Perspectives on the valuation of coastal and marine ecosystem services

inc. key insights from TEEB Nordic

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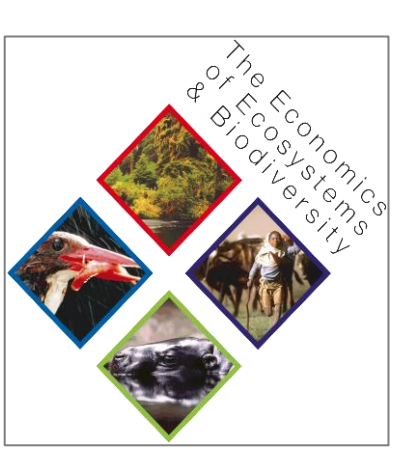
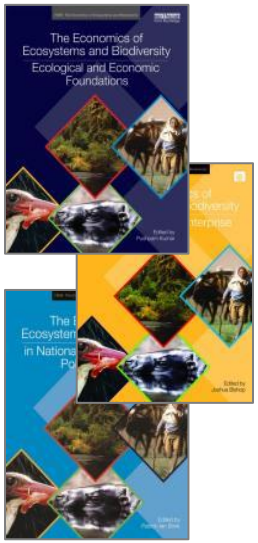
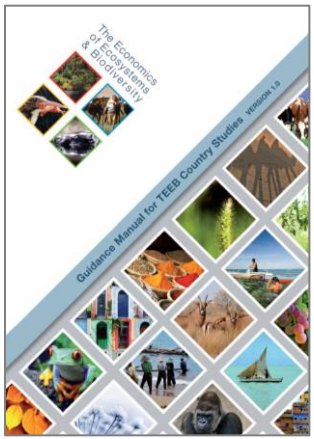
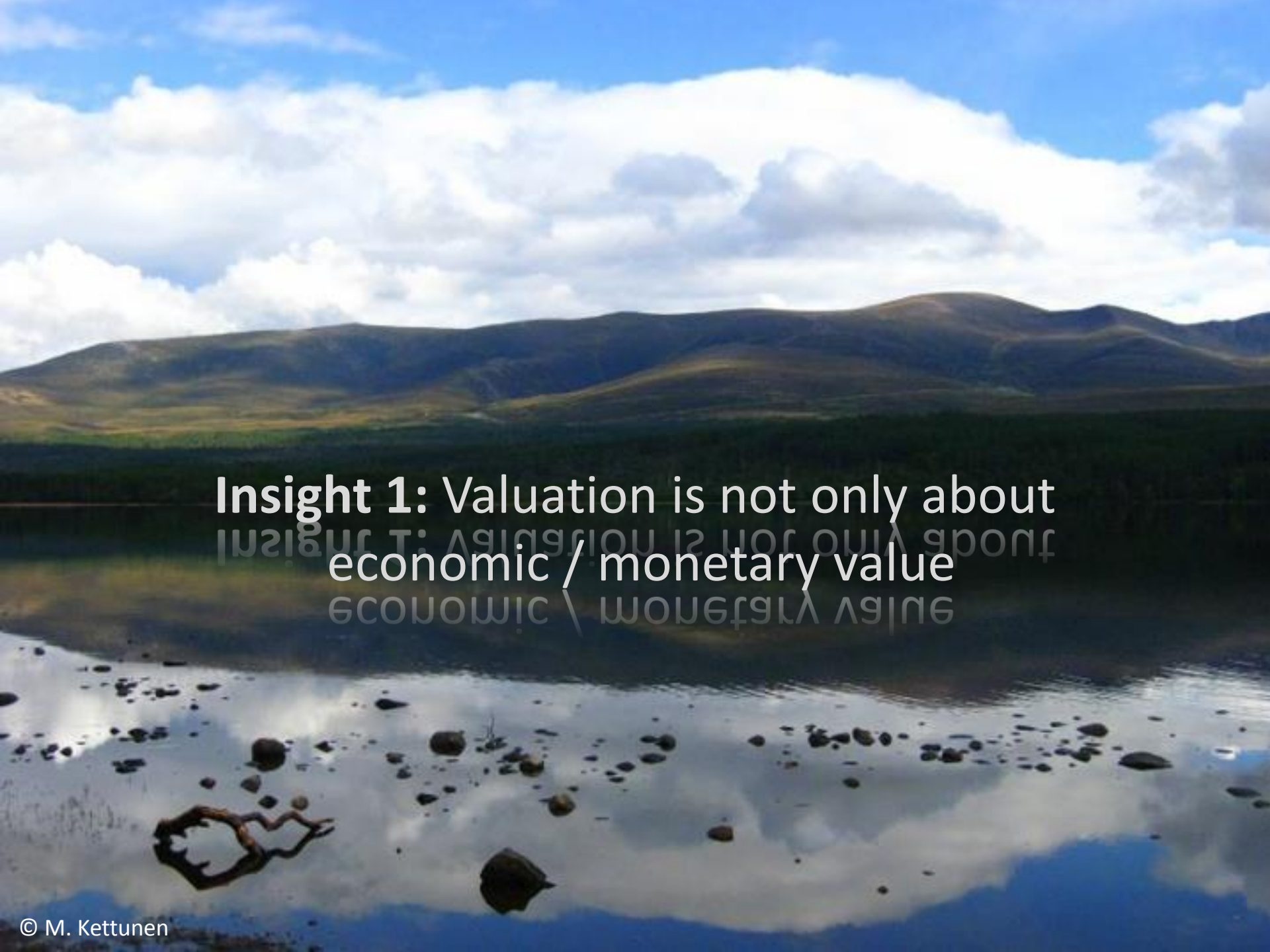
TEEB and TEEB Nordic – the context



