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EDITORIAL

Marine Biotechnology in the Bioeconomy

In this newsletter, we present the six projects granted in the first ERA-MBT call. The ambition with the call was to build competence and develop the marine biotechnological toolbox to utilize and process marine biomass into a range of valuable products in multistream biorefineries.

Launching the call created great interest. In the first step of the procedure a total of 43 proposals were submitted, showing that both academia and industry had a clear attention towards the scope of the call and wanted to contribute to find solutions to the challenges described. European R&D environments' ability to coordinate, and their willingness to build common knowledge for the best possible and sustainable utilization of precious marine biomass, will found a pillar in the bioeconomy, and the aims of the call have thus been met. The six funded projects bring together partners from nine of the

... continued on page 2



ERA-MBT stand at the Bioeconomy Investment Summit, 9-10 November 2015.

The *Marine Biotechnology ERA-NET* (ERA-MBT) is a consortium of 19 national funding agencies seeking complementarities between national activities by pooling resources to undertake joint funding of transnational projects in the area of Marine Biotechnology.

During the lifetime of the project the following activities will be carried out, supporting the European Bioeconomy:

- Launching **three thematic calls** to generate joint European research and development activities.
- Arranging a number of **stakeholder events** to promote dialogue between science, industry and policy and to identify requirements for successful developments within the area.
- Performing **outreach activities** to seek complementarities and avoid overlap with other activities sharing common interest with ERA-MBT.
- Establishing a **Strategic Roadmap** with the support of the **International Advisory Group**, an expert panel reflecting views and expertise from the scientific, policy and business sectors.
- Developing a **perspective on the future** of marine biotechnology research and development and its likely impacts.
- Providing information about marine biotechnology in an **online and open access portal** with a wiki function.

ERA-MBT consortium countries. These are several R&D institutions and eight industries joining forces towards developing new knowledge and applications. In addition, external partners from the UK, Italy and Canada have joined projects with own funds.

The biomasses targeted span all the major species having potential for utilization as judged today. The projects cover enzymatic and microbial refining of seaweed and microalgae into high value products such as antioxidants, antimicrobials, ingredients in food, feed, cosmetics, animal health, platform chemicals and more. Developing microalgae for fish feed and shellfish production, addressing the algae toxin challenge is also targeted. This clearly demonstrates that there is a considerable potential for making valuable products addressing a variety of markets. The new generations of multistream biorefinery processing will thus also be developed and applied to marine raw materials, creating new jobs and fulfilling the objectives of the European bioeconomy where improved use of biomass is a major goal. Today the biomass utilised for production of food, feed and a range of other bio-based products, is basically provided from land based resources. However, by sustainable harvesting of also marine biomass, the potential to increase the production needed to address the societal challenges is considerably enhanced; provided suitable biorefinery processes are developed.

The results of our first call make us conclude that Europe is in need for new knowledge in this area, and is well prepared to forcefully develop the marine leg for a bioeconomy, based on expanding the biotechnological toolbox to handle marine bioresources. The inclusion of three external partners further give us a clear signal that the interest to participate in this endeavour reaches beyond the ERA-MBT consortium pointing towards a larger trans-European and even an international effort to address this challenge.



Dr Steinar Bergseth
The Research Council of Norway (RCN),
Norway

SECOND JOINT CALL

The ERA-MarineBiotech is pleased to announce the second transnational joint call for research projects related to “[Biodiscovery - Bioactive molecules from the marine environment](#)”.

Together, the 13 funding organisations involved in this call expect to support around 8 Mill. € for marine biotechnology research. The main purpose of the call is to stimulate joint European research and development activities within marine biotechnology related to valorization of bioactive molecules from

Relevant documents:

- [Call text and guidelines for applicants](#)
- [Proposal submission](#) (one-step procedure, closing deadline 16 March 2016)
- [Partnering platform](#)

Follow the website for more news:

<http://www.marinebiotech.eu/second-transnational-call>



FIRST JOINT CALL

In the first joint call entitled “[The development of biorefinery processes for marine biomaterials](#)”, ERA-MBT has selected six projects to be funded with a total budget of more than € 8 million. After the submission date of 10 December 2014, a total of 43 pre-proposals were received. There were 23 proposals requesting € 27.5 million selected to continue to the next stage. From these full-proposals 6 were selected to be funded.

