



20th of October, 2010  
CBD COP10, Nagoya

## The Economics of Ecosystems & Biodiversity

### Mainstreaming the Economics of Nature

**Pavan Sukhdev**

Study Leader – TEEB

& Special Adviser & Head - Green Economy Initiative

UNEP



Federal Ministry for the  
Environment, Nature Conservation  
and Nuclear Safety



Rijksoverheid



NORWEGIAN MINISTRY  
OF FOREIGN AFFAIRS



# The Economics of Ecosystems & Biodiversity

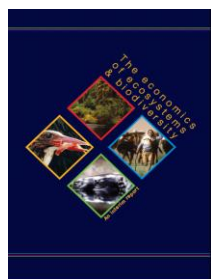


## TEEB's genesis ...

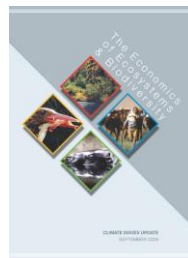


**“Potsdam Initiative – Biological Diversity 2010”**

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



**TEEB Interim Report  
CBD COP-9, Bonn, May 2008**



**TEEB Climate Issues Update  
Strömstad September 2009.**



**TEEB Main Reports  
Nov. 2009 – Oct. 2010**

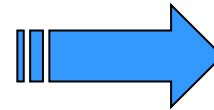




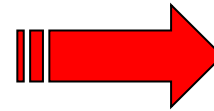
## TEEB's main reports



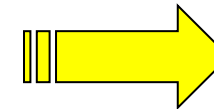
Science & Economics  
Foundations



Policy Evaluation  
for National Policy-  
Makers



Evaluation & Decision  
Support for Local and  
Regional Policy



Business Risks  
& Opportunities



Synthesis

**TEEB's mission is to make Nature economically visible**

# 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 Djoghlaif**



**Yolanda Kakabadse**



**Ladislav Miko**

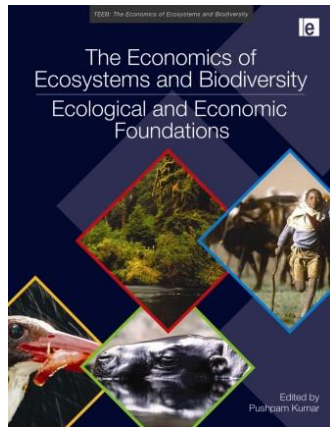


# The Economics of Ecosystems & Biodiversity

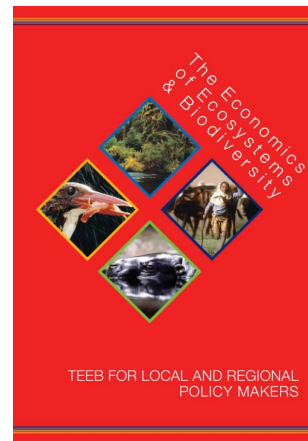


## The TEEB Community

### Coordinating Editors of TEEB main reports



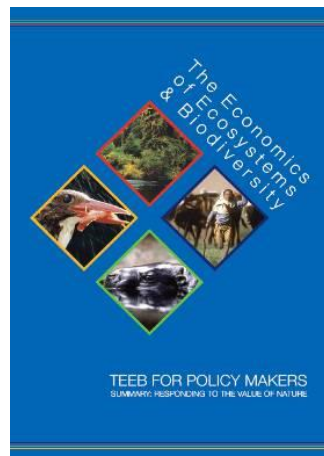
**Pushpam Kumar**



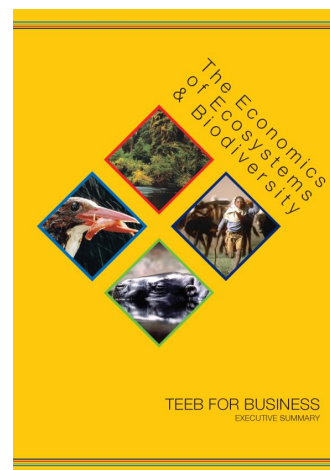
**Haripriya  
Gundimeda**



**Heidi  
Wittmer**



**Patrick ten Brink**



**Joshua Bishop**





## The TEEB Community...

- UNEP for hosting TEEB



- TEEB Scientific Coordination Team at UFZ



- over **500** contributors across partner institutions, universities, individuals...
  - an international and diverse “Community” of economists, ecologists and practitioners ...
  - sharing best practices, tools, methods and experience
  - and making TEEB a “Global Public Good”



## TEEB's approach



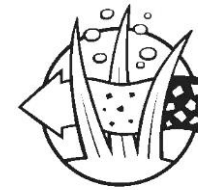
**1. Recognizing value:** a feature of all human societies and communities



