



MINISTRY OF ENVIRONMENT
AND CLIMATE CHANGE



University of
Southampton



REGIONAL FLYWAY INITIATIVE TRAINING SERIES:

Workshop on Wetland Ecosystem Services and Nature-based Solutions

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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)

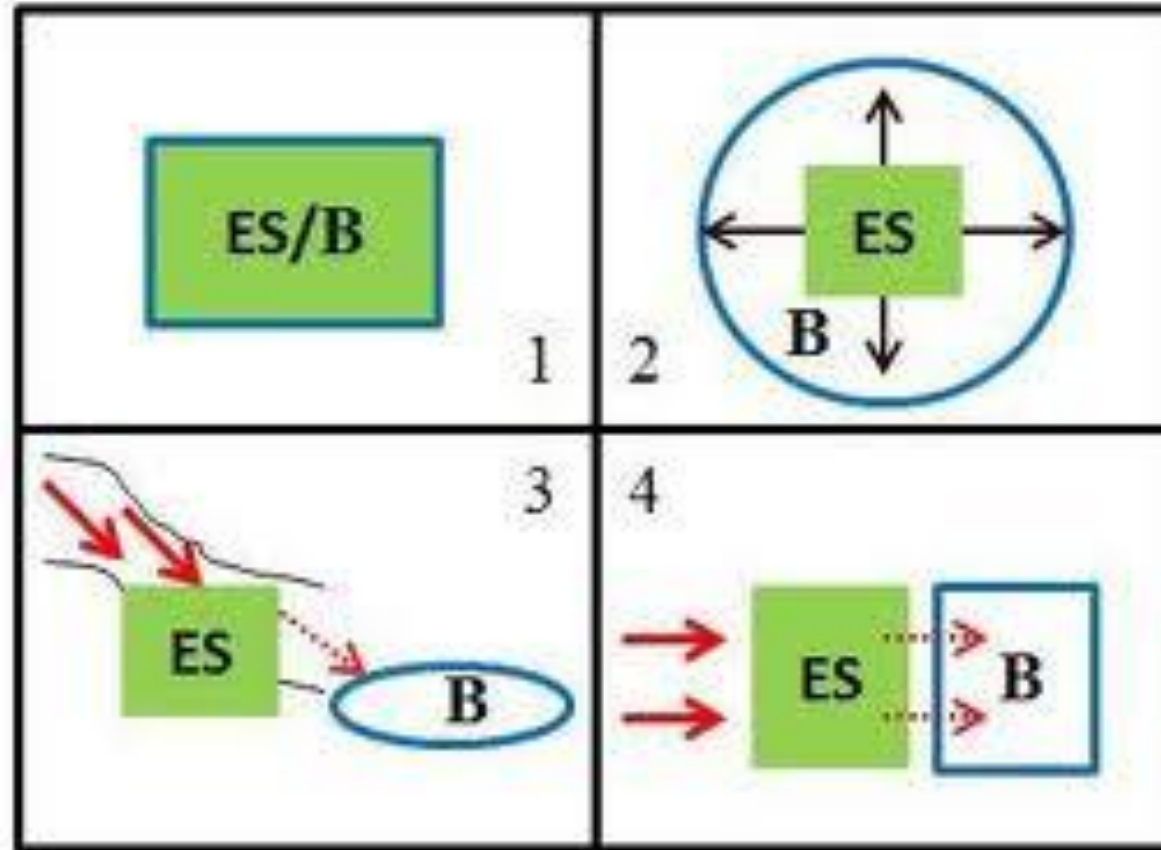
The benefits that people derive from nature (Nature Conservancy, 2015)

Ecosystem services: concepts

Key concepts:

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

Ecosystem services: key concept 1



Where are the ecosystem services (ES) produced?
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: 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

