



Financing Reduced Emissions from Deforestation and Degradation

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The World Bank

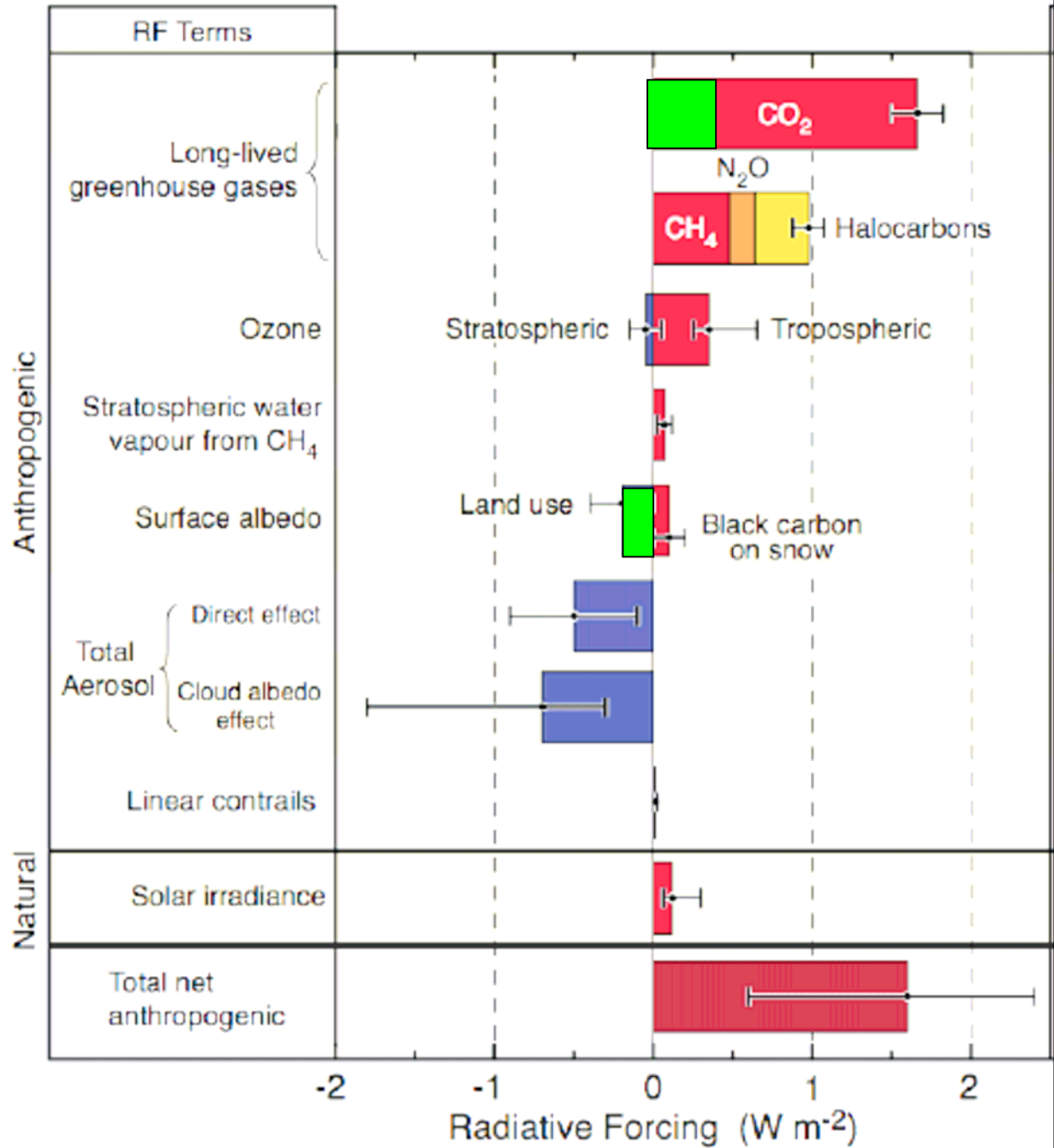


First – Some Numbers



The closer we move to full capture of the LUC sector, the more global carbon cycle issues arise

