



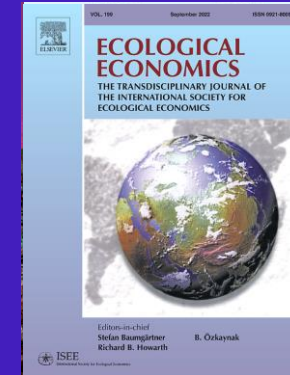
The history of Ecosystem Services

1th July 2022
Seminar A&B
Professor Shibata

Michael Murawski

Contents

- I. Preceding Economic History
- II. Post War Environment
- III. Interconnection Economy and Nature
- IV. Mainstreaming and Commodification of Nature
- V. The current state of Ecosystem Services
- VI. Re-branding? ES to NCP
- VII. ES Development Discussion



*Publication in
April 2010*

The history of ecosystem services
in economic theory and practice:
From early notions to markets and
payment schemes

Erik Gómez-Baggethun
Rudolf de Groot
Carlos Montes
Pedro L. Lomas

A brief reminder

Ecosystem Services...

can be defined as **all the benefits we derive from mother nature,**
which **contribute to the well-being** of human **societies**

- summarized from FAO

Preceding Economic History

(Pre) Classical economics

Sir William Petty

"Hands were the father
as lands were the
mother of wealth"



1667

1776



Adam Smith

The Wealth of Nations

Labour ("working hours")
determines value



1871

S. Jevons and C. Menger

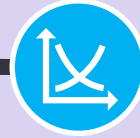
Goods receive their value
based on utility provided
("Ability to satisfy wishes")

Neo-classical economics

A.C. Pigou

Externalities should be
solved by taxation

1881



A. Marshall

Principles of Economics

Value determined by
supply and demand



1920s

1931

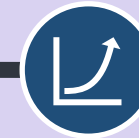


H. Hotelling

The economics of
exhaustible resources

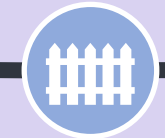
R. Solow

"Solow Model"
Land is irrelevant



1956

1960



R. Coase

Property rights to solve
externalities

Preceding Economic History

(Pre) Classical economics

Sir William Petty

"Hands
as la
mot"

S. Jevons and C. Menger

Goods receive their value
from utility provided



Adam Smith

The Wealth of Nations

Labour ("working hours")
determines value

Neo-classical economics

A.C. Pigou

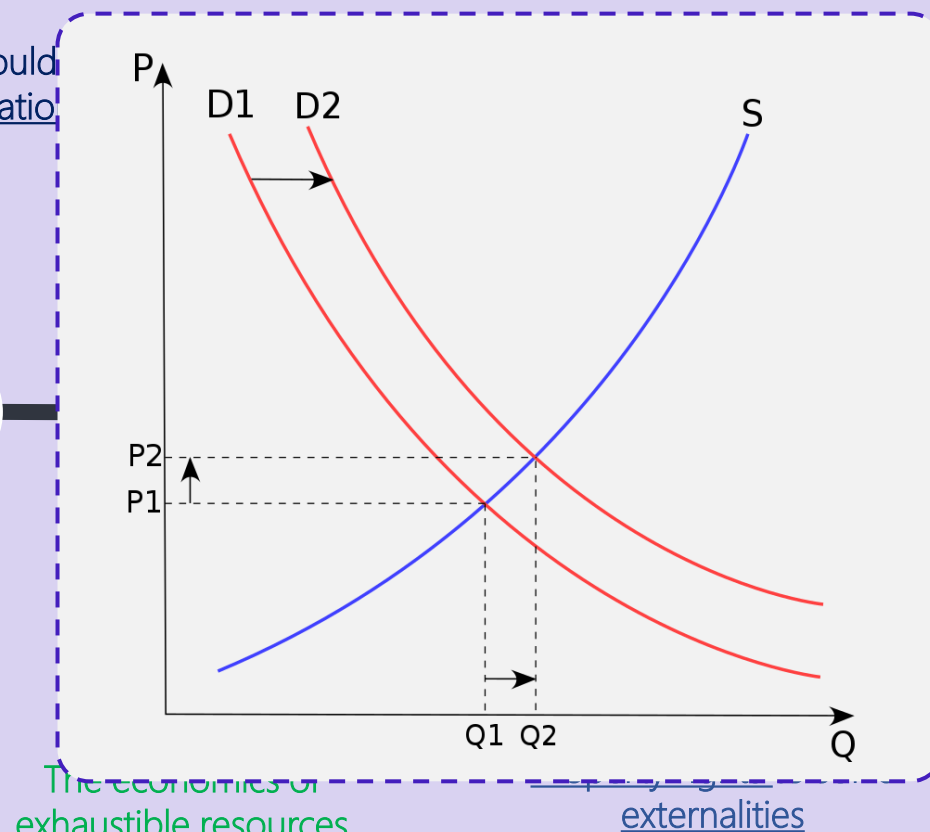
Externalities should
be solved by taxation

