

Capitalizing on Natural Resources: New Dynamics in Financial Markets

The transition from biodiversity
liabilities to biodiversity business:
What financial products do we need?

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11 September 2008



Biodiversity and business: What's it all about?

Biodiversity refers to “the variability among living organisms from all sources ... and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (*United Nations Convention on Biological Diversity, Article 2*).

Ecosystems

Businesses depend on ecosystem services
(regenerative and waste assimilation capacity)

Species

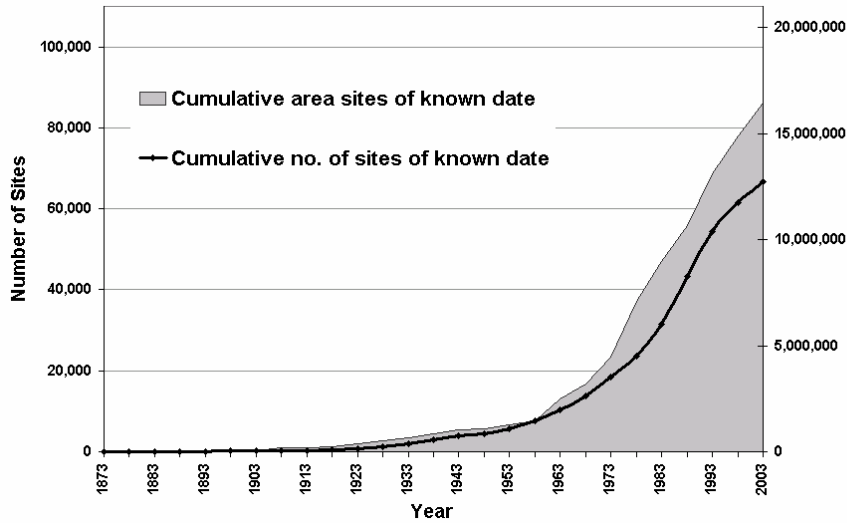
Business activities impact – both positively and negatively – a vast array of species.

Some sectors depend directly on wild plants and animals for their production processes

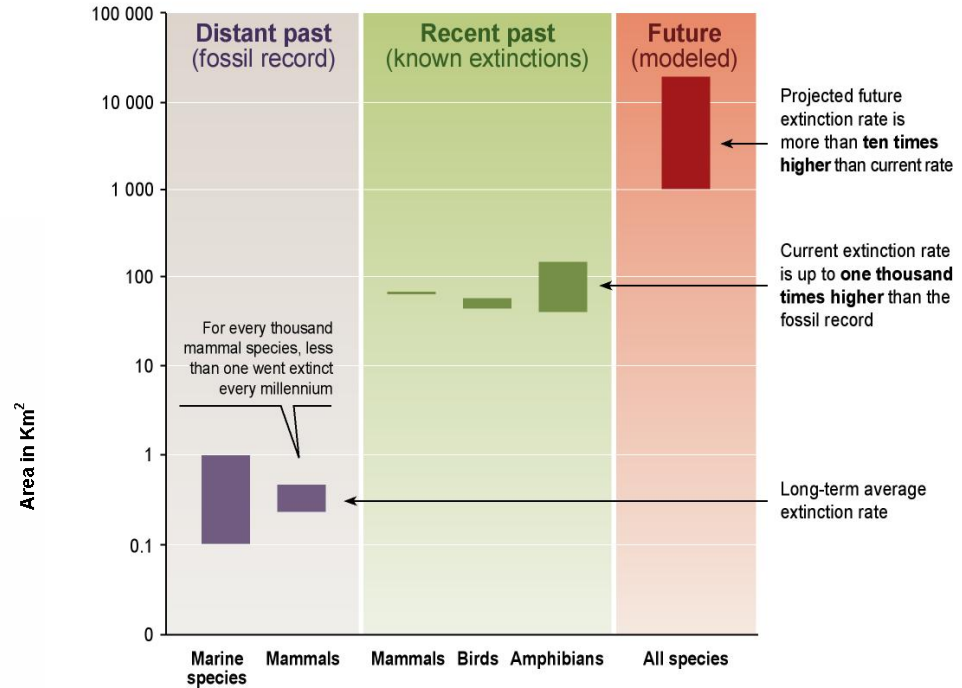
Genes

Business plays a dominant role in the commercial use of genetic resources and their derivatives

