



Integrated valuation of ecosystem services

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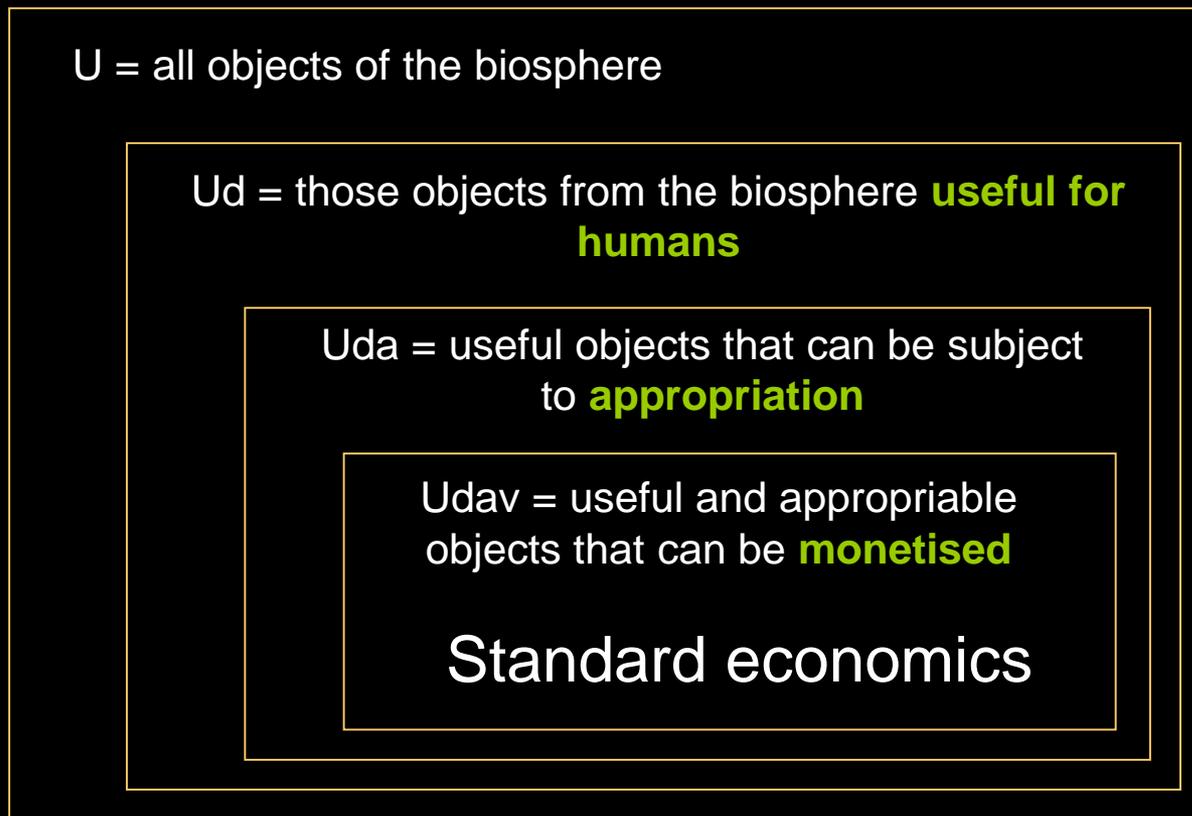
Norwegian Institute of Nature Research - NINA
Institute of Environmental Science and Technology, Environmental Change Institute



Ecosystems and their services: building the knowledge base for European assessments
European Environment Agency, Copenhagen, Denmark, 01 October 2014

