



Beyond Commensuration

Plural Valuation of Nature in Official Statistics and Ecosystem Accounting

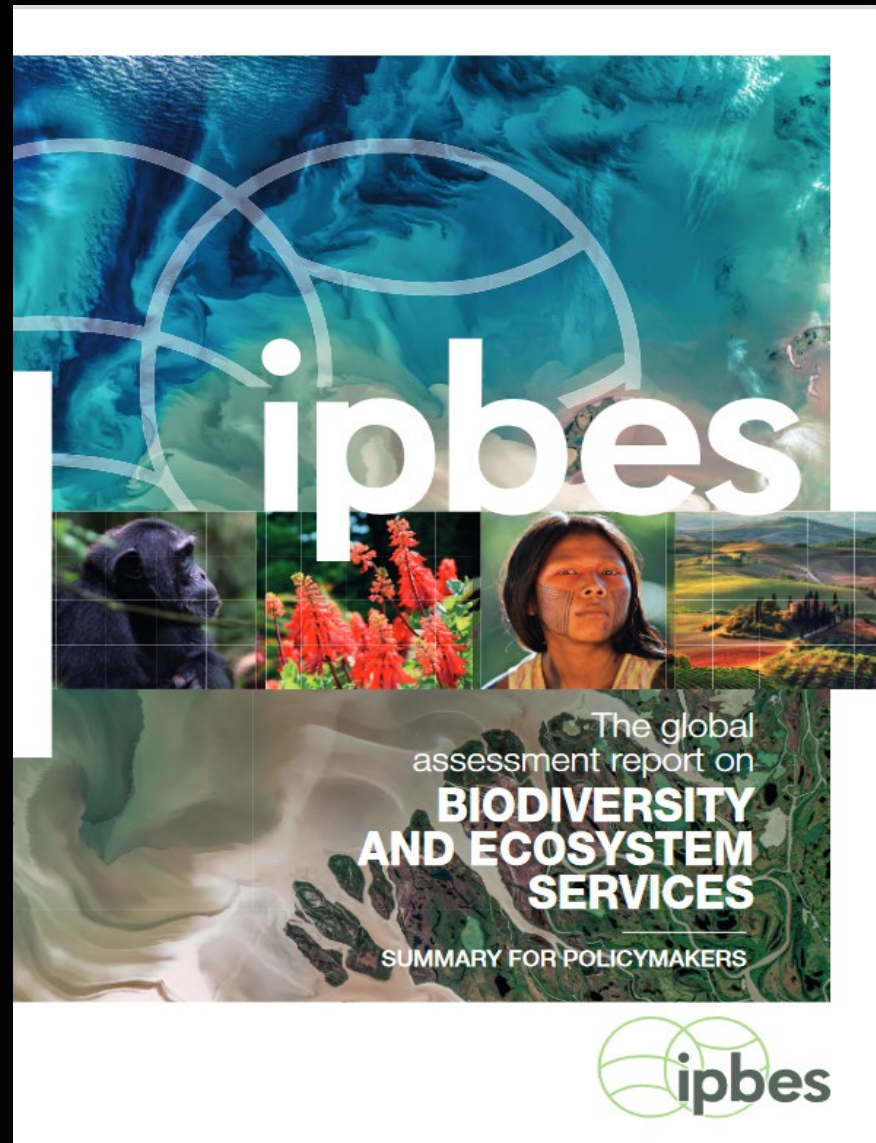
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Challenges in the measurement of nature in official statistics

Rome, Italy, 25-26th May 2026

The causes of the
global nature
crisis are linked to
the way we value
nature in political
and economic
decisions



New environmental pragmatism:

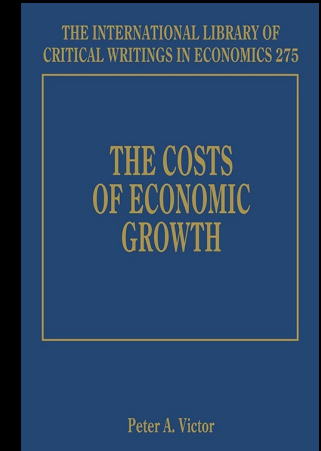
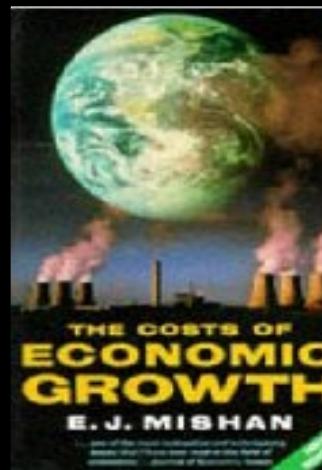
Makes a case for broader use of market language, values and instruments in conservation