More information on the projects can be read in the factsheets below.



ABSTRACT

The marine biomasses to be used in Mar3Bio are brown algae and crustacean byproducts. These abundant but underexploited renewable biomasses have great potential for production of high value biomolecules. The current bottlenecks for a bio-refinery focusing on these raw materials are low yields, high energy consumption and incomplete spectrum of recovered biomolecules. Mar3Bio will tackle this by a multidisciplinary and intersectorial R&D approach, and contribute to the development of efficient and sustainable bio-refinery processes for exploitation of the selected biomasses. The main objective is to advance technology beyond state-of-the-art to I) increase the yield and quality of the products arising from early process streams by optimizing the isolation and fractionation steps performed on the raw materials, and II) modify selected fractionated biomolecules to high value products. The expected achievements will have great impact on the fulfilment of the ambitions of ERA-MarineBiotech.



Håvard Sletta, Project Coordinator
SINTEF Materials and Chemistry
Norway

Topic:

- Materials
- Cosmeceuticals (e.g. skincare)
- Health (e.g. food supplements)
- Pharmaceuticals

Marine biomass:

- Macroalgae
- Crustacea

Keywords:

Extraction, high value products, enzymes in processing steps, reduced energy consumption

Total costs*: € 3.378.920

Funding granted*: € 2.181.032

Duration: 3 years (2016-2018)

** Exact amount may change after completion of national contracts*

CONSORTIUM

Name	Organisation	Country
Håvard Sletta	SINTEF Materials and Chemistry	Norway
Vincent Bulone	Royal Institute of Technology (KTH)	Sweden
Finn Lillelund Aachmann	Norwegian University of Science and Technology	Norway
Sergio Paoletti	University of Trieste	Italy
Olav Gåserød	FMC Biopolymer AS	Norway
Gudmundur Hreggvidsson	MATIS	Iceland
Blaž Likozar	National Institute of Chemistry	Slovenia

ABSTRACT

Shellfish production sites in the EU are prone to closures due to the accumulation of biotoxins, with over 26 EU regulated toxins requiring statutory monitoring. Further impacts are exerted on fish farming industries through the production of feed from contaminated shellfish. The focus of this proposal is to isolate large quantities of biotoxins using enhanced biorefining methods for the preparation of reference materials and to allow for research to be conducted on the effects of biotoxins on other important aquaculture industries. Further work will focus on enhanced production of microalgae as fish feed. Biotoxins will be sourced from contaminated shellfish, bulk algal culturing, harvesting of algal blooms in situ and enzymatic conversions. Biorefining processes will be enhanced through optimisation of algal culturing, the development and use of novel immunoaffinity and polymeric columns, reducing cost and increasing economic viability.



Dr Jane Kilcoyne, Project Coordinator
Marine Institute
Ireland

CONSORTIUM

Topic:

- Feed
- Materials
- Environment and monitoring (e.g. biosensors, anti-fouling technology, bioremediation...)

Marine biomass:

- Molluscs
- Microalgae
- Fish

Keywords:

Marine biotoxins, biorefining, fish feed, reference materials, LC-MS, NMR, structure elucidation, HP20 resin, Harmful algal blooms, shellfish, monitoring, aquaculture

Total costs*: € 749.949

Funding granted*: € 749.949

Duration: 3 years (2016-2018)

