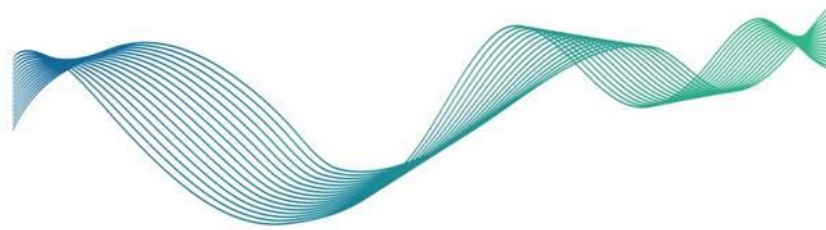


# MarineBiotech



## Research and Innovation Roadmap

**Dermot Hurst**

Marine Institute Ireland



Marine Biotechnology ERA-NET (ERA-MBT) is funded under the European Commission's Seventh Framework Programme. Grant Agreement Number 604814  
December 2013 - November 2017

# What is a “research and innovation roadmap”?



A **plan** or **strategy** designed to deliver a goal – maximise the use of biotechnology to explore marine bioresources.

- Anticipates and prepares for future
- Based on expert inputs and dialogue
- Looks at research and innovation opportunities
- Not a prediction but a sign-posting of possible opportunities
- Considers short and long-term research activity

# MARINE BIOTECHNOLOGY STRATEGIC RESEARCH AND INNOVATION ROADMAP

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INSIGHTS TO THE FUTURE DIRECTION  
OF EUROPEAN MARINE BIOTECHNOLOGY



This project has received funding from the European  
Commission's Seventh Framework Programme for  
research and technological development under  
grant agreement no 604814.



SEPTEMBER 2016



- A key element of the ERA-MBT project deliverables
- Secured extensive inputs from an array of contributions
- Resulted in a plan to increase the role of biotechnology in unlocking the value of marine bioresources
- Provides insights to future challenges and opportunities

# Roadmap influenced by global megatrends and EU Challenges

## Changing demographics

- World population to exceed 8 billion by 2030
- Living longer = ageing populations (median age 34y by 2030)

## Globalisation

- Strong market growth in BRIC and ASEAN

## Scarcity of resources

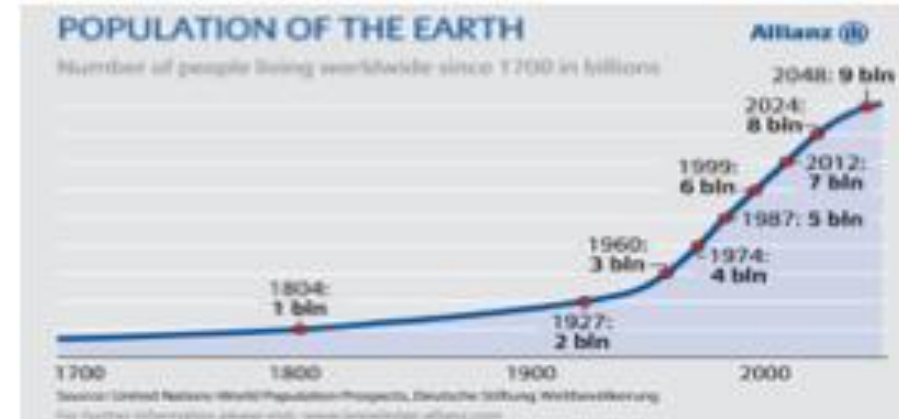
- Rising food demand, food security issues
- Materials shortages