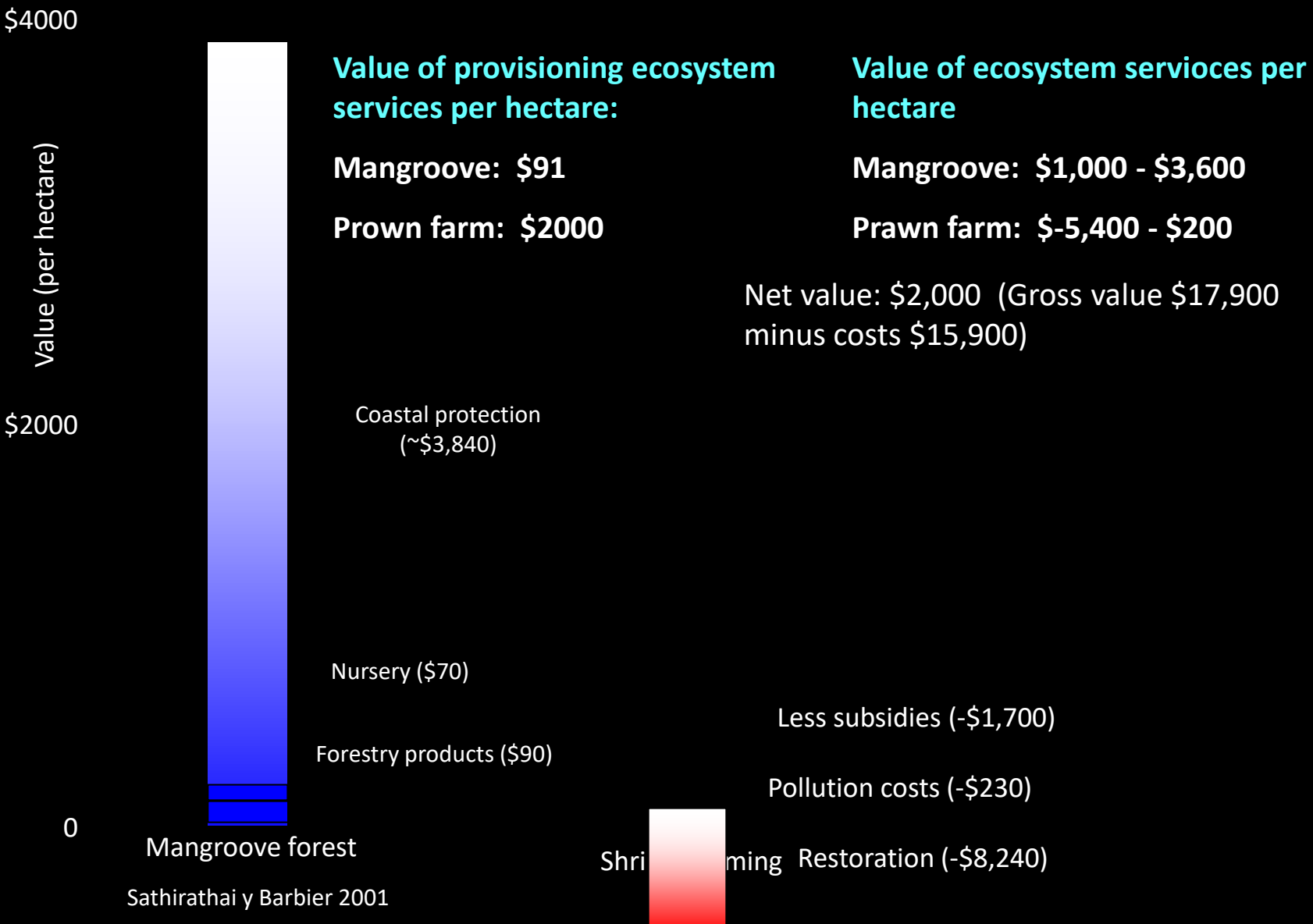
The 'hidden' costs of growth



- Growth bears many **unaccounted costs** (e.g., pollution and resource depletion, biodiversity loss)
- These costs **rarely appear in economic accounts**, unless claimed through court cases or unless state regulations mandate the internalization
- In practice, **born by third parties** (future generations, poor communities, other species...)

