



## 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**



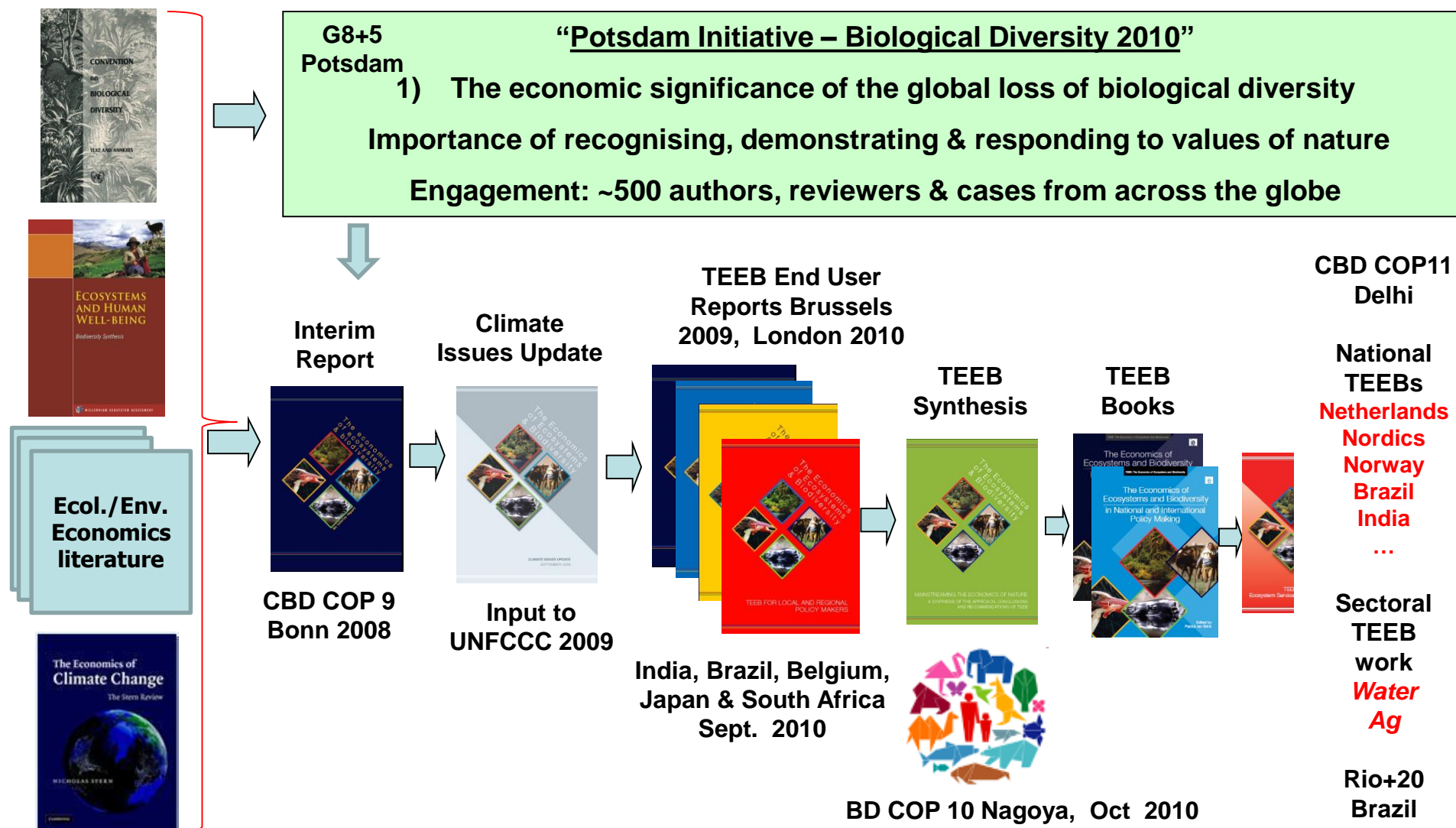
## Presentation overview



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



