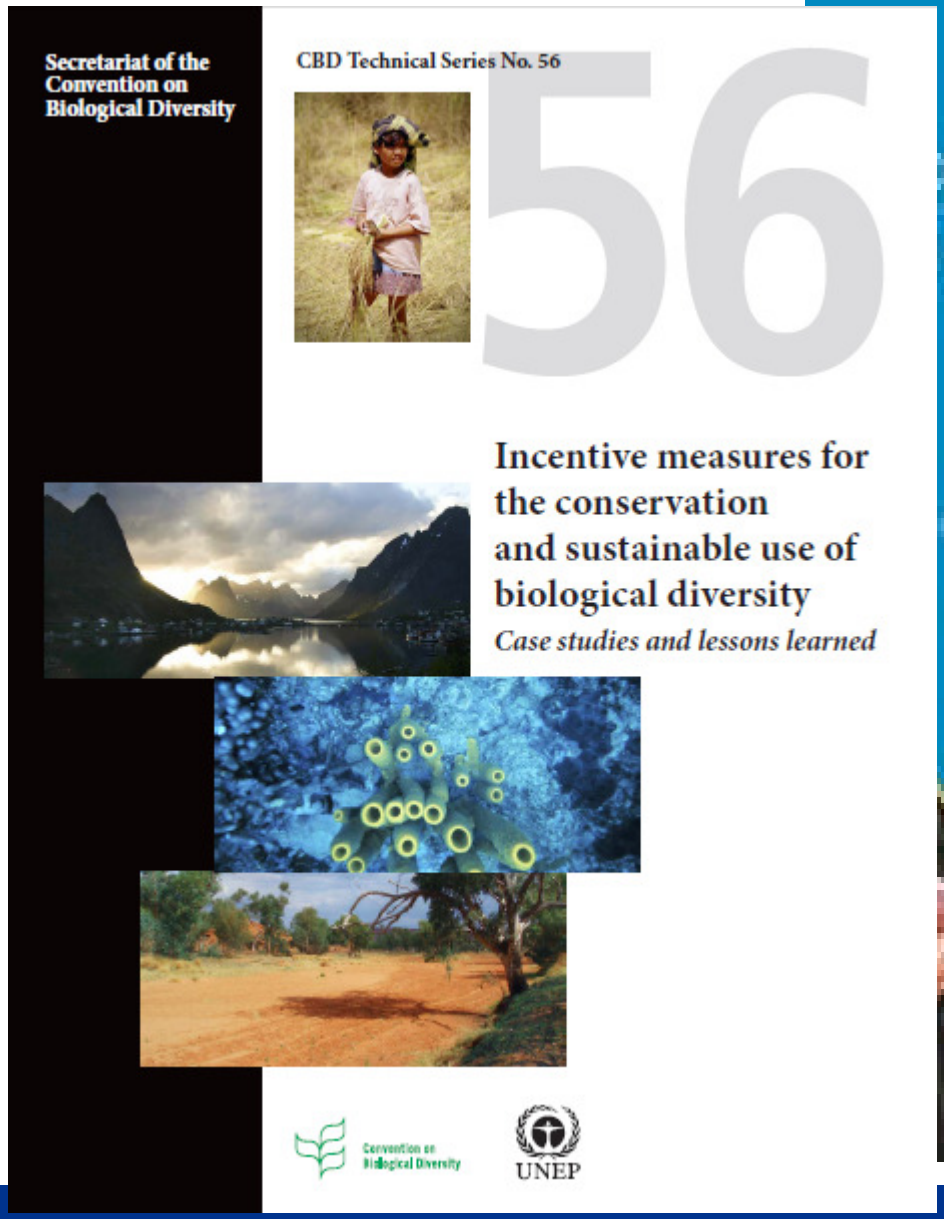
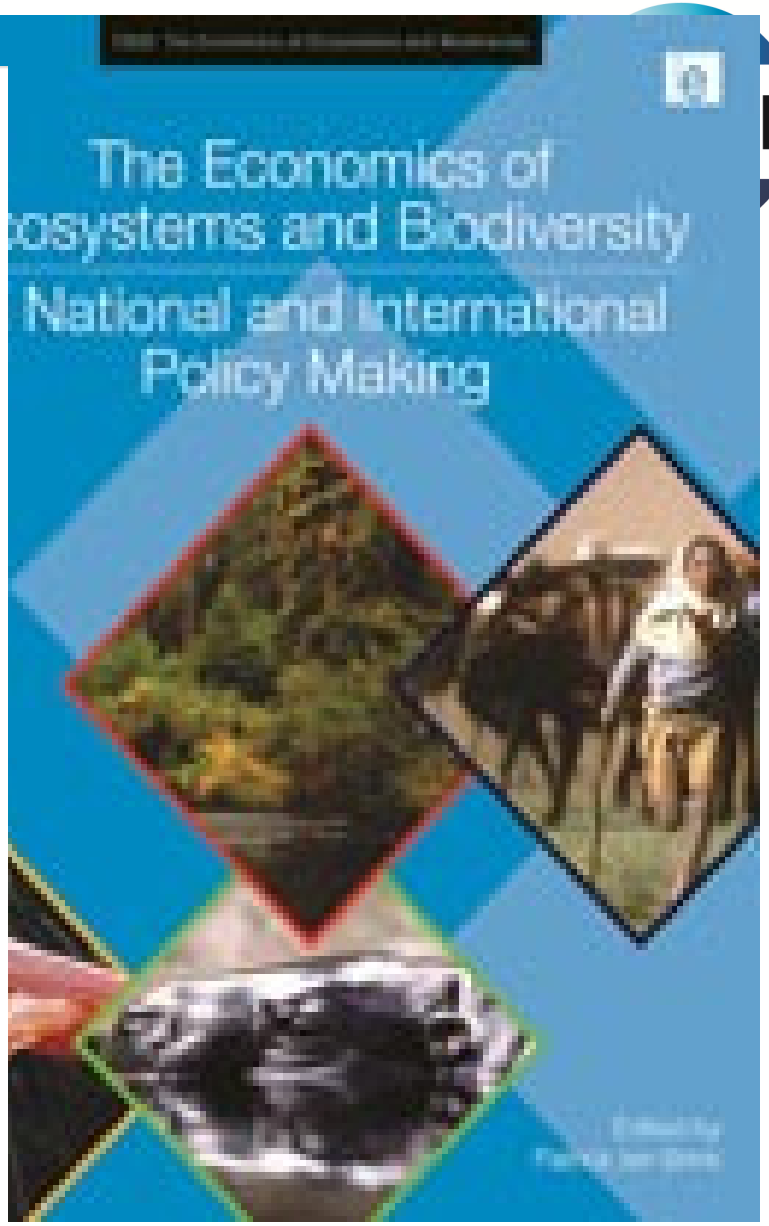
Positive incentive measures for conservation and sustainable use of biodiversity

