



Attaching a value to ecosystem goods and services within the Baltic Sea

Heini Ahtiainen

MTT Agrifood Research Finland

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Background

- Ecosystem Approach increasingly popular
- The Baltic Sea region
 - EU Marine Strategy Framework Directive
 - HELCOM
 - Nordic Council of Ministers (NCM)
- Global/other areas
 - UNEP: Ecosystem Services Economics (ESE)
 - TEEB (global, regional and country studies)
 - National ecosystem assessments, e.g. UK NEA (2011)

Valuation of ecosystem services

- Need
 - Visibility and significance
 - Transparency
 - Cost-benefit analysis
- Interdisciplinary
- Monetary vs. non-monetary
- Marginal values (→ values for changes)
- Environmental valuation = valuation of ecosystem services



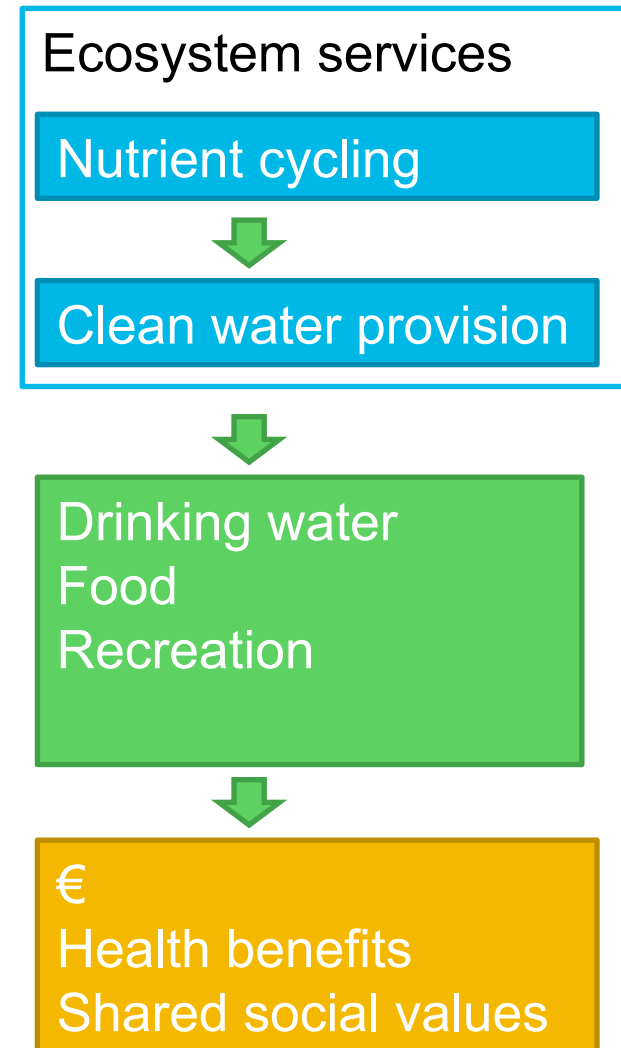
Ecosystem services – definition for valuation

(based on UK NEA (2011), Fisher et al. (2009), Fisher & Turner (2008))

Framework



Example



Coastal and marine ecosystem services in the Baltic Sea - examples

Intermediate services →	Final services →	Goods/benefits
Nutrient cycling Primary production Water cycling Habitat maintenance Biodiversity maintenance	Fish/shellfish Water quality Wild species diversity Raw materials Climate regulation	Energy Food Recreation Tourism Education Aesthetic/Inspiration Existence