- Emissions from LUC 1.6 GtC per year (6 Gt CO₂), but large variability and uncertainty in estimate
- Fossil emissions 7.2 GtC (26 Gt CO₂)
- c. 20% of CO₂ emissions
- But land clearing usually increases albedo (cooling), and
- Reduces evapotranspiration (warming)
- LUC emissions vary greatly year by year
- Land clearing varies with the economy
- Forest fires vary with local and global climates
- Net uptake and loss balance varies by 1 to 2 Gt C over 2 to 3 years
- CO₂ fertilisation effect






- **Whatever the outcome of UNFCCC negotiations, continued deforestation**
 - **(i) adds directly to the burden and costs of mitigating climate change**
 - **(ii) reduces options to adapt to climate change**
 - **(iii) reduces options for future generations**
 - **(iv) destroys cultural heritage**
- **Our ultimate approach to reducing deforestation will be multi-faceted**





Some Numbers Continued

- **Forest area 1.3 B ha**
 - **Deforestation rate c 11M ha/y (FAO)**
 - **Deforestation rate about 1% per year**
 - **Demand for agricultural and pastoral land**
 - Deforestation contributes c. 0.25% to Soya area and 6% to Oil Palm annually
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Second – Some Context



- **Costs of REDD**
 - 1.6 Gt C @ \$50/tC is \$80B / y
 - Achieve – 10 to 20% reduction??
- **Implies low tens of billions of dollars per year**
 - (range of estimates \$2B/y to \$25B/y)



Can it be done?

Stern Report

- “Research carried out for this report indicates that the opportunity cost of forest protection in 8 countries responsible for 70 per cent of emissions from land use could be around \$5 billion per annum initially, although over time marginal costs would rise.”

Assumes critical areas can be identified within countries so that payments or incentives can be focused on those ‘about to deforest’ and no international leakage

Bolivia
Brazil
Cameroon
DR Congo
Ghana
Indonesia
Malaysia
PNG



- “Direct yields from land converted to farming, including proceeds from the sale of timber, are equivalent to less than \$1 per tonne of CO₂ in many areas currently losing forest, and usually well below \$5 per tonne.”
- Other estimates suggest that costs would rise as the portion of deforestation to be avoided rose – to \$30 tCO₂

Based on ...

NPV for alternate uses

10% discount over 30 year horizon

Clearing costs factored in

Ongoing maintenance costs

With & without salvage logging

From Maryanne Grieg-Gran (iied)
for Stern Review

Table 3 Global and National Costs of Foregone Land Uses (excluding one-off timber harvesting)

Country	Land Uses	US/ha	No of ha (000)	Cost US\$ 000
Cameroon	Annual food crops short fallow	774	85.8	66,373
	Annual food crops long fallow	346	44	15,222
	Cocoa with marketed fruit	1,365	66	90,062
	Cocoa without marketed fruit	740	22	16,279
	Oil palm and rubber	1,180	2.2	2,595
	<i>Total</i>			220
DRC	Annual food crops short fallow	774	124.41	96,241
	Annual food crops long fallow	346	63.8	22,071
	Cocoa with marketed fruit	1,365	95.7	130,589
	Cocoa without marketed fruit	740	31.9	23,604
	Oil palm and rubber	1,180	3.19	3,763
	<i>Total</i>			319
Ghana	Small-scale maize and cassava	197	115	22,667
	<i>Total</i>			115

But, the calculations assume that areas at immediate risk can be identified and payments directed towards them

Second – Some Context

Recall - Implementation will likely need \$5+B/y

- Developing country forest exports \$17B/y (2004 FAO)
- ODA \$80B / y
- Concessional finance \$40B/y
- GEF forest related \$100M/y (CC \$300M/y)
- 1st Commitment Period CDM \$1B/y to \$5B/y
- Foreign Direct Investment in developing countries \$160B/y
- Gross Domestic Investment in developing countries \$1,500B/yy
- Spending on protected areas in developing countries \$800M/y
- Assets major Conservation NGOs \$5B; income \$1.2B
- Payment for Environmental Services (PES) \$80M/y
- Certified Forest Products \$120M/y
- Bio-prospecting \$14M/y
- Total flow of investment to forests in developing countries c \$13B to \$25B (60% direct private investment)
- Socially Responsible Investment portfolio (USA only) \$2,000B