**2. Demonstrating value:** in economic terms, to support decision making

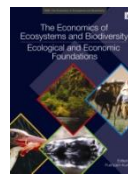
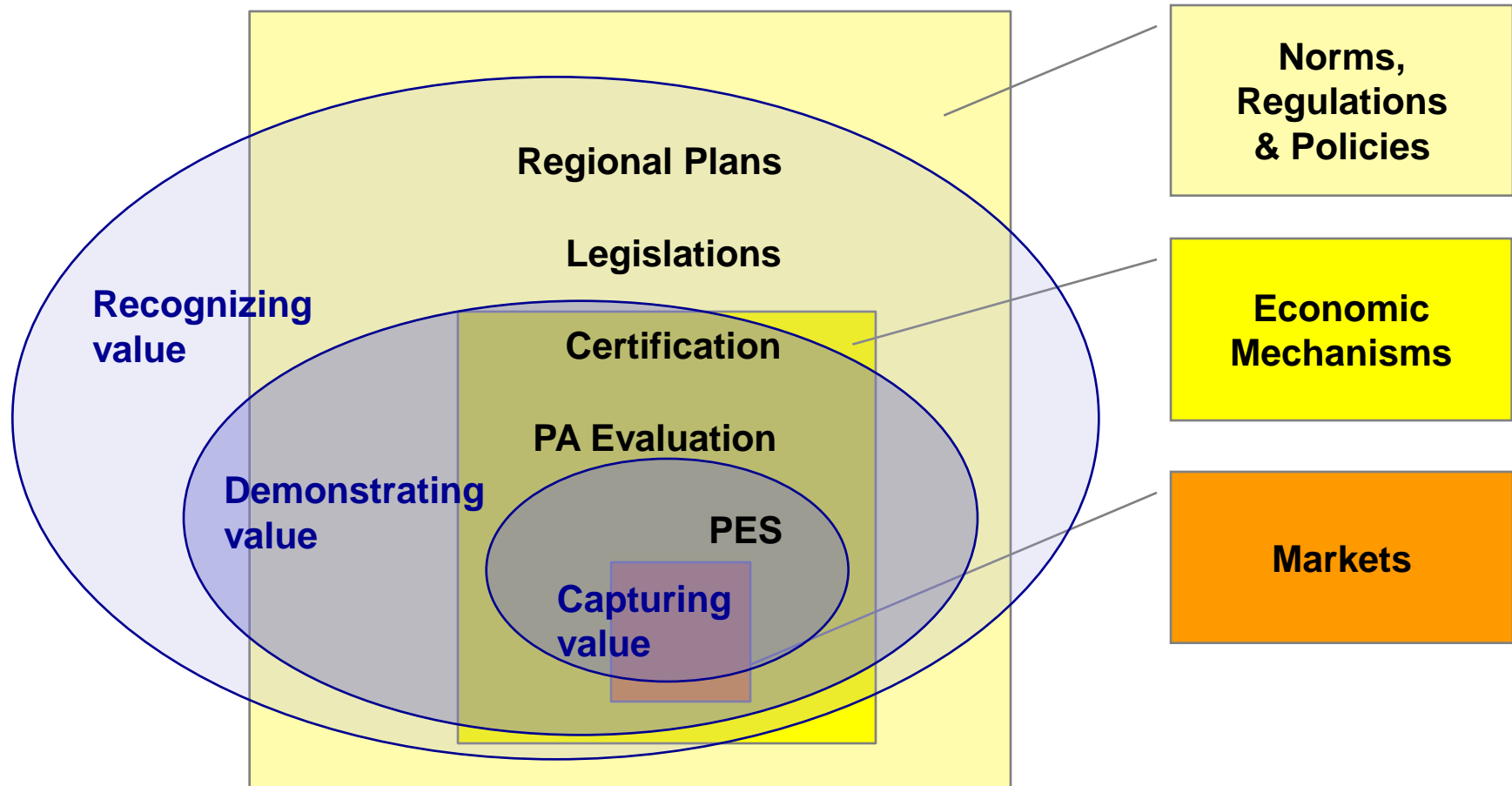


**3. Capturing value:** introduce mechanisms that incorporate the values of ecosystems into decision making





## Valuations, Operating Spaces, Responses...



Ch.5



Ch.4



Ch.3



Ch.3



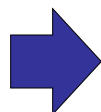


## Recommendations:

### Make Nature's values visible...

*The destruction of nature has now reached levels where serious social and economic costs are being felt – and will be felt at accelerating pace under “business as usual”*

- **Assess and Communicate the role of biodiversity and ecosystem services in the economy**
- **Ensure public disclosure of, and accountability for, impacts on nature**



Ch.1,3,4



Ch.1



Ch.2,3



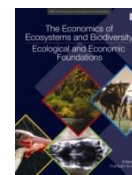
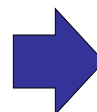
## Recommendations:

### Measuring better to manage better

*Natural resources are economic assets, whether or not they enter the marketplace*

*Conventional measures of national economic performance (eg : GDP Growth) fail to reflect these stocks and their benefits flows.*

- **Rapidly upgrade the System of National Accounts (SNA) to include changes in natural capital stocks and ecosystem service flows (CBD Strategic Plan – Target 2 ... in [..])**
- **URGENT : physical accounts for forest stocks / carbon storage need to be in place (e.g. for orderly development of REDD+)**



Ch.3



Ch.3,5

# The Economics of Ecosystems & Biodiversity



## Recommendations:

## Natural capital and poverty reduction

**Ecosystem services dependency**

**Indonesia**

**99 million**

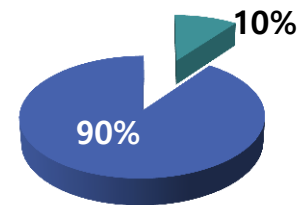
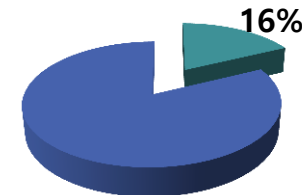
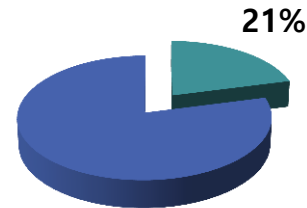
**India**

**352 million**

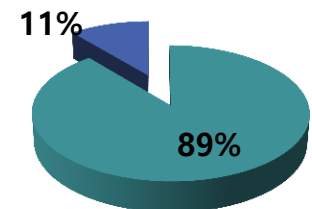
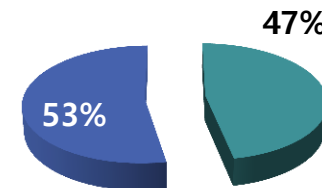
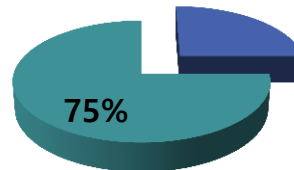
**Brazil**

**20 million**

**Ecosystem services as a % of classical GDP**



**Ecosystem services as a % of “GDP of the Poor”**



**Ecosystem services**

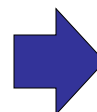


## Recommendations:

### Natural capital and poverty reduction

*In many developing countries, poor households rely heavily on natural capital for their survival and livelihoods, and are highly vulnerable to losses of ecosystem services*

- Fully integrate into policy our dependence on ecosystem services , especially their role as a lifeline for poor households.
- Target development interventions & evaluate the social impacts of policies that affect the environment.



Ch.2,3,9



Ch.1,5,10





## Recommendations: Financial Disclosure and “Net Positive impact”

*Corporate financial reporting standards & purchasing policies do not generally require attention to environmental externalities*

- **Disclose all major externalities in the annual reports and accounts of business and other organizations**
- **Reflect all environmental liabilities and changes in natural assets of the Corporation in its statutory accounts**
- **Principles of ‘No Net Loss’ or ‘Net Positive Impact’ (avoidance, mitigation, restoration, compensation, etc) should be integrated into normal business practice**





## Recommendations:

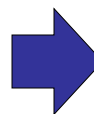
### Changing economic incentives

- 'polluter pays' and 'full-cost-recovery' principles to guide incentives.
- full disclosure of subsidies, measure and report them annually, and phase them out (CBD Strategic Plan - Target 3).

## Recommendations:

### Conservation is Good Investment...

- Effective, equitably managed PA's, especially in the high seas
- Ecosystem valuation to justify PA's & inform conservation investment



Ch.2,6,7,8



Ch.7,9



## Recommendations:

## Conservation is Good Investment...

- Global spending on PAs p.a.: ~ \$6.5-10 billion
  - Need for PAs (15% land, 30% sea) p.a.: ~ \$45 billion
  - Need for Natura 2000 p.a.: ~ \$6.5 billion
  - Benefits from effective PAs p.a. : ~\$ 4-5 trillion
- 
- International NGO funding: ~ >\$1 billion  
p.a.
  - International gov funding (30-50% to PAs): ~\$4-5 billion p.a.
  - Market-based income to PAs ~ \$1-2 billion p.a.
  - Percentage of total ODA: ~ 2.8%





## Recommendations : CCS ... Nature's Way

## Ecological infrastructure and climate change



- Tropical forests store a fourth of all terrestrial carbon
  - 547 gigatonnes (Gt) out 2,052 Gt (Trumper et al. 2009)
- Tropical forest capture
  - up to 4.8 Gt CO<sub>2</sub> annually (Lewis & White 2009)  
(total emissions p.a. ~32Gt)
- Stopping deforestation holds an excellent cost-benefit ratio
  - Halving deforestation generates net benefits of about \$ 3.7 trillion (NPV) including only the avoided damage costs of climate change (Eliasch Review 2008)



