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Workshop on **Investments** under  
**Clean  
Development  
Mechanism**

13-14 NOVEMBER 2003

HOTEL INTER-CONTINENTAL  
SANDTON SUN AND TOWERS

JOHANNESBURG, SOUTH AFRICA

Co-organized by JETRO and UNIDO through

Asia-Africa Investment and Technology Promotion Centre (AAITPC)  
project funded by the Japanese Government  
<http://www.unido-aitpc.org>

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# TABLE OF CONTENTS

## **PROGRAMME**

## **LIST OF PARTICIPANTS**

## **PROFILE AND PRESENTATION PAPERS OF SPEAKERS:**

**Module 1 - Dr. Tadashi Aoyagi, Mitsubishi Research Institute, Japan**

*Challenges and Opportunities of Clean Development Mechanism (CDM)*

**Module 2 - Mr. Thomas Black-Arbelaez, Andean Center for Economics in The Environment (CAEMA), Colombia**

*How to develop and implement CDM projects that generate Certified Emission Reductions (CER)*

**Module 3 - Dr. Tschenge Demana, Department of Trade and Industry (DTI), South Africa**

**- Mr. Stefan Raubenheimer, South South North Trust, South Africa**

*CDM Opportunities and Institutional Framework in South Africa*

**Module 4 - Dr. Sandra Greiner, The world Bank, Washington, DC, USA**

*CER Buyer's Perspective and Alternatives in Financing the CDM projects*

**Module 5 - Mr. Marcos R. Castro, Ecuadorian CDM Promotion Office (CORDELIM), Ecuador**

*What are requirements to host CDM projects as a country?*

**Module 6 - Mr. G.L. Jimenez Blasco, United Nations Industrial Development Organization (UNIDO, Austria**

*What are the UNIDO activities in CDM investment promotion?*

**Module 7 - Mr. M. Tsukiji, United Nations Industrial Development Organization (UNIDO), Austria**

## **DISCUSSIONS:**

*What is the role of Investment Promotion Agencies can best play to maximize the benefits under CDM as a host country?*

**Subject to Change**

**UNIDO's AAITPC Project: Program of CDM Workshop**

Day 1 is open for business community (by prior registration) while Day 2 is the session limited only for the executives of the investment promotion agencies invited. This Workshop is co-organized by UNIDO and JETRO Johannesburg.

<b>Day 1 (Thursday, November 13, 2003)</b>	
<b>9:00 AM</b>	<b>Registration</b>
<b>9:30 AM</b>	<b>Welcome and Opening Remarks</b>
<b>10:00 AM</b>	<p><b>Module 1: Dr. Tadashi Aoyagi, Mitsubishi Research Institute, Japan</b></p> <p><b>Challenges and Opportunities of Clean Development Mechanism (CDM)</b></p> <ol style="list-style-type: none"> <li>1) What is CDM in the first place?                             <ol style="list-style-type: none"> <li>a) Kyoto Protocol and Annex I Countries and Non-Annex I Countries</li> <li>b) Greenhouse gases (GHG)</li> <li>c) First Commitment Period and Banking</li> <li>d) Market-based Mechanism (CDM, JI, ET)</li> <li>e) Certified Emission Reductions (CER) and ERU</li> </ol> </li> <li>2) Why is CDM important to business?</li> <li>3) Why is CDM a new source of investments and technology transfers?</li> <li>4) How much is a CER worth?</li> <li>5) How to sell the CERs?</li> </ol>
	<b>10:40 - 11:00 Questions and Answers</b>
<b>11:00 AM</b>	<b>Coffee Break</b>
<b>11:20 AM</b>	<p><b>Module 2: Mr. Thomas Black-Arbelaez, Andean Center for Economics in the Environment (CAEMA), Colombia</b></p> <p><b>How to develop and implement CDM projects that generate Certified Emission Reductions (CER)?</b></p> <ol style="list-style-type: none"> <li>1) What are requirements to become eligible for CDM projects?</li> <li>2) What are <i>baseline</i> and <i>additionality</i>?</li> <li>3) <i>Small-scale CDM</i> projects and <i>bundling</i></li> <li>4) Bilateral, Multilateral and Unilateral Models</li> </ol>
	<b>11:50 - 12:10 Questions and Answers</b>
<b>12:10 PM</b>	<b>Lunch</b>
<b>13:10 PM</b>	<p><b>Module 3: Dr. Tschenge Demana, Department of Trade and Industry (DTI), South Africa and Mr. Stefan Raubenheimer, South South North Trust</b></p> <p><b>CDM Opportunities and Institutional Framework in South Africa</b></p> <ol style="list-style-type: none"> <li>1) Strategy and policy</li> <li>2) Institutional framework to attract CDM investments in South Africa</li> <li>3) Show case of potential CDM projects: Energy/Transportation/Industrial/Coal Mining/Waste Management/LULUC</li> </ol>
	<b>13:40 - 14:00 Questions and Answers</b>
<b>14:00 PM</b>	<b>Coffee Break</b>
<b>14:20 PM</b>	<p><b>Module 4: Ms. Sandra Greiner, The World Bank, Washington, D.C., USA</b></p> <p><b>CER Buyer's Perspective and Alternatives in Financing the CDM projects</b></p> <ol style="list-style-type: none"> <li>1) Emission Reduction Market</li> <li>2) Quality of CERs to purchase</li> <li>3) Prototype Carbon Fund and its Experiences</li> <li>4) Additional Funding Sources of CDM Projects</li> </ol>
	<b>15:40 - 16:00 Questions and Answers</b>
<b>15:00 PM</b>	<b>Cocktail Reception</b>

Day 2 is exclusively for the executives of investment promotion agencies invited.

<b>Day 2 (Friday, November 14, 2003)</b>	
<b>9:30 AM</b>	<b>Registration</b>
<b>10:00 AM</b>	<p><b>Module 5: Mr. Marcos R. Castro, Ecuadorian CDM Promotion Office (CORDELIM), Ecuador</b></p> <p><b>What are requirements to host CDM projects as a country?</b>            Issues to be discussed:</p> <ol style="list-style-type: none"> <li>1) Understanding CDM project cycle</li> <li>2) CDM as a voluntary participation</li> <li>3) Requirements to host CDM projects</li> <li>4) Designated National Authority (DNA)</li> <li>5) Functions of DNA</li> </ol> <p><b>10:40 - 11:00 Questions and Answers</b></p>
<b>11:00 AM</b>	<b>Coffee Break</b>
<b>11:20 AM</b>	<p><b>Module 6: Mr. G.L. Jimenez Blasco, United Nations Industrial Development Organization (UNIDO), Austria</b></p> <p><b>What are the UNIDO activities in CDM investment promotion?</b></p> <p><b>11:40 - 12:00 Questions and Answers</b></p>
<b>12:00 PM</b>	<b>Lunch</b>
<b>13:10 PM</b>	<p><b>Module 7: Mr. M. Tsukiji, United Nations Industrial Development Organization (UNIDO), Austria</b></p> <p><b>Discussion:</b>  <b>What is the role the Investment Promotion Agencies must and can best play to maximize the benefits under CDM as a host country?</b></p> <ol style="list-style-type: none"> <li>1) Institutional Framework</li> <li>2) Benefits and Costs</li> <li>3) Formulation of Projects</li> <li>4) Financing Projects</li> <li>5) DNA</li> <li>6) Promotional Activities</li> </ol>
<b>14:50 PM</b>	<b>Closing Remarks</b>
<b>15:00 PM</b>	<b>Close of Workshop</b>

# LIST OF PARTICIPANTS – WORKSHOP ON CDM

13 and 14 November 2003 - Johannesburg

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CDM Workshop on Nov 13 and 14, 2003: List of Participants (Actual)

11/24/2003

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66	Mr.	Johannes	van Zyl	Suprachem	Divisional Manager Commercial	012 380 2505	012 380 2051	083 304 0672	<a href="mailto:johannes.vanzyl@iscor.com">johannes.vanzyl@iscor.com</a>

**Investment Promotion Agencies:**

1	Ms.	Léonie	Konian	Côte d'Ivoire Investment Promotion Centre	Marketing Director				
2	Mr.	Gode Pierre	Dagbo	Côte d'Ivoire Investment Promotion Centre	Director General				

3	Mr.	Kwasi	Abeasi	Ghana Investment Promotion Centre (GIPC)	Chief Executive				
4	Dr.	Peter	Ankrah	Ghana Investment Promotion Centre (GIPC)	Director for Promotion & Public Relations				
5	Ms.	Belarmina	Capitine	Mozambique Investment Promotion Center (CPI)	Project Officer				
6	Dr.	Mussa	Usman	Mozambique Investment Promotion Center (CPI)	Deputy Director				
7	Mr.	John Mathew	Mnali	Tanzania Investment Centre	Senior Investment Promotion Officer				
8	Mr.	Samuel	Sitta	Tanzania Investment Centre	Executive Director				
9	Mr.	Lungisa	Magwentshu	TISA	Chief Executive Officer	012 428 7908	012 428 7031		
10	Dr.	Maggie	Kigozi	Uganda Investment Authority (UIA)	Executive Director				<a href="mailto:lungisa@isa.org.za">lungisa@isa.org.za</a>
11	Mr.	Issa	Mukasa	Uganda Investment Authority (UIA)	Assistant Director				
<b>Speakers:</b>									
1	Dr.	Tadashi	Aoyagi	Mitsubishi Research Institute	General Manager				
2	Mr.	Thomas	Black-Arbelaez	Colombia Andean Center for Economics in the Environment	Executive Director				

3	Dr.	Tshenge	Demana	Department of Trade and Industry (DTI)	Chief Director of Geographic Project Unit				
4	Dr.	Sandra	Greiner	The World Bank Carbon Finance Unit	Economist				
5	Mr.	Stefan	Raubenheimer	South South North Trust	Chief Executive Officer				
<b>Co-Organizers (UNIDO and JETRO):</b>									
1	Mr.	Masato	Tsukiji	UNIDO	Senior Technical Advisor and Project Manager				
2	Mr.	Guillermo Luis	Jimenez Blasco	UNIDO	Senior Industrial Development Officer				
3	Ms.	Louise	Binge	JETRO					
4	Mr.	Etienne	Botha	JETRO					
5	Mr.	Akikazu	Hamada	JETRO					
6	Mr.	Osamu	Hattori	JETRO					
7	Mr.	Yoshiyasu	Imazu	JETRO					
8	Mr.	Jason	Joffa	JETRO					
9	Mr.	Mikio	Nagata	JETRO					
10	Mr.	Takashi	Suzuki	JETRO					
<b>Total: 92 Participants</b>									

# Challenges and Opportunities of Clean Development Mechanism(CDM)

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November 13, 2003  
Mitsubishi Research Institute  
Dr. Tadashi Aoyagi

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## Agenda

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- Global warming
- International discussion on GHGs reduction
- Kyoto mechanism
- Ratification process of Kyoto protocol
- Trading market
- Role of Clean Development Mechanism

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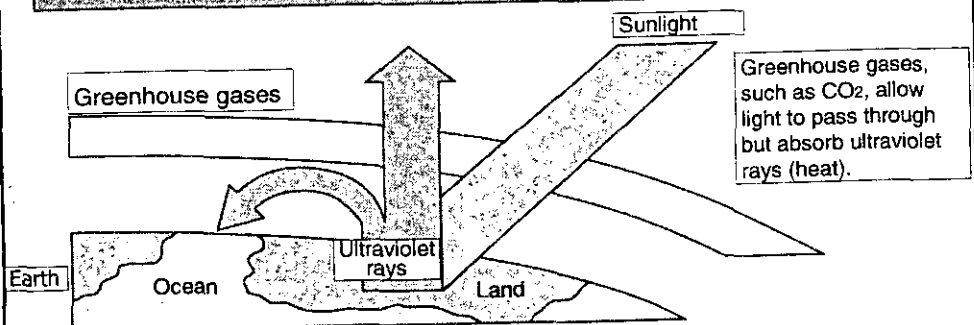


