



សិក្ខាសាលាបណ្តុះបណ្តាលបណ្តាញផ្លូវហោះហើរសត្វស្លាបថ្នាក់តំបន់ស្តីពី

REGIONAL FLYWAY INITIATIVE TRAINING SERIES



ការវាយតម្លៃសេវាកម្មអេកូឡូស៊ីតំបន់ដីសើមនៅកម្ពុជា Wetland Ecosystem Services Cambodia

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13-14 September 2023



INTRODUCTION TO ECOSYSTEM SERVICES: DEFINITIONS AND CONCEPTS

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Definitions of ecosystem services

The conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life (Daily 1997)

The benefits people obtain from ecosystems (Millennium Ecosystem Assessment, 2006)

Ecosystem services are the aspects of ecosystems that actively or passively, produce human well-being (Fisher et al. 2009)

The benefits provided by ecosystems that contribute to making human life both possible and worth living (UK National Ecosystem Assessment, 2011)

The benefits obtain from ecosystems for human well-being (TESSA, 2011)

The benefits that people derive from nature (Nature Conservancy, 2015)

Ecosystem approach

What is an ecosystem?

An ecosystem is a dynamic complex of plants, animals, and microorganism communities and the non-living environment, including humans, interacting as a functional unit.

1. Vary in size;
2. Share the basic structural units;
3. Boundary should be clear where a number of discontinuities coincide e.g. in the distribution of organisms, soil types, etc.

Ecosystem approach

provides a valuable framework for analysing and acting on the linkages between people and their environment.

the *Convention of Biological Diversity (2000)* defines ecosystem approach as follows:

“The Ecosystem Approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Thus, the application of the ecosystem approach will help to reach a balance of the three objectives of the Convention: conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.”

Ecosystem approach

An approach that seeks to achieve the sustainable use of ecosystem services through these key principles:

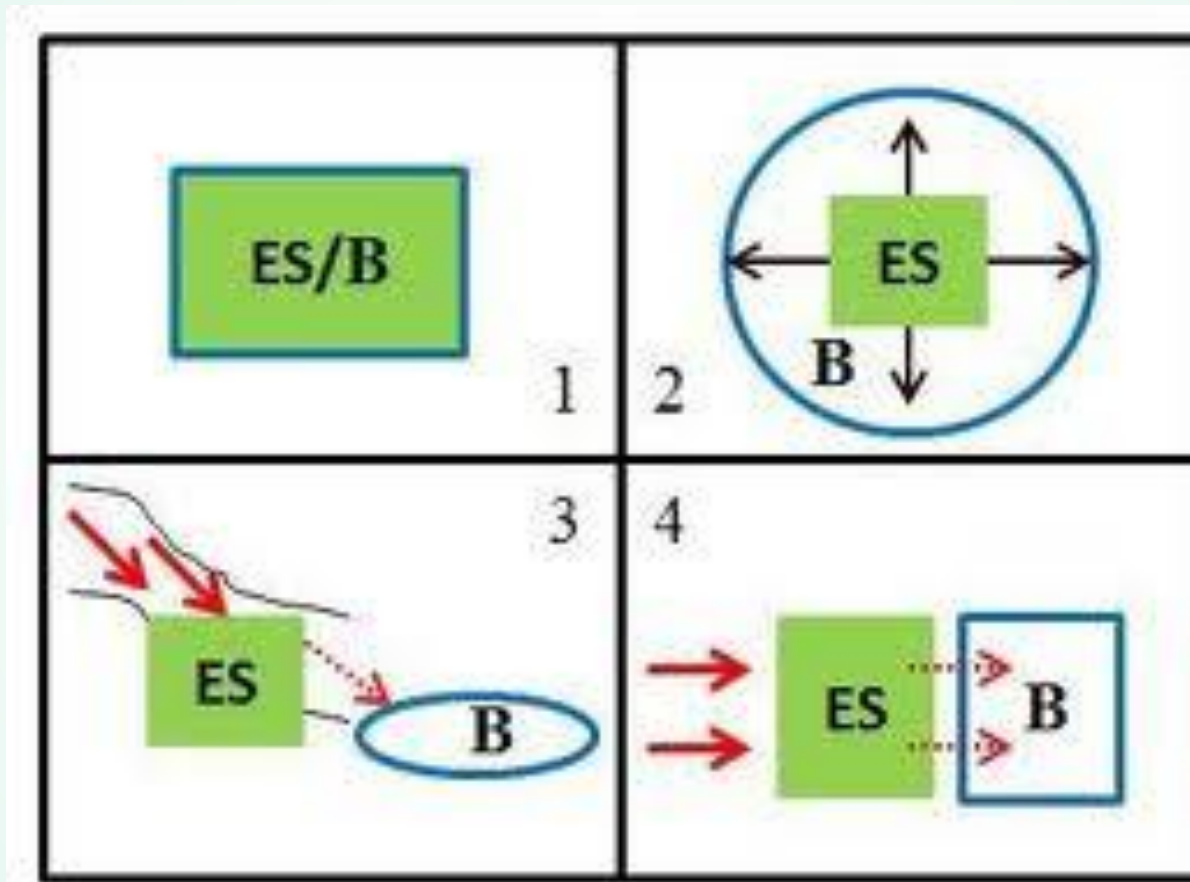
1. Management within natural limits
2. Management for the long term
3. Management at the macro and micro scales
4. Account for true value
5. Make trade-offs clear
6. Involve stakeholders in decisions

