The Economics of Ecosystems and Biodiversity (TEEB) - Policy applications of ecosystem accounts

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Institute for European Environmental Policy

Expert Meeting on Ecosystem Accounts

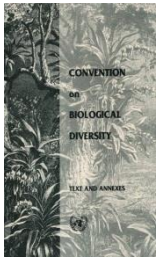
5 - 7 December 2011, London, UK

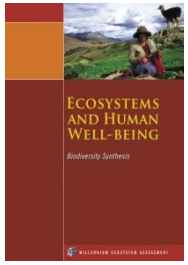
Hosted by the Office for National Statistics and the Department for Environment, Food, and Rural Affairs of the United Kingdom.
Organised in collaboration with the European Environment Agency, the World Bank and the United Nations Statistics Division

Presentation overview

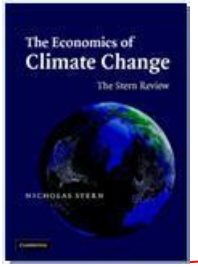
- Quick background to TEEB
- Policy Demand for valuation and accounts
- Issues around measurement
  - experimentation & precision,
  - needs for policy making
- Summary

TEEB's Genesis, Aims and progress





Ecol./Env. Economics literature



G8+5 Potsdam

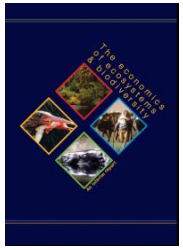
"Potsdam Initiative – Biological Diversity 2010"

1) The economic significance of the global loss of biological diversity

Importance of recognising, demonstrating & responding to values of nature

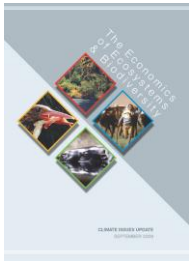
Engagement: ~500 authors, reviewers & cases from across the globe

Interim Report



CBD COP 9 Bonn 2008

Climate Issues Update

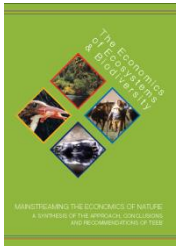


Input to UNFCCC 2009

TEEB End User Reports Brussels 2009, London 2010

India, Brazil, Belgium, Japan & South Africa Sept. 2010

TEEB Synthesis



TEEB Books

BD COP 10 Nagoya, Oct 2010

CBD COP11 Delhi

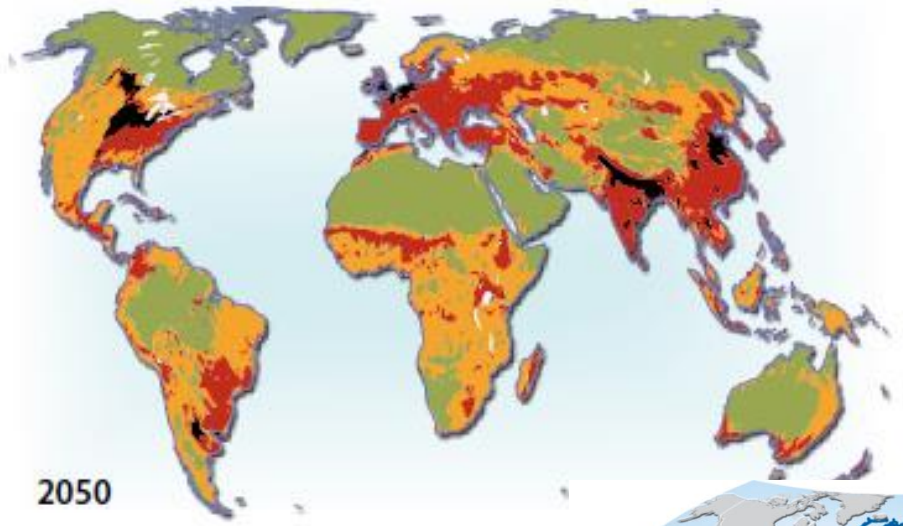
National TEEBs
Netherlands
Nordics
Norway
Brazil
India
…

