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The International Advisory Group (IAG)

Establishing the IAG

Work Package 2

Strategy for the marine biotechnology ERA-NET and beyond in the context of the European Bioeconomy

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EXECUTIVE SUMMARY

The formation of an expert group representative of industry, academe and policy actors associated with marine biotechnolology was identided as a key strategic support to ERA-MBT. The International Advisory Group (IAG) is such a group. The membership of the ERA-MBT consortium defined the Terms of Reference for the IAG and identified a diverse membership from within and outside Europe. Formed during 2014 the role of the IAG is to,

- To support the ERA-MBT in the creation of a vision and associated strategy for an ERA-MBT roadmap
- Provide comments on the results of a MBT foresight study
- Provide contributions to and validate the strategic roadmap
- Advise the ERA-MBT regarding priority research areas of relevance to industry
- Advise on the implementation of ERA-MBT
- Advise on research call content
- Advise on the definition of activities that supportive the development of ERA-MBT
- Review the performance indicators and assess the impacts of ERA-MBT

The IAG would also contribute to the objectives of the ERA-MBT by,

- Helping to define events/activities to capture and profile the views and expectations of stakeholders regarding marine biotechnology opportunities;
- Identifying ways to improve interaction between marine biotechnology/bioresources researchers and industry;
- Advising on the implementation of the strategic roadmap and assessing its impact.

The IAG membership comprises Alan Dobson – Ireland, Frank-Oliver Glöckner – Germany, Adrianna Ianora – Italy, Ernst Kloosterman – Norway, Fernando de la Calle - Spain, Fredrika Gullfot – Sweden, Helena Vieira – Portugal, Nathalie Moll - Belgium, Patrick Sorgeloos – Belgium, Uwe Waller – Germany and Rachael Richie – Canada (chair).

This report describes the process of forming the IAG, its membership and includes the minutes from the first meeting of the IAG.

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INTRODUCTION

The International Advisory Group (IAG) will serve as ERA-MBT's "think-tank" group, acting as a reference point for all strategic initiatives undertaken by the ERA-MBT consortium. The role of the IAG within ERA-MBT spans the life-time of the project. The diverse background and experience of the IAG members is particularly relevent to activities such as developing the strategic roadmap, defining research priorities and reviewing ERA-MBT performance, in addition to broader issues associated with the implementation of ERA-MBT.

SELECTING MEMBERS FOR THE IAG

A process for selecting members of the IAG was initiated immediately after the Kick-off meeting of ERA-MBT in Lillehammer 30th January 2014. A draft ToR for the IAG was circulated for comment within the ERA-MBT consortium and members of ERA-MBT were invited to propose nominations and selection criteria.

The following was agreed at a WP2 meeting 27th of February in Copenhagen, concerning the IAG nomination process.

A discussion on a draft process to support the appointment of the IAG led to the decision that nominations were to reflect persons best suited to cover the spread of marine biotech activity, rather than an equal/balanced national representation of member countries; nominations would be sent by e-mail to the leader of WP2; WP2 would create a provisional membership following an evaluation of nominations; approval of the IAG would be by the ERA-MBT steering committee. The prime criteria for membership of the IAG, was the scientific, technical or business profile of the nominee; the second "criteria" was to achieve a balanced representation with regards to nations/regions, gender, and origin i.e. industry, academic, policy.

The leader of WP2 was requested to issue a final draft of the nomination process and the ToR of IAG for approval at the ERA-MBT meetings of PMT and SC in April 2014.

The final nomination process is included in Appendix 1.

The final Terms of Reference for IAG is included in Appendix 2.

An e-mail was sent from the WP2 leader to all partners of the ERA-MBT in March 2015, asking for nominees to the IAG to be made using a standard nomination form – see Appendix 3. The deadline for nominating candidates was set to 18th April 2014, after which the WP2 team would create a short-list and a reserve list of candidates to be discussed at the PMT meeting in the 28-29 April 2014 in Ghent.

At the PMT meeting Ghent, the ERA-MBT partners suggested some minor adjustments to the short-list. The short-list was subsequently endorsed by the SC, and the Coordinator was asked to officially invite the members on the short list. All invited members accepted the invitation to join the IAG.