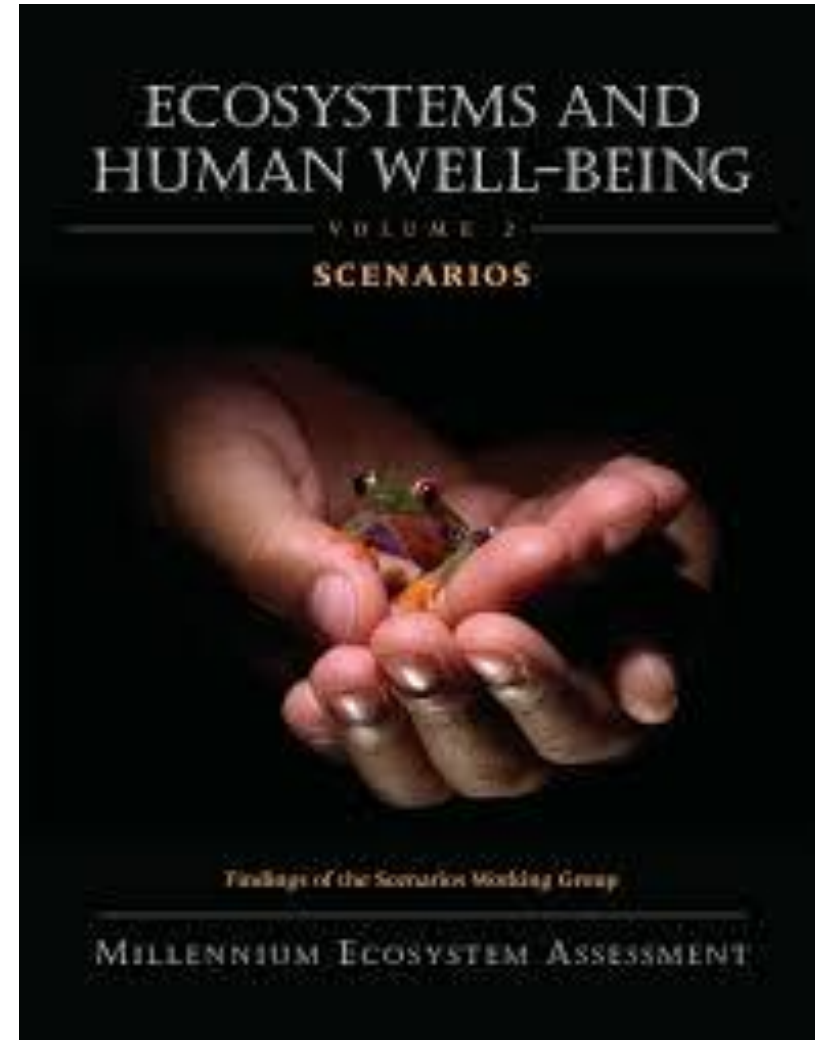
Millennium Ecosystem Assessment (MA)

