



Plantations and the Kyoto Protocol

Benoît Bosquet, World Bank
Plantation Investment Expert Forum
Toronto, March 22, 2005

**Harnessing the carbon market to sustain
ecosystems and alleviate poverty**

World Bank Carbon Finance Products



Total funds under management: ~ US\$860 million



Prototype Carbon Fund. \$180 million (closed).
Multi-shareholder. Multi-purpose.



Netherlands Clean Development Facility. \$180 million (closed).
Netherlands Ministry of Environment. CDM energy projects.



Community Development Carbon Fund. \$128.6 million (closed).
Multi-shareholder. Small-scale CDM energy projects.



BioCarbon Fund. \$43.8 million (open).
Multi-shareholder. JI and CDM LULUCF projects.



Italian Carbon Fund. \$15 million (open to Italian participation).
Italian Multi-shareholder. Multipurpose.

Netherlands
ECF

Netherlands European Carbon Facility. \$60 million with IFC (closed).
Netherlands Ministry of Economic Affairs. JI projects.

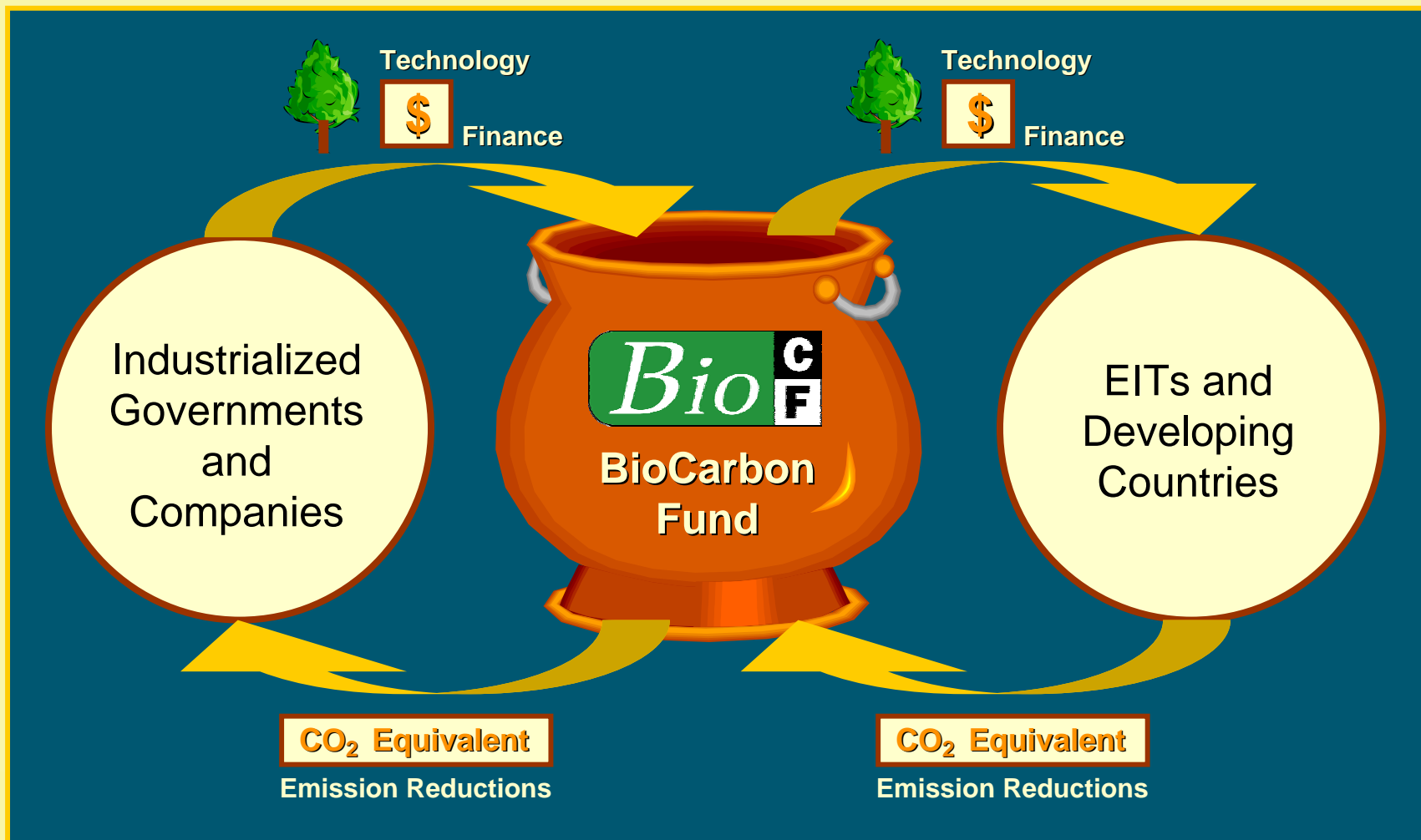
Spanish
CF

Spanish Carbon Fund. \$200 million (open to Spanish participation).
Spanish Multi-shareholder. Multipurpose.

Danish CF

Danish Carbon Fund. \$30 million (open to Danish participation).
Danish Multi-shareholder. Multipurpose.

How the Fund Works





PCF Romania Afforestation

- Afforestation/reforestation of 6,000 ha of degraded public agricultural land in 7 counties of southern Romania (60 sites)
- Species: *Robinia pseudoaccacia*, etc. on very degraded soils (50%); *Populus*, *Salix*, *Quercus*, etc. (50%) on less degraded soil and Danube Islands
- Project entity: National Forest Administration (public)
- JI project
- Cost = \$10 million
- ERPA value = \$ 3 million: 0.85 Mt CO₂e @ \$3.6/t CO₂e.
- Long-term sequestration > 2 Mt CO₂e
- Cost recovery with carbon = 35% over 15 years
- IRR = 4% with C (2% without C)



PCF Moldova Soil Conservation



- Afforestation/reforestation of 14,500 ha of degraded public and communal land throughout Moldova (1,900 sites)
- Species: *Robinia pseudoaccacia* + natives. No site is monocultural. Underplanting after 25-35 years with more noble species.
- Project entity: Moldsilva (public)
- CDM project
- Cost = \$14 million