MEMBERS OF THE IAG

Adrianna Ianora

Professor Adrianna Ianora is Research Director and Head of the Functional and Evolutionary Ecology Department at the Stazione Zoologica Anton Dohrn, Naples (Italy). Adrianna Ianora studied at McGill University of Montreal (Canada) and was Laurea Cum Laude at the University of Naples (Italy) in 1980. Research interests include exploring the biotechnological applications of microalgal secondary metabolites as pharmaceuticals. She is member of the EUROMARINE and MARS Steering Committees; Editorial Board Member of several journals, including PloSONE and Frontiers in Marine Biotechnology; author of 100 Web of Science publications; co-Author of Marine Board-ESF Position Paper 15: "Marine Biotechnology: A New Vision and Strategy for Europe". She participated in PHARMASEA FP7 project; 3 Italian National Industry-Driven Projects (PON01) coordinated by Novartis Vaccines & Diagnostics srl, Sanofi S.p.A and BIOGEM Scarl. She has been member of the Open University PhD Committee at the Stazione Zoologica Anton Dohrn since 2001 and has co-ordinated the ecology courses of the PhD programme since then. She has also been involved in the organization of many training courses within the EU Networks of Excellence MarBEF, EUROCEANS and Marine Genomics.

Alan Dobson

Professor Alan Dobson is a microbiologist and Director of the Environmental Research Institute at University College Cork (Ireland) and is a principal investigator on a range of nationally and internationally funded marine biotechnology related projects. He leads Ireland's national marine biodiscovery research activity – the Beaufort Marine Biodiscovery project and is a partner in a wide range of EU funded projects including the FP7 projects PharmaSea, MicroB3 and other projects involving the discovery, evaluation and characterisation of marine origin biological resources for possible use in food and health applications. Professor Dobson is a frequent reviewer of marine

research proposals on behalf of the EU; was an invited author of the Marine Board position paper 15 – "Marine Biotechnology: a New Vision and Strategy for Europe" and is a member of Ireland's marine biotechnology task force, which is responsible for defining a national marine biotechnology strategy. Professor Dobson is a Member of the Royal Irish Academy.

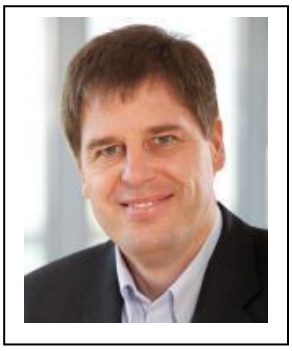
Ernst Kloosterman

Ernst Kloosterman is managing director of the Industrial Biotech Network Norway. This innovation network aims to accelerate the development of a sustainable and economically feasible industry based on Norwegian bioresources. The network facilitates multidisciplinary and cross-sectorial networking and promotes the use of biotechnology as an enabling technology. Before that, he was managing director and responsible for the establishment of the marine biotechnology and life sciences cluster 'BioTech North', in the Tromsø region in Northern Norway. Ernst Kloosterman is originally a chemical engineer from the University of Groningen (The Netherlands). He started his career in 1985 at the Dutch chemical company DSM where he held several management positions within R&D, new business development, technology and production in the fields of chemicals and engineering plastics until 2001.

Fernando de la Calle

Dr. Fernando de la Calle is Head of the Microbiology Dept. within Drug Discovery (R&D) at PharmaMar (Spain). He received his PhD in Molecular Biology from the Universidad Autónoma de Madrid (Spain) in 1998 and his B.Sc. in Biology from Universitat de les Illes Balears (Spain) in 1986. He also completed an Executive-MBA at IDE-CESEM (Spain) in 2005. He has more than 25 years' experience working in drug discovery from marine microorganisms, and is co-inventor of the current hemi-synthetic process used to manufacture Yondelis®, the first marine derived medicine approved in Europe for the treatment of Soft Tissue Sarcoma and Ovarian cancer. He is an expert in Applied Biotechnology and the design of biotechnology processes using marine bacteria. In

addition, he is an external advisor for biotechnology issues to the Spanish Government (INCUAL), scientific contact person from PharmaMar for FP7 EU projects related to Marine Biodiversity such as MAMBA, MaCuMBA and MicroB3; and Principal Investigator in more than 10 other nationally funded projects.