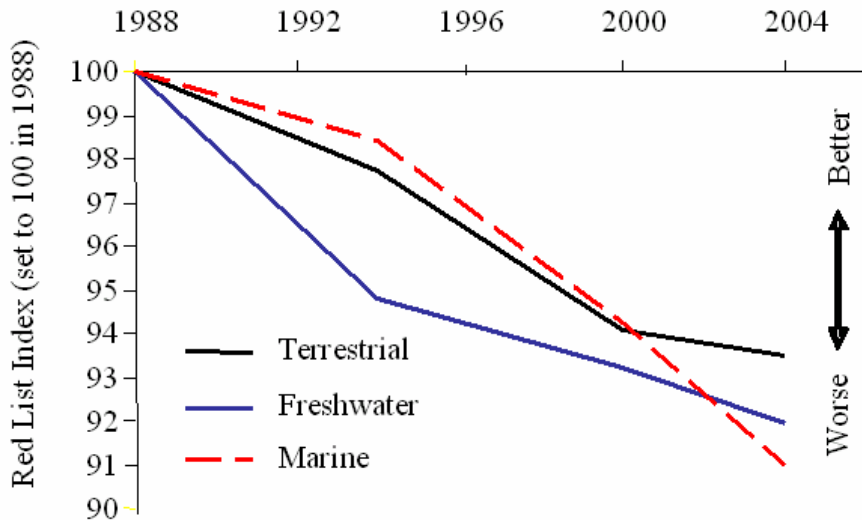
Biodiversity conservation today: Not good enough



Extinctions per thousand species per millennium



Source: Millennium Ecosystem Assessment



Fish landings in tons



Source: Millennium Ecosystem Assessment

What's special about biodiversity conservation (from a financial services perspective)?

- Still mostly an “externality”
 - no penalty for damaging biodiversity
 - 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



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

Joshua Bishop, Sachin Kapila, Frank Hicks, Paul Mitchell and Francis Vorhies



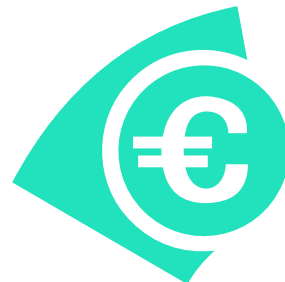
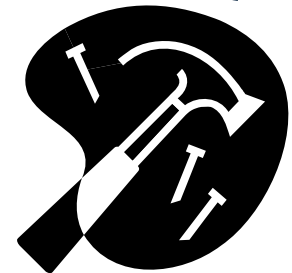
Biodiversity Business:

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 and habitat banking
 - Biodiversity management services
 - Sport hunting and fishing
 - Eco-tourism

What is needed to stimulate biodiversity business?

- **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



Building biodiversity business: The key role of enabling policy

1. Government spending & voluntary initiative

- Conservation budgets and donations
- Public infrastructure
- Private commitments

2. Regulation (“command & control”)

- Planning, mitigation & reporting requirements
- Technology rules & restrictions
- Standards & targets

3. Market-based instruments (“incentives”)

- Market facilitation
- Taxes and subsidies
- Tradable rights and liabilities

Market-based instruments: examples for nature conservation

i. Market facilitation

- Standards, certification and labelling

ii. Taxes and subsidies

- Payments for ecosystem services (PES)

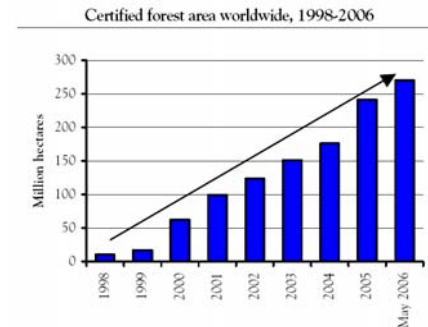
iii. Tradable rights and liability

- Bio-carbon and biodiversity offsets

i) Making markets with information: Standards, certification and labelling

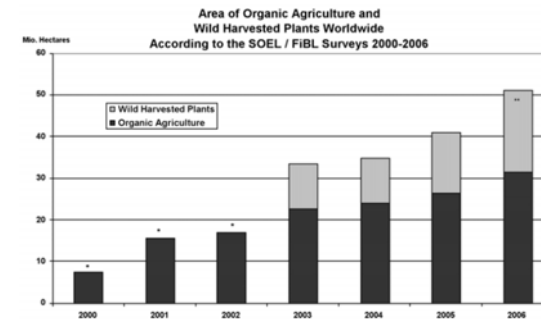
- How to finance the initial standard-setting (avoid 'regulatory capture')?
- How to achieve faster/wider uptake by producers and consumers, in purely voluntary schemes?
- Who pays the costs of meeting the standard, if consumers are unwilling?
- How to reduce barriers to entry by small-scale producers?