## What is global warming

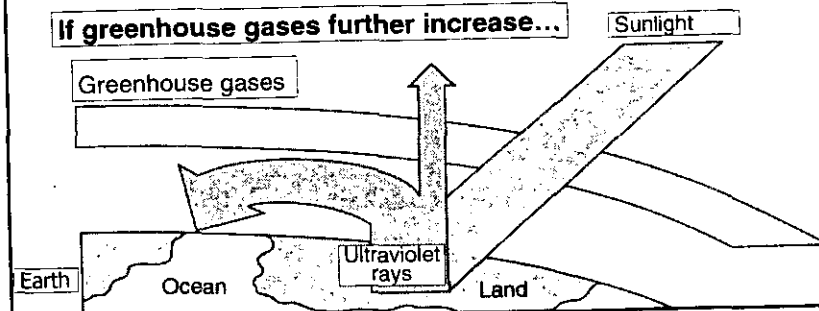
- Mechanism of global warming
  - Heat-balance of the earth
- Founded in late 19<sup>th</sup> Century
  - Arrhenius (Swedish scientist)
- GHGs ( greenhouse effect gases)
  - CO<sub>2</sub>, methane, HFC, CFC, N<sub>2</sub>O, SF<sub>6</sub>
  - Global warming potential
- Several signs of warming

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### Mechanism of Greenhouse Gases



### If greenhouse gases further increase...





## International discussion for global warming ( 1 )

---

- 1988 Toronto conference
  - Developed countries should commit 20% energy consumption reduction.
- Establishment of IPCC
- Second world climate conference(1990)
- 1992 Earth summit ( UNCED UN conference on environment and development )
  - Framework convention on climate change
- Enter into the forth 1994

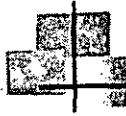
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## IPCC report ( Inter-governmental panel on climate change)

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- First report(1990 )
  - 60% ghgs reduction is needed for CO2 stabilization)
- Second report(1995 )
- Third report(2001 )
- Contents
  - Forecast of warming
  - Cost for adaptation
  - Social impact of warming

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## Main result of IPCC report

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- Future scenario of economic energy society
- Future energy consumption
- Future temperature raise
- Future sea level raise
  - GHGs are main contributors for last 50 years global warming
  - Average temperature raise at the end of 21st century is 1.5C, maximum 6.1C.

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## International discussion for global warming ( 2 )

---

- COP1 (conference of the parties) 1995
  - Berlin mandate
- COP 3 1997 Kyoto conference
  - Kyoto protocol
- COP7 2001 Marrakech conference
  - Marrakech accord
    - detail discussion on Kyoto protocol

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## Framework convention on climate change

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- Object
  - Stabilize ghgs concentration in the atmosphere
- Obligation of developed countries
  - Return the ghg emission to 1990 level in 2000
- Support developing countries in finance and technology (rich developed countries)
- Definition of countries
  - Developed countries Annex I OECD, EITs
  - Rich developed countries Annex II OECD
  - Developing countries

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## Kyoto protocol(COP3 )

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- Dec 1997
- Introduction of flexibility concept due to the difficulty of emission reduction (energy usage is directly connected with economic activities)
  - Time flexibility, regional flexibility, reduction point flexibility ,gas flexibility)
- Reduction target for developed countries
- Legally binding close

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# Kyoto Mechanism

- Supplemental to domestic actions, domestic action thus constitutes a significant element of each Annex I Party's effort to meet the commitments
- Annex I Party may transfer/acquire AAUs, ERUs, CERs, and RMUs under Article 17

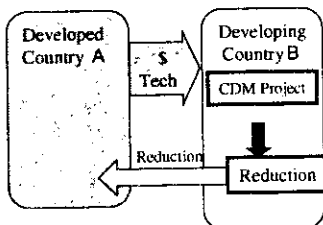
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## Basic Features of Kyoto Mechanism ( CDM/ET )

### Clean Development Mechanism (CDM)

( Article 12 of Protocol )

Developed countries to finance emissions-reduction projects in developing countries and receive credit for doing so.

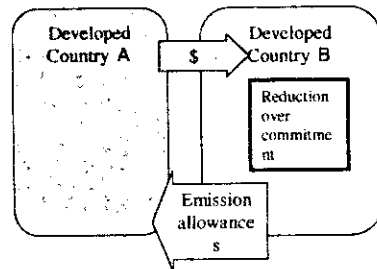


✕ Credit gained for reductions after 2000

### Emissions Trading

( Article 17 of Protocol )

Parties with emissions commitments may trade their emission allowances with other Parties to achieve their commitments



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## Marrakech Accords

### -CDM-(1)

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- it is the host Party's prerogative to confirm whether a CDM project activity assists it in achieving sustainable development;
- Annex I Parties are to refrain from using units generated from nuclear facilities to meet their commitments

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## Marrakech Accords

### -CDM-(2)

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- public funding for CDM projects is not to result in the diversion of ODA and is to be separate from and not counted towards the financial obligations of Annex I Parties
- share of proceeds for adaptation: 2% of issued for a project activity;
- CERs bankable up to 2.5% of a Party's assigned amount pursuant to Article 3.7 and 3.8

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## Marrakech Accords



### -CDM-(3)

- CDM Executive Board established  
10 members (Annex1 Parties-4, NonAnnex1 Parties-6)
- Simplified modalities and procedures for small-scale project activities agreed at COP8:
  - (a) Renewable energy project activities <15 MW,
  - (b) Energy efficiency improvement project activities <15 GWh/year; or
  - (c) Other project activities which emit <15 kt-CO<sub>2</sub>/year

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## Marrakech Accords



### -CDM-(4)

- Crediting period starts after the date of the registration of the project activities
- Credits for a project starting as of 2000-Nov11,2001 may be issued retrospectively but not earlier than Jan1,2000, if submitted for registration before Dec31, 2005

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# Marrakech Accords

## -CDM-(5)

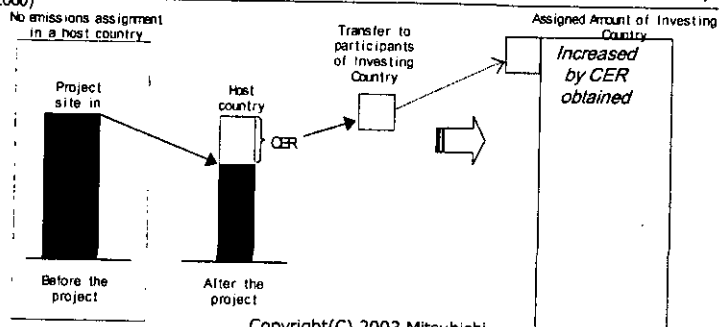
- Afforestation and reforestation projects shall be the only eligible LULUCF projects under the CDM during the 1<sup>st</sup> commitment period(CP)
- Each Annex I Party's net acquisition of CERs from A&R CDM projects for the 1<sup>st</sup> CP: not exceed 1% of base year emissions

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### Basic Features of Clean Development Mechanism

- Annex I countries implement projects to reduce emissions in a Non-Annex I countries, and the resultant reductions in emissions are shared between the participants of the project.
  - Credits issued in CDM is called CER (Certified Emission Reduction)
  - Annex I countries can use CER for their obligations under the Kyoto Protocol
  - Developing country where the projects is undertaken is called "Host country", country financing the project is called "Investing Country"
  - Example of GHG Reduction Projects : Renewable energy, Enhancement of energy efficiency, Fuel switch, Reuse of Methane
  - CO2 sink project : Afforestation and Reforestration

- CDM allows developed country to increase its emission limit
  - Rigid examinations for credit issuance
- CDM is only scheme in Kyoto Mechanism that credits can be obtained before the first commitment period (from 2000)



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# CDM project cycle

Implementation of CDM project, where project participants implement emissions reduction or sink projects in developing country and obtain CER as a result of the project, is as follows.

## ① Designing of CDM Project

- Designing of CDM project by the project participant
  - Necessary to complete project design document (PDD) by the participant

## ② Approval by both Investing and Host governments

- Project participant gain approval in written form, by both investing and host country governments.
  - Procedures within Japan as an investing country has already determined in Oct.2002.
  - Host countries procedures need to be consulted (not determined in most cases).

## ③ Validation and Registration of CDM Project

- Validation is done to evaluate CDM project using PDD made by the project participants
  - Validation is done by Designated Operational Entity (DOE)
  - DOE is selected by the project participant
- After the validation, qualified projects will be officially registered
  - CDM Executive Board (EB) will register the project

Implementation of the Project

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## ④ Monitoring of the CDM project

- Project participant implements the project and conduct monitoring activity to calculate GHG reduction

## ⑤ Verification/ Certification/ Issuance of CER

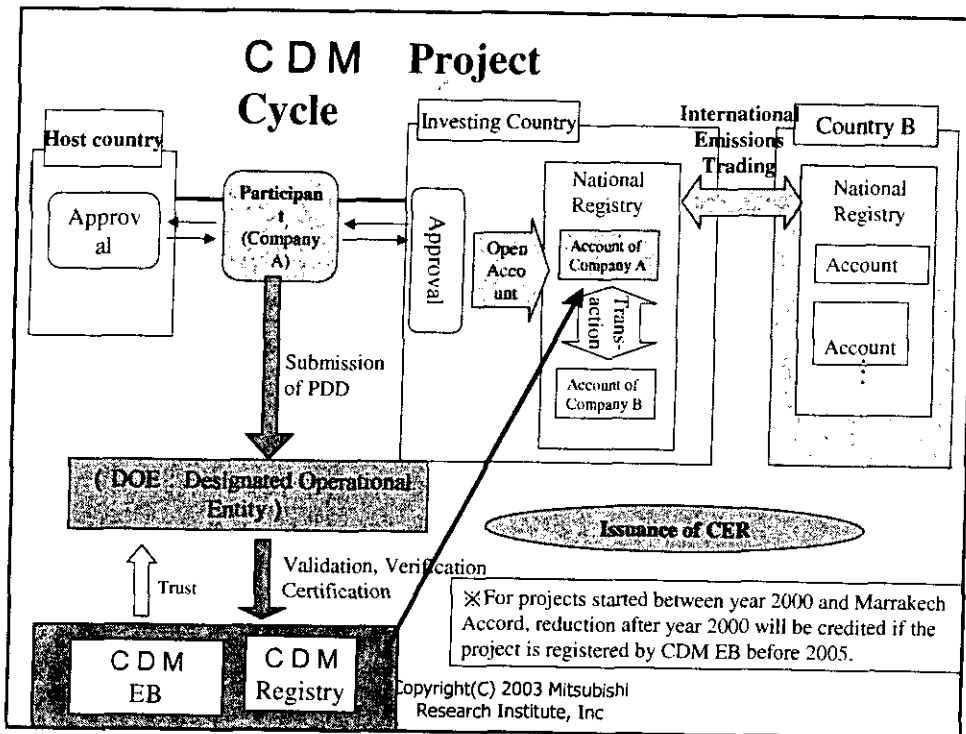
- Projects participant reports to DOE the monitoring result and reduction amount of emissions
- DOE will conduct verification of the monitoring result and reduction amount
- DOE will officially certify (certification) by the result of verification
- CDM EB will issue CER (issuance) equivalent to amount certified by DOE
- Issuance CER will include reduction amount of emissions after 2000

