

# The Economics of Ecosystems & Biodiversity



Royal Swedish Academy of Agriculture and Forestry

13 October 2011  
Stockholm, Sweden

## The Economics of Ecosystems and Biodiversity

**Benjamin Simmons**  
United Nations Environment Programme



UNEP  
United Nations Environment Programme



## Outline

- Background/Conceptual Foundations
- TEEB Process/Outputs
- Value of Valuations
- Next Steps/Recommendations

# The Economics of Ecosystems & Biodiversity

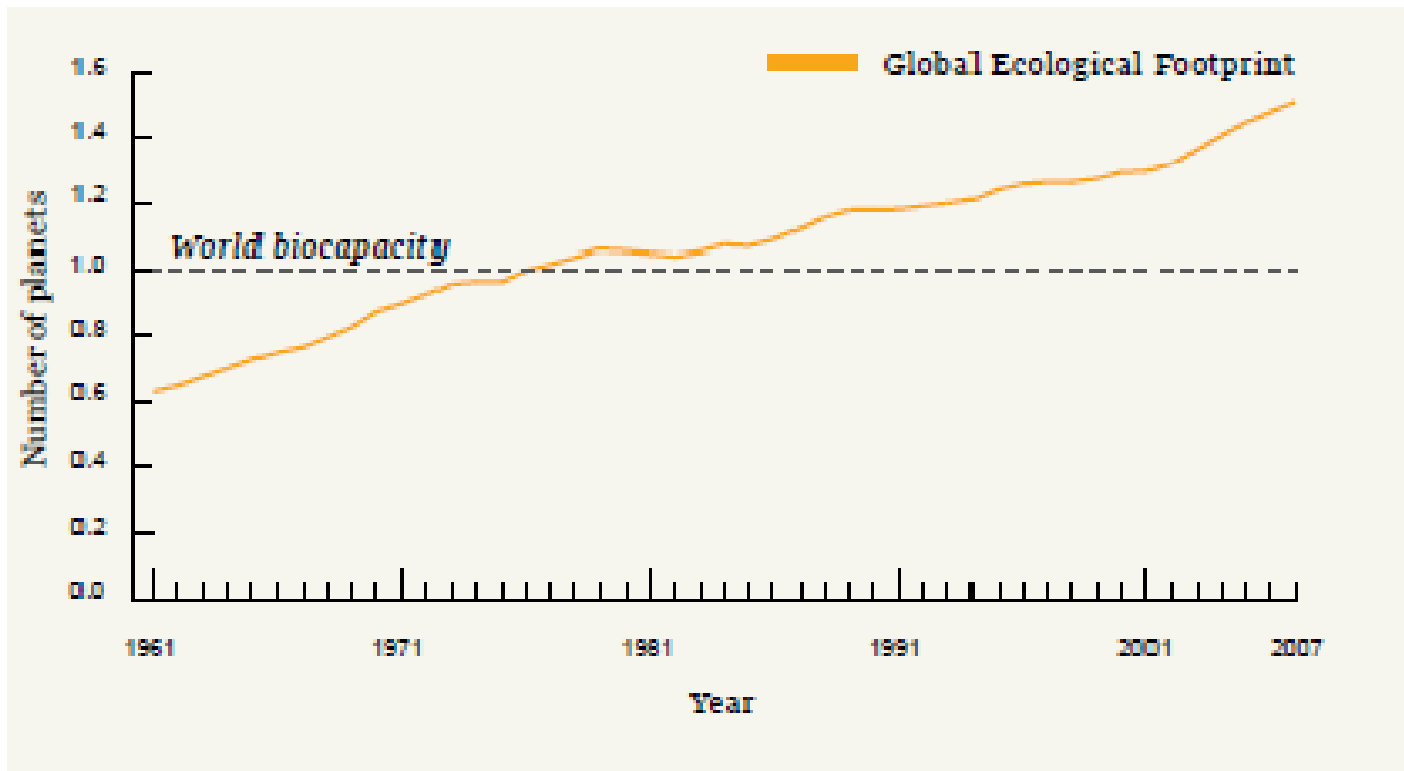


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**We cannot solve our problems with the same thinking  
we used when we created them.**

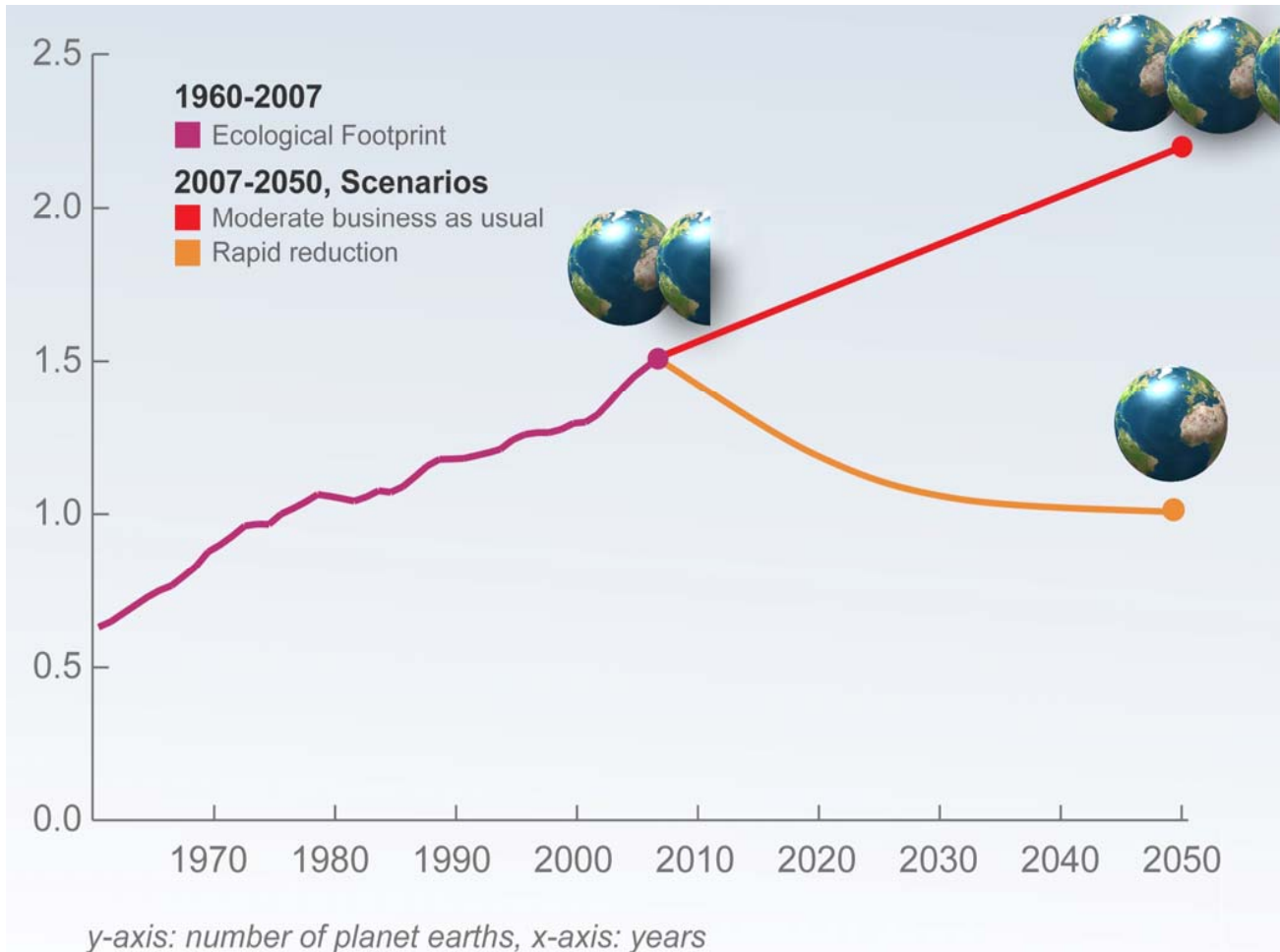
**-Albert Einstein**

# The Economics of Ecosystems & Biodiversity



*Global Footprint Network – [www.footprintnetwork.org](http://www.footprintnetwork.org)*

# The Economics of Ecosystems & Biodiversity



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# The Economics of Ecosystems & Biodiversity



“Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber and fuel.”

