



Leakage, tCERs and ICERs

Ellysar Baroudy

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Harnessing the carbon market to sustain
ecosystems and alleviate poverty

Emission Reductions Purchase Agreements - CDM

- Albania Assisted Natural Regeneration
- China Pearl River Watershed Management
- Colombia San Nicolas Agroforestry
- Colombia Silvopastoral Rehabilitation
- Costa Rica Coopeagri
- Ethiopia Humbo Assisted Regeneration
- Honduras Pico Bonito
- India Improving Rural Livelihoods
- Kenya Green Belt Movement
- Madagascar Biodiversity Corridor
- Mali Acacia Plantations
- Moldova Soil Conservation
- Nicaragua Precious Woods
- Niger Acacia Community Plantations
- Philippines Watershed Rehabilitation
- Trinidad and Tobago Nariva Wetland Restoration
- Uganda Nile Basin Reforestation

Emission Reductions Purchase Agreements - Non-CDM

- **Reducing Emissions from Deforestation and Degradation**
 - Colombia San Nicolas
 - Honduras Pico Bonito
 - Madagascar Biodiversity Corridor
- **Agriculture and Soil Carbon**

Permanence in the CDM A/R: tCERs and ICERs

Background

- Marrakesh Accords allowed for LULUCF projects to be eligible under CDM (for Afforestation / Reforestation exclusively)
- COP9 adopted the following decisions:
 - A/R CDM projects generate temporary credits due to ‘non-permanent’ nature of the carbon
 - Two specialized forms of CERs: tCERs (temporary) and ICERs (long-term)
 - Five-yearly verification
 - Crediting periods: one time 30 years, or 20 years renewable twice
 - At the end of 60 years, tCERs and ICERs have to be replaced with non-LULUCF credits

tCERs and ICERs

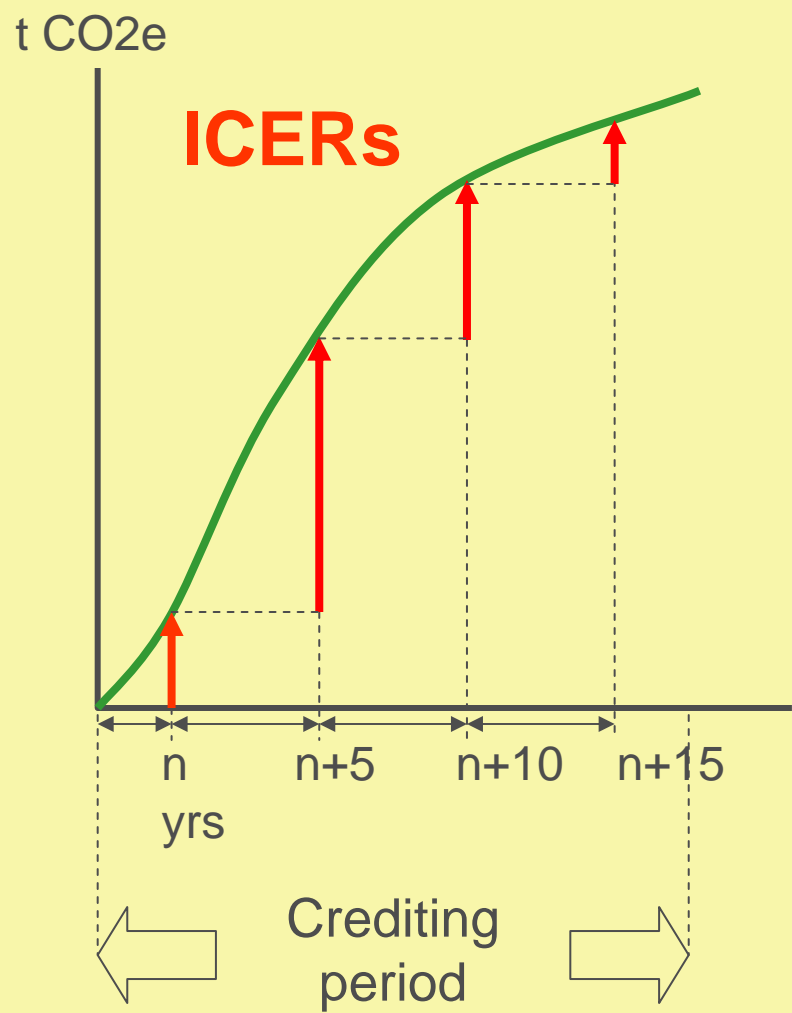
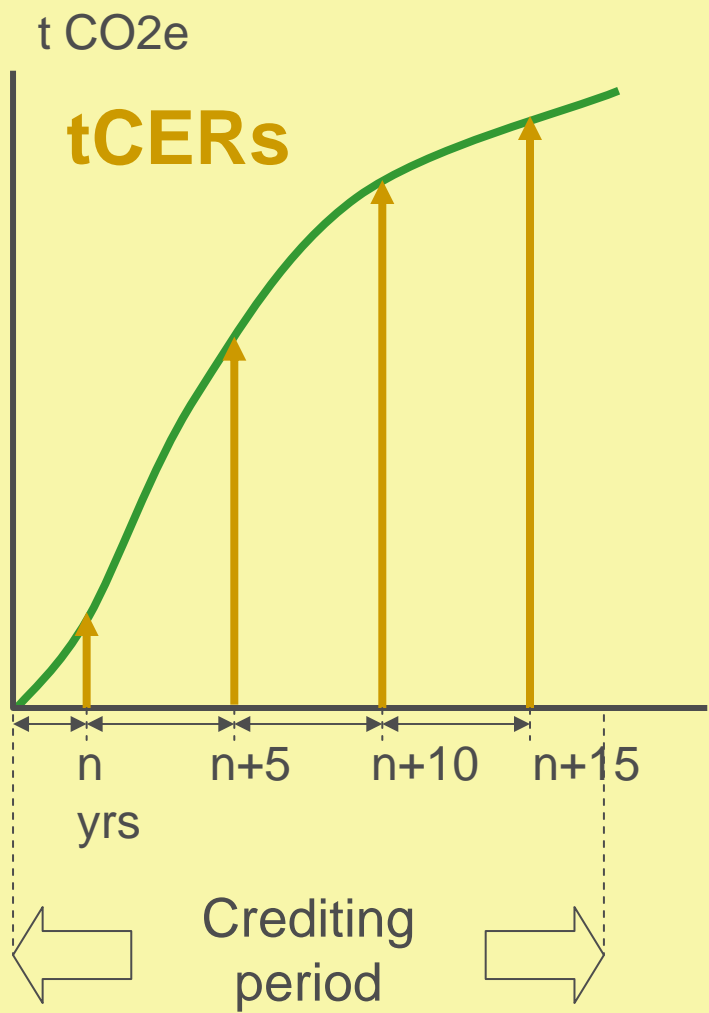
■ tCERs