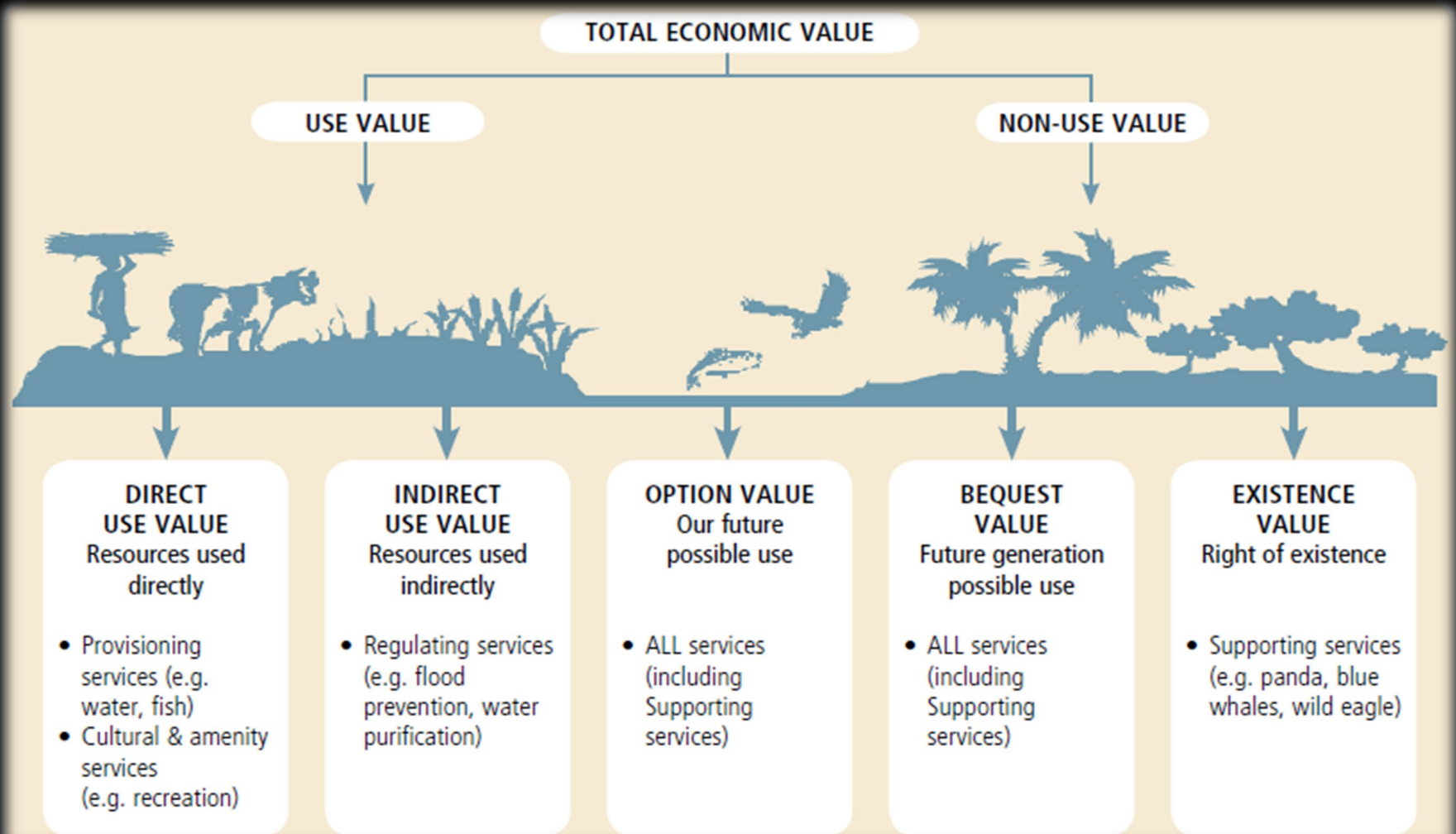


Environmental decline: an externality problem?