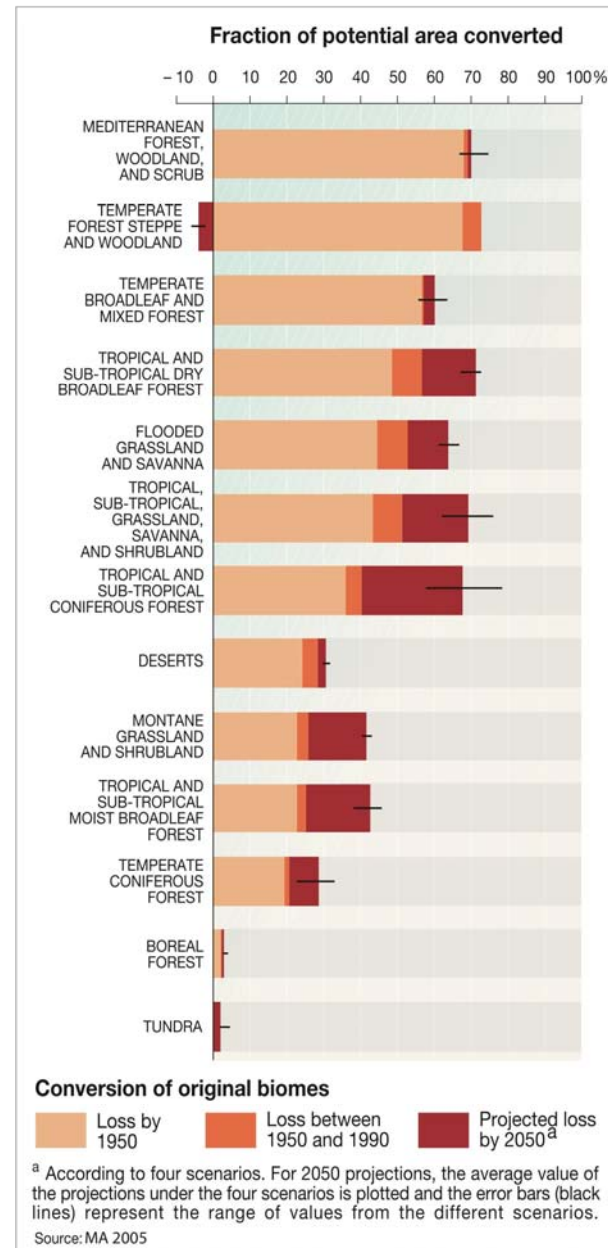


**Millennium Ecosystem  
Assessment**

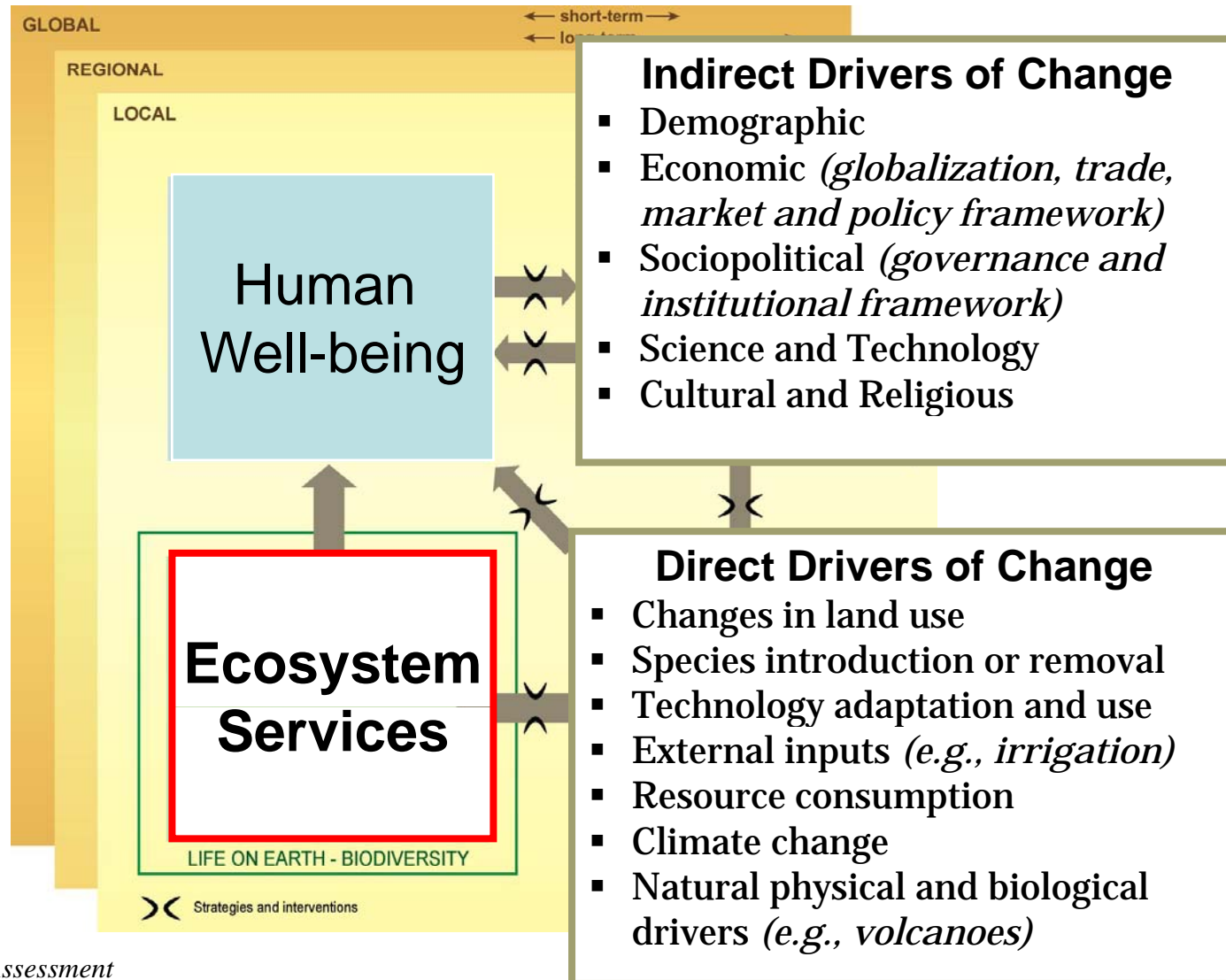
# The Economics of Ecosystems & Biodiversity



