

# **Valuation of damage to ecosystems in Sweden - an applied approach**

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# Disposition

- Intro
- Current governmental developments
- Other valuation approaches than economic valuation
- Policy instruments and markets for ecosystem services
- Using Ecosystem services as decision support
- Discussion

# Intro

- The possibility to value damage to ecosystem services require a legal framework, not only scientific results
- In Sweden, political decisions have recently been made to initiate this process

# SOU 2013:68 – background

- The Swedish environmental policies are organised around 16 environmental quality objectives
- These long term objectives are assigned with 'interim targets'
- In a governmental decision 2012, new interim targets were added (quick translation):
  - Target 3.5.1: Important ecosystem services and factors affecting their maintenance are identified and categorised by 2013
  - Target 3.5.2: By 2018, the importance of biological diversity and the value of ecosystem services should be publicly known and integrated into economic decision support, political considerations, and other decisions in society when this is relevant and reasonable

Ds 2012:23

# SOU 2013:68 - Purpose and results

- Purpose of the investigation:
  - To propose measures that enables the importance of biodiversity and values of ecosystem services to be well known and become integrated into economic and other decisions in society when relevant and reasonable
- The investigation identify three enabling mechanisms, and 25 measures:
  - Integration into decision processes
  - Improved basis for decisions
  - Increase the level of knowledge

## SOU 2013:68 – Results (continued)

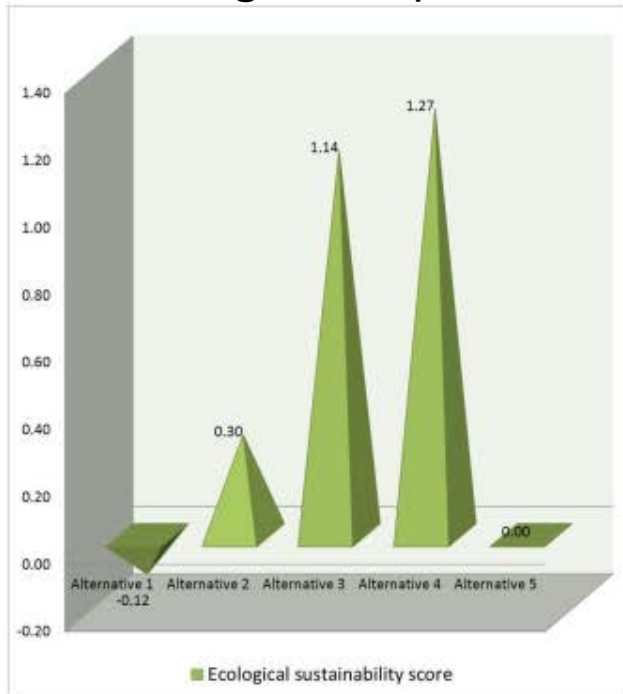
- Monetarisation is not always suitable
- Ecosystem services should be further developed
- Today, a number of official bodies and corporations are including assessments of ecosystem services as a part of their 'wider analysis'
- Functioning ecosystem services are relevant for corporations in their risk assessment and business development
- The possibility to demand compensation for negative impacts on ecosystem services (caused by land exploitation etc) is in principle possible by law already in Sweden, but this process is hampered by "legal unclarities"