R. Solow

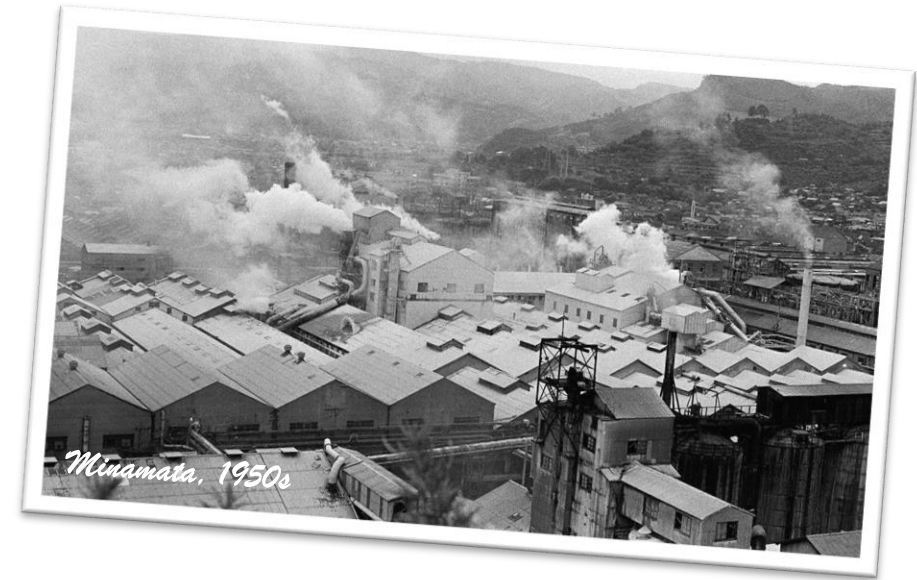
20s

Principles of Economics

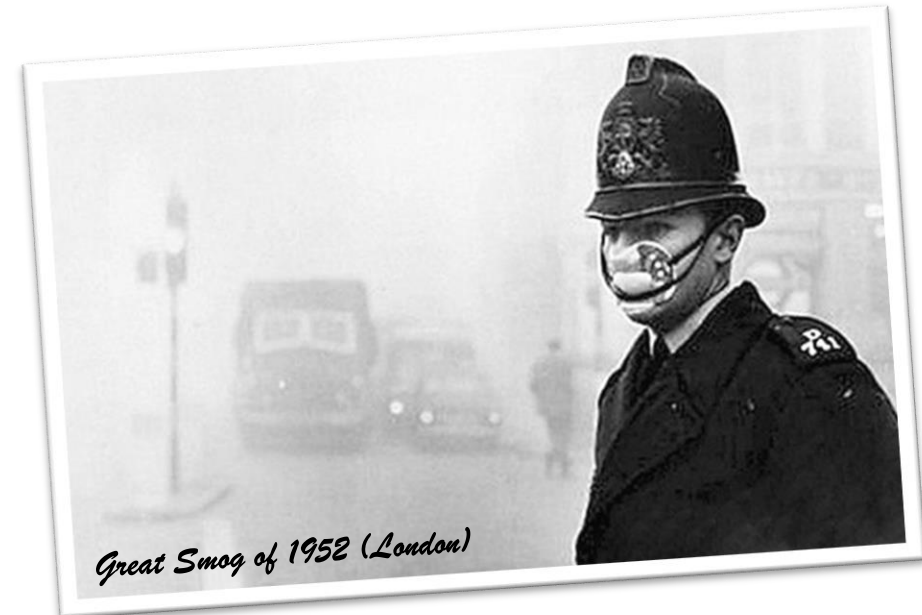
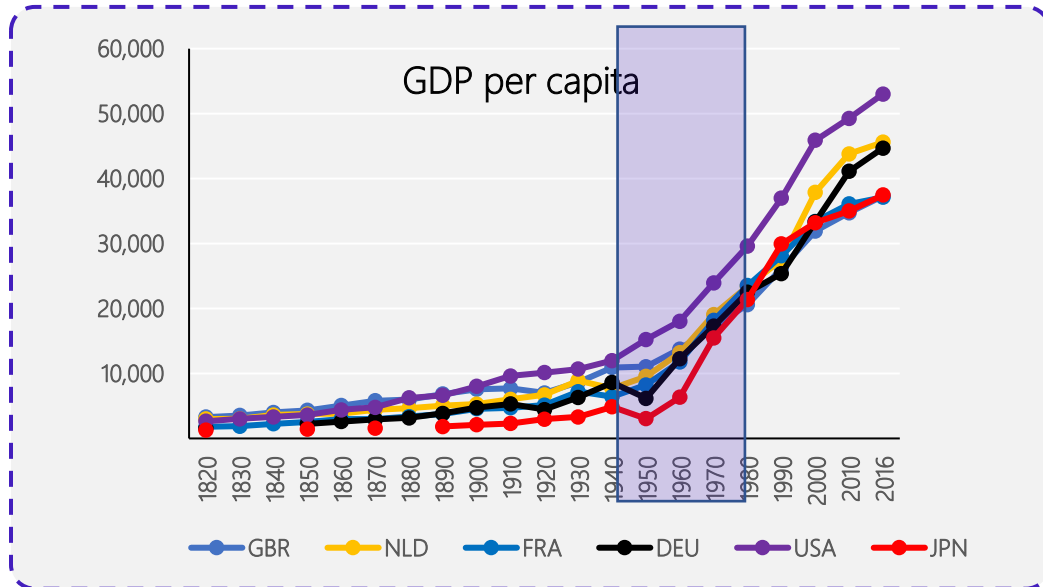
Value determined by
supply and demand



Post-War – “The good times”



Higher production = higher well-being + ... **more pollution**



1970s - The evolution of Ecosystem Services

1968



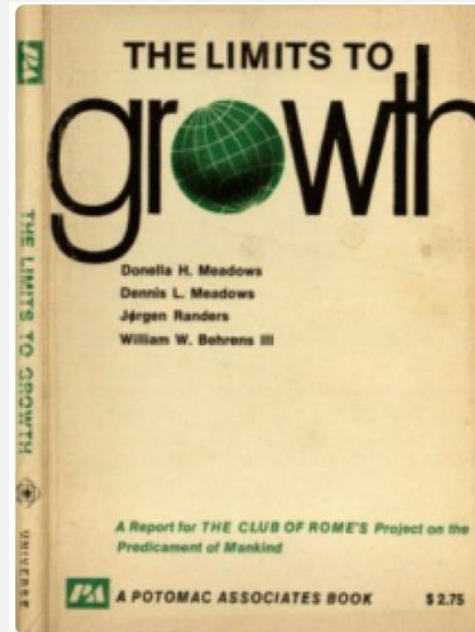
G. Hardin

"The tragedy of commons"

*Economic Theory to explain
natural processes*



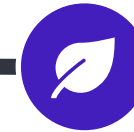
1972



*"If present growth trends
(...) and resource
depletion continue
unchanged, the **limits to
growth** on this planet
will be reached within
the **next 100 years**"*

*- Meadows et al.
(The Club of Rome)*

1973



1970s - The evolution of Ecosystem Services

1968



G. Hardin

"The tragedy of commons"