**Developing
Country
component only**



Financing Challenges for a REDD System

Seller's View

- **Seller's view**
 - Capacity building
 - Upfront payments for transitional costs
 - Guarantee of continuing funding for maintenance
 - Bundle with other Payments for Environmental Services
 - Social equity
 - Political feasibility
- **Differing circumstances**
 - Active deforestation
 - Potential future deforestation
 - Early action to reduce deforestation
 - Forest degradation



Financing Challenges for a REDD System

Buyer / Donor's View

- **Buyer / Donor's view**
 - Price / impact per \$
 - Quality of product
 - Social equity
 - Permanence
 - Sovereign risk
 - Fungibility in markets
 - Credit for early action
 - Political feasibility
- **Possible buyers/donors**
 - Development agencies / Banks (\$40B/y)
 - Bilateral donors (\$80B/y)
 - Kyoto market (low B/y)
 - Voluntary markets (lower B/y)
 - NGOs (\$100sM /y)



A step towards implementing payments for REDD



The Global Forest Alliance Work Program

The World Bank Forest Strategy	Harness Potential of Forests to Reduce Poverty	Integrate Forests in Sustainable Economic Development	Enhance Global Environmental Services
Complemented by GFA Work Programs	Sustainable Rural Development	Sustainable Forest Management and Markets	Environmental Services and Innovative Financing
Engaging in Core Activities (examples)	<ul style="list-style-type: none"> ▪ Ecosystem landscape-based approaches ▪ Sustainable forest-based livelihoods ▪ Increased adoption of agroforestry by smallholders ▪ Access of local communities to markets ▪ Community/smallholder partnerships with private sector 	<ul style="list-style-type: none"> ▪ Sustainable & legal trade, independent certification ▪ Exploit domestic and export market opportunities ▪ Zoning, land tenure and land rights ▪ Protected area and forest management planning ▪ Community-based management ▪ Sustainable plantation development 	<ul style="list-style-type: none"> ▪ Forest Carbon Partnership Facility (avoided deforestation) ▪ BioCarbon Fund (mostly reforestation) ▪ Payments for environmental services ▪ Alternative financing for protected areas
Supported by cross-cutting enabling and knowledge services	<p style="text-align: center;">Forest Law Enforcement and Governance (FLEG) National and regional governance action plans and processes</p> <p style="text-align: center;">Program on Forests (PROFOR) Analytical Products, Toolkits and Knowledge Management, including external causes of deforestation</p>		
Governed by a multi-stakeholder platform	<p>Governed by a multi-stakeholder council (WBG, Govs, GEF, NGOs, private sector, international organizations, other)</p> <p>with participation of principal countries and beneficiaries</p>		

This is still in design

Global Forest Alliance

Technical Assistance

\$100 million (new)

- Capacity building, pilot initiatives, grants for analytical work, build incentives through increased market share, tax revenues, price premia, etc.

Carbon Finance

\$200 million (new)

- Trustee for carbon purchases
- Linking buyers and sellers
- Reforestation + Avoided Deforestation

Investments

• Bank investments:

- IBRD, IDA, IFC scale up from current \$0.4 billion to \$0.8 billion p.a. by 2015

• Other investments by:

- Regional development banks, bilaterals, private, institutional investors, venture capital
- Amount TBD, but significant

• Carbon Finance:

- Reforestation: \$75 million
- Avoided Deforestation: \$200 million by 2012 and over \$1 billion by 2015

Leveraged Impacts on the Ground

Improve and sustain the livelihoods of **500 million poor, forest dependent people**