## Conversion of original biomes, 1950-2050



# The Economics of Ecosystems & Biodiversity

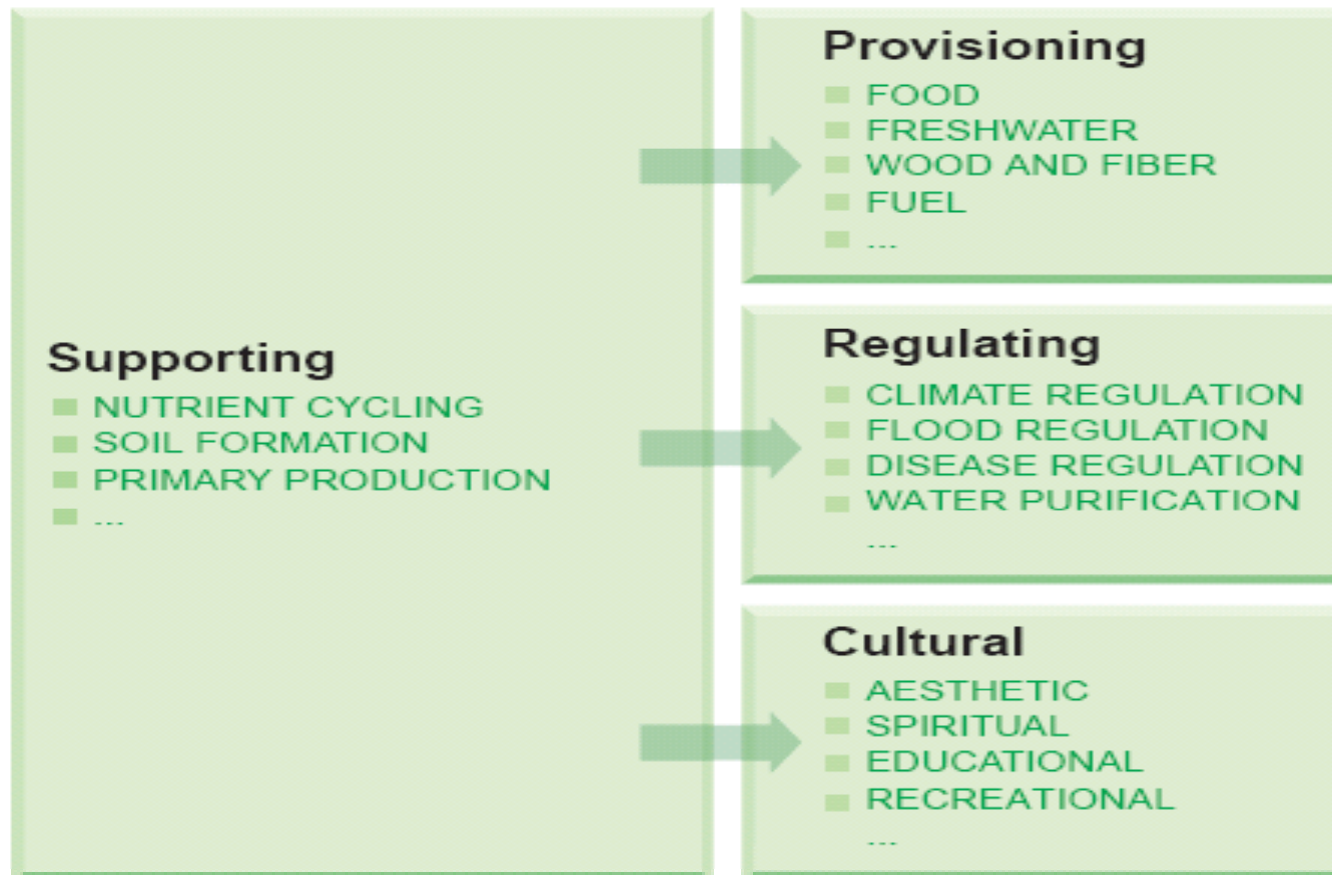




# The Economics of Ecosystems & Biodiversity



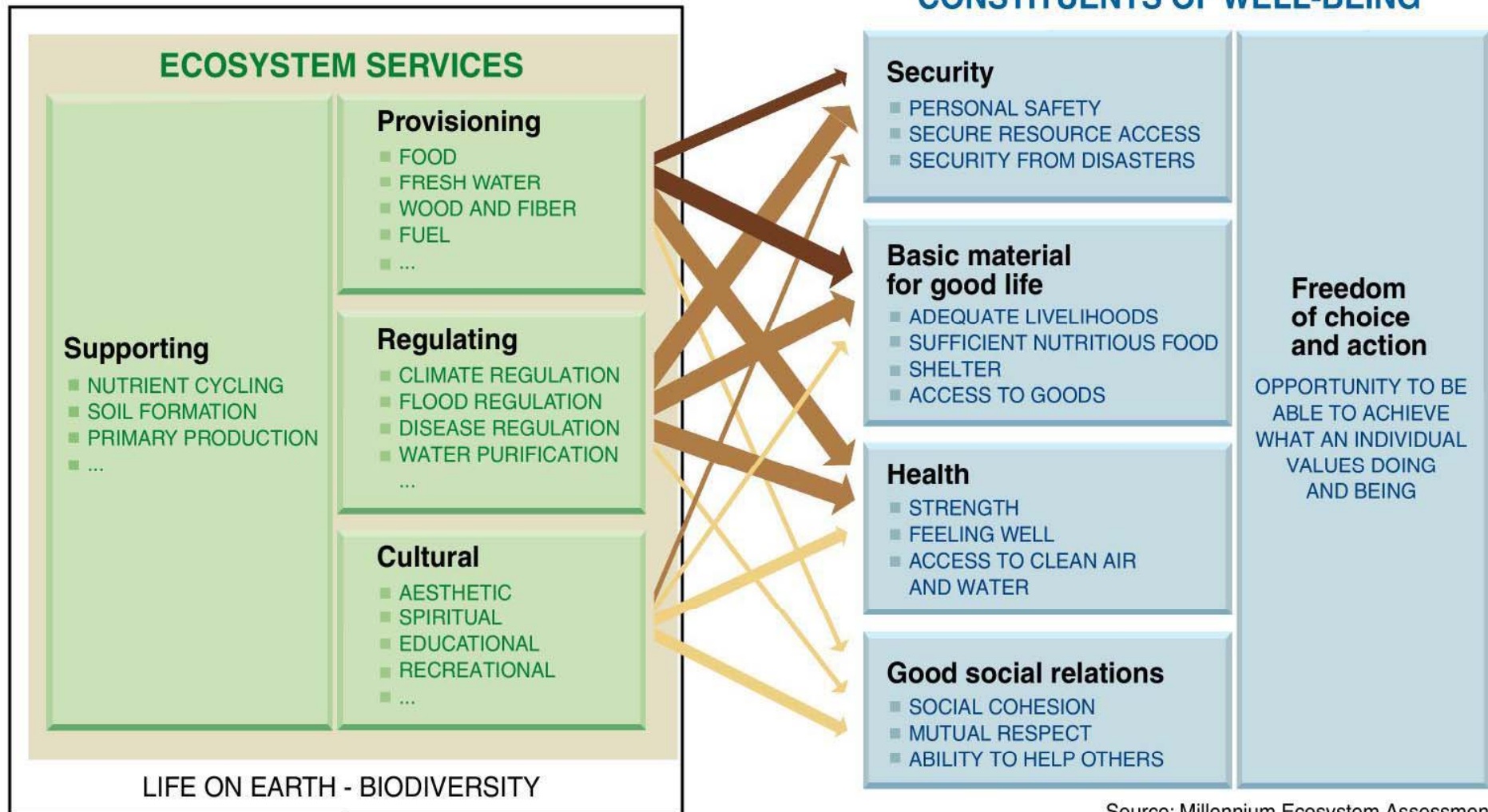
## ECOSYSTEM SERVICES



# The Economics of Ecosystems & Biodiversity



## Ecosystem Services and Human Wellbeing

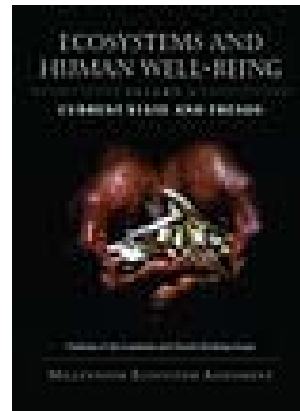


Source: Millennium Ecosystem Assessment

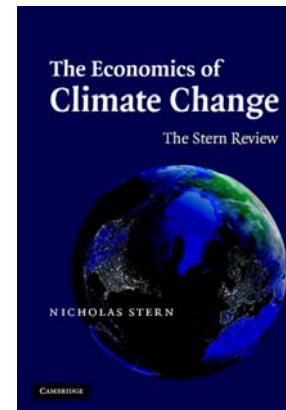


## TEEB's genesis ...

2005



2006



**“Potsdam Initiative – Biological Diversity 2010”**

**... the economic significance of the global loss of  
biological diversity ...**



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- **TEEB Process/Outputs**
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**Mainstreaming the Economics of Nature**

# The Economics of Ecosystems & Biodiversity



## TEEB is ...

- A multi-donor initiative, hosted by UNEP, to explore economic perspectives on nature
- Some 200 economists & ecologists (26 countries) in 5 working groups



Institute for  
European  
Environmental  
Policy



ORGANISATION  
FOR ECONOMIC  
CO-OPERATION  
AND DEVELOPMENT



European Environment Agency