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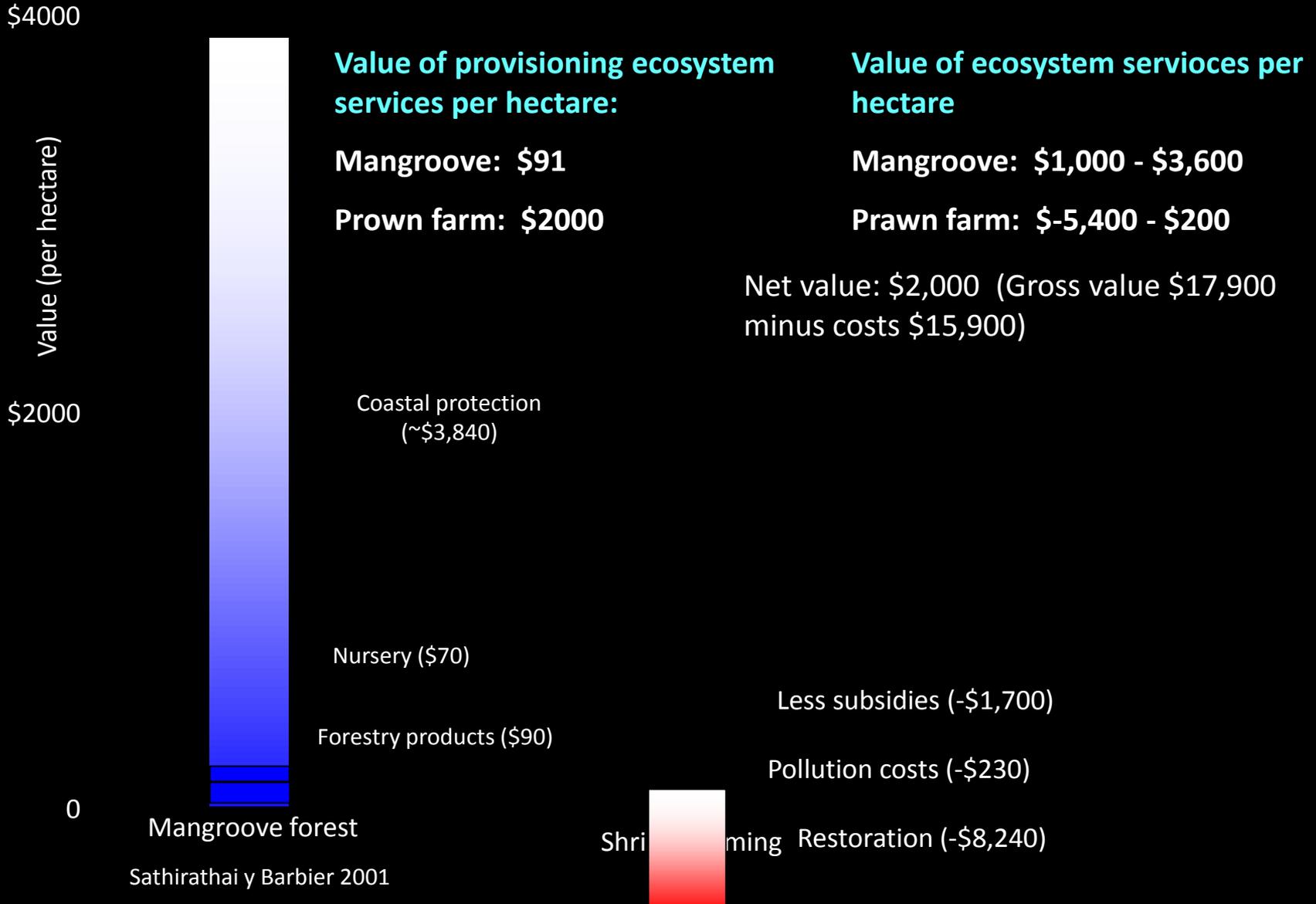
The scope of conventional economic analysis: the COMMODITY