** Exact amount may change after completion of national contracts*

Name	Organisation	Country
Jane Kilcoyne	Marine Institute	Ireland
Christopher Owen Miles	Norwegian Veterinary Institute	Norway
Beatriz Reguera	Instituto Espanol de Oceanografia (IEO)	Spain
Pearse McCarron	National Research Council Canada	Canada
Fidel Delgado	Neoalgae Microseaweeds products	Spain
Stephen Burrell	Marine Institute	Ireland
Joe Silke	Marine Institute	Ireland
Ingunn Anita Samdal	Norwegian Veterinary Institute	Norway

ABSTRACT

A culture collection of >100 genome sequenced marine bacteria from the Arctic region, and the Moving Bed Technology (MBT) will be used as tools to increase the value of marine rest raw materials. The bacterial isolates have been screened for biocatalyst activities (e.g., PUFA production, lipases, proteases), and hence represent an excellent starting point for this project. Inspired by the RAS (Recirculating Aquaculture system) technology, the idea is to establish and optimize microbial communities on MBT biobeads. The bacterial communities will be specifically trained into microfactories for conversion of low value rest-raw material from the fish industry. The process will be analogous to RAS, where biofilters are used to convert waste into non-toxic products. Water and lipid phases from spent medium will be collected and screened for potential products. In summary, the robust MBT method will be used in a completely new area, to convert cheap marine biomasses into new products.



Dr Peik Haugen, Project Coordinator
UiT-The Arctic University of Norway
Norway

CONSORTIUM

Name	Organisation	Country
Peik Haugen	UiT-The Arctic University of Norway	Norway
Ragnhild D Whitaker	Norwegian Institute of Food, Fisheries and Aquaculture Research	Norway
Elin Moe	Instituto de Tecnologia Quimica e Biologica	Portugal
Fredrik Almqvist	Umeå University	Sweden

Topic:

- Food
- Feed
- Materials
- Cosmetics (e.g. skincare)
- Health (e.g. food supplements)
- Pharmaceuticals

Marine biomass:

- Fish
- Crustacea
- Molluscs
- Macroalgae

Keywords:

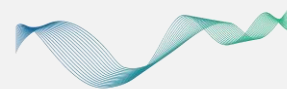
Moving bed technology, Recirculating Aquaculture System, RAS, metagenomics, metabolomics, microbial factories, microbial communities.

Total costs*: € 1.832.446

Funding granted*: € 1.503.285

Duration: 3 years (2016-2018)

** Exact amount may change after completion of national contracts*



Novel Extraction Processes for multiple high-value compounds from selected Algal source materials

PROJECT FACTSHEET

CALL 1 | NOVEMBER 2015

ABSTRACT

Novel enzyme-based extraction technologies will be applied to algal biomass derived from selected algal taxonomic groups including macroalgae (seaweeds), microalgae and cyanobacteria. Algal species will be chosen according to their potential to produce high bioactive levels which will be further enhanced by applying abiotic stresses. Algal extracts produced by enzymatic and traditional approaches will be tested for multiple applications, concentrating on antioxidant and antimicrobial activities with applications in food, cosmetics, animal health (aquaculture) and personal/home care. Extracts that exhibit high activities will be chemically characterised to identify active components.



Dr Dagmar Stengel, Project Coordinator
National University of Ireland Galway
Ireland

Topic:

- Food
- Feed
- Materials
- Cosmetics (e.g. skincare)
- Health (e.g. food supplements)
- Pharmaceuticals
- Environment and monitoring (e.g. biosensors, anti-fouling technology, bioremediation...)

Marine biomass:

- Microalgae
- Microalgae
- Bacteria

Keywords:

Algae, antioxidant, antimicrobial, aquaculture, bioactive, cosmetics, cyanobacteria, enzymatic extraction, food, home care

Total costs*: € 894.918

Funding granted*: € 759.976

Duration: 2 years (2016-2018)

* Exact amount may change after completion of national contracts

CONSORTIUM

Name	Organisation	Country
Dagmar Stengel	National University of Ireland Galway	Ireland
Alan Dobson	University College Cork	Ireland
Peter Bossier	Ghent University	Belgium
Sarah Hosking	Unilever	UK
Jeanette Andersen	UiT- The Arctic University of Norway	Norway