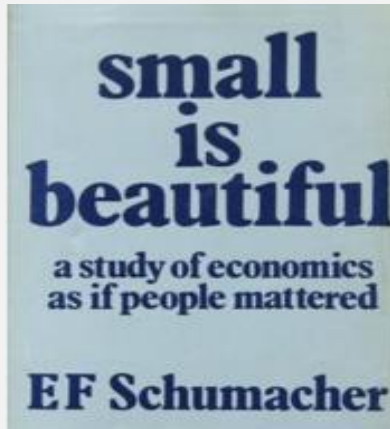
*Economic Theory to explain
natural processes*



1972

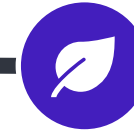


Natural Capital and Oil Crisis



- The book outlines problems associated with globalization and mass-production
- Introduction of Natural Capital as finite resource
- Natural Capital needs to be invested, quantified and safeguarded

1973



- Arab oil producers cut off exports to the U.S. to protest American military support for Israel.
- Soaring gas prices and a major economic downturn in the U.S

Interconnection of Economy and Nature

1981



P. Ehrlich, A. Ehrlich

The Case for Conservation: Extinction.
Extinction, Substitution and Ecosystem Services



1987



Brundtland Report



*"Ecology and economy are becoming ever more **interwoven** locally, regionally, nationally, and globally into a **seamless net** of causes and effects"*

1997



G. Daily

Introduction: What are
Ecosystem Services?

*"Ecosystem services are the **conditions and processes** through which natural ecosystems (including its species), **sustain and fulfil human life**. They maintain biodiversity and the production of ecosystem good."*

Total 7 ecosystem services identified

Mainstreaming and Commodification of Nature

1997



R. Constanza et al.

The value of the world's ecosystem services and natural capital

Focus on market-based economic evaluation



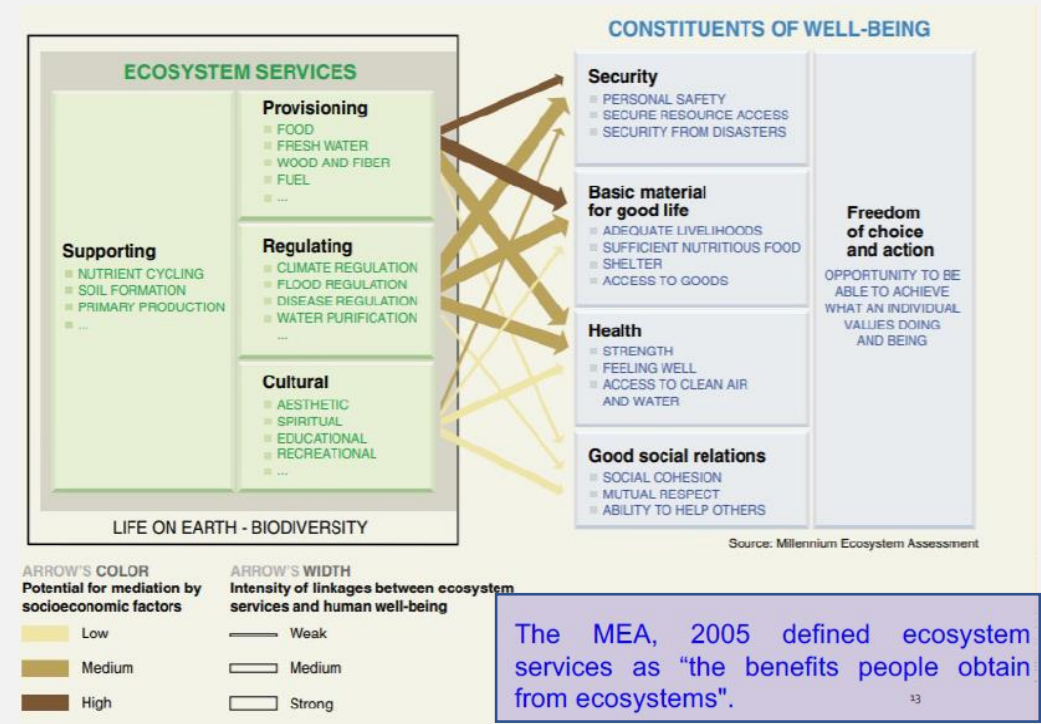
Total 17 ecosystem services identified

2005



Millennium Ecosystem Assessment (MEA, 2005)

