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Symposium on “Biodiversity and Ecosystem Services in Impact Assessment”

TEEB in National and Local Policy and Practise

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Rijksoverheid



NORWEGIAN MINISTRY OF FOREIGN AFFAIRS



UKaid
from the Department for International Development



Ministry of the Environment



SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

The Economics of Ecosystems & Biodiversity



Example : Rationale & Impacts of “Payments for Ecosystem Services”

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

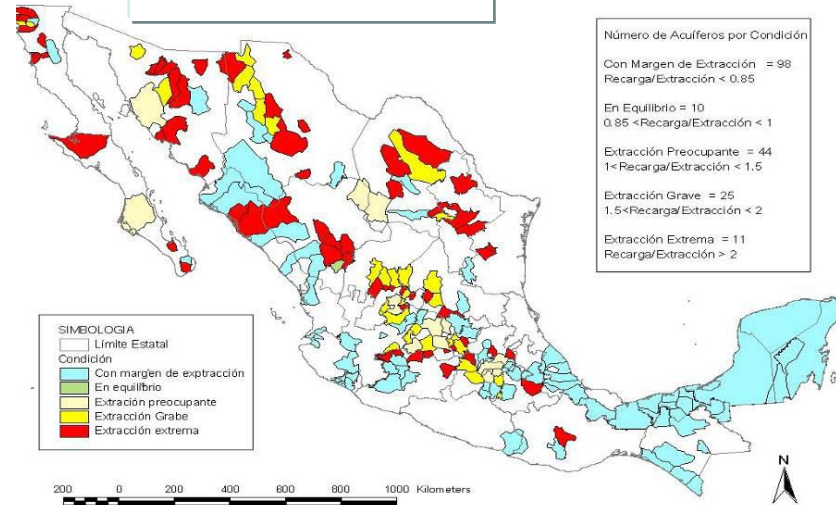
Result

Deforestation rate fell from 1.6 % to 0.6 %.

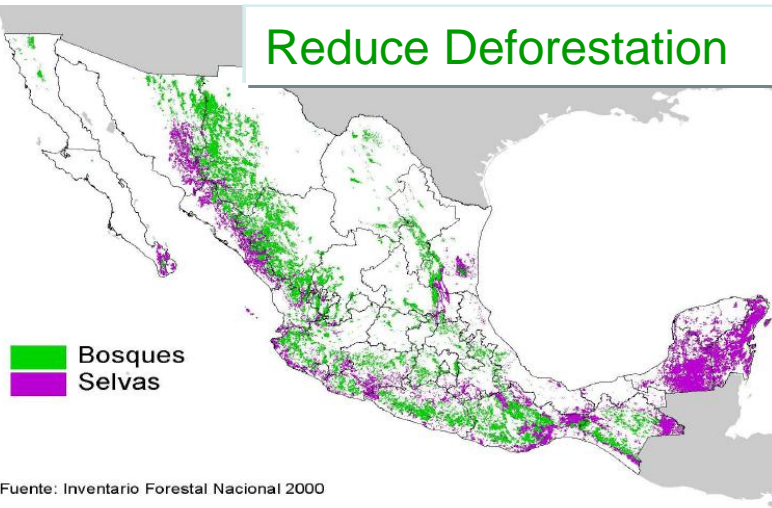
18.3 thousand hectares of avoided deforestation

Avoided GHG emissions ~ 3.2 million tCO₂e

Improve Hydrological services`



Reduce Deforestation



Fuente: Inventario Forestal Nacional 2000

Address Poverty



Fuente: CONAPO

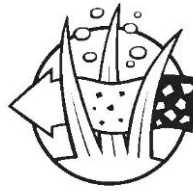
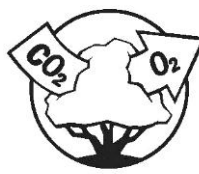