First global study on the state of the natural environment

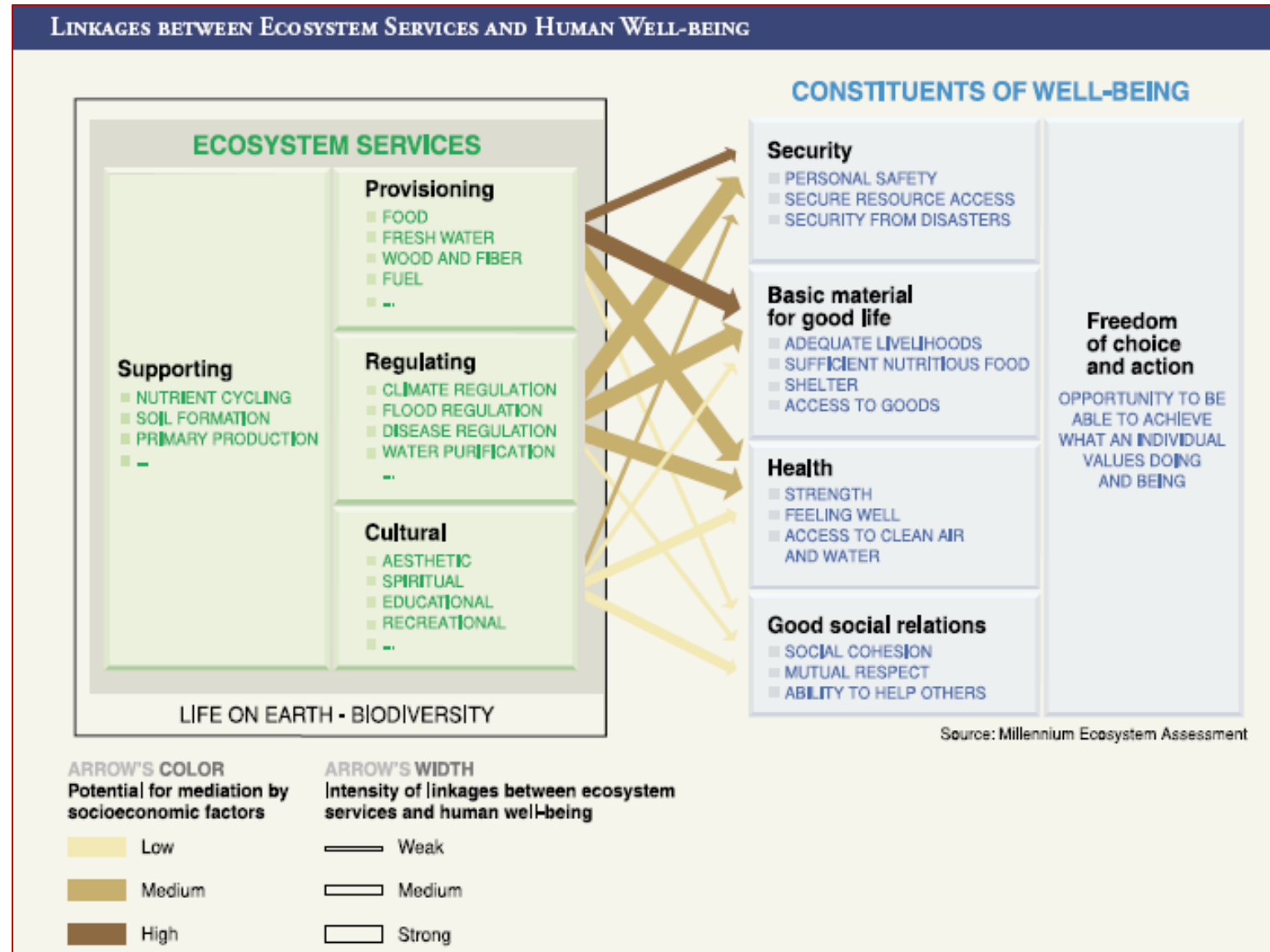
Established in 2001

MA's definition of ESs:

benefits people obtain from ecosystems



Millennium Ecosystem Assessment (MA)