Ecosystem services: concepts

Key concepts:

1. If nobody benefits, there's no ecosystem services

Ecosystem services: key concept 1



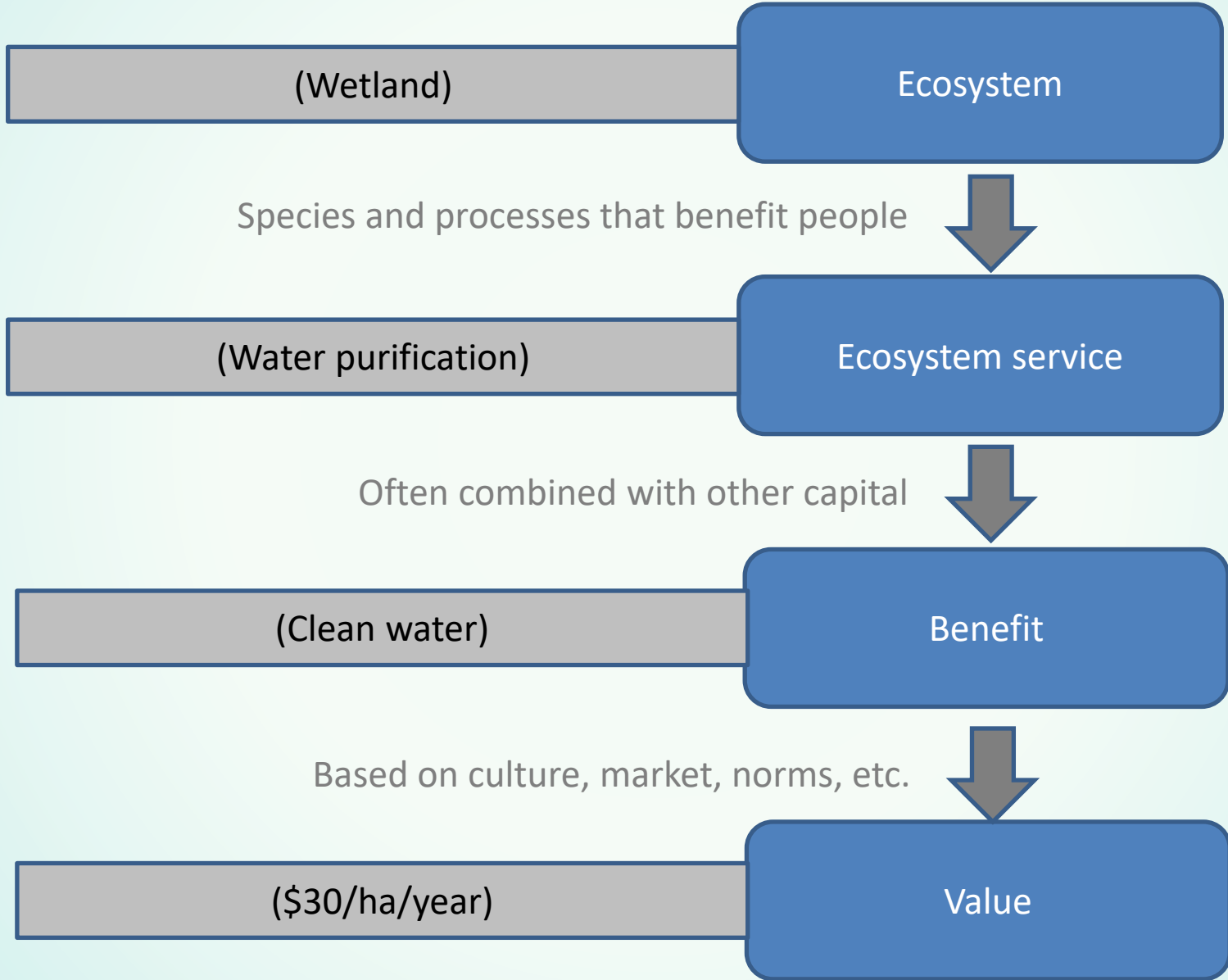
Where are the beneficiaries?

