

Journée Biodiversité & Entreprises

# Biodiversity and compensation: legal and economic issues

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# Outline

- Economic challenges of biodiversity
- Why offset biodiversity loss?
- The range of biodiversity business
- Biodiversity offsets, trading and banking
- Examples from around the world
- Lessons from carbon markets
- Questions and challenges

# What's special about biodiversity (from an economic perspective)?

- Still mostly an “externality”
  - Little/no penalty for damaging biodiversity
  - Little/no financial reward for conserving it
- The ultimate “anti-commodity”
- Uniqueness versus replace-ability
- Significant unknowns (high option values)
- High inter-dependence (ecological linkages)
- Uncertain thresholds of viability/collapse
- Importance of spatial connectivity
- Significance of temporal variability

# Why offset biodiversity loss?

- Because biodiversity is...
  - Increasingly scarce and thus valuable
  - Increasingly costly to conserve *in situ*
- Because development will not (must not) stop
  - Poverty reduction requires infrastructure
  - Economic activity will never be completely ‘footprint neutral’
- How to secure resources that biodiversity requires?
  - Traditional reliance on public funding
  - Plus command-and-control policy (e.g. land use zoning, protected areas, regulation of production methods)
- Consensus that more/different approaches needed
- Growing interest in how to mobilize private finance



# From liability to market opportunity: the concept of biodiversity business

‘Commercial enterprise that generates profits through activities that conserve biodiversity, use biological resources sustainably, and share the benefits arising from this use equitably’.

## Building Biodiversity Business

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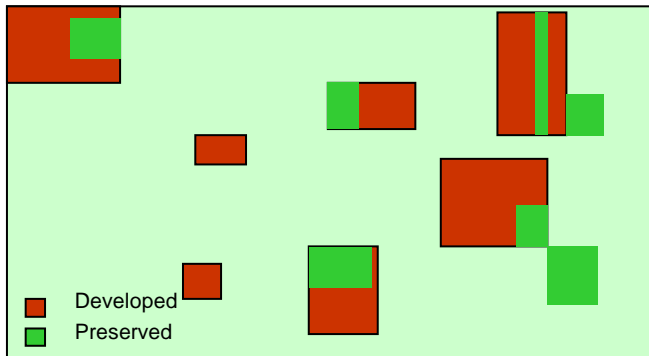
# Biodiversity Business: multiple market segments, sectors and approaches

- Eco-agriculture
- Sustainable forestry
  - Non-timber forest products
  - Sustainable fisheries & aquaculture
  - Bio-carbon offsets including REDD
  - Payments for watershed protection
  - Bio-prospecting for genetic resources
    - **Biodiversity offsets, trading and banking**
    - Biodiversity management services
    - Sport hunting and fishing
    - Eco-tourism

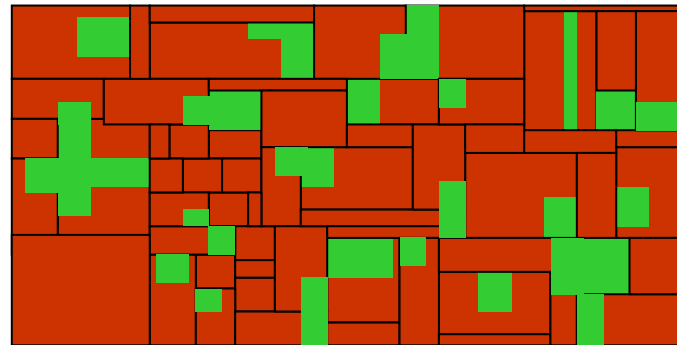
# Biodiversity offsets, trading and banking: From one-off projects to liquid markets

- **Biodiversity offsets:**
  - Compensation for residual loss or damage from development
  - Usually in-kind (like-for-like)
  - Usually one-off (project-by-project)
- **Biodiversity trading:**
  - Transfer responsibility for offset between land owners
- **Biodiversity banking:**
  - Offsets in advance of development, financed by credit sales