Nathalie Olsen, IUCN (with inputs from Markus, Josh, Andy and others via the TEEB slide trail)

Sub regional workshop for Eastern Europe and Central Asia on Valuation and Incentive measures

Tbilisi, Georgia, 29-31 May, 2012


Secretariat of the Convention on Biological Diversity
CBD Technical Series No. 56
56
Incentive measures for the conservation and sustainable use of biological diversity
Case studies and lessons learned
Convention on Biological Diversity
UNEP


The Economics of
Ecosystems and Biodiversity
National and International
Policy Making

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."

What are incentives?

Incentives:

the opportunities and constraints that influence the behaviour of individuals and organisations in a society, deriving from a wide range of societal factors, including, but not limited to, from measures taken by governments

Incentive measures:

"…economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity." (Article 11 CBD)

A specific inducement designed and implemented to encourage individuals to conserve biological diversity or to use its components in a sustainable manner

CBD (2011). Incentive measures for the conservation & sustainable use of biological diversity: Case studies…

1. Direct approaches – monetary incentives are paid to reward producers for biodiversity-friendly outcomes or to avoid biodiversity-harmful outcomes

- **Payments for ecosystem services**, incl. creation of new markets
- Taxes and user fees to discourage activities harmful to biodiversity conservation and/or sustainable use

2. Indirect approaches – include non-monetary measures and activities that encourage the conservation and sustainable use of BES although they may not be specifically designed to do so

- Support for **certification and eco-labelling** for goods produced in biodiversity and ES neutral or positive manner
- Market promotion of biodiversity-based goods and services ➔**sustainable or eco-tourism, biotrade, green public procurement, removal trade barriers**
- Support for community based natural resource management

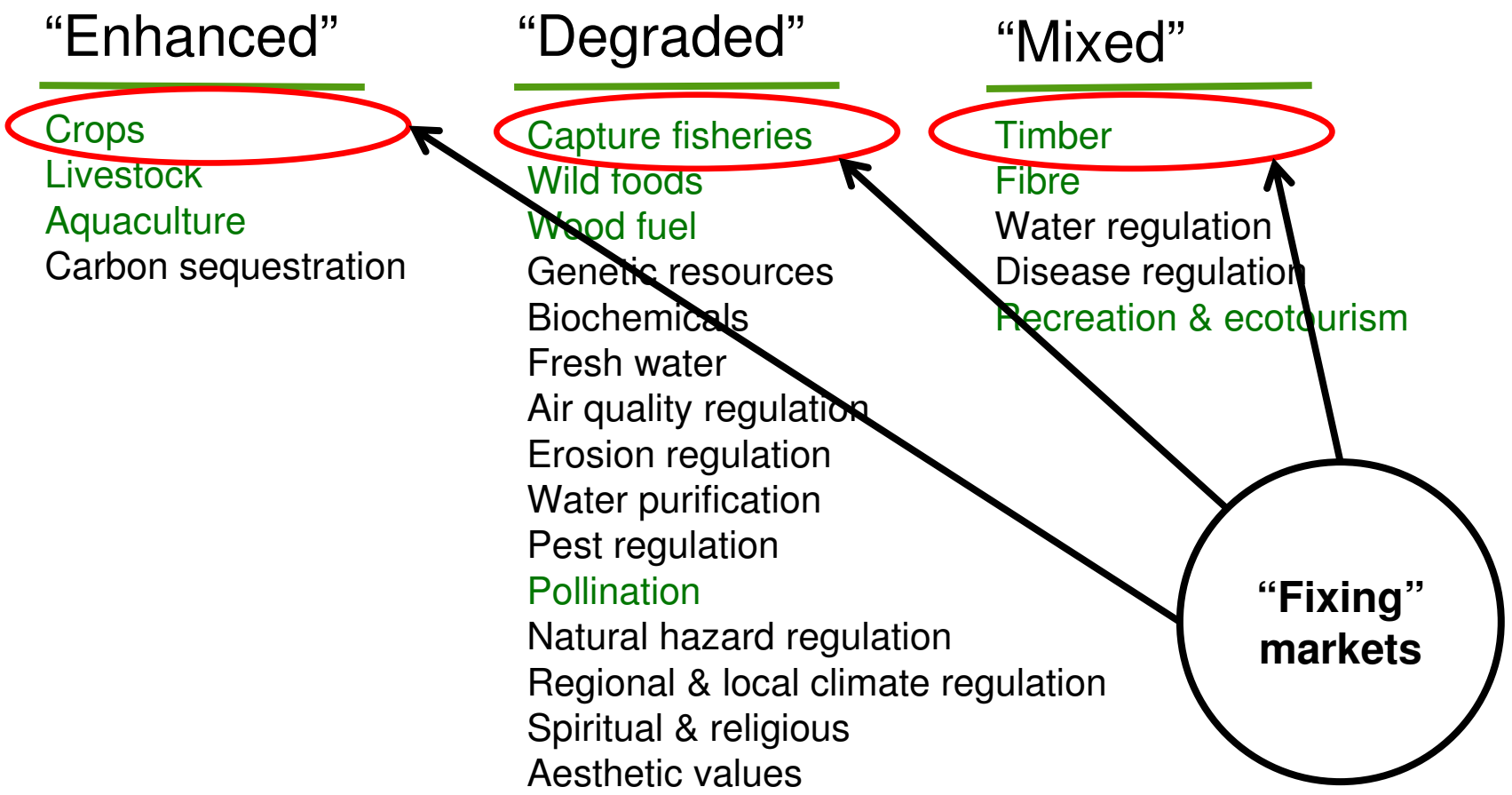
From ecosystem decline to ecosystem incentives