- Credit expires after 5 years
- New certificates can be issued if carbon still in place
- tCERs have to be used in the commitment period in which they are issued – compliance for one commitment period

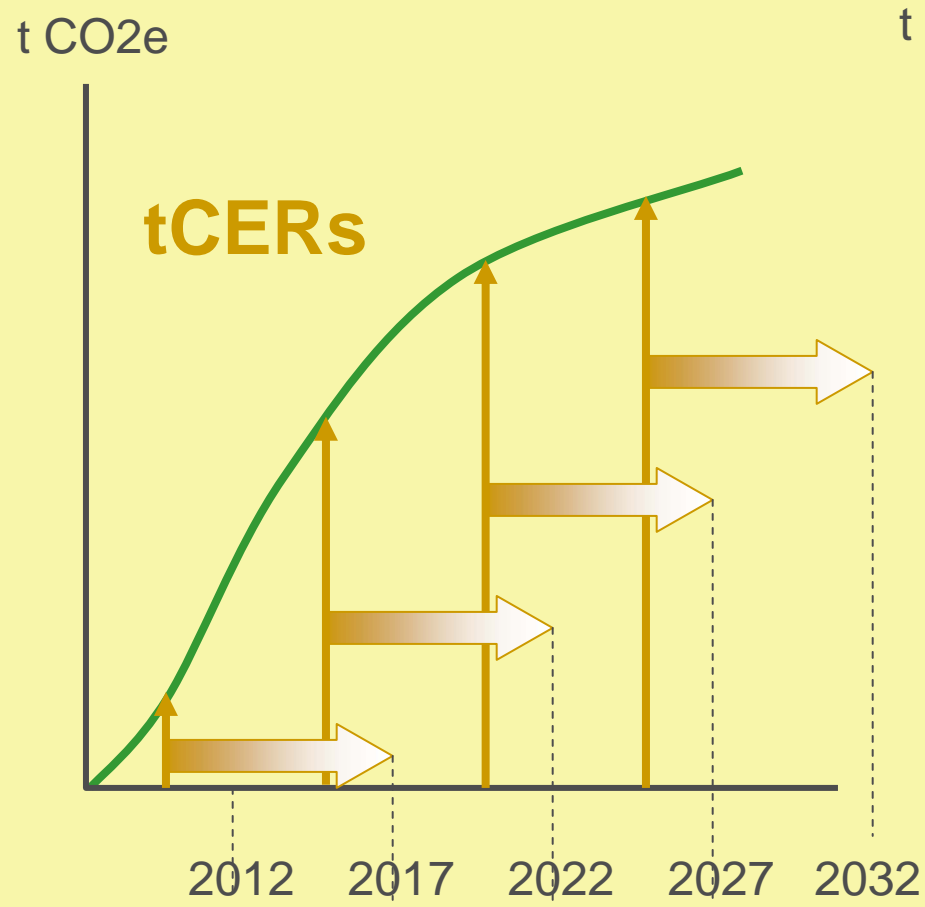
■ ICERs

- Sequestration also verified every 5 years
- Certificates have to be renewed only at the end of the crediting period
- Certificates issued for full crediting period and do not have to be replaced until the end of the crediting period
- ICERs have to be used in the commitment period in which they are issued – compliance for one commitment period

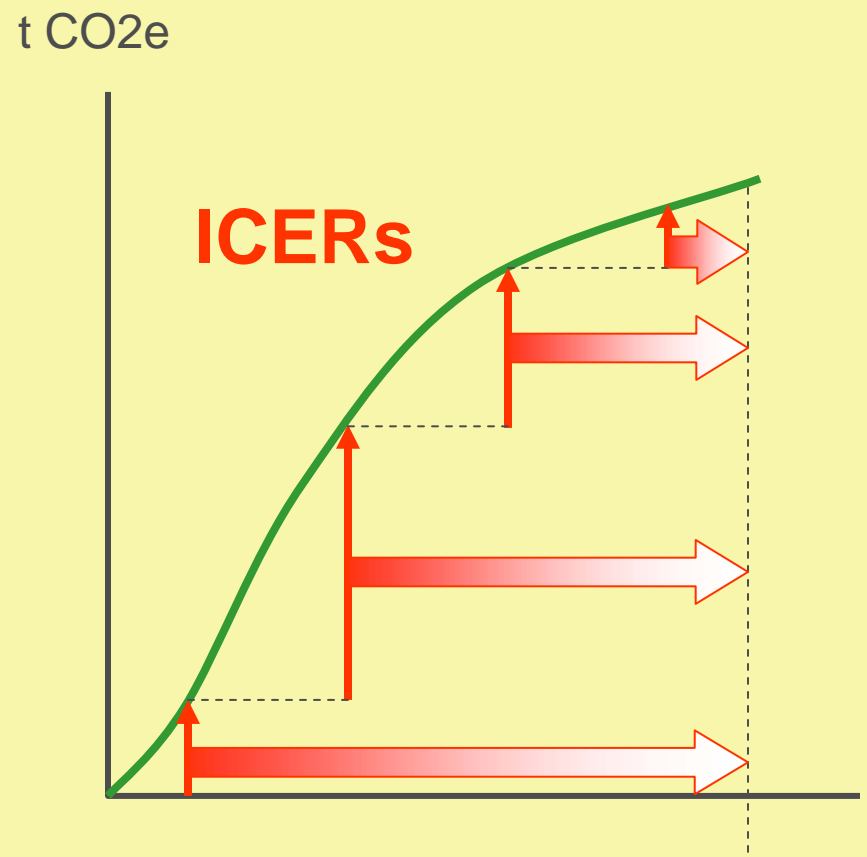
tCERs & ICERs: Quantity



tCERs & ICERs: Renewal / Replacement



End of subsequent commitment period



End of crediting period

tCERs vs. ICERs

- BioCF: More tCERs than ICERs
 - ICERs bind the seller and buyer more than tCERs for a longer-term (namely 20 to 60 years depending on crediting period)
 - tCERs may give seller more incentives for long-term sustainability (additional cash flow)
- Price is the same for tCERs and ICERs
- Joint Implementation (JI) unlike CDM – forest credits are permanent
- Impacts demand and price e.g. EU-ETS