Ecosystem services: concepts

Key concepts:

1. If nobody benefits, there's no ecosystem services
2. Ecosystem services are not the ecosystem that provided them. They are what the ecosystem does

Ecosystem services: key concept 2



Ecosystem services: concepts

Key concepts:

1. If nobody benefits, there's no ecosystem services
2. Ecosystem services are not the ecosystem that provided them. They are what the ecosystem does.
3. Ecosystem services can be one of these economic goods: private good; common-pool resource; toll or club good; and public good

Ecosystem services: key concept 3

	Excludable ("I can prevent you from accessing it")	Non-excludable
Rival "If I use it, there is less for you"	Private good (fish, timber)	Common-pool resource (public grazing land)
Non-rival	Toll or club good (copyrighted information)	Public good (stable climate)

Four types of economic goods

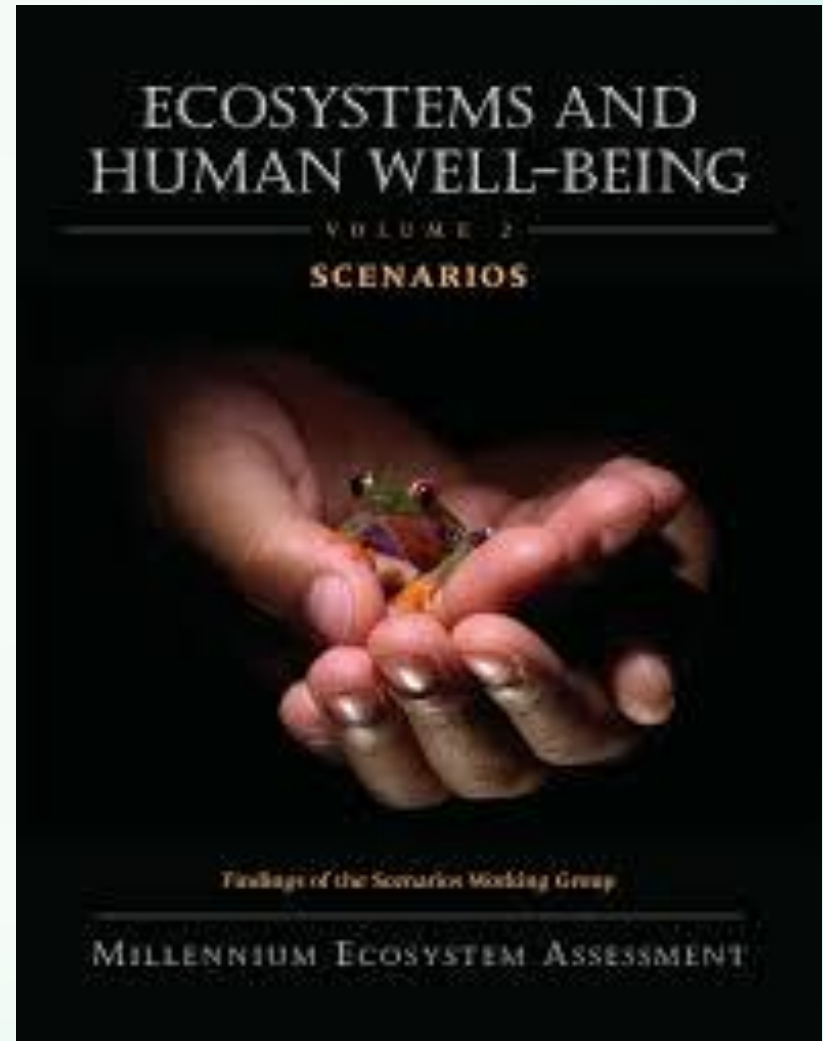
Millennium Ecosystem Assessment (MA)