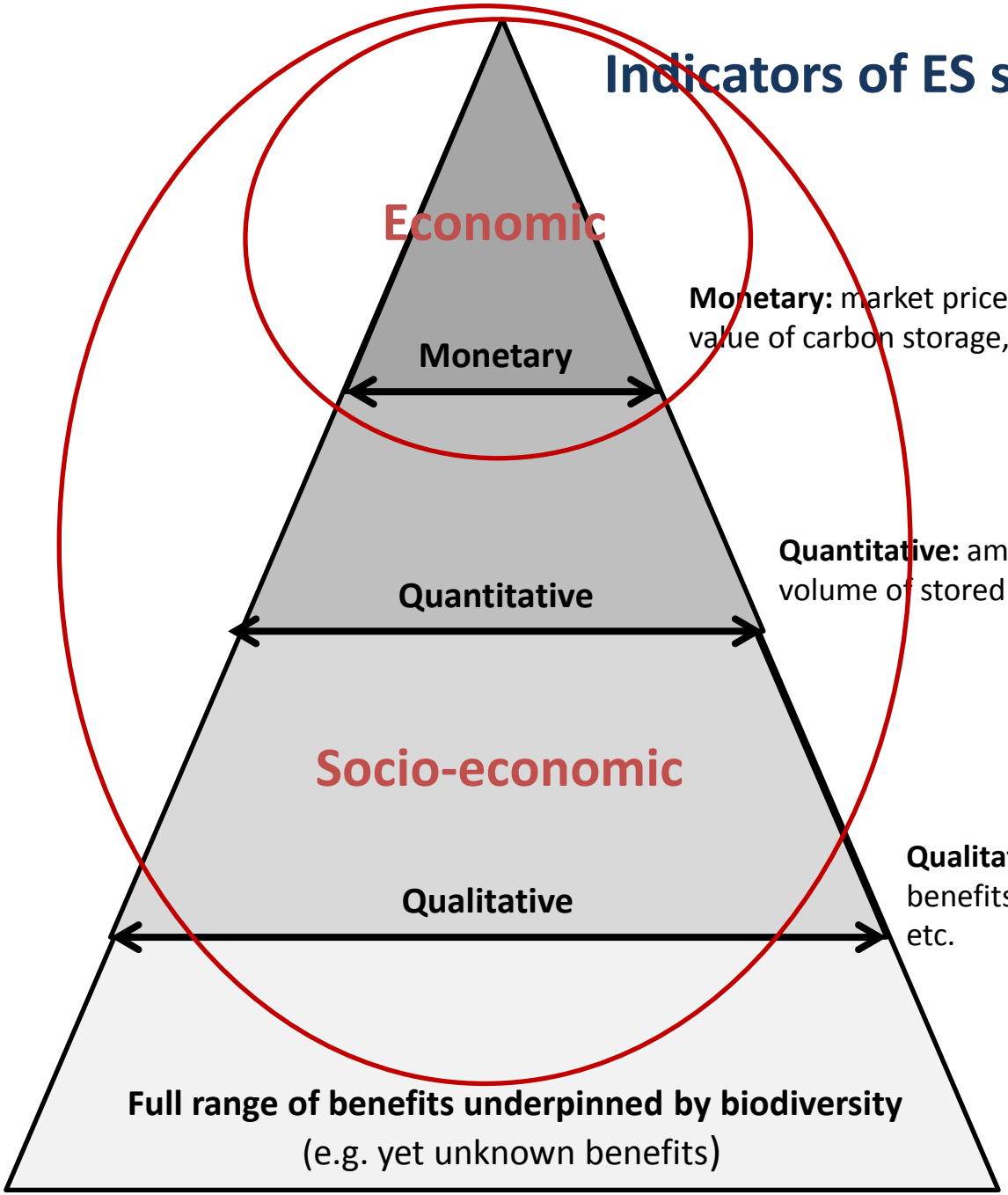




Kick-off 2007 / 2008 - Global Assessment 2010 - Country studies 2011 onwards - inc. TEEB Nordic 2012


Insight 1: Valuation is not only about
economic / monetary value

Indicators of ES socio-economic value



Monetary: market price of products,
value of carbon storage, avoided costs of water purification etc.

Quantitative: amount of people enjoying given products,
volume of stored carbon, volume of purified water etc.

Qualitative: description of the range of various benefits, dependency of people on these benefits etc.

Modified from Kettunen and ten Brink (2013)

Value of fish(ing) in the Nordic countries

Commercial fishing (marine)

Economic

- Number of professional fishermen: 1,600 (Se), 2,088 (Dk), 2,195 (Fin) and 12,280 (No)
- Market value of commercial fisheries: EUR 27 mil. (Fin), EUR 110 mil. (Se), EUR 460 mil. (Dk) and EUR 2 bil. (No) / year

Recreational fishing

Socio-economic

- Estimated over 6 mil. recreational fishermen in the Nordic countries (European Anglers Alliance 2002)
- 30 - 50% of population / country / year engages with fishing (Fin, Se, No) (Sievänen and Neuvonen 2010, Statistics Sweden 2012b and 2012c, Statistics Norway 2012)
- Estimated economic value of recreational fishing in Sweden around EUR 80 mil (Garpe 2008)

See Kettunen et al. (2013) TEEB Nordic for references http://www.teebweb.org/countryprofile/nordic-countries/

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Value of fish(ing) in the Nordic countries

The case of Baltic Sea salmon

Commercial

Economic

- Value (NPV) of commercial landings EUR 0.9 - 3.6 mil. / year (Dk, Fin, Pl and Se in 2009-2015)

Recreational / cultural

Socio-economic