# Connectivity, scale and cost: The rationale for biodiversity banking



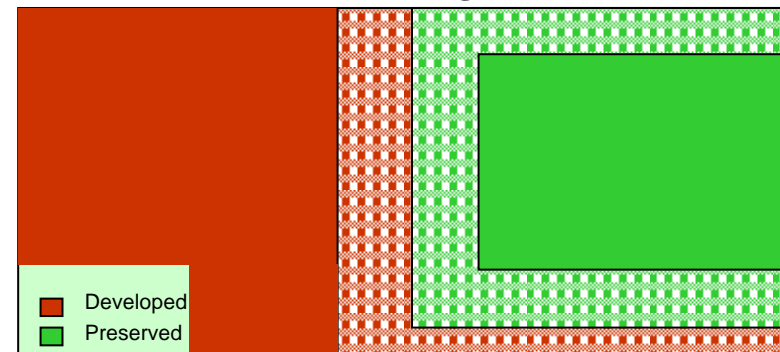
**1) case-by-case  
offsets, early stage**



**2) case-by-case  
offsets, final  
outcome**

Sources: 2004: Insight/IUCN; White; Maze.

**3) biodiversity banking,  
better results?**





# Where are biodiversity offsets, trading and banking being used or 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
- **Global:** World Bank, International Finance Corporation
- **Voluntary:** BBOP, ICCM, Anglo American, Newmont, Shell, BP, Eni, Chevron Texaco, Statoil, Walmart, DuPont, Rio Tinto

# Wetland mitigation and conservation banking in the USA: a growing market

- Mandatory compensation for loss of or damage to scarce habitat (wetlands, endangered species)
- Usually more than one hectare of mitigation is required for each hectare of habitat lost
- Developers can discharge liability by purchasing “credits” from approved mitigation bankers for similar habitat within a specified “service area”
- Mitigation banks can sell only approved credits that meet agreed performance criteria according to a fixed timetable
- Mitigation credits may be used only once and mitigation banks must be conserved in perpetuity
- Prices of mitigation credits reflect costs of buying land, improving habitat and long-term management



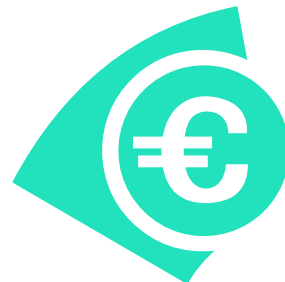
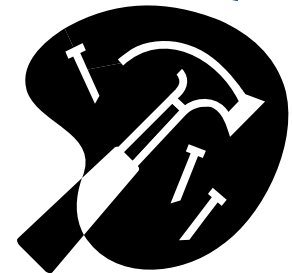
# Wetland mitigation and conservation banking in the USA: Some recent data

Indicator	Wetlands (most data 2005)	Endangered Species (2003)
Approved banks	405 (75 sold out)	~60
Participating US states	42	5+
Area approved (acres)	43,549 (FY03)	39,488 ha (cum.)
Private commercial banks	70%	63%
Credit prices (per acre)	\$3,000-\$350,000	\$3,000-\$150,000
<b>Total market value:</b>	<b>&gt; US\$ 1 billion per annum</b>	

Sources: Fox and Nino-Murcia (2005); Ecosystem Marketplace (2006); Wilkinson & Thompson (2006); National Mitigation Banking Association (2007); US Fish & Wildlife Service (2007)

# What is needed to stimulate biodiversity offsets, trading and banking?

- **Enabling policy**
  - Voluntary as well as mandatory
  - Corporate, local, national, international
- **Business tools**
  - Product development, quality control, supply-chain management, marketing, biodiversity reporting
- **Financing instruments**
  - Grants, debt, equity