First global study on the state of the natural environment

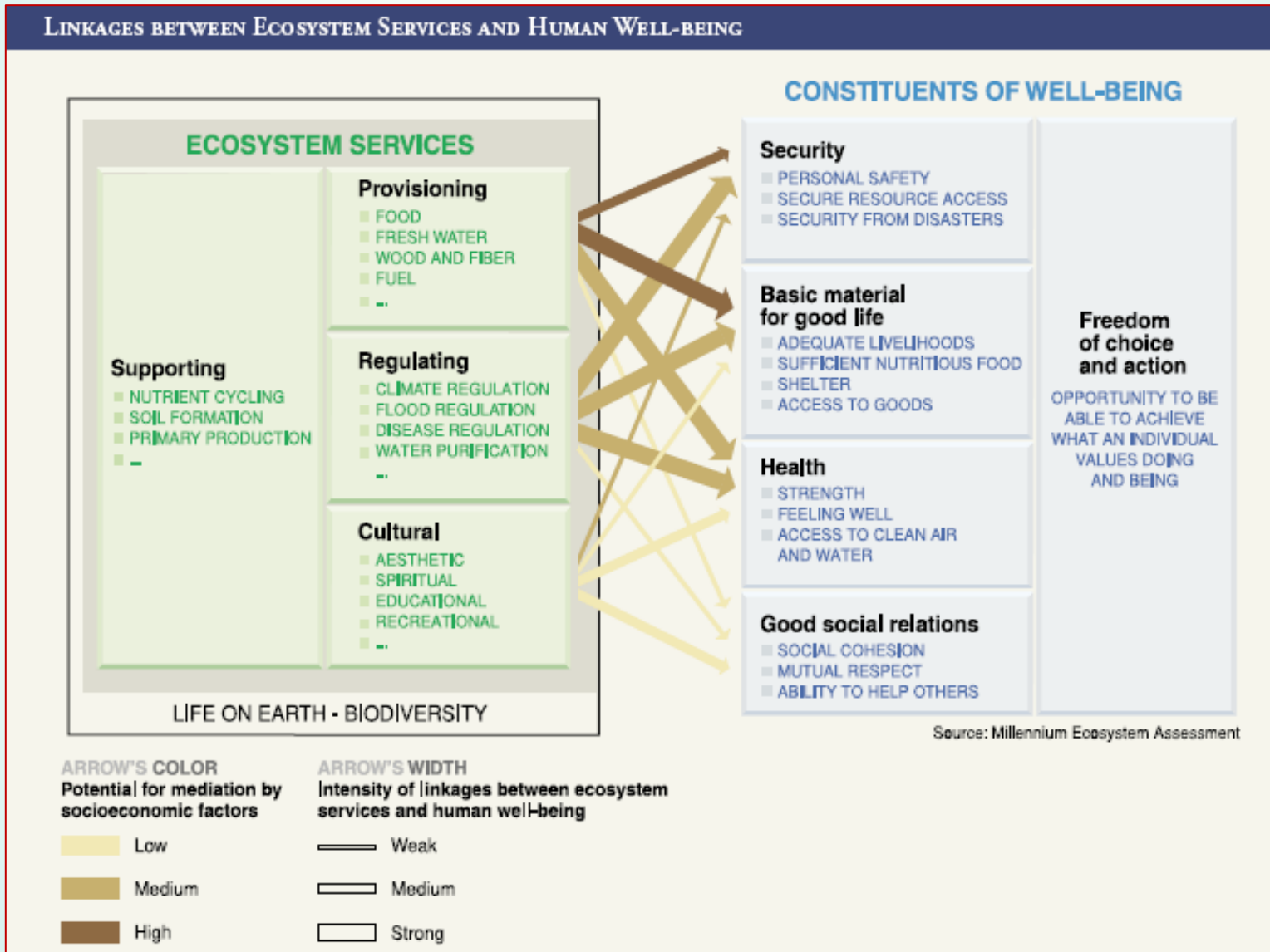
Established in 2001

MA's definition of ESs:

benefits people obtain from ecosystems



Millennium Ecosystem Assessment (MA)



