



Emerging Markets for Ecosystem Services

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Forest Trends/Ecoagriculture Partners

July 2005



Conservation of Natural Ecosystems and ES Services: Key Messages

- 1) Conservation finance is in crisis even as broader ecosystem conservation needs are identified
- 2) Innovative market and ‘market-like’ mechanisms are emerging to incorporate financial value of ecosystem services in mainstream economy
- 3) PES rules and strategies developed over the next decade will influence patterns of conservation and investment globally over the next century—and the benefits/protections for local communities



Investing in “Natural Infrastructure”

Air quality

Pest & disease control

Watershed protection and regulation

Wilds species & habitat protection

Plant pollination

Carbon sequestration and storage

Soil formation and fertility

Decomposition of wastes

Landscape beauty

Motivations for Using Market Instruments

- Failure of traditional regulatory approaches
 - Limits of protected areas
- Financial markets reward short-term returns over long-term ones
- Financial value of forest conversion is much higher than for conservation
 - Stagnant public and civic funding for forest conservation

Who Buys Ecosystem Services?

Direct Beneficiaries

- **Watershed protection**

- Industrial, agricultural water users – to secure stable supply, flow
- Municipal water utilities, consumers (reduce costs, water quality)
- Agencies managing environmental risks (e.g., floods)

- **Carbon emission offsets or avoided deforestation**

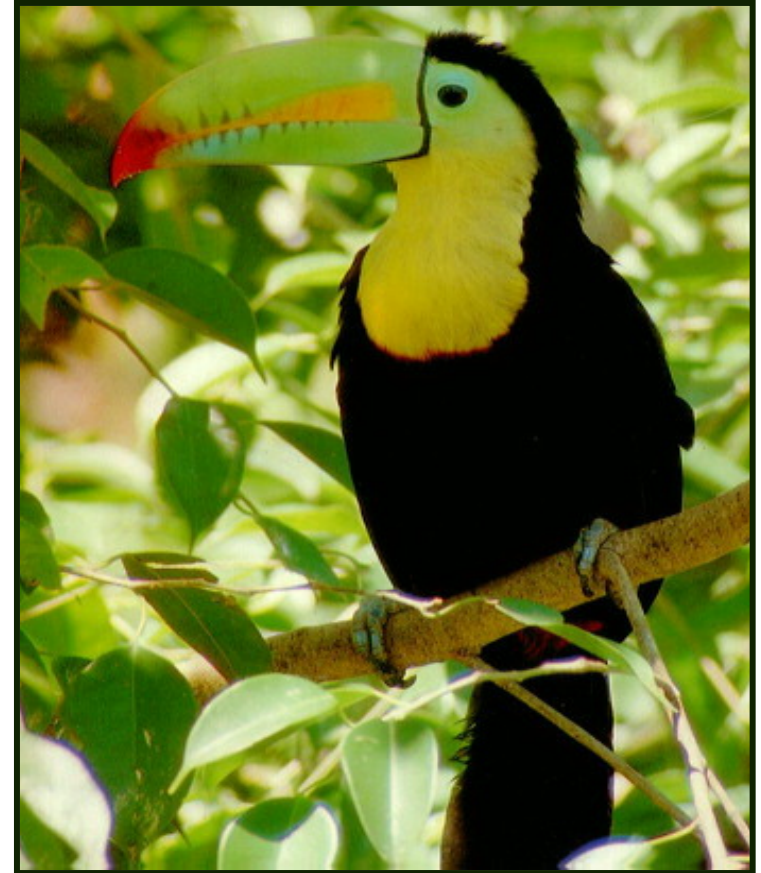
- Industries seeking to comply with carbon rules (offsets for emissions)
- Companies, groups strengthening reputation for env. stewardship
- Agencies, municipalities seeking to improve air quality