"Enhanced"	"Degraded"	"Mixed"
Crops	Capture fisheries	Timber
Livestock	Wild foods	Fibre
Aquaculture	Wood fuel	Water regulation
Carbon sequestration	Genetic resources	Disease regulation
	Biochemicals	Recreation & ecotourism
	Fresh water	
	Air quality regulation	
	Erosion regulation	
	Water purification	
	Pest regulation	
	Pollination	
	Natural hazard regulation	
	Regional & local climate regulation	
	Spiritual & religious	
	Aesthetic values	

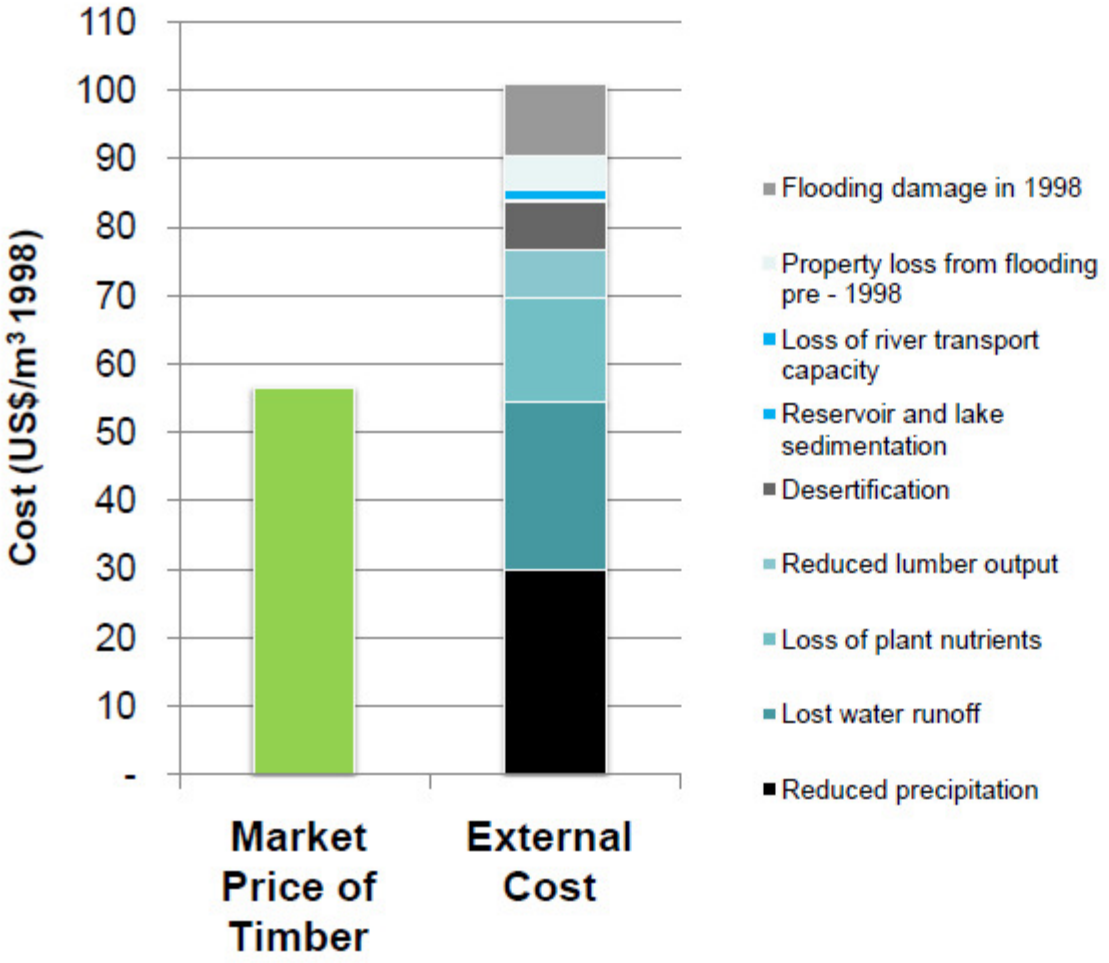
Markets that exist in green

Source: Millennium Ecosystem Assessment, 2005.