## ⑥ Sharing of CER

- 2% of issued CER is deducted for supporting developing countries
- Certain % of CER is deducted for operational cost of CDM
  - Percentage is not determined at the moment
- Remaining CER is shared between Host country and project participant
  - Sharing ratio needs to be pre-determined
  - In case project participant is more than one, sharing ratio among the participants needs to be pre-determined

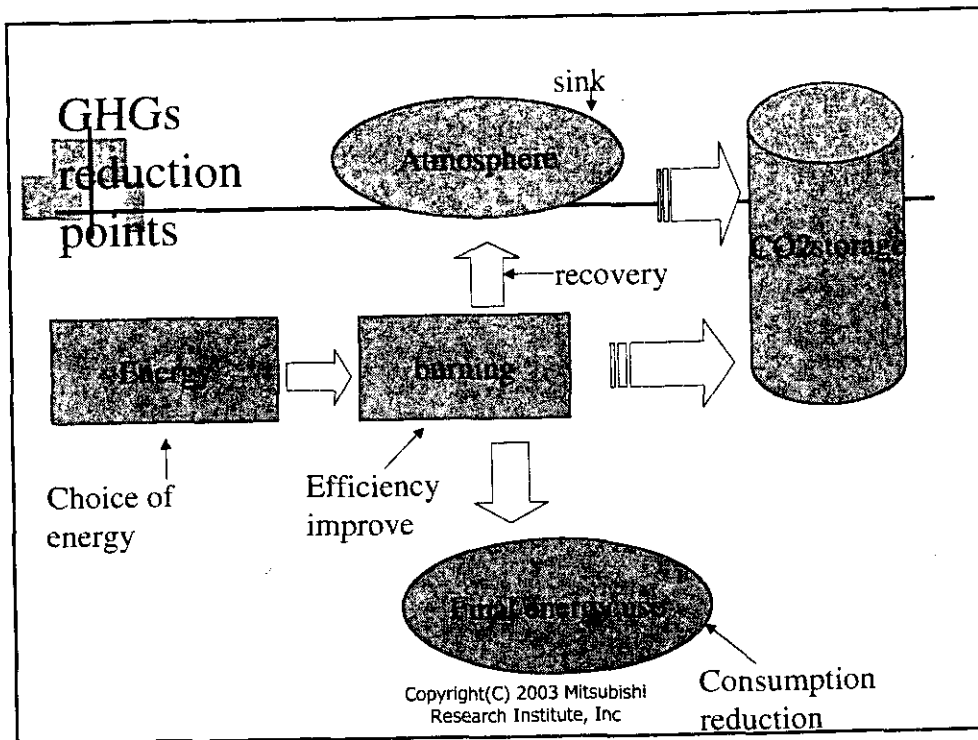
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### To be a host country of a CDM project activities

- Ratify the Kyoto Protocol
  - Assess a project proposal from the SD priority, provide a letter of approval
  - Develop procedures for public participation and environmental impact assessment
  - Capacity building needs
    - :Institutional, legal capacity
    - :Development of project portfolios
    - :OEs familiar with the host country's circumstances



## GHGs reduction points

- Choose low emission fuel
- Increase energy efficiency at energy conversion
- Recover from flue gas
- Recover from atmosphere(sink )
- Increase energy efficiency at final use
- Methane use

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## CDM/JI project example(1)

### multiple benefits

- Efficiency increase of a gas-fired power plant (1,000MW) from 30% to 40%
  - Saves 44,000,000m<sup>3</sup>/yr of natural gas
  - Saves 1,000,000t-CO<sub>2</sub>/yr of carbon (which can be marketed: indicative price up to \$10/t-CO<sub>2</sub>, thus 10 year reduction could finance about 10% of investment)
  - Reduces pollution through reduced energy consumption and additional environmental measures
  - Improved quality of electricity and/or heat

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## Designing CDM projects from investor's view

### Uncertainties

- *Additionality*
- *Baselines*
- *Supplementarity*
- *Credit sharing*

### Project design principles

#### Risk reduction

- *Diversity of projects*

#### Regret reduction


- *Consistency with investor strategy*

#### Host-country needs

- *Needs extensive consultation*

#### Private sector initiatives

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## Current situation of Kyoto Mechanism

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- Dynamic Political Situation
- Development of regimes and markets related Kyoto ratification
- Development of non Kyoto related regimes & markets

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## Ratification of Kyoto Protocol

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- USA withdraw
- EU ratified
- Japan ratified
- Russia maybe ratify?
- Canada ratified
- Australia out

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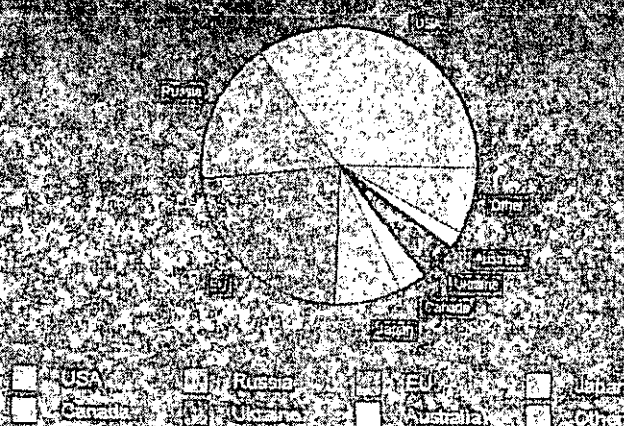
## PROTOCOL STATUS

### Likelihood of Protocol Entry Into Force

- Kyoto Protocol enters into force 90 days after at least 55 countries ratify accounting for at least 55% of 1990 Annex I CO<sub>2</sub> emissions
- Because US (36%) will not ratify, everything depends on Russian ratification
- Protocol will probably enter into force by the end of 2003 (but not necessarily in time for COP-9 to be COP/MOP-1)

## 1990 ANNEX B CO<sub>2</sub>

### 55% Needed for Protocol Entry Into Force



## RUSSIAN RATIFICATION

Biggest Country in World Holds Most of Cards

- Ratification is essential for KP entry into force
- "Hot air" is essential for many OECD countries to meet targets
- Probably will ratify, but not quickly
- Probably will sell some hot air, but not all
- Resulting price in credits market will be high

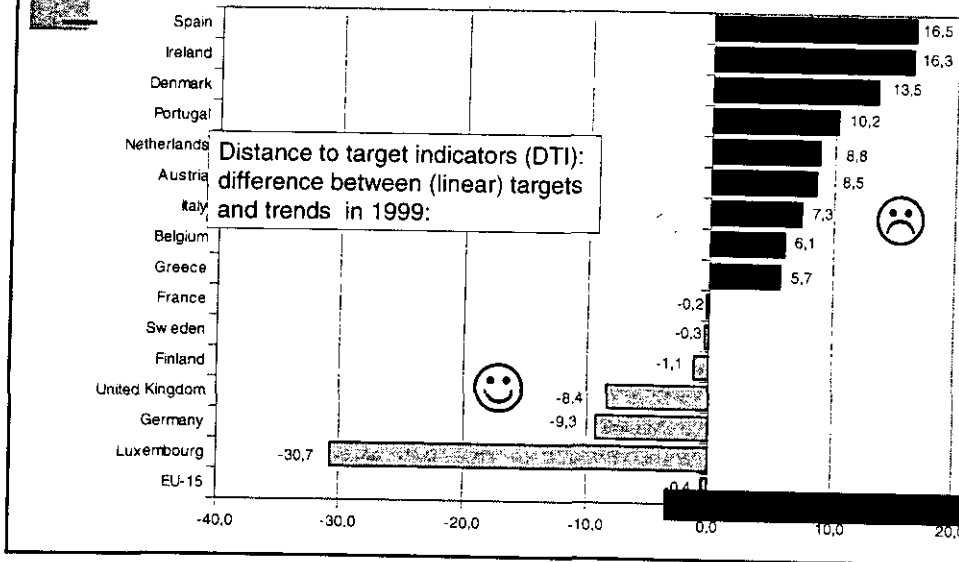
## Main countries GHG emission situation



- EU
- Japan

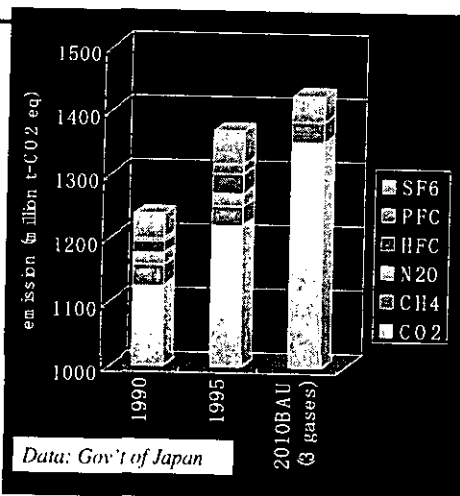
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## EU Progress of Individual Member States



## Japan: emissions are on the rise...

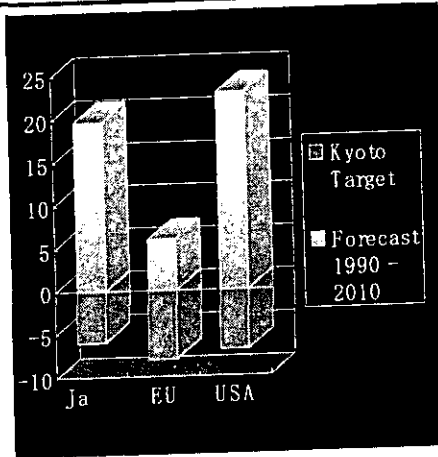
- Has to decrease emissions by 6%
- So far it has increased by about 10%
- Without measures, it will increase by another 10%
- Decrease in 1997 and 1998 mainly due to recession



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## ...but the targets are high...

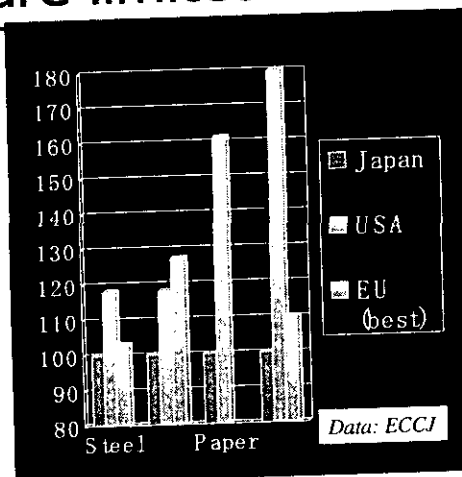
- The developed countries face tough emission targets under the Kyoto Protocol
- “Hot Air” trading mainly from Russia will not be enough to cover the deficit



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## and options are limited...

