



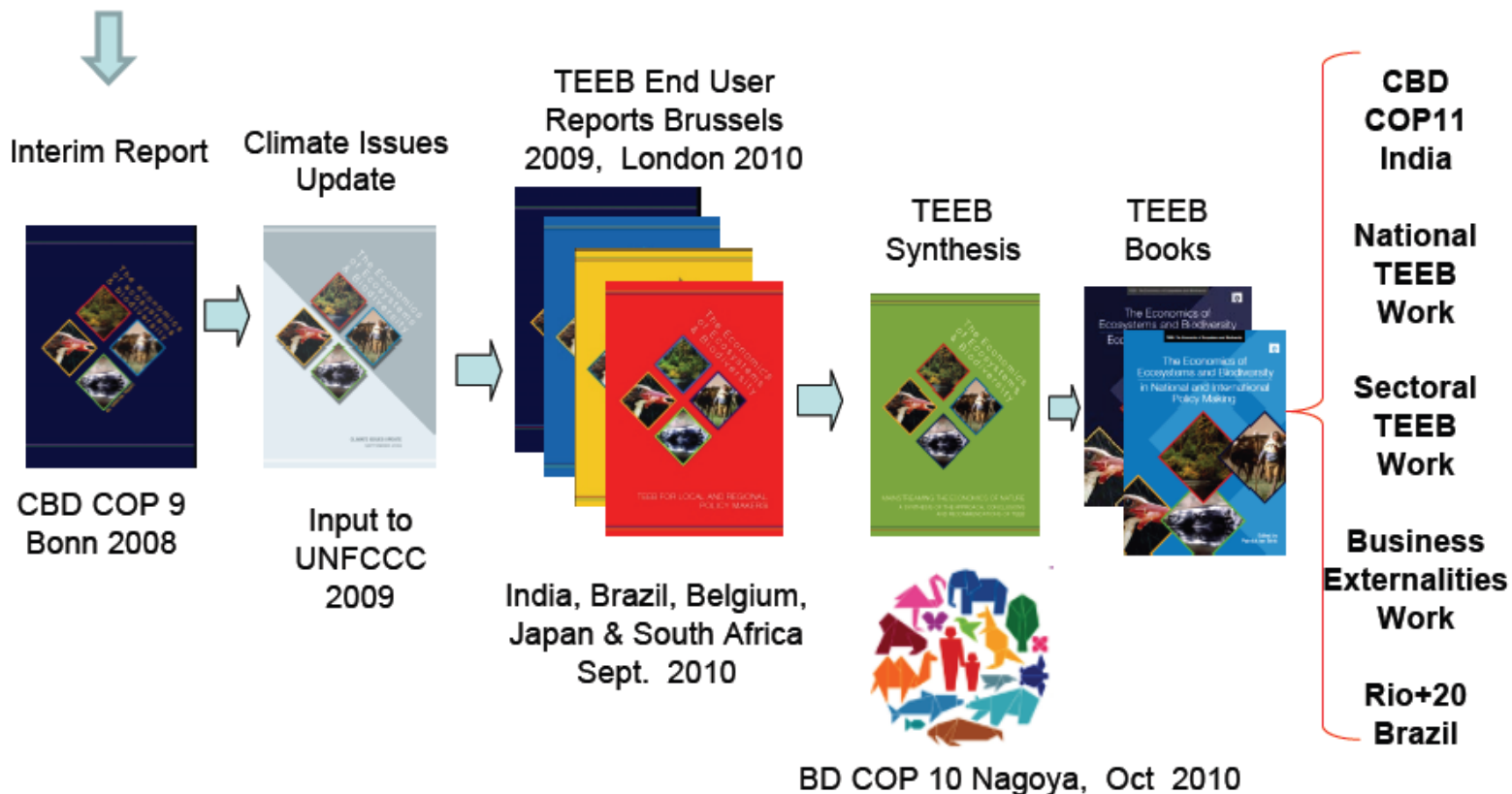
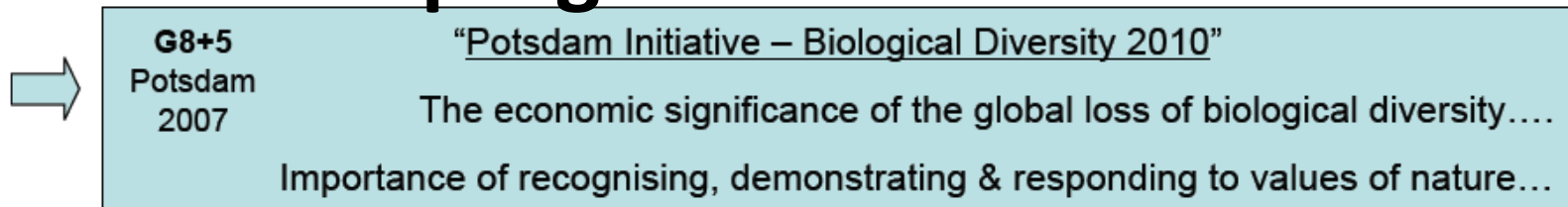
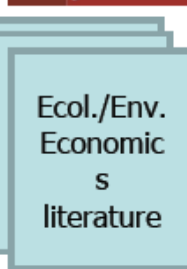
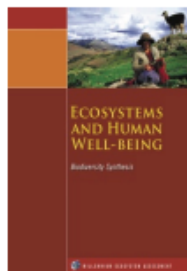
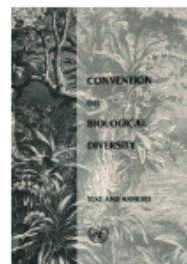
6<sup>th</sup> March 2012  
Quito, Ecuador