Frank Oliver Glöckner

Professor Frank Oliver Glöckner is a trained microbiologist and head of Microbial Genomics and Bioinformatics Research Group at the Max Planck Institute for Marine Microbiology in Bremen and Professor of Bioinformatics at Jacobs University Bremen (Germany). His group develops enabling technologies and products to transform the wealth of environmental sequence- and contextual (meta)data into biological knowledge. He was/is the principle investigator of a range of national (REGX, MIMAS, GFBio, de.NBI) and European funded projects like Marine Genomics Europe, MetaFunctions, MAMBA, Symbiomics, EuroMarine, BioVeL and the ESFRI project MIRRI. He coordinates the large-scale integrated "Oceans of Tomorrow" project Micro B3 (Biodiversity, Bioinformatics, Biotechnology). He was chair of the joint workshop series of the EC-US Task Force on Biotechnology and led the European Science Foundation (ESF) position paper 17 on "Addressing Marine Microbial Diversity and its role in Ecosystem Functioning and Environmental Change". He is the elected chair of the Mediterranean Science Commission committee for Marine Microbiology and Biotechnology and member of the executive board of the "Genomic Standards Consortium". He is part of the Scientific Advisory Boards of EMBL-EBI/ENA, PharmaSea and Tara-Oceans.

Fredrika Gullfot

Dr. Fredrika Gullfot is the founder and CEO of Simris Alg, a pioneering blue agribusiness based in Southern Sweden. The innovation-based company grows microalgae for the production of dietary supplements and functional food ingredients. Simris Alg has received numerous awards for

entrepreneurship, environmental sustainability and innovation, and Swedish business media has included Simris Alg on its official list of Sweden's 33 hottest new tech companies. Fredrika Gullfot has a PhD in Biotechnology from the KTH Royal Institute of Technology and BIOMIME™, the Swedish Center for Biomimetic Fiber Engineering in Stockholm. As the first female winner, Dr. Gullfot was awarded the 2014 Chemical Engineering Prize for her groundbreaking work in algae technology. Before pursuing her interest in biotechnology, she has held key positions in a variety of industries, including investment banking, national security, and telecom. She is an active proponent of green biotechnology as a key solution for a sustainable future and economic growth.

Helena Vieira

Helena Vieira is a co-founder and was CEO (2005-2013) of BIOALVO SA, a Portuguese marine natural resources biotech company focusing on developing novel marine ingredients for a variety of sectors (from pharma to cosmetics, food, agricultural and industrial) and has recently started MY.SPAKOS, a personalized cosmetics enterprise. At the same time, she is doing national and international business and scientific consulting on innovation, entrepreneurship, technology transfer, marine biotech and sea economy projects. Helena Vieira holds a post-graduate in Leadership & Strategy in Pharma & Biotech, from Harvard Business School (USA) and a PhD in Biomedicine from Imperial College of London (UK). Previously, she was a researcher in the molecular and cellular biology fields, in Portugal and UK and progressed to be an Associated Professor and Scientific Coordinator of the biomedical and clinical engineering degrees at the Engineering Faculty of UCP (Portugal). Currently, she is also responsible for the supervision & teaching of Entrepreneurship, Innovation and Technology Transfer courses to MSc and PhD Students in the University of Lisbon and a Member of the European Marine Board, LIDE SEA Subcommittee and invited international expert of the Blue4Green EU Project.

Nathalie Moll

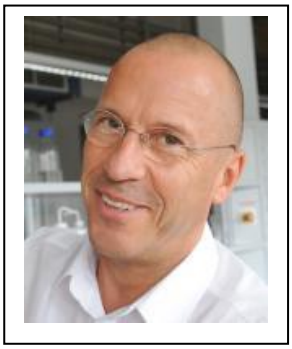
Nathalie Moll has spent nearly 20 years working for the biotech industry at EU and national level and has held several posts in EuropaBio, the European Association for BioIndustries, taking up the role of Secretary General in April 2010. She received the 2013 Women Innovation Technovisionaries Award, in the context of the annual international conference "Women & Technologies" as well as the 2009 Leadership and Excellence in Advancing Agbiotech and Food Issues (LEAFFI) Award for Acceptance with the Green Biotech Team in EuropaBio. She is an Honours graduate of the University of St. Andrews (Scotland) in Biochemistry and Biotechnology and has focused on improving awareness of the importance and benefits of biotechnology for society, working together with the industry, regulators and stakeholders, towards developing a more supportive legislative framework for the industry and related sectors.

