

# Positive incentive measures for conservation and sustainable use of biodiversity

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Sub-regional workshop for East, South and Southeast Asia on Updating NBSAPs – Economics days

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CBD

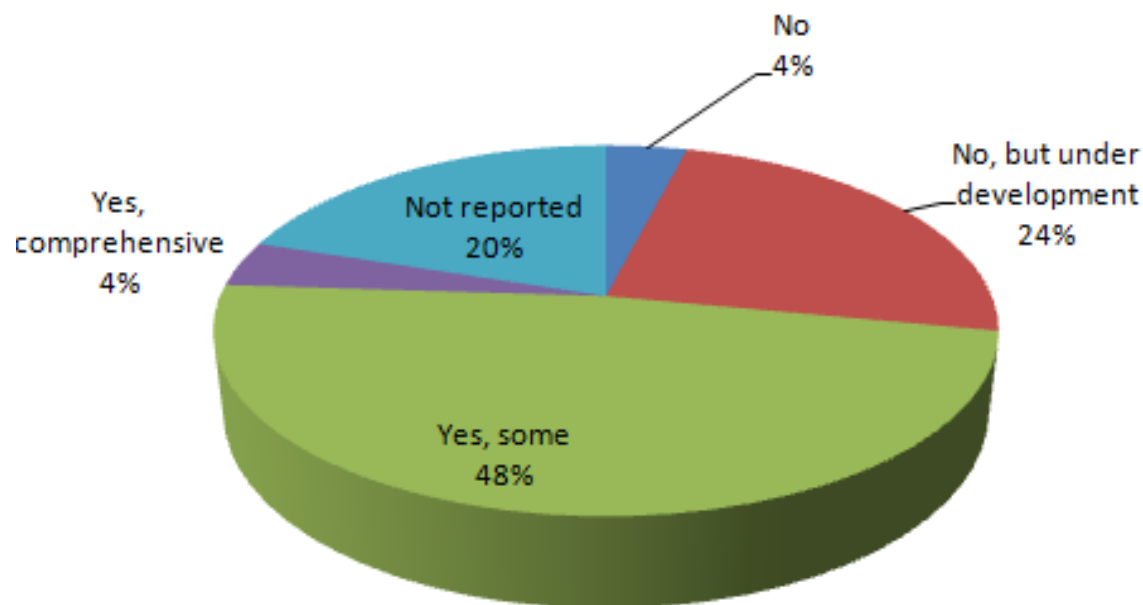


## X/44. Incentive measures

“By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and **positive incentives for the conservation and sustainable use of biodiversity are developed and applied**, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.”

## East, South, South-East Asia (20 out of 25)

83. ♦ Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?	Details
a) No	1
b) No, but relevant programmes are under development	6
c) Yes, some programmes are in place (please provide details below)	12
d) Yes, comprehensive programmes are in place (please provide details below)	1



## ***CBD (2011). Incentive measures for the conservation and sustainable use of biological diversity: Case studies and lessons learned, Technical Series No. 56***

### **1. Direct approaches - 'paying' relevant actors to achieve biodiversity-friendly outcomes or to not achieve biodiversity-harmful outcomes**

- payments for ecosystem services incl. market creation
- taxes and user fees and exemptions to encourage activities beneficial for conservation and/or sustainable use
- long-term retirement (or set aside) schemes, conservation leases or easements

### **2. Indirect approaches - support activities or projects that are not designed exclusively to conserve or promote the sustainable use of biodiversity, but which contribute to these objectives**

- development or commercialization of biodiversity-based products or services (eco-tourism, biotrade)
- community based natural resource management

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# From ecosystem decline to ecosystem incentives

## “Enhanced”

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Crops  
Livestock  
Aquaculture  
Carbon sequestration

## “Degraded”

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Capture fisheries  
Wild foods  
Wood fuel  
Genetic resources  
Biochemicals  
Fresh water  
Air quality regulation  
Erosion regulation  
Water purification  
Pest regulation  
Pollination  
Natural hazard regulation  
Regional & local climate regulation  
Spiritual & religious  
Aesthetic values