Leakage

Leakage

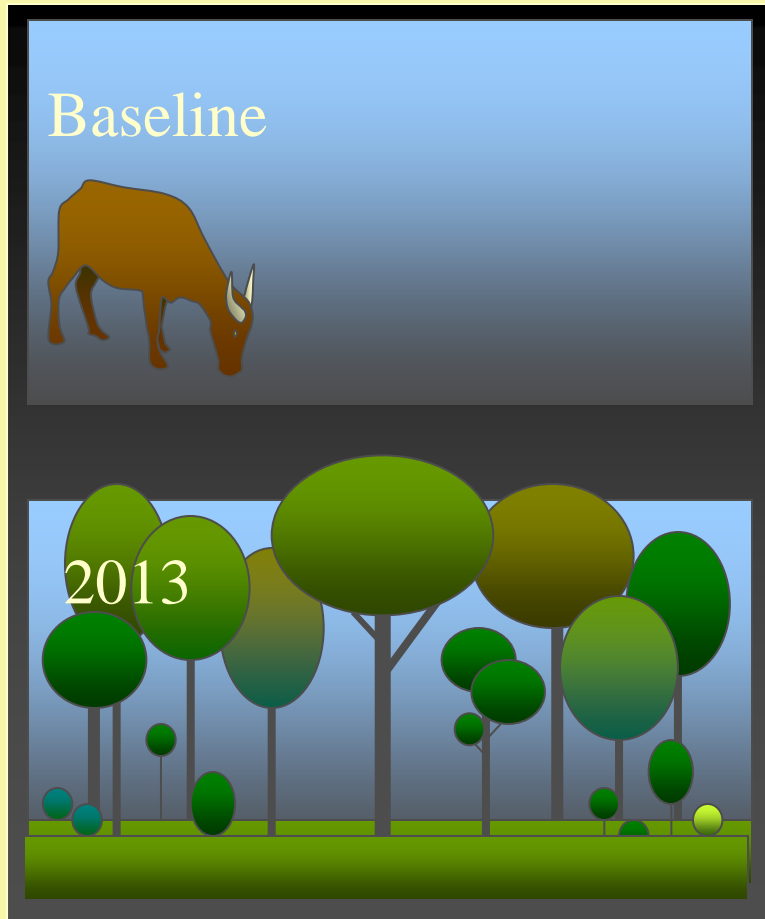
- Some projects will lead to “offsite” consequences that will partially negate the atmospheric benefits of the project itself – this is leakage
 - e.g. Reforesting an area leads to displaced cattle owners clearing forest elsewhere to re-establish pasture
 - Increased income from agroforestry, leads to higher demand for timber and fuel woods leading to deforestation

Leakage

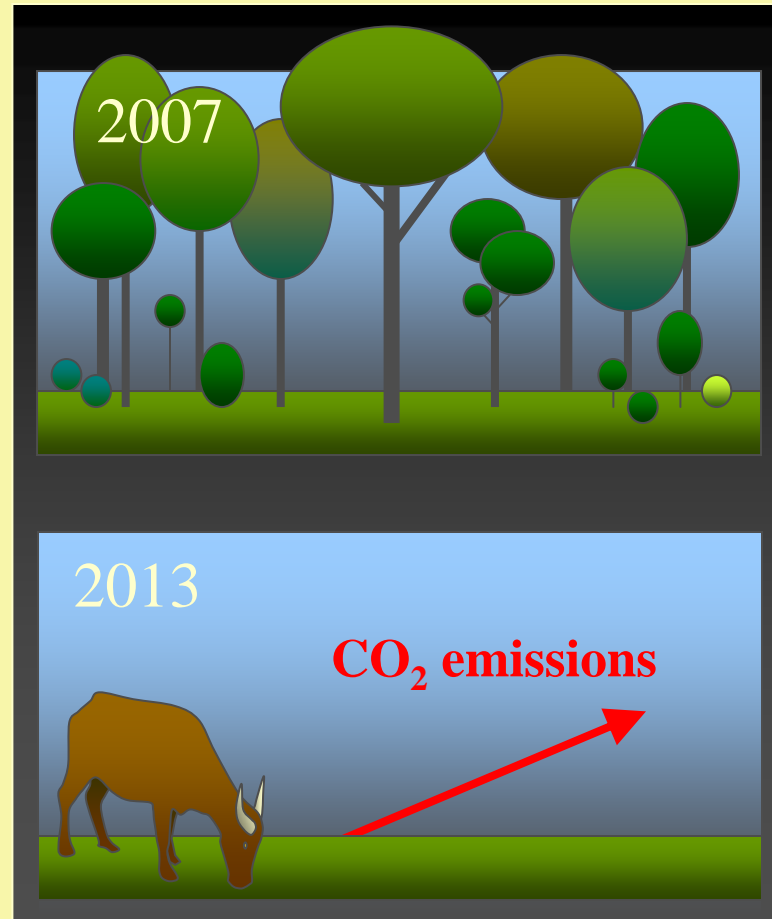
- Must be recorded and reported since the start of the project activity
- Can include:
 - Vehicle and machinery use
 - Displacement of agricultural activities, livestock, fuel wood collection
 - Fence post use !
 - Market effects