- **Biodiversity conservation**

- Conservation agencies and organizations working on private lands
- Tourist industry, for landscape beautify or protection of key species
- Land developers (offsets for damage, or for amenity values)
- Farmers (to protect pollinators, sources of wild products)

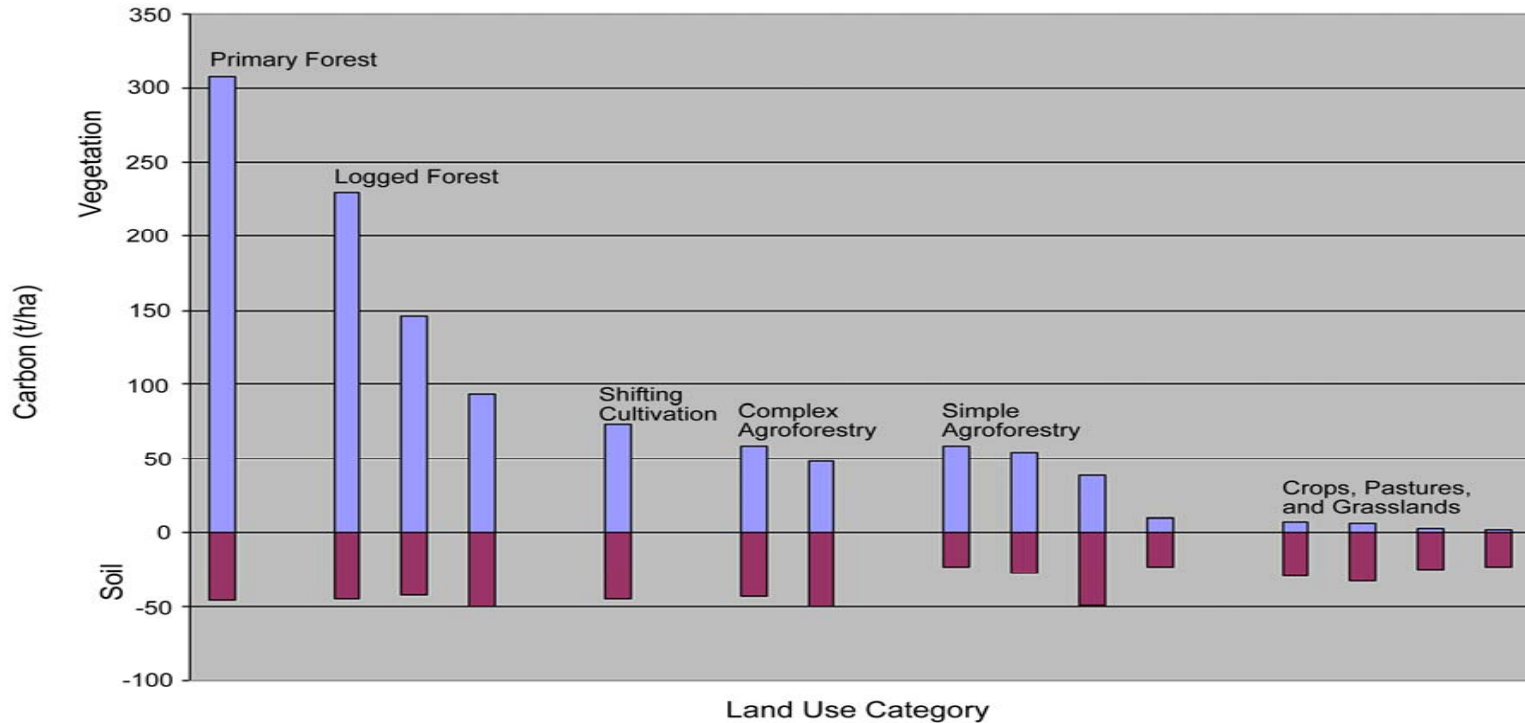
Who Buys Ecosystem Services? Indirect Beneficiaries