# The Economics of Ecosystems & Biodiversity



## TEEB Advisory Board



**Achim Steiner**



**Joan-Martinez Alier**



**Edward Barbier**



**Jacqueline McGlade**



**Giles Atkinson**



**Lord Stern**



**Jochen Flasbarth**



**Julia Marton-Lefevre**



**Peter H. May**



**Karl-Goran Maler**



**Herman Mulder**



**Walter Reid**



**Ahmed Djoghla**



**Yolanda Kakabadse**



**Ladislav Miko**



## What TEEB is aiming for...

- Synthesis of existing knowledge on economics of ecosystems and biodiversity
- Focused analysis and key messages for different end-users
- Active and worldwide dissemination to these users
- Awareness raising and mainstreaming

## TEEB is not....

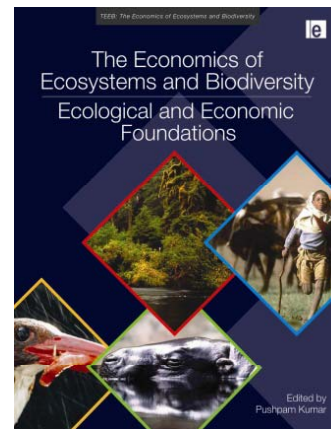
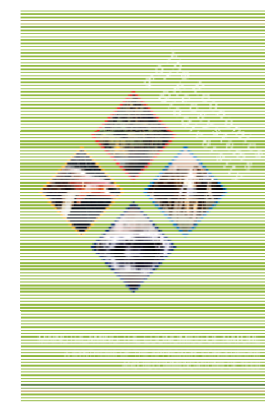
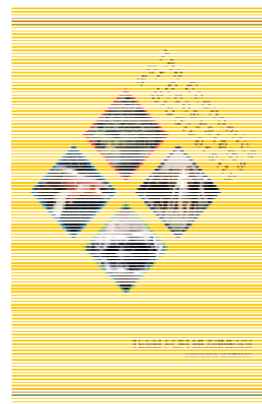
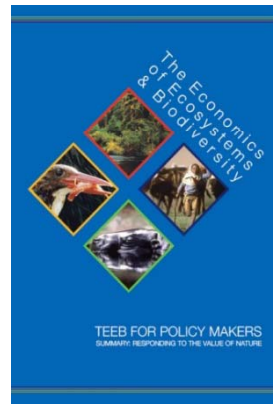
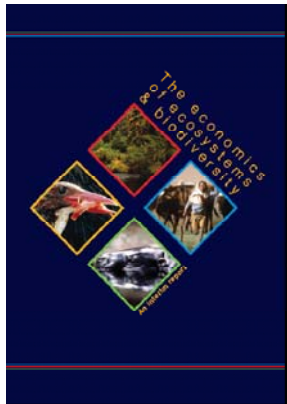
- Academic effort
- Global valuation study



# The Economics of Ecosystems & Biodiversity



## TEEB – a series of reports



[www.teebweb.org](http://www.teebweb.org)

# The Economics of Ecosystems & Biodiversity



## ... and broad media coverage

- over 1,100 news articles in 65 countries
- more than 1300 websites
- 1800 social media fora





## TEEB References

- G8 Carta di Siracusa
- G20 Leaders Statement
- CBD COP-10
  - Decision X/2 on the Strategic Plan for Biodiversity 2011-20
  - Decision X/21 on Business Engagement
  - Decision X/44 on Incentive Measures
- Ramsar Resolution X.12 on “Principles for partnerships between the Ramsar Convention and the business sector”