ABSTRACT

SeaRefinery will develop eco-friendly chemical and enzymatic processing technologies to extract and purify high value-added components such as antioxidants, antimicrobial components and hydrocolloids from cultivated seaweed species (e.g. *Saccharina latissima*) in an integrated biorefinery. Bioactive compounds, e.g. phlorotannins, fucoidan, and laminarin, will be selectively tested for bioactivity. In addition, laminarin and marine proteins will be tested in nutraceutical and selected food model systems. Alginate will be tested as additive for textile applications via coating and extrusion technologies. In order to maximise the value of the biorefinery feedstock (input) and derived products (output), we will grow monocultures on innovative textile cultivation substrates with high yield biomass production. Seasonal variation, replicated over two years, of the selected biomolecules will be a measuring tool for harvesting the seaweeds with maximum contents of bioactive compounds.



Dr Anne-Belinda Bjerre, Project Coordinator
Danish Technological Institute
Denmark

CONSORTIUM

Topic:

- Feed
- Materials
- Cosmetics (e.g. skincare)
- Health (e.g. food supplements)
- Pharmaceuticals

Marine biomass:

- Macroalgae

Keywords:

Seaweed, *Saccharina latissima*, cultivation, harvesting, storage, preconversion, biorefinery, bioactive, hydrocolloids, protein, nutraceuticals, functional foods, pharmaceuticals, biobased materials, extraction, enzymes, green solvents

Total costs*: € 2.607.074

Funding granted*: € 1.406.156

Duration: 3 years (2016-2018)

* Exact amount may change after completion of national contracts

Name	Organisation	Country
Anne-Belinda Bjerre	Danish Technological Institute	Denmark
Rósa Jónsdóttir	MARINOX EHF	Iceland
Sarah Hotchkiss	CyberColloids Ltd	Ireland
Bert Groenendaal	SIOEN Industries NV	Belgium
Guy Buyle	Centexbel	Belgium
Job Schipper	Hortimare AS	Norway
Jan Alexander Villadsen	ViVoX ApS	Denmark
Helen Oshea	Cork Institute of Technology	Ireland

ABSTRACT

Brown algae biomass is a promising and challenging resource for industrial bioconversions, but there is a need to develop efficient cell factories to convert the constituent carbohydrates into high-value added products. In this proposal, four metabolically different environmental bacteria, inherently suitable to harsh process conditions, will be engineered for production of a number of industrially important platform and specialty chemicals, including 1,2-propanediol, cadaverine, propanol and lycopene. The project will implement and integrate systems biology and metabolic engineering, including rounds of model-driven metabolic optimization. Feedstock development and process engineering are important parts, to optimize fermentability of the algal hydrolysates, and ensure integration with downstream processing and product recovery. At the end of the project, use of all major carbohydrate fractions from brown algae through integrated processing will be demonstrated at small pilot scale.



Dr Trygve Brautaset, Project Coordinator
Norwegian University of Science and Technology
Norway

CONSORTIUM

Name	Organisation	Country
Trygve Brautaset	Norwegian University of Science and Technology	Norway
Alexander Wentzel	SINTEF Materials and Chemistry	Norway
Steinn Gudmundsson	University of Iceland	Iceland
Eva Nordberg Karlsson	Lund University	Sweden
Jochen Förster	Technical University of Denmark	Denmark
Gudmundur Oli Hreggvidsson	Matis Ohf	Iceland
Bruno Ferreira	Biotrend SA	Portugal
Simão Soares	SilicoLife Lda	Portugal

Topic:

- Materials
- Energy as by-product
- Production of other commodities or services

Marine biomass:

- Macroalgae
- Bacteria

Keywords:

Microbial metabolic engineering, systems biology, value-added chemicals, integrated bioprocess, fermentations

Total costs*: € 2.485.677

Funding granted*: € 1.981.507

Duration: 3 years (2016-2018)

** Exact amount may change after completion of national contracts*

ERA-MBT WORKSHOP ON COLLABORATION OPPORTUNITIES

What? A noon to noon workshop with the coordinators/leaders of a selected group of project leaders of various European Bioeconomy projects and networks.