- **Consumers:**
“green” values
- **Companies:**
“green” branding
- **Investors:**
”green” filters



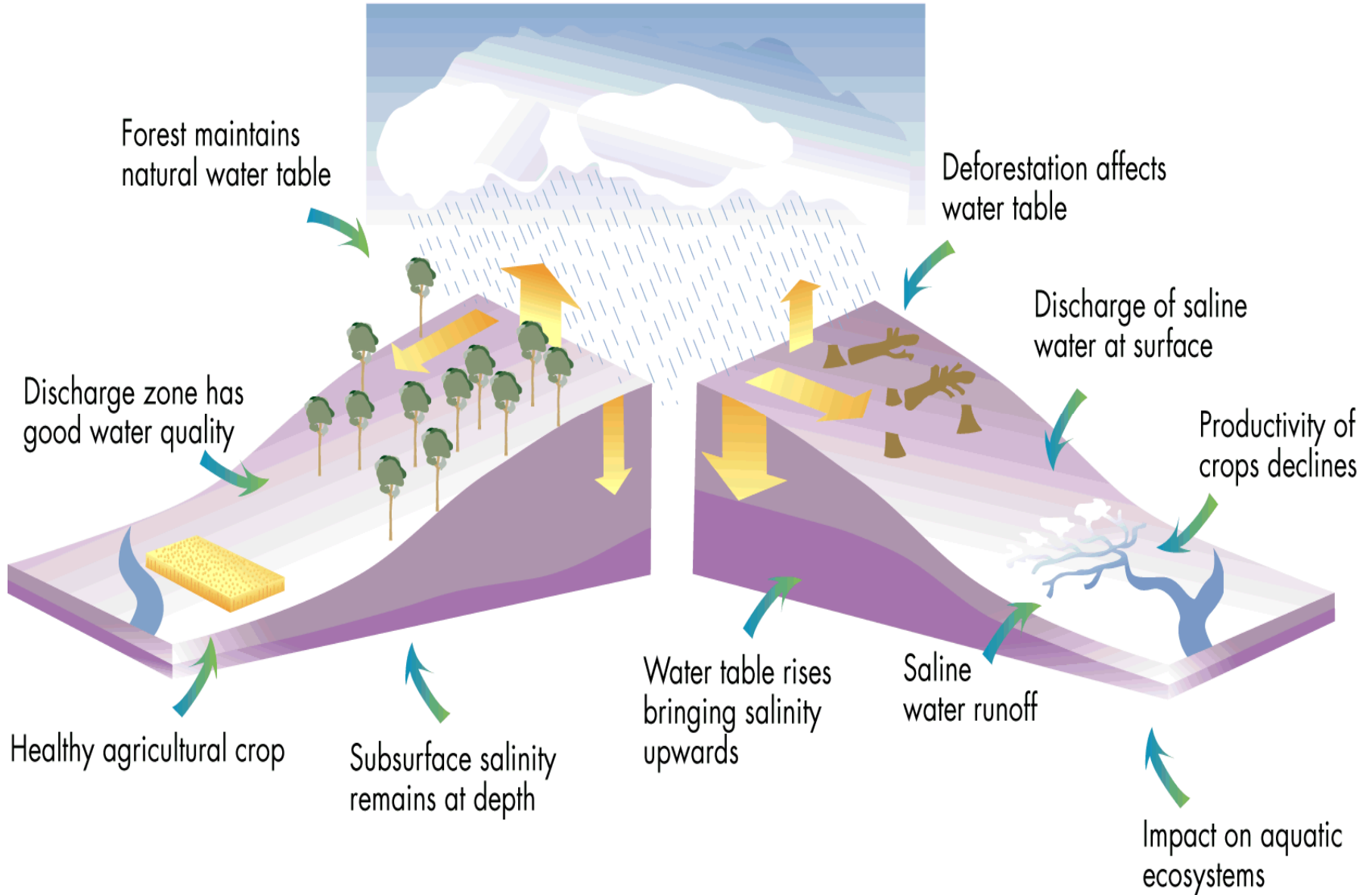


Using Carbon Emissions Trading to Finance Sustainable Development and Conservation