- MEA promotes ES in political realm
- Research booster
- Human-centric, still emphasis on dependency



The current state of Ecosystem Services

2012



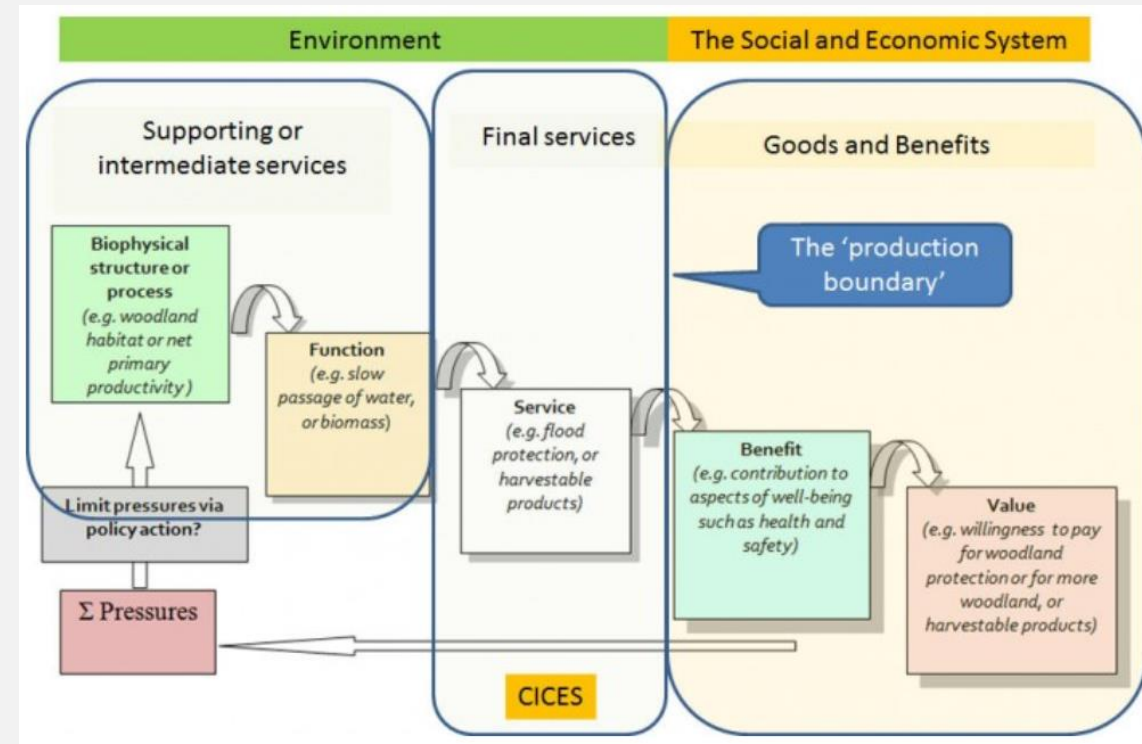
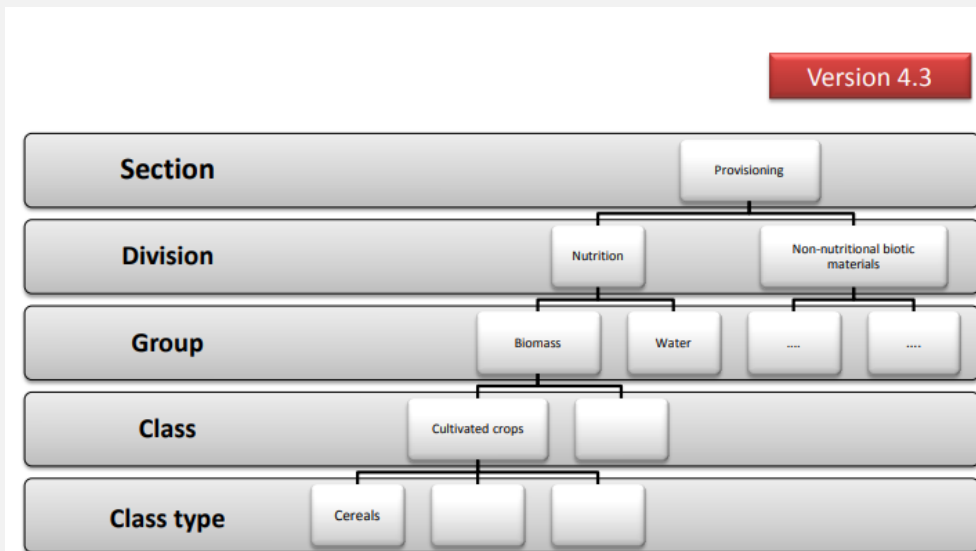
2015