## Climate change

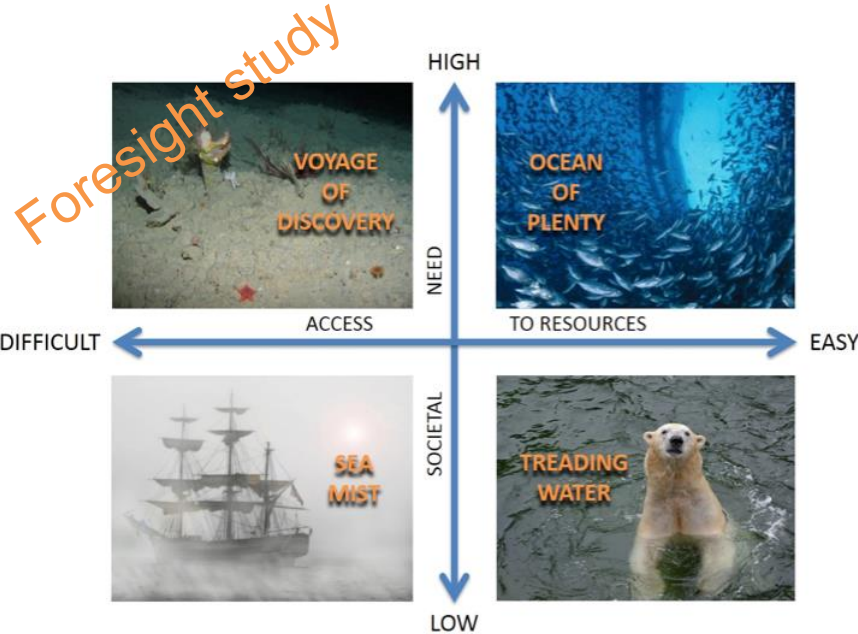
- Loss of biodiversity

## Science and technology

- Impact of innovation
- Age of the life sciences



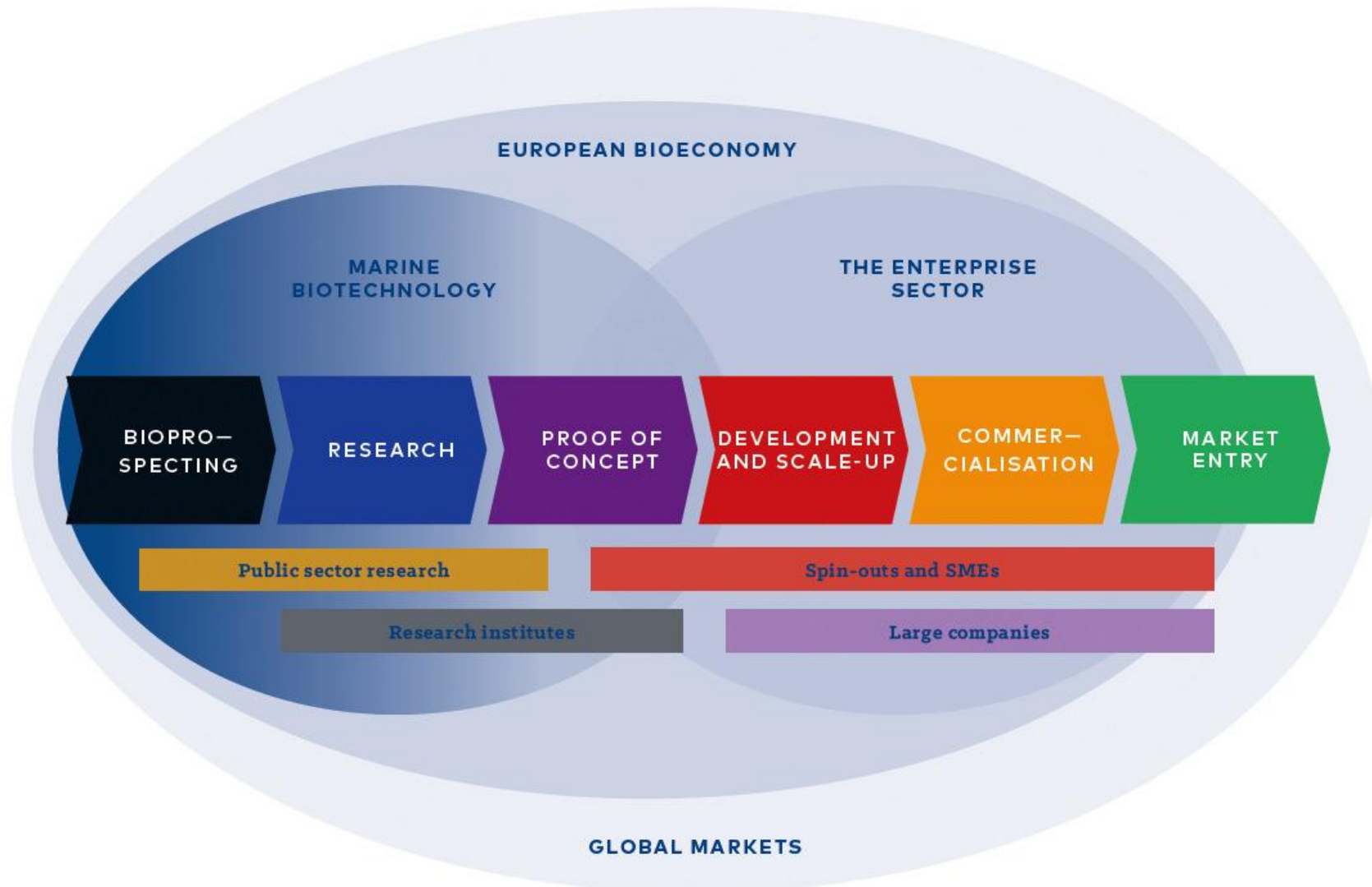