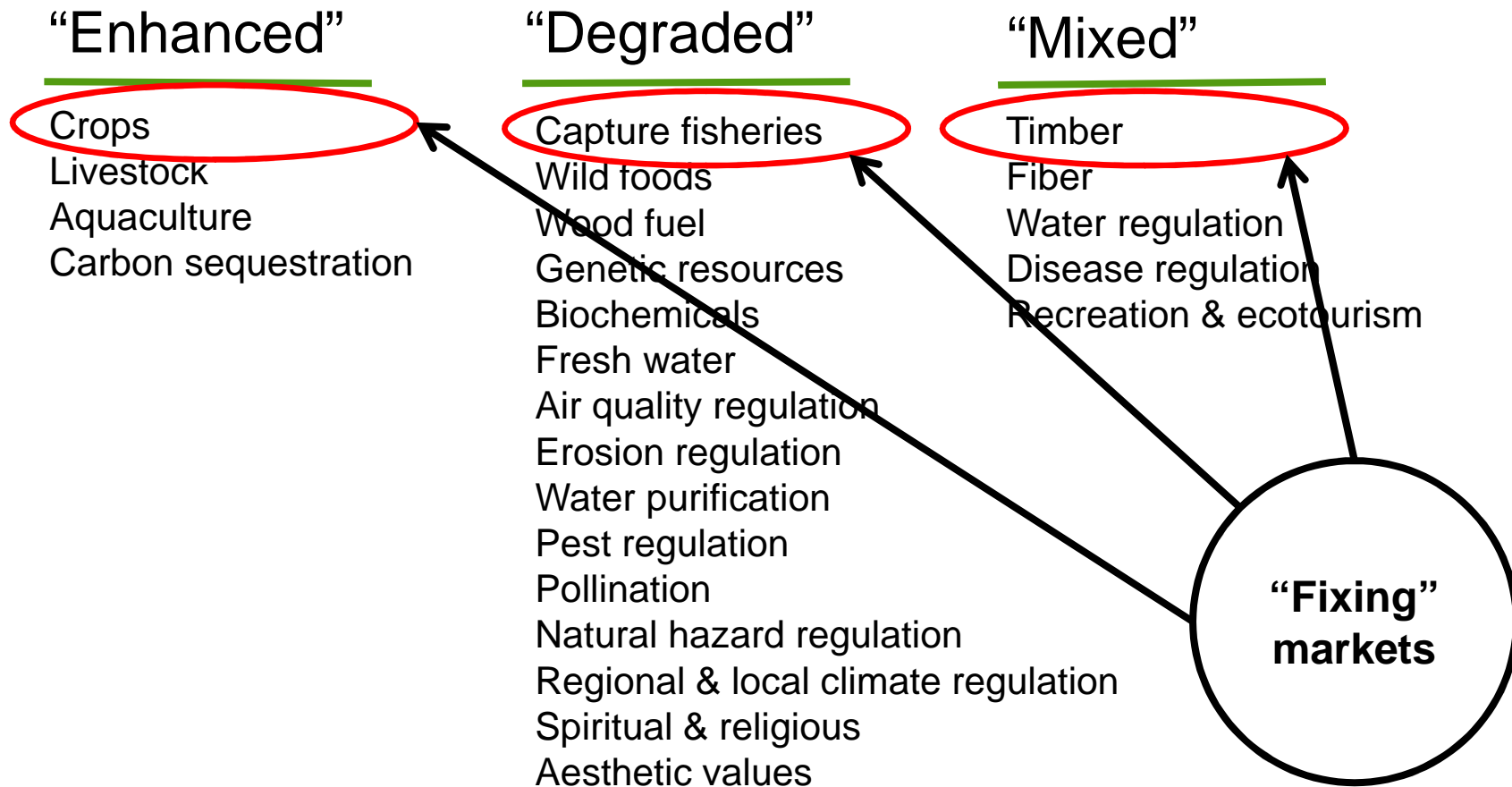
## “Mixed”

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Timber  
Fiber  
Water regulation  
Disease regulation  
Recreation & ecotourism

Source: Millennium Ecosystem Assessment, 2005.