- Fin state budget allocated nearly EUR 1.4 mil. for annual stockings (2000-2004) and over EUR 9 mil. were spent for habitat restoration (1997-2005)

- In addition, Baltic salmon plays an important role in
  - reducing sedimentation
  - regulating food webs and maintaining the general ecological balance of ecosystems

  → No monetary / quantitative estimates of value exist

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See Kulmala et al. case study (2013) in TEEB Nordic for further references http://www.teebweb.org/countryprofile/nordic-countries/

Recreation value of Baltic Sea

Results of Baltic Sea survey (2010)

- Majority of identified values and uses (swimming, diving, fishing, hiking and picnicking) are directly related to cultural and recreational services
- Furthermore, majority of these closely linked to services regulating water quality

- Almost 1/3 of respondents (Dk, Fin and Se) willing to financially support actions aimed at improving the Baltic Sea environment

→ Qualitative and quantitative estimates of socio-economic value

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See D'Amato, Artell, Ahtiainen et al. case study (2013) in TEEB Nordic for further references http://www.teebweb.org/countryprofile/nordic-countries/


Insight 2: (Economic) valuation should be carried out with a clear purpose

What is / will be the purpose for valuating Baltic ES?

- Awareness raising ?
- Advocacy and policy influence?

→ Qualitative and quantitative info can suffice

→ Broad (but robust) monetary valuations, to indicate scale

- Evaluation / improvement of existing policy instrument (fishing quotas, ag env payments)?
- Development of new policy instruments (Payment for Ecosystem Services - PES)

→ Quantitative and monetary information

→ Cost-benefit considerations

- Development of novel business ideas ?