Life in harmony,  
into the future  
COP10/MOP5  
AICHI-NAGOYA  
JAPAN 2010



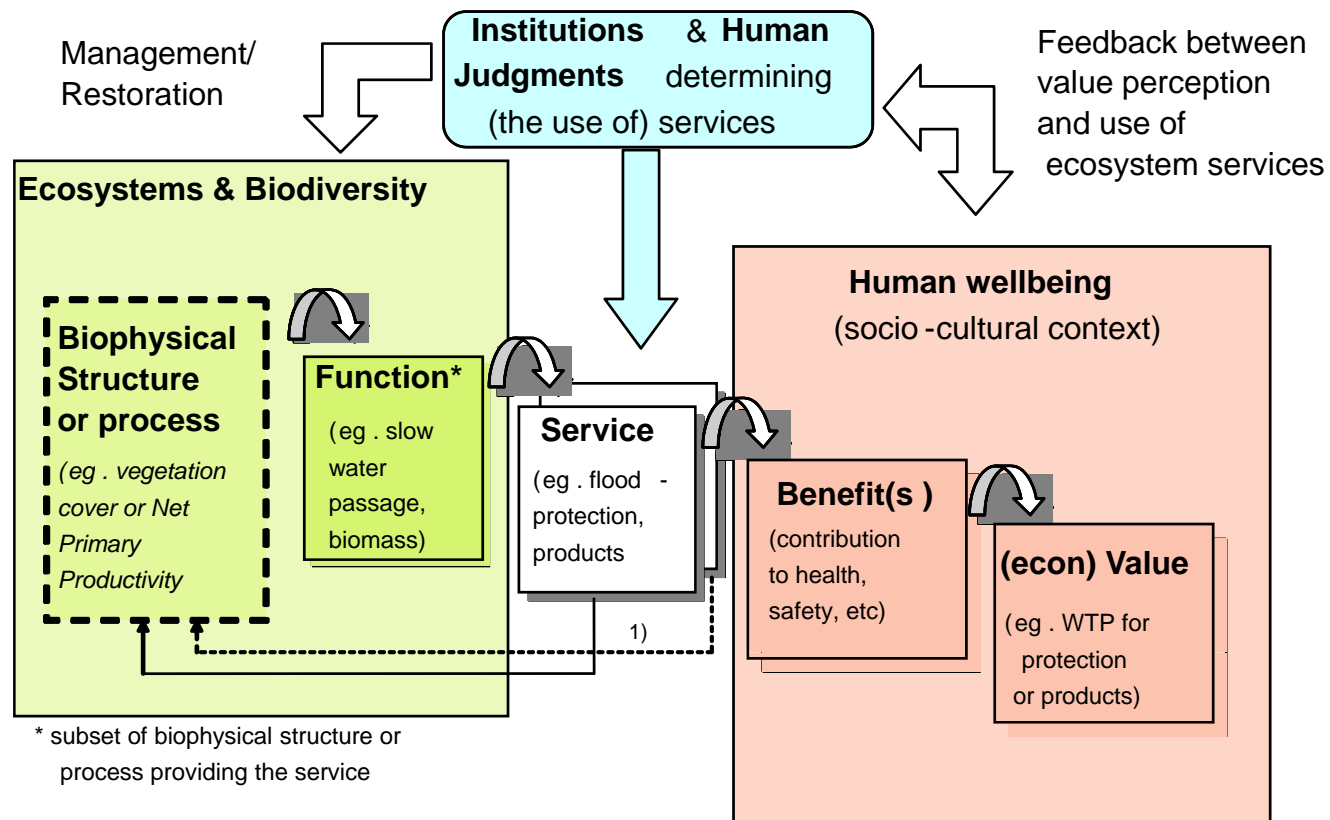


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## TEEB Conceptual Framework



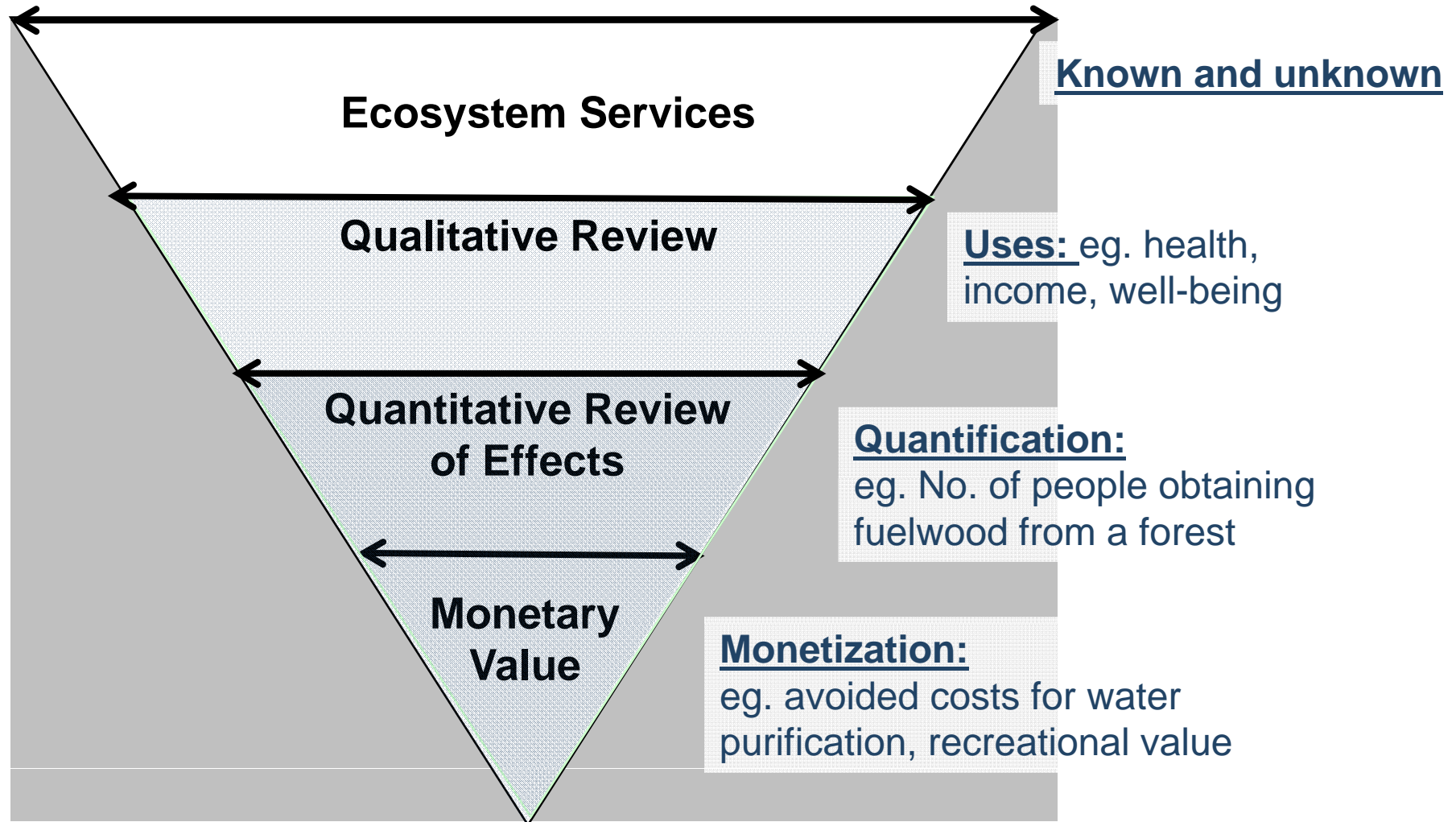


## TEEB approach to “valuation”

- 1. Recognizing value:** a feature of all human societies and communities
- 2. Demonstrating value:** in economic terms, to support decision making
- 3. Capturing value:** introduce mechanisms that incorporate the values of ecosystems into decision making