TEEB's approach

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

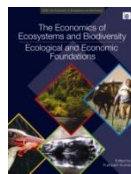
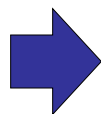
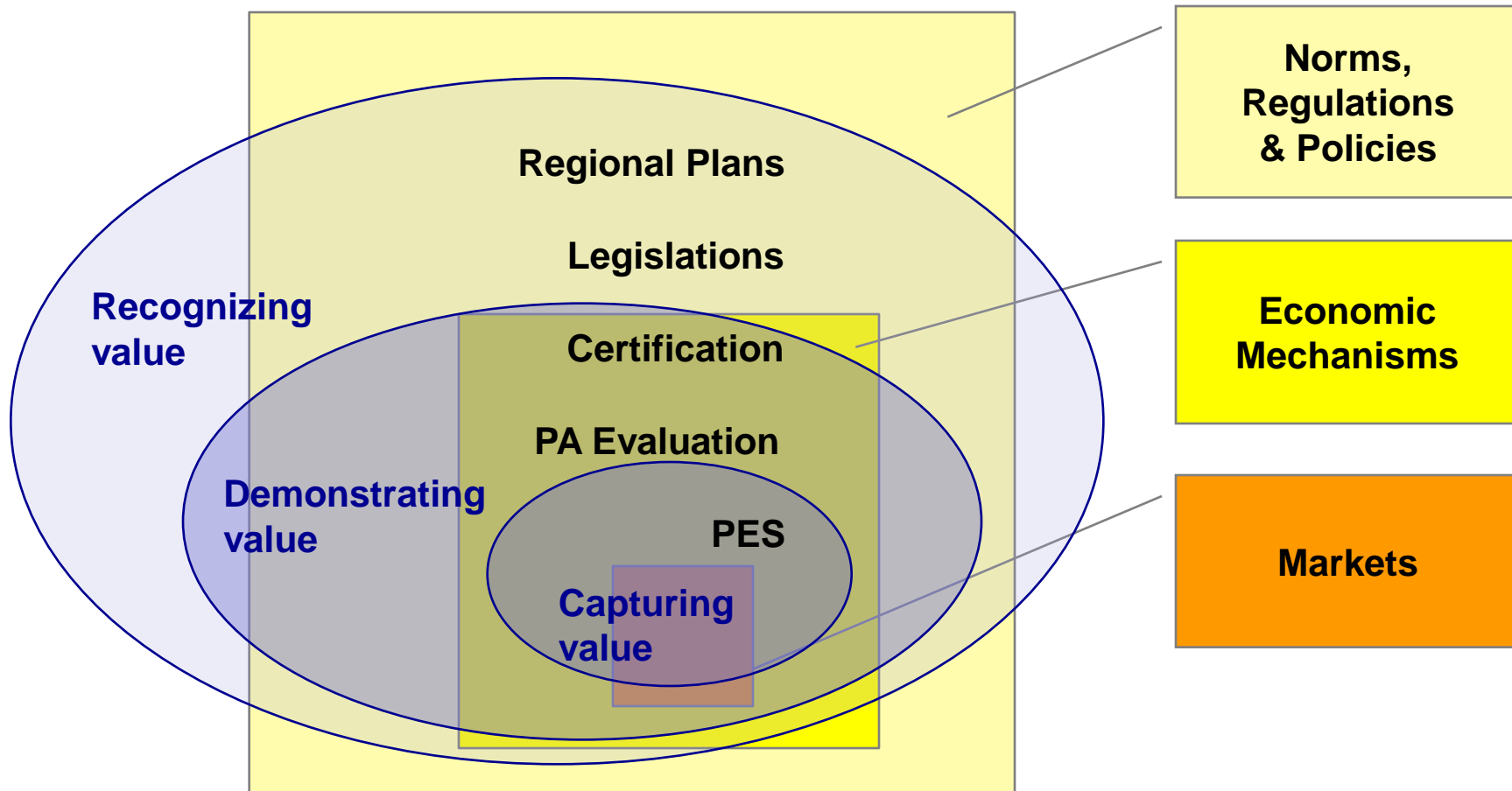
2. Demonstrating value: in economic terms, to support decision making

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



Examples : 'Satoyama' Landscapes

75 - 100% reduction in pesticides, traditional winter flooding rice farming adopted, & White Stork rice & other certified products sold at a "premium"

Konotori no Mai / Flying Oriental White Stork

PES

2003 - 2007: farmers paid 40,000 JYen per 1,000m² of rice paddies .Currently granted 7,000 JYen per 1,000m² by Toyo-oka City