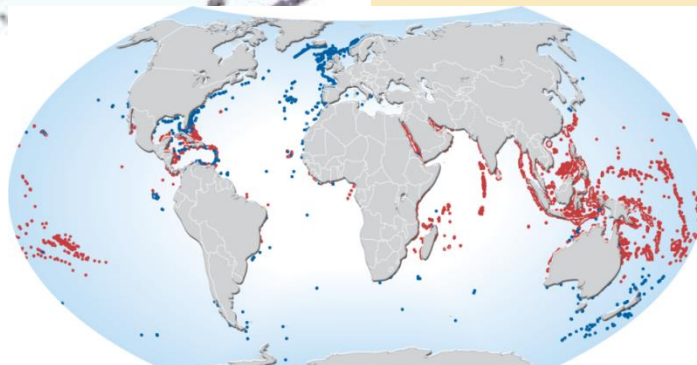
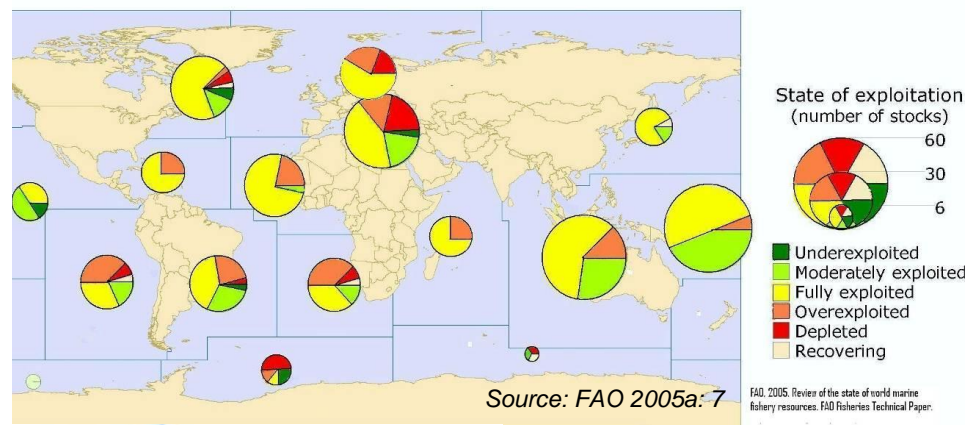
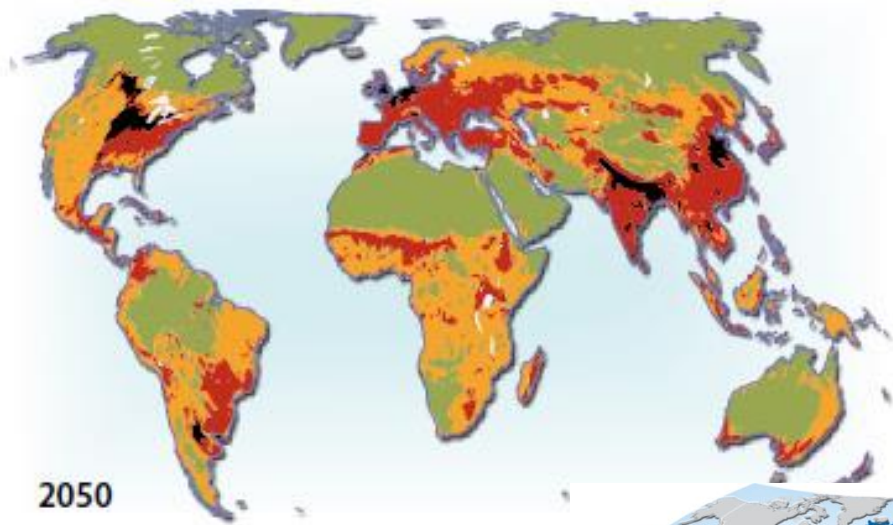
## TEEB's Genesis, Aims and progress