# From ecosystem decline to ecosystem incentives by fixing markets (CBD “indirect approaches”)



# Fixing markets: 'green' products and services

- **Organic food and drink:** Global sales = US\$ 60 billion in 2009
- **Certified 'sustainable' forest products:** sales increased four-fold between 2005 and 2007
- **Eco-labeled fish products:** global market grew by over 50% from 2008 to 2009 to US\$ 1.5 billion
- **Eco-friendly attributes:** Major consumer brands have added 'ecologically-friendly' attributes to product lines:
  - Mars (Rainforest Alliance cocoa)
  - Cadbury (Fairtrade cocoa)
  - Kraft (Rainforest Alliance Kenco coffee)
  - Unilever (Rainforest Alliance PG Tips)



**FSC** FOREST STEWARDSHIP COUNCIL  
Because forests matter



## Biodiversity business – Himalayan biotrade

- Asia Network for Sustainable Agriculture and Bioresources (ANSAB) created Himalayan Biotrade to market non timber forest products (NTFPs) produced by local community enterprises in Nepal to national and international markets
- To specialise in natural and sustainably sourced NTFP and to obtain organic and/or Forest Stewardship Council (FSC) certification
- Essential oils, handmade paper and medicinal and aromatic plants
- Targets supply chains of multinational companies committed to sustainability and willing to pay premium for sustainably sourced material
- Encourage community support for forest conservation and ultimately local ownership of the forest



- **Where?** Northern Tanzania
- **Who?** Istituto Oikos, the Tanzania Tourism Board and the Mkuru Camel Group, a community organisation.
- **What?** Camel and walking safaris run by Maasai guides for experiencing the cultural and natural heritage of the region.
- **Conservation reasoning:** Counter local dependence on unsustainable practices with the provision of sustainable livelihood options.
- **Success factor:** Local partnerships and community management.



# Community-based natural resource management

- Policies which encourage the involvement of traditional and local communities in conservation
  - Wildlife in PAs
  - Sustainable forest management
- Rely on generating and sharing new revenue
- May be based on traditional knowledge
- **Community forestry in India** where benefits of NTFP shared between joint forest mgt committees and States
- **Eco-tourism in Egypt** – govt promoting bedouin-managed ecotourism enterprises (lodging, treks and crafts)
- Long term commitment, tangible benefits, institutions

# What is required to support biodiversity business?

- Enabling environment
  - Laws and regulations
  - Taxes and subsidies
  - Property law and legal liability regimes
- Finance
  - Programmes to provide long-term finance to commercial ventures (govt, NGOs, private investors)
- Business tools
  - Technical support to SMEs to engage in certified or organic markets
  - Support with measuring impacts and indicators