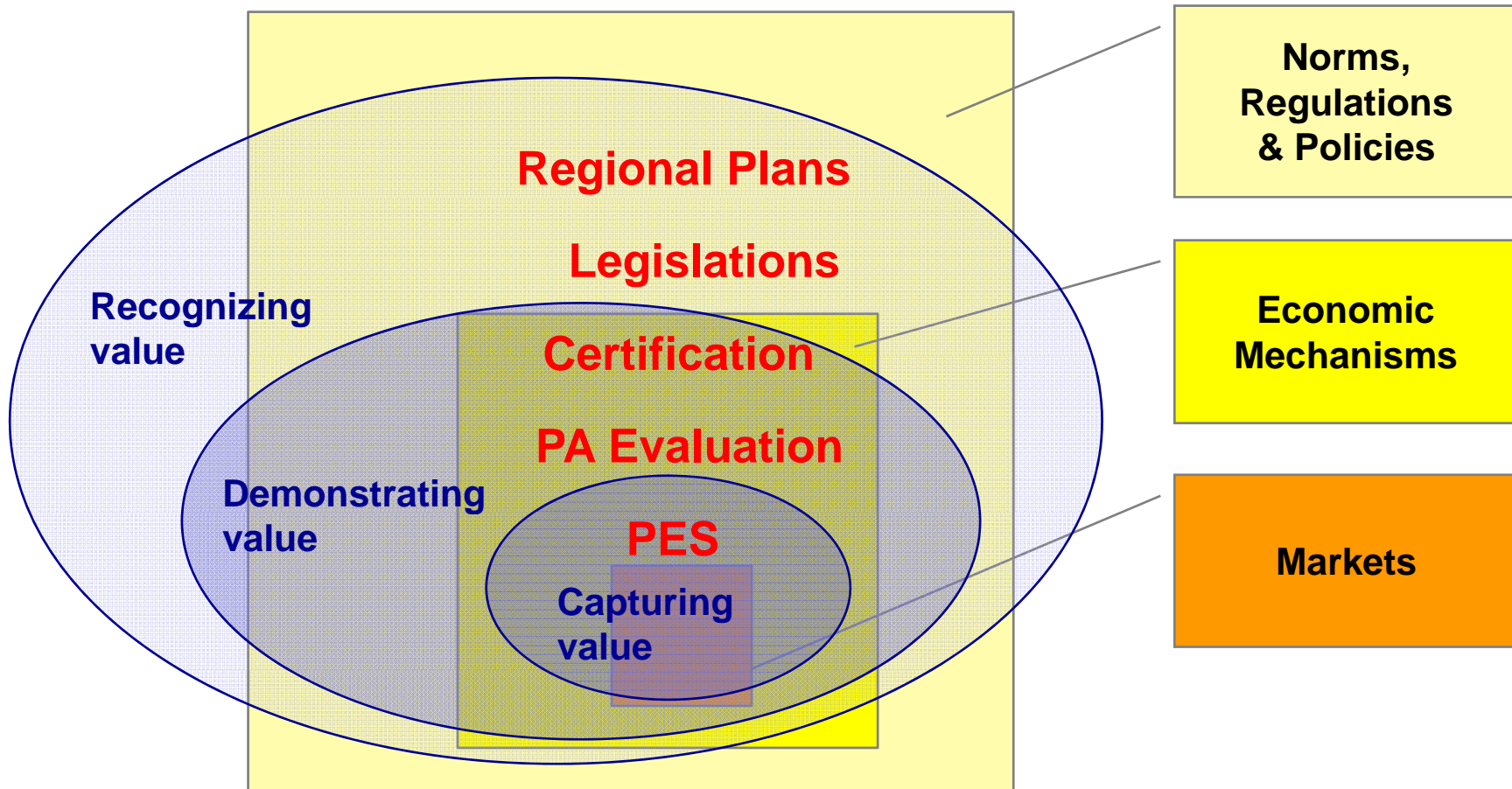


## Different Levels of Analysis





## Relationship with Policymaking





## The Economics of Ecosystems & Biodiversity



**Filtration plant estimated cost  
US\$ 6-8 Billion  
Plus US\$300-500 Million annual  
running costs**



**Investment in watershed  
US\$ 1-1.5 Billion**

# The Economics of Ecosystems & Biodiversity



## Leuser Ecosystem, Indonesia

- 2.5 Mio ha with species rich forest providing multiple services (water provision, erosion control, etc.)
- Deforestation and resulting erosion is a major challenge – also for agriculture

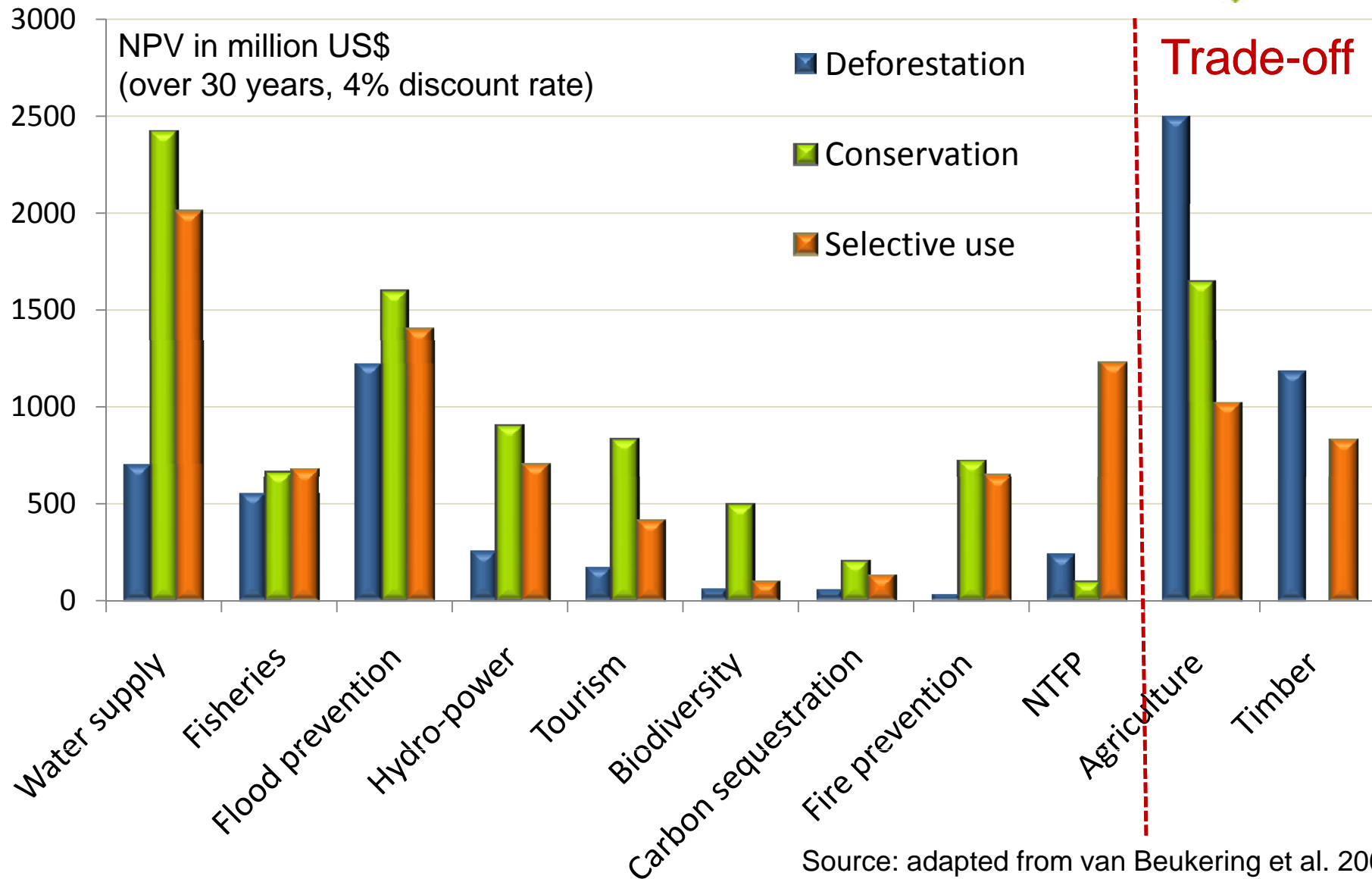


Source of image of orangutan: <http://img.dk.com/stays/cs/7/1/vn/features/rainforest/images/L-newmonkey3-x280-RD094.jpg>  
Source of rainforest image: <http://img.pestacultures.com/images/aceh/MountLeuser1.jpg>  
Source of map: [http://www.planet-aceh.org/automne\\_modules\\_files/polyProjects/public/r5950\\_7\\_3np\\_sumatra\\_a3\\_thumbnail.png](http://www.planet-aceh.org/automne_modules_files/polyProjects/public/r5950_7_3np_sumatra_a3_thumbnail.png)