- ERPA value = \$ 5.2 million: 1.48 MtCO₂e @ \$3.5/t CO₂e
- Buffer = 28% each year
- Long-term sequestration > 3 Mt CO₂e
- Cost recovery with carbon = 42% over 15 years
- IRR = 4% with C (<0 without C)

Participation & Timeline



- **Operational since May 2004**
- **11 Participants: \$43.8 M**
 - Okinawa Electric; Government of Canada; Government of Italy; Tokyo Electric; Eco-Carbone; Agence Française de Développement; Government of Spain; Government of Luxembourg; Idemitsu Kosan; Sumitomo Joint Elec. Power Co.; Sumitomo Chemicals
- **Marketing effort continues in Japan, Europe, Canada**
- **Expected by December 2005: ~ \$50 M**
- **2.5% catch-up payment from March 31, 2005**
- **First contract signed in June 2005; last in June 2006**
- **Purchasing period: up to 2017 (60% of ERs delivered by 2012)**



Goals



- Atmospheric: Reduce GHG concentrations over baseline
- Cost-effective: Buy low-cost climate change mitigation opportunities
- Social: Improve livelihoods (employment, income, know-how)
- Environmental: Conserve biodiversity, rehabilitate land
- Adaptation: Increase social and ecological resilience of local communities



Two Windows



First Window

Kyoto-compatible

CDM: Afforestation
/Reforestation + Biofuels

Carbon credits to meet
Kyoto obligations

Second Window

Explore "beyond Kyoto"

CDM: Forest management,
revegetation, agricultural
land management

No carbon credits

Portfolio - First Window



- In-fill planting for forest restoration
- Community forestry
- Agroforestry
- Biofuels



Portfolio - Second Window



- Forest restoration & conservation



- Reduced tillage



- Revegetation



LULUCF in the Carbon Market



- Some NGOs wanted all LULUCF out of the CDM
- Rules only adopted at CoP9 in December 2003
- LULUCF strictly restricted in the CDM:
 - Only Afforestation/Reforestation (avoided deforestation and forest management excluded)
 - Max 1% of Annex I 1990 emissions
 - Canada ~ 7 Mt CO₂e/yr (= 33 Mt CO₂e for the 1st CP, i.e. 3% of compliance gap)
 - Japan ~ 12 Mt CO₂e/yr
- Complex rules
 - Temporary crediting: 5-year leases
 - Replacement after 60 years
- Only 3 baseline & monitoring methodologies submitted, none approved
- All LULUCF excluded from the EU ETS