From ecosystem decline to ecosystem investment by fixing markets (CBD "indirect approaches")



Business impacts at sector & country-level

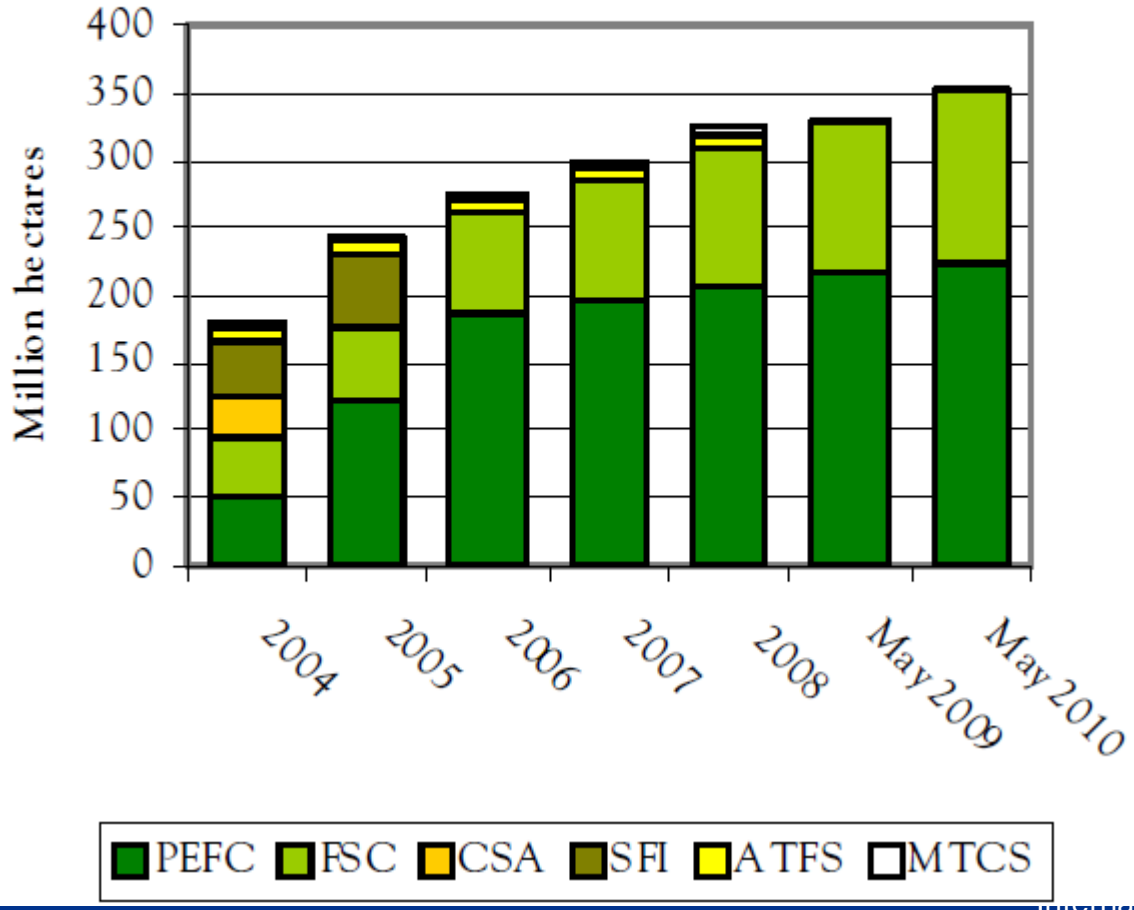


- US$12.2 billion estimated ecological cost of deforestation in China (1950-88)
- 60% of this cost is attributed to logging
- 64% of logging was for construction and materials sectors
- External costs = 178% of the market price of timber (1998)

Source: TEEB for Business, 2010 (Annex 2.1).

Fixing Markets

Forest area certified by major certification schemes, 2004-2010



- 355 million hectares (9% of world‟s forests)
- 26% of global supply of industrial roundwood
- 84% of certified forests are in North America and Western Europe
- 2 schemes dominate: FSC, PEFC

Source: UNECE/FAO Forest Products Annual Market Review 2009-2010 cited in TEEB D3

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)

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SOIL ASSOCIATION ORGANIC STANDARD