ARROW'S COLOR
Potential for mediation by socioeconomic factors

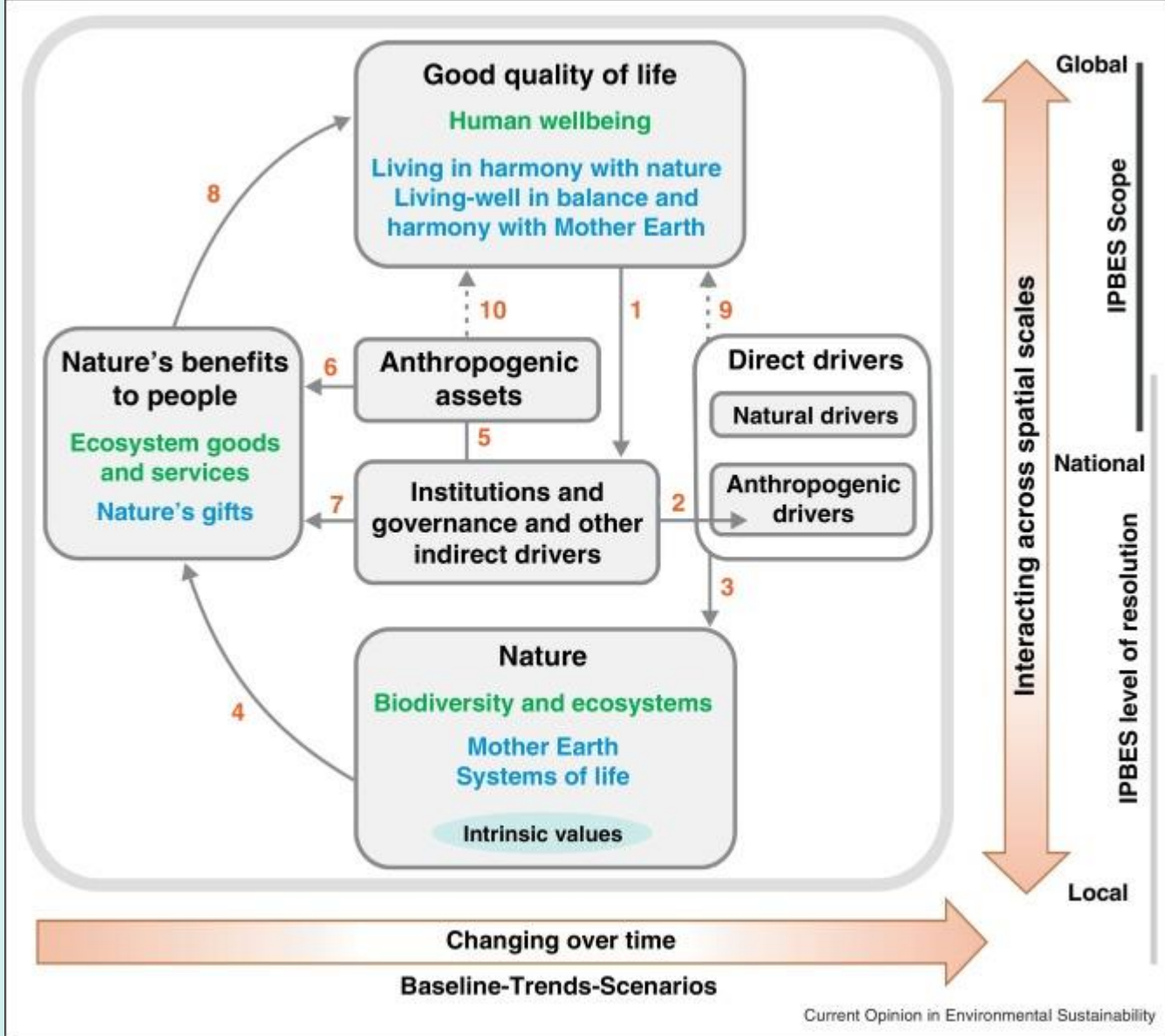
- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Nature's Contributions to People

Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES)





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VALUING NATURE

Assessing ecosystem services for better biodiversity conservation/resource management

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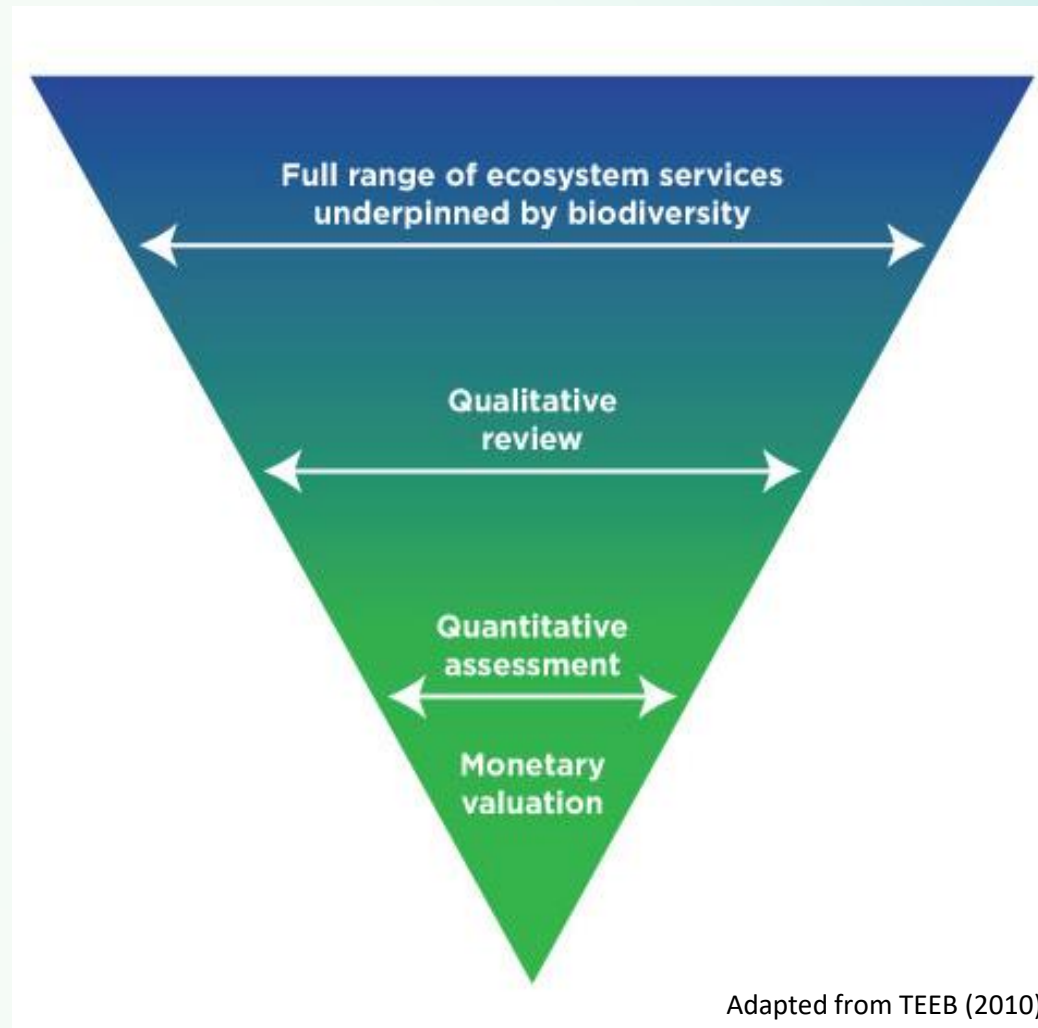
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Economic valuation of ecosystem services (ES)