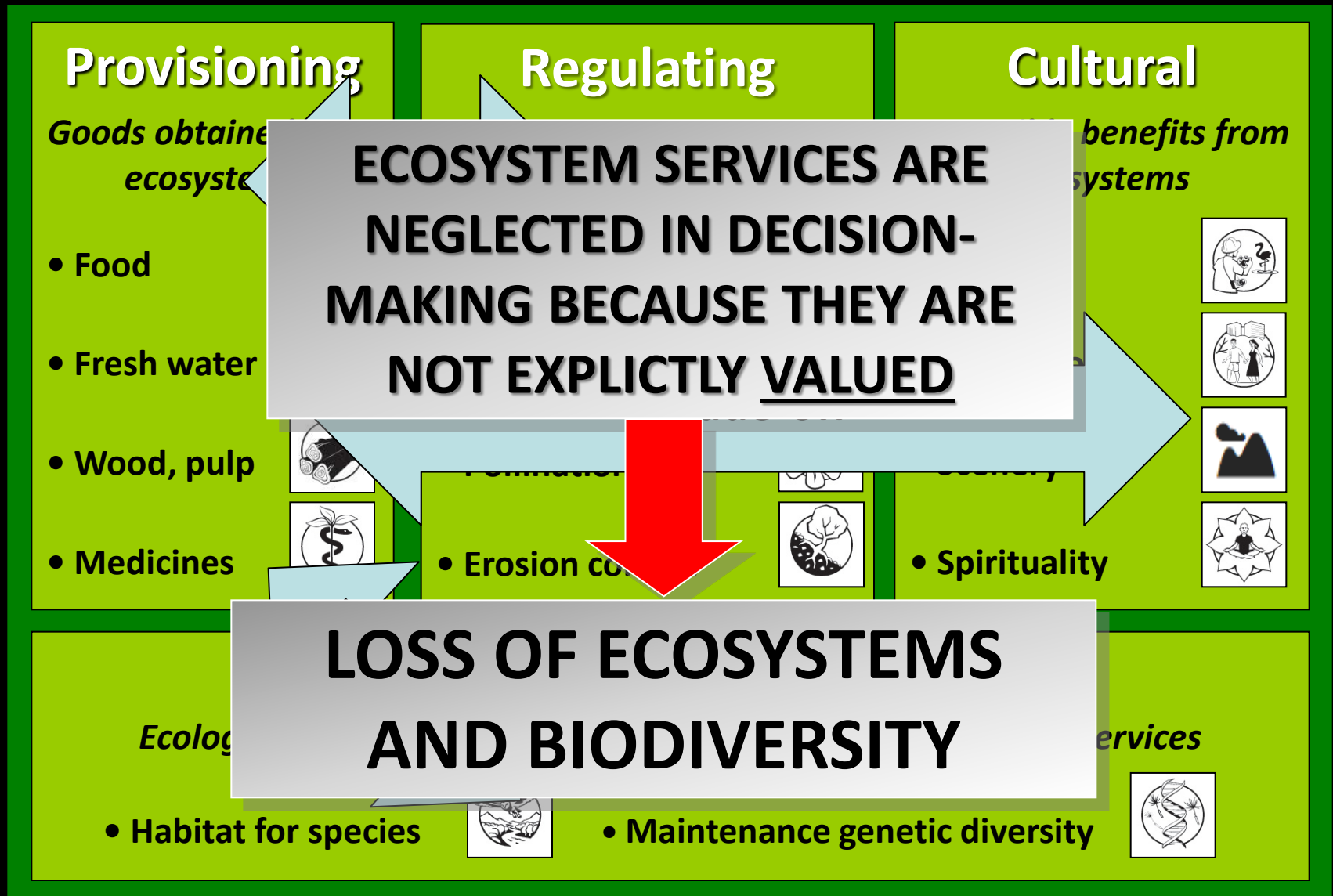


Environmental decline: an externality problem?

'Total Economic Value' framework



Environmental decline: an externality problem?



Demonstrating nature's values

The Economics of Ecosystems & Biodiversity (TEEB)



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

The global cost of biodiversity loss: 14 trillion Euros?

Although some success has been achieved in meeting the global target of reducing the rate of loss of biodiversity by 2010¹, a new report suggests that biodiversity will continue to decline, adversely affecting the health of associated ecosystems. By not meeting the 2010 targets, the report estimates the cumulative loss of biodiversity and associated ecosystem services between 2000 and 2050, could be equivalent to 7 per cent of the 2050 world Gross Domestic Product (GDP).

Incommensurability of nature's values

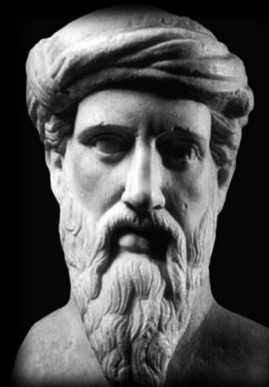
Where does value emerge from?