**“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: 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





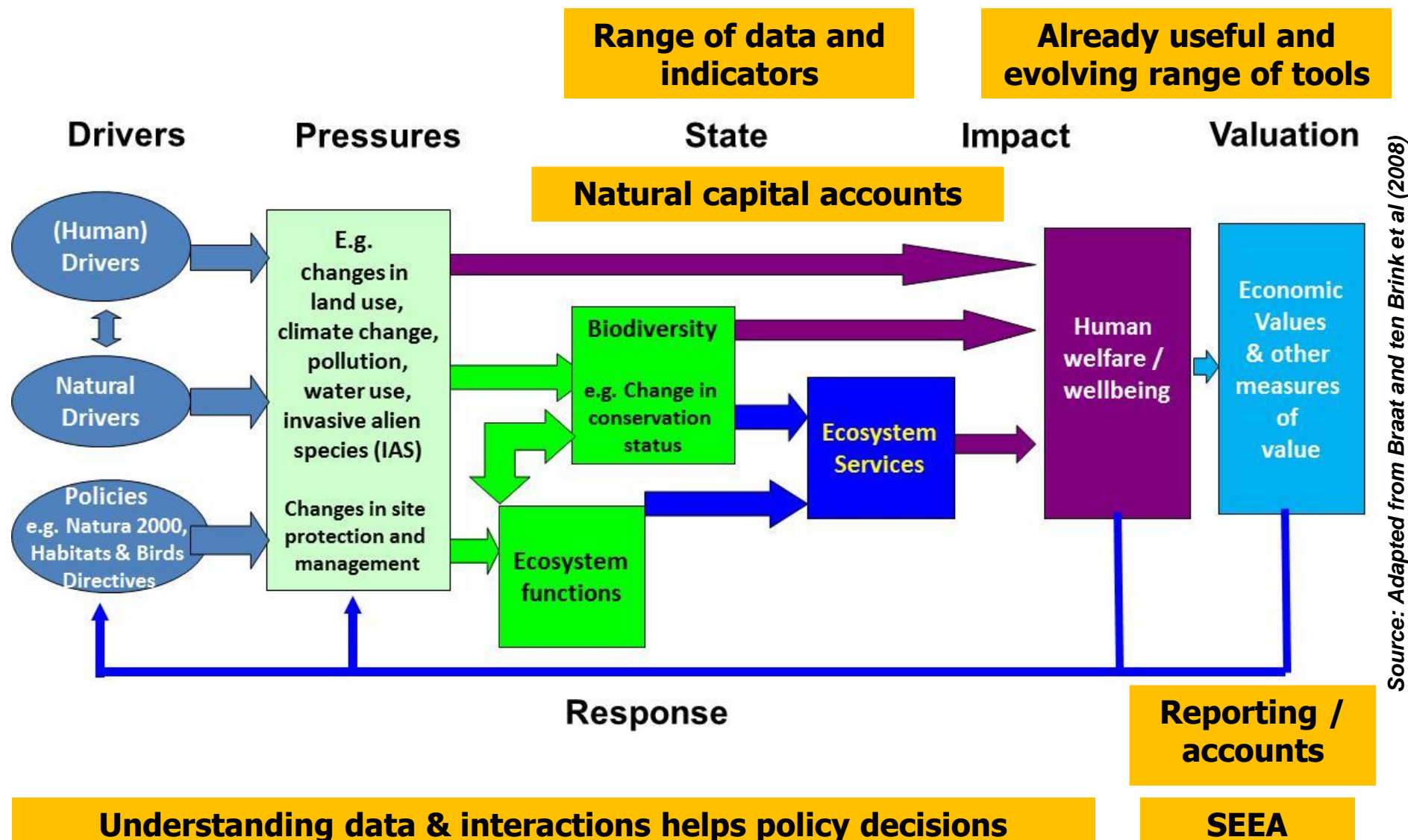
## Critical issues

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 seen as a 'slow fuse' investment, but one that can lead to a paradigm shift in governance.