# From ecosystem decline to ecosystem incentives

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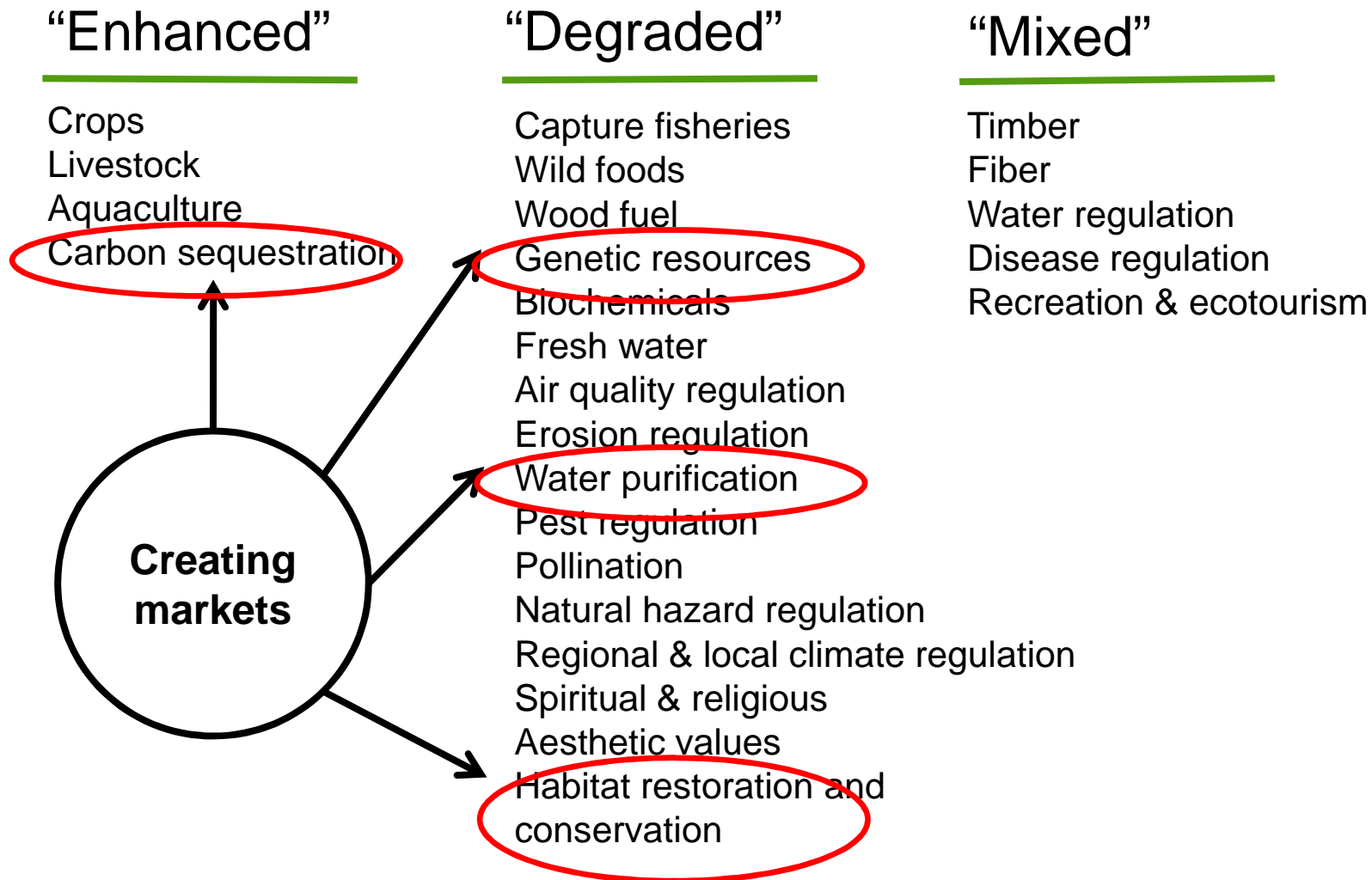