Leakage - A/R example

Project Area

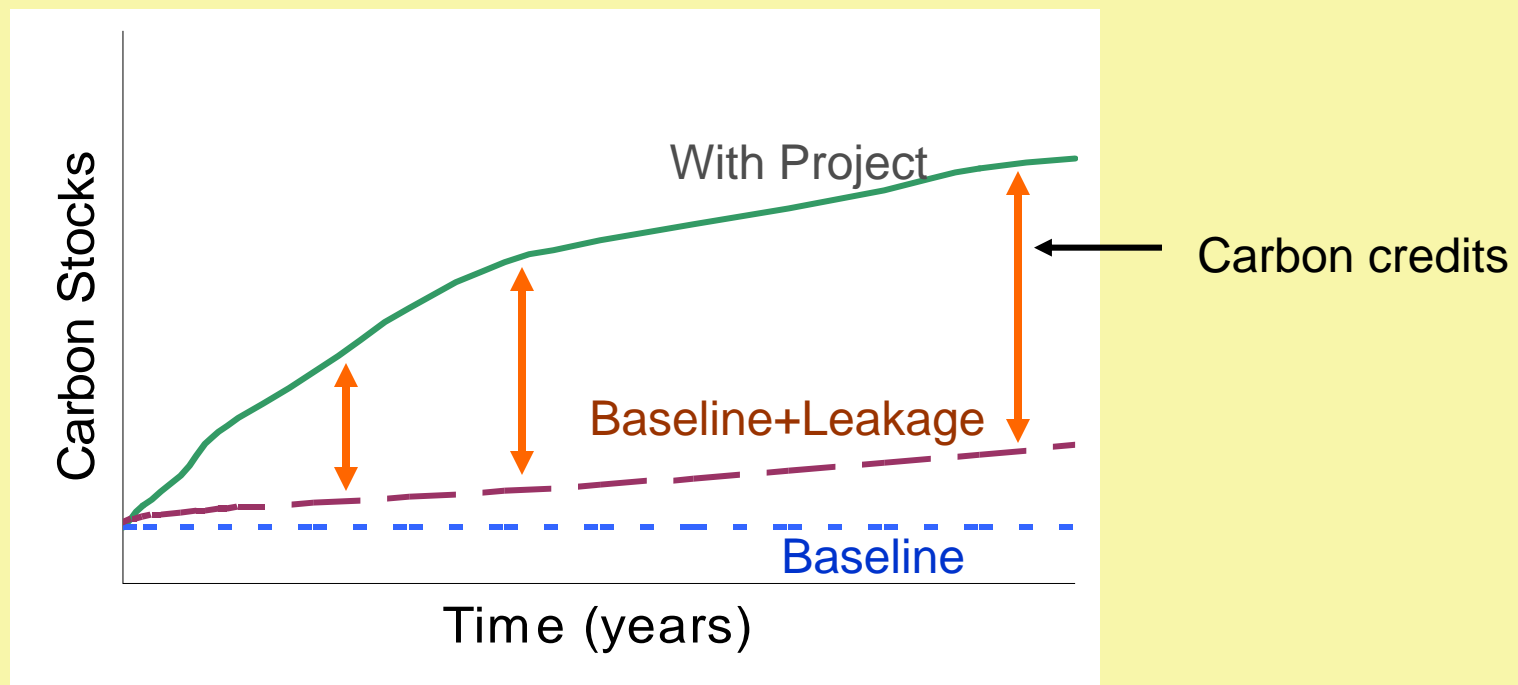


Nearby the Project Area



Leakage - A/R example

- Carbon credits
= Project – Baseline – Leakage
- Put in place measures to reduce leakage



Ex ante estimation of leakage

0% Percentage of total decreases in carbon stocks and increases in GHG emissions (project emissions and leakages) that is considered insignificant (EB31-A16 default = 5%)

Increased fossil fuel consumption outside the project boundary

Transport activity	Vehicle type <i>x</i> description	Percent vehicle type use %	Fuel type <i>y</i>	Fuel efficiency e_{xy} l km ⁻¹	CO ₂ e emission factor EF_{xy} dimensionless	Capacity of the vehicle performing the transport task
Transport of machines from the parking lot to the project site for site preparation			Diesel			Number of machines per site preparation
		100.00%	Gasoline			
Transport of seedlings from the nursery to the project sites			Diesel			Number of seedlings per transporting vehicle
		100.00%	Gasoline			
Transport of fertilizers from the sale point to the project sites			Diesel			t Fertilizer per transporting vehicle
		100.00%	Gasoline			
Transport of harvested wood products to sale point or wood processing facility:	1		Diesel			m ³ per transporting vehicle
		100.00%	Gasoline			
		2		Diesel		
100.00%	Gasoline					
	3		Diesel			m ³ per transporting vehicle
		100.00%	Gasoline			
Transport of fuel-wood to the sale or consumption point			Diesel			m ³ per transporting vehicle
		100.00%	Gasoline			
Transport of labour force to the AR site			Diesel			Number of persons in one vehicle
		100.00%	Gasoline			
		Average percentage of labour force that needs to be transported to the AR site using a vehicle				

Overall Summary and Trends

Evolution...