- The case of Japan
  - Energy efficiency already highest among OECD.
  - Mass transportation exists.
  - Little scope for additional reforestation.
- Limits domestic options, but provides a source for technology transfer

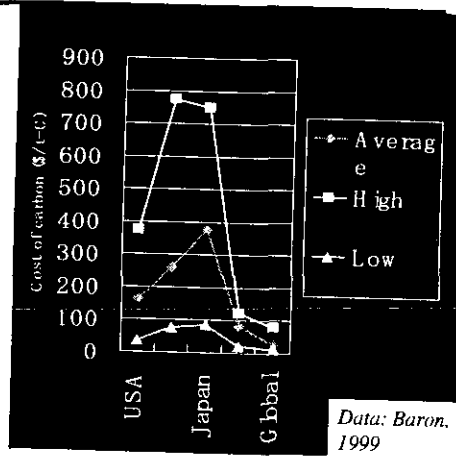


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## ...as well as costly

- Survey of models yield the following:
  - Japan is probably the costliest place
  - Trading (ET, JI, CDM) can contribute
- Need to consider necessity/possibility of trading
- Japan will be one of the biggest 'buyer' in trading



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## Use of Kyoto Mechanism

- **Although understanding that Kyoto mechanism is supplementary to domestic measures, Developed countries shall seek for the utilization of the mechanism to achieve Kyoto Protocol in cost effective manner.**
- **CDM has great significance as international contribution as it will promote sustainable development in developing countries**

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## Emissions Trading

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- Trading by private rule
  - US CCX market just started
- Trading by official rule
  - Denmark green electricity trading
  - UK GHG trading market
- EU wide trading will start from 2005
  - Relations with KP is not yet clear

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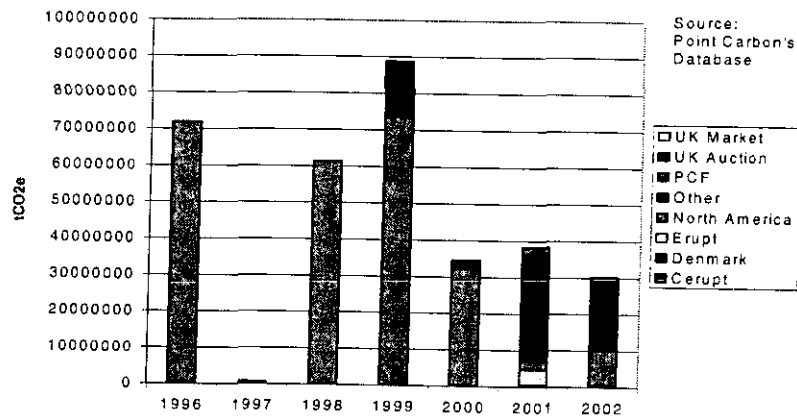
## Current Market Activity

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- Last 12 months most active in GHG market ; 30 to 50 mmt CO<sub>2</sub>e traded in last year
- UK GHG trading program
  - DuPont - Mieco executed first GHG transaction of government-sanctioned instrument
  - Auction held to provide companies with funds to reduce emissions below a baseline; \$305 million allocated, 4 mmt of reductions committed
  - Approximately 20 trades have occurred and 100,000 to 200,000 allowances traded
- Danish power sector cap & trade program
  - Initial cap on CO<sub>2</sub> of 23 million tons in 2000 is reduced 1 million tons per year through 2003
  - Approximately 10 trades have occurred and 300,000 to 500,000 allowances traded
- First swap of UK and Danish allowances brokered in 2002
- Swaps of Danish allowances for VFRs have occurred

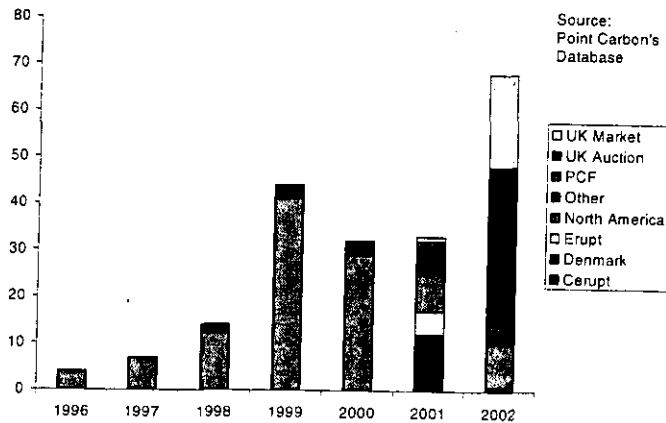
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# Transacted Volumes, July 2002



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# No. of transactions, July 2002



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## The Carbon Market in 2002: Volumes and Prices

System	Million tCO <sub>2</sub> e	Price USD/tCO <sub>2</sub> e	CDM?
UK Auction	12	17	No
Erupt and Cerupt	12 - 16	4.2 - 5	Yes
Prototype Carbon Fund	4.5 - 7.5	3 - 4	Yes
UK Market	0.5-0.9	6.0 - 7.5	Probably
Denmark	0 - 0.8	4 - 4.6	Not yet
North America	10 - 30	1 - 3	Yes
Other	10 - 20	1 - 3	Yes

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## Recent GHG Market Pricing

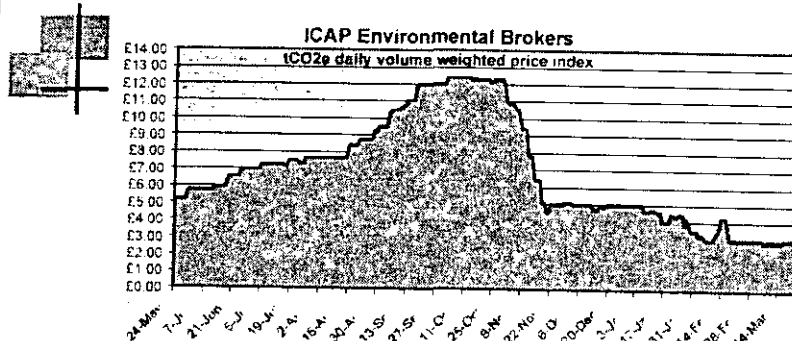
GHG Prices by Commodity and Vintage (U.S.\$ per ton CO<sub>2</sub>E)

Commodity Type	Vintage Year	Price per ton CO <sub>2</sub> E (US\$)
<b>Verified Emission Reductions ("VERs")</b>		
Annex B VERs	1991-2007	\$0.30-\$2.00
Annex B VERs	2008-2012	\$1.50-\$3.00
CDM VERs	2000-2012	\$3.00-\$5.00
Dutch ERUs		\$4.40-\$7.99
<b>Compliance Tools</b>		
Danish allowances	2001-2002	\$1.96-\$3.07
Danish allowances - Bid/Offer	2002	\$1.77-\$2.03
UK allowances	2002	\$6.81-\$8.79
UK allowances - Bid/Offer	2002	\$8.06-\$8.50

Source: Natsource, June 2002

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## UK Market



出典：ICAP資料（ブローカー）

- Failure of market design
  - Almost participants could reduce their reduction target easily
- Transaction : 7.22Mt-CO<sub>2</sub>

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## Conclusion

- Project-based credits could become a bridge between CDM and market
- Solid accounting and tax system for Kyoto Unit is essential for promoting CDM
- CDM will be powerful measures to get new investments and technology transfer
- CDM makes your states more attractive to investors

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**Thomas Black-Arbeláez**



Director of the Andean Center for Economics in the Environment (ACEE). Head of the Office of Economic Analysis and Policy at the Colombian Ministry of Environment (1996-2000) where he was research director and principal author of the National Strategy Study for the Implementation of the Clean Development Mechanism in Colombia. He was part of the Colombian National Delegation to the UNFCCC for three years, in charge of negotiations related to the Clean Development Mechanism. Economist for the United States Congress where he carried out research and published articles on the economic efficiency and environmental effectiveness of the US Acid Rain Emissions Trading Program, the use of pollution charges to control air pollution from lead and the use of tax incentives to promote investment in environmental protection, among others. He has been professor of environmental economics at Master's level in the Universidad de los Andes and Universidad Javeriana in Colombia and Universidad de Concepción in Chile. He has published various papers and developed numerous studies for the World Bank, ECLAC, OECD, GTZ, among others, on the Clean Development Mechanism. He is a consultant for the World Bank, PCF, NSS Program on capacity building related to the Clean Development Mechanism and development of related studies.



The Andean Center for Economics in the Environment  
Bogotá - Lima

# MULTILATERAL, BILATERAL AND UNILATERAL MODELS OF CDM

UNIDO-AAITPC CDM WORKSHOP  
Johannesburg, November 13, 2003

Thomas Black-Arbeláez,  
Director, the Andean Center

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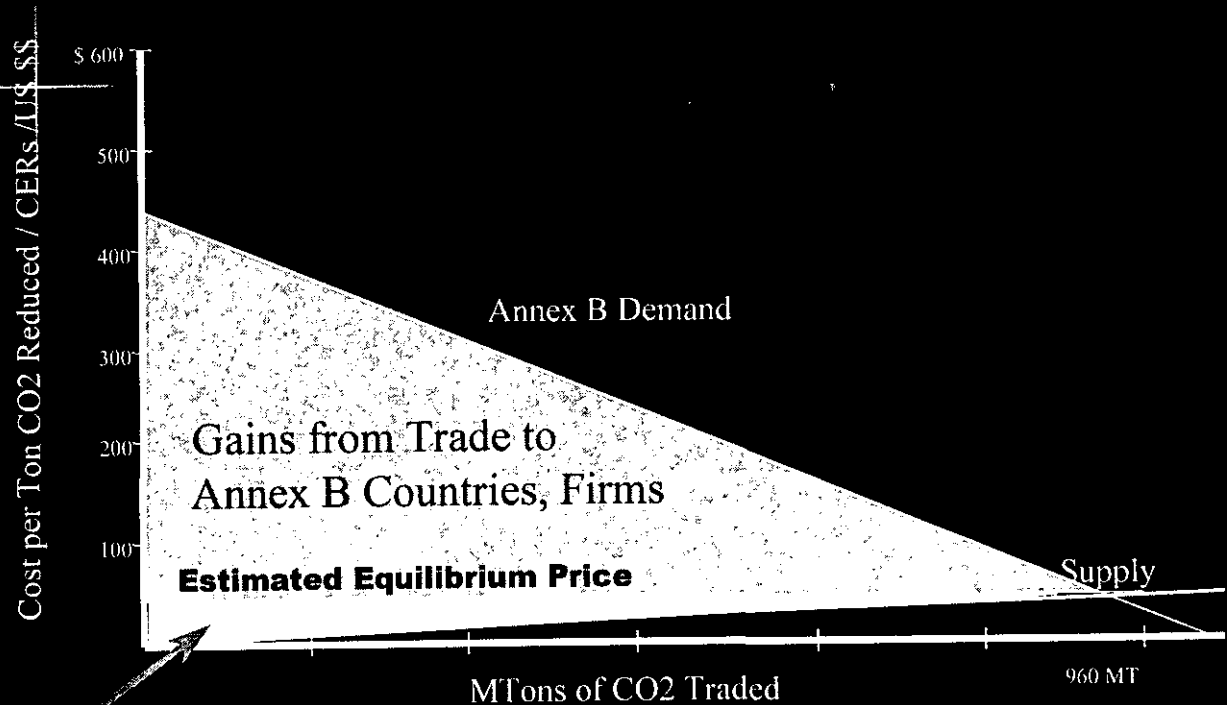
## contents

- I. What will be the *Gains From Trade* for host countries from CDM? How can host countries optimize these gains?
- II. Bilateral, multilateral and unilateral models of CER formation
- III. Case for discussion