Patrick Sorgeloos

Professor Dr. Patrick Sorgeloos is emeritus Professor of Aquaculture at the Ghent University (Belgium) and has been involved in fish and shellfish larviculture R&D in Europe, Asia, Latin America and Africa since the mid-seventies. So far, over 250 Masters and 70 PhD alumni graduated at Ghent University in the field of aquaculture under his guidance. Dr. Sorgeloos is a strong promoter of international networking in aquaculture and was/is involved in the World Aquaculture Society (being its President in 1999-2000), the European Commission (Chairman of the Thematic Network Aquaculture – AquaTnet; member of the Advisory Group of DG Research FP7 theme 2 "Food, agriculture and biotechnology"; and Chairman of the ASEM Aquaculture Platform) and the European Aquaculture Technology & Innovation Platform (co-founder and board member). He has received honorary awards in China, Ecuador, Egypt, Greece, Thailand, USA and Vietnam.

Rachael Richie, chair of IAG

Dr. Rachael Ritchie is the Director of Business Development at Genome British Columbia (Canada), where she works to develop strategic partnerships to facilitate advancement of genomics within and from the lab to deliver tangible economic and social benefits. Dr. Ritchie's involvement in marine biotechnology dates back to 1998 in Eastern Canada where she worked with government and private sector entities to bring molecular biology to bear on pressing aquaculture and fisheries issues around fish health, stock structure and environmental sustainability. From 2010-2012, Dr. Ritchie worked in the OECD's Science and Technology Policy department to analyse policies to help bring advances in science and technology to practical application. During this time, she led the development of the OECD's report "Marine Biotechnology: Enabling Solutions for Ocean Productivity and Sustainability". Within Genome British Columbia, Dr. Ritchie manages a $42M CAD Fisheries & Aquaculture portfolio of projects ranging from development of genomic tools to monitor finfish and shellfish, to the development of new tools to support sablefish (*Anoplopoma fimbria*) broodstock development.



Uwe Waller

Professor Dr. Uwe Waller is a marine biologist leading the aquaculture research and development activity at the University of Applied Sciences in Saarbrucken (Germany). He became a member of the school of engineering after 30 years of fundamental marine research at the Institut für Meereskunde in Kiel (Germany). Today he works with engineers from different fields of technology. Professor Waller's research is strictly interdisciplinary and focuses on knowledge transfer in marine biotechnology. His main research topic is multi-trophic aquaculture, including vertebrate and invertebrate animals, as well as plants and microalgae. Based on results from the applied science, he is developing large commercial demonstration projects. Recently, a large commercial seawater production was opened in the neighbourhood of Saarbrücken, producing fish from temperate oceans. The project is internationally observed because it proofs opportunities for future aquaculture, which is environmentally sound and sustainable. Professor Waller is reviewer of

national and international aquaculture research proposals. He frequently reviews submissions to international scientific aquaculture journals. He is member of national groups dealing with future strategies for the development of aquaculture biotechnology in Germany.

FIRST MEETING OF IAG

The first IAG meeting was held on the 27th October in conjunction with the stakeholder meeting of the ERA-MBT at Hotel Olissippo in Lisbon. The minutes from the meeting is attached as Appendix 4.

The next meeting will be scheduled during the summer of 2015 and if possible will be held in conjunction with a suitable ERA-MBT event.

APPENDICES

APPENDIX 1: DRAFT PROCESS FOR NOMINATIONS TO ERA - MBT INTERNATIONAL ADVISORY GROUP

Purpose of the International Advisory Group

To guide and advise on the delivery of the ERA-MBT over the period 2014-2017 (see ToR for more details on the role of the IAG).

Role of each partner

Each partner in the ERA-MBT is entitled (and encouraged) to make up to 4 nominations to the IAG.