# The Economics of Ecosystems & Biodiversity



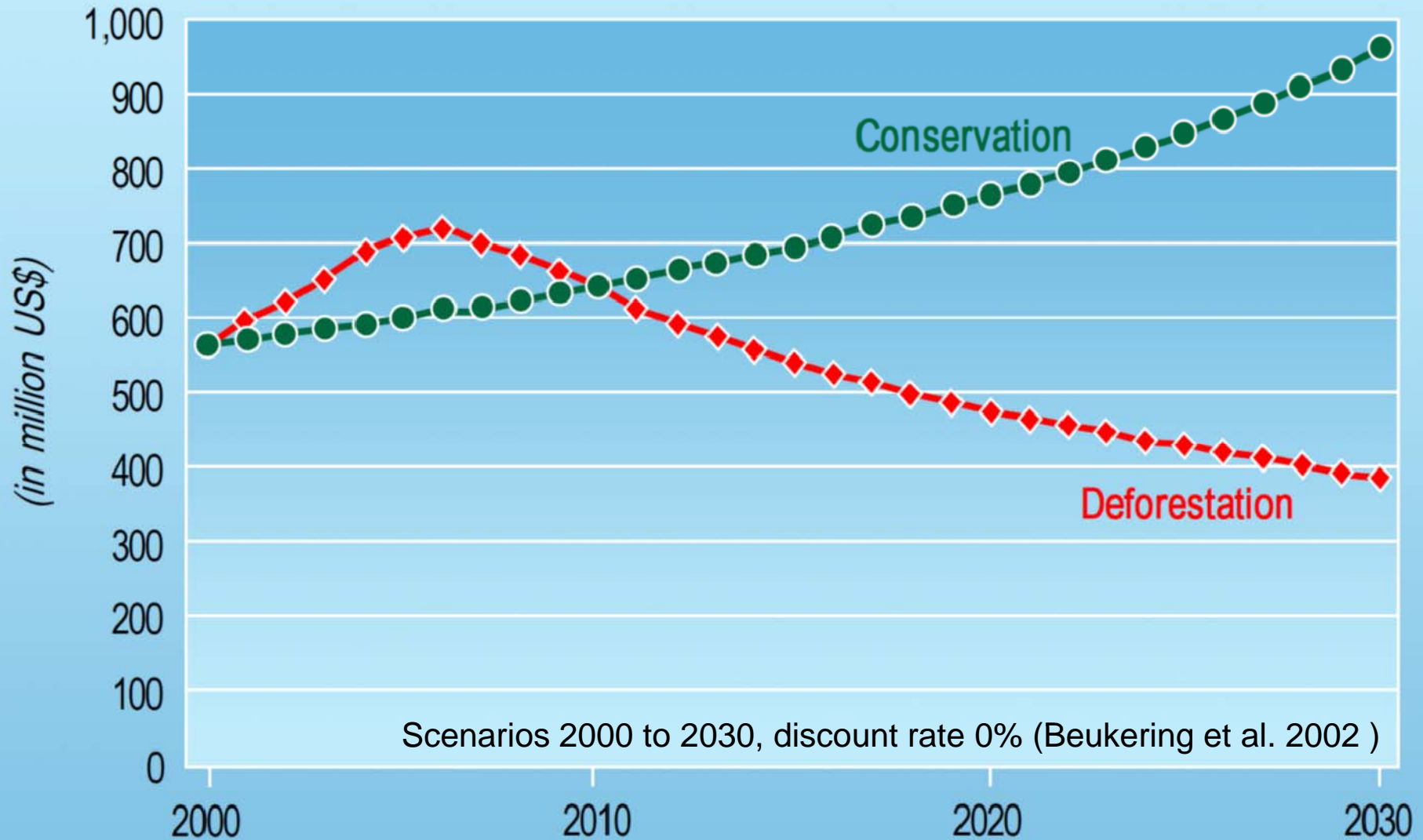
## The benefits from ecosystem services



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## Benefits over time

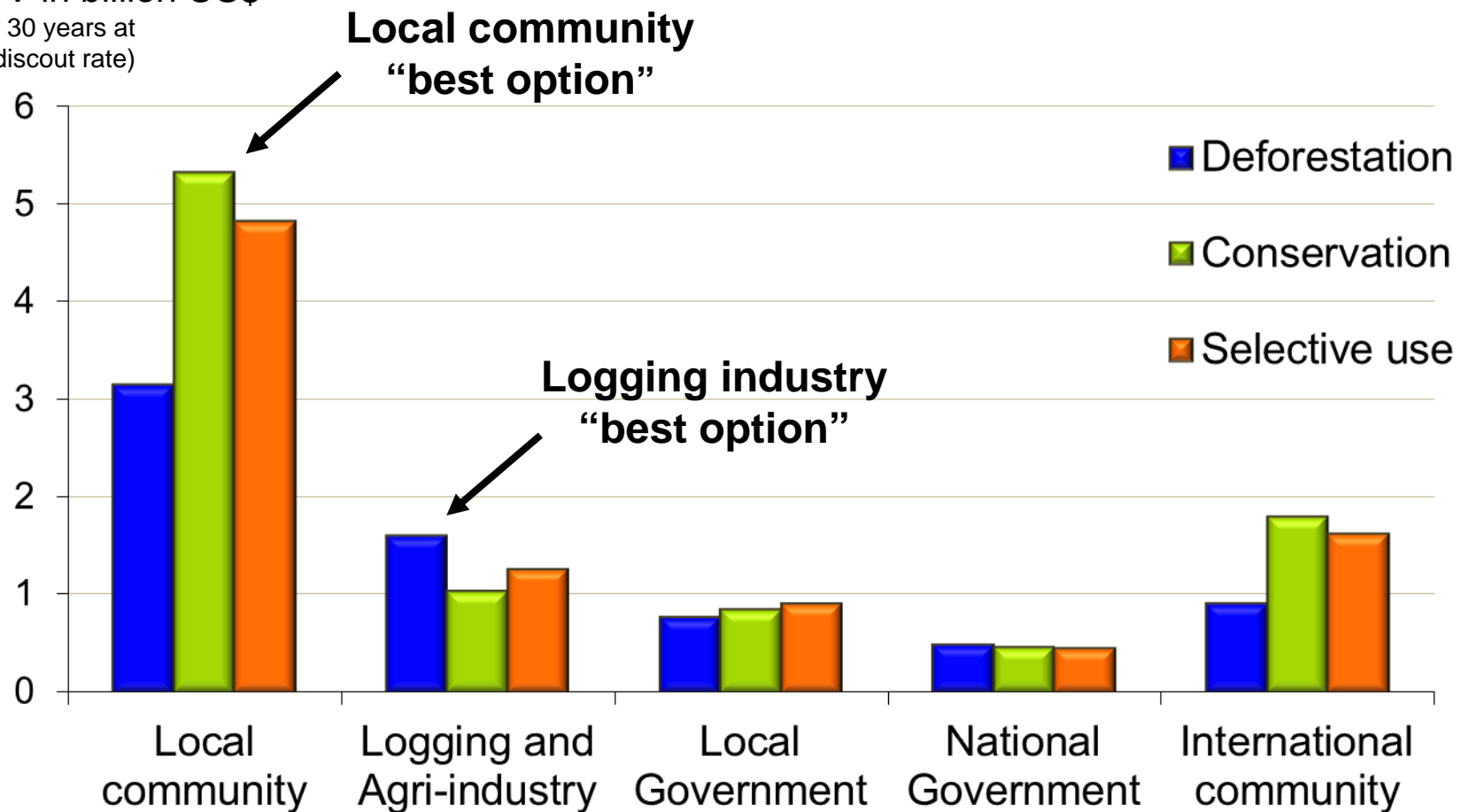


# The Economics of Ecosystems & Biodiversity



Who is benefiting?