# SOU 2013:68 – Additional comments

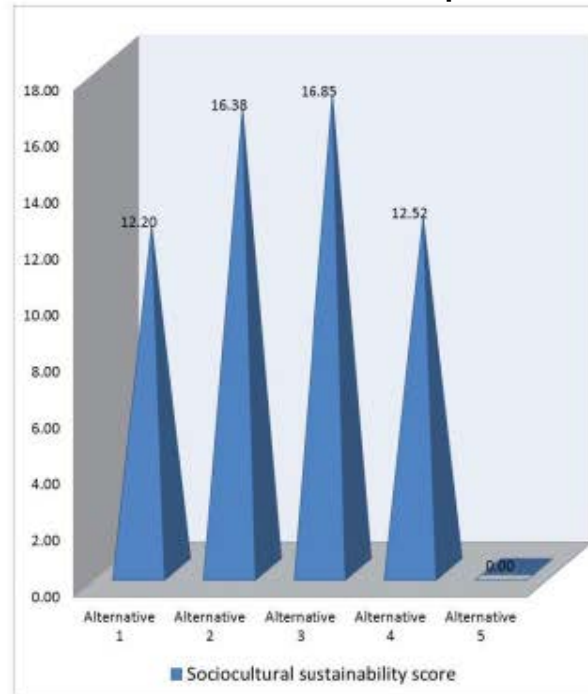
- Personal interpretation:
  - By 2018 impacts on ecosystem services should be included in the decision support material (in one way or the other) prior to public sector investments or other activities causing the impact. The private sector is invited to join in
  - Implementation procedure consist partly of learning by doing
  - There seems to be an ambition to expand the existence of 'markets for ecosystem services' in Sweden (more mussle banks)

# Using Multi-Criteria Analysis to value Ecosystem Services (example decontamination)

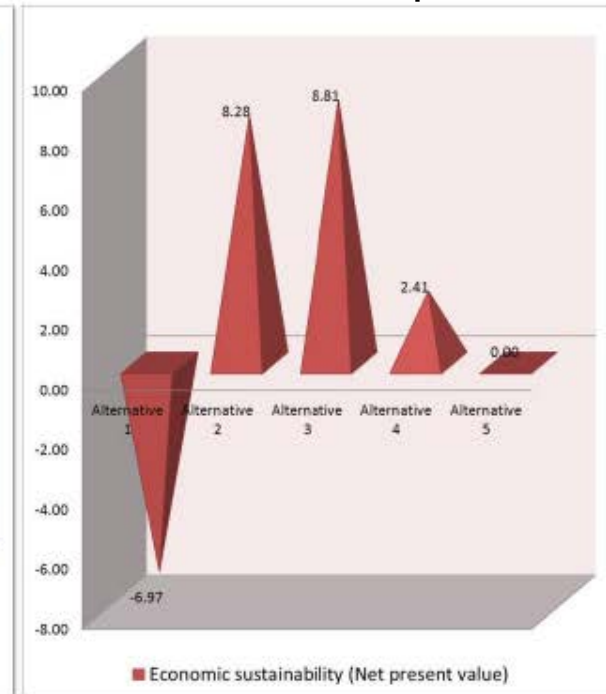
### Ecological aspects



### Socio-cultural aspects



### Economic aspects



Rosén, 2013



# Other means to value ecosystem services?

- Swedish EPA project: “Dialog for nature management”
  - Stakeholder involvement
- Resilience estimates
- Learning processes / participatory approaches
  - Sensitivity model
- SWOT - analysis

# Policy instruments and markets for ecosystem services

- Today, instruments are being re-grouped into which ecosystem service they are aimed at
- Usually, policy instruments can be grouped into 3 main groups:
  - Regulation
  - Information
  - Incentive based (economic) instruments
- Markets for ecosystem services belongs to the third category
  - It is one of the possible environmental management options
  - It should not replace existing environmental management principles, but provides a complement to the 'tool box'

Hasselström, 2013

# Using ecosystem services as decision support – private sector

- Corporate level thinking on Ecosystem Services:
  - Avoid disturbances in the delivery chain, and in production caused by reduced supply of scarce/damaged natural resources
- Larger challenges for industry?
  - How can an integration of Ecosystem Services into environmental accounting contribute to the companies objective of delivering projects/services/products in time and within budget while minimising risks?
- Using tools
  - Northern ToSIA – Sustainable forest
  - REMEDE

Cole et al., 2012

# Tentative results from interviews with stakeholders (industry/institutions/authorities)

- Varying consideration of ecosystem services
- Low level of application of ecosystem services into decision making
- Low level of 'self-estimated knowledge' concerning ecosystem services
- The concept of Ecosystem services appear to provide opportunity for 'wider thinking', but risk of imposing confusion and double counting

IVL, under development

# Discussion

- Will valuation of ecosystem services function as decision support?
- In the context of air pollution, will valuation of ecosystem services encourage increased attention to environmental aspects of air pollution?