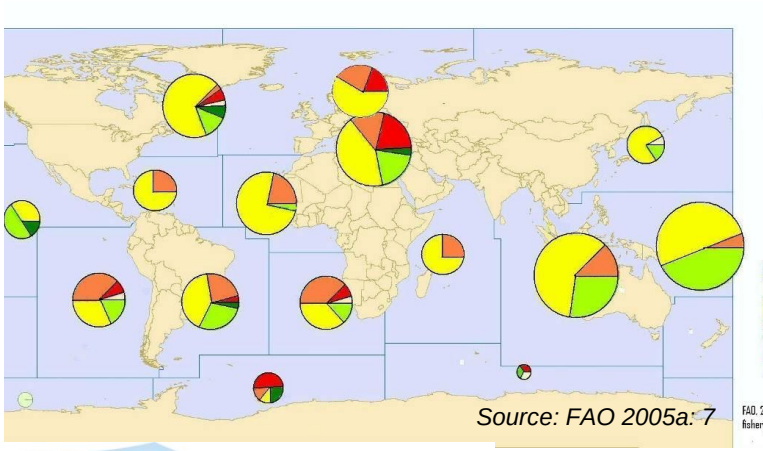
Sectoral TEEB work
Water
Ag

Rio+20 Brazil

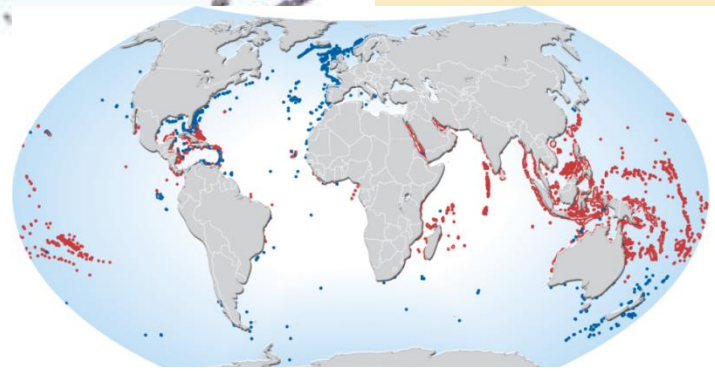
"I believe that the great part of miseries of mankind are brought upon them by false estimates they have made of the value of things."

Benjamin Franklin, 1706-1790





Source: FAO 2005a: 7



Source: Nellemann et al 2008: 22

"There is a renaissance underway, in which people are waking up to the tremendous values of natural capital and devising ingenious ways of incorporating these values into major resource decisions." Gretchen Daily, Stanford University

Critical issues

The value of biodiversity and ecosystem services are not fully reflected in the markets, in price signals, and policies

- **Decision making** (at company, policy & citizen level) **still too often fails to take into account the local to global benefits, contributing to a loss of biodiversity and ecosystem services.**