# I. What will be the *Gains From Trade* for host countries from CDM? How can host countries optimize these gains?

*UNDERSTANDING OF THE CARBON MARKET IS THE KEY INFORMATIONAL RESOURCE*

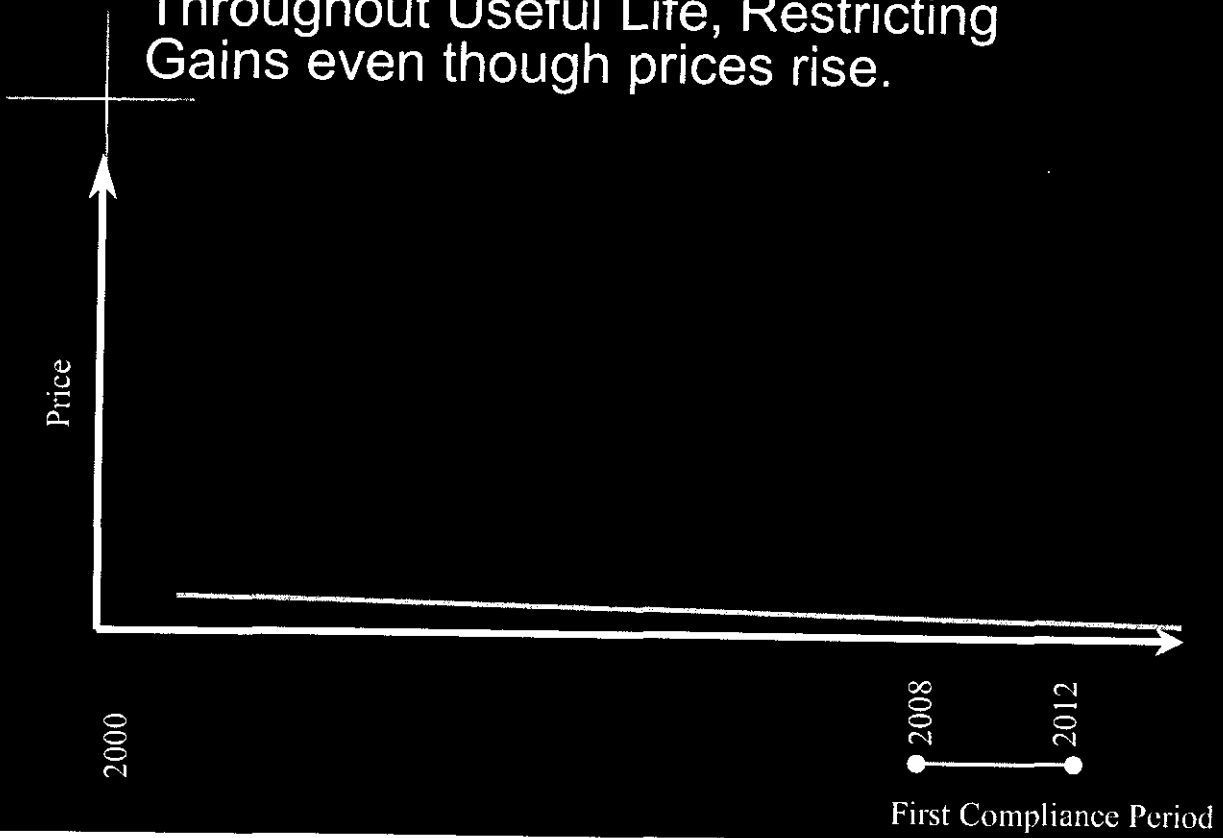
## Gains from Trading in the Kyoto Markets Should Benefit Developing Countries as Well



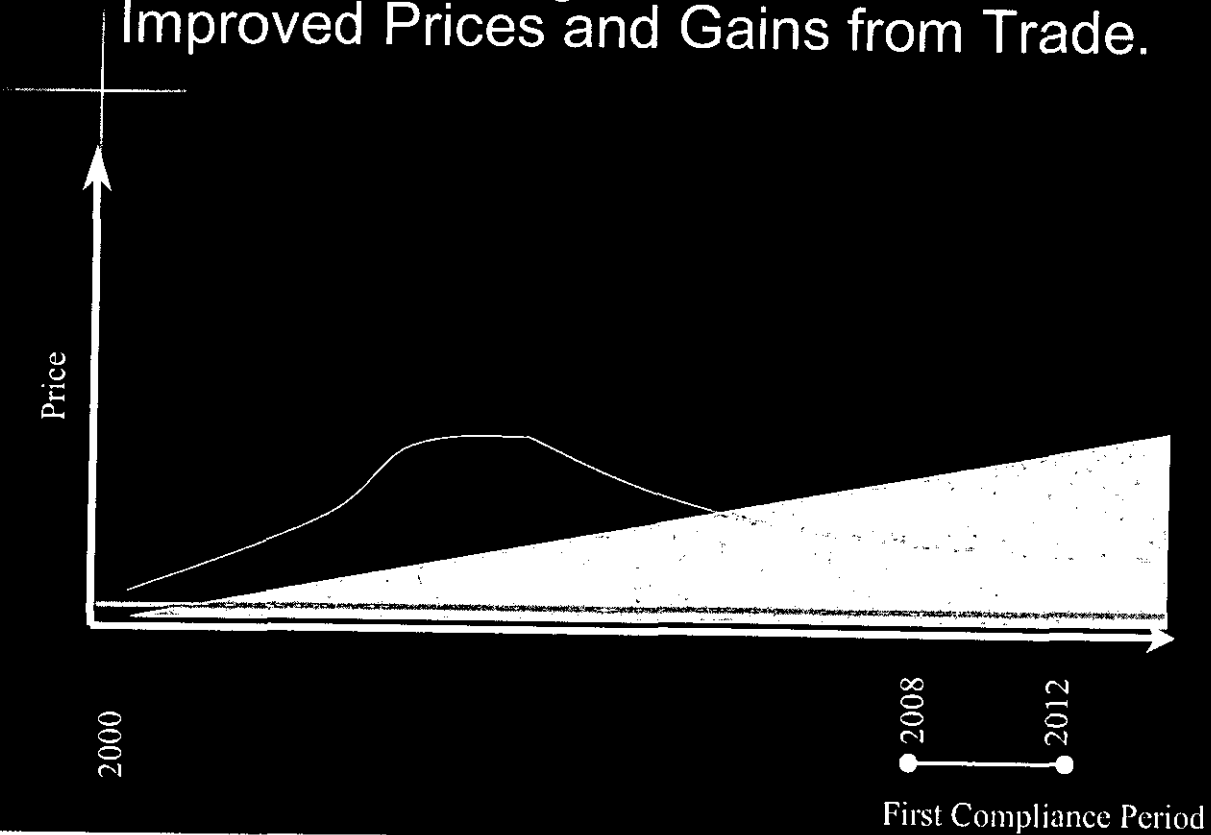
Gains from Trading from Credit Suppliers



Current Model of Payment for Future CER Flows Impose Pre-Market Prices Throughout Useful Life, Restricting Gains even though prices rise.



If CER Prices Increase in Real Terms over Time, Developing Countries Need to Obtain Improved Prices and Gains from Trade.



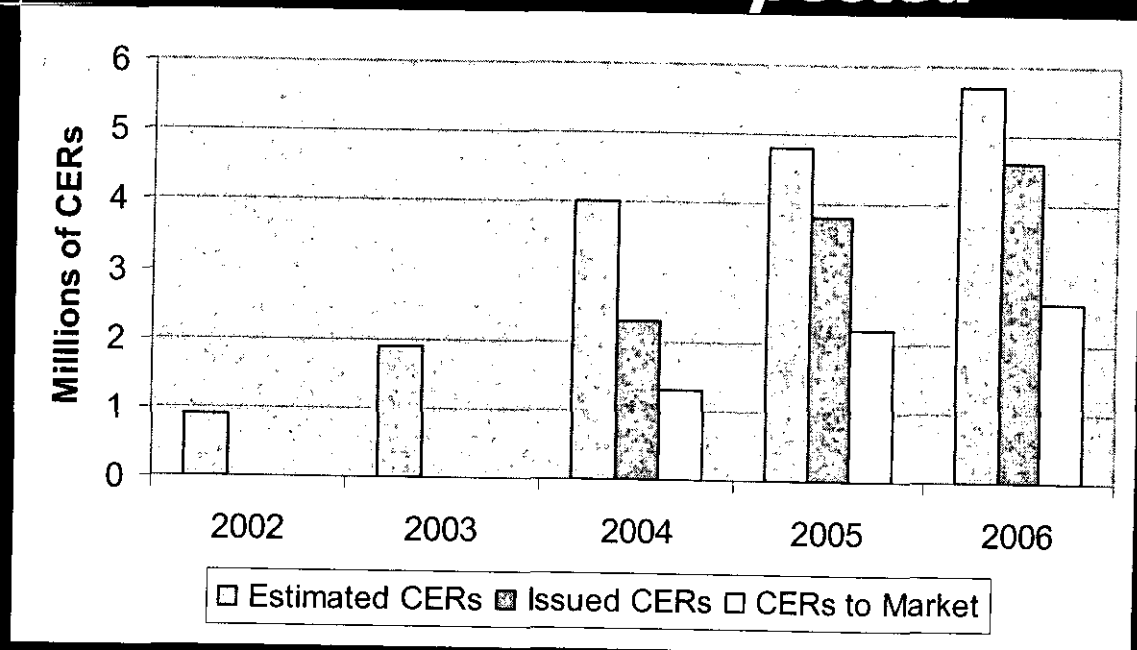
# Demand Conditions Consolidating for CERs

- 1) European ETS law and rules favor CERs and set up positive price conditions
- 2) Russian Ratification should occur
- 3) Annex B BAU emissions rising above initial estimates
- 4) Some US states, firms, may invest in CERs
- 5) Banking for 2nd Comp Period strengthens demand

# Key Supply Determinants Indicate Lower than expected CERs Volumes

- 1) Level of Effective Supply from China, India, Africa, Asia
- 2) Management of "Hot Air" potential supplies
- 3) High Transaction Costs and Low CER Prices Discouraging Developing Country Firms from Engaging in CDM;
- 4) Lack of Financing Alternatives Locally and Regionally for financial closure and project execution.
- 5) Political Pressure from Environmental NGOs discouraging investment in large hydro, forestry
- 6) Institutional constraints on supply are limiting expectations: *Meth Panel Non-Approvals*

## Point Carbon Estimate on Effective Supply of CERs: *Much less than expected*



## Andean Center Key Market Assumptions

- CER demand is consolidating as EU regulates market in favor of CERs
- Supply will remain lower than initially expected in the short to medium term
- Market conditions and prices will improve for high quality CDM projects
- Prices are rising now for forward delivery 6-7 dollars / CER

# CER Price Development Scenarios Used by Andean Center

First Option CER Price (US \$/CER)

2004	2005	2006	2007	2008	2009	2010	2011
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
3	3	5	5	7	7	7	7

Second Option CER Price (US \$/CER)

2004	2005	2006	2007	2008	2009	2010	2011
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
3	3	5	6	9	9	9	9

## Annex B Buyers Willingness to pay more for future CERs in projects with:

1. High Volume of CERs Generation
2. The amount of pre-2012 CERs to be generated
3. Renewable Energy without negative environmental or social impact
4. High quality of the host firm.
5. *Low Delivery Risk—high probability that the expected CERs will be generated.*

# Market and price information sources

- [www.environmental-finance.com](http://www.environmental-finance.com)
- Joint Implementation Quarterly
- [www.pointcarbon.com](http://www.pointcarbon.com)
- [www.climateark.com](http://www.climateark.com)
- [www.CO2e.com](http://www.CO2e.com)
- [www.natsource.com](http://www.natsource.com)

## Conclusion 1:

- Host countries and firms must understand the fundamentals of the market.
- Study these fundamentals closely as part of every day business.
- Develop a set of probable scenarios regarding price trajectories over time.
- Structure models and projects to obtain optimal CER price during the useful life of the CDM projects.
- This will allow host firms and countries to obtain a fairer share of the gains from trade.

## II. Comparing Models for Developing CDM

Multilateral

Bilateral

Unilateral

## The Multilateral Model

- Top – Down approach
- Multilateral Development Banks
- Centralized Funding:
  - By Governments
  - By Private Sector
- Common Project Portfolio
- Centralized Decision-Making & Management
- Centralized Trading Function

## Advantages of The Multilateral Model

- Positive early demonstration effects for market, projects.
- Take early mover risks in embryonic, uncertain market.
- Research, evaluate, implement key methodologies and processes for project development and approval.
- Assist in Institutional Development to mobilize CDM.
- Risk Diversification for Annex B investors.
- Assume Downward Price Risk, Kyoto Risks for project owners
- Well Financed.
- Promote Equitable Allocation of Funds Across Sectors, Countries, Regions.
- Can assist in coordinating investment package.