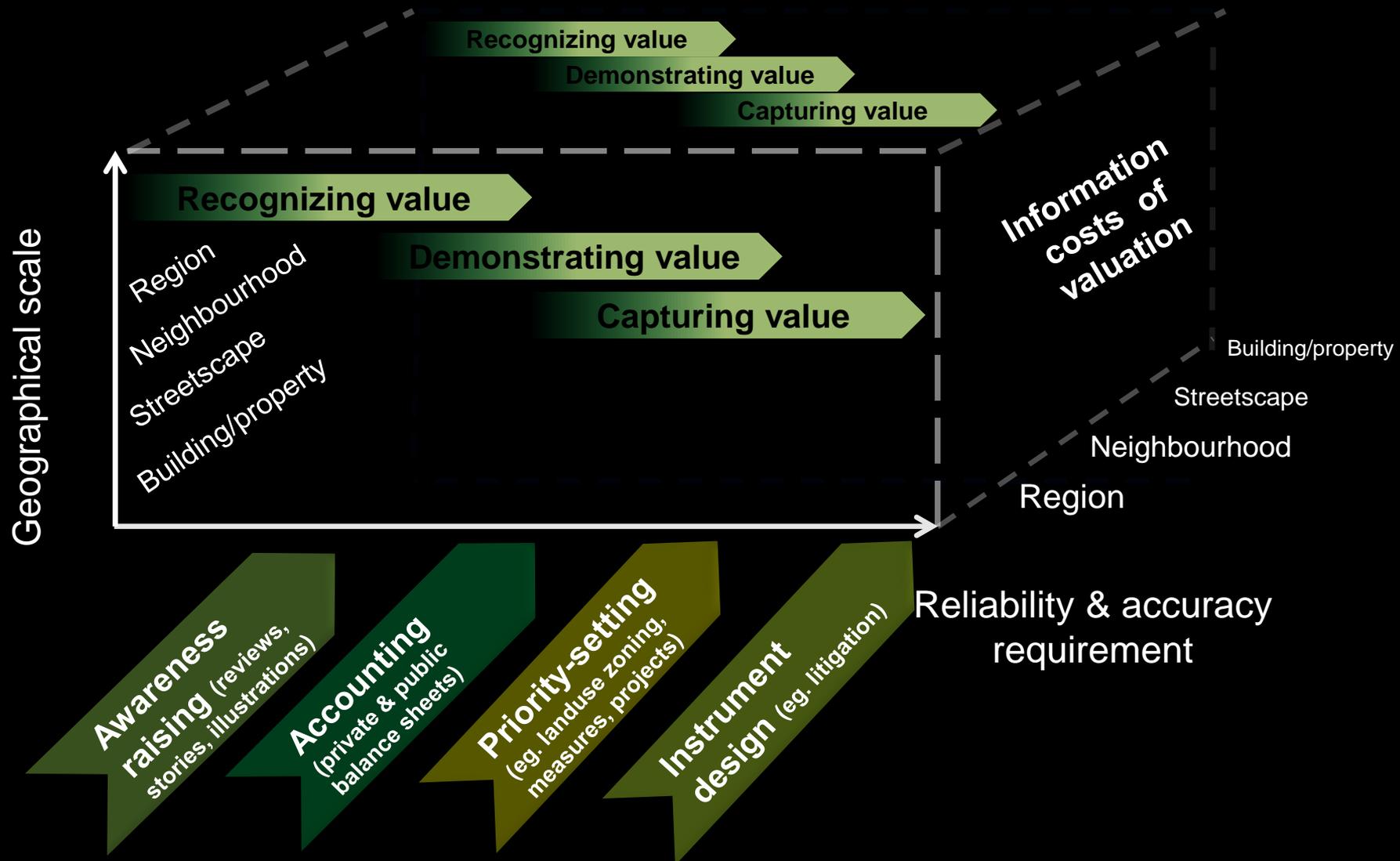
Conventional economics leaves most **ecosystem services** outside its scope of analysis

Proposed solution: get the prices right and set up economic instruments

Integrated valuation of ecosystem services



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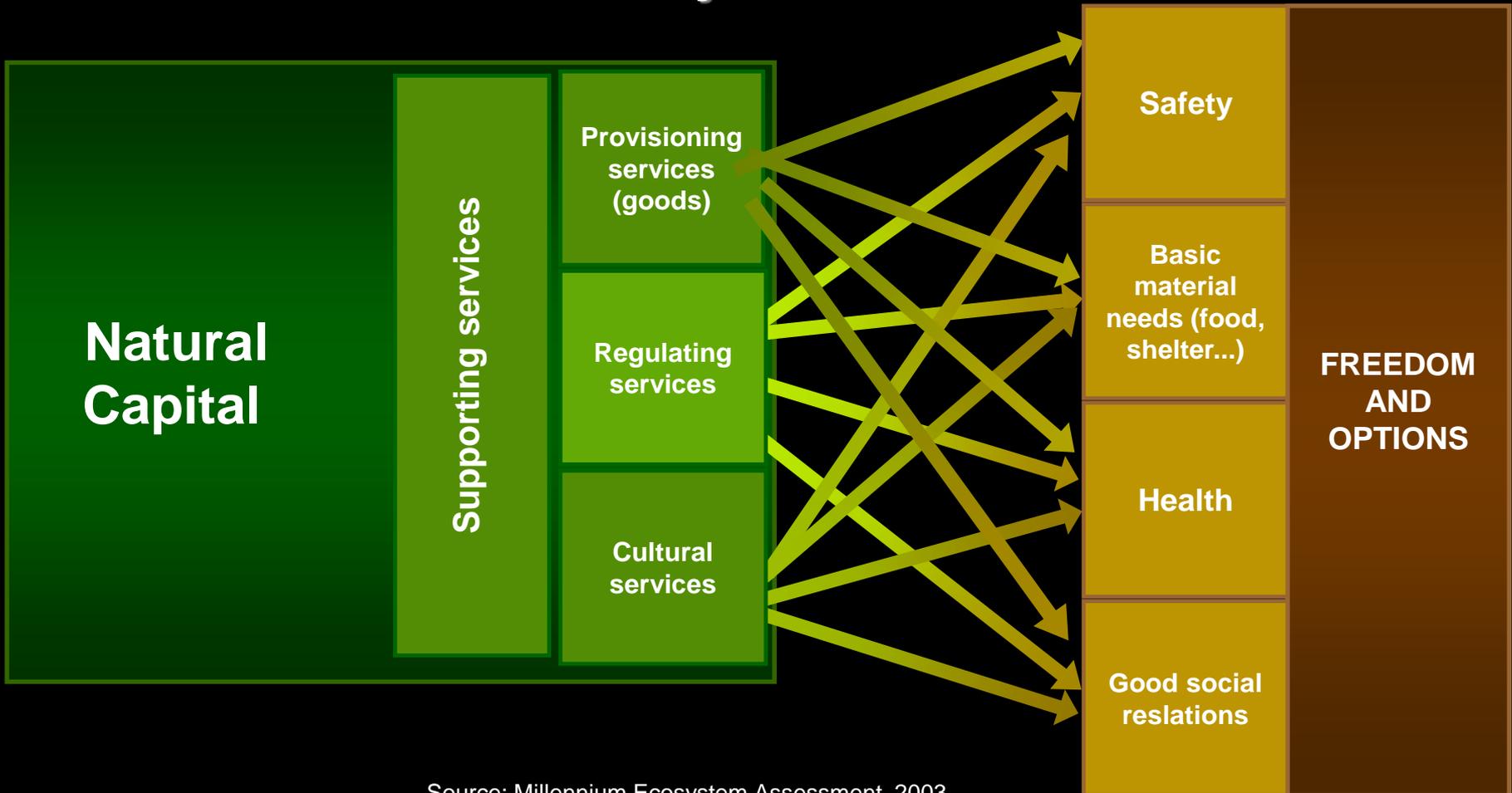
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Recognizing value