Conserve **5 billion tons of CO₂**

Sustainably manage **300 million ha of production forests**

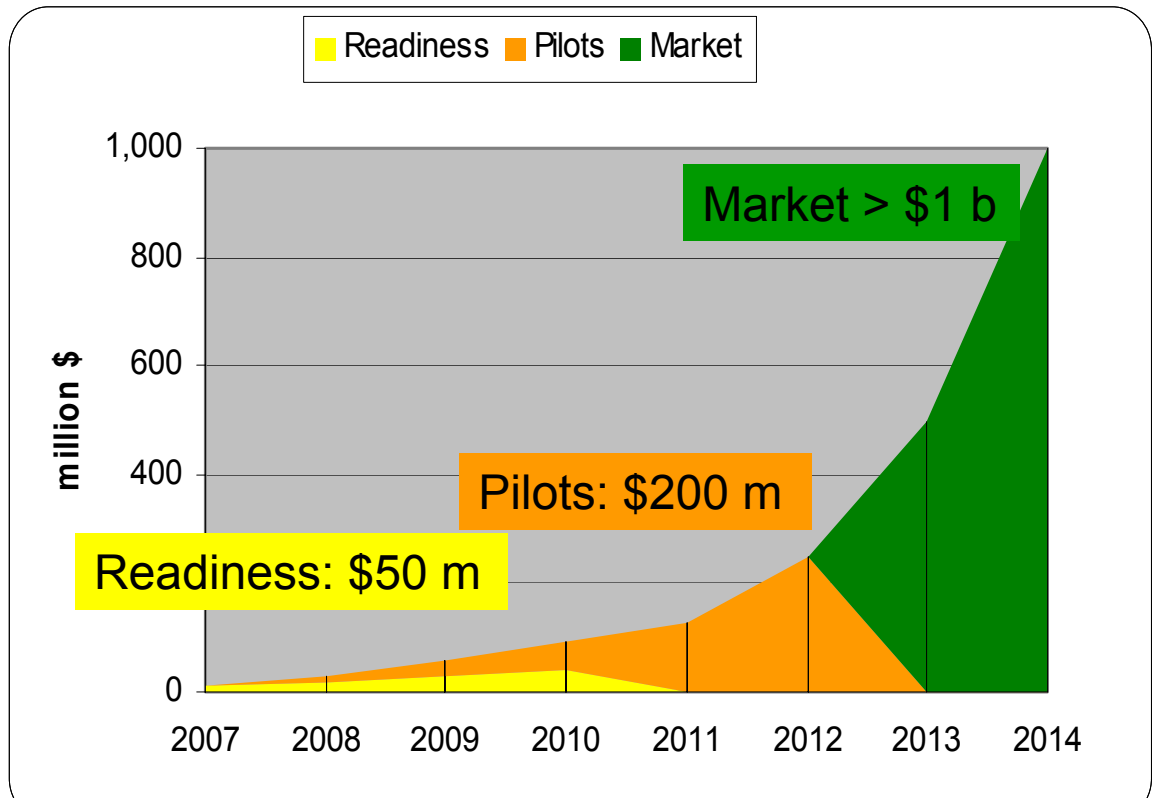
Employ **10 million people**



The Forest Carbon Partnership Facility

Proposed World Bank's Response

- *Prepare for a system of positive incentives post-2012 that includes REDD through*
 - Capacity building: readiness for a future system
 - Pilot performance-based payments