→ Market-based valuations

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What is / will be the purpose for valuating Baltic ES?

The Economics of Ecosystems & Biodiversity
Nordic Synthesis

: Existing valuations of Baltic Sea ES – a mixed bag of studies

- Awareness raising and advocacy and policy influence?

→ Traditionally focused on recreational and cultural values of Baltic Sea

- Evaluation / improvement / development of policy instrument

→ Focus on evaluation of (negative) impacts – lacking valuation to support concrete improvements and development

→ Up and coming !?

- Development of novel business ideas ?

→ Up and coming !

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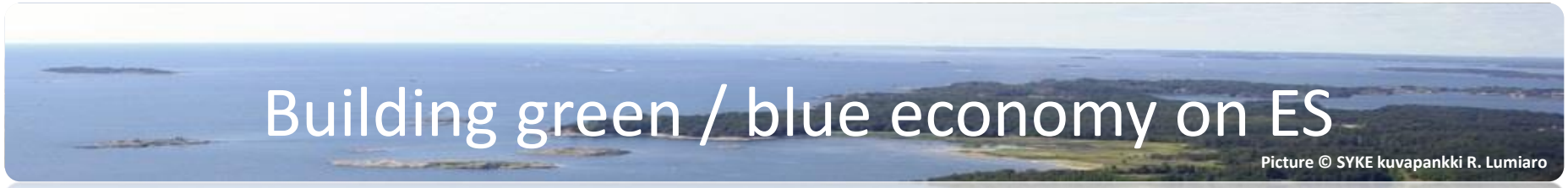
Building green / blue economy on ES



1. Understanding the value of ES & natural capital – even where the values are not market based / only economic.

2. Integrating the value of ES & natural capital systematically into the foundations of decision-making at all levels:

- ES indicators → accounting systems → macro indicators of welfare
- Policies, strategies, legislation, impact assessments → concrete tools for resource / coastal planning …

3. Providing the right economic signals – removing harmful subsidies and creating incentives to sustainable use of natural capital

4.→ Investing in green / blue: green / blue infrastructure & creating green / blue jobs

Understanding & systematically assessing ES stocks, flow & value

Ecosystem service stock
(status & trends)

Ecosystem service flow
(status & trends)

Ecosystem service value
(current & potential)

- Qualitative
- Quantitative
- Monetary

Trade-offs

Trade-offs

Trade-offs

Biodiversity (status & trends) Indication of resilience !

: Current use of ES indicators somewhat chaotic → need to be more systematic

: Also, lots of gaps in marine / Baltic sea ES knowledge

Box 3.3: Selected examples of possible and/or commonly used ecosystem service indicators identified in the context of TEEB Nordic

Ecosystem service	Bio-physical indicator (status / availability)		Socio-economic indicator (value)	
	Direct indicators (e.g. reflecting sustainable status)	Proxy indicators (level of use / availability as a proxy for status, with no reflection of sustainability)	Direct indicators (e.g. reflecting sustainable level of use)	Proxy indicators (current value as a proxy, with no reflection of sustainability)
Fishing: fresh waters and marine	Current actual stock / population size of fish in commercial use (estimated) Reproduction rate of the fish in commercial use (estimated)	Size of catch (current) Number of fish species in commercial use (current)	(Market) value / value added1 of catch (sustainable) Number of jobs / employment / businesses / income	Size / value of catch (current) Number / % of fish and other species in commercial use

Concrete visions / signals / tools / initiatives: national

ES Stock – Flow – Value Biodiversity

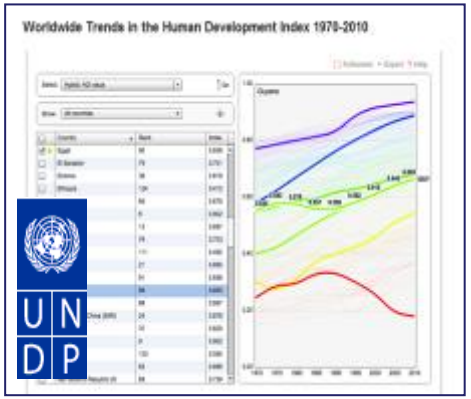
European Environment Agency

UNEP

OECD

Natural Capital Accounting (NCA):
Ecosystem accounts (EA) & System of Integrated Environmental and Economic Accounting (SEEA)