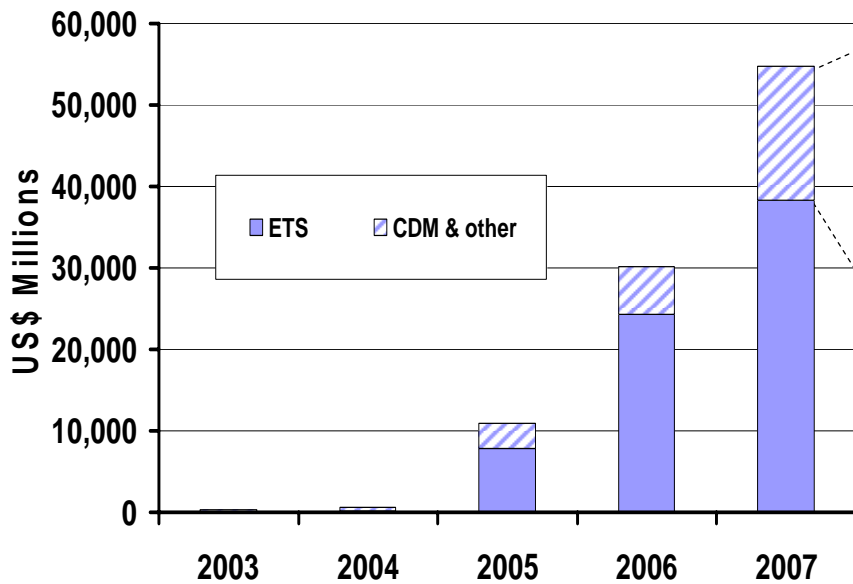


# What lessons for biodiversity offsets from carbon offset markets?

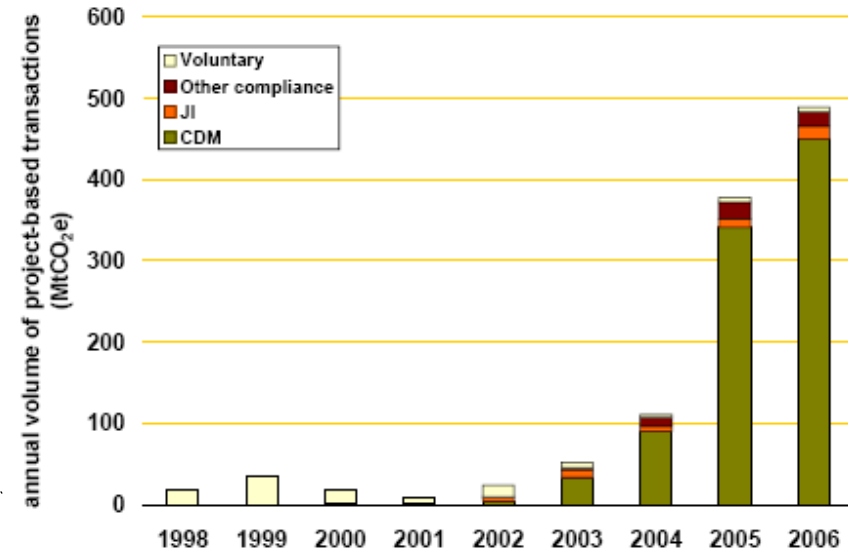
1. Define a currency based on clear priorities
2. Approve methodologies and performance standards
3. Negotiate realistic targets/caps and timetables
4. Choose instruments that stimulate private investment
5. Inform, monitor and enforce compliance
6. Learn and adapt

# Carbon trade and carbon assets

## Global Carbon Trade



## Project-Based Carbon Offsets



“Investors all over the world have pumped around \$66 billion into more than 200 newly launched mutual funds and exchange traded funds investing in companies that help to mitigate or adapt to climate change” (Deutsche Asset Management, 2008)

# 1. Define the currency based on priorities

## Climate change:

6 greenhouse gases regulated under Kyoto Protocol

- Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), PFCs, HFCs, SF<sub>6</sub>

Substances regulated under Montreal Protocol

- Halons, CFCs, HCFCs, methyl chloroform, carbon tetrachloride, methyl bromide

All may be expressed in terms of:

- **CO<sub>2</sub> equivalent (CO<sub>2</sub>e)**

## Biodiversity and ecosystems:

- Species richness, uniqueness
- Threat status (IUCN Red List Index)
- Intra-specific genetic diversity
- Habitat hectares
- Living Planet Index
- Pan-European Common Birds Index
- Percent natural habitat cover
- Rate of natural habitat loss
- Natural habitat fragmentation
- Protected area coverage
- Ecosystem services (provisioning, regulating, cultural, supporting)