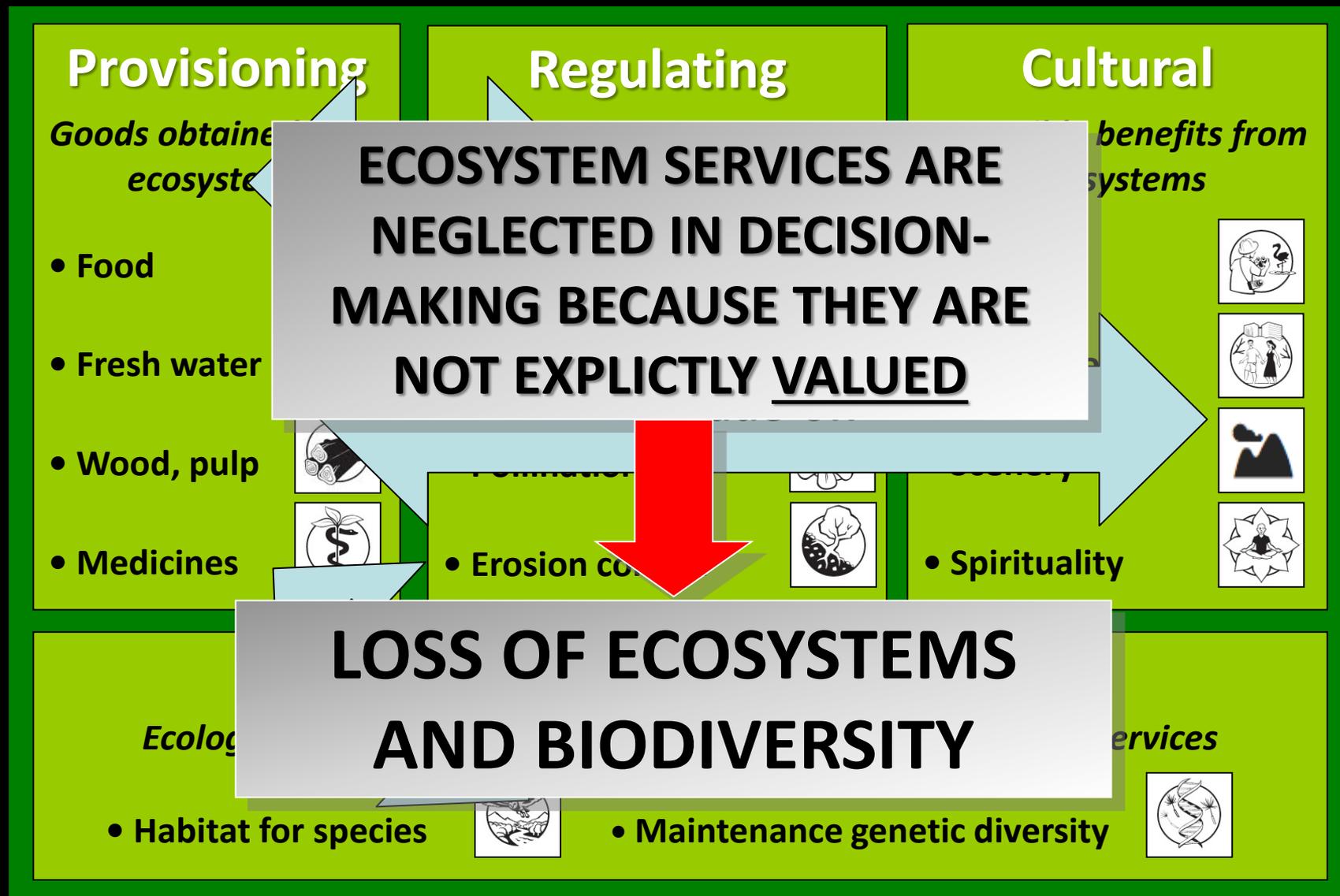
ECOSYSTEM SERVICES:

'benefits human obtain from ecosystems'

HUMAN WELL-BEING COMPONENTS



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Demonstrating value

The Economics of Ecosystems & Biodiversity (TEEB)



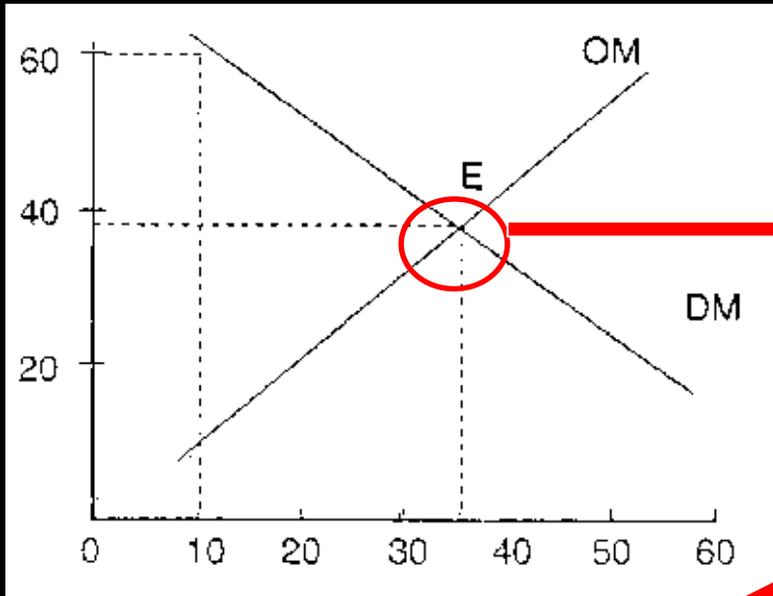
“Potsdam Initiative – Biological Diversity 2010”

Assessment of economic costs of inaction in relation to global biodiversity loss

Global study on the economic benefits of biodiversity and ecosystem services and the costs derived from their loss

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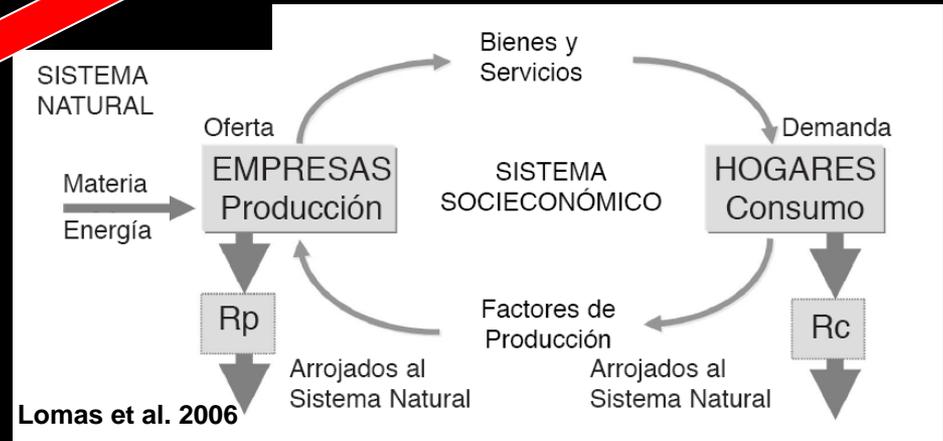
Demonstrating value