Note:
The challenge is to ensure the IAG is populated by persons best suited to contribute to the development of ERA-MBT as opposed to ensuring any level of national representation on the IAG

Criteria for nomination

In nominating persons for membership of the IAG, partners should take into account the skill sets/competencies required of nominees as outlined below;

1. Have a background in academe, industry, or policy related to marine biotechnology
2. Be recognised within their peer group for contributions to the development of marine biotechnology
3. Demonstrate a familiarity with, and an understanding of, marine biotechnology and its potential impact on scientific, economic, environmental and societal progress
4. Be familiar with EU research funding mechanisms
5. Have contributed to the development of marine biotechnology related initiatives (research, enterprise or policy)

Note: *Each criterion carries the same weight for the purpose of ranking nominations*

Submission of nominations

- Nominations to the IAG are to be made by-mail to leader of WP2
- Each nomination is to be accompanied with a short justification indicating how the candidate meets the nomination criteria
- The nomination process will remain open until 17.30h 23/04/2014
- The name of the partner making each nomination must accompany the submission

Analysis of nominations

- Nominations will be assessed by membership of WP2
- Each nomination will be awarded a score of 1 to 10 for each criterion to reflect the extent to which the nominee meets the assessment criteria and to ensure the full extent of the MBT domain is covered
- All nominations will be ranked on the basis of the total score (out of 50 total marks)

- The top 20 ranked nominations will form the basis of a short-list and the shortlist submitted to the consortium from which a final recommended selection of the IAG will be made to the SC

Approval of the IAG

- The recommended membership of the IAG will be presented to the ERA-MBT for final approval by the ERA-MBT Steering Committee at the PMT meeting in April 2014
- The SC will appoint 10 members to the IAG
- A reserve list will be created to fill positions which remain vacant following the offer of appointment to the IAG. The reserve list will comprise the shortlist of candidates remaining after the 10 persons are appointed to the IAG.

APPENDIX 2: TERMS OF REFERENCE FOR THE MARINE BIOTECHNOLOGY ERA NET (ERA-MBT) INTERNATIONAL ADVISORY GROUP

Purpose of the International Advisory Group

To guide and provide advice on the delivery of the ERA-MBT over the period 2014-2017

Term

- The IAG will remain in place for the duration of the ERA-MBT (48month)
- The initial term of the IAG will 18 months, during which there will be 2 meetings.
- The Steering Committee (SC) of the ERA-MBT will review performance and composition of the IAG after 18 months
- The ERA-MBT SC may extend the term of members and/or appoint new members after 18 months

Membership of the Group

Chair – to be elected from within the IAG members

Members – to be nominated by ERA-MBT partners - maximum of 10 members

Quorum – a minimum of seven members of the IAG is required to hold a meeting

Secretary to the IAG – WP2 leader

Interaction of the ERA-MBT Steering Committee with the IAG

- Steering Committee members may attend meetings of the IAG

Terms of Reference

- To support the ERA-MBT in the creation of a vision and associated strategy for an ERA-MBT roadmap
- Provide comments on the results of a MBT foresight study
- Provide contributions to and validate the strategic roadmap
- Advise the ERA-MBT regarding priority research areas of relevance to industry
- Advise on the implementation of ERA-MBT
- Advise on research call content
- Advise on the definition of activities that supportive the development of ERA-MBT
- Review the performance indicators and assess the impacts of ERA-MBT

Examples of items likely to be addressed in meetings of the IAG include;

- Helping to define events/activities to capture and profile the views and expectations of stakeholders regarding marine biotechnology opportunities;
- Identifying ways to improve interaction between marine biotechnology/bioresources researchers and industry;
- Advising on the implementation of the strategic roadmap and assessing its impact.

Voting

Decisions of the IAG should be reached by consensus – where this is not possible, the IAG may adopt a voting process (simple majority) - the chair has a casting vote.

Confidentiality

Members of the IAG will be required to sign an agreement concerning confidentiality.

Practicalities

- The ERA-MBT will prepare all processes, meetings and documents and act as a secretariat for the IAG
- Participation in the IAG via video or teleconference is acceptable
- All expenses incurred in participating in the IAG will be reimbursed by the ERA-MBT

APPENDIX 3 NOMINATION FORM FOR IAG MEMBERS

INTERNATIONAL ADVISORY GROUP

NOMINATION FORM

Full name of the nominated person

Prefix | *Last Name* | *Given Name*

Position

Affiliation/Organisation

Address

Address line 1

Address line 2

City | *Postal Code* | *Country*

Tel No.