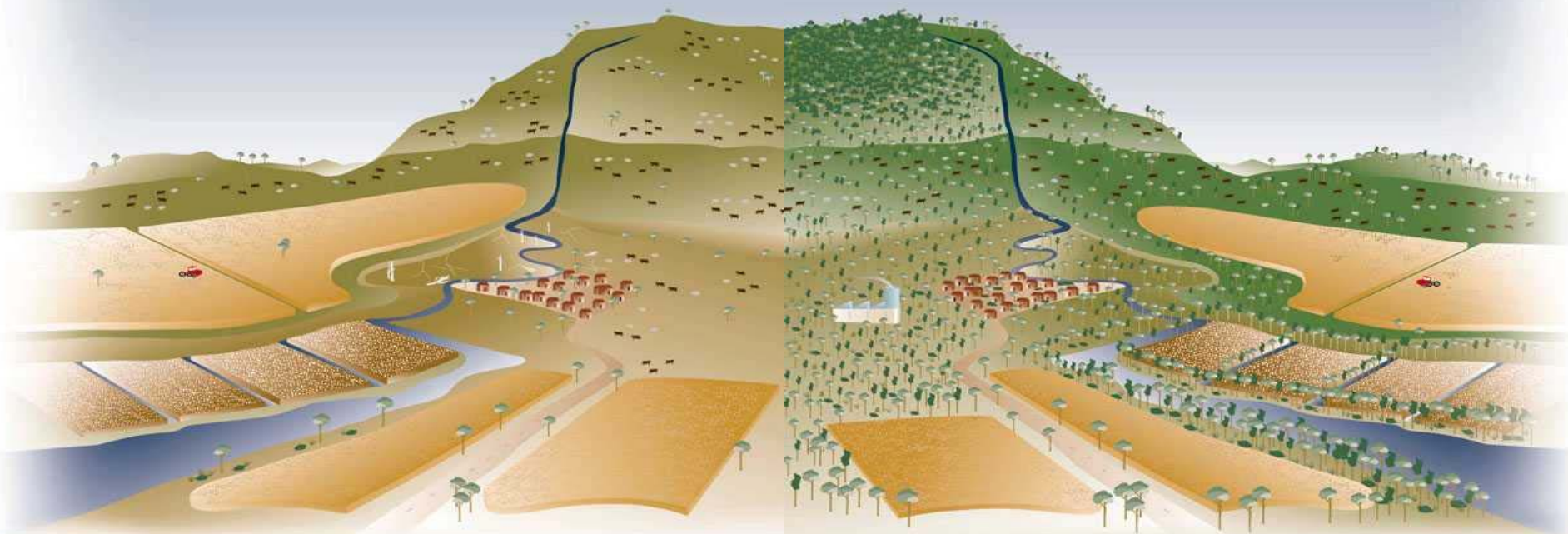


Above-Ground Time-Averaged and Total Soil Carbon (0-20 cm) for sites in the humid tropical lowlands of Brazil, Cameroon and Indonesia

THE WATER CYCLE AND DRYLAND SALINITY



New Value from Forest Services



P R E S E N T

The existing rural landscape.

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	250,000	25,000
Cattle	200,000	40,000
Wheat	250,000	118,000
Canola	150,000	112,000
Cotton	150,000	490,000
TOTAL	1,000,000	785,000

ENVIRONMENTAL PROBLEMS

- ◆ Dryland salinity increasing
- ◆ Rising water tables and saline discharge
- ◆ Nutrients leaching into waterways
- ◆ Low biodiversity
- ◆ Soil erosion and turbid waterways

F U T U R E

Planted forests in the landscape create a more diverse economy and a healthier environment.