## Potential Disadvantages of The Multilateral Model

- High cost structures; Lack Least-Cost Incentives; CDM Costs to Annex B investors and to Project Owners may be high.
- May Concentrate Market Power / Monopoly Player, especially in early phases of market.
- Imposes price signals and payment formats.
- Fiduciary Responsibility to Annex B Investors may affect CER price and gains from trade to developing countries, favoring investors over project hosts.
- Distance: inability to provide local support for projects during complex CDM processes.

# The Bilateral Model

- Participants: Annex B Investor Firms and Developing Country Hosts, One to One
- Foreign Direct Investment Model
- De-centralized decision-making, investment & project management
- De-centralized CER Trading Function
- CDM one of many negotiated issues in investments
- Relative negotiating power and information determines who gains most from CER generation

## Bilateral Model: Possible Advantages

- Once partners identified, High Efficiency & Cost-Effectiveness
- Flexibility & Speed in Negotiations
- Annex B partner brings investment capital and package
- Investment package may assume CDM transactions costs
- Ease of Project Implementation
- Minimum Bureaucracy
- Vigorous Primary & Secondary Markets



## Bilateral Model: Possible Disadvantages

- High Search Costs, Difficulty in identifying joint investment partners
- Increased sensibility to Investment Risks may limit total CER generation
- Distributional Equity across developing sectors, countries, regions not Assured
- Annex B Investor may have more negotiating power than developing country host entity
  - Design of project on investor terms
  - CER Pricing and payment on investor terms

## The Unilateral Model

- Bottom-up approach.
- CDM as an economic opportunity from the Host Firm and Country Perspective.
- Strategic CDM to optimize host country and firm gains from trade in the international carbon market.
- Host Country Entities Act as:
  - Project Sponsor
  - Coordinator of Investors and Investment Packages
  - Owner & Trader of CERs with multiple trading options

# Process for approvals

- Host firm identifies project opportunity
- Host firm develops PDD
- Qualified broker offers project CERs (a portion) to multiple potential buyers in many Annex B countries
- Best-price buyer identified
- ERPA Signed
- Both countries approve CDM project

# Possible Difficulties:

- Limited understanding of CDM opportunity in key sectors
- Firms' Limited understanding of market dynamics and CER pricing scenarios
- Must manage investment and trading risks
- Must assume CER transactions costs

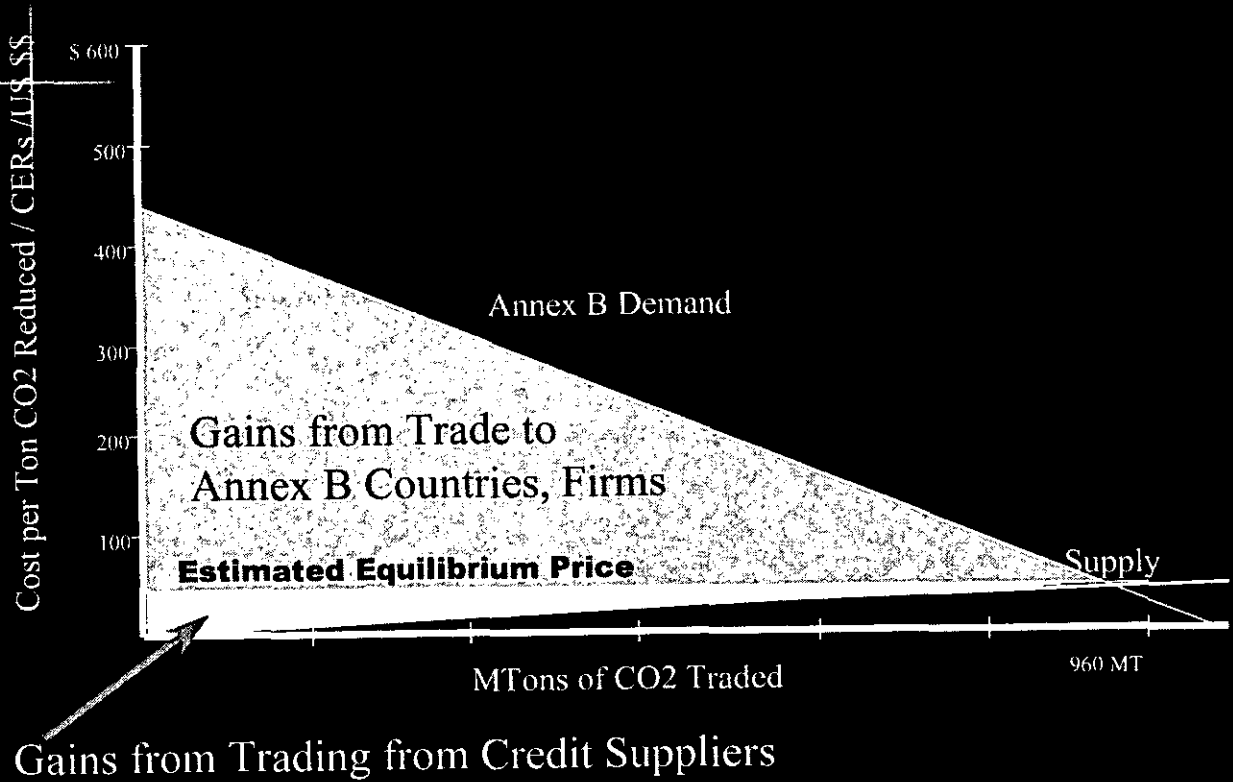
## Possible Advantages of The Unilateral Model

- Can identify potential projects more readily throughout sectors, country.
- Can design projects per host preferences, including technologies, location, time period, size
- Can design projects to maximize local collateral environmental and social benefits.
- Can manage local risks that outside investors may not.
- Eliminate Potentially Contentious Negotiations with foreign investors
- Lower Formulation, Transactional Costs of CDM using local professionals
- Can seek best possible CER prices for host firm through strategic marketing techniques in the short, medium and long term
- Can improve Gains from trading for host countries very significantly

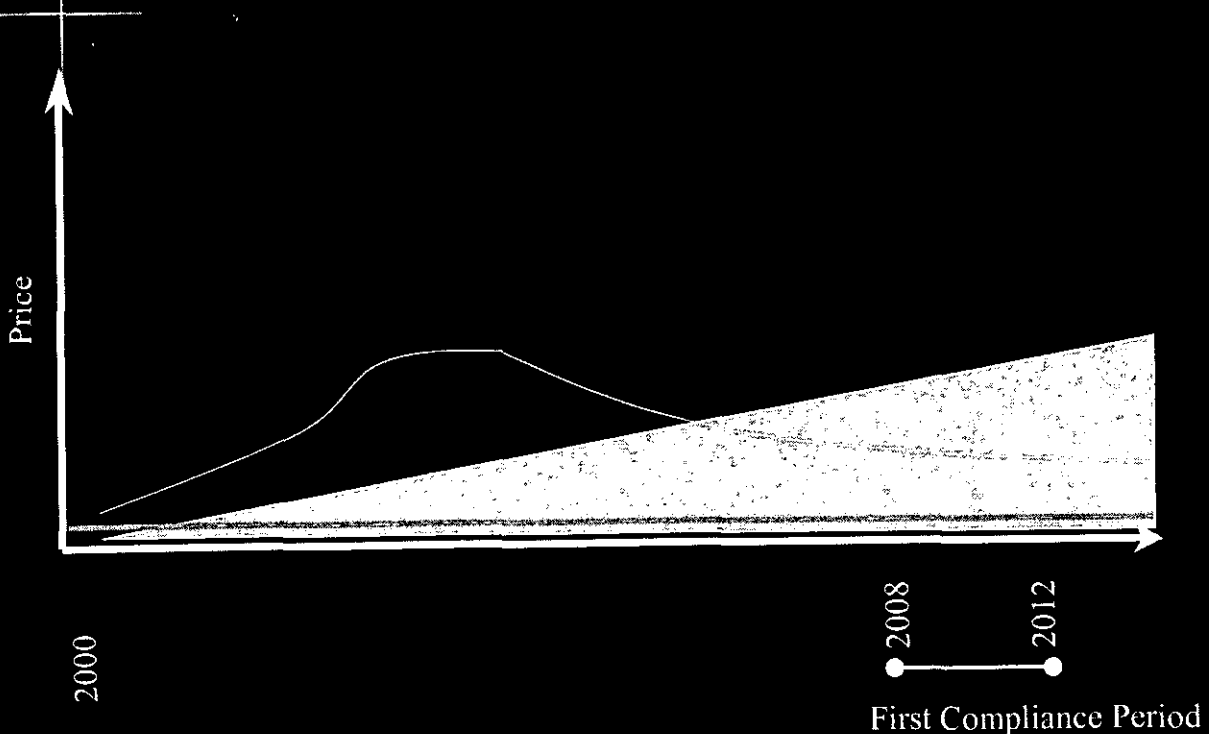
## CER strategic marketing techniques

- Commit a portion to multilateral buyers funds at an assured price;
- Use a good (qualified, experienced, positioned) broker to offer specific future amounts of CERs globally to highest bidder in Japan, Canada, EU
- Generate and hold a portion of the CERs to sell unilaterally after they are emitted by EB, after Russian Ratification and Entry into Force to highest bidder

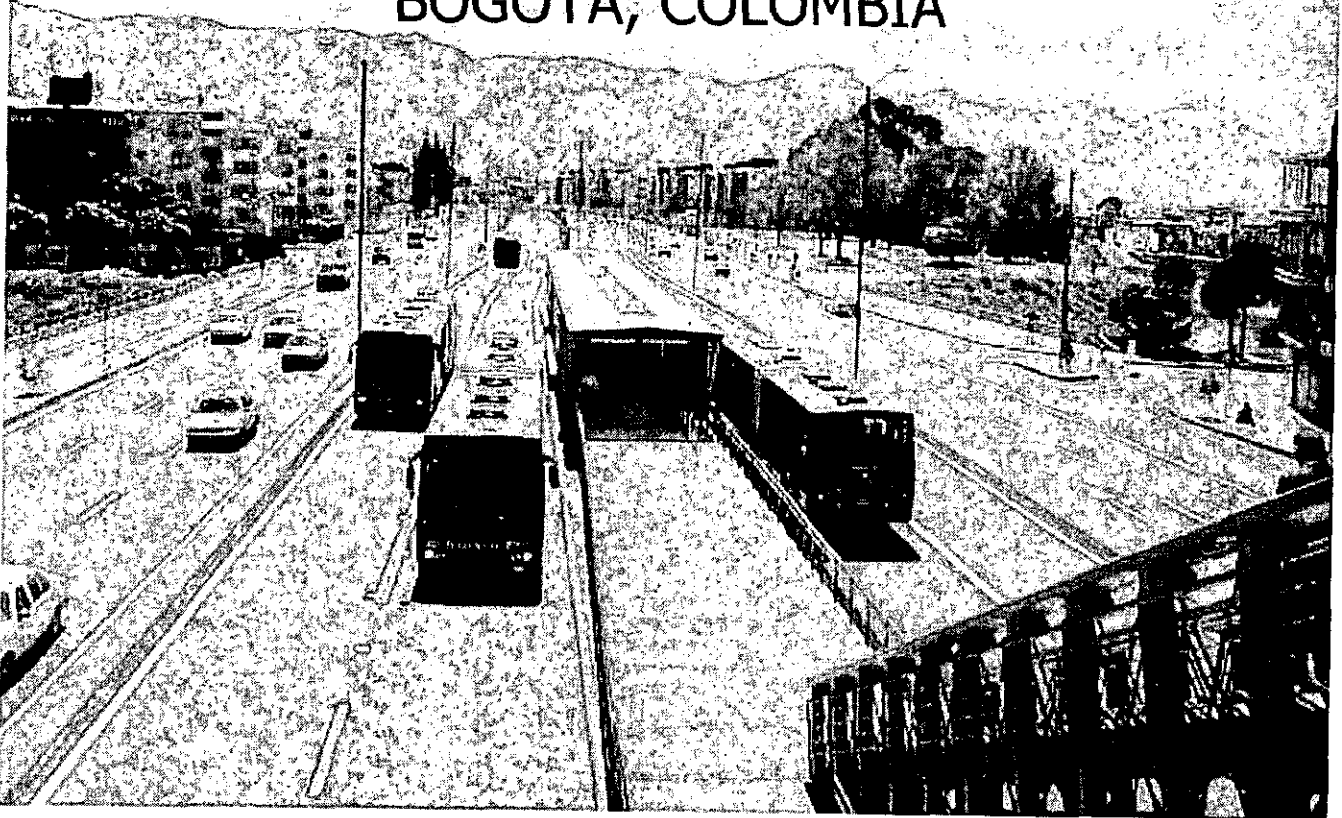
# Gains from Trading in the Kyoto Markets Should Benefit Developing Countries as Well