PRICE AS THE BEST
INDICATOR OF MARKET
VALUE

**BUT... MOST ECOSYSTEM
SERVICES LACK MARKETS
AND HAVE NO PRICE**

**DOES THIS MEAN
THAT THEY DO NOT
HAVE VALUE?**



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Demonstrating value



**“A cynic is a man who
knows the price of
everything and the value
of nothing”**

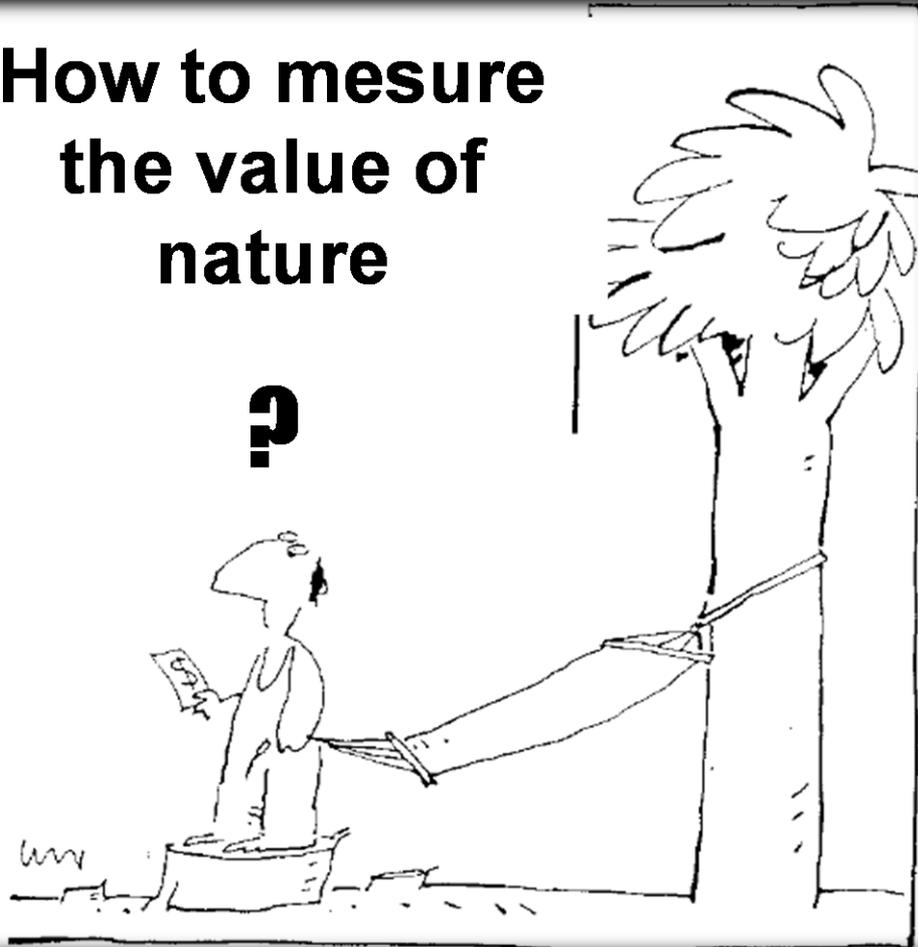
**Lord Darlington, in Oscar Wilde’s
‘Lady Windermere’**

(1854-1900)

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Demonstrating value

How to measure the value of nature



- Within the discourse about ES 'value' is easily misread as merely denoting monetary value
- Oxford Dictionary defines 'value' as *"the regard that something is held to deserve; the importance, worth, or usefulness of something"*. *"[one's judgment of what is important in life]"*.
- Valuation is about eliciting the importance of things: multiple valuation languages needed