# Contributions to the Roadmap



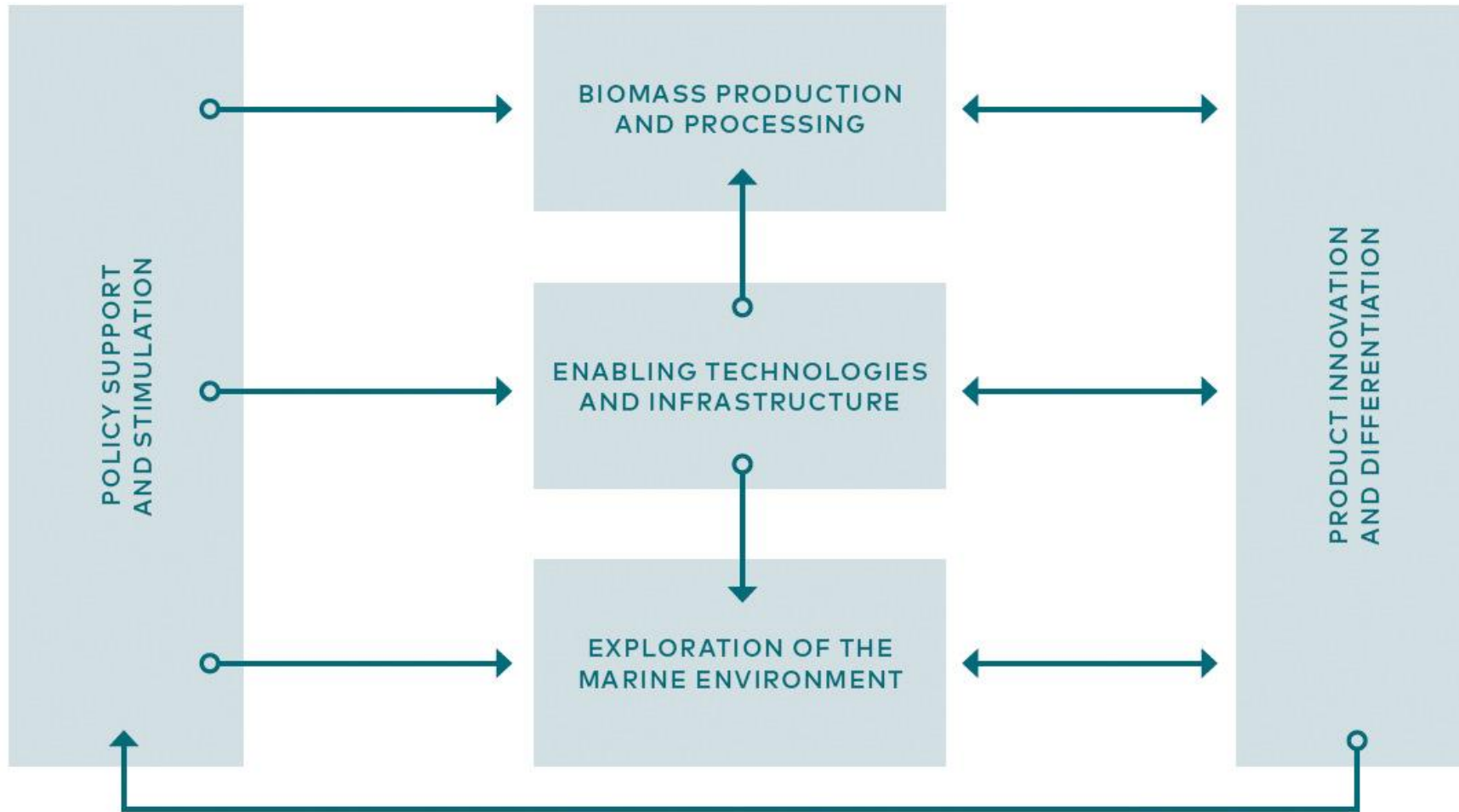
# The roadmap development process



# A position for marine biotechnology



# Thematic areas of the