Certified forestry: 7% of productive forest area and US\$20 billion sales in 2007



Source: FAO (2007); FSC (2008)

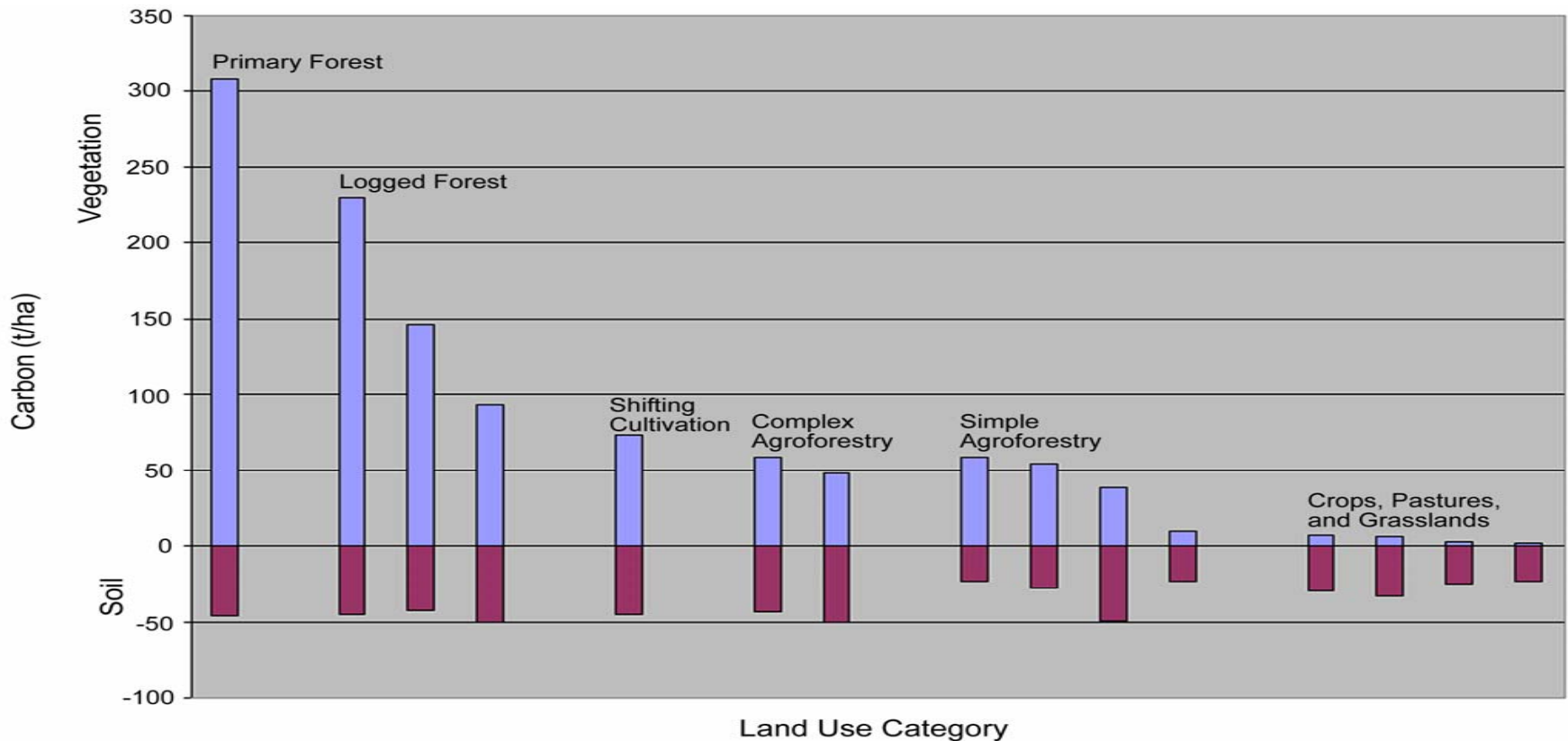
Organic agriculture: 30 million hectares and US\$38 billion in 2006



Source: Willer et al. (2008)



iii) How to combine biodiversity and carbon assets? Afforestation/Reforestation, soil carbon & REDD



Above-ground and total soil carbon (0-20 cm) for sites in the humid tropical lowlands of Brazil, Cameroon and Indonesia

Source: Forest Trends

Biodiversity offsets and habitat banking: A step towards tradable development rights?