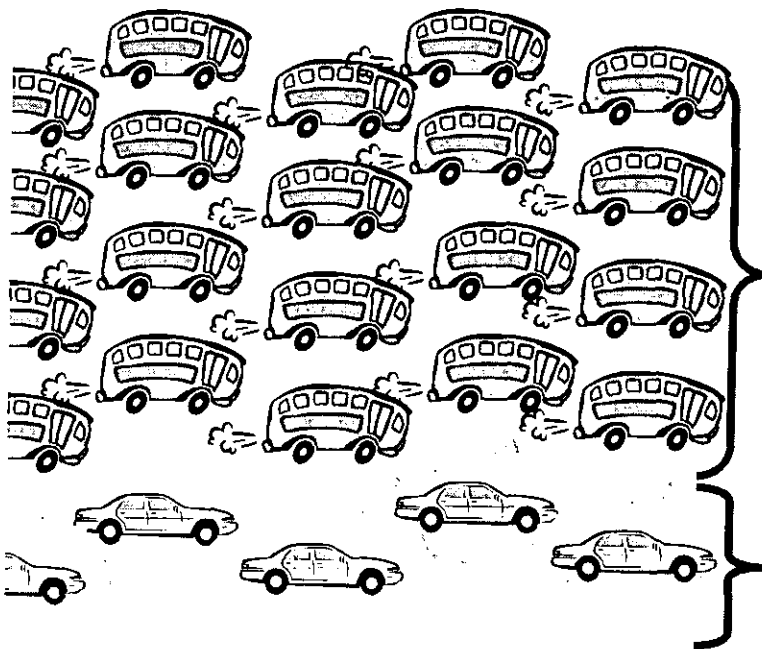
If CER Prices Increase in Real Terms over Time, Developing Countries Can Use the Unilateral Model to Obtain Improved Prices and Gains from Trade.



# CDM CASE STUDY: THE TRANSMILENIO MASS TRANSPORT PROJECT IN BOGOTA, COLOMBIA



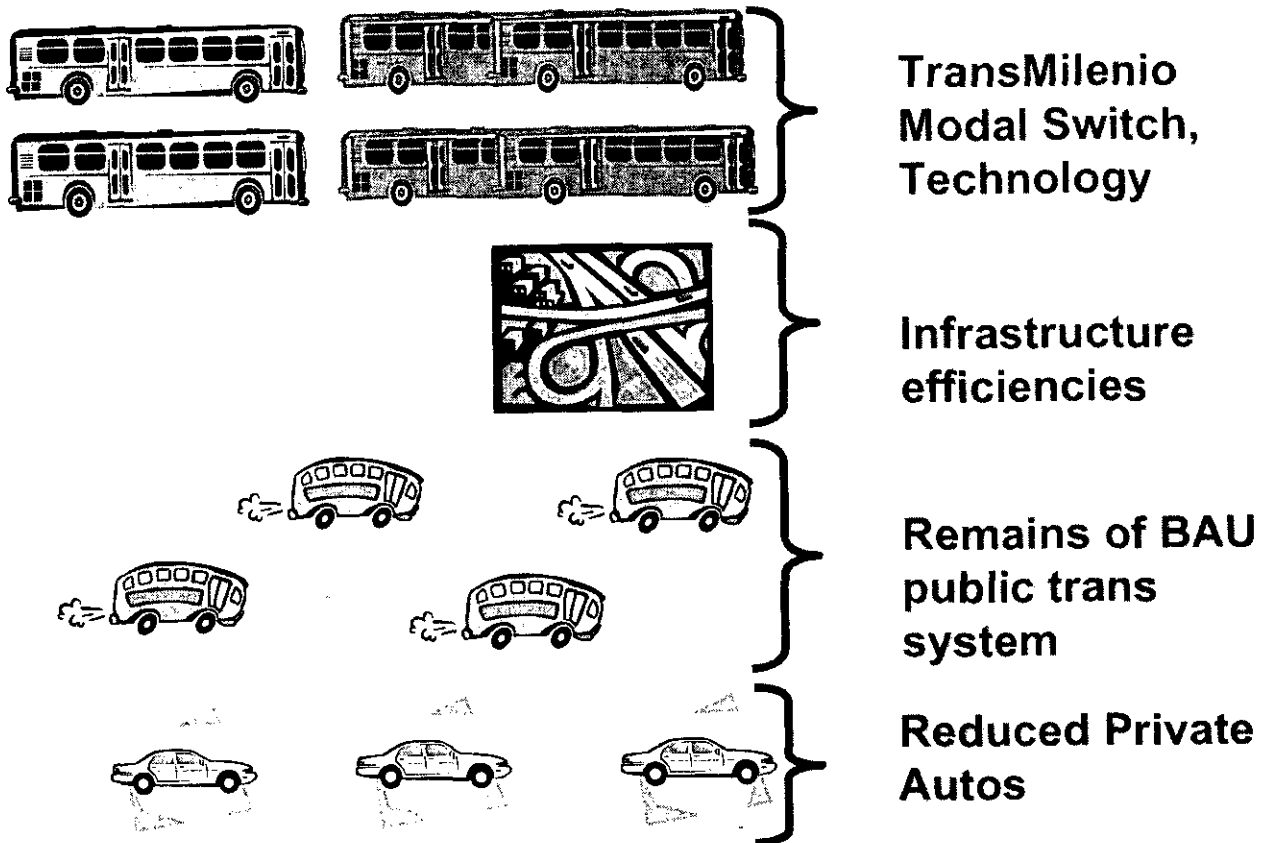
## Phase II and III Baseline Emissions Case (Phase 1 Not additional)



BAU mass transport  
in Colombian  
Cities

Privately owned  
and driven autos

## Emissions with the CDM Project



## Estimated CER generation

- 10 year baseline
- Annual CERs: 400.000 ton on average (fases 2 and 3)
- Total Expected CERs: 4 million

## Estimates of the total CER value at possible market prices

- Total CER Income at US \$ 3/CER:  
US\$ 12.000.000 ☹
- Total CER Income at US \$ 5/CER:  
US\$ 20.000.000
- Total CER Income at US \$ 7/CER:  
US\$ 28.000.000
- Total CER Income at US \$ 9/CER:  
US\$ 36.000.000 ☺

## COMPARING THE GAINS FROM TRADE FOR HOST COUNTRY AND FIRM

- MULTILATERAL FUND THAT MANAGED CDM COMPONENT:
  - 30% of CERs to Fund for Transactions Costs; 1.2 Mn CERs = \$7.2 Mn today's market
  - All Host CERs (2.8Mn) must be delivered to Annex B buyer at US \$3;
  - Total CER value to host \$8.4 Mn.
- UNILATERAL GENERATION CAN:
  - Transactions costs between \$500,000 - 1 Mn.
  - Place CERs at market prices \$6-7; CER value above \$24 Mn.
  - Total Value to host above \$23 Mn.

## Conclusions 2:

- The three models are complementary; none is "better or worse"; each offer specific advantages and disadvantages
- All 3 models are operating and will contribute to market development;
- Multilateral model has introduced the global carbon market around the world, bilateral and unilateral programs will participate more as market develops and prices consolidate
- Governments, institutions and firms should support the three models and optimize their utility based on local conditions
- Unilateral model represents more gains for those who are willing to make investments and take risks.





## Resume

Tshenge Demana

### EDUCATION:

I matriculated from Mbilwi High School in the Northern Province. After spending 6 months at the University of the North in Pietersburg as a first year medical student. I received a scholarship to study at Denison University in Granville, Ohio, United States of America. I graduated with Chemistry as my major subject and Mathematics forming my minor concentration. I graduated at the end of May 1987. In June that year, I enrolled at the University of Michigan in Ann Arbor for a PhD in Analytical Chemistry. This Doctoral Degree was awarded to me in May 1992.

### WORK EXPERIENCE:

Before I went to university, I taught mathematics to standard 7 and biology to standard 9 students at Vuwani Secondary School in Soweto. However, I was not a trained/qualified teacher. When I finished my doctoral studies, I worked as a research fellow in a pharmacology laboratory at the medical school of the University of Michigan. At the same time, I acted as a consultant for my PhD mentor's laboratory seeing that they continued with the research work that I started. On returning to South Africa, I joined Lennon Limited in Port Elizabeth as a research scientist in August 1993. Lennon Limited is a manufacturer of generic pharmaceuticals. At Lennon, I was involved in both R&D and quality control work. I spent about 2 years at Lennon and then I joined the University of the Western Cape as a lecturer in Analytical Chemistry in 1995. Essentially I introduced Analytical Chemistry as a taught subject at the University. I then joined the DTI's standards and environment directorate in 1998.

Dr Tshenge Demana  
Director: Standards & Environment  
Department Of Trade And Industry

# **CDM Opportunities and Institutional Framework in South Africa**

Presented by Dr T. Demana  
13 November 2003

**UNIDO AAITPC WORKSHOP ON CLEAN DEVELOPMENT  
MECHANISM (CDM)**

## **Structure of the Presentation**

- Objectives
- Background on SA economy
- South Africa's readiness
- CDM Institutional Arrangements
- Draft Sustainable Development Criteria
- CDM Opportunities in SA
- Conclusion

## **Objective**

- To give information on the institutional arrangement regarding CDM in South Africa
- To inform the prospective CDM investors of South Africa's readiness to evaluate and process CDM projects

## **Background on SA Economy**

- SA economy is growing steadily
- It is highly dependent on cheap energy
- This is primary economic advantage
- Mostly due to coal resources
- But high CO2 emitter (15th in world)
- Hence important country for mitigation options

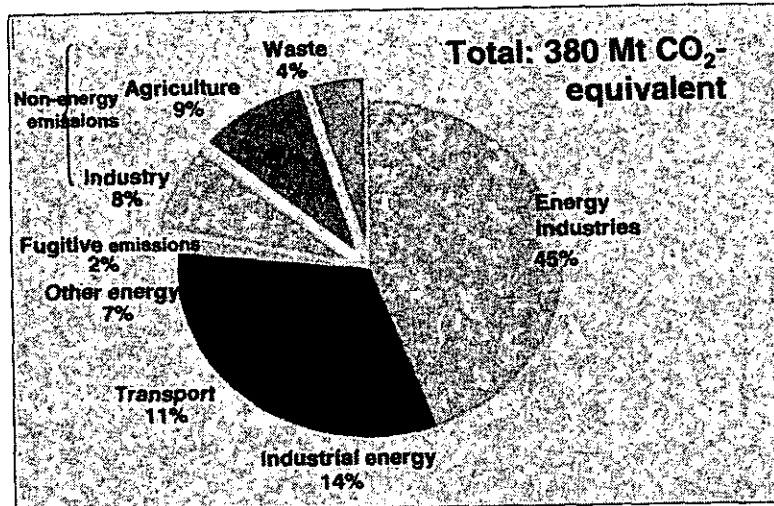
## **Background continued**

- Africa emits 3% of world ghg's
- South Africa emits almost 50% of Africa's emissions
- South Africa represents almost 50% of Africa's economy
- South Africa seen as:
- Gateway into Africa
- Investment location

## **South Africa's readiness**

- The dti has commissioned a study through the Nedlac process, to identify sectors with potential for CDM projects
- The report will be used as a handbook for investor's guidance
- The identified sectors are: Energy, Manufacturing, Transport, Agriculture, Waste and Industrial process

## Most emissions in SA are energy-related



Share of national emissions, CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, 1994 GHG inventory

## Most mitigation options relate to energy

- Energy
  - change fuel mix: renewable energy, switching from coal to gas; demand side management; more efficient power plants and syn-fuel production; etc.
- Industry
  - switching fuels - coal to gas for boilers; more efficient energy use; more efficient industrial processes, efficient motors; etc.
- Transport
  - more efficient cars and trucks, switching fuel to compressed natural gas, switching from cars to bus & trains, multi-occupancy lanes, fuel tax, etc.