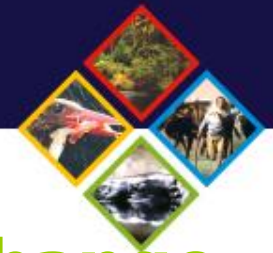
# Recommendations:

## Ecological infrastructure and climate change

Example: ECUADOR'S Conservation Proposal  
( Yasuni Preserved, ITT Oil stays in ground)



Yasuni National Park –  
“the most biodiverse  
wilderness on Earth”



## Recommendations:

## Ecological infrastructure and climate change

### Example : Nature-based climate change mitigation, Germany

- drainage of 930,000 ha peatlands for agriculture caused emissions of 20 Mio. t of CO<sub>2</sub>-eq. per year, @ social cost 1.4 billion €
- **Peatland restoration:** low cost , biodiversity friendly mitigation

#### Mecklenburg-Vorpommern:

- Pilot project 2000-2008
- Restoration of 30,000 ha
- Reduced emissions up to 300,000 tCO<sub>2</sub>-e
- **cost of 8 to 12 € / t CO<sub>2</sub> (& if extensive grazing / reed production/ alder forest then costs down to 0 to 4 € )**



Restored peatland in Trebeltal 2007  
Foto: D. Zak, <http://www.fv-berlin.de>



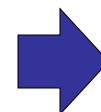
## Recommendations:

### Ecological infrastructure and climate change

*Investing in ecological infrastructure makes economic sense when the full range of benefits is taken into account*

*It is usually cheaper to avoid degradation than to pay for restoration, but both are relevant in the context of climate change*

- **Ecosystem conservation and restoration should be evaluated & pursued in support of climate change mitigation and adaptation.**
- **Within the UNFCCC process, REDD+ should be accelerated for implementation : pilot projects & capacity building in developing countries.**



Ch.5,9







## Recommendations:

### > Mainstreaming the Economics of Nature <

***A whole range of opportunities is out there!***

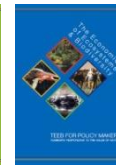
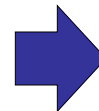
#### ➤ Cancun UNFCCC COP

- Climate change mitigation policy needs to reflect wider costs and benefits for biodiversity (Coral reef emergency / REDD).
- Climate change adaptation finance needs to consider the compelling economics of using ecosystem restoration.

#### ➤ Rio+20

- Formally recognise the links between biodiversity, climate change, development, water and food security

#### ➤ ***Many opportunities on the local, national and business level!***







## Main Assets Built by TEEB

### **TEEB Reports & Databases**

**Constant review  
and updates**

### **TEEB Approach**

**Collaborative  
stewardship**

### **TEEB Community**

**Vibrant &  
expanding**

### **TEEB Brand**

**Evolving, dynamic,  
jointly owned**




## Main Demands Made of TEEB

- TEEB Capacity Building for Developing Countries
- “Country” and “Regional” TEEB Analysis
- Green National Accounts (Project w/ WB, UNEP & Others)
- Estimating Business Sector Externalities
- Identifying & closing Ecology & Valuation Knowledge Gaps
- Communicating the Issue to Society at Large



## TEEB - MOFILM contest

- MOFILM “crowd sources” videos for global brands (Unilever, Walmart, Coke, Pepsi, etc. etc.) and a few social causes, helping aspiring filmmakers showcase their talent
- MOFILM chose TEEB as their 2010 social cause thanks to a pitch by TEEB’s Indian partner 
- Remarkable results .... Over **1,000** Downloads...and **55** Film entries !
- **Top 25 TEEB films** will be made available for “social media” outreach , school education, CBD, ....





## Want to know more?

Sessions on economics of ecosystem services and biodiversity, climate change and land management

***Monday, 25<sup>th</sup> October, Room 211A, Building 2***

- |          |   |
|----------|---|
| 10:00 am | <b>TEEB4me: Communicating the Value of Nature</b> |
| 11:30 am | <b>TEEB: The Scientific Approach</b>              |
| 1:15 pm  | <b>TEEB for Local Policy</b>                      |
| 3:00 pm  | <b>TEEB for Business</b>                          |
| 4:30 pm  | <b>TEEB for National Policy</b>                   |
| 7:30 pm  | <b>Evening reception</b>                          |



Rio Conventions'  
**ECOSYSTEMS  
PAVILION**

Linking biodiversity, climate change and sustainable land management



# The Economics of Ecosystems & Biodiversity



***Thank You !***

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

**[www.teeb4me.com](http://www.teeb4me.com)**



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