



Norwegian University
of Life Sciences

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Workshop on
The long-term potential of marine biotechnology
Organised within the framework of the OECD project on
The Future of the Ocean Economy
Plentzia Marine Station PiE-UPV/EHU; Plentzia-Bizkaia, Basque Country, Spain
29-30 September 2015

Agenda

Co-chairs: Torgeir Edvardsen, Øystein Lie and Ionan Marigómez
(OECD, Norwegian University of Life Sciences and University of the Basque Country)

Tuesday, 29 September 2015

- 12.30 **Arrival and welcome** by *Iñaki Goirizelaia (Rector, UPV/EHU) and Barrie Stevens (OECD)*
- 13.00 **Towards a Marine Biotechnology framework for sustainability** by *Torgeir Edvardsen and Kathleen D'Hondt (OECD)*
Brief overview of recent works addressing the contribution of Marine Biotechnology for sustainability
Overview of the *Future of the Ocean Economy Project*
Objectives of the meeting
- 13.30 Lunch
- 14.30 **Lead experts' introduction** – *Øystein Lie and Ionan Marigómez*
- 14.45 **Low Footprint Bio-production**
- Subtopic 1 Seafood production
Introductory presentation by **Odd Magne Rødseth**, *AquaGen AS and NMBU, Norway* – followed by roundtable discussion
- Subtopic 2 Non-food production
Introductory presentation by **Zhenming Chi**, *UNESCO Chinese Center of Marine Biotechnology, China* – followed by roundtable discussion
- Subtopic 3 Engineering biotechnology
Introductory presentation by **Choul-Gyun Lee**, *Inha University, Korea* – followed by roundtable discussion

Discussion points:

- o Enabling Marine Biotechnology for Food Production (Feed and feed technology, molecular approaches for aquaculture, nutrition science, genetics/genomics, breeding, pharma, genetic traceability, bioprocessing)

- o Industrial Marine Biotechnology (non-food) (biodiscovery, proteomics, drug discovery, screening, drug design, synthetic biology, experimental assays, protein/enzyme engineering, biorefinery, fermentation, enzymology)
- o Gene resources exploration: biodiversity and discovery of marine natural compounds applications (gene resources engineering: biomimicry, bio-process engineering, and bioengineering Bioenergy, Biomaterials, Engineering & design)

18.50 Wrap up of the day by Ionan Marigómez

19.15 End of first day

20.30 Dinner

Wednesday, 30 September 2015

09.00 Brief remarks on previous day's proceedings by Øystein Lie

09.10 ***Ocean & Human Health***

Subtopic 1 Healthy Oceans

Protection and management of the ocean health: biosensors, biomarkers, bioassays, bioremediation and biore restoration

Introductory presentation by **Laura Giuliano**, *Institute for Coastal Marine Environment (IAMC-CNR), Italy* – followed by roundtable discussion

Discussion points:

- o Horizon scanning - What Priorities for Future Marine Industrial Biotechnology
- o Protecting the oceans by addressing various parameters and living resources,
- o Bio sensors, xenobiotics, etc, genetic markers and whole genome based population mapping/structure and eco dynamics, bio remediation, bio restoration, etc

11.00 Coffee break

11.30 Subtopic 2 Healthy humans

This topic will deal with improving health and wealth in aging; understanding disease, clinical applications, new analytical technologies, etc; bioethical compliance (3Rs)

Introductory presentation by **Dominic Poccia**, *Amherst College, USA* – followed by roundtable discussion

Discussion Points:

- a) Sustainable food supply: seafood quality, safety and processing
- b) Marine bioactive compounds to be used in the manufacture of functional foods (Seafood and nutraceutica addressing life style diseases (molecular nutrition science)
- c) Biomedicine – Human health research: marine or aquatic models for systems disease biology studies and drug discovery

13.20 Workshop wrap up

13.30 Lunch