Valuing Nature

Assessing ecosystem services for better biodiversity
conservation/resource management

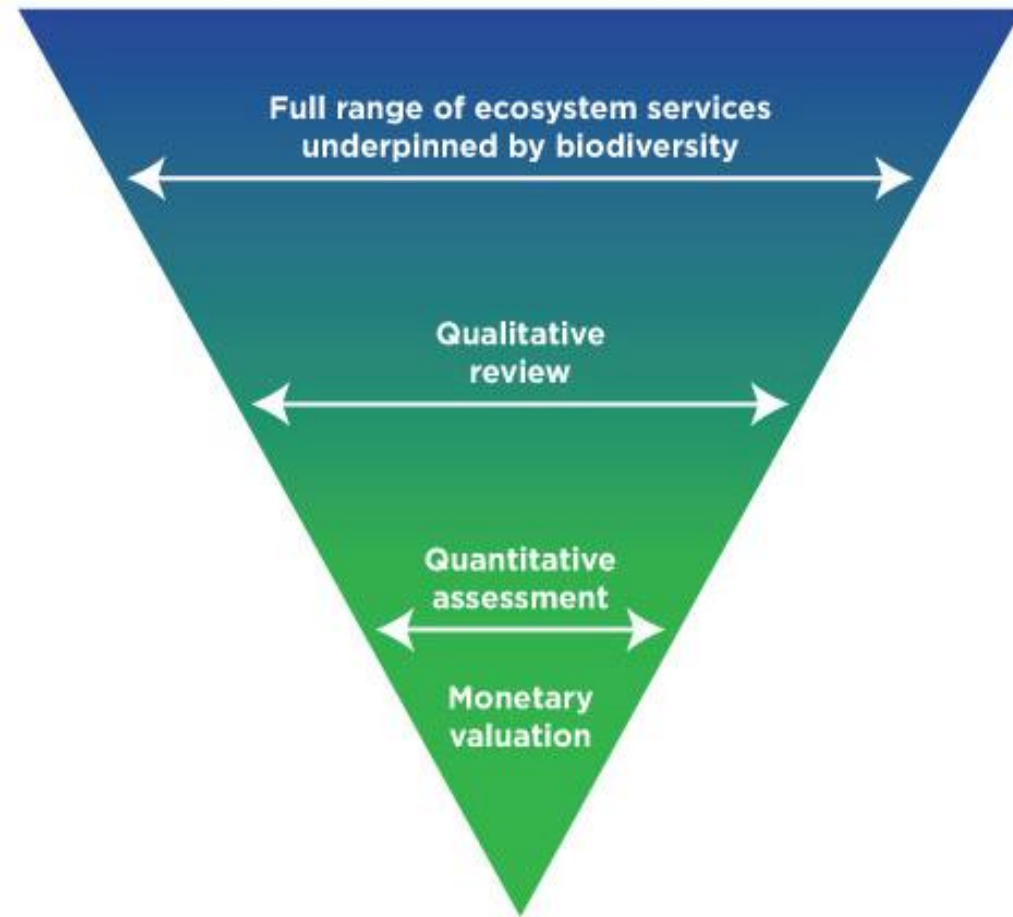
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Economic valuation of ecosystem services (ES)

