

Identifying and categorising ecosystem services – from initial concepts to an accounting framework

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Overview

- Why do we need a system to categorise ecosystem services?
- What are the options and constraints?
- What are the challenges?
- What are the next steps?

Why do we need a system to categories ecosystem services?

- There is an accounting need....
 - *Integrated environmental and economic accounts describe a socio-ecological system, we are not just bolting the environment on to a set of economic accounts.....*
- There is also a more general science and policy need...
 - *What ever accounting solutions we devise, they have to have some resonance in wider scientific and policy debates otherwise they will not have credibility and we will not be able to unlock the value of the information that science can provide....*

What are the options and constraints?

Section	Division	Group
Provisioning	Nutrition	Biomass
		Water
	Materials	Biomass
		Water
	Energy	Biomass-based energy sources Mechanical energy
	Regulation & Maintenance	Mediation of waste, toxics and other nuisances
Mediation by ecosystems		
Mediation of flows		Mass flows
		Liquid flows
		Gaseous / air flows
Maintenance of physical, chemical, biological conditions		Lifecycle maintenance, habitat and gene pool protection
		Pest and disease control
		Soil formation and composition
		Water conditions
		Atmospheric composition and climate regulation

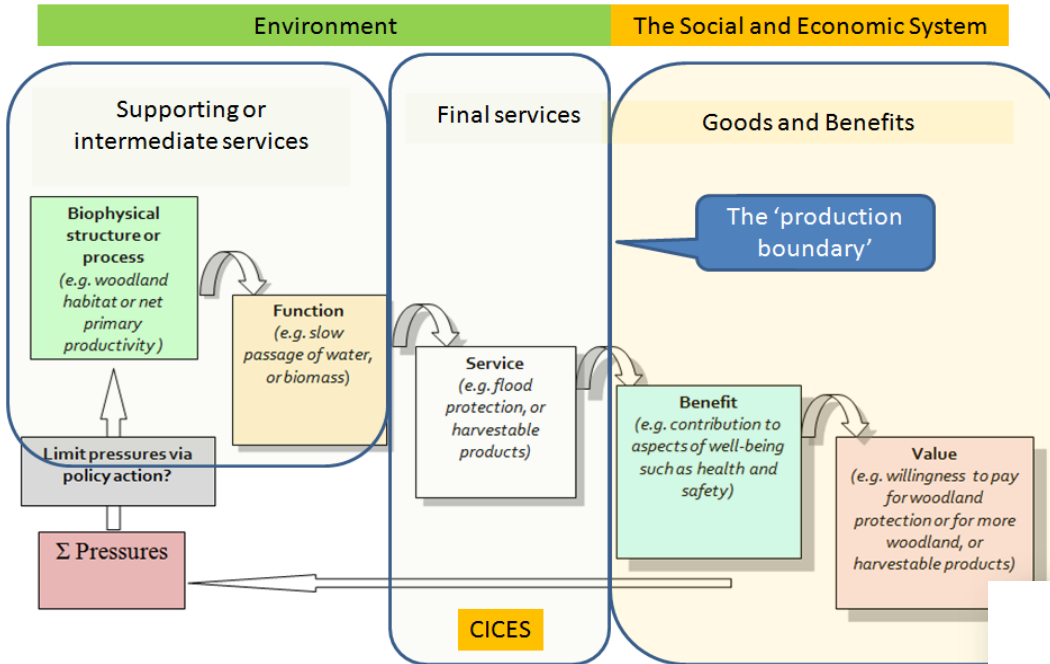
MA	TEEB
Food	Food
Water	Water
Fibre, Timber, Ornamental, Biochemical Genetic materials	Raw materials, medicinal resources Genetic materials
Water purification and water treatment, air quality regulation	Waste treatment (water purification), air quality regulation
Erosion regulation	Erosion prevention
Water regulation	Regulation of water flows, regulation of extreme events
Pollination	Pollination
Pest regulation	Biological control
Disease regulation	
Soil formation (supporting services)	Maintenance of soil fertility
Atmospheric regulation	
Air quality regulation	Air quality regulation

What are the options and constraints?

Section	Division	Group
<i>This column lists the three main categories of ecosystem services</i>	<i>This column divides section categories into main types of output or process.</i>	<i>The group level splits division categories by biological, physical or cultural type or process.</i>
Cultural	Physical and intellectual interactions with biota, ecosystems, and land-/seascapes [environmental settings]	Physical and experiential interactions
		Intellectual and representative interactions
	Spiritual, symbolic and other interactions with biota, ecosystems, and land-/seascapes [environmental settings]	Spiritual and/or emblematic
		Other cultural outputs

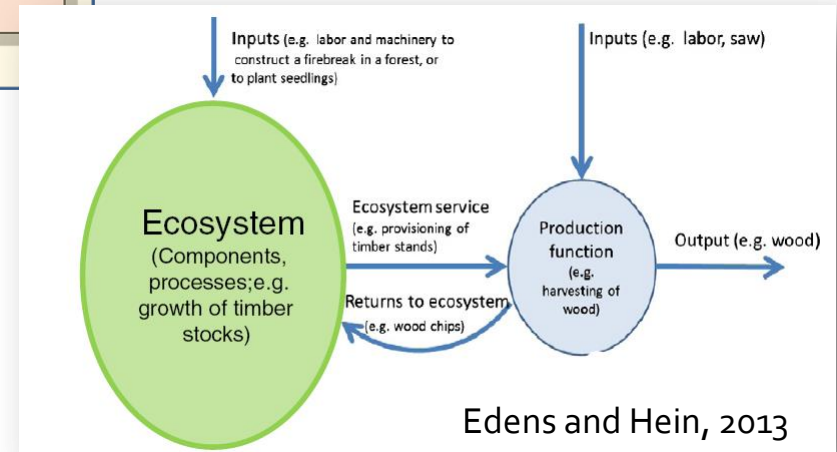
MA	TEEB
<i>MA provides a classification that is globally recognised and used in sub global assessments.</i>	<i>TEEB provides an updated classification, based on the MA, which is used in on-going national TEEB studies across Europe.</i>
Recreation and ecotourism	Recreation and tourism
Knowledge systems and educational values, cultural diversity, aesthetic values	Inspiration for culture, art and design, aesthetic information
Spiritual and religious values	Information and cognitive development

What are the challenges?



Haines-Young and Potschin, 2013

Evolving conceptual frameworks



Edens and Hein, 2013

What are the next steps?

- The task is to go ... *'from concept to an accounting framework'*
- ES are not something easily measured across the board, even if we can agree terminology
- We need to think about the underpinning functionality as well as final services
 - *Stocks and flows?*
- We need to think about benefits and beneficiaries as well as final ecosystem services
- We need to think about geography
- **We need to think about what we need in order to take decisions based on these accounts....**