

# PML

Plymouth Marine  
Laboratory

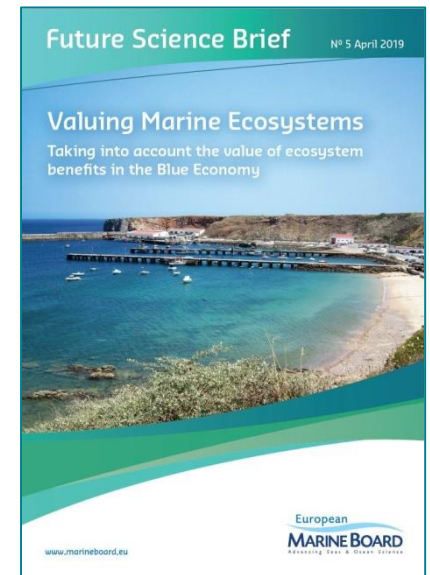
Listen to the ocean

## Valuing marine ecosystems

European Marine Board Future Science Brief N°5,  
April 2019

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Plymouth Marine Laboratory



# Valuing Marine Ecosystems

## European Marine Board Future Science Brief 5

Working Group on Valuing Marine Ecosystems (WG VALMARE)

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**Current and emerging pressures are multiple and interacting**



**Transport**



**Concerns**  
**Outbreaks**  
**Invasives**



**Changes in productivity**



**Energy**  
**Devices**

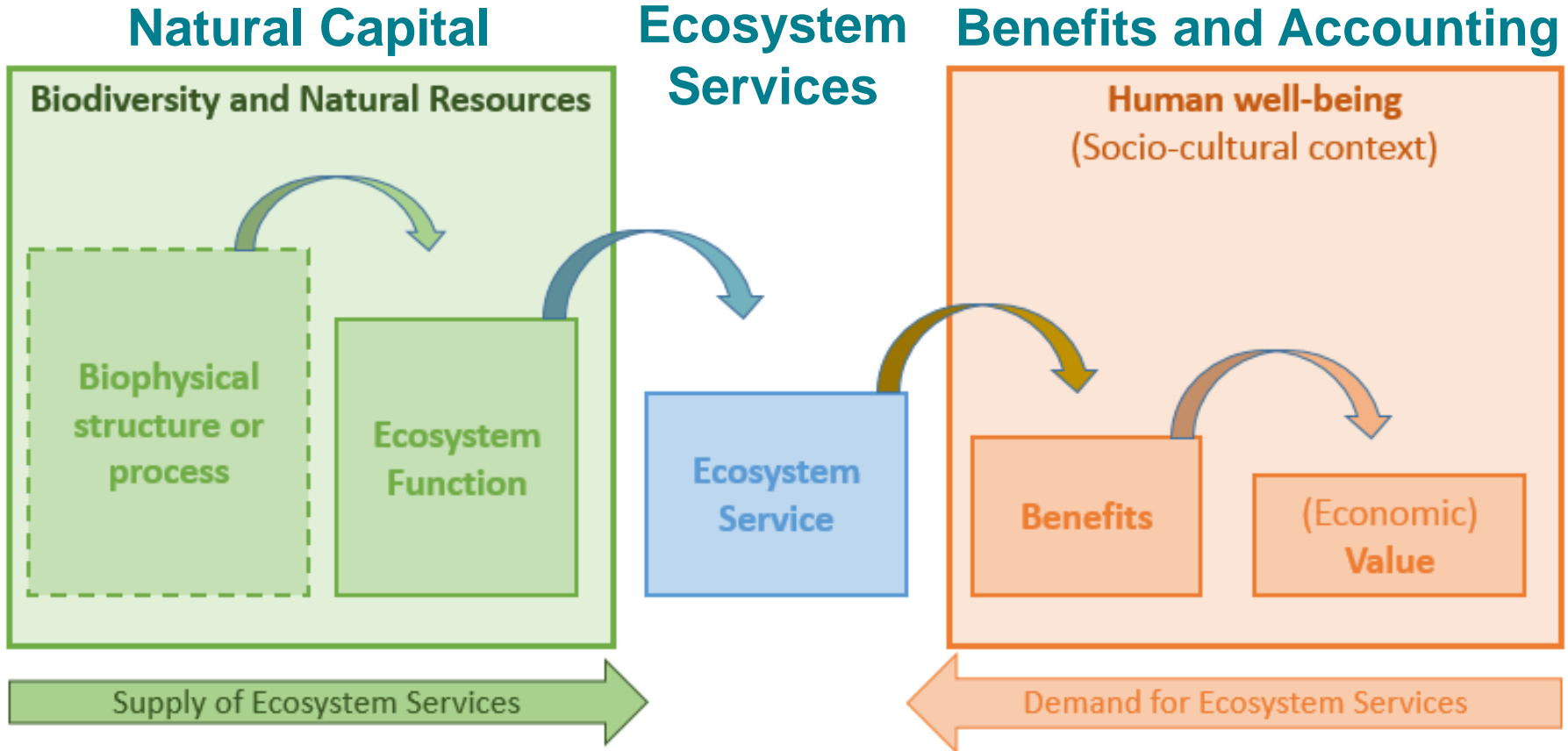


**Exploitation of living resources**

**Discharges**

**Environmental Changes (including climate change)**

# Framework(s)



**Marine ecosystem services** are the services provided by the processes, functions and structure of the marine environment that directly or indirectly contribute to societal welfare, health and economic activities.

# Valuation of ecosystem services and benefits to support:

- Sustainable Blue Growth Strategy
- EU policies
- Commercial/Regulation/Management
  - licencing
  - planning for conflicting uses
- Environment
  - environmental protection
- Raise awareness



*EU Maritime Policy*

*EU Marine Strategy Framework Directive*

*IMO Convention on Ballast Water Management*

*Biodiversity Strategy*

*Marine Planning Directive*

*Invasive Alien Species Strategy*

*Common Fisheries Policy*



# Value = importance?

## Whose value?

- **Economic values**

- Assume that individuals are rational and have well-defined and stable preferences over alternative outcomes, which are revealed through actual or stated choices.