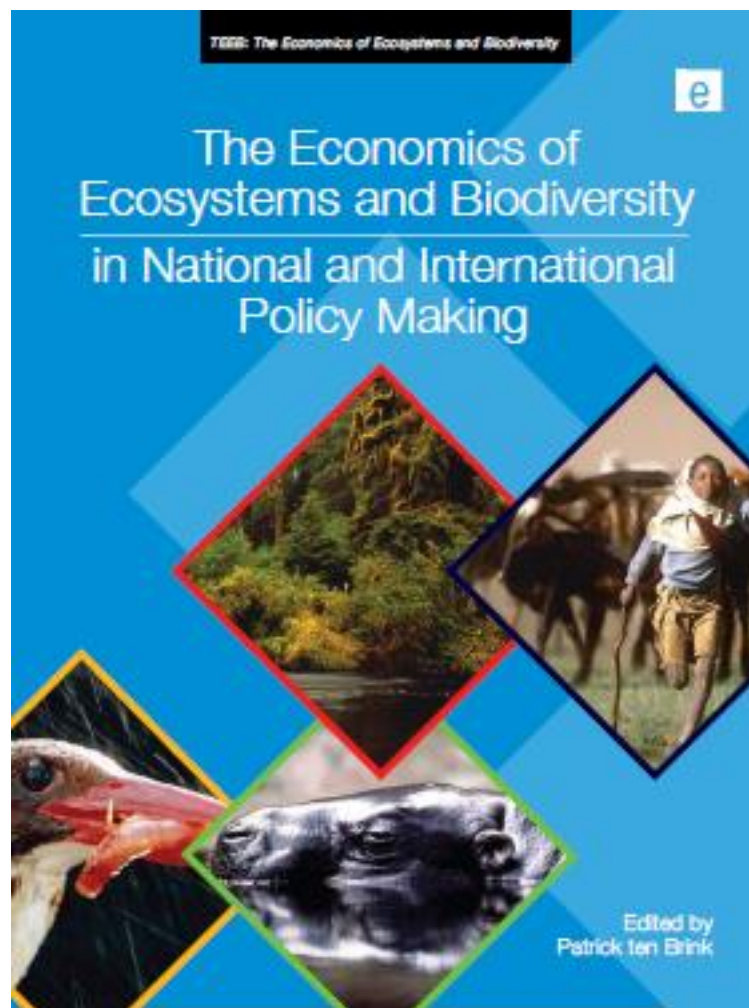


## From (policy) drivers to impacts to values





## 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

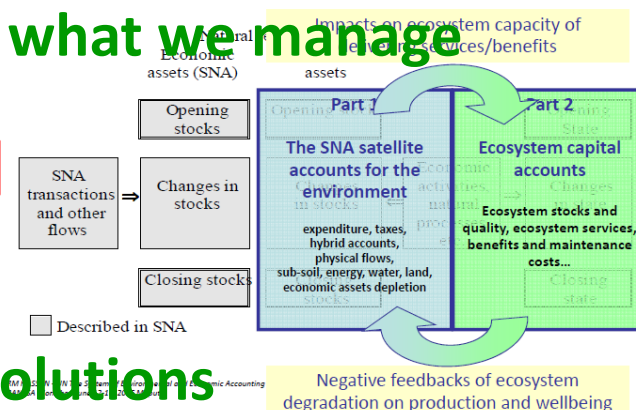
- Nature's assets & biodiversity loss
- Economic values and loss
- Social dimension



## 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)

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

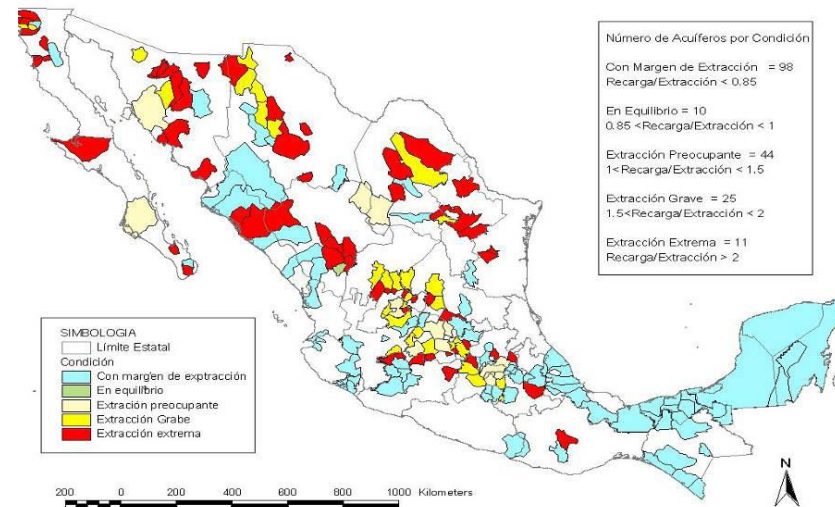
## Result

Deforestation rate fell from 1.6 % to 0.6 %.

