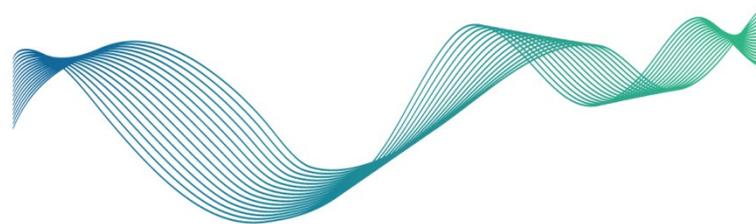




# MarineBiotech



## ERA-NET Preparatory Action in Marine Biotechnology

[www.marinebiotech.eu](http://www.marinebiotech.eu)



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# A Global Perspective: High-level analysis of key trends and developments in global marine biotechnology research, technology development and innovation

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- Global marine biotechnology initiatives – eg OECD's
- Major marine bioscience activities in different countries
  - National strategies
  - National programmes
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- Regional activities – eg CIESM
- Other relevant activities, infrastructures etc – eg ODIN, Census of Marine Life



## General comments

- No obvious National Strategies for Marine Biotechnology
- A few specific national programmes in MBt R&D or industrial applications
- Economic development support does exist (equivalent to ERDF and regional or national programmes in EU) – combinations of direct grant, loan, loan guarantee, matched-funding, tax-benefits
- Globally, algal bioenergy support stands out, mainly due to very strong US focus on R&D and investment
- Marine bioactives and molecular aquaculture also important



## OECD

Organisation for Economic Cooperation and  
Development

- Multi-national working party initiated by Norway 2010
- Within the Working Group on Biotechnology
- Aligned with OECD Green Growth and the G-20 Global Marine Environment Protection Initiative
- 5 broad [starting] areas: molecular aquaculture, algal biofuels, bioremediation, biodiscovery, biosensors
- 11 members - 9 individual countries, the EU & OECD BIAC
- Scoping Paper 2011
- MBt working party Global Forum Vancouver May 2012



## USA, Australia, Canada

- USA: a focus on algal bioenergy – very strong government support for jet-fuel; a new national Bioeconomy plan with opportunity to establish MBt as strategic element; several world-recognised MBt institutes – CoMB, Scripps etc
- Australia: long-term health supplement businesses (Dunaliella etc); a commitment to marine biosciences via AIMS; state recognition of strategic value of MBt eg Tasmania, Queensland
- Canada: established marine ingredients businesses; Dept of Fisheries and Oceans biotechnology programme; National Research Council; National Strategy for Biotechnology; National Bioproducts Programme; bioprospecting, bioactives and bioenergy; strong support in Quebec – MBRC Rimouski – with national & international collaborations



## China, Japan, India

- China: National Plan for biosciences and biotechnology out to 2050; High-tech R&D plans on 4-year cycles – biotechnology and marine technologies are strategic themes of current Program 836; note the strong role of Chinese Academy of Sciences and Key Laboratories eg Dalian; extensive activity eg Ocean Uni Qingdao, but no easy overview available
- Japan: rather less prominent than 10-20 years ago
- India: an intention to establish a National MBt Institute – funding voted end-2011; €12M joint biofuels programme UK BBSRC and India's Department of Biotechnology – includes algae



## Brazil, Chile, Argentina

- Brazil: BIOMAR – Marine Biotechnology Action – established 2005 by Ministry of Science and Innovation to fund MBt projects; RedeAlgas; many research activities in bioactives and in bioenergy but difficult to see cohesion
- Chile: several Unis are highly active: Catolica del Norte (algae); Concepcion
- Argentina: Law promoting biotechnology-based businesses and industrial R&D 2007



## South Korea, Philippines, Thailand, Vietnam

- South Korea: Biotechnology Strategies “Biotech 2000” (1994-2006) and “Bio-Vision 2016” (2006-2016); active MBt institutes (MBRC KORDI; Marine Bioprocess Research Centre Pukyong Uni; Centr for Marine Natural Products and Drug discovery Seoul Uni; and depts of MBt at major universities)
- Philippines: a specific Council for Agriculture, Aquatic [and Marine] Resources Research & Development; the “Philippine PharmaSeas drug discovery program”;UP Visayas MBC
- Thailand: long-term work on advanced aquaculture of shrimp/prawn; BIOTEC (National Center for GE&B at Chulalongkorn Uni)
- Vietnam: MBt well-established at Vietnam National University; Vietnamese Academy of Science and Technology Nhatrang Institute; International University



## CIESM

### Mediterranean Science Commission

- 22-state organisation headquartered in Monaco
- Non-European members include Egypt, Israel, Morocco, Syria, Tunisia, Turkey, [Algeria]
- Covers all aspects of marine science and research - no specific focus on marine biotechnology – except:
- Decision of CIESM Board 2010 to ‘unite in protecting the economic interests of the Mediterranean against the risk of massive exploitation of their marine genetic resources by foreign companies’ (*F Briand, DG CIESM*)
- Blue Biotech meeting La Spezia 12 April 2011
- ‘Blog’ forum on Blue Biotech at <http://www.ciesmseaforum.org/category/blue-biotech/>
- Next congress 2013



## Other international and regional initiatives

- Census of Marine Life 2000-2010: Established by Alfred P Sloan Foundation
- Regional Oceanographic data and information exchange networks established under the aegis of UNESCO's IODE
- Pan American Marine Biotechnology Association – HQ Canada



## Suggestions and Assistance



- Suggestions:
  - What information is most useful for you in considering scope, shape and development of transnational funding for Europe
- Assistance:
  - Pointers to contacts and sources of information to enhance and validate the report information

Thank you!

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