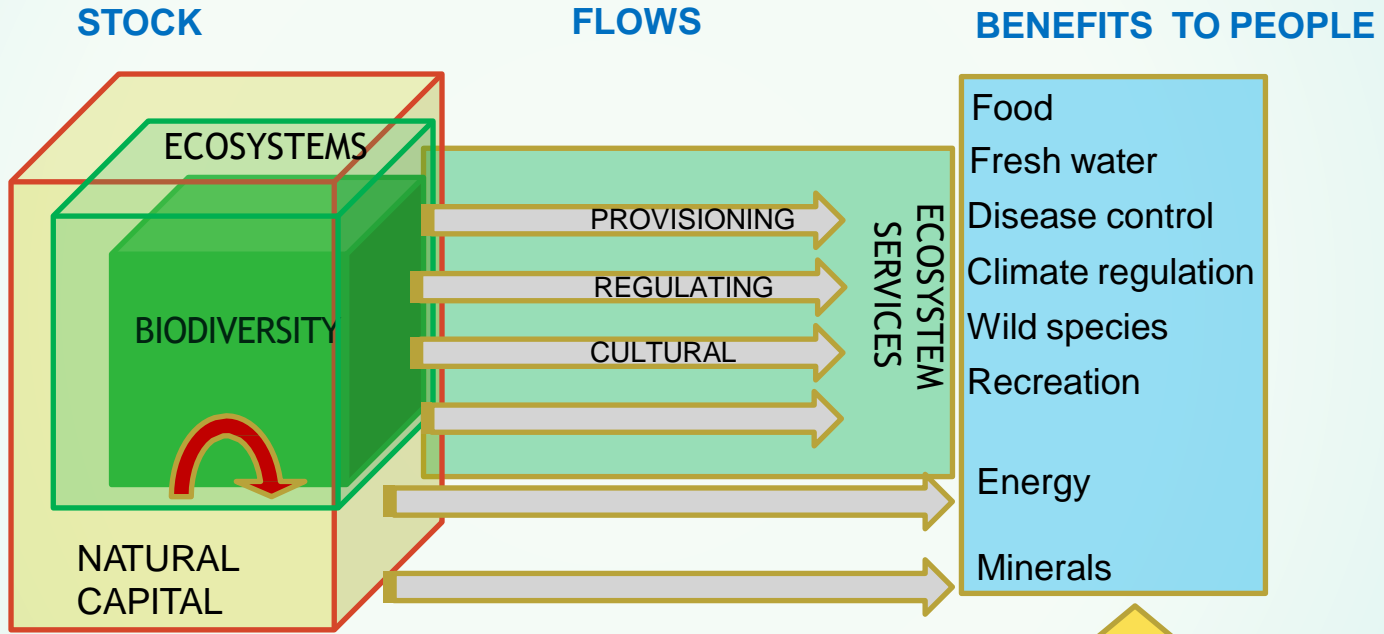
PRO: Frequently used to present ecosystem value in a policy-relevant and accessible way (leverage into decision-making)

PRO: Can use a range of methods to assess the value and relative importance of the full range of ES underpinned by biodiversity