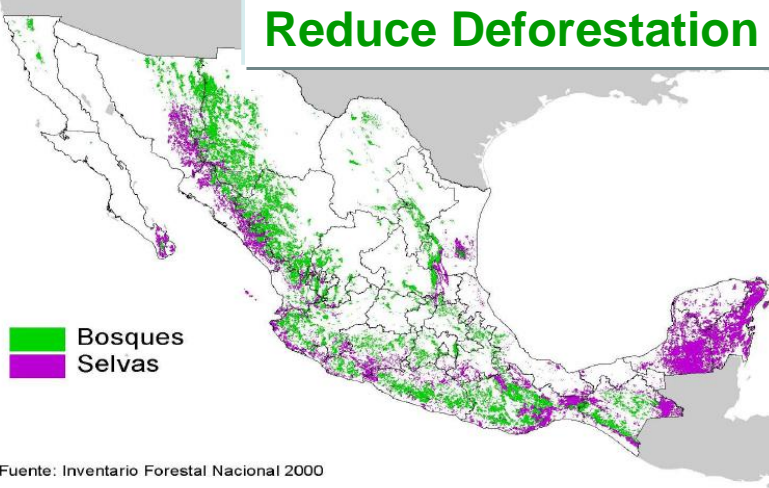
18.3 thousand hectares of avoided deforestation