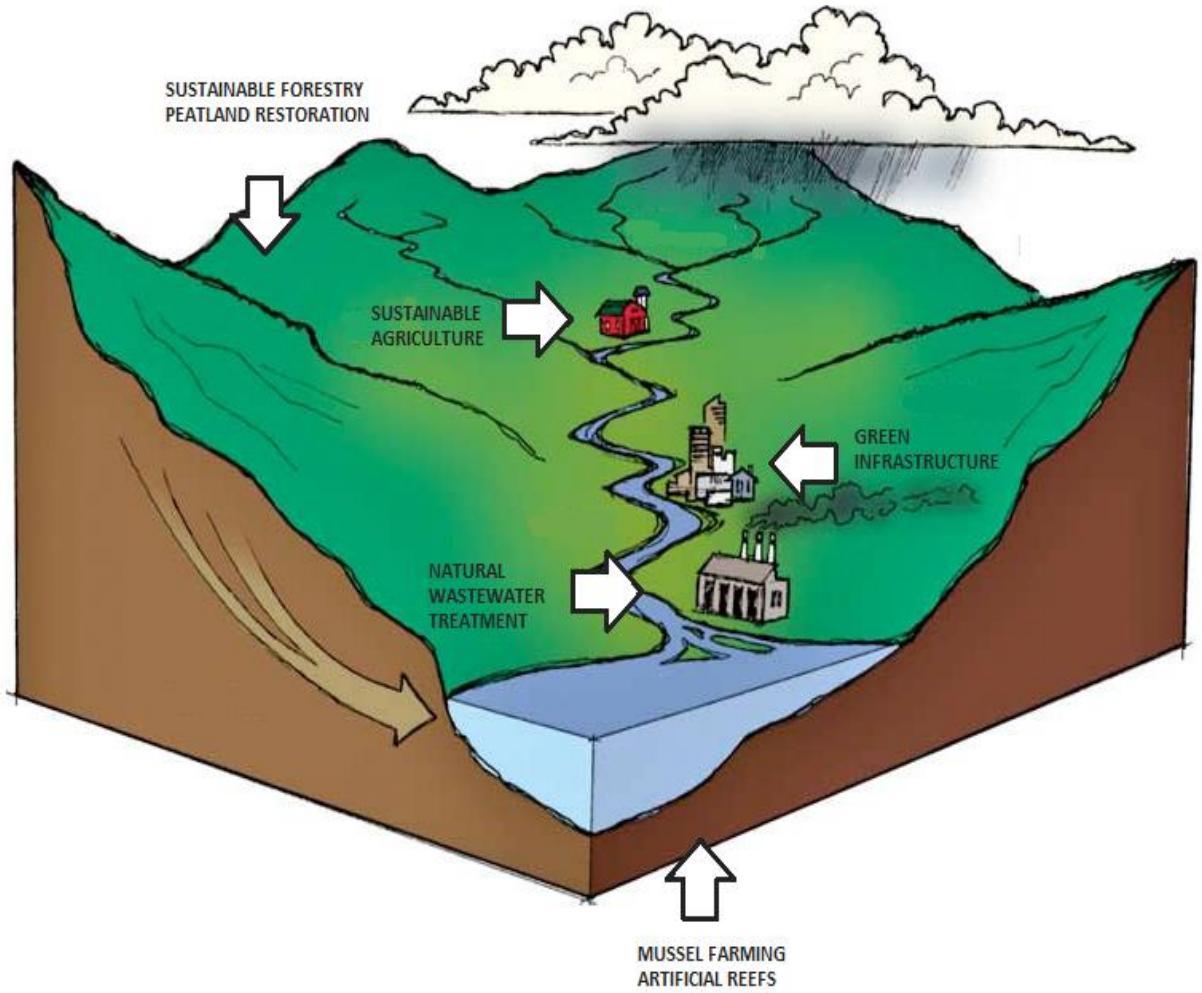
Beyond GDP



A bundle of greener macroeconomic & societal indicators

Concrete visions / signals / tools / initiatives: regional

Picture © SYKE kuvapankki R. Lumiaro



Example: a broader vision for managing Baltic Sea water resources

- From measuring impacts to finding effective bundles of solutions
- Innovative new means based on ES knowledge
- Looking beyond the immediate coastal zone

Source: D'Amato and Kettunen (2013) Potential for PES schemes in Finland, developed in the context of TEEB Finland (to be published)