When? 8th - 9th September 2015

Outcome? The workshop was highly successful as the project/network representatives identified a long list of potential common activities. Moreover, 4 concrete collaborative actions with an accompanying action plan were developed in following themes:

- Capacity building – Tech Transfer – Knowledge Transfer
- Consultation of Stakeholders – Strategic input
- Scientific conferences – Showcases
- Harmonization – joint time lines



Photocredit: VLIZ

Download documents:

- [Summary of the workshop](#)
- [News report](#)
- [Photo gallery](#)



Dr Bert Groenendaal
SIOEN Industries nv, Belgium

THE VOICE OF A STAKEHOLDER

ERA-MBT continues to have a dialogue with stakeholders. The present interview is with Dr. Bert Groenendaal, R&D Project coordinator at SIOEN Industries NV and R&D director at AT~SEA Technologies. Bert is involved in several national and European collaborative projects (e.g. AquaValue, AT~SEA) which led to the successful cultivation of seaweeds on advanced textile substrates. Dr Fien De Raedemaeker from the Flanders Marine Institute (VLIZ) talked with Dr Bert Groenendaal about the economic potential of these macroalgae, and the next steps to be taken to make cultivation of seaweeds with maximum contents of bioactive compounds possible, the topic of the recently started SeaRefinery project.

Q: Could seaweed become an important source for the future supply of food and feed (additives), biochemicals, biomaterial and bioenergy in Europe?

A: Yes, seaweeds will become an important source for our future food and feed supply but also for the production of biochemicals and biomaterials in the near future. Bioenergy is somewhat further away. Energy nowadays is so cheap that all the efforts you have to do to extract energy from seaweeds is too expensive today. The focus in the near future will be on high-value added products.

Q: How can seaweed cultivation in the open ocean contribute to the use and development of the marine biotechnology toolbox?

A: Seaweeds are a complex mix of all kinds of chemical components. They contain proteins and lipids, lots of low and high molecular sugar derivatives and lots of other components in smaller amounts that we do not even know today. It is quite a complex mixture of chemical components which, in the coming years, we have to focus on in biorefining these components and isolating the highest value components. The real challenge is to not only isolate one component, as it is being done today, like the isolation of carrageenan or alginates from seaweeds while throwing away all the remaining seaweed parts. The challenge will be to develop a cascade process where you will isolate different components from seaweeds: proteins plus certain sugar derivatives, plus certain lipids. Then you really extract all the value from the seaweed, which is not the case today yet.



Q: What is your opinion on the choice of the topic of the first ERA-MBT joint call for research “The development of biorefinery processes for marine bioresources”?

A: Today we are quite good at cultivating seaweeds but the next step for everyone involved in the seaweed business is to focus on the cascade biorefinery process. This challenge we are now facing is exactly the topic of the first ERA-MBT call. In the SeaRefinery project, one of the six selected projects of this call, the aim is to refine the cascade biorefinery process of seaweeds. The challenge will be to identify and isolate the different components from seaweeds in order to make the optimal amount of money from seaweeds.

Q: What is the benefit of your collaboration in European partnerships?

A: We are talking about a very multidisciplinary field here. If you are looking into the cultivation and the biorefinery of seaweeds, you need a different competences. The textile people have an important involvement, whether they are cultivating on ropes or on two-dimensional textiles. Marine engineering is an important knowledge that you need for the deployment in the sea. You need the biologists to identify which species are best to be cultivated at a certain location. Once you have cultivated the seaweed you have to mechanically harvest it. Whether you are doing that at sea or bring it on land and perform the harvesting there with special equipment, it requires the manufacturing of different machinery. The seaweed that has been harvested has to be stored for a certain amount of time, you cannot bring in your whole harvest into your biorefinery factory all at once, you might have to store large volumes at sea, which in itself is already a challenge. Then you bring it onshore and you start your whole biorefinery process itself; the chemical and physical processing and handling of large amounts of seaweeds. It requires a lot of different competences, from biologists, to textile engineers to chemical engineers, to marine engineers to perform this whole process.