Avoided GHG emissions ~ 3.2 million tCO<sub>2</sub>e

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



**Reduce Deforestation**



Fuente: Inventario Forestal Nacional 2000

**Address Poverty**



Fuente: CONAPO

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

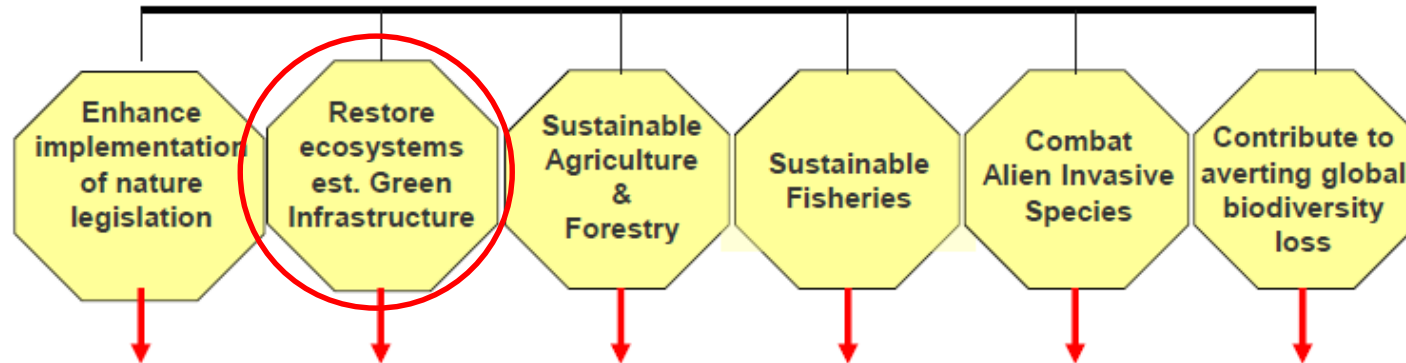
## A 2050 VISION

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

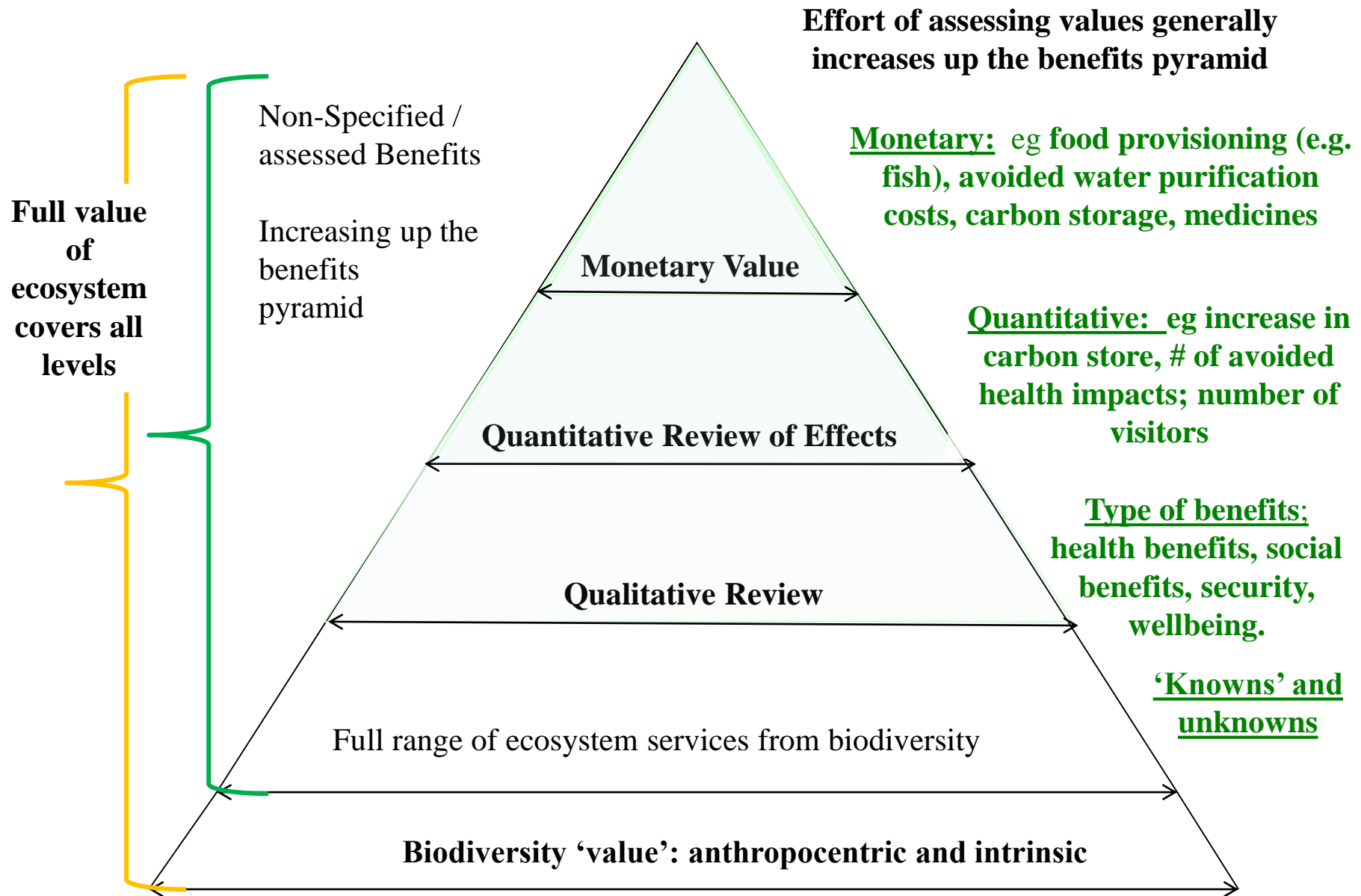


DG Env Presentation at  
"Investing in Peatlands"  
Sterling 2011.

## Actions

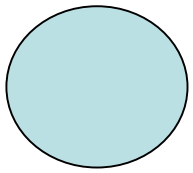

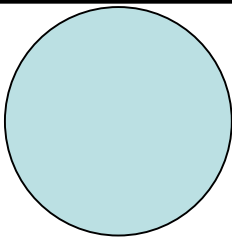

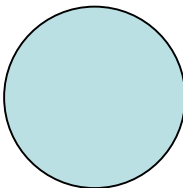
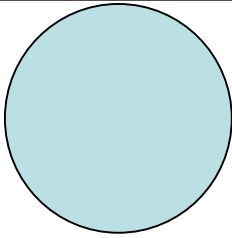
**Action 5: Improve Knowledge of ecosystems and their services in the EU.** Member States, with the assistance of the Commission, will **map** and **assess the state of ecosystems** and their **services** in their national territory by 2014, **assess the economic value** of such services, and **promote 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

	Available information	Press interest	Policy needs
Quantitative / qualitative			
Monetary			

- 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



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

## Over time

## Road Map

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

[illegible]



## 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

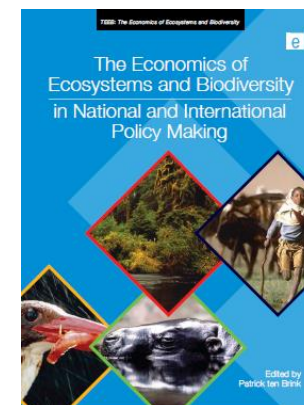
TEEB Reports available on <http://www.teebweb.org/>

See also [www.teeb4me.com](http://www.teeb4me.com)

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