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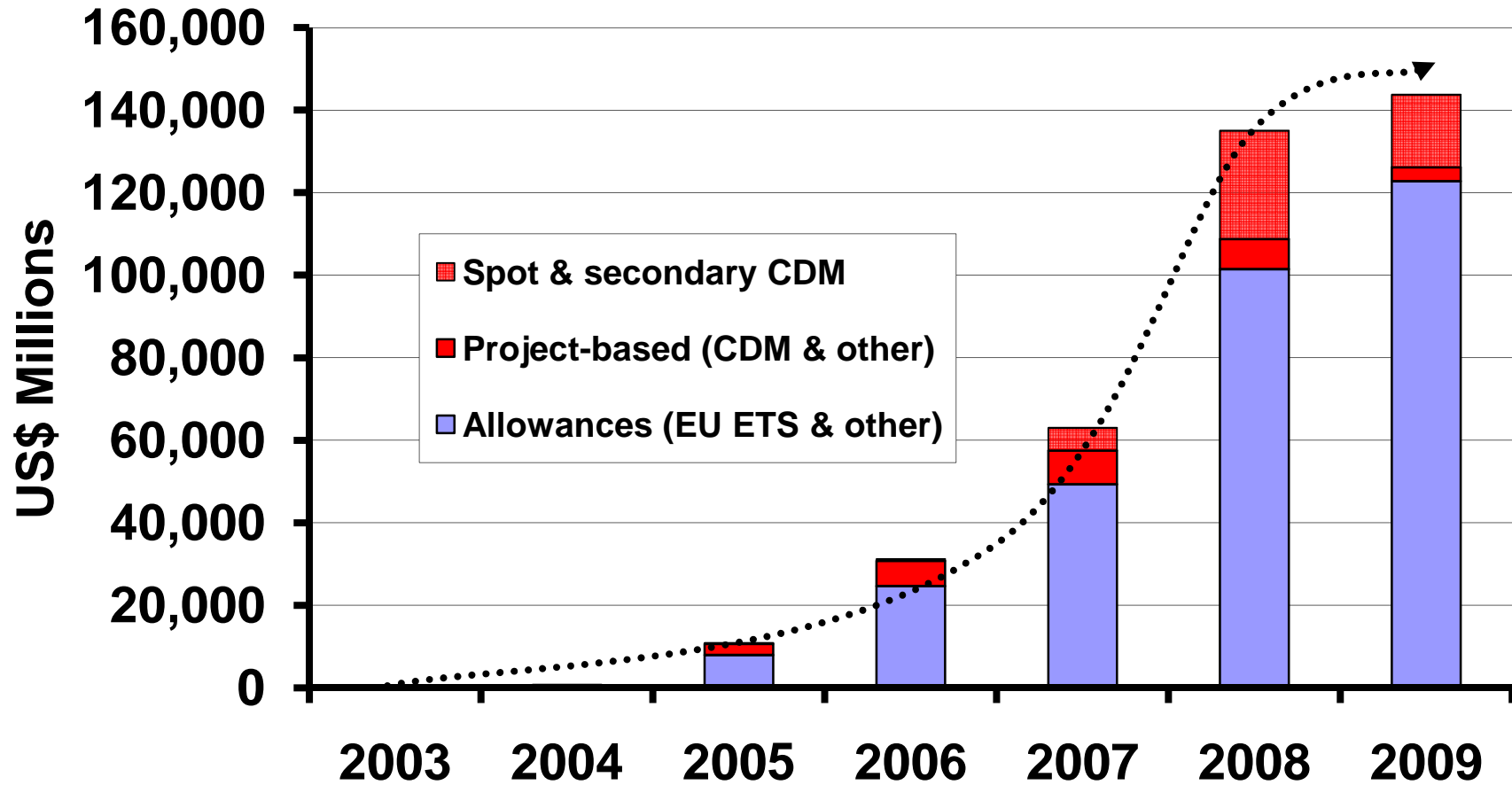
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Source: Millennium Ecosystem Assessment, 2005.