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	150,000	18,000
Cattle	120,000	28,000
Wheat	200,000	94,000
Canola	120,000	90,000
Cotton	150,000	490,000
Timber	26,000	12,000
Bioenergy	117,000	9,000
Charcoal	117,000	14,000
Carbon credits		41,000
Salinity credits		26,000
TOTAL	1,000,000	822,000

ENVIRONMENTAL BENEFITS

- ◆ Dryland salinity reduced
- ◆ Lower water tables and clean discharge
- ◆ Nutrients retained on farm
- ◆ Biodiversity increased
- ◆ Soil erosion reduced



Potential Benefits & Risks for Producers

Benefits

- * New, often more regular, flows of income (15-25% +)
- * Portfolio diversification
- * Catalyst for adopting better management practices
- * Asset appreciation (pest & disease control, high inventory)
- * Locally-valued ecosystem goods and services
- * Social investment, such as preserving cultural heritage

Risks

- * Loss of economic use options
- * Loss of land and forest ownership or access
- * Loss of local ecosystem services
- * Contractual obligations if services not delivered

Types of Markets and Payment Schemes for Ecosystem Services

a) Self-organized private deals

Private entities pay for private services

- * Perrier-Vittel pays upstream landowners for improved agricultural practices and reforestation of sensitive infiltration zones (US\$230/ha/yr)
- * TNC, CI, WCS payments to farmers and communities for conservation management

b) Public payments to private land and forest owners

Public agency pays for service

- * Public payments for watershed protection in Mexico (\$60 mln in 2004)
- * USDA and Dept. Interior payments to landowners for wildlife conservation (EQUIP, Safe Harbor...)



Types of Markets and Payment Schemes for Ecosystem Services



c) Open trading of environmental credits under a cap or floor

Landowners either comply directly with regulations, or buy compliance credits

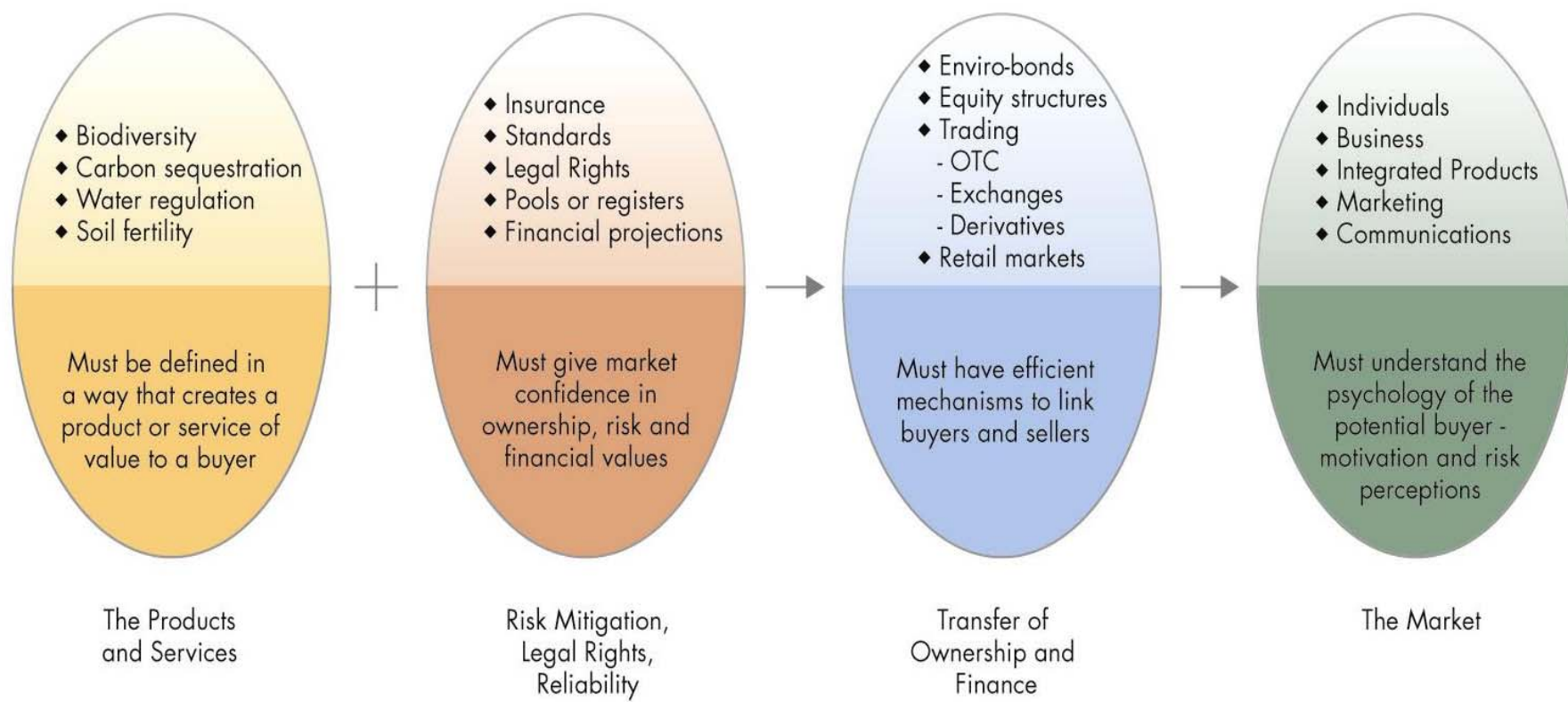
- * Wetland banking in US allows developers to offset damage (credits: US\$7,500-100,000/acre)
- * The Kyoto-compliant carbon emission offset market is expected to grow to a minimum of 15m t/CO₂ in 2008-2012