- Based on utilitarianism and assume substitutability
- Defined in terms of the trade-offs that individuals are willing to make, given the constraints they face.

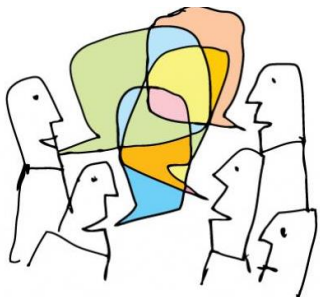
- **Community-based values**

- Based on the assumption that individuals make choices based on what they think is good for society as a whole rather than what is good for them as individuals.



# Valuation: Approaches and Methodologies

- Revealed preference
  - Market values, travel cost, hedonic pricing
- Stated preference
  - Contingent valuation, contingent behaviour, choice experiments
- Benefit transfer
  - Adapt values derived from existing studies to some other context
- Measures of attitudes, preferences, and intentions
  - Surveys, narratives, focus groups, behavioural observation
- Civic valuation
  - Referenda, citizen jury





# Recommendations and Key Actions

## 1. Include ecosystem valuation in marine management decision models

- Use to support marine management and policy decision making
- Understand trade-offs
- Assess sustainability by including the loss of natural capital in all cost-benefit analyses, and match it against the growth of economic capital.



# Recommendations and Key Actions

## 1. Promote the harmonization of ecosystem service frameworks

- to improve the usage and comparability of ecosystem services assessments

## 2. Develop a set of indicators for ecosystem services that can be included under existing monitoring programmes

- Improve understanding of the role of marine biodiversity and ecosystem processes in providing services and benefits
- Identify potential ecological thresholds (tipping points)