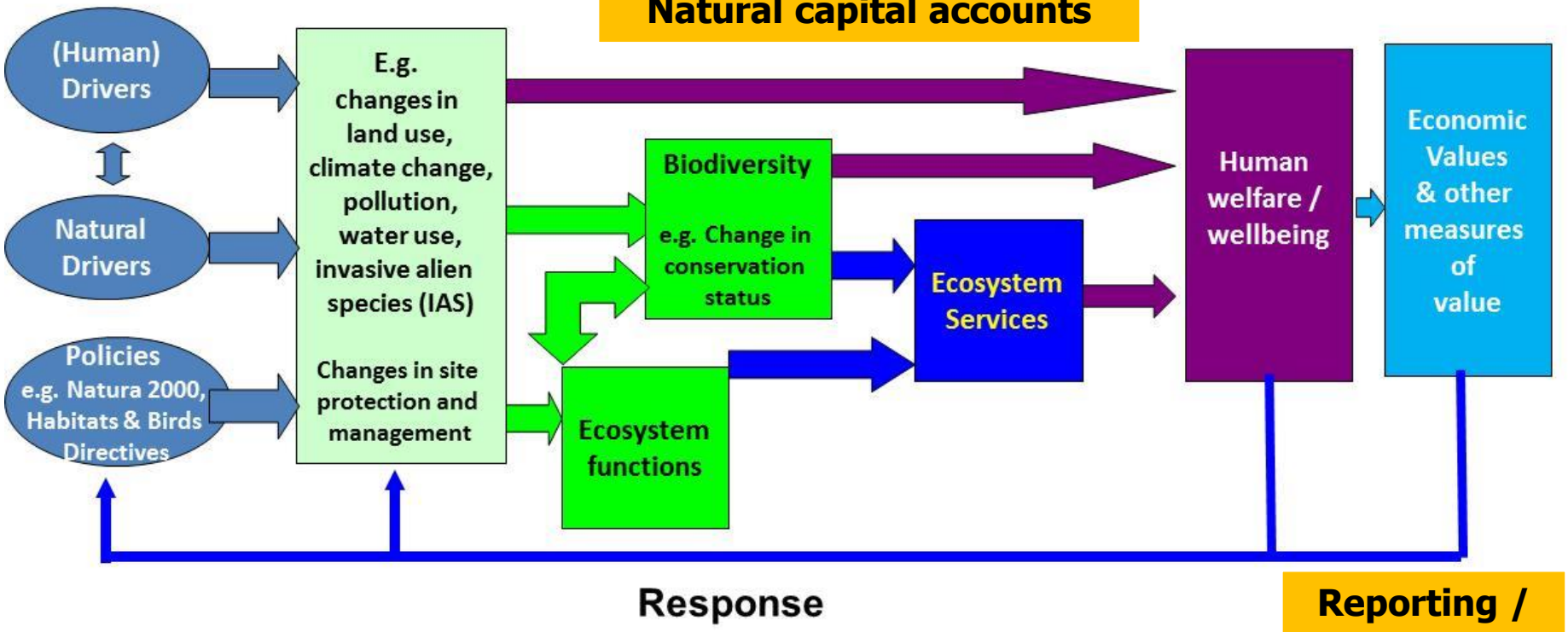
- **Assessing ecosystem service benefits (and links to biodiversity and ecosystem functions) and identifying who benefits from what natural capital is critical for policy focus, interest and instrument choice, design and implementation.**

- **There is a growing recognition of the need to improve and invest political capital in natural capital accounts and integrated environmental and economic accounts. This is a seen as a 'slow fuse' investment, but one that can lead to a paradigm shift in governance.**

From (policy) drivers to impacts to values

Range of data and indicators

Already useful and evolving range of tools



Source: Adapted from Braat and ten Brink et al (2008)

Reporting / accounts

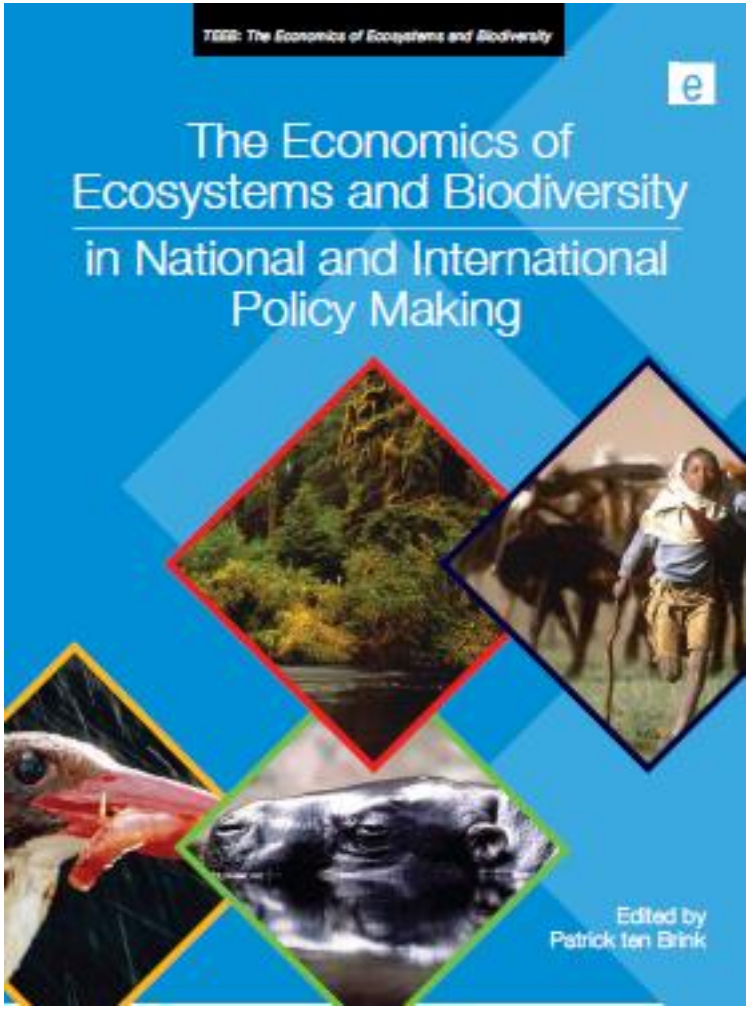
Understanding data & interactions helps policy decisions