## **Non energy related sectors**

- Residential & commercial buildings
  - energy efficiency; efficient lighting, orientation and passive solar design, insulation, solar water heaters, appliance labelling
- Land use, agriculture & forestry
  - sequestration of carbon in vegetation; managing forests and croplands sustainably; minimum tillage agriculture
  - questions of permanence, leakage, sustainability, accounting
- Coal mining
  - using discard coal, washing coal, drain methane
- Waste
  - landfill methane; recycling; solid waste reduction

## **Institutional Framework Status**

- CDM Secretariat will be located at DME
- The DNA steering committee will be constituted by the following government departments with DME chairing:
  - The dti
  - DFA
  - DEAT
  - DoT
  - DST
  - DWAF

## **Requirements for participation in the CDM**

- *Ratification*: ratification of the Kyoto Protocol.
- *Designated National Authority*: the establishment of a Designated National Authority for CDM purposes; and.
- *Written approval*: the Protocol requires voluntary participation in the CDM and the approval of the host country that each CDM project assists in achieving sustainable development in the host country.

## **Proposed Functions of the CDM Secretariat**

- Screening- Primary & secondary
- Administrative arrangements for the Steering Committee
- Tracking and Reporting
- Promotional activities
- Marketing a portfolio of projects
- Review Legal Framework

## Screening

- **Primary-** determine if the data and information necessary to carry out a full evaluation of the proposed project is contained within the submitted documentation
- **Secondary-** designed to determine if the project should, in fact, be approved as a sustainable development project eligible for the CDM. Requires technical evaluation

## Administrative arrangements for the Steering Committee

- The Secretariat will prepare projects proposals for the steering committee meeting
- Advise project participants of the outcomes of the evaluation process
- Communicate this information to the CDM executive board
- Liaise with stakeholders
- Place the projects on the website for stakeholder comments
- Integrate these comments for the Committee meeting



## **Promotional Activities**

- Facilitate the use of the CDM and reduce transactions costs of CDM projects
- Improve the chances of South Africa receiving a favourable market share of the international CDM project market.
- Promote those CDM projects which are most favourable to South Africa from the perspective of poverty alleviation, technology transfer, environmental improvement, renewable energy, or other elements of sustainable development.

## **Supporting Activities for an Effective CDM in South Africa**

- Support South Africa's participation in international negotiations
- Information provision and awareness raising
- Project portfolio development and marketing
- Project development
- Investor relations
- Project facilitation and support
- Baseline support
- Bundling of projects

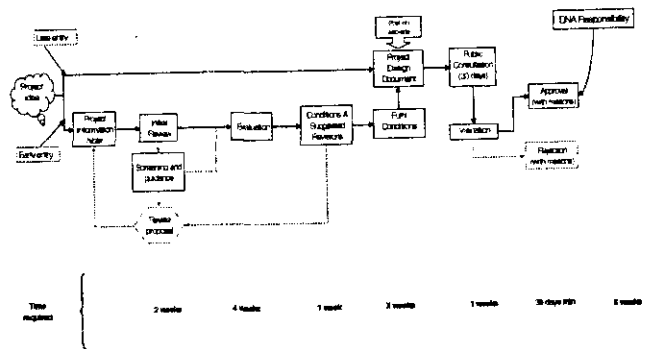
**Table 1. Proposed Sustainable Development Criteria for Project Approval**

Criteria	Indicator
<b>Environmental impacts</b>	
§ Air quality changes in terms of priority pollutants § Water quality changes in terms of priority pollutants § Other impacts (eg. noise, safety, property value, visual impacts, traffic)	§ Air quality changes in terms of priority pollutants § Water quality changes in terms of priority pollutants § Other impacts (eg. noise, safety, property value, visual impacts, traffic)
Change in usage of natural resources	§ Change in usage of water, fuel or other non-renewable natural resources
Biodiversity impacts	§ Changes to local and regional biodiversity

<b>Economic impacts</b>	
Macroeconomic impacts	§ Balance of payment impacts (increase or decrease in foreign exchange requirements)
Appropriate technology transfer	§ Cleaner technologies to be used in the project (from international or local sources) § Technological skills to be transferred and future self reliance of project § Previous successful application of the technology § Is technology appropriate to South Africa § Does project provide demonstration and replication potential

Social impacts	
Alignment with national, provincial and local development priorities	§ General assessment against available policies and plans
Social equity and poverty alleviation	§ Job creation (number of jobs created/destroyed, duration of time employed, distribution of employment opportunities, types of employment, categories of people to be employed in terms of gender and racial equity) § Local economic development impacts § Whether project location has particular developmental needs § Distribution of project benefits
General Criteria	
General project acceptability	§ Frivolous projects; § Projects clearly unlikely to succeed; § Grossly unfair distribution of benefits from the project

### Draft process



## Conclusions

- SA has established a CDM office – the DNA
- Sustainable Development indicators an ongoing process
- Promotion from government will be based on sectoral studies/surveys
- Emphasis will be on industrial projects



## Resume

Stefan Raubenheimer

### **Involvement in Climate Change and the Clean Development Mechanism**

Formed the SouthSouthNorth project in 1999 with Steve Thorne and Professor Emilio la Rovere of University of Rio de Janeiro (COPPE), Brazil. Built organisation with funding from Department Foreign Affairs Government of Netherlands to a network including COPPE in Brazil, BCAS in Bangladesh, Pelangi in Indonesia, Krysalis in South Africa, and HELIO International in Paris. SouthSouthNorth was formed to develop a number of CDM projects in the four countries of operation with project developers, and through the projects to build capacity and conduct an early testing of CDM host country processes. SSN is also helping to set up the DNA's in these four countries. SSN is non-profit. See [www.southsouthnorth.org](http://www.southsouthnorth.org)

In South Africa, SSN is developing 2 projects with Mondi, two with City of Cape Town, and one with Stellenbosch Municipality.

Stefan Raubenheimer and Steve Thorne also practice as energy and climate consultants through Energy Transformations cc, and have delivered numerous training courses and interventions in the CDM in South Africa and beyond.

Stefan Raubenheimer has been extensively involved in the UNFCCC process from 1999. He visited Tokyo in 2003 and presented the South Africa CDM Guide and Investors Portfolio to Japanese institutions under the auspices of UNIDO Japan.

### **Qualifications and certifications:**

BA (Wits) LLB (Cape Town), Attorney (non-practicing), Arbitrator: AMSSA, Mediator: AMSSA, Facilitator: AMSSA



# UNIDO AAITPC CDM Workshop: Options for Project Developers and Investors/Purchasers of CER's



## What are the options for project developers?

- PD's are interested in project finance
- In some cases in technology, but not all
- In some cases can self-develop their project
- In many cases need confidence in the CDM idea



## What are the options for investor/purchasers

- To go it alone, in funds, or through brokers
- To look for technology and investment projects and form joint ventures
- To buy forward through ERPA's
- To buy through DPA's



## How do we get the two groups to dance together?

- Knowledge on both sides
- Networks
- Bilateral linkages
- Unilateral opportunities
- Project finance



## Let's use two project examples:

- Landfill gas
- Low hanging fruit
- Very popular
- Good finances
- Still lots of institutional risk
- Housing
- High hanging fruit
- Not popular
- Not great finances
- Huge benefits

## Kayasa Housing Retrofit



*(5500 t CO<sub>2</sub>/annum/project activity reduced and avoided)*

- *Baseline study completed and forwarded to Meth. Panel for verification (Suppressed Demand: Crediting of avoided emissions due to poverty)*
- *PDD Completed*
- *Public Participation Completed*
- *EIA not required*
- *Feasibility Assessment underway*

	Solar Water Heaters	Ceilings & Roof Insulation	CFLs	TOTAL
Emissions Avoided (ton of CO <sub>2</sub> /hh/ye ar)	1.1	1.1	0.2	2.4
Energy Savings in Rand	192	385	50	627



*Marketing of carbon reductions at current pricing levels, i.e \$5/ton = Approximately R40/t, ⇒ R 2016/household and approximately R4.6 million for the 2309 houses over a period of 21 years.*



Emissions avoided range between 125 000 to 128 000 tonnes CO<sub>2</sub>/year

- Baseline Study completed
- PDD completed
- EIA must be undertaken by the entity undertaking the sale and extraction of gas (not project participant)
- Public participation linked to EIA process.
- Feasibility Study completed and validation thereof to be undertaken
- In order to comply with legislation (baseline) the City requires R 50m



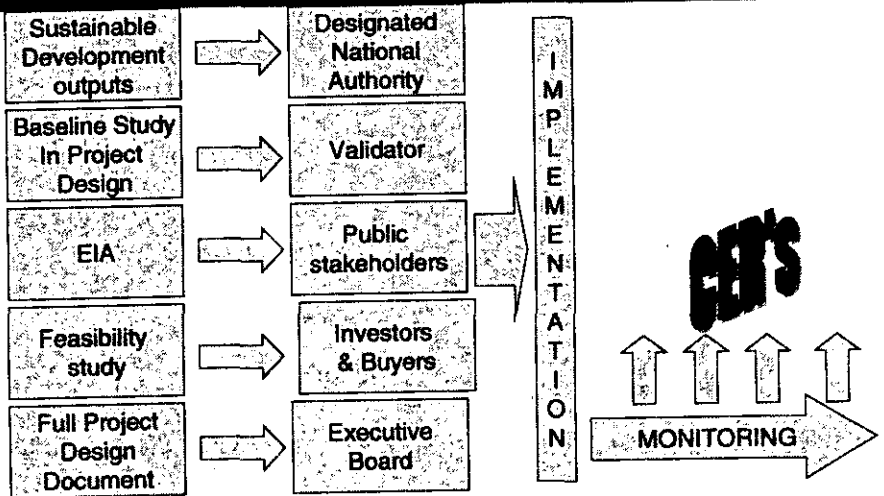
	Baseline	Project Activity
Capital Cost	R 48m	R 68m
Operating Cost	R 8m	R 37m
Income	-	R 252M
Discounted cashflow after CERs (at 15% p.a.)	-	R43m
IRR (pre-tax)	-	30% (gas sales only) 45% (CDM+gas sales)

**Financial Viability: Key Variables**