# From ecosystem decline to ecosystem incentives by creating markets (CBD “direct approaches”)



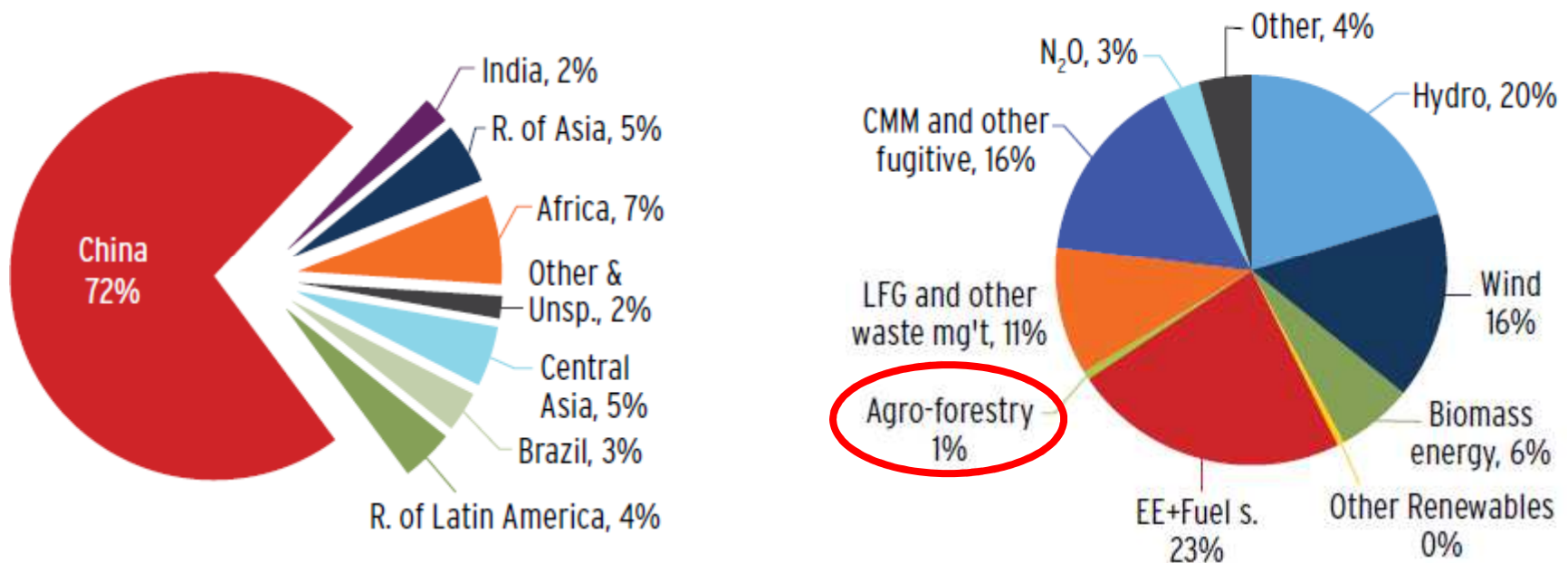
# Creating markets: The case of carbon



**Cumulative 2003-2009: US\$307 billion  
(of which CDM US\$78 billion)**



# Creating markets: Carbon offsets as a new export sector for developing countries



**Primary CDM sellers and sectors in 2009, as percent of total volume transacted**  
(Source: World Bank 2010).



## Forest carbon offsets & REDD+

Markets	Volume (MtCO <sub>2</sub> )		Value (million US\$)	
	Historical Total	2008	Historical Total	2008
Voluntary OTC	15.3	3.7	129.7	31.5
CCX	2.6	1.3	7.9	5.3
<b>Total Voluntary Markets</b>	<b>17.9</b>	<b>5.0</b>	<b>137.6</b>	<b>36.8</b>
New South Wales	1.8	0.2		
CDM A/R	0.5	0.1	2.9	0.3
NZ ETS	0.1		0.7	
Kyoto (AAU)	0.6		8.0	
<b>Total Regulated Markets</b>	<b>2.9</b>	<b>0.2</b>	<b>11.6</b>	<b>0.3</b>
<b>Total Global Markets</b>	<b>20.8</b>	<b>5.3</b>	<b>149.2</b>	<b>37.1</b>

Source: Hamilton et al. (2010)

# Creating markets: Biodiversity offsets and “habitat banking”



“The global annual market size is at least \$1.8-\$2.9 billion” (Madsen et al. 2010)  
(see: [www.speciesbanking.com](http://www.speciesbanking.com))

# Payments for ecosystem services (PES)

National PES Programmes	Annual Budget in USD
China, Sloping Land Conversion Programme (SLCP)	4 billion (Bennett, 2008)
Costa Rica, Payments for Environmental Services (PES)	12.7 million (FONAFIFO, 2009)
Mexico, Payments for Environmental Hydrological Services (PEHS )	18.2 million (Muñoz Piña <i>et al.</i> , 2008)
UK, Rural Development Programme for England	0.8 billion (Defra, 2009)
US, Conservation Reserve Program (CRP)	1.7 billion (Claassen, 2009)
Regional PES Programmes	Annual Budget in USD
Australia, Tasmanian Forest Conservation Fund (FCF)	14 million (DAFF, 2007)
Australia, Victoria State ecoMarkets	4 million (DSE, 2009)
Bulgaria and Romania, Danube Basin	575 000 (GEF, 2009)
Ecuador, Profafor	150 000 (Wunder and Alban, 2008)
Tanzania, Eastern Arc Mountains	400 000 (EAMCEF, 2007)

Source:  
OECD,  
2010.

# What are PES?

The underlying principle of PES - ‘beneficiary pays’ principle

1. A voluntary transaction where
2. A well-defined environmental service (or land use likely to secure that service)
3. Is being ‘bought’ by at least one buyer
4. From a minimum of one environmental service provider
5. If, and only if, the environmental service provider secures environmental service provision (conditionality)

# PES are flexible

- Work across services:
  - **Watershed protection (avoided erosion, reduced use of fertilisers)**
  - **Carbon storage**
  - **Biodiversity**
  - **Bundled services**
- Work across scales:
  - **496 ha being protected in a watershed in Ecuador (Pimampiro)**
  - **4.9 million ha sloped land reforested by paying landowners China**
- Work across source of financing:
  - **Public (Mexico, Costa Rica)**
  - **Private (e.g. water utilities)**
- Work across levels: Local and national (and international?)
  - **Local: New York, Ecuador**
  - **National: Costa Rica, Mexico and Ecuador**
  - **Global: REDD+**