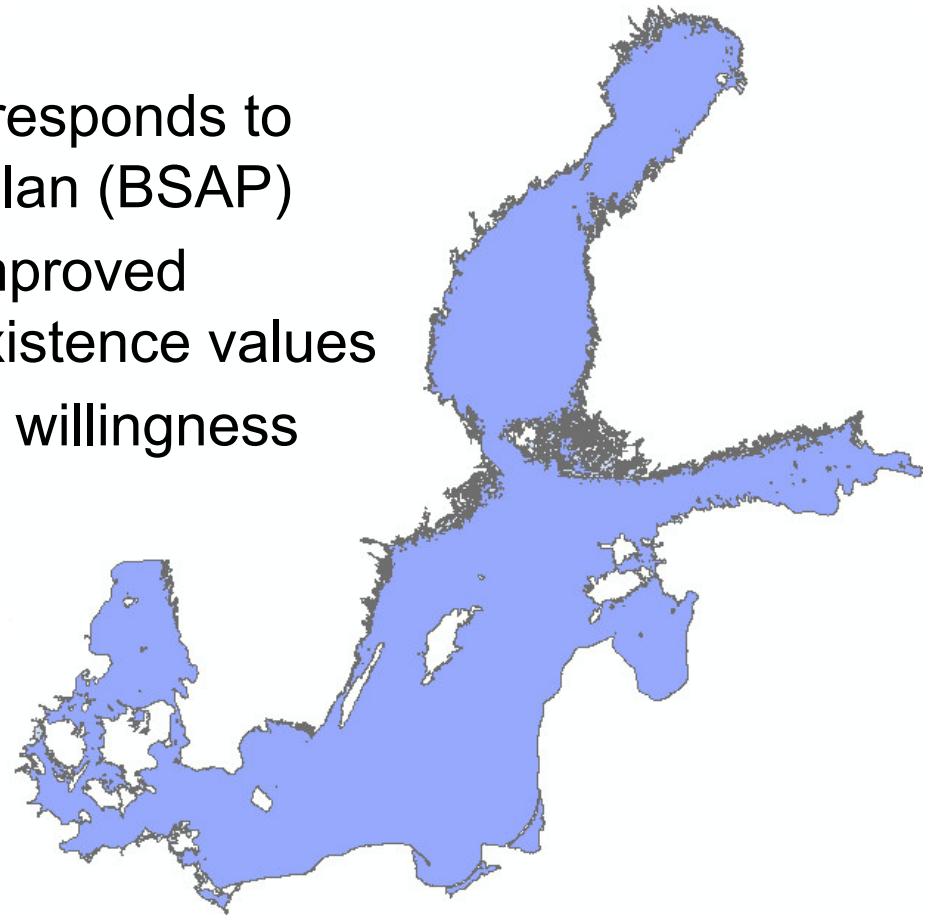
Valuation of ecosystems services: Examples in the Baltic Sea area

Reducing eutrophication in the Baltic Sea

Local/regional studies

Features of the study

- Estimating the benefits of reducing eutrophication in all nine coastal countries
- Change in eutrophication corresponds to HELCOM Baltic Sea Action Plan (BSAP)
- Reduced eutrophication → improved recreation possibilities and existence values
- Contingent valuation method, willingness to pay (WTP)
- Identical surveys in 2011
- Over 10500 respondents in 9 countries



Results: general

- Spending leisure time at the Baltic Sea common
 - Especially Sweden, Denmark and Estonia
- Personal experiences of eutrophication
 - Most common in Sweden, Finland and Lithuania (around 50%)
 - Least common in Denmark and Germany (around 20%)
- Respondents value improvements in the whole Baltic Sea
- Healthy marine ecosystem is important

Results: willingness to pay

Country	Observations	Share of respondents WTP (%)	Mean WTP €/person/year	Adult population (in millions)	National WTP M€/year
Denmark	1061	54	36.3	3.958	144
Estonia	505	56	25.8	0.989	25
Finland	1645	63	42.5	3.617	154
Germany	1495	56	25.2	68.321	1718
Latvia	701	50	5.9	1.69	10
Lithuania	617	55	16.5	2.516	42
Poland	2029	55	13.4	24.624	330
Russia	1508	32	11.7	81.467	951
Sweden	1003	75	77.1	7.564	583
Total	10564	55		194.746	3957

Local/regional valuation studies in the Baltic Sea

- Few dozen studies on the benefits of improved marine environment
- Most from Denmark, Finland, Germany and Sweden
- Typically recreation and existence benefits
- Benefits from coastal habitats
 - Finnish-Swedish Archipelago area and Lithuanian coast
 - Healthy vegetation, preservation of pristine areas and size of fish stocks
- Eutrophication
 - Several studies
 - Gulf of Finland, Swedish archipelago
- Fish stocks/recreational fishing
 - Several local and regional studies, international study in the 1990s

Conclusions

- The Baltic Sea provides many important ecosystem goods and services that affect human welfare
- Some valuation knowledge available
 - Environmental issues: Eutrophication, fisheries
 - Goods/benefits: Recreation, fish, existence values
- International cooperation important
- Challenges:
 - Which ecosystem services and goods should we value?
 - Estimating values relevant to decision-making

THANK YOU!

More information:
Heini Ahtiainen, MTT Agrifood Research Finland,
heini.ahtiainen@mtt.fi

Photos: Janne Artell



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