ES to NCP

Common International Classification of Ecosystem Services (CICES)

- Classification standard, compatible with IPBES framework, MEA and TEEB

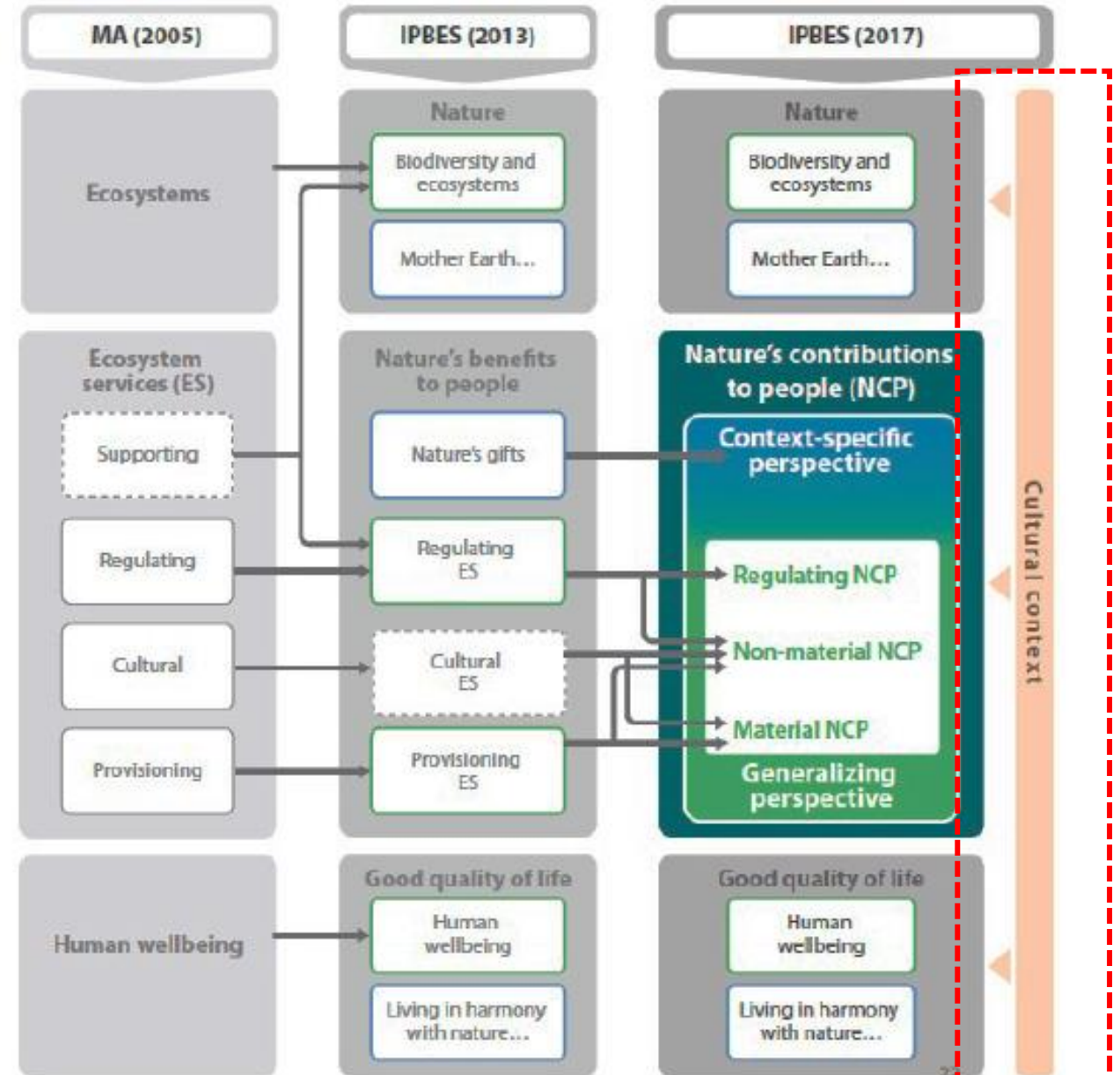


Re-branding? ES to NCP

- “Nature’s contribution to people” is IPBES term for Ecosystem Services
- Existing frameworks fail to incorporate social science and local practices
- Western science overpowered indigenous knowledge and people
- Seeking a broad, pluralistic approach



The move by IPBES to replace ecosystem services with NCP is an outcome of politics, not rigorous thinking.



1. Economic values, valuation methods and market schemes are **not** ideologically neutral.

- Corbera et al. (2007)
- Vatn (2005)

2. Market-based mechanisms can **corrupt** and ultimately change the logic of conservation from **communal regulation to economic self-interest**.

- Vatn (2010)

3. Payment schemes are frequently **adopted** quickly **without sufficient critical discussion**

- Redford and Adams (2009)

4. Re-branding typically **excludes** parts of **audience** and received negatively

- Collange and Bonache (2015)
- Aimé-Garnier and Roux (2006)



The ES concept developed, while significantly diverging from its original purpose -
Good or Bad?



Making Nature visible in economic decision making.

Logic of valuation as a pragmatic short-term tool.

Daily et al., 2009
Spash, 2008a; Child, 2009

Sources:

Page 1

<https://pixabay.com/photos/yosemite-national-park-mountains-1771239/>