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

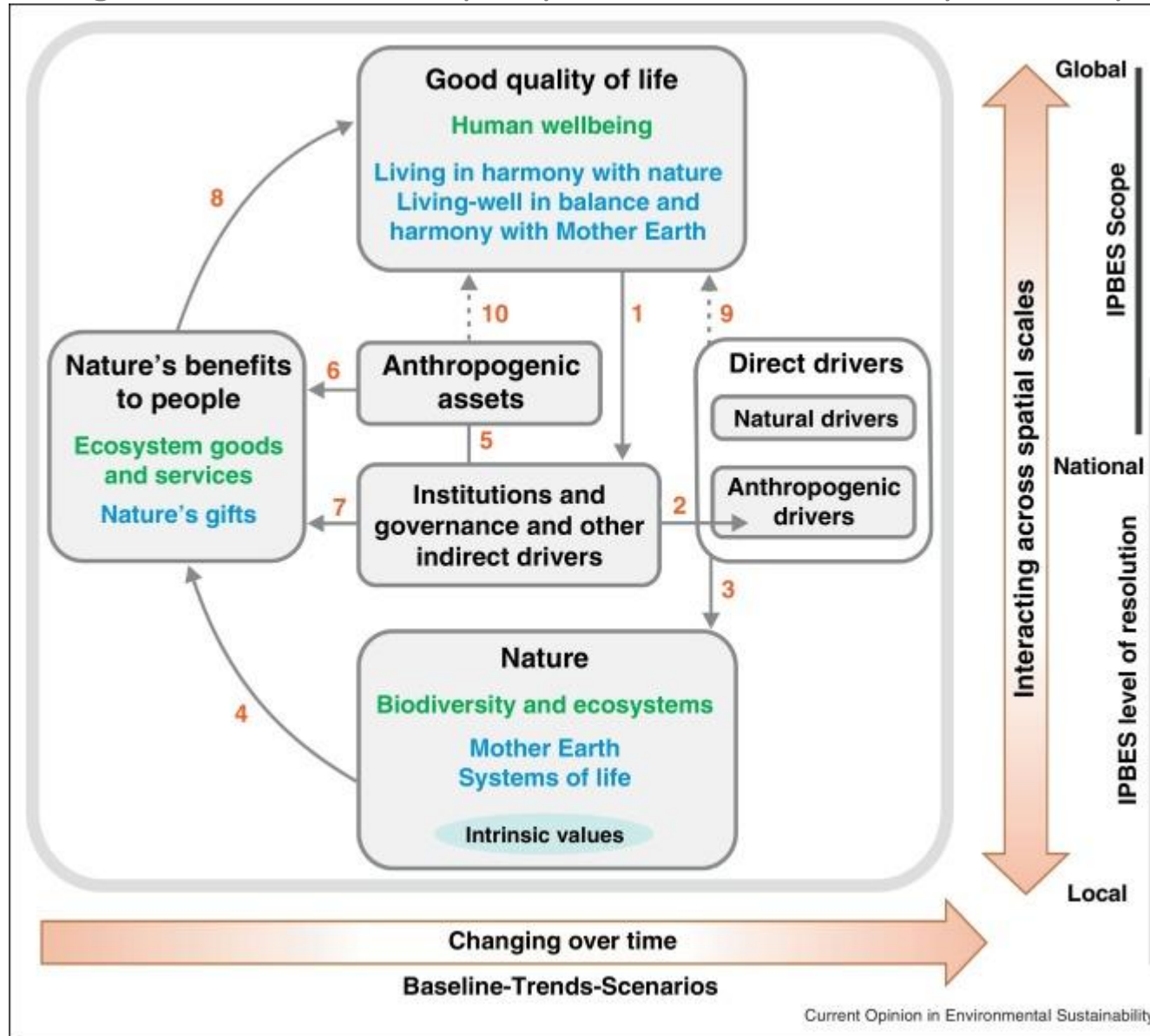


Adapted from TEEB (2010)

THANK YOU

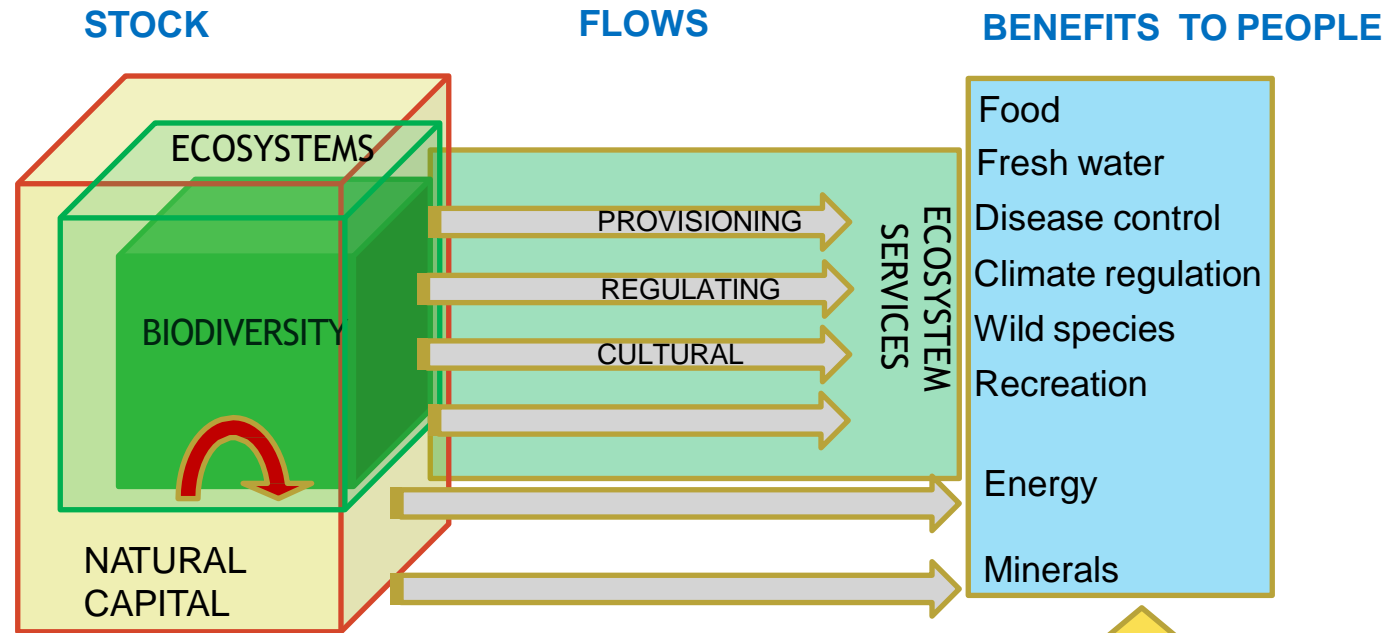
Nature's Contributions to People

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



Diaz et al. (2015)

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)