roadmap



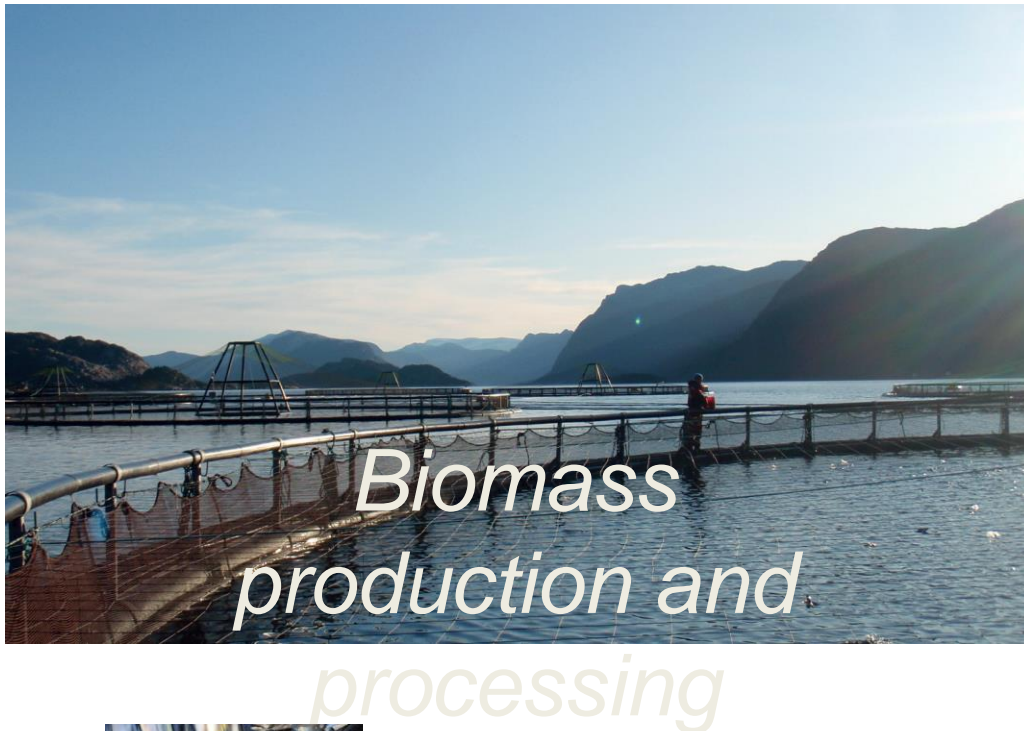
# Thematic areas



- Target sources of marine organisms/ biomass
- Identify marine species and characterise materials
- Access marine habitats