Mobile No.

Email Address

Fax No.

Full name person making the nomination

Last Name | *Given Name*

Affiliation/Organisation

Provide supporting statements/justification of the nominee

Please provide a short statement under each of the four criteria below to support your nomination

1. **Have a background in academe, industry, or policy related to marine biotechnology**

2. **Be recognised within their peer group for contributions to the development of marine biotechnology**

3. **Has a familiarity with, and an understanding of, marine biotechnology and its potential impact on scientific, economic, environmental or societal progress**

4. **Have contributed to the development of marine biotechnology related initiatives (research, enterprise or policy)**

Provide a short CV of the nominee

APPENDIX 4 FIRST MEETING OF IAG

ERA-MBT
International Advisory Group

IAG Meeting 27th October 2014, Lisbon

Notes from the first meeting of the IAG

Present:
IAG Members: Rachael Ritchie, Adrianna Ianora, Helena Vieira, Fernando de la Calle, Ernst Kloosterman, Uwe Waller, Fredrika Gullfot

ERA-MBT Members: Steinar Bergseth, Torger Børresen, Dermot Hurst, Sigurður Björnsson, Petra Schulte, Jens Schiffers, Marta Norton, Fien De Raedemaecker

Apologies received: Alan Dobson, Patrick Sorgeloos, Frank-Oliver Glockner, Nathalie Moll

1. **Introduction**
   Dermot Hurst welcomed participants to the first meeting of the IAG. He thanked Marta for her excellent contributions in making all the arrangement related to the IAG meeting and the Stakeholder Meeting. After a tour-de-table where everybody introduced themselves, Dermot Hurst outlined the role of the IAG from the perspective of the ERA-MBT and emphasised the need for the IAG to focus on strategic issues and its role as a sounding board for new initiatives originating within the ERA-MBT project. Meetings would be kept focused and short. Regular updates of ERA-MBT progress and issues for comment by the IAG would be posted to the ERA-MBT website.
2. **Overview of the ERA-MBT**
   Steinar Bergseth outlined the history marine biotechnology from 2001 and explained how the present ERA NET had been preceded by the KBBE Collaborative Working Group and the CSA MarineBiotech as a preparatory action for ERA-MBT. He further made an introduction to the objectives and structure of the ERA-MBT project and emphasised the overarching goal of ERA-MBT to make a lasting impact on European marine biotechnology by identifying strategic research opportunities, funding appropriate research and identifying a foundation of funding agencies committed to embracing marine biotechnology research as enabling scientific, economic and societal progress.
3. **Current status of the ERA-MBT project**
   Torger Børresen made reference to the background document 'Overview of Marine Biotechnology' that was provided to the members of the IAG in advance of the meeting, and presented the preliminary findings of a desk study on major policy and other key documents as one of several inputs to the Strategic Roadmap for the ERA-MBT.

   Following this overview, Dermot Hurst introduced the work package leaders, who provided updates on the status of activity within their areas of responsibility. These short presentations highlighted key aspects of ERA-MBT progress, which included an on-line survey of industry needs and issues, the first call for research proposals -biorefining - and the extensive communications effort that delivered a web-site, the stakeholder meeting,

call documentation, brochures, newsletters and other supporting information for ERA-MBT activity.

The work package on 'Strategy for ERA-MBT and beyond in the context of the European Bioeconomy', for which Dermot Hurst is the WP leader, included the development and adoption of a "vision" for ERA-MBT, a desk study and a foresight exercise – called OUTLOOK. Dermot Hurst presented the vision having been adopted by the ERA-MBT Steering Committee at the Galway PMT meeting, and asked the IAG for comments. The IAG emphasised the importance of explaining how this network was different from other networks. The vision was seen as relevant in achieving the goal of establishing a lasting network; being enterprise-driven by the end of the project period of ERA-MBT, which presently is a network of funding agencies.

