prior to launching activities.

Cluster support

Waddah Saab (RTD): not very mature area for the EU, something mainly done nationally/regionally. However in current SF regulation under discussion, the concept of smart specialisation is introduced. Some countries/regions already do so, e.g. Ireland sea change strategy. Lithuania focused on 3 clusters to spend SF, one of which is Klaipeda (maritime cluster).

Skills

Sustainable

IMP

Thomas Rammelt (North Sea Foundation): the amount of research on impact of fisheries on marine ecosystems, equals the amount of all other aspects times two. The North Sea Foundation, e.g. concept of zonal fisheries, so only under certain conditions, certain fishery types allowed in certain zones. Already applied in Natura2000 and territorial waters in NL. Same being considered for Doggersbank (international natura2000).

Papadoyannakis (ENV): a more global perspective would be great to be added. Convention on biodiversity; marine protected areas not only barrier but also contribute to economic developments.

Janette Worm (WaterPlanetEarth): MS are now developing national strategies under MSFD. Would it be an idea to join these again into an EU strategy for sust devt, next to the blue growth vision also to have an environmental vision?

Joao Fonseca Ribeiro (Portugal Government): sustainability must be inside the economic activity otherwise it will only be regulatory enforced.

Waddah Saab (RTD): stresses that the concept of marine eco-system services may help. E.g. Australia report where both econ and eco-system benefits are addressed. However difficult to value as some parts are not tangible. Valuation methodology is progressing but still work in progress. Sharing of methodologies/findings needs to be further developed.

Jan-Stefan Fritz (KWM German Marine Research): asks for linking ecologic aspects with statistics on economy you have. Options 1) do nothing, focus a bit on specific sectors, or 2) structural view endangers backlash in Europe, so what would be European contribution?

Waddah Saab (RTD): on aquaculture: we have to learn also from China. They combine fish aquaculture with shellfish below – productivity and sustainability. Problem is nutrients going to seabed. Here shellfish you absorb the nutrients. So smart combinations, both space and environment.

Inclusiveness

Promoting public awareness

Janette Worm (WaterPlanetEarth): calls for a more bottom-up perspective to define the critical factors in promoting the Blue Growth project in the public. That would be innovative, then you integrate governance in your chain of value.

Joao Fonseca Ribeiro (Portugal Government): reminds participants about the general challenges that national governments currently face to communicate the radical changes in the economic reforms towards its citizens. In his view, the EU should be careful of the specificities to the circumstances, e.g. sea-basins differences.

WWF representative : likes the public private dialogue and underlines that a useful tools are NGOs. Interactive approach rather than top-down planning. Dialogue is both sides, not one side.

Janette Worm (WaterPlanetEarth): example cradle to cradle approach – fi more small scale initiatives that benefit local communities e.g. eco-tourism, rather than big cruise company developing their area and they don't see the benefits.

Janette Worm (WaterPlanetEarth): EU cyscot project connects local dialogue to the EU dialogue – they are collecting best practices at present, which you could use. In most developing countries they also start from local level and then grow to higher level. That would fit innovative blue growth model.

Waddah Saab (RTD): very interesting, because not traditional research, but scientists are stakeholders like any other. Stakeholders share perception of the issues. But also important to make citizens aware of pollution they make at sea, since large part starts on land.

Lady (WWF): fully agree. Stakeholder dialogue different ways to involve them, fi to let them know they are not there in vain, but have something to gain, they will get something back.

2.8 Conclusions

Roelof-Jan Molemaker:

- Thanks everybody for the active participation
- Few issues repeated through the day, important to take on board.
- Further deepening & best practices can enhance the study
- Inspiration for further finalisation received, thank you.

Ronald Vopel (MARE)

- Thanks to Ecorys, participants.
- Further thinking/reflection, welcome to contact us later.
- Communication foreseen in autumn, then more official position
- EU maritime day Gotenborg Sweden 21-22 May will include a session on Blue growth
- Study designed from technology angle, less sustainable, struggling with economy vs ecology. But compare with other developing world regions, we have a luxury position. Good to also look at what others do and learn from them.
- Inclusiveness – weakness, still in development, how to get to higher level. Key role for local communities, naturally EC is weak, depends on intermediaries and public consultation.
- Example DE vs FR after Fukushima: closing down or continuing nuclear. What should EU do? Only a continuous dialogue with all stakeholders (also on the ground) can help to provide a sound input to EU policy-making.



Sound analysis, inspiring ideas