SEEA

Institute for European Environmental Policy

The Economics of Ecosystems & Biodiversity

TEEB for Policy Makers



Book announcement: [The Economics of Ecosystems and Biodiversity in National and International Policy Making](#) **now available from Earthscan**

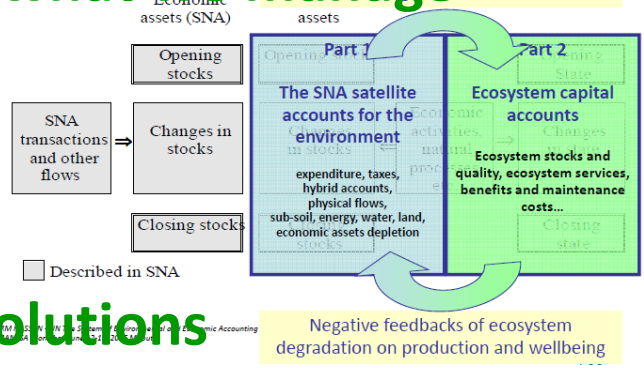
The Global Biodiversity Crisis

- Nature's assets & biodiversity loss
- Economic values and loss
- Social dimension

Measuring what we manage

Revision → SEEA2012/13

- Indicators
- **Accounts**
- Valuation
- Assessment



Available Solutions

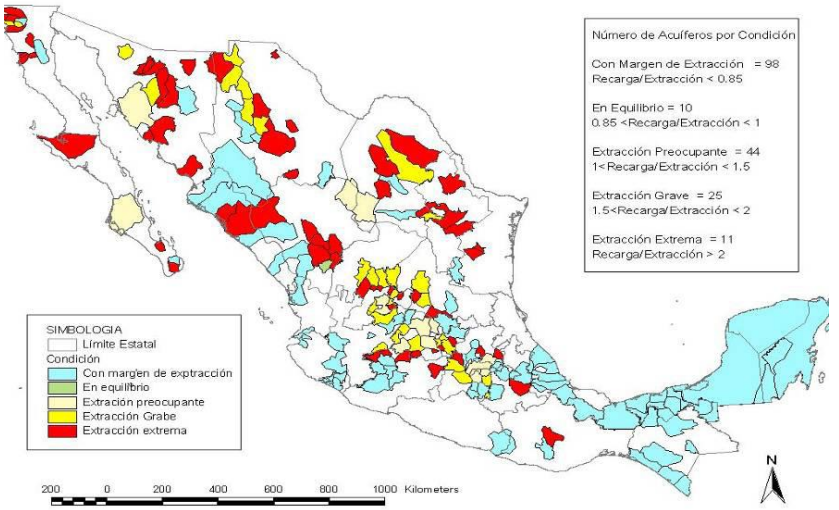
- **Markets/pricing/incentives :PES**
- Regulation: standards
- Regulation: planning, protected areas
- **Investment** (man-made & natural capital)

Transforming our approach to natural capital

Indicators/Statistics inform Policy: Payments for Ecosystem Services (PES)

Hydrological services: Aquifer recharge; Improved surface water quality, reduce frequency & damage from flooding`

Instrument: Mexico PSAH: PES to forest owners to preserve forest: manage & not convert forest