# **PES – key criteria for cost effectiveness**

- **Remove perverse incentives**
- **Establish clear and enforceable property rights**
- **Clearly define PES goals**
- **Develop a robust monitoring and reporting framework**
- **Establish baselines to ensure additionality**
- **Identify buyers and ensure sufficient, long-term finance**
- **Identify sellers and target ES benefits**
- **Consider bundling or layering multiple ecosystem services**
- **Address leakage**
- **Ensure permanence**
- **Reflect ES providers OC via differentiated payments**
- **Deliver performance-based payments and enforce**

# PES in China – Sloping Lands Conversion Programme

- Began in 2000 after massive flooding caused in part by land clearing
- Focuses on largest source of soil erosion and flood risk -- farming steep slopes
- Budget is ¥337 billion covering 2,000 counties in 25 provinces to convert 15 million ha cropland to forest by 2010
- Participating farmers are paid to convert cultivated land on steeply sloping hillsides back to forest or grassland
- Two **compensation** levels to reflect differences in opportunity costs
- **Objective:** to provide ecological (flood risk prevention) and health benefits (reduced dust storm health impacts) to Chinese population  
to reduce poverty among rural households
- **Results :** decreased soil erosion  
Some improvement in livelihoods

## PES/CBNRM in India



- Chandigarh sought to protect lake from sedimentation by convincing upstream land users in Sukhomajri watershed to change land uses
  - watershed was revegetated and system of check dams to stock flow of silt
  - **Compensation:** Additional dams built to provide irrigation to compensate village for stopping grazing on slopes
- 
- **Challenge:** check dams benefited only a minority of landowners in village
  - **Solution:** to ensure that all benefitted from halt to grazing and from dams
    - Pipes laid so most land received water
    - All households shared in ownership of the captured water and water rights were tradeable
  - **Community mgt:** Village level management based on Hill Resource Mgt Societies
  - **Incentives:** water rights and rights to collect *bhabber* grass
  - **Results:** Siltation declined by 95% saving US\$200,000 p.a. in dredging costs
    - Increases in crop and livestock income lead to increase in income for all



## PES in Bolivia – Los Negros

- Hydrological regulation PES by protecting forest and biodiversity (11 migratory tropical bird species) in Los Negros river watershed
- 46 farmers in 2,700 ha
- Annual contracts prohibit tree cutting, hunting and forest clearing on enrolled lands
- **Financing:** US Fish and Wildlife Service and municipality on behalf of downstream water users
- **Payments** in kind (bee-hives)
- **Partnership** with local NGO which is replicating scheme

**What about the social impacts of changing incentives?**



# Ecosystem incentives and poverty

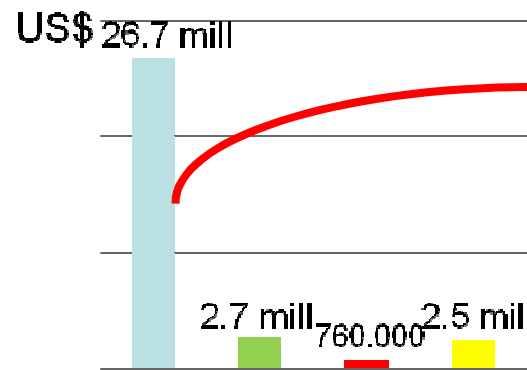
- **Potential opportunities:**
  - increase cash income
  - diversify income sources
  - reinforce social networks
  - develop new skills
- **Potential constraints:**
  - insecure property rights
  - high start-up and transaction costs
  - weak enforcement capacity



# Bringing it all together? Aligning economic growth, biodiversity and development

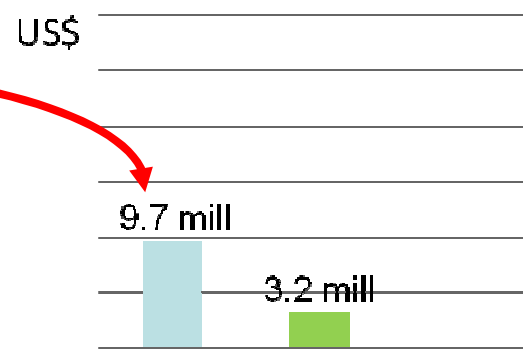
- Example: Rio Tinto mine in Madagascar
- Corporate goal: Net Positive Impact (NPI) on biodiversity
- Support for conservation project (60,000 ha lowland forest)