## **Biodiversity Values : Recognizing, Demonstrating, & Capturing**

Pavan Sukhdev  
CEO – GIST Advisory, &  
Yale School of Forestry & Environmental Studies,  
McCluskey Fellow, 2011

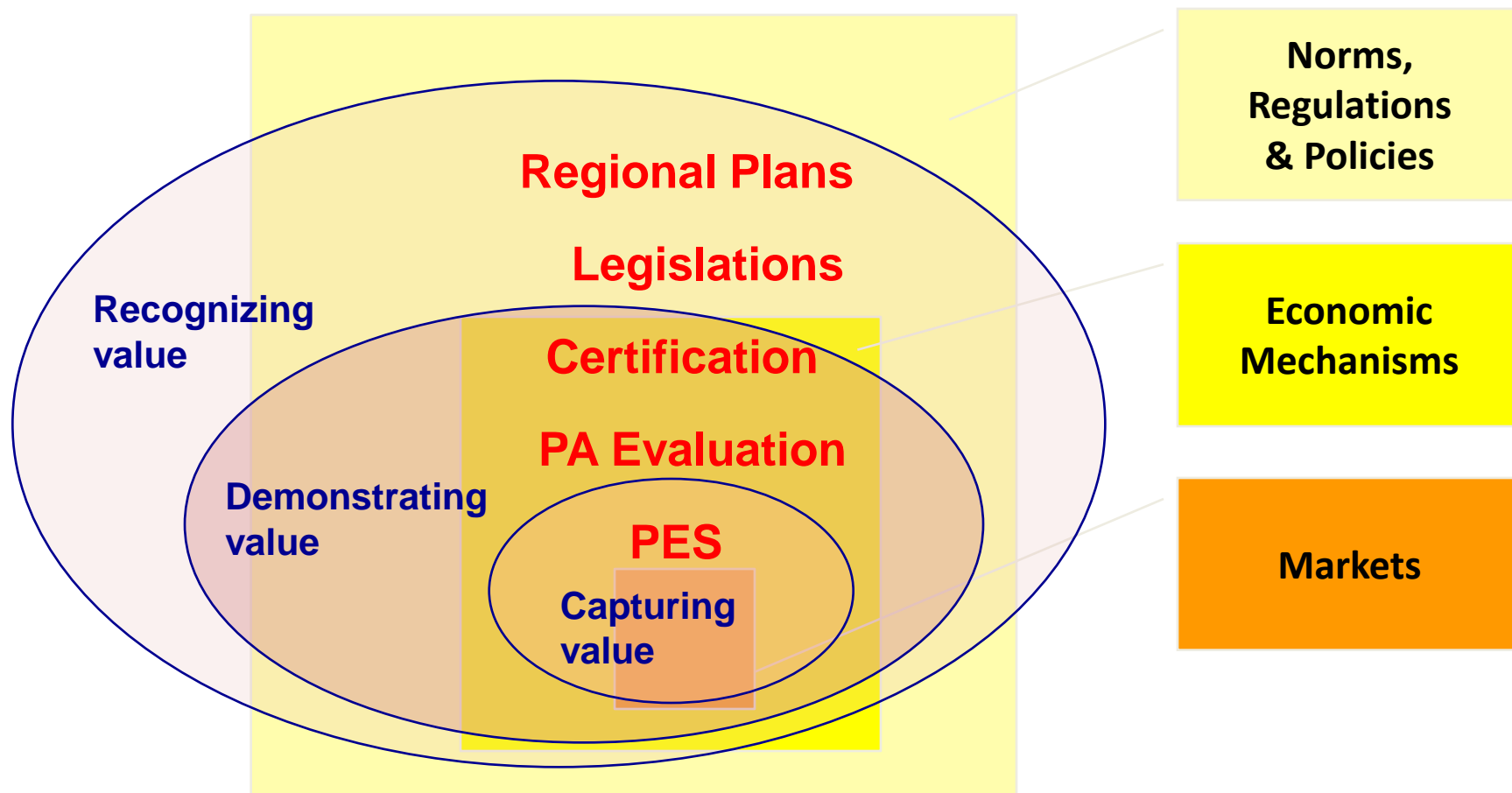


## TEEB (2008-2010) genesis, aims & progress

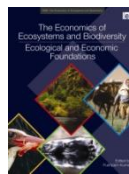




## TEEB on Valuation & its Responses



**“Valuation is a *human Institution*”**



**Ch.4**  
**Ch.5**



**Ch.4**



**Ch.3**



**Ch.3**



## 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



## Ecosystem Services and Poverty Alleviation

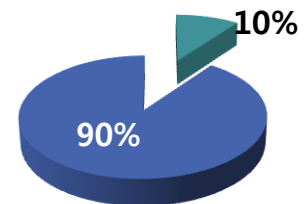
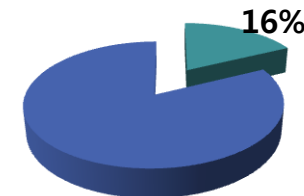
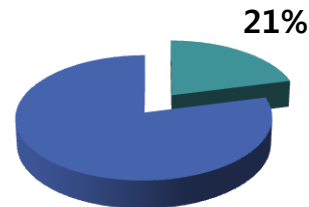
**Ecosystem services dependency**

**Indonesia**  
99 million

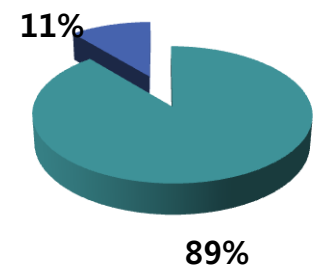
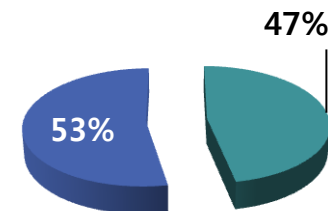
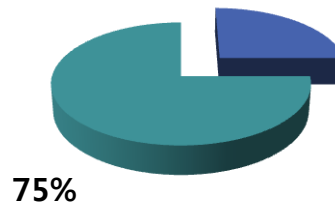
**India**  
352 million

**Brazil**  
20 million

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



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



 **Ecosystem services**



## 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)
- Livestock numbers grew from 20 (1998) to 340 (2003)