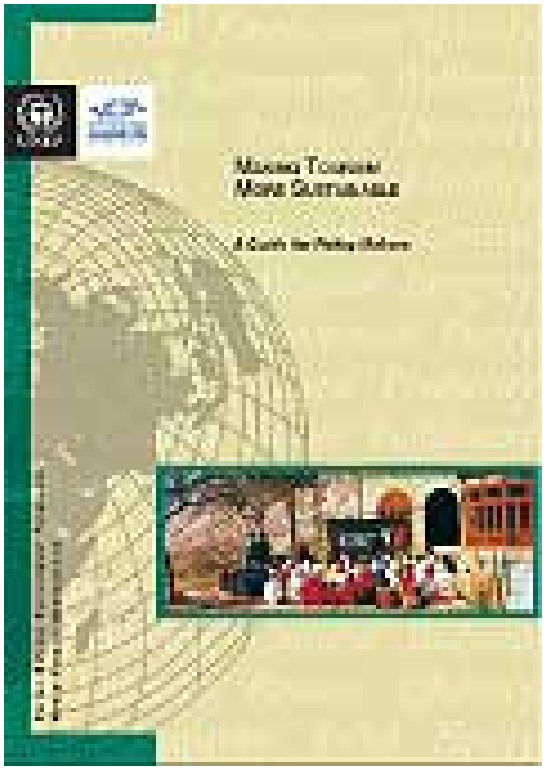
RAINFOREST ALLIANCE CERTIFIED EST 1987

MARINE STEWARDSHIP COUNCIL

responsibletravel.com
Holidays that give the world a break

FSC FOREST STEWARDSHIP COUNCIL
Because forests matter

Sustainable tourism - Principles



- ✓ Adopt an ecosystem-based approach in tourism development planning
- ✓ Manage impacts on biodiversity from hotel development and attempt to achieve an overall positive contribution
- ✓ Design with nature and adopt nature-based solutions
- ✓ Respect, involve and support local communities
- ✓ Build collaboration among stakeholders

Sustainable eco-tourism

- Example Camel and walking safaris run by Maasai guides to experience the cultural and natural heritage of the region
- Conservation reasoning: To counter local dependence on unsustainable practices with the provision of sustainable livelihood options
- Success factor: Local partnerships between NGO, Tanzania Tourism Board and community organisation/management

Community-based natural resource management

- Policies which involve traditional and local communities in wildlife conservation and SFM
  - Wildlife in PAs, linked to eco-tourism
  - Sustainable forest management
- Rely on generating/sharing new revenue, traditional knowledge
- Community forestry in India where benefits of NTFP shared between joint forest mgt committees and States
- Surui Forest Carbon Project (Brazil) – community management of forests in the Amazon

Surui Forest Carbon Project

- 1200 member tribe in 27 villages over 240,000 ha in Amazon
- Govt introduced incentives in 1980s for devt: subsidising roads and economic devt

- Indigenous territories set up in 1983 but not sufficient to protect against illegal logging and land grabbing
- Set up carbon project➔ REDD+
- Through alliances with international NGOs, indigenous groups and govt, Google Earth, developing carbon project to finance 50 year tribal mgt plan and support protection and restoration

From ecosystem decline to ecosystem incentives

"Enhanced"

Crops
Livestock
Aquaculture
Carbon sequestration

"Degraded"

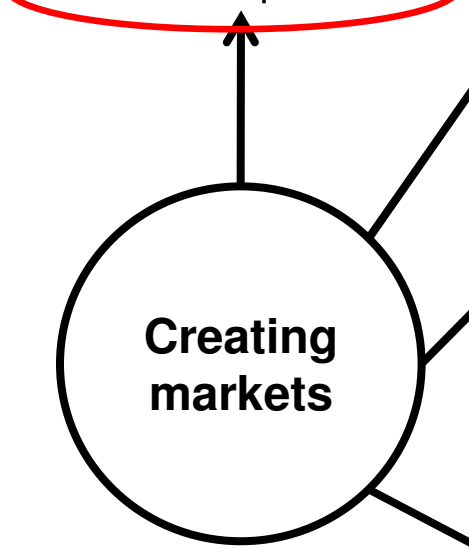
Capture fisheries
Wild foods
Wood fuel
Genetic resources
Biochemicals
Fresh water
Air quality regulation
Erosion regulation
Water purification
Pest regulation
Pollination
Natural hazard regulation
Regional & local climate regulation
Spiritual & religious
Aesthetic values

"Mixed"

Timber
Fibre
Water regulation
Disease regulation
Recreation & ecotourism

Source: Millennium Ecosystem Assessment, 2005.

From ecosystem decline to ecosystem incentives by creating markets (CBD "direct approaches")



"Enhanced"