- From nature/land?
- From labor needed to produce a good?
- From utility something provides?
- From the energy it embeds?

Economic value theories long dominated by notions of value monism

Incommensurability of values

- Plurality of values
- Different valuation measures
- Weak comparability of values



Pitagoras



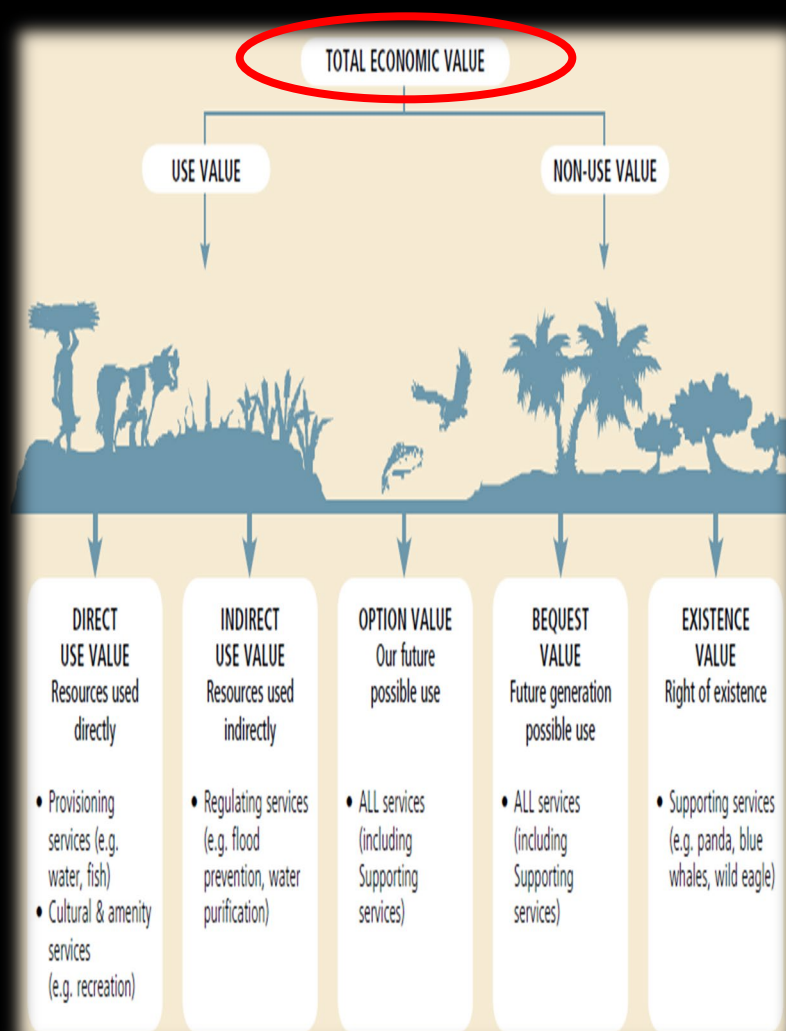
Neurath



Berlin

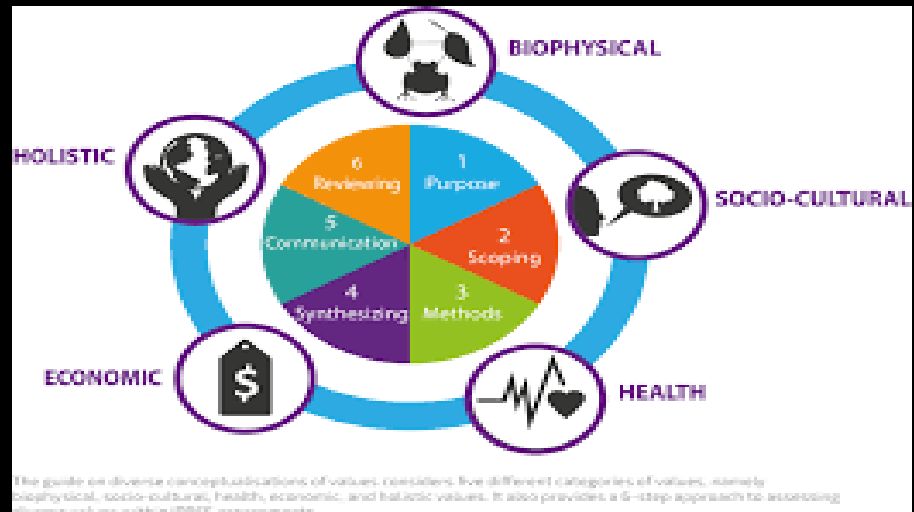
Incommensurability of nature's values

The limits of aggregation



Plural valuation of nature:

- Also referred to as inclusive or integrated valuation
- The process of synthesizing information, knowledge and data to elicit the various ways in which peoples conceptualize and appraise nature's values (Gomez-Baggethun et al. 2014)
- It is expected to facilitate accounting valuation frames that give basis for informed deliberation, decision making and planning
- Taken up by a growing body of literature and IPBES



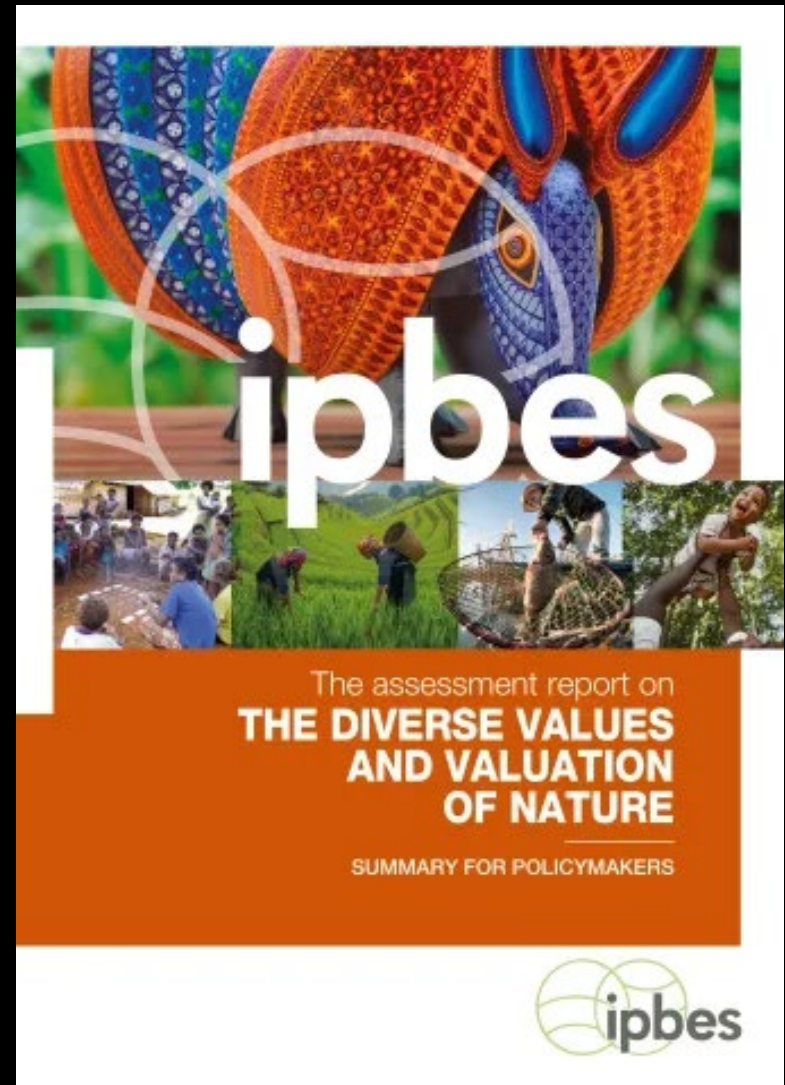
Plural values difficult to integrate in accounting/ official statistics

- Official statistics traditionally rely on, standardization, comparability, aggregation, and quantification.
- Environmental accounting systems such as:
- United Nations's System of Environmental-Economic Accounting (SEEA), natural capital accounting, ecosystem service valuation, often try to integrate nature into frameworks compatible with national accounts and GDP
- But once you monetize or aggregate values, several problems appear

The case for plural valuation of nature

Focus on market values (instrumental values, short-term profit and economic growth) has come at the expense of both nature, society and future generations, and has often ignored the values of indigenous peoples and local communities

Politics has failed to capture the many ways nature is important to people



Environmental conflicts reflect **value conflicts**

- Economic values (growth and jobs)
- Subsistence values (reindeer herding)
- Cultural values (traditional knowledge)
- Ecological values (biodiversity)
- Aesthetic values (landscapes)
- 'Sacred' values (e.g. Rásttigáis mountain)



Commodification of nature

The reach of markets into aspects of life traditionally governed by non-market norms stands amongst one of the most significant developments of our time: the environment is a key front in the expansion of markets and prices