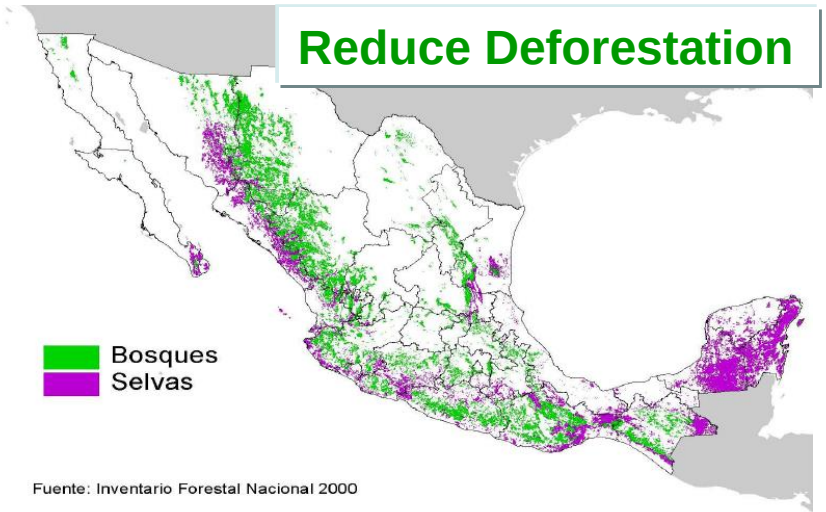
Result

Deforestation rate fell from 1.6 % to 0.6 %.

18.3 thousand hectares of avoided deforestation

Avoided GHG emissions ~ 3.2 million tCO2e

Reduce Deforestation



Address Poverty

Munoz 2010); Muñoz-Piña et al. 2008; Muñoz-Piña et al. 2007.

CBD COP 10 Nagoya: Strategic Plan 2011-20

5 strategic goals & 20 headline targets *....extracts...*

Strategic goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 1:... people aware of the values of biodiversity .....

Target 2: .... biodiversity values have been integrated ....into strategies... planning ... national accounting.... reporting systems.

Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14: ... ecosystems that provide essential services.... restored and safeguarded

Target 15: ... contribution of biodiversity to carbon stocks has been enhanced...

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization;

Evidence on values of biodiversity can also support many other targets
e.g. On sustainable fisheries, agriculture, forestry, sustainable use ...

EU Biodiversity Strategy

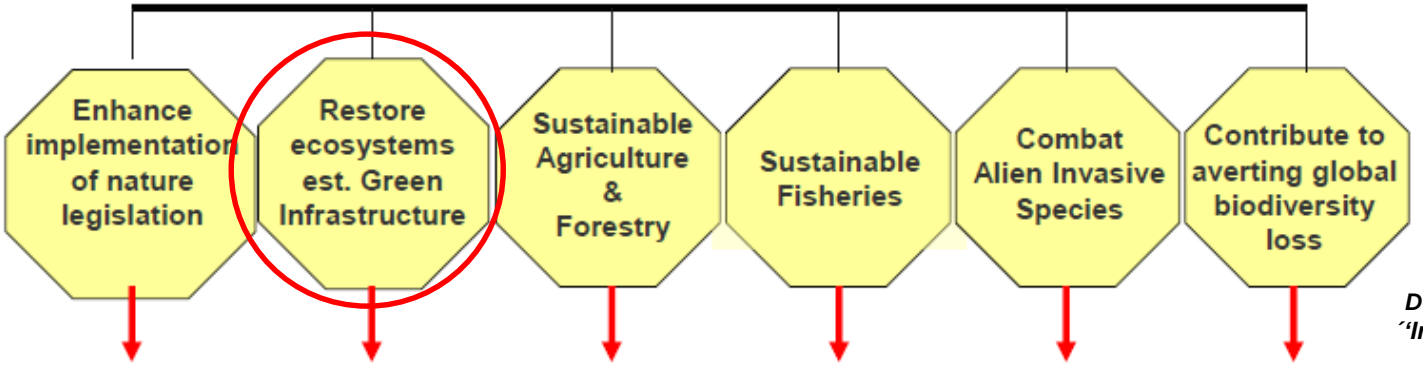
A 2050 VISION

European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored

A 2020 HEADLINE TARGET

Halt the loss of biodiversity and ecosystem services in the EU and restore them insofar as feasible, and step up the EU's contribution to averting global biodiversity loss.

