

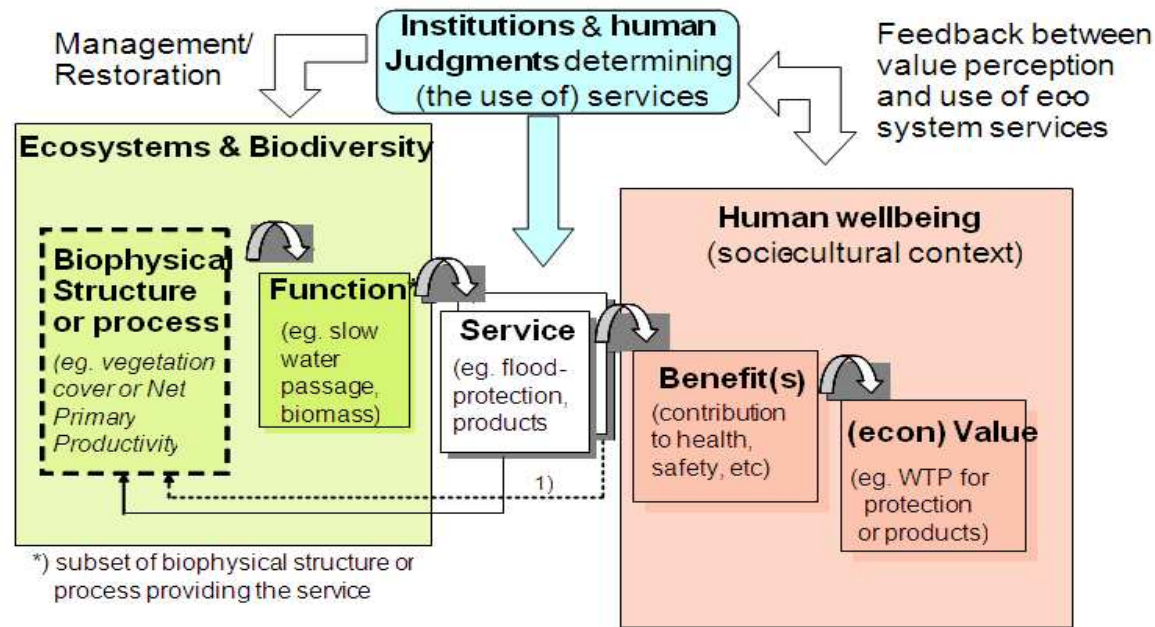
Ecosystem goods and services in Svalbard: from ecology to society

Joanna Piwowarczyk
Monika Kędra
Zakład Ekologii Morza, IOPAN



Ecosystem services concept

Contributions that ecosystems make to human well-being



*) subset of biophysical structure or process providing the service

Adapted from Haines -Young & Potschin, 2010

- 1) One function is usually involved in the provision of several services and the use of services usually affects the underlying biophysical structures and processes in multiple ways. Ecosystem service assessments should take these feedback-loops into account.

Typology of marine ecosystem services

| Provisioning services | Regulating services | Habitat services | Cultural services |
|---|--|---|--|
| <ul style="list-style-type: none"> • Food provision • Biotic raw materials (non-food) | <ul style="list-style-type: none"> • Air purification • Climate regulation • Disturbance prevention or moderation • Regulation of water flows • Waste treatment and assimilation • Coastal erosion prevention • Biological control | <ul style="list-style-type: none"> • Gene pool protection • Migratory and nursery habitat | <ul style="list-style-type: none"> • Leisure, recreation and tourism • Aesthetic experience • Inspiration for culture, art and design • Cultural heritage • Cultural diversity • Spiritual experience • Information on cultural development |

Contrasting scenarios: A2 (National Responsibility) & B1 (Global Community)

http://www.marineactors.eu/Core_pages/Future_scenarios_and_policy_implications_with_rele



| | | Scenario: | A2 | B1 |
|--|----------------------------------|--|----|----|
| Provisioning | Food provision | Fish populations: | ↓ | ↑ |
| | | Quality of the fishery: | ↓ | ↑ |
| Provisioning | Biotic raw materials | Genetic resources: | ↓ | ↑ |
| | | Endemism and uniqueness of species: | ↓ | ↑ |
| Regulating | Climate regulation | Air-sea flux: | ↑ | ↑ |
| | | Greenhouse gases: | ↑ | ↑ |
| | Coastal erosion prevention | Change in beach profile: | ↓ | ↓ |
| Elevation/ height above mean seawater level: | | ↓ | ↓ | |
| Regulating | Waste treatment and assimilation | Water contamination: | ↑ | ↓ |
| | | | | |
| Habitat | Gene pool protection | Genetic diversity: | ↓ | ↑ |
| | | Migratory and nursery -habitat | ↓ | ↑ |
| Cultural | Leisure, recreation and tourism | Species of recreational interest: | ↓ | ↑ |
| | | Biotope of interest to key recreational users: | ↓ | ↑ |
| Cultural | Cultural heritage | Species and habitats : | ↓ | ↑ |
| | | | | |

Social discourse on climate change

Collective Intelligence:

- supports deliberation of complex issues, and idea exchange between a diverse group of participants;
- includes elements of behaviour and cognitive sciences;
- employs methods of: Nominal Group Technique, Interpretive Structural Modelling, and Argument Mapping;
- steps and outcomes: (i) generation of ideas or barriers, (ii) voting and ranking to select the most important issues, (iii) structuring the selected barriers;
- two workshops; ten participants each;
- mentality, lack of education, consumerism and neoliberal mindset as most important issues

(NTG; Delbecq, Van De Ven, & Gustafson 1975; ISM; Warfield 1994; AM; Hogan et al. 2014)