The Forest
Carbon
Partnership
Facility

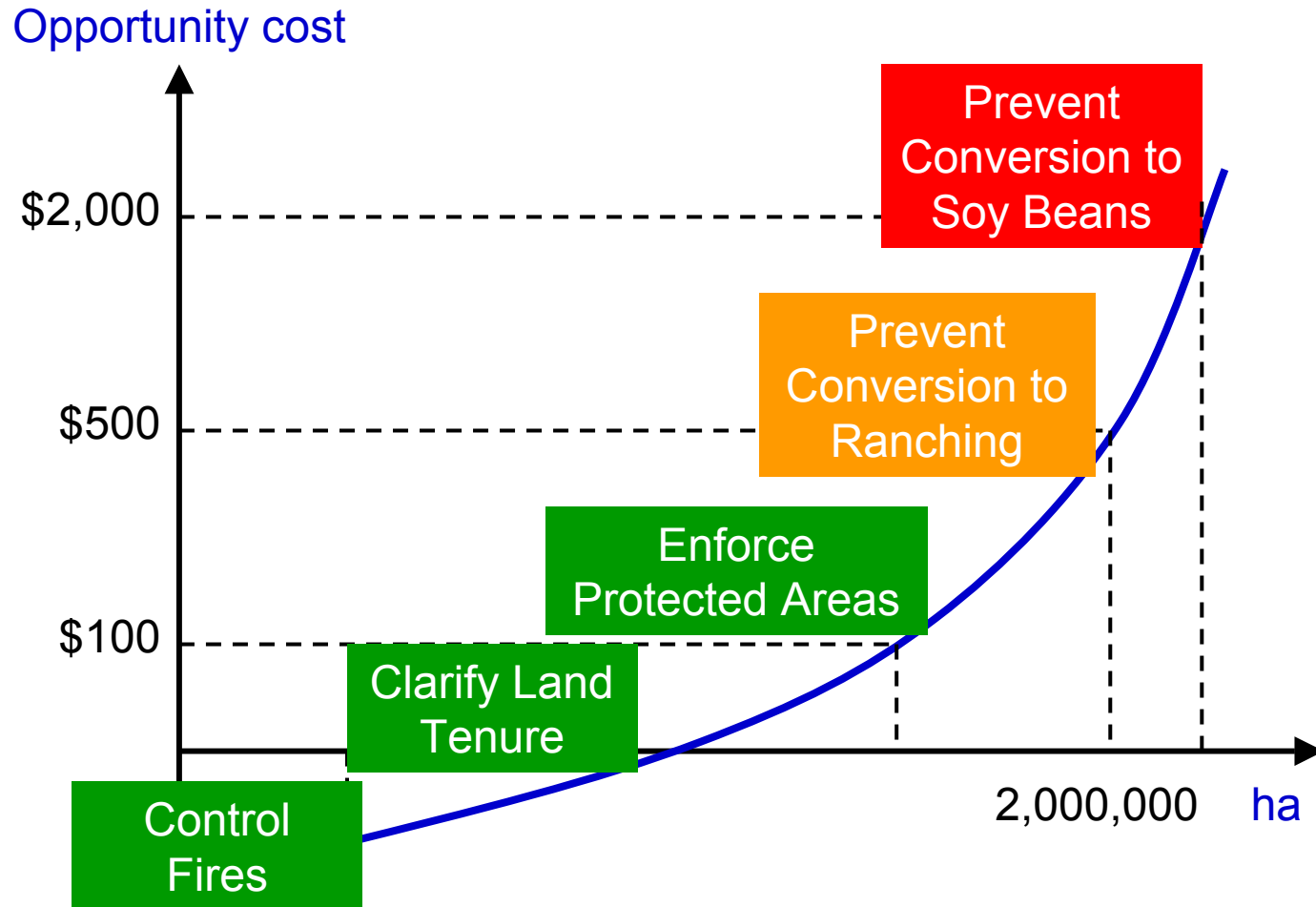
Two mechanisms:

- “Readiness”: capacity building
 - Assessment of current forest carbon emissions
 - Projection of emissions based on reference scenario
 - Detailed economic analysis: what is the marginal cost of reducing deforestation and degradation?
 - Design and implement strategy for REDD
 - Monitoring of emission reductions
- Pilot Carbon Purchases