Photo: Keith Hiscock

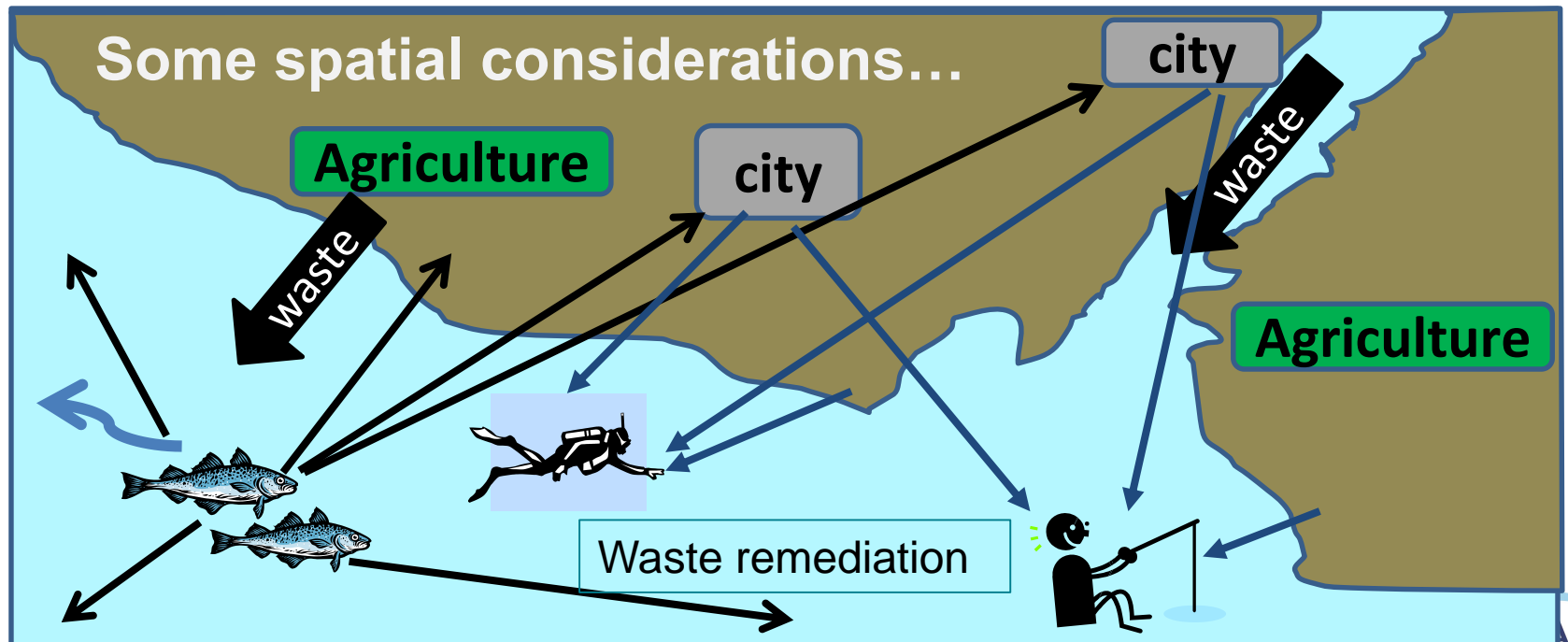
## Recommendations and Key Actions

4. **Create open databases that contain the data, meta-data, applied methodology and results of marine ecosystem valuation studies (monetary as well as non-monetary)**
  - Improve the quality and availability of monetary and non-monetary valuation data, establish best practice
  - Develop further understanding of values (economic, shared, social, health)
  - Increase comparability and usability of the gathered information e.g. for bio-economic models
5. **Enhance trans-disciplinary connections by incorporating fundamental marine science, social science, economic and public health approaches**
  - Develop policy Q & As
  - Context for interpretation of results

# Recommendations and Key Actions

## 6. Set the right scale and boundaries for each valuation study

- Those areas that provide the services and those where the benefits occur



## Recommendations and Key Actions

### 6. Set the right scale and boundaries for each valuation study

- Those areas that provide the services and those where the benefits occur
- Administrative boundaries
- Cooperation on local, regional and international scale might be necessary to make a robust assessment and undertake trade-off analysis

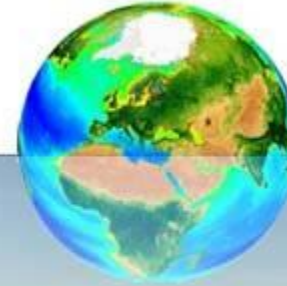


# Recommendations and Key Actions

## 7. Develop the Natural Capital Approach and Natural Capital Accounting

- Enhance and standardize existing marine asset and valuation data sets, assessment methods and reporting of results
- Address issues such as scale, aggregation and ecosystem degradation to facilitate inclusion in accounting
- Develop financing mechanisms (e.g. payments for ecosystem services) to improve the sustainable use of marine natural capital

# Thank you



## Valuing Marine Ecosystems

Taking into account the value of ecosystem benefits in the Blue Economy



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

European

**MARINE BOARD**

Advancing Seas & Ocean Science

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