CERTIFICATION

Rice sold at 23 % higher rate for reduced pesticide use, and 54 % more for organic farming



- ❑ White Stork habitat increased from 0.7 ha in 2003 to 212.3 ha
- ❑ Extinct in 1971, now has over 40 breeding pairs
- ❑ 1 billion JPY annually in tourism, & municipal income raised by 1.4 %



Examples : Kampala Wetland

Services provided by the Nakivubo swamp include natural water purification and treatment & supporting small-scale income activities of slum dwellers

PROTECTED AREA EVALUATION

Ecosystems services provided by the swamp equal USD 1 million -1.75 million / year
If the swamp is converted then additional investment into a sewage treatment plant would be required with running costs of over USD 2 million / year



(Nakivubo: designated a part of the city' s greenbelt zone)



Examples : Tubbataha Marine Park, Philippines

UNESCO World Heritage site, contains 396 species of corals & has higher species diversity per square metre than the Great Barrier REEF

LEGISLATION

President passes the Tubbataha Reefs Natural Park Act in 2010 to establish a 10 mile buffer zone around the no-take marine reserve in the Philippines

Park boundaries are increased by 200%

10% annual increase in live coral cover & fish biomass is four-folds better than the average healthy reef in the country



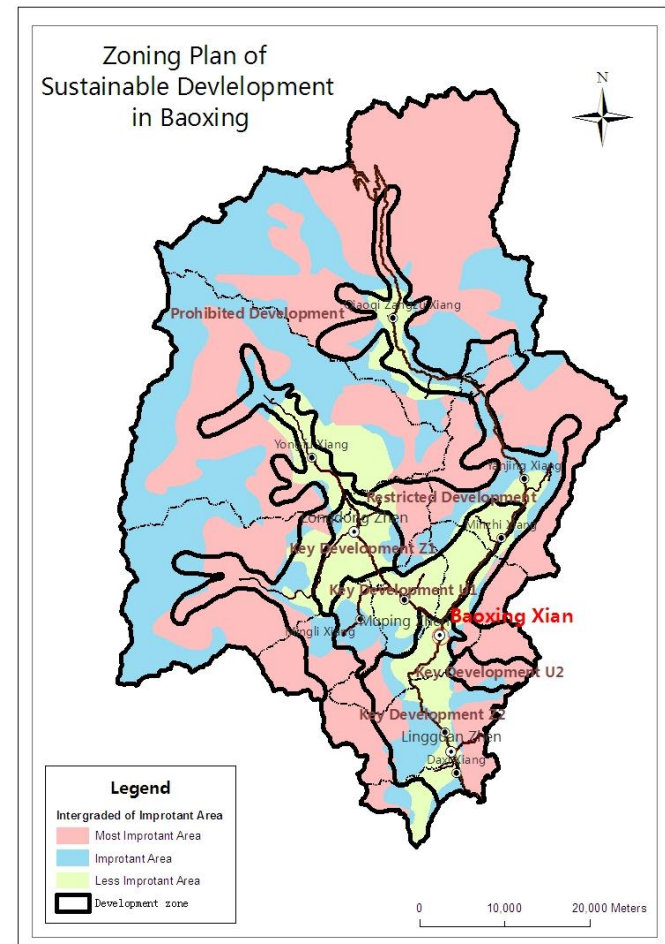


Examples : Integrating ecosystem services into land use plans in Baoxing County, China

REGIONAL LAND PLANNING

Planners in Baoxing County, Sichuan Province, use an ecosystem service mapping and modeling tool (InVEST) to plan development zones that avoid areas of high ecosystem service provision and importance for conservation based on the concept of 'Ecosystem Function Conservation Areas'

Developments reconsidered by local governmental officials during the making of the next Baoxing County Land Use Master Plan 2010 where mapping highlighted that activities were planned in areas of several critical ecosystem services

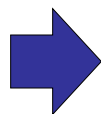




TEEB's Key Recommendations: Make Nature's values visible...