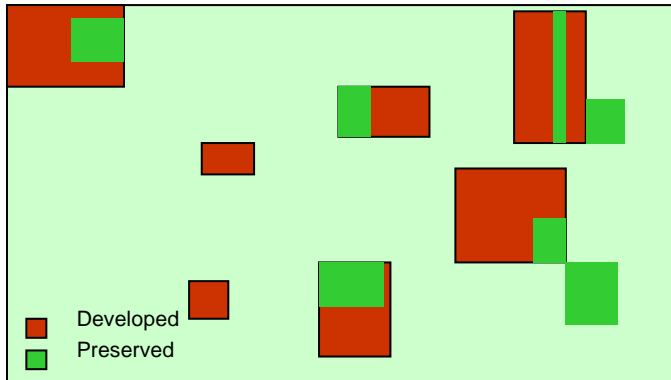
Biodiversity offsets: Like-for-like compensation for residual loss or damage from development

Biodiversity banking: providing offsets in advance of development, financed through credit sales

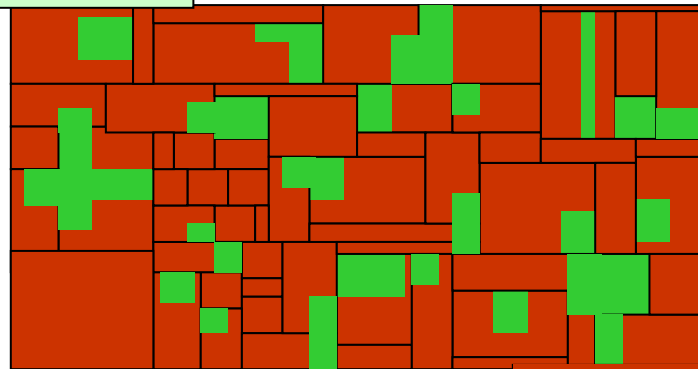
Where are biodiversity offsets and banking being used or developed?

- **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:** ICCM, Anglo American, Newmont, Shell, BP, Eni, Chevron Texaco, Statoil, Walmart, DuPont, Rio Tinto

Connectivity, scale and cost: The rationale for biodiversity banking



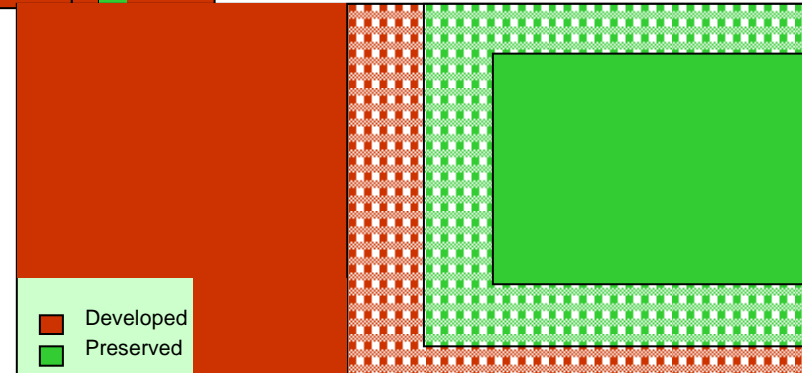
1) case-by-case
offsets, early stage



2) case-by-case
offsets, final outcome

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

3) biodiversity banking,
a better result?



Legal and financing options for bio-carbon and biodiversity offsets

- Purchase land outright (or secure long lease)
 - Acquire a covenant / easement over the land (development rights)
 - Negotiate changes in land use practices with land users ('Payment for Ecosystem Services')
-
- Funding needed for start-up and to support long-term operating costs (e.g. trust funds)
 - Insurance needed to protect against failure

What lessons can we learn from carbon markets to help develop biodiversity 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



For more information:

Building Biodiversity Business

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

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



The 4th World Conservation Congress

Barcelona, Spain
5-15 October, 2008

Hosted by:

- Spanish Government - Ministry of Environment
- Catalan Government - Ministry of Environment and Housing

Organized by:

- IUCN



Venue: Centre Convencions Internacional Barcelona (CCIB)