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Livestock
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Capture fisheries
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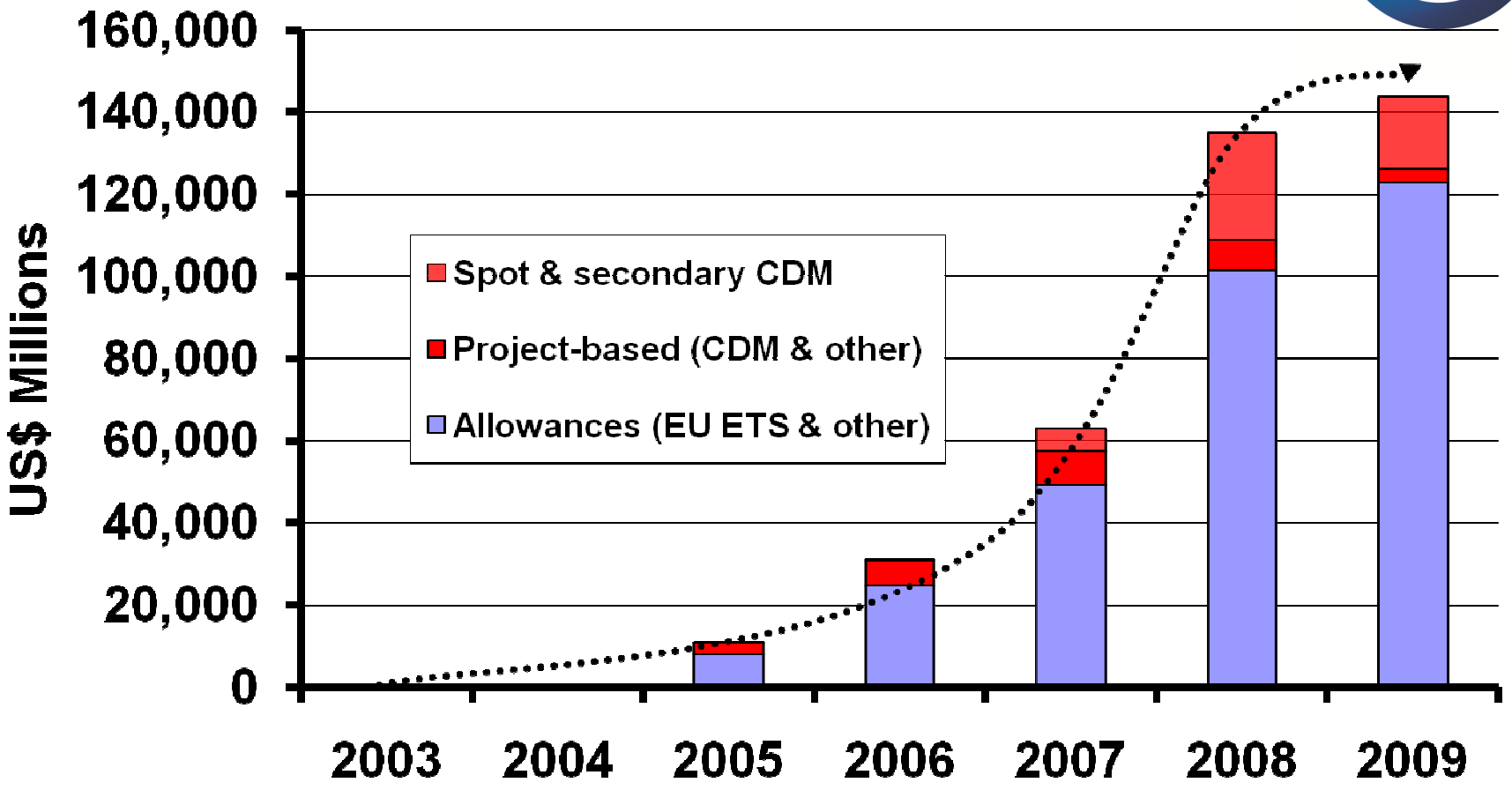
Aesthetic values
Habitat restoration and conservation

"Mixed"

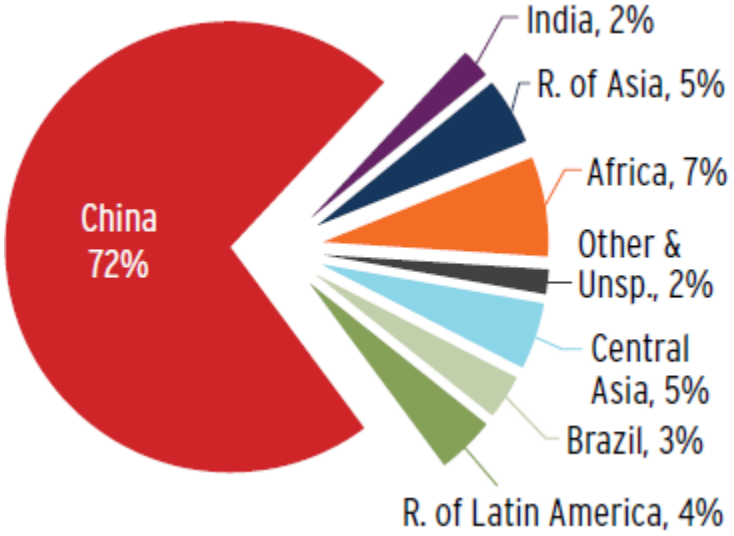
Timber
Fibre
Water regulation
Disease regulation
Recreation & ecotourism

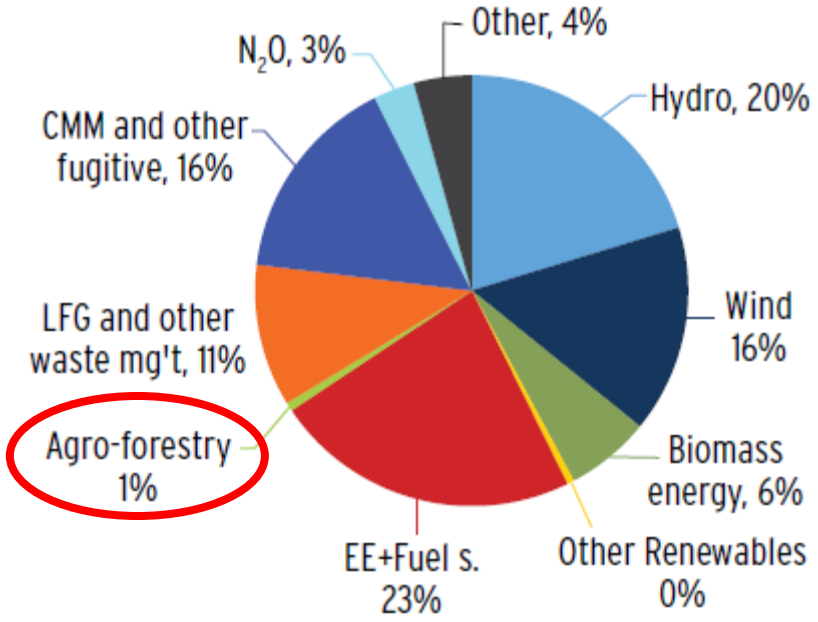
Creating markets: The case of carbon



Cumulative 2003-2009: US$307 billion (CDM US$78 billion)

Creating markets: Carbon as a source of finance for developing countries





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

Creating markets: Biodiversity offsets

What are biodiversity offsets?

- Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken (BBOP)
- Based on polluter pays principle
- Offsets require developers to restore or conserve an area greater than that damaged of “equivalent” habitat
- “no net loss” or “net positive impact”
- Offsets are quite developed for carbon, less so for biodiversity

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)

Creating markets: Biodiversity offsets

Where are biodiversity offsets used or being developed?

- **USA**: Federal Clean Water Act, Endangered Species Act
- **Australia**: Victoria, NSW, Western Australia
- **Brazil**: Protected Areas Law, Forestry Code
- **Canada**: Fisheries Act
- **Mexico**: Protected Areas Law, Forestry Law
- **South Africa**: Western Cape draft provincial guidelines
- **Switzerland**: Federal Law for Protection of Nature & Landscape
- **EU**: Habitats Directive, Environmental Liability Directive
- **Georgia:** **???, BP Pipeline**
- **Voluntary:** IFC, ICCM, Anglo American, Newmont, Shell, BP, Chevron Texaco, Statoil, Walmart, DuPont, Rio Tinto

Creating markets - 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 *et al.*, 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)

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 –paying for water quality improvements

- Market based instruments combine well with regulation (carbon market based on imposed ceiling on emissions, biodiversity offsets rely on legal requirement to offset)
- water quality trading can be win-win for business and the environment: a regulatory compliance option that costs less and is better for the environment
- Medford City has to reduce temperature of Rogue River as wastewater treatment plant outflows are warming the water
  - Build cooling towers or holding ponds at cost of $15 million
  - Buy water quality credits from Freshwater Trust to plant trees in strategic areas to cool river + tracking and monitoring (cost of $8 million)
- tracking and monitoring was part of contract and is vital to producing water credits that are valid for offsetting regulatory requirements
- water quality trading in a market provides a way to improve the environment while creating jobs and saving money in meeting regulatory requirements

PES in Bolivia – Los Negros

- Problem: deterioration in river (quantity and quality)
- 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

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

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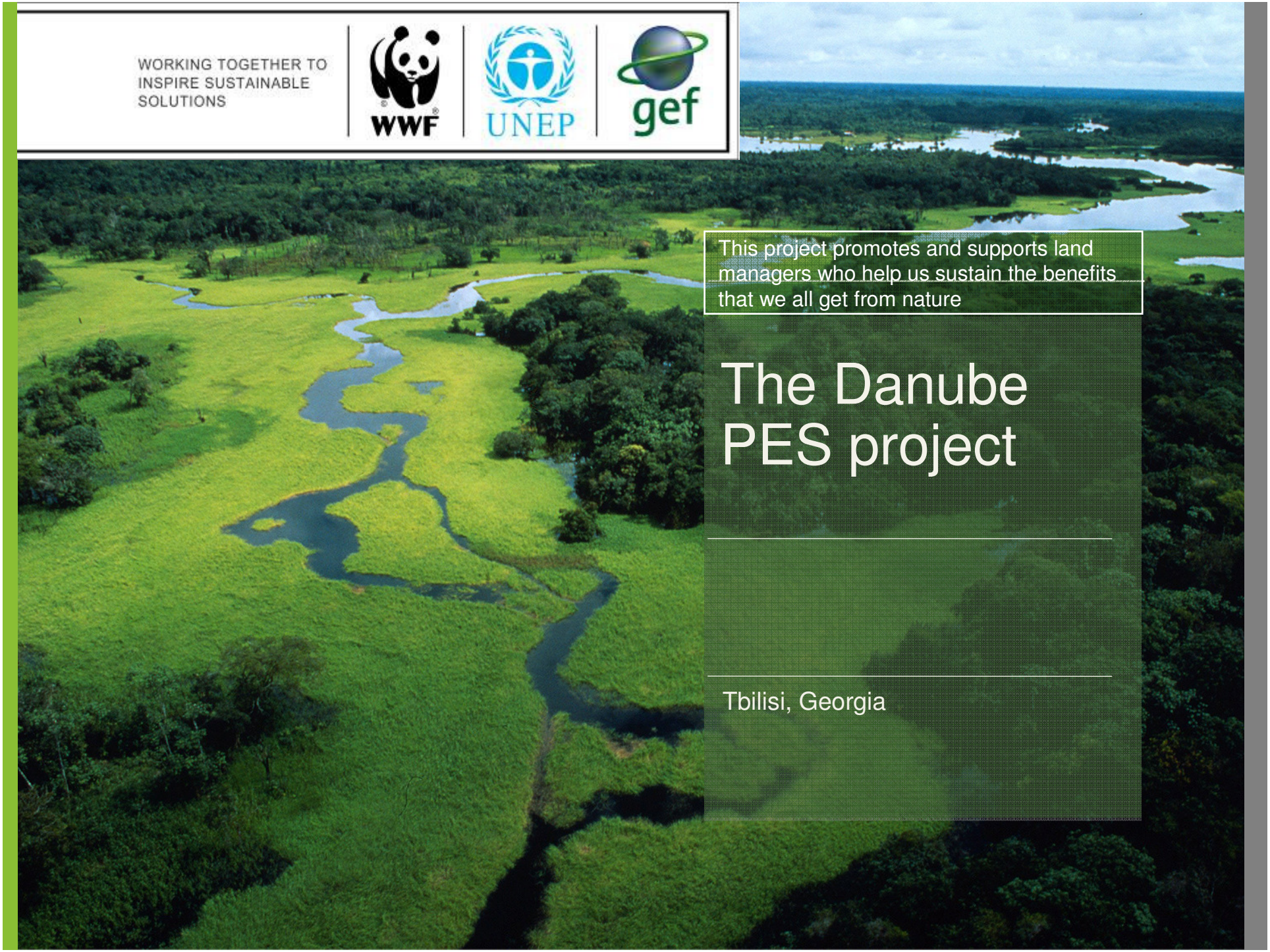