Q: What are the next research questions for companies aiming to bring high-value compounds from marine seaweed to the market?

A: There is a need for the identification of the true value of seaweed. There are quite a number of different seaweeds naturally available in Europe but only 3-4 species are being cultivated. Even of those relatively known species, the small components of them are not fully understood and the analysis may vary depending on the location and season of sampling. A detailed analysis of seaweed is definitely a step that has to take place to identify the true value of different seaweed species. Other research questions also occur in the context of upscaling cultivation in Europe, like legislation and the reaction of society. It is not something technical but it is very important before large-scale commercial developments can take place.



Textile substrate covered with seaweed; SIOEN Industries
Photocredit: Guy Buyle



Textile substrate covered with seaweed during drying process

BERT GROENENDAAL

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ERA-MBT IN INTERNATIONAL EVENTS

ERA-PLATFORM-MEETING

Representatives of eight biotechnology oriented ERA-NETs, two ERA-NET COFUNDS, two PPPs and representatives from the EuropaBio and the European Commission gathered on 2-3 September 2015 in Riga, Latvia to exchange experiences and present new developments as part of the ERA Platform programme.

All ERA-NETs presented the various calls, procedures applied and results obtained. This was a very valuable exchange of information, illustrating how the different ERA-NETs could learn from each other. This was also highlighted in a presentation by Christine Bunthof, explaining how ERA-Platform functioned in assisting the ERA-NETs related to the KBBE network to work together and illustrated how earlier events had been arranged.

The meeting was concluded with a round-table session where all participants expressed their views on how the challenges of the activities related to the different European instruments could be met in the future.

Further information can be found on the [ERA-MBT website](#).



*Participants at the ERA-PLATFORM meeting.
Photocredit: Torger Borresen.*



*Participants at the 7th Rendez-Vous de Concarneau.
Photocredit: Rendez-Vous de Concarneau 2015.*

THE 7TH RENDEZ-VOUS DE CONCARNEAU

Another 'Rendez-Vous de Concarneau: where industry meets science in marine biotechnology' were successfully held 15-16 October 2015. The meeting gathered more than 60 participants from around the world.

The first session focused on 'Laws in marine biotechnology in Europe', a very important aspect when ownership and protection of material being collected in the oceans is to be utilised, and potential economic value estimated.

The second session concerned the conditions for SMEs and their contribution to marine biotechnology.

The second day was entirely devoted to marine biotechnology in Polynesia, where a range of interesting presentations were given on the possibilities for exploiting marine resources in this part of the Pacific Ocean.

Further information and presentations can be found on the [ERA-MBT website](#) and at the [Concarneau website](#).



MICRO B3 FINAL CONFERENCE

The final Micro B3 conference, held 2-5 November 2015 at the Royal Flemish Academy of Belgium for Science and Arts in Brussels, brought together representatives from 46 institutions in 16 countries.

The programme gave a very good overview over what had been achieved in the project, where more than 80 peer-reviewed publications have been published covering the three b's, Biodiversity, Bioinformatics and Biotechnology.

The [MicroB3 project](#) is a large EC supported integrated project coordinated by Frank Oliver Glöckner, Professor of Bioinformatics at Jacobs University in Bremen, and also a member of the International Advisory Group of ERA-MBT.

Having marine biotechnology as one basic aspect of the Micro B3 project, ERA-MBT was invited to contribute, and Torger Børresen as invited speaker made the presentation 'ERA-NET MarineBiotech – future potentials and collaboration between academia and industry'.