■ Permanence

- Issue of temporary crediting raised at recent UNFCCC working group meetings
- Countries making formal submissions to UNFCCC (February '09) on alternatives such as buffers, reserves and insurance

■ Monitoring & Leakage

The Executive Board agreed in November 2008 that the GHG emissions from the following sources related to A/R CDM project activities:

- (a) Fossil fuel combustion in A/R CDM project activities;
- (b) Collection of wood from non-renewable sources to be used for fencing of the project area;
- and
- (c) Nitrous oxide (N₂O) emissions from decomposition of litter and fine roots from N-fixing trees

are insignificant in A/R CDM project activities and may therefore be neglected in A/R baseline and monitoring methodologies.

Improvements in a Future Regime



- Expand beyond Afforestation/Reforestation
 - Revegetation
 - Agriculture
 - Renewable biomass
 - Avoided deforestation
- Allow Afforestation/Reforestation to supply more than 1% of Annex I 1990 emissions
- Allow A/R on land deforested after December 31, 1989
- Continue temporary crediting beyond 60 years
- Seek alternatives to temporary crediting
- Inclusion of AFOLU in EU ETS (from 2013?)
- ✓ Raise cap on small-scale A/R projects above 8,000 t CO₂e/yr [Revised at COP13 to 16,000 t CO₂e/yr]

www.carbonfinance.org

www.biocarbonfund.org

World Bank Carbon Funds & Facilities



Total funds pledged = US\$ 2.1 billion (16 governments, 67 firms)



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



■ **Netherlands Clean Development Mechanism Facility.** (closed). Netherlands Ministry of Environment. CDM energy, infrastructure and industry projects.



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



■ **BioCarbon Fund.** \$91.9 million (Tranche 1 and 2 closed). Multi-shareholder. Mainly CDM LULUCF projects; some REDD and soil carbon.



■ **Italian Carbon Fund.** \$155.6 million (closed). Multi-shareholder (from Italy only). Multipurpose.



■ **Netherlands European Carbon Facility.** (closed). Netherlands Ministry of Economic affairs. JI projects.



■ **Spanish Carbon Fund.** \$282.4 million (closed). Multi-shareholder (from Spain only). Multipurpose.



■ **Danish Carbon Fund.** \$69.4 million (closed). Multi-shareholder (from Denmark only). Multipurpose.

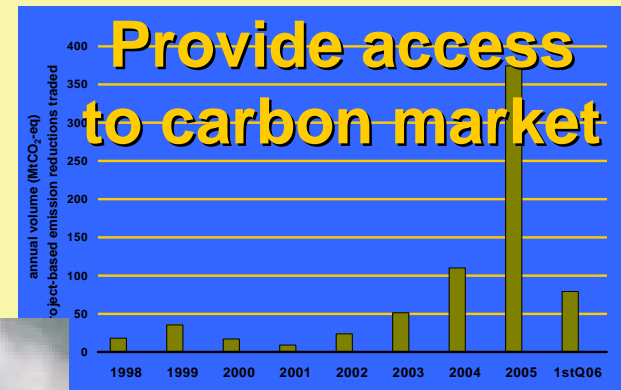


■ **Umbrella Carbon Facility.** \$737.6 million (Tranche 1 closed – 2 HFC-23 destruction projects in China).