Dermot Hurst further outlined how the OUTLOOK foresight process would be organised and who the members of the workshop panel were. With some comments and a dialogue on the short timeframe for a demanding task, the IAG supported the concept of the OUTLOOK foresight and considered it important as an input to the Strategic Roadmap.

4. **Discussion on the role of the IAG**

The IAG terms of reference were reviewed and following a short discussion were accepted as forming a solid working platform for the IAG activity. Making communications between the ERA-MBT project and the IAG was highlighted as a priority. A separate folder dedicated to the IAG would be set up on the ERA-MBT homepage to ensure maximum contributions by the IAG to ERA-MBT and to enable communications between IAG members.

5. **Discussion on strategic gaps and future direction of ERA-MBT**

The focus of this agenda item were plans to develop a strategic roadmap informed by the desk study, surveys, stakeholder meetings and the OUTLOOK foresight process. A lively discussion against a background of ERA-MBT plans highlighted the following points,

- The justification for a continuation of funding in this area is likely to determine the extent to which funding agencies and others are willing to join.
- There are bottlenecks across the entire RTDI landscape and it is important to find ways to speed up the RTDI processes in academia and industry, having firstly clarified these bottlenecks.
- We should have a clear definition of what we mean by marine biotechnology, since different industries possess varying views, ranging from failing to recognise it at all, to describing their activity as marine biotechnology; we have to understand why these divergent views exist.
- Funds provided by research calls can only initiate small targeted activity and/or attract new researchers to work in the area, the real investments in RTDI are made by industry. We must secure insights to industry activity and needs for support from such networks as the ERA MBT.
- In many cases the decision to participate in an application for funding is determined by the type of funds that are open, not the research need of the firm. These institutional led research applications need industry as partners to secure funds and don't always place the research needs of the firm at the centre of the application. It appears to some firms that funders want more applied research done than do the firms, who seek support for problems they cannot solve alone.

Funds that target proof of concept, up-scaling and enabling firms to access new knowledge are highly valued by industry.

The ERA-MBT strategy is important in responding to and supporting European excellence in the sector. Developing insights to areas where Europe leads marine biotechnology RTDI would allow funds to be directed towards reinforcing critical mass, rather than a dispersal of funds to areas where Europe has no presence and no prospect of developing such a presence.

It is important that ERA-MBT remains flexible and able to link into and work with other funding initiatives in Europe and elsewhere. Adopting a narrow approach in funding only applied or near to market research is likely to be a barrier to real progress in marine biotechnology RTDI.

The aim of the first joint call is to bring together basic, applied, technology and market driven research approaches in biorefinery processes for marine bioresources. The concept of developing a "proactive" marine biotechnology toolbox versus a purely market driven approach for ERA-MBT was recognised as appropriate for the first call.

ERA-MBT must look at the various markets in which marine biotechnology can make an impact. There are many market opportunities where marine biotechnology is already making an impact and offering further potential – e.g. enzymes, pharma, nutraceuticals, food production and many more. Needs across these opportunity areas differ, as do the timescales. No single solution exists; we have to deepen our understanding of industry needs and the timescales for any action by ERA-MBT. Impacts are more likely to emerge from targeting the so-called "low-hanging fruit" than seeking to direct ERA-MBT funds towards breakthrough research. A good understanding of Europe's strengths and weaknesses in marine biotechnology related areas is required to inform future strategic options/decisions.

The IAG had a brief discussion on the importance of developing and using appropriate performance indicators to measure the performance of the ERA-MBT in terms of its accountability, its impact and in supporting the long-term sustainability of ERA-MBT as a viable European network.

The IAG identified the need to make knowledge of marine biotechnology more widely available and identified it as an area where ERA-MBT could make a major contribution.

6. Election of a Chairperson

The IAG will act as an independent reference point for the ERA-MBT project and will be supported in this role by the ERA-MBT acting as a secretariat. Future meetings will be led by the IAG and there is a requirement on the IAG to appoint a person to act as a Chairperson.

The IAG meeting elected Dr Rachel Ritchie unopposed to act as Chairperson for the IAG.

7. AOB

Nothing was raised outside the main agenda.

8. Date and location of the next meeting

The next meeting will be scheduled during the summer of 2015 and if possible will be held in conjunction with a suitable ERA-MBT event.