Commodification of nature

Classical economists recognized ecosystem services (*avant la lettre*) but believed they should stay outside the circuits of monetization and sale

- **David Ricardo (1772-1823)**

“Natural agents are serviceable to us by adding to value in use; but as they perform their work gratuitously, as nothing is paid for the use of the air, of heat, and of water, the assistance which they afford us, adds nothing to value in exchange” (1817 [2001], p. 208)

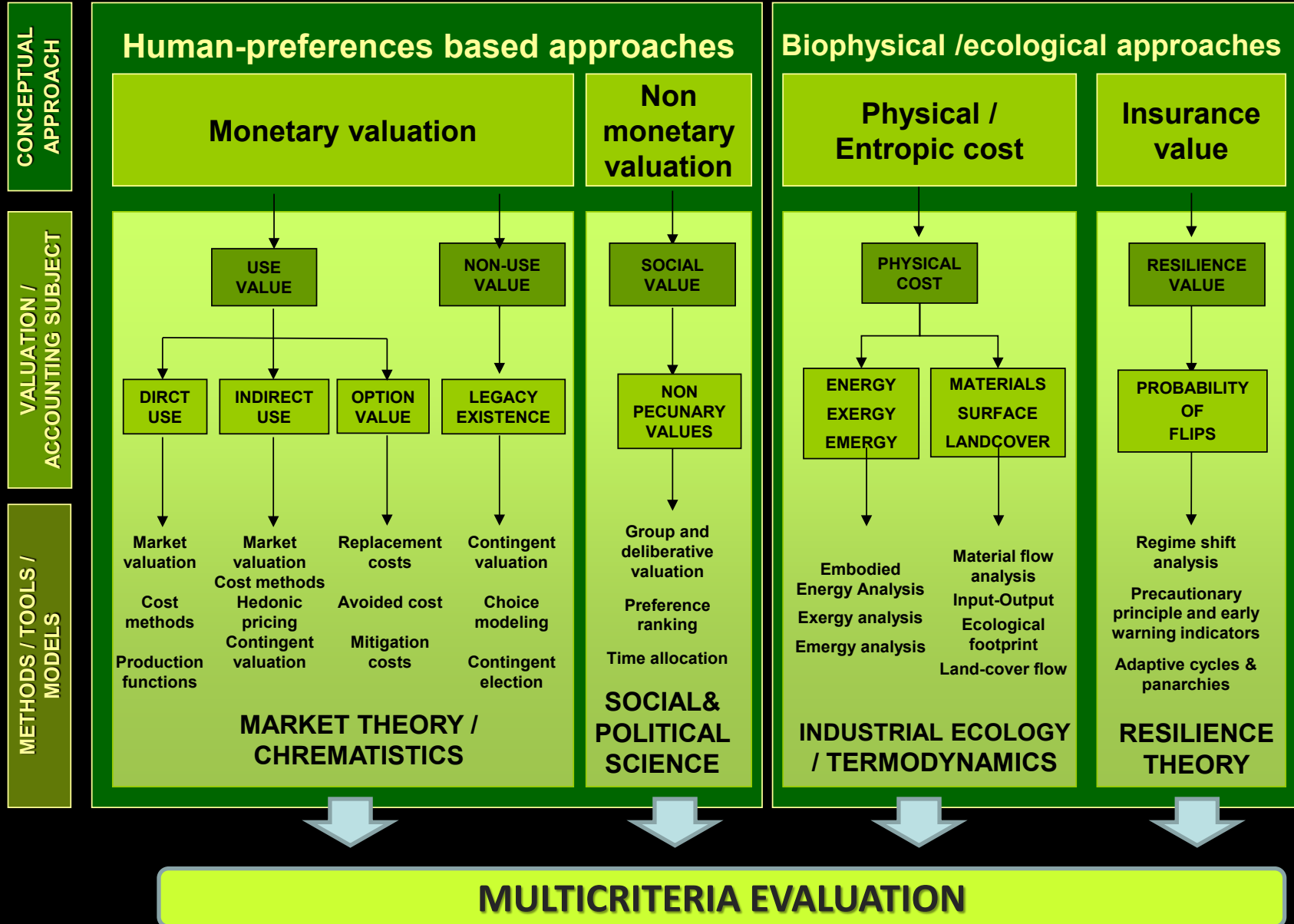


- **Jean Baptiste Say (1767-1832):**

“the wind which turns our mills [...] and even the heat of the sun, work for us; but happily no one has yet been able to say, *the wind and the sun are mine, and the service which they render must be paid for*” (1829, p. 250)