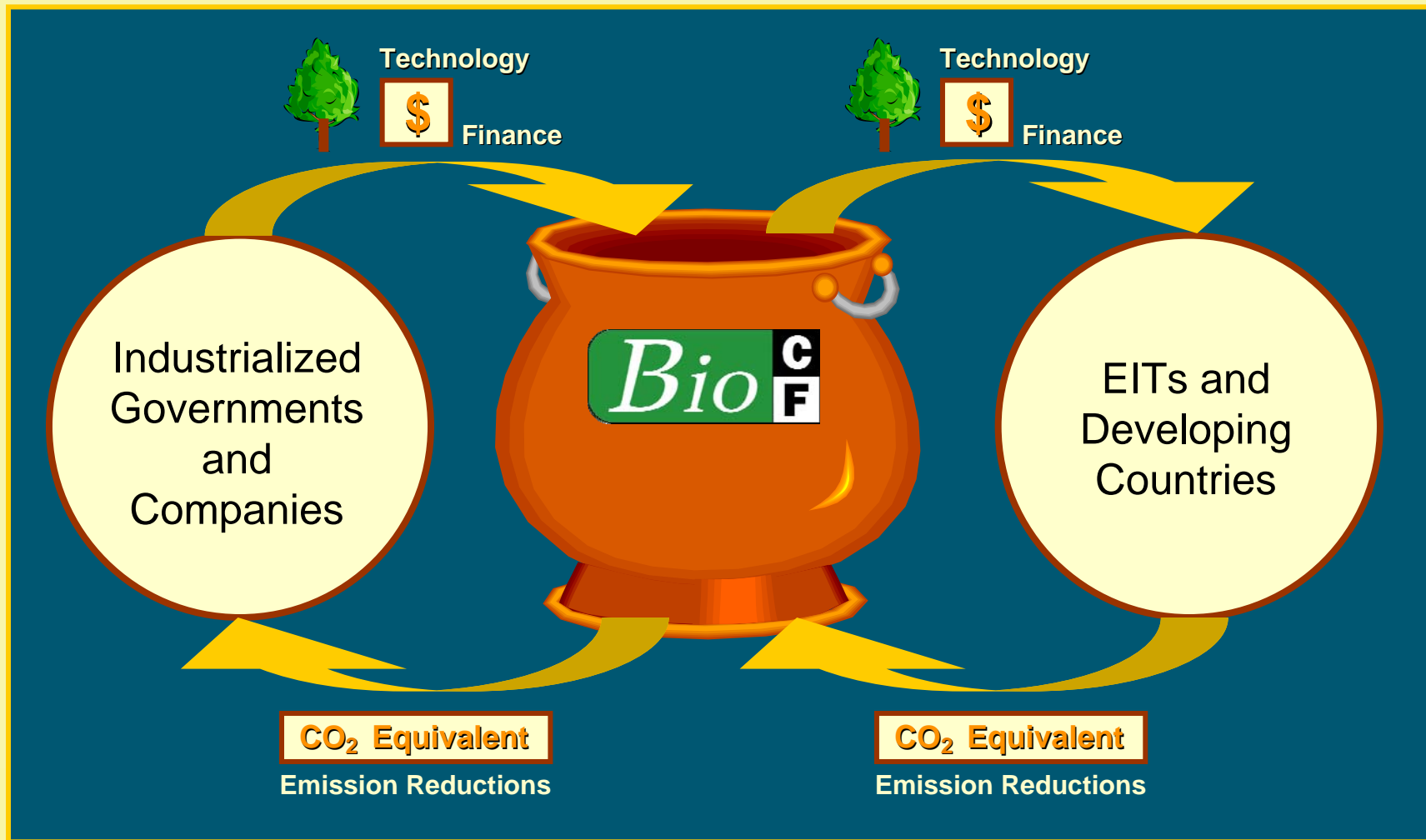


■ **Carbon Fund for Europe.** \$65 million. Multi-shareholder. Multi-purpose. Managed with EIB.

