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Biodiversity Values : Recognizing, Demonstrating, & Capturing

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McCluskey Fellow, 2011
The Economics of Ecosystems & Biodiversity

TEEB (2008-2010) genesis, aims & progress

G8+5 Potsdam 2007

“Potsdam Initiative – Biological Diversity 2010”

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

Importance of recognising, demonstrating & responding to values of nature...

Interim Report

Climate Issues Update

TEEB End User Reports Brussels 2009, London 2010

TEEB Synthesis

CBD COP11 India

National TEEB Work

Sectoral TEEB Work

Business Externalities Work

Rio+20 Brazil

CBD COP 9 Bonn 2008

Input to UNFCCC 2009

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

BD COP 10 Nagoya, Oct 2010

Ecol./Env. Economic literature
Valuation is a human Institution
The TEEB approach is critical for...

1. Poverty alleviation
2. Achieving the Millennium Development Goals
3. Ensuring sustainable economic growth
4. Creating sustainable livelihood opportunities in developing countries
5. Enhancing ecological & economic resilience locally
6. Improved management of ecological infrastructure - the largest development asset
7. Improved biodiversity conservation practice
Poverty Alleviation

Conservation is the key to poverty reduction for 70% of the world’s poor, who live in rural areas and depend directly on biodiversity for their survival and well-being.

Source: CBD (2010)
Ecosystem Services and Poverty Alleviation

Ecosystem services dependency

Ecosystem services as a % of classical GDP

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

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Ecosystem Services as a % of GDP</th>
<th>Ecosystem Services as a % of GDP of the Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>99 million</td>
<td>21%</td>
<td>75%</td>
</tr>
<tr>
<td>India</td>
<td>352 million</td>
<td>16%</td>
<td>53%</td>
</tr>
<tr>
<td>Brazil</td>
<td>20 million</td>
<td>10%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Gundimeda and Sukhdev, D1 TEEB
Poverty Alleviation

Example: Hiware Bazaar, India

Integrated watershed management based development approach turns a village’s misfortune into an ecological and economic success

- Increase in irrigated area from 70 ha (1993) to 260 ha (2006)
- 73% reduction in poverty in less than a decade, due to profits from dairy & cash crops

Source: TEEB for Local Policy Makers Case Study (2010)
Ecosystem Services impact all MDG’s

Although Goal 7 is most specifically focused on biodiversity related issues, biodiversity is important to the achievement of all eight MDG goals, and is essential to the fulfillment of MDG commitments by the year 2015.

Source: CBD (2010)
Achieving Millennium Development Goals

Goal 1: Eradicate Extreme Hunger & Poverty
The poor depend on biological resources for almost 90% of their livelihood requirements.

Goal 2: Achieve Universal Primary Education
Shortage of biological resources increases workload of children whose families are dependent on them; making it harder for them to attend school.

Goal 3: Promote Gender Equality & Empower Women
Biodiversity degradation makes women’s tasks more difficult (distance to nearest source of fuelwood) & impacts their status (earnings from NTFP gathering)

Source: CBD (2010)
Achieving Millennium Development Goals

Goal 4, 5 & 6: Health Related Goals
- 80% rely on traditional plant-based medicine.
- Upstream / supply exacerbates water scarcity
- Sustainable fisheries crucial as protein source

Goal 7: Ensure Environmental Sustainability
Biodiversity loss directly affects quality and quantity of ecosystem services essential to well-being

Goal 8: Global Partnership for Development
Stronger partnerships to better integrate biodiversity considerations into poverty alleviation strategies and development programs.

Source: CBD (2010)
Ensuring Sustainable Economic Growth: Integrating ecosystem services into land use plans in Baoxing County, Sichuan, China

REGIONAL PLANS

An ecosystem service mapping and modeling tool (InVEST) used to plan development zones that avoid areas of high ecosystem service provision and conservation importance.

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

Over 1.6 billion people rely on forest & non-timber forest products for their livelihoods (CBD, 2010)

TEEB supports livelihoods & employment through
• Conservation & sustainable use of natural capital
• Creation of new employment opportunities
Creating Sustainable Livelihoods : 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**

After 1998 Bleaching – Stakeholders meeting

“No-take” areas agreed, & later, President passed the Tubbataha Reefs Natural Park Act in 2010 (10 mile buffer zone around the no-take marine reserve) thus increasing Park by 200%

- 10% annual increase in live coral cover.
- Fish biomass is four-folds better than the average healthy reef
Enhancing Ecological & Economic Resilience Locally

Planting mangroves along the coastline in Vietnam cost **USD 1.1 million**, but saved **USD 7.3 million** annually in dyke maintenance.

Managing Ecological Infrastructure: Kampala Wetland

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

**P. A. 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)
Improving Biodiversity Conservation
Economic Instruments in ‘Satoyama’ Landscapes
75 - 100% reduction in pesticides, traditional winter flooding rice farming adopted, & White Stork rice & other certified products sold at a “premium”

**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%
• TEEB is *not* about “Selling Mother Nature”

• TEEB is *not* some simple-minded cost-benefit-based stewardship model for the whole Earth

• TEEB *is* about preventing the economic invisibility of Nature from leading to bad policies & trade-offs

• TEEB *is* about recognizing, demonstrating, capturing and rewarding the benefits that ecosystems and biodiversity provide to society in general and to poor people in particular
Thank You!

www.teebweb.org

www.teeb4me.com