Value incommensurability and pluralism



Biophysical assessment

Valuation based on human principles & preferences

Non-monetary
valuation

BIODIVERSITY ASSESSMENT

Mapping, Measurement & Modelling

Indicator development

Species richness, rarity, diversity, and
vulnerability assessment

ECOLOGICAL IMPACT METHODS

Embodied Energy/Exergy/Emergy analysis

Ecological / water / carbon footprint

Human appropriation of NPP

Input-output analysis

OPINION-BASED METHODS

Group and deliberative valuation

Q-Methodology, Mental models

Preference ranking

NETWORK ANALYSIS

Social network analysis

DISCOURSE ANALYSIS

Literature, photo, media interpretation

DIRECT MARKET VALUATION

Market analysis

Production function

INDIRECT MARKET VALUATION

Replacement, restoration, avoided cost

Hedonic pricing

Travel cost method

SIMULATED MARKET VALUATION

Contingent valuation,

Choice modelling

Monetary
valuation

Ecological values

Biophysical
and energy
values

Resilience
insurance
value

Ecosystem
quality
values

Sociocultural values

Symbolic,
aesthetic
values

Environmental
justice
Ethical values

Relational
and place
values

Economic values

Direct
use
values

Indirect
use
values

Non
use
values

Regulating services



Cultural services



Provisioning services



Supporting /Habitat / maintenance services



From market-based to plural valuation of nature

Plural valuation in science

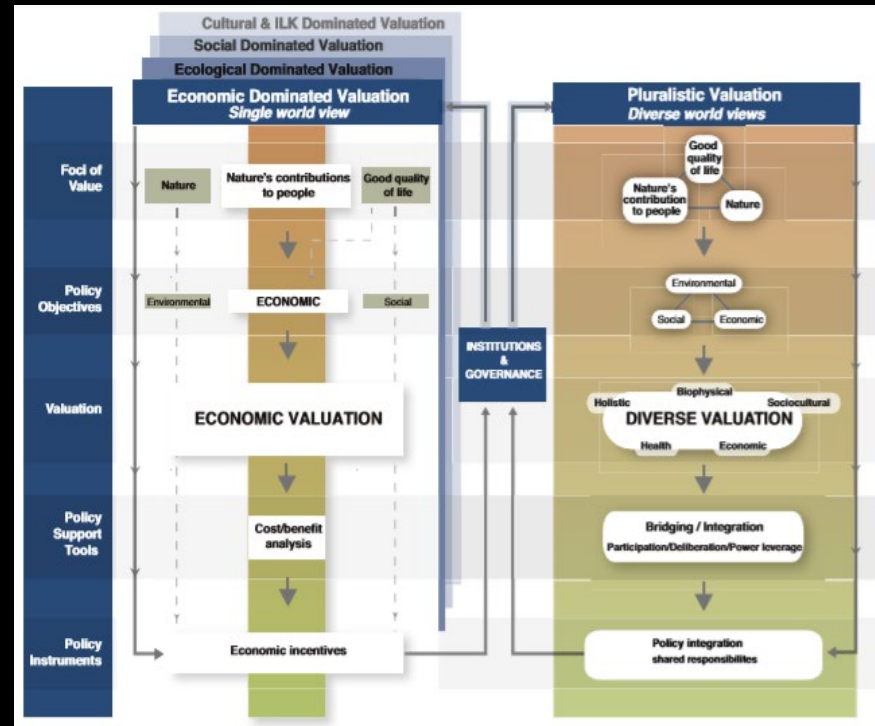


Plural valuation in IPBES



Approaches to values & valuation

				
SOCIO-CULTURAL	ECONOMIC	HEALTH	ILK/HOLISTIC	BIOPHYSICAL
Socio-cultural	Economic	Health	ILK/Holistic	Biophysical



Conclusion

- Environmental accounting can accommodate incommensurability:
 - Using multiple indicators,
 - Avoiding over-reliance on monetary valuation,
 - Preserving qualitative and participatory dimensions
 - Recognizing ecological limits
 - Accepting that some values remain irreducible
- But official statistics cannot fully escape commensuration pressures because states and markets generally demand standardized categories for decision-making.
- In practice, the goal is usually not to solve incommensurability, but to make it visible, institutionalize value pluralism, and prevent the dominance of a single (monetary) valuation logic