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Demonstrating value

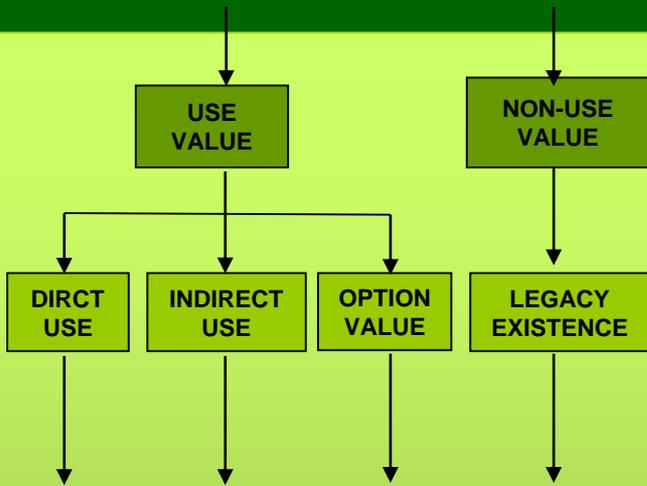
CONCEPTUAL
APPROACH

VALUATION /
ACCOUNTING SUBJECT

METHODS / TOOLS /
MODELS

Preference-based approaches

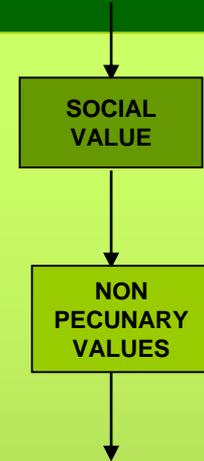
Market-based / monetary / exchange value



Market analysis. Cost methods
Market analysis. Cost methods. Hedonic pricing. Contingent valuation. Contingent election
Replacement and avoided cost methods
Contingent valuation. Contingent election
Contingent valuation
Contingent election