Further information can be found on the [ERA-MBT website](#).



Torger Børresen as invited speaker at the MicroB3 final conference.

THE BIOECONOMY INVESTMENT SUMMIT

A major conference was hosted by the EU in Brussels 9-10 November with the title '[A Bioeconomy for Europe: using resources from land and sea for a post-petroleum economy](#)'. More than 400 delegates discussed for two days how the bioeconomy could be further developed in Europe.

Throughout the conference it was clear that resources from the sea were given high priority, and during the first day a plenary session had the title 'Looking ahead: the Marine and the Bioeconomy'.

ERA-MBT had an exhibition space in the hall immediately outside the plenary conference auditorium. The stand received a lot of attention and was an excellent opportunity to explain what marine biotechnology is all about and what ERA-MBT does to stimulate research and innovation to contribute to the development of the bioeconomy in Europe.

The second day included parallel sessions, where one session was scheduled to present EU supported projects within the marine area. Seven projects were presented, among them ERA-MBT as the only ERA NET. Steinar Bergseth, ERA-MBT's coordinator presented ERA-MBT and participated in the following discussion panel.

For further information on the conference, including pictures and live stream recordings, please look up [here](#).



Steinar Bergseth and Torger Børresen presenting an exhibition space in the hall of the Bioeconomy Investment Summit.



SYNERGIES WITH OTHER PROJECTS

H2020 – INFRADEV-4 - EUROPEAN MARINE BIOLOGICAL RESEARCH INFRASTRUCTURE CLUSTER TO PROMOTE THE BLUE BIOECONOMY (EMBRIC)

Marine (blue) biotechnology is the key to unlocking the huge economic potential of the unique biodiversity of marine organisms. This potential remains largely underexploited due to lack of connectivity between research services, practical and cultural difficulties in connecting science with industry, and high fragmentation of regional research, development and innovation (RDI) policies. To overcome these barriers, [EMBRIC \(European Marine Biological Resource Infrastructure Cluster\)](#) will link biological and social science research infrastructures (EMBRC, MIRRI, EU-OPENSOURCE, ELIXIR, AQUAEXCEL, RISIS) and will build inter-connectivity along three dimensions: science, industry and regions. The objectives of EMBRIC are to: (1) develop integrated workflows of high quality services for access to biological, analytical and data resources, and deploy common underpinning technologies and practices; (2) strengthen the connection of science with industry by engaging companies and by federating technology transfer (TT) services; (3) defragment RDI policies and involve maritime regions with the construction of EMBRIC. Acceleration of the pace of scientific discovery and innovation from marine bioresources will be achieved through: (i) establishment of multidisciplinary service-oriented technological workflows; (ii) joint development activities focusing on bioprospection for novel marine natural products, and marker-assisted selection in aquaculture; (iii) training and knowledge transfer; (iv) pilot transnational access to cluster facilities and services. EMBRIC will also connect TT officers from contrasted maritime regions to promote greater cohesion in TT practices. It will engage with policy-makers with the aim of consolidating a perennial pan-European virtual infrastructure cluster rooted in the maritime regions of Europe and underpinning the blue bioeconomy.

Coordinated by EMBRC, EMBRIC brings together 27 partners including 6 SMEs and 21 research institutions or public research organizations throughout Europe.

NEW PARTNERSHIPS AS ERA NET COFUNDS

There is a new trend in supporting money from the Commission, now turning more funds into various partnerships. One category is termed [COFUNDS](#), and the difference relative to the traditional ERA NETs is that the Commission adds funds to what is contributed by the different Member States in the call. This means that the traditional ERA NETs as we know them will not exist in the future.

In ERA-MBT we have a task in WP2, where we will ‘[Develop a framework and initial cooperation for a sustainable, European marine biotechnology supportive network](#)’ that will last also after the present ERA-MBT financial period. Although we have more than two years more to prepare such a lasting partnership, it is important to start early. It is thus of interest to observe which ERA NET COFUNDS are being called for in the 2016-17 period of Horizon 2020.