## 2. Approve methodologies and standards

### **Climate change:**

- Clean Development Mechanism (CDM)
- Chicago Climate Exchange (CCX)
- Gold Standard
- Voluntary Carbon Standard (VCS)
- Voluntary Offset Standard (VOS)
- Climate, Community and Biodiversity Standards (CCBA)
- WRI/WBCSD GHG Project Protocol
- Plan Vivo
- ISO 14064-2

### **Biodiversity and ecosystems:**

- Sustainable forest management standards (e.g. FSC, CSA, SFI, PEFC)
- Marine Stewardship Council (MSC)
- IFOAM norms (organic agriculture)
- IUCN Framework for assessing PAs
- Principles & Criteria for Sustainable Palm Oil
- EU eco-label
- International Ecotourism Standard (Green Globe)
- UN/ECE draft code of conduct on PWS
- IFC Performance Standard 6
- ISO Environmental Mgmt. Standards



# 3. Negotiate realistic targets and timetables

## Climate change:

- % reduction in GHG emissions by 2012, 2020, 2050 (UNFCCC, ETS, CCX, etc)
- 2° C average warming above pre-industrial levels
- 550 parts-per-million (ppm)
- Renewable energy as % of total
- Biofuels as % of liquid fuels

## Biodiversity and ecosystems:

- CBD 2010 Target (“significant reduction of the current rate of biodiversity loss”)
- Protected area coverage (15% terrestrial; 30% marine)
- Conserve “Hotspots”, “Last Great Places”, “Ecoregions”
- No net loss of wetlands
- Net positive impact on biodiversity
- Proportion of total land area covered by forest (MDG7)

# 4. Choose instruments to stimulate investment

## **Climate change:**

- Eliminate perverse subsidies (e.g. support for fossil fuels)
- Cap-and-trade emissions
- Carbon taxes
- Subsidies for energy efficiency or for renewable energy
- Carbon import tariff

## **Biodiversity and ecosystems:**

- Eliminate perverse subsidies (e.g. agricultural price supports)
- Wetland mitigation banks (USA)
- Habitat credit trading (USA)
- Environmental Liability (EU)
- Certification and eco-labelling
- Agri-environmental subsidies and other public PES
- Tax credits for easements and other environmental actions

# 5. Inform, monitor and enforce compliance

## **Climate change:**

- National reports to UNFCCC / Kyoto Protocol
- CDM Monitoring, Verification and Certification reports
- CER registries (CDM, national)
- CCX annual verification and audit system
- Corporate emission reports
- Public information campaigns

## **Biodiversity and ecosystems:**

- National Biodiversity Action Plans and national reports (e.g. to CBD)
- National Environmental Performance Reviews (e.g. OECD)
- Corporate biodiversity reports
- Review / renewal of certificates (e.g. every 5 years for FSC, MSC)
- Global Reporting Initiative (EN6/7)

# 6. Learn and adapt

## Climate change:

- Kyoto commitment periods
- ETS National Allocation Plans (2005-07, 2008-12, etc)
- CCX compliance commitment phases (2003-06, 2007-10)

## Biodiversity and ecosystems:

- “When it comes to evaluating the success of its interventions, the field of ecosystem protection and biodiversity conservation lags behind most other policy fields” (Ferraro & Pattanayak 2006)
- “Up to now there is no comprehensive evaluation of agri-environmental programmes” (Bonnieux et al. 2004)
- “Very little evidence exists on whether the ESA effectively promotes species recovery” (Langpap & Kerkvliet 2003)

# Questions and challenges for biodiversity offsets

- **What balance between avoid, mitigate and offset?**
  - Who sets limits, standards and assesses performance?
- **Who wins and who loses from offsets?**
  - How to balance local, regional and global priorities?
- **What is the currency for biodiversity offsets?**
  - Is like-for-like, on-site compensation always best?
  - What are the geographic limits of compensation?
- **What are the limits of responsibility?**
  - Are project developers responsible for immigration?
  - How to create offsets for commodity supply chains?
- **How can biodiversity offsets be made secure?**
  - What legal options are offered by existing land rights?
  - How to meet long-term financing needs?
  - How to protect against failure?



# Thank you

## Building Biodiversity Business

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<http://cms.iucn.org/about/work/programmes/economics/>

<http://www.biodiversityeconomics.org/>