This project promotes and supports land managers who help us sustain the benefits that we all get from nature

The Danube PES project

Tbilisi, Georgia

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

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The Danube PES project, area map

Timeframe:
Jan 10 – Dec13

Scope: Bulgaria, Romania, Serbia and Ukraine

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

Pilot PES schemes

since 2010 we have been working on:

- a national public scheme for fisheries and aquaculture in Bulgaria
- 2 schemes supporting protection and biodiversity and cultural values of protected areas in Bulgaria and Romania
- 1 scheme for sustainable fishpond management in Romania
- 1 scheme for wetland management by harvesting biomass

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

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Public payments for sustainable fisheries

- Place: Bulgaria
- Environ issue: businesses use organic substances and fish feed which contaminates water
- Target: decrease the footprint in fishery and aquaculture sector
- Concept: provide state aid for use of fish feed with low environmental impact (better absorption by fish, low % of residues in water, natural ingredients)
- State budget allocated: 1,28 million euro for the period 2011-2013

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

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Payments for sustainable fishpond management

- Place: Ciocanesti, Romania
- Environ issue: Fish-eating birds of high conservation value feed on this private market-oriented fishpond. The fishpond owners suffer loss of yield to up to 70%.
- Concept: provide funding for investments in equipment decreasing the loss of yield and for creating conditions for birds during different seasons
- Funding: mixed public-private

Use of OP Fish and eco-tourism opportunities

WORKING TOGETHER TO INSPIRE SUSTAINABLE SOLUTIONS

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Management of wetlands through biomass use

- Place: Persina, Bulgaria
- Environ issue: Overgrowth of wetlands with reed
- Concept: ensure the harvest of reed showing to local communities its economic potential
- Funding: private

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

Changing the incentives: summing up

	Ecosystem Damage (Business as usual)	Conservation & Sustainable Use
Costs	Need to **rise** through: •Technological limits •Resource taxes/fees •Reporting requirements •Naming and shaming	Need to **fall** through: •Tax credits •Facilitated permitting •Lower interest rates
Benefits	Need to **fall** through: •Consumer boycotts •Trade barriers (where allowed)	**Need to rise through:** **•Consumer choice** **•Payment for ecosystem services** **•Market creation** **•CBNRM**

Thank you

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What is PES?

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)

Source: Wunder 2005

Investing in protection of ecosystem services: a business opportunity for Vittel (Nestlé Waters), France

The context

- Vittel relies on water quality for its product but prevented by law from treating water
- Agricultural intensification in 1980s in the catchment above the source aquifer would result in increased levels of nitrates and pesticides
- Vittel considered range of options
- Most cost-effective and legally feasible option - to develop incentives for farmers to switch to less polluting agricultural practices

source: Danièle Perrot-Maître 2006, The Vittel payments for ecosystem services: a “perfect” PES case? IIED/DFiD.

Vittel: The Scheme

- Large research programme initiated
- Creation of intermediary organisation to negotiate and implement programme (locally based and staffed) – Agrivair
- 30 year contracts in compensation for risk and reduced profitability
- Land purchase: 1450 ha, given in usufruct to farmers
- Subsidy: USD 230/ha/year for 7 years (up to 75% of farms disposable income)
- Cover cost of new farm equipment and buildings and modernization (up to Euros 150,000 per farm)
- Free labour for composting and free technical assistance
- Total cost (first 7 years): about 24.25 million euro (= 980euro/ha/yr)

Vittel – What was achieved?

- All 26 farmers in sub-basin adopted new farming system
- 92% of sub basin protected (5100 ha) and maize production had been eliminated
- Nitrate pollution reduced
- Vittel maintains a steady supply of high quality water and its brand reputation

Vittel – Lessons learned

- Establishing PES programmes is a complex undertaking
  - Interactions between technical, economic, social, legal, political aspects
  - Difficult to estimate cost of programmes and compensation
- Primary reasons for success are not necessarily financial
  - Institutions and trust - Agrivair
  - Understanding farmers and their life choices
  - Long-term rather than annual contracts
  - Payments must ensure no loss of income

- Use of proxies sometimes necessary
  - Payments based on farming practice, not measurable impact on water quality
- There is a business case for private sector participation in PES
- What is the scope for scaling up?