6 TARGETS

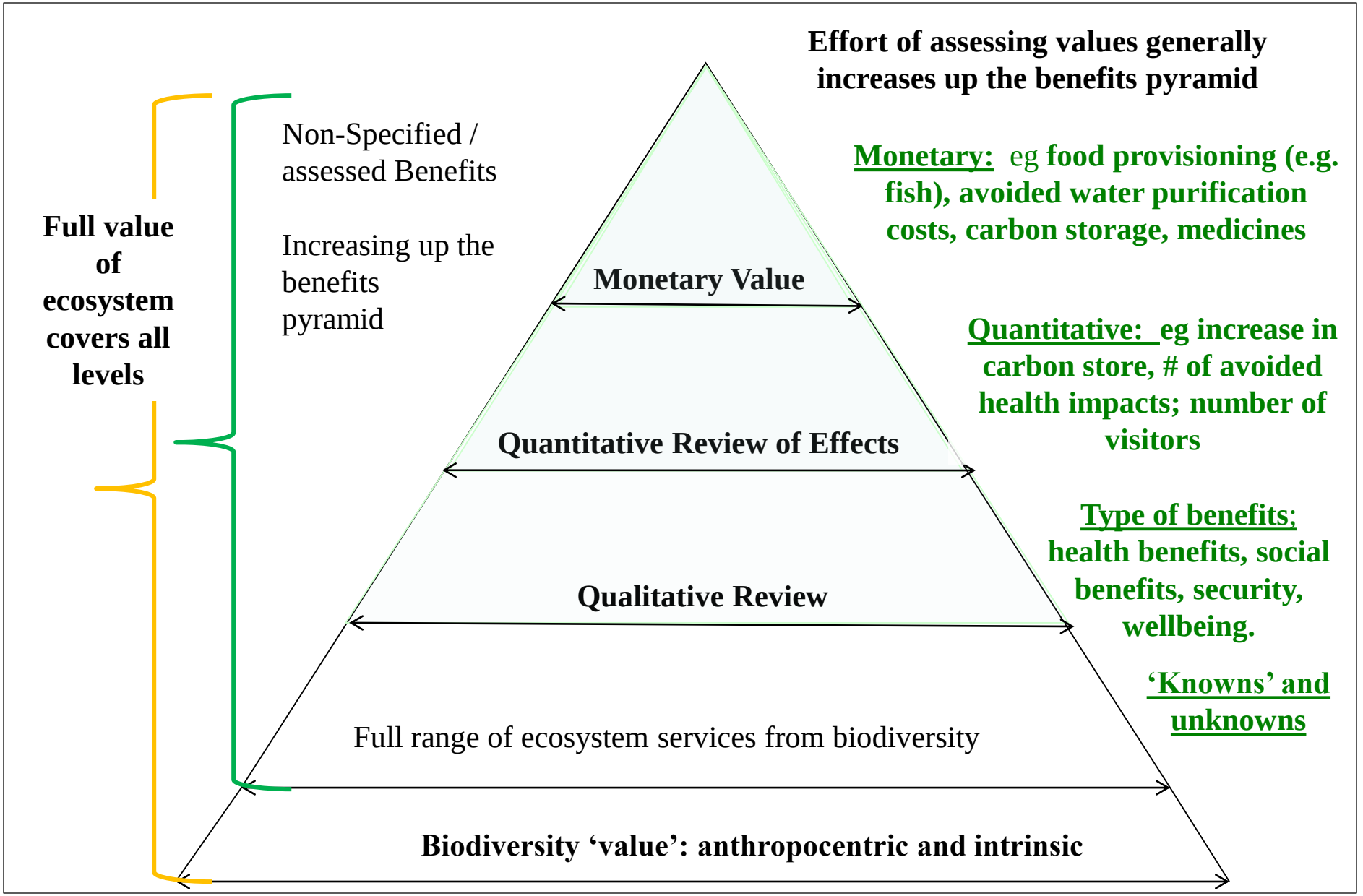


DG Env Presentation at ´'Investing in Peattlands' Sterling 2011.