BioCarbon Fund Goals

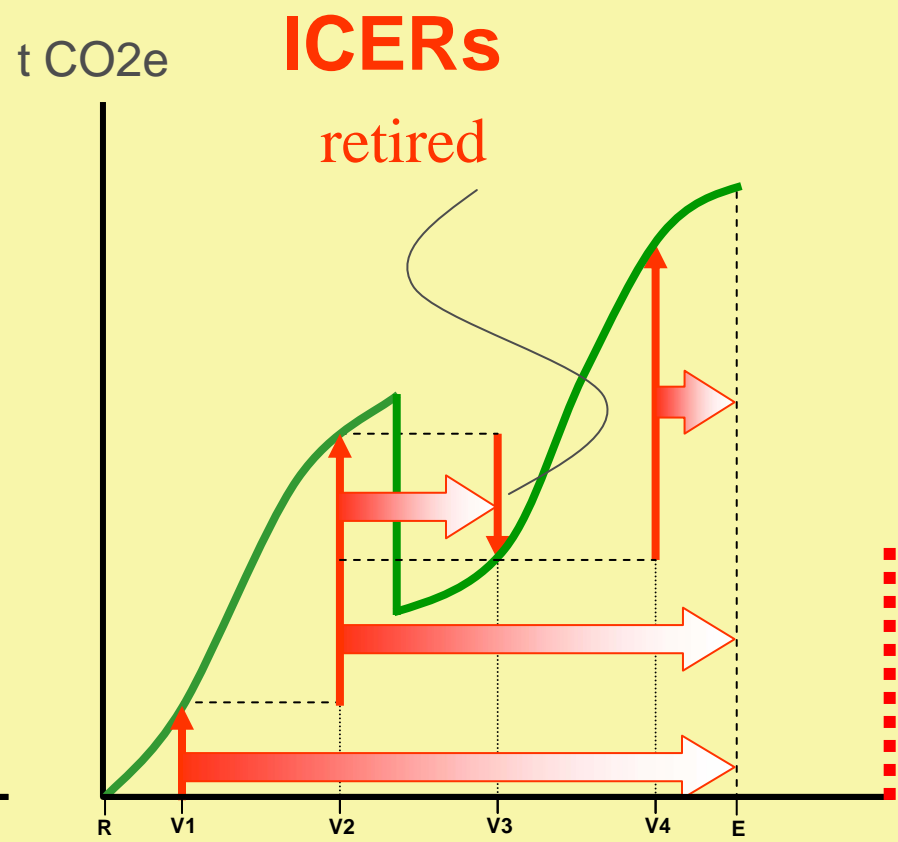
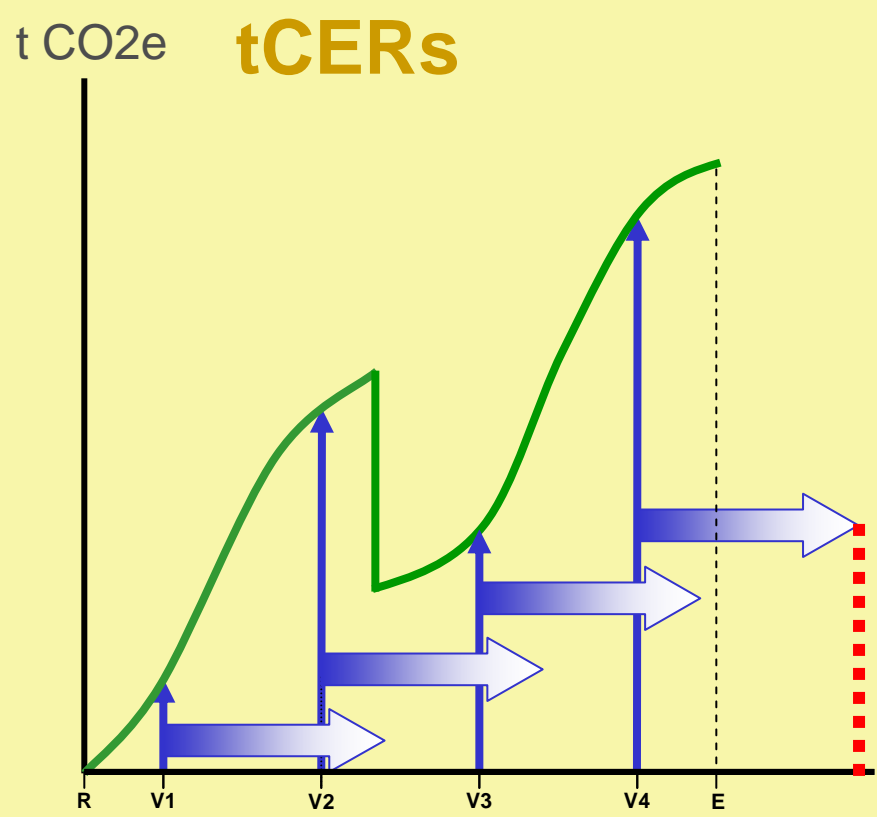


How the Fund Works



tCERs & ICERs: *Other distinctive features*

If carbon is lost...



tCERs can cover one commitment period more than ICERs

BioCF Achievements (1/2)



■ **Contracts signed**

- 17 ERPAs signed – early mover under the CDM
- Others under negotiation

■ **Methodologies**

- 10 A/R methodologies approved
- Public domain

■ **Project registration**

- First ever CDM A/R project registered (China)
- Two projects submitted for registration

■ **Capacity building**

- Over 22 project entities have been trained
- Countries have adopted forest definitions
- Submissions to the UNFCCC concerning rules

BioCF Achievements (2/2)



■ Comfort building

- Show that CDM rules can work in practice
- Identifies where challenges lie
- Body of experience beyond theoretical debate
 - Suggest improvements in rules
- Testing ground for post-2012, including “avoided deforestation”

■ Inclusion

- Rural world can participate in the CDM
- Africa > 1/3 of portfolio