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

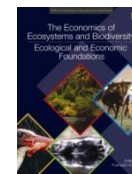
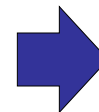


TEEB's Key Recommendations: Measuring better to manage better

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



TEEB's Key Recommendations: Natural capital and poverty reduction

Ecosystem services dependency

Indonesia

99 million

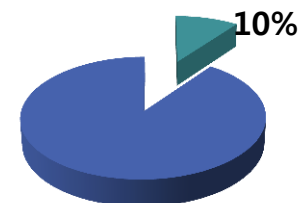
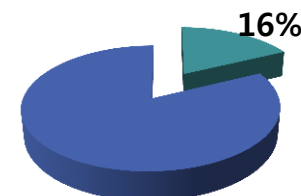
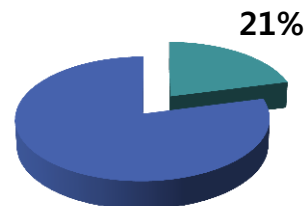
India

352 million

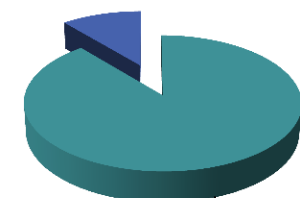
Brazil

20 million

Ecosystem services as a % of classical GDP



Ecosystem services as a % of "GDP of the Poor"



75%

47%

89%



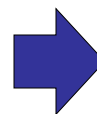
Ecosystem services



TEEB's Key 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

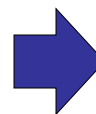


TEEB's Key Recommendations: Changing economic incentives

- '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

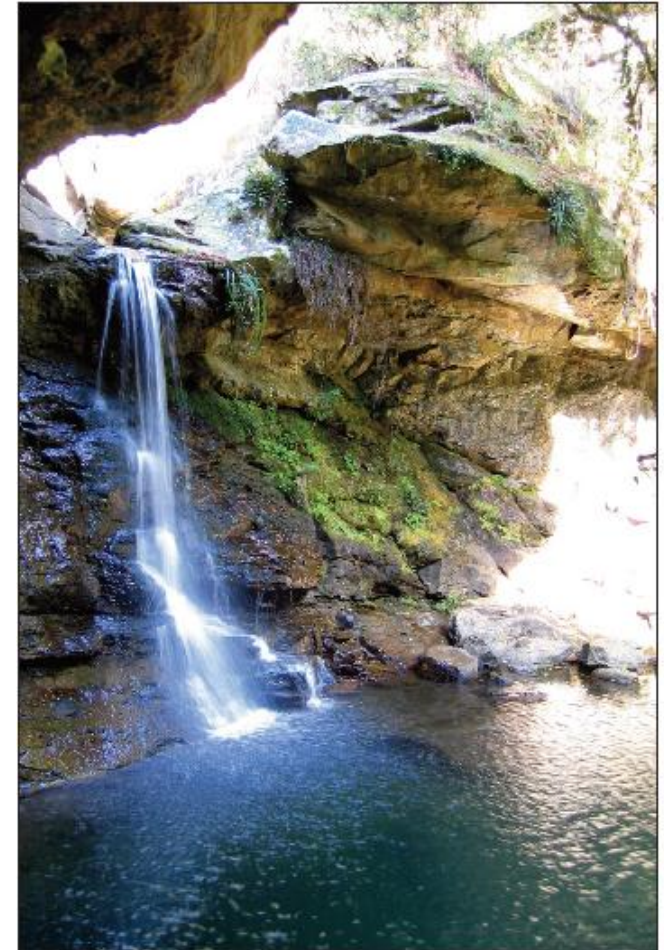


Ch.7,9



Protected areas / Ecological infrastructure & Freshwater

- ❖ 1/3 of the world's 100 largest cities draw a large part of their drinking water from PAs and many more from the wider spectrum of ESS (inc. agricultural land and forestry)
- ❖ Benefits of avoided costs can be very large
- ❖ PAs & forests purify water for NY city = **US\$ 6 bn (total)** savings in water treatment costs



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TEEB 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 CO₂ 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)



Ch.5,9



TEEB's Key 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



The Economics of Ecosystems & Biodiversity



Thank You !

www.teebweb.org

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