Page 2

<https://www.sciencedirect.com/science/article/pii/S2212041612000162>

Page 3

<https://www.fao.org/ecosystem-services-biodiversity/en/>

Page 4

<https://www.geschichtslehrer.in/contentLD/HI/Ba81mManufaktur.pdf>

<https://oll.libertyfund.org/title/hull-the-economic-writings-of-sir-william-petty-vol-1>

https://en.wikipedia.org/wiki/Supply_and_demand#/media/File:Supply-and-demand.svg

Page 5

<https://www.japantimes.co.jp/news/2020/10/24/national/social-issues/minamata-disease-victims-closure/>

<https://www.oecd-ilibrary.org/sites/5fa1c6e1-en/index.html?itemId=/content/component/5fa1c6e1-en>

<https://emadion.it/en/mysteries/mysterious-places-2/london-great-smog/>

<https://www.businessinsider.com/what-tokyo-japan-looked-like-60s-70s-retro-2017-3>

Page 6

<https://www.npr.org/sections/parallels/2013/10/15/234771573/the-1973-arab-oil-embargo-the-old-rules-no-longer-apply>

<https://www.youtube.com/watch?v=CxC161GvMPc>

Page 7

<https://www.science.org/doi/10.1126/science.213.4505.327.b>

<https://www.jstor.org/stable/1309037>

https://www.veganaustralia.org.au/animal_agriculture_causes_biodiversity_loss_un_report

Page 8

<https://www.nature.com/articles/387253a0>

Page 9

https://unstats.un.org/unsd/envaccounting/workshops/ES_Classification_2016/UNSD_CICES_20062016_FINAL.pdf

<https://cices.eu/supporting-functions/>

Page 10

<https://www.sciencedirect.com/science/article/pii/S2212041618301384>