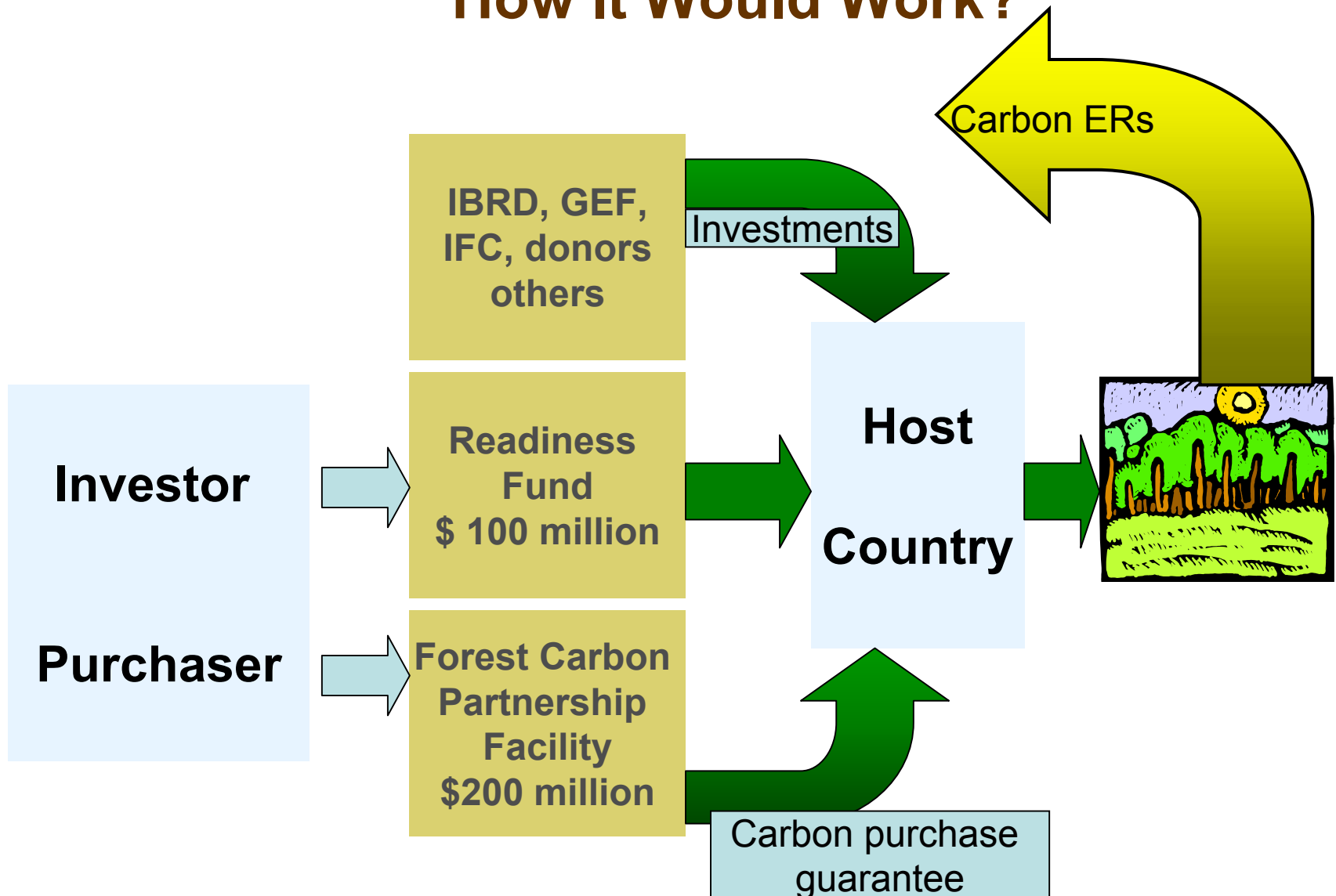


- **Price Carbon \geq Opportunity Cost of land**
- **Pick low-hanging fruit first**

The Forest Carbon Partnership Facility



The Forest Carbon Partnership Facility: How It Would Work?





Key Risks and Mitigations

Risks	Mitigations
<ol style="list-style-type: none">1. Perception of pre-empting international negotiations on avoided deforestation2. Countries feel excluded from pilots3. Some Parties seek an ODA funded, no Kyoto credit system)4. Countries lack enabling framework5. Country does not implement necessary measures	<ol style="list-style-type: none">1. Respond to demand from countries.2. Selection will be based on initial findings from capacity building phase.3. Explore alternative approaches in pilot stage, proactive country dialogue. ODA funding likely.4. Capacity building for readiness5. Payment on delivery for bulk of finance



Where next?

- **Socially Responsible Investment**
 - **Eco-friendly labelling**
 - **MIGA Guarantees – Partial Risk Guarantee** (covers debt servicing defaults – can it be modified to cover deforestation defaults?)
 - **Novel fund raising approaches**
 - e.g. International Finance Facility for Immunization (IFFIm)
 - Raise \$4B capital by issuing bonds (through World Bank at AAA rating)
 - Secured by 8 countries who will spread their donor payments over 20 years
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