d) Eco-labeled forest, farm products

Consumers prefer certified sust. supplies

- “Shade-grown coffee” in Mesoamerica (US\$5 billion for sale in USA alone)

Creating Markets for Ecosystem Services

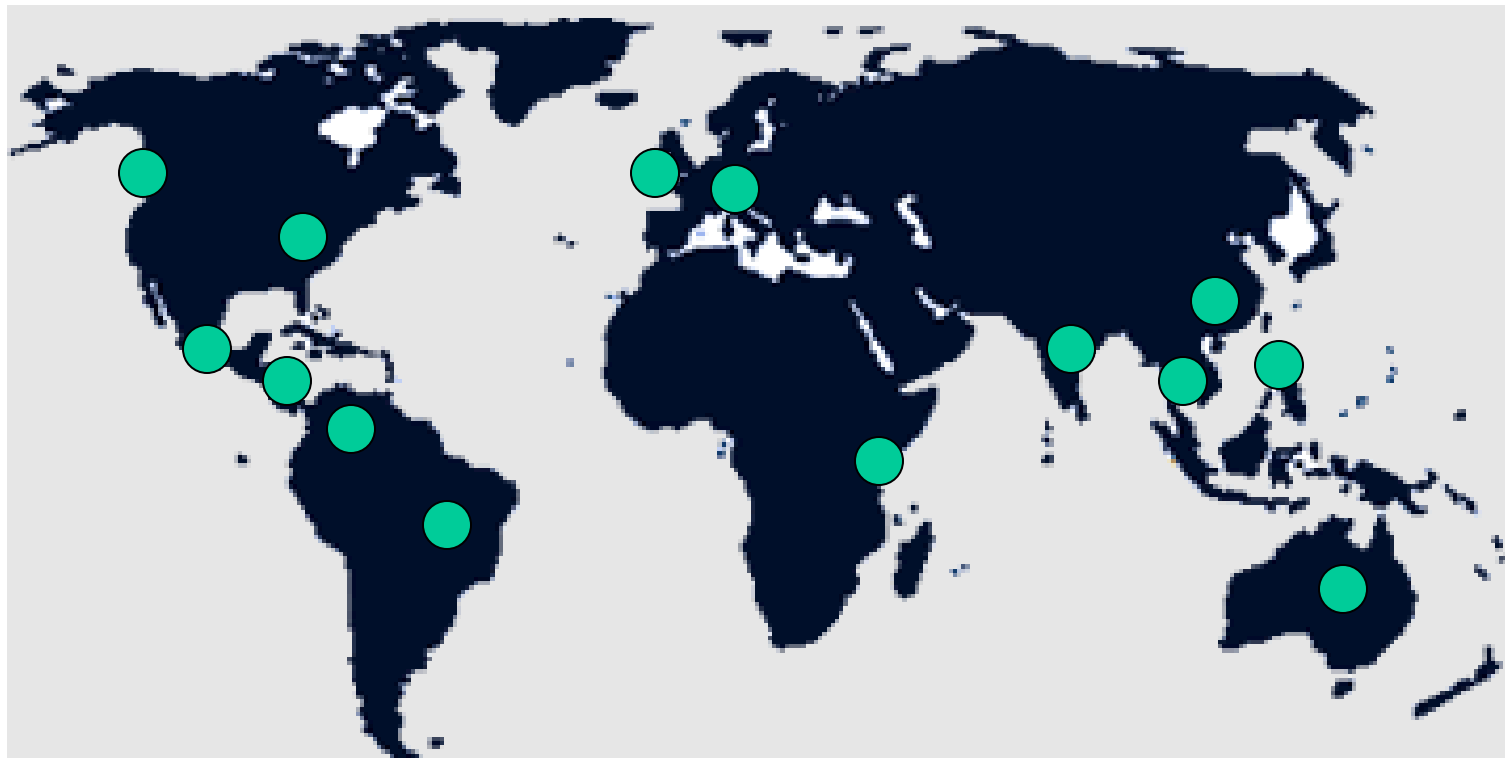




- **Lack of technical and market information**
 - **Limited institutional experience**
 - **Inadequate legal framework**
 - **Suspicion of markets for public goods**
 - **Equity concerns**



The Katoomba Group—Linking Global Innovators, Providing Policy Support



the
katoomba
group

Business Models for ES Suppliers



- **Biodiversity Offsets Project**
(Pilots: Australia, Brazil, Mexico, Uganda..)
- **Business Development Facility** (Brazil, South Africa, Mozambique, China...)
- **Forest Carbon Projects**
- **Agri-Environmental Payments** (Brazil, C. Am., E. and S. Africa, U.S.)



Overcoming Obstacles for Community Producers

- **Democratize information** about ecosystem service markets
- **Encourage broad participation** in policy dialogue about the rules and shape of ecosystem service payments
- **Reduce learning costs** for new entrants to these markets; training programs and enterprise support; financial viable and appropriate business models
- **Reduce transaction costs** through institutional innovations like suitable intermediaries, 'bundling', large-area programs, integrate with economic activities

**The first global information service to report on
developments in new
ecosystem service-based markets for:**

Vol. 1, No. 1

- Water quality and quantity related to land use decisions
- Carbon sequestration
- Biodiversity and endangered species
- Other conservation-related transactions

<http://www.ecosystemmarketplace.com>



A monthly/bi-weekly news service targeted to diverse users, including finance, industry, communities, and environmental NGOs.

The “Ecosystem Marketplace” :

- **Highlighting market developments**
- **Price trackers of major markets**
- **Key transactions**



Possible Roles for the U.S. Forest Service in Development of PES

- **Identify promising opportunities for public and private PES**
- **Mobilize public and expert dialogue and action about PES across**
- **Undertake research on ES and PES**
- **Support design of appropriate regulatory frameworks**
- **Provide technical assistance to landowners and ES buyers**



Thank you!

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