Concrete visions / signals / tools / initiatives: local

Picture © SYKE kuvapankki R. Lumiaro

PES schemes: inc. mussel farming for water quality

Investment in green infrastructure: inc. coastal wetland restoration

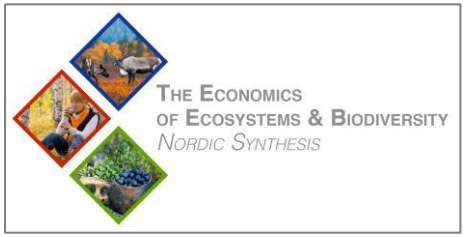
Sustainable business ideas: inc. algae or reed based biofuels

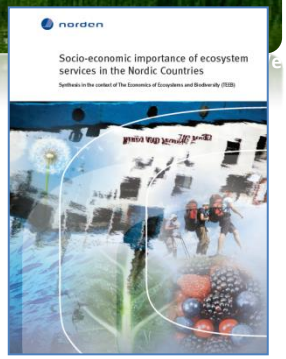
Conclusions

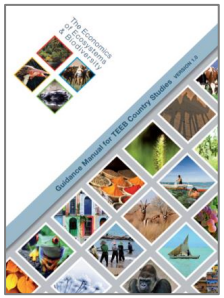
- **Key principles:**
  - Recognise – demonstrate – capture
  - Qualitative – quantitative – monetary
- **No valuation for valuation's sake – define your purpose**
- **Call for more comprehensive vision for Baltic Sea ES, supported by solution-oriented valuations**

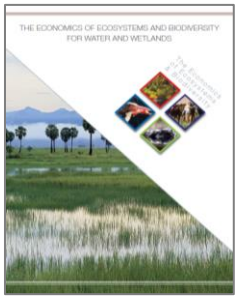
Further information

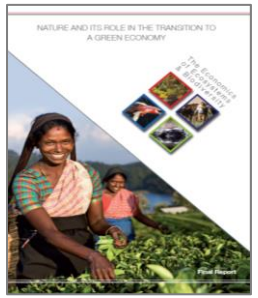
- The Economics of Ecosystems and Biodiversity (TEEB) (2008 -)
- Kettunen et al. (2012) TEEB Nordic
- Guidance Manual for TEEB Country Studies (2013)
- TEEB Water and Wetlands (2013)
- TEEB Green Economy (2012)
- TEEB Finland (2012 – 2014)
- Kettunen & ten Brink (2013) Social and Economic Benefits of Protected Areas - An Assessment Guide

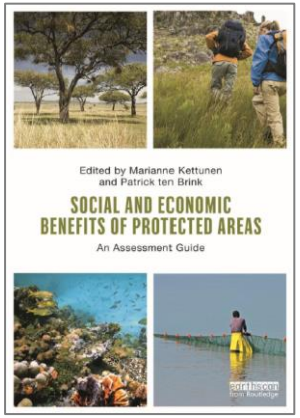












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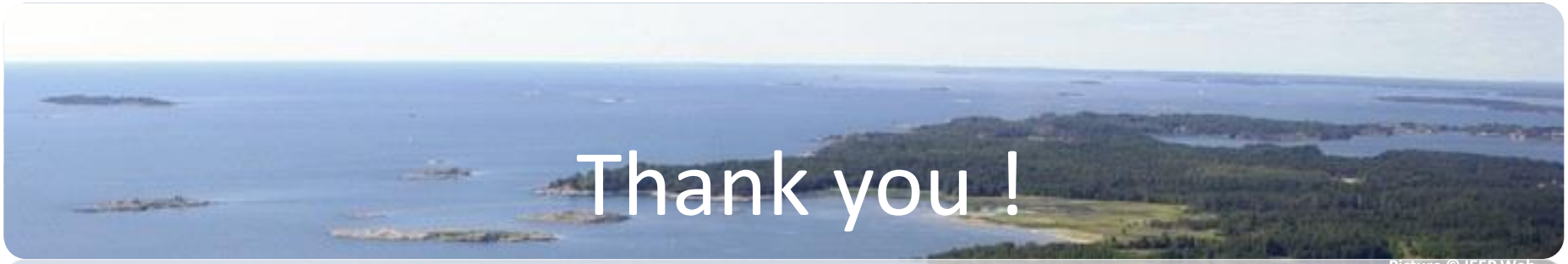

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