# Thematic areas



- Sustainable use of wild species
- Sustainable culture of marine organisms
- Transformation/refining marine biomass



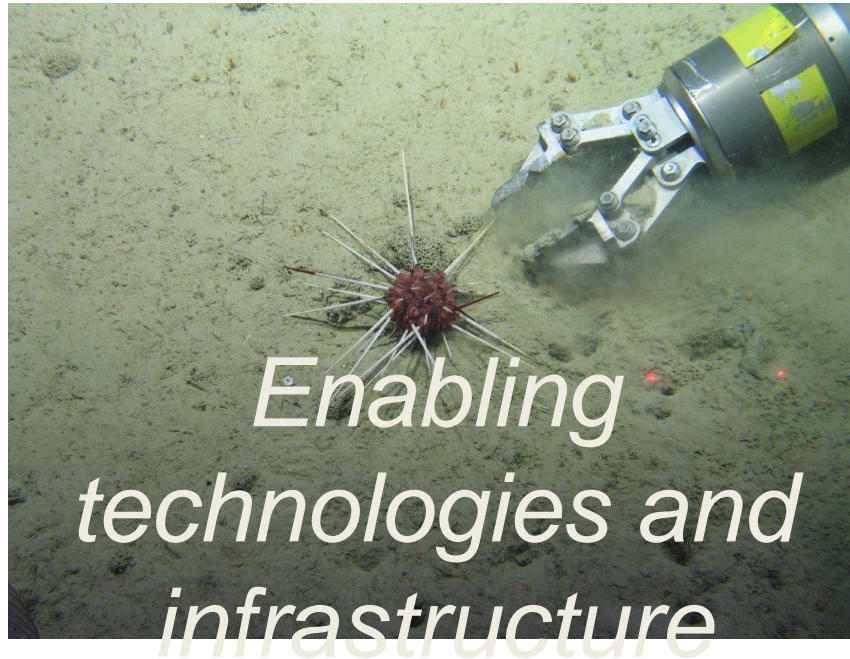
# Thematic areas



- Human and animal health products
- Food and feed products
- New industrial products and processes
- Environmental measures



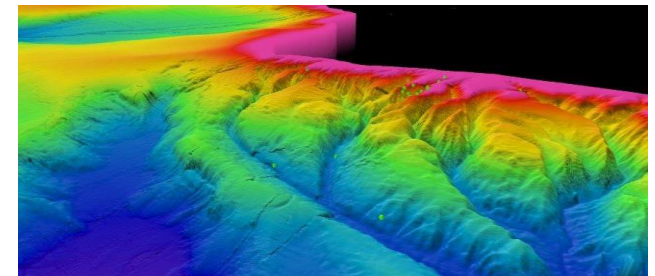
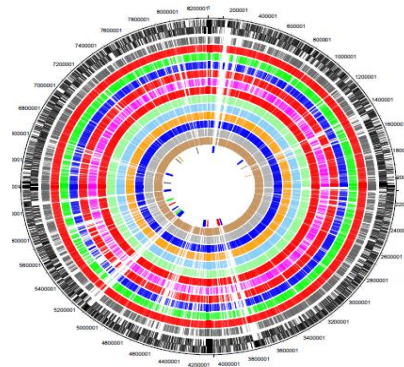
# Thematic areas



- R&I networks and collaboration
- Development of the marine biotech toolbox
- Supporting infrastructure