Plantations in the Carbon Market



- Plantations not popular with important constituents:
 - Some environmental NGOs (Greenpeace, FoE, WWF)
 - European Commission (DG Environment)
 - Some European countries (Germany, Austria)
- Main criticisms:
 - Monocultures
 - Exotics
 - GMOs
 - Lets North off the hook
 - Too cheap to be good for people and environment
 - Not additional
 - Not permanent



BioCF Project Portfolio



- ~ 140 Project Idea Notes received
 - Buyer's market: supply > demand
- At \$50 million, BioCarbon Fund needs 20 projects
- 20 leading candidates identified; 10 projects cleared
- Main risk: financial closure



BioCF Portfolio: Leading Projects



- Albania Assisted Natural Regeneration
- Brazil Reforestation around Hydro Basins
- China Pearl River Watershed Management
- Colombia San Nicolas Agroforestry
- Colombia Silvopastoral Rehabilitation
- Costa Rica Coopeagri
- Dominican Republic Rio Blanco Reforestation
- Honduras Pico Bonito
- Madagascar Biodiversity Corridor
- Mexico Seawater Agroforestry
- Nicaragua Precious Woods
- Philippines Watershed Rehabilitation
- Tanzania Small Group and Tree Planting
- Ukraine Chernobyl Reforestation





- To be attractive to investors, BioCF must be cost-effective
- Indicative contract prices (to be negotiated):
 - \leq \$4/t CO₂e (tCERs/ICERs)
 - \$4/ t CO₂e (ERUs)
 - \leq \$3/t CO₂e (Window 2)
 - < \$1/t CO₂e (CERs purchased forward: advance payment)



The BioCF and Plantations



- Need to shelter the BioCF from as much criticism as possible given demonstration objectives
 - More mature/liquid market will be able to venture into more controversial projects
- No single project is solely about commercial plantations, but elements of plantations in several projects: diversified assets
 - China: environmental plantings + plantation (eucalyptus, oak)
 - Costa Rica: assisted regeneration + plantation (50% natives + 50% teak)
 - Honduras: agroforestry + plantation (natives)
 - Nicaragua: plantation (90% teak) + conservation



Problems with the Status Quo



- Land-use change is 20% of GHG emissions
 - Should be part of the solution. Better land use sequesters carbon while creating social and environmental co-benefits
- Rural communities cannot participate in a CDM limited to energy/infrastructure. Exclusion of LULUCF = tariff barrier
 - Open the carbon market to rural poor to allow them to compete and export
- Debate mostly ideological
 - Provide projects, facts to inform decisions
- UNCBD and UNCCD lack resources
 - Carbon market under UNFCCC can help



Solutions to the Status Quo (1)



- Reach out to regulators:
 - Canada, Italy, Japan, Spain – so they accept the replacement risk
 - EU, mostly EC – so it allows CDM LULUCF in EU ETS from 2008
 - All countries – so they allow more than Afforestation/ Reforestation beyond 2012
- Emphasize development benefits of LULUCF
 - To buyers
 - To developing countries (Africa!)
- Present LULUCF as part of the solution
- Gather project-level evidence
 - Permanence
 - Environmental and social benefits
 - Leakage



Solutions to the Status Quo (2)



- Canada, Italy, Japan, Spain: accept the replacement risk
 - Governments can better afford to bear this risk than private companies
 - Governments also negotiate the rules
- EU: allow CDM LULUCF in EU ETS from 2008
 - Main issue: how to convert tCERs/ICERs into EUAs?
 - Proposal:
 - Buying country government receives tCERs/ICERs from private company
 - Government converts tCERs/ICERs into CERs (for a premium paid by private company)
 - CERs are imported into ETS
- Include more LULUCF for 2013-2017
 - Quid pro quo: can help non-Annex I countries make commitments (Brazil)





www.biocarbonfund.org

www.carbonfinance.org