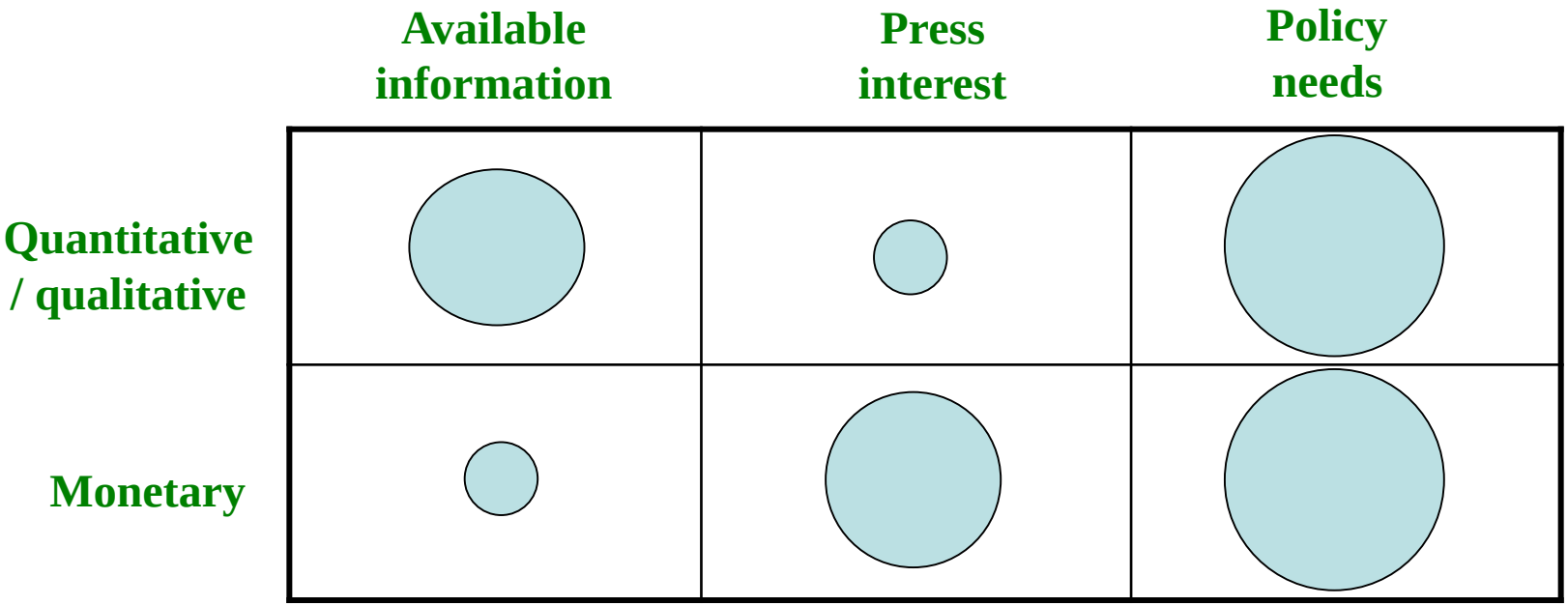
Actions

Action 5: Improve Knowledge of ecosystems and their services in the EU. Member Sates, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020

Biodiversity: The (information on) Benefits Pyramid



The Evidence Base and Demand



- There are different audiences, and different messages are needed for each.
- Different types of messages have different power and different reach.
- Policy needs a solid quantitative foundation as well as insights on costs and benefits

Source: P. ten Brink: presentation at March 2008 workshop Review of Economics of Biodiversity Loss, Brussels

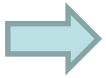
Lessons from Evaluation – Tools, their application and evolution, the use of results and road map for development