- **73% reduction in poverty** in less than a decade, due to profits from dairy & cash crops





## 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.



## 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 )



## 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.

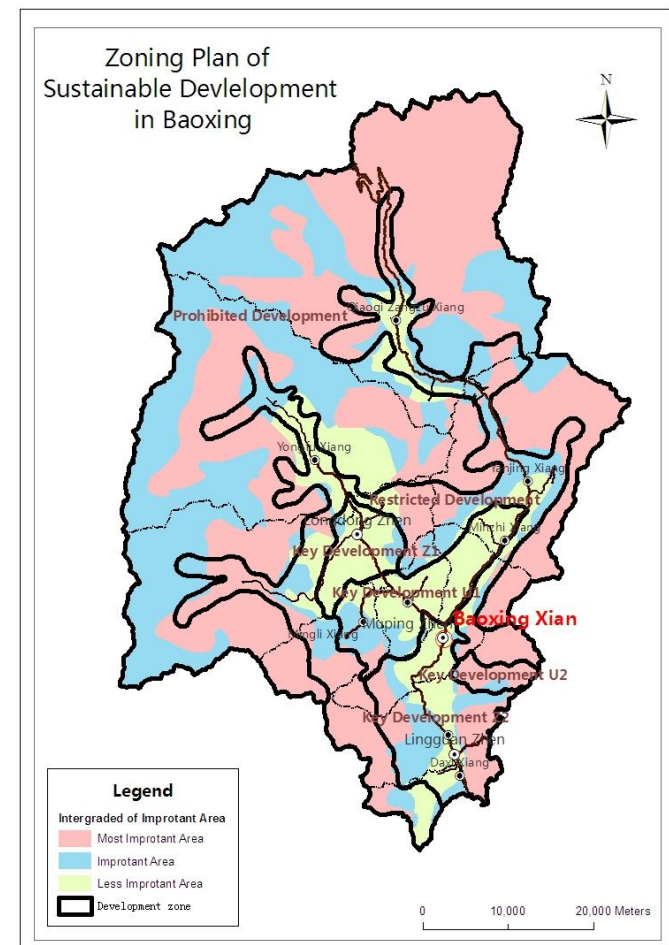


## Ensuring Sustainable Economic Growth : Integrating ecosystem services into land use plans in Baoxing County, Sichuan, China

### 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

# The Economics of Ecosystems & Biodiversity



## 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 1,000m<sup>2</sup> of rice paddies .Currently granted 7,000 JYen per 1,000m<sup>2</sup> 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 %

Konotori no Mai /  
Flying Oriental White Stork





- 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

# The Economics of Ecosystems & Biodiversity



**Thank You!**

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

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