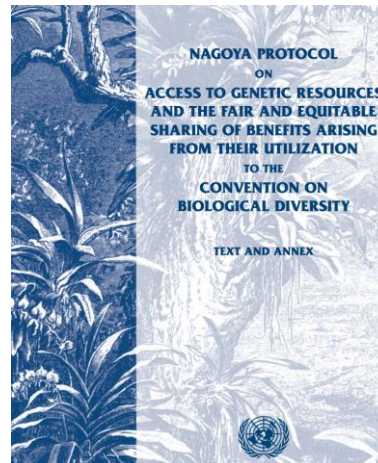
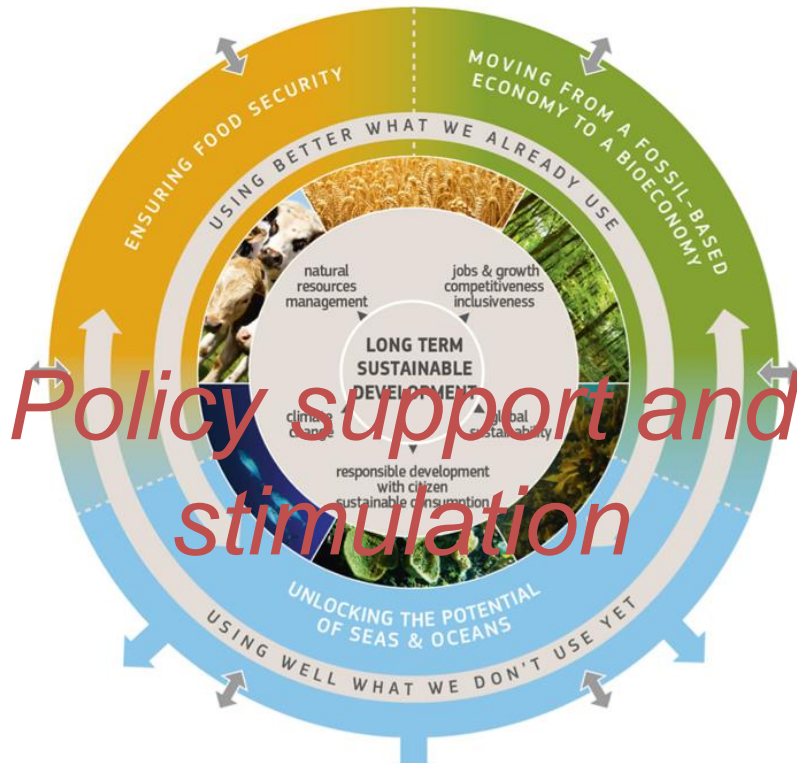
## NEPTUNA