NPV in billion US\$  
(over 30 years at  
4% discount rate)

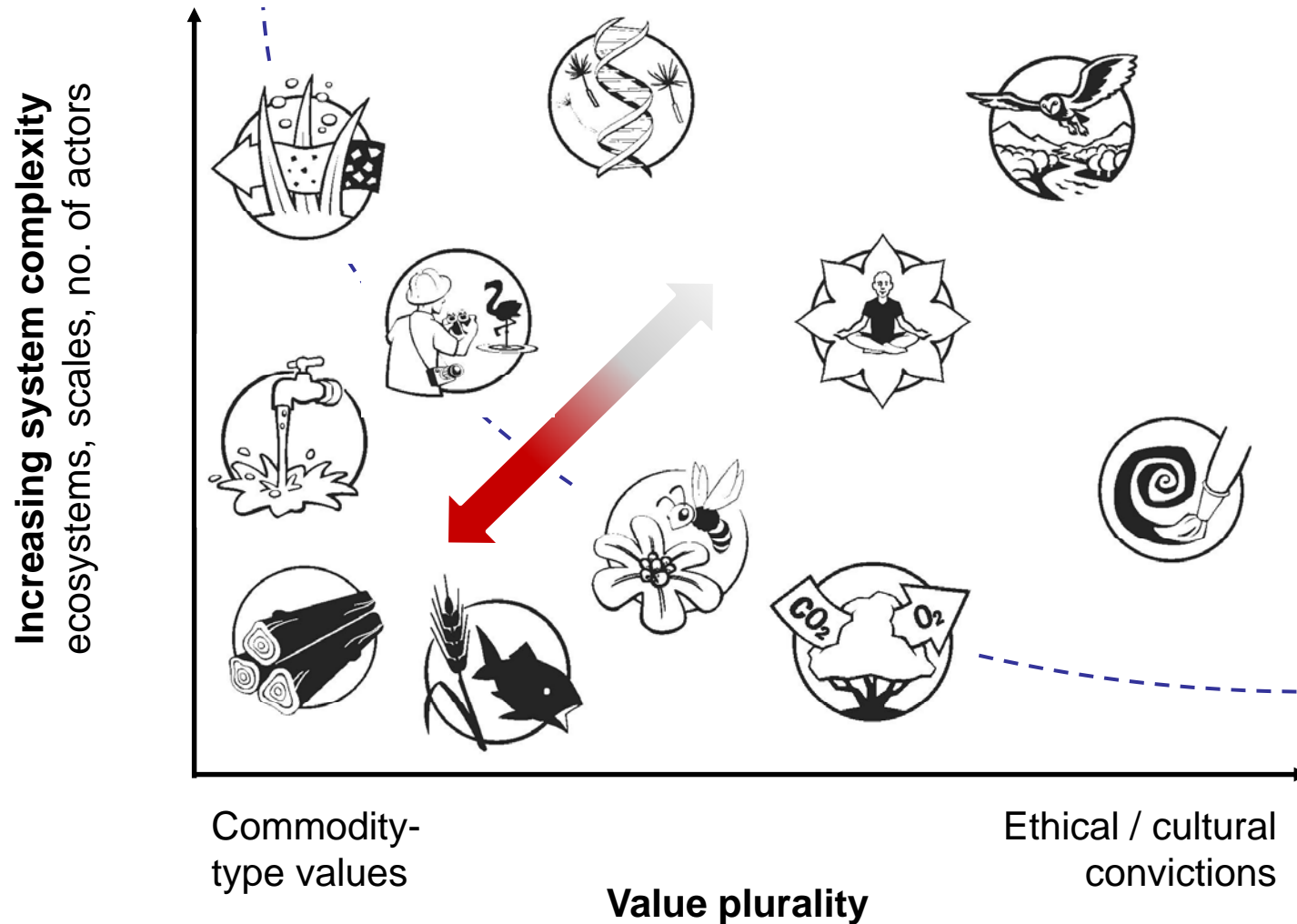


Source: adapted from van Beukering et al. 2003

# The Economics of Ecosystems & Biodiversity



## Usefulness of economic valuation





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## TEEB - Next Steps

### 1. National Studies

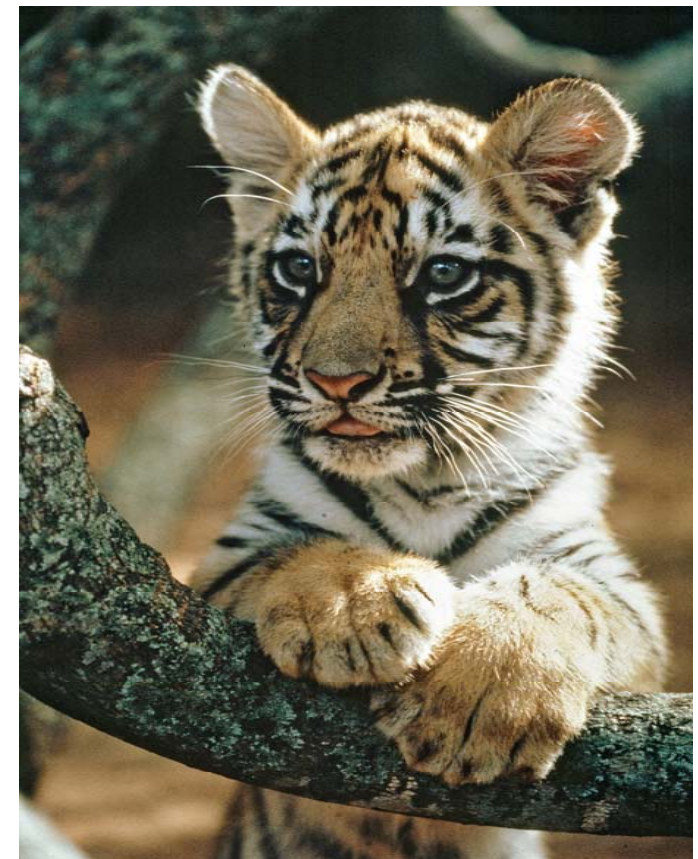
- Brazil, India, Germany, Netherlands, Norway, and others

### 2. Sectoral Studies

- Water and wetlands
- Oceans
- Agriculture

### 3. Network/Outreach

- TEEB database
- TEEB case studies
- TEEB news updates







## TEEB Lessons

- High-level government commitments
- Open Architecture
- Independence
- Targeted to specific end-users
- Robust Communications and Outreach Strategy



## TEEB “*Game Changer*” Recommendations

- Understand and recognize the value of nature
- Develop new national measurements for growth and prosperity
- Develop new private sector disclosure requirements
- Shift consumption patterns

# The Economics of Ecosystems & Biodiversity



Look deep into nature, and then you will  
understand everything better.

-Albert Einstein

[www.teebweb.org](http://www.teebweb.org)



UNEP

United Nations Environment Programme