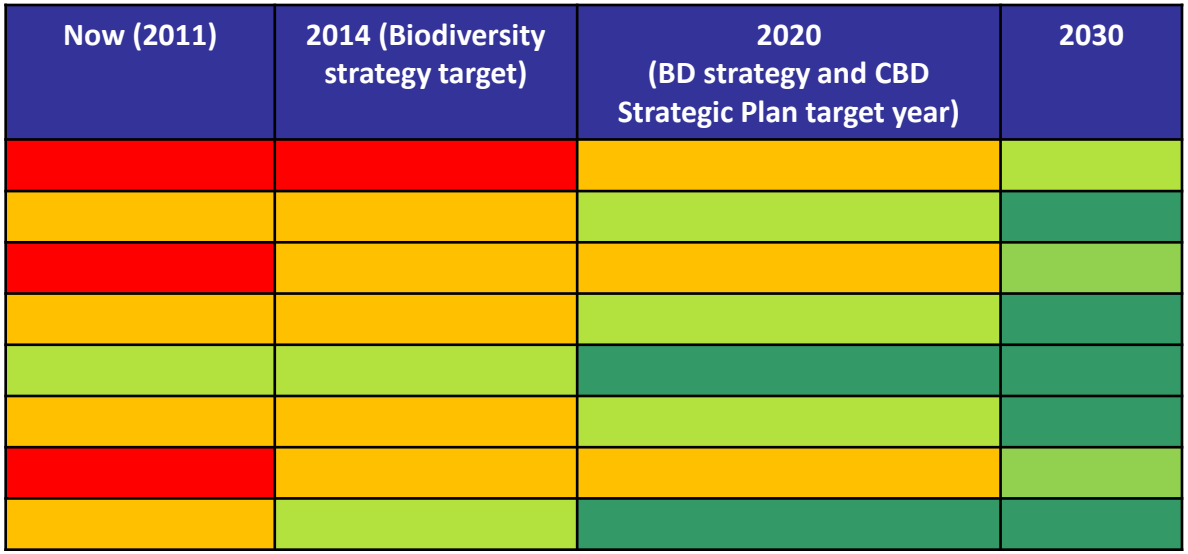
Nature of result	Method and its application: robustness and use
Experimental	Experimental methods; useful to explore ways forward; help learning. *Do not use the results for decision making;*
Indicative/illustrative	Valuable illustrative/indicative numbers to give order of magnitude results. **Helps scale an issue and identify importance. Already useful for policy reflections**.
Robust in part; not yet precise	Fairly robust tools leading to Illustrative/indicative – useable with due caveats, **Valuable in impact assessment, with transparent presentation of limits and what the numbers mean. Wide ranges**
Robust and more precise	**Robust method – should lead to robust numbers, fine for publication, citation, without need for significant context. Ranges more precise (though still ranges)**

Over time

Road Map

- **More physical data**
- **Better monitoring (e.g. GIS)**
- **Better indicators & time series**
- **More valuation cases**
- **Method evolution**
- **Learning from others`**





Fit for purpose: what level of precision is needed?

- **EU Policy Making – if it is clear that benefits are an order of magnitude larger than costs (or vice versa), then a very clear signal for need for policy action (or not). Precision less critical in Impact Assessment (IA) where a clear order of magnitude can be established. Robust order of magnitude can suffice.**

- **Instrument Design – eg PES, REDD+, ETS – greater precision needed to get the design right (e.g. what level of payments, defining additionality & conditionality) and have confidence in the instrument**

- **In project and permit assessment – as precise an answer is needed where possible, but whole picture also needed**

- **In compliance checking (e.g. performance under PES/REDD) – as precise an answer as possible is needed. Verifiability.**

Fit for purpose:
Policy needs & context defines the level of robustness and precision needed
Good governance only requires answers fit for purpose – proportionality principle

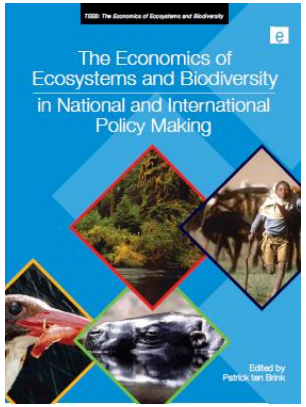
Summary

- **Measuring better to manage better:** from indicators to mapping to accounts – physical accounts and integrated economic and environmental accounts.
- **Fit for purpose:** precision valuable for some decisions; order of magnitude results for others.
- **Making Natures Values Visible:** improved evidence base for improved governance, awareness for action – government, business, people. Needs for qualitative, spatial, quantitative & monetary information.
- **Growing political commitment:** **CBD Strategic Plan, Biodiversity Strategy**
- Clear need for natural capital accounts and fuller SEEA
- **Learning by doing** / learning **from others** - **key for realising a road map and reaching objectives. Solid foundation for improved policy**

Thank you

TEEB Reports available on http://www.teebweb.org/

See also www.teeb4me.com



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