## Potential benefits:



- Carbon storage
- Wildlife habitat
- Hydrol. Regulation
- Eco-tourism

## Potential costs:



- Lost agricultural output & NTFPs
- PA start-up and management

- **Benefit-sharing with communities (based on REDD revenues)**

## Changing the incentives: summing up

	<b>Ecosystem Damage (Business as usual)</b>	<b>Conservation &amp; Sustainable Use</b>
<b>Costs</b>	<p>Need to <b>rise</b> through:</p> <ul style="list-style-type: none"> <li>• Technological limits</li> <li>• Resource taxes/fees</li> <li>• Reporting requirements</li> <li>• Naming and shaming</li> </ul>	<p>Need to <b>fall</b> through:</p> <ul style="list-style-type: none"> <li>• Tax credits</li> <li>• Facilitated permitting</li> <li>• Lower interest rates</li> </ul>
<b>Benefits</b>	<p>Need to <b>fall</b> through:</p> <ul style="list-style-type: none"> <li>• Consumer boycotts</li> <li>• Trade barriers (where allowed)</li> </ul>	<p><b>Need to rise through:</b></p> <ul style="list-style-type: none"> <li>• <b>Consumer choice</b></li> <li>• <b>Payment for ecosystem services</b></li> <li>• <b>Market creation</b></li> <li>• <b>CBNRM</b></li> </ul>



**Thank you!**

# Country experience with positive incentives

- **Describe an example** of a positive incentive for biodiversity conservation and/or sustainable use in your country. Which CBD targets/programmes are relevant?
- **How does the incentive work?** How are the costs and/or the benefits of conservation or of biodiversity-friendly activities affected by the incentive?
- **What is the impact of the incentive on biodiversity?** What is the extent of uptake/adoption of the incentive? What are the indicators of success, relative to “business-as-usual”?
- **How much does it cost to implement the incentive**, and how is this cost covered? Public spending and/or private expense? Is the incentive efficient (i.e. benefits > costs) or at least cost-effective, compared to alternative measures?
- **What are the social equity impacts of the incentive?** Who are the “winners” and “losers”? Does the incentive help to reduce poverty? What about governance/participation aspects?
- **Are there side effects** or unintended consequences from the incentive? Are they positive and/or negative?

# Target setting on positive incentives

## 1. How can existing positive incentives be improved?

- How to replicate or expand coverage?
- How to improve targeting/effectiveness?
- How to improve social/equity impacts?
- How to improve financial sustainability?
  - Opportunities for “self-financing”?
  - Opportunities to reduce costs?

## 2. What new positive incentives may be introduced?

- What criteria are most relevant to identify high potential or high priority for introducing positive incentives? Existing threats to biodiversity? Economic values of biodiversity? Social development concerns?
- What are the key steps involved in introducing new positive incentives?



## Fiscal incentives for private reserves in Brazil

Under Brazil's Program for Private Reserves of Natural Heritage (RPPN), private landowners can voluntarily declare all or any part of their property to be permanently protected. Launched by Federal Decree (1996) and State Decree (1998), the RPPN Program was revised and incorporated in legislation passed by Congress in 2000. To date, six of Brazil's 26 states have enacted legislation that mirrors the federal law. **Landowners must apply for RPPN status** with the Brazilian Environmental Institute or, where laws permit, with local officials. **If approval is granted, landowners receive breaks on property taxes and priority access to certain public financing programmes**, such as the National Environmental Fund. Under the RPPN programme, **land use is restricted to research, environmental education, ecotourism and limited resource extraction**. The RPPN has been especially useful as a means of consolidating fragments of natural habitat and creating ecological corridors. Approximately **half a million hectares of privately-owned land are now protected** by state and federal laws in Brazil, representing just under 0.5 percent of total conservation units in the country. Since 1990, nearly 600 individuals, corporations and activist groups have voluntarily registered private property under the RPPN scheme.

# MA's “promising (economic) responses”

- Incorporation of nonmarket values of ES in resource management decisions
- Elimination of subsidies that promote excessive use of ecosystem services (+ transfer subsidies to payments for non-marketed ecosystem services)
- Measures to reduce consumption of unsustainably managed ES
- **Greater use of economic instruments and market-based approaches**
  - **Taxes or user fees**
  - **Creation of markets**
  - **Payments for ES**
  - **Mechanisms to allow consumer preference to be expressed through markets**