CON: Can only capture some of the total value of ecosystems



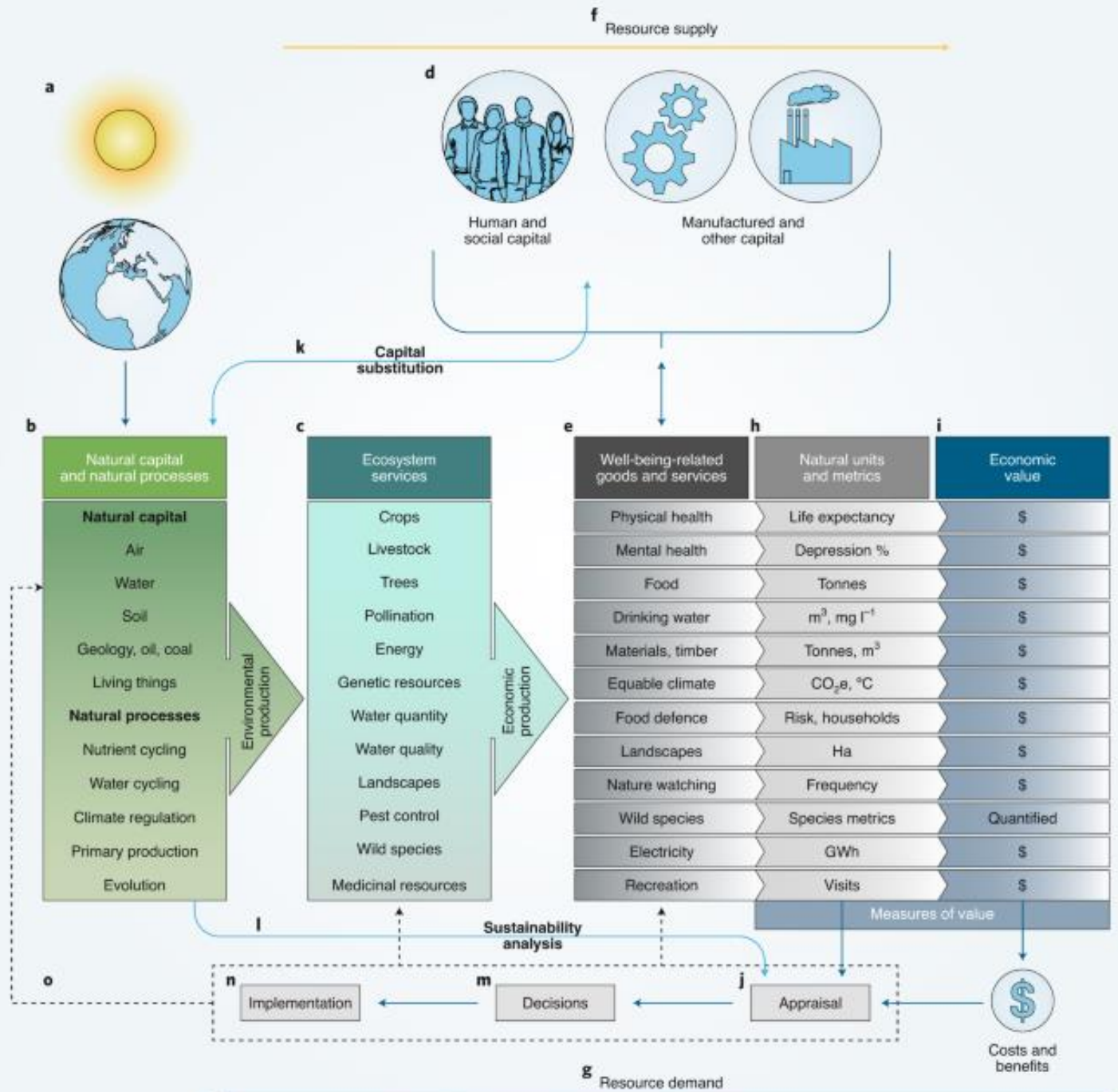
Natural capital



Natural capital is a stock, from which people derive benefits. One subset of the stock of natural capital is ecosystems, and the benefits are then called ecosystem services

Other capital inputs

Natural capital framework (Bateman and Mace, 2020)



THANK YOU