The provisional call text scheduled launched in October 2015 contained two interesting topics that could be of considerable value for the future of ERA-MBT. One topic ‘ERA NET COFUND on Biotechnologies’ is being planned as part of the work programme termed ‘Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing’ (NMBP). This topic addresses three ERA NETs being ERA-IB, ERASynBio and ERASysAPP, but consortia applying for funds from the topic may just as well include partners not having participated in these ERA NETs, and the topic description may allow for contents that today is relevant also for ERA-MBT.

The second topic for the next call of interest to marine biotechnology is nested under the Blue Growth strategy, and the provisional title reads ‘ERA NET COFUND on marine technologies’. The call text is very broad, but includes the application of biorefineries, and considering the statement that this topic is seeking synergies with the Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans), the topic is worth attention also for ERA-MBT.

Other types of partnerships of interest to ERA-MBT are also expected in the future, e.g. the Bio Based Industries Joint Undertaking, where projects closer to industrial application are being called for.



ERA-MBT AT A GLANCE



Project Coordinator

Steinar Bergseth
The Research Council of Norway (RCN)
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ERA-MBT Partners

The ERA-MBT partners welcome you to ERA-MBT and invite you to become involved in the shaping of a common ERA in Marine Biotechnology. Contact the individual project partners using the partner information page at the [project website](#).

Stay connected

[Subscribe](#) to the newsletter mailing list

Follow us on Twitter [@ERA_MBT](#)

Contribute to

[The MarineBiotech wiki-pages](#) which aggregate information on marine biotechnology to inform funding agencies, stakeholders and the interested public about developments, achievements and knowledge in this area.

[A LinkedIn communication forum](#) to support exchanges between stakeholders and to highlight opportunities for interlinkage and collaboration.

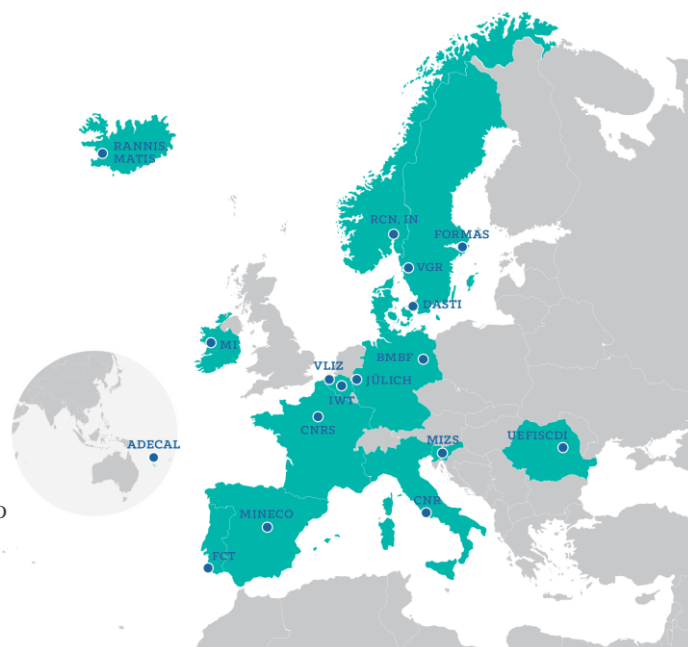
Comments? Suggestions?

Please contact us at info@marinebiotech.eu.

Upcoming events

We are collecting information on all events related to the field of marine biotechnology.

To stay up to date, please visit our [upcoming events page](#). If you cannot find the event you are organising or attending and would like to have it featured in our events calendar, please contact [us](#).



Newsletter acknowledgements

The newsletter has been brought to you by the ERA-MBT editorial team: Steinar Bergseth (RCN), Torger Børresen (IFD), Dermot Hurst (MI), Fien De Raedemaeker (VLIZ) and Kim Turk (MIZS) with the input of ERA-MBT partners.