MARKET THEORY /
CHREMATISTICS

Social valuation

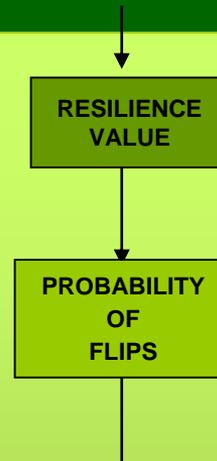


Group and deliberative valuation
Joint analysis

SOCIAL &
POLITICAL
SCIENCE

Biophysical approaches

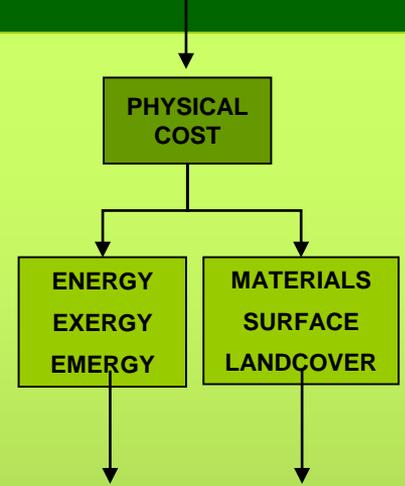
Insurance value



Regime shift analysis
Joint analysis

RESILIENCE
THERY

Physical / Entropic cost



Embodied Energy Analysis
Exergy analysis
Emergy analysis

Material flow analysis
Input-Output
Ecological footprint
Land-cover flow

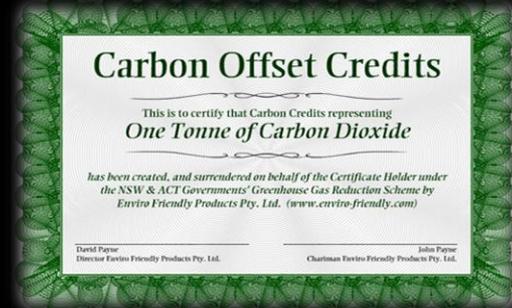
INDUSTRIAL ECOLOGY
/ THERMODYNAMICS

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Capturing value



MES:
Polluter pays principle



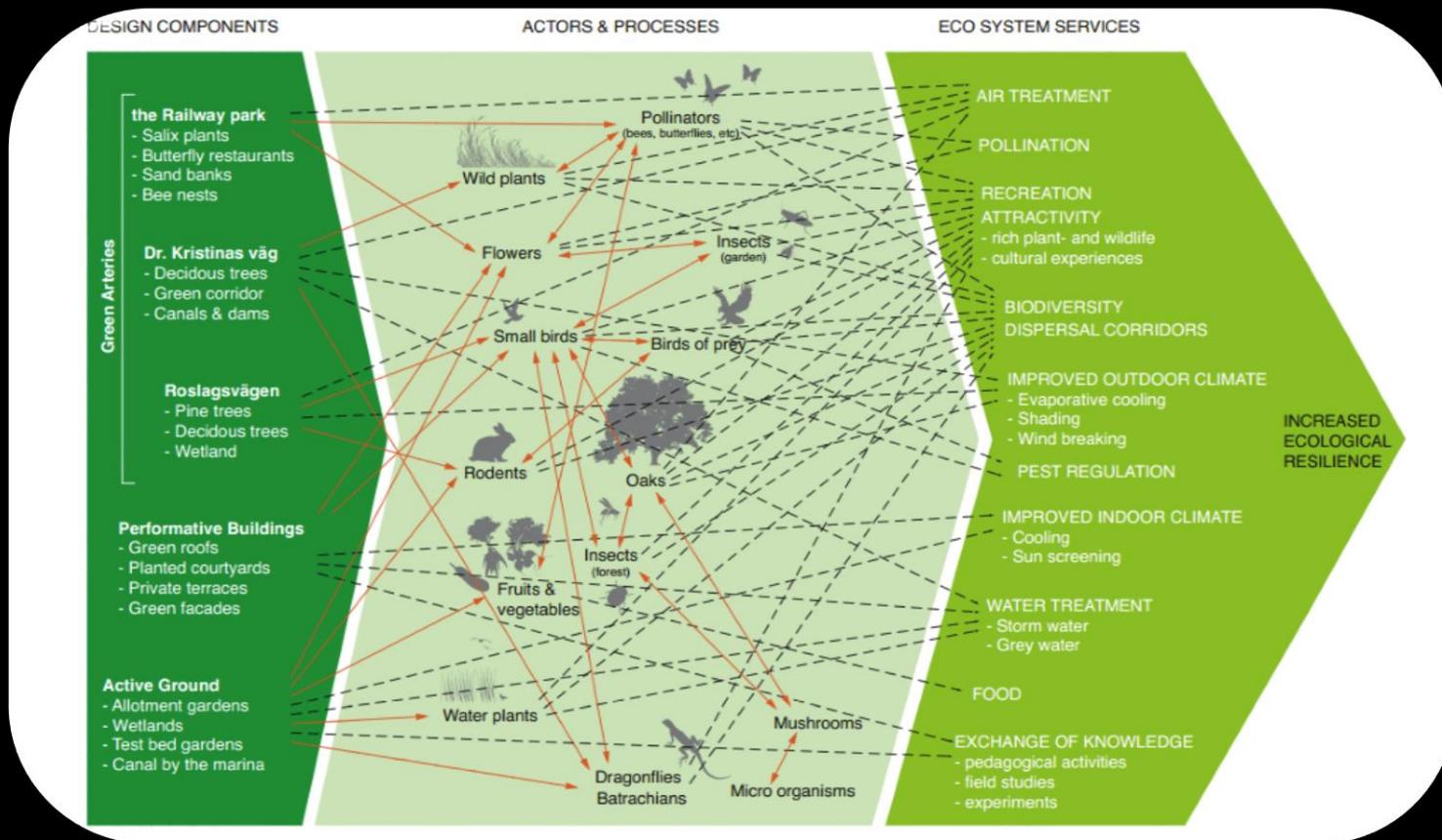
PES:
Stewards earn principle



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Capturing value

- **Biophysical limits:** uncooperative nature of environmental commodities for being non-fungible or separable into discrete tradable units



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Capturing value

- **Institutional limits:** Public good nature of most ES makes exclusion technically difficult and economically expensive

		RIVALRY	
		Low	High
EXCLUDABILITY	Difficult	Public	CPRs
	Easy	Club	Private

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Capturing value

- **Sociocultural limits:** cultural barriers to extend markets to domains traditionally been governed by non-market norms
 - Ecologists (& others) react to commodification of environmental policy: Reluctance to the utilitarian drift in biodiversity policy + restrictions in access to public and common goods
 - Uncertainty with regard to behavioral and motivational changes (value crowding effects): frame shifting, fines >> prices, indulgencies...



Food for thought

- **Value means importance.** Understanding “the value” of ES&B involves acknowledging and eliciting **incommensurable** values, & metrics and valuation techniques
- Efforts devoted to economic valuation need serious reallocation: from assessment of **hypothetical values** to **real management costs**: from individual WPT to allocation of public budgets; from the ES in the wilderness to commodity chains
- Used beyond its appropriate context of applicability, it leads to the **tragedy of well intentioned valuation**, paving the way discursively and sometimes technically for undesirable commodification of ecosystem services
- To value or not to value? That is not the question. Necessity to demarcate the domain of money and markets in environment policy. Then we can decide which **externalities to internalize, which internalities to externalize**
- Limited scope for MBIs due to biophysical, institutional and cultural barriers. Governing ES with common / public good character involve **int. cooperation** and **public regulation**

Funding

Operationalising Natural Capital and Ecosystem Services (OpenNESS)

<http://www.openness-project.eu/>



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