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



# Thematic areas

- Develop the bioeconomy
- Legal issues
- Environmental regulations



**The new Common Fisheries Policy: sustainability in depth**

**What?**

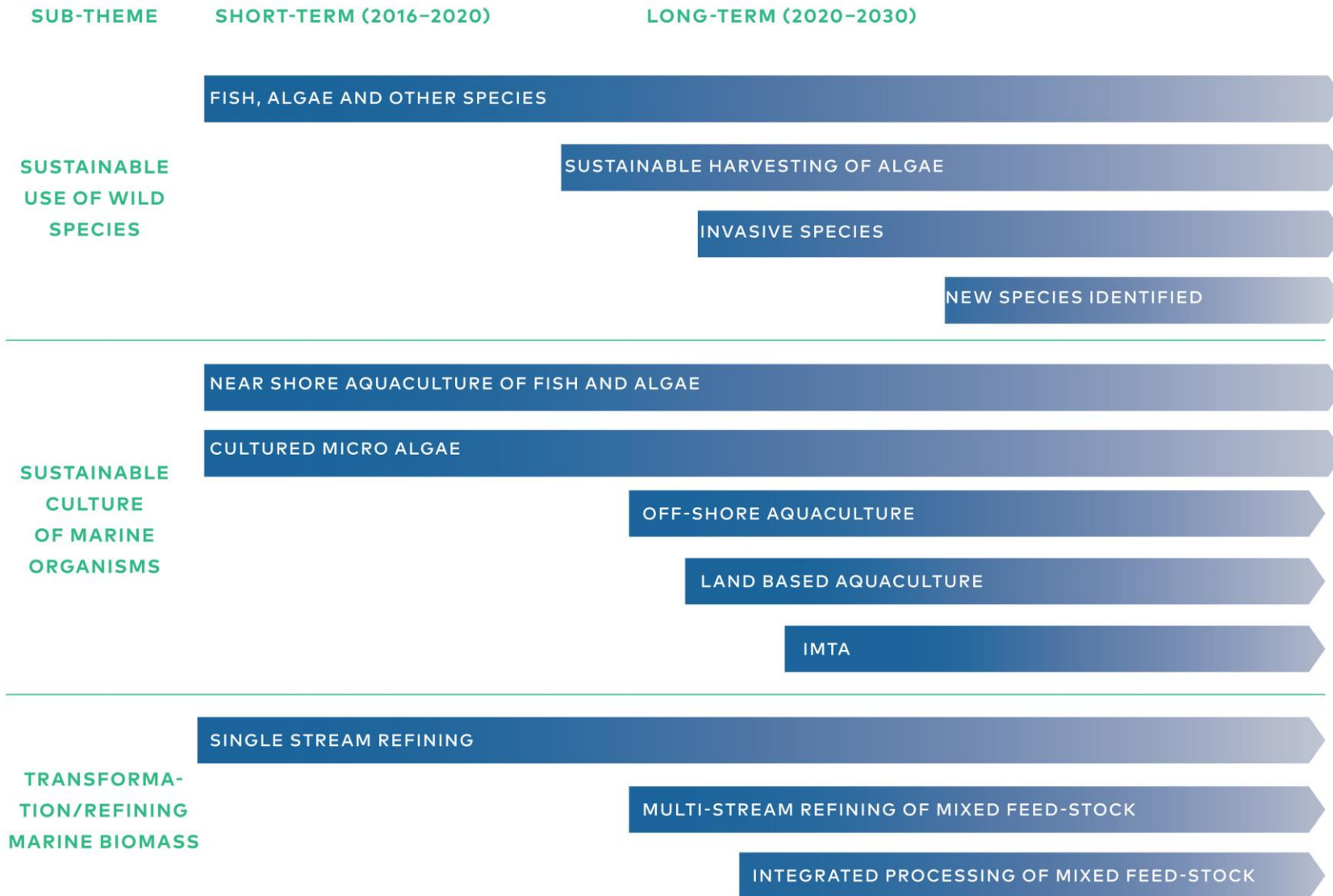
- MSY** Maximum Sustainable Yield is the best possible objective for renewable and profitable fisheries, harvesting the maximum amount of fish on a long term basis.
- Regionalisation** Natural resources and the socioeconomic fabric vary greatly from one place to another. A balanced representation of local stakeholders knows best how to apply EU rules in their respective areas.
- Fisheries science** Scientific advice is the basis for good policy making, setting fishing opportunities according to the state and productivity of fish stocks.
- Multinational plans** Co-ordinate the goals and tools for fish stock management and the response to achieving the objectives in a sustainable and inclusive way.

**How?**

- Rules** Sea-use fishing is an activity that exploits common natural resources. It needs to be regulated to safeguard fair access, sustainability and profitability for all.
  - Total Allowable Catches
  - Fishing licenses
  - Fleet capacity management
  - Reducing environmental impact
- Discards** The landing obligation (to be gradually introduced from 2015 to 2020), prohibits the wasteful practice and will provide more accurate data on real catches, and will be a driver for more selectivity and better planning.
- Targeted funding** For low income, small scale coastal fisheries, small scale must be more important for employment, marine stewardship and building together the coastal communities.
- Aquaculture** With wild fish no longer able to supply the world population, sustainable aquaculture is called to meet the growing demand for seafood.
- Control** Good management relies on accurate, complete and verifiable data. Sufficient and reliable data must be collected, managed and supplied by Member States.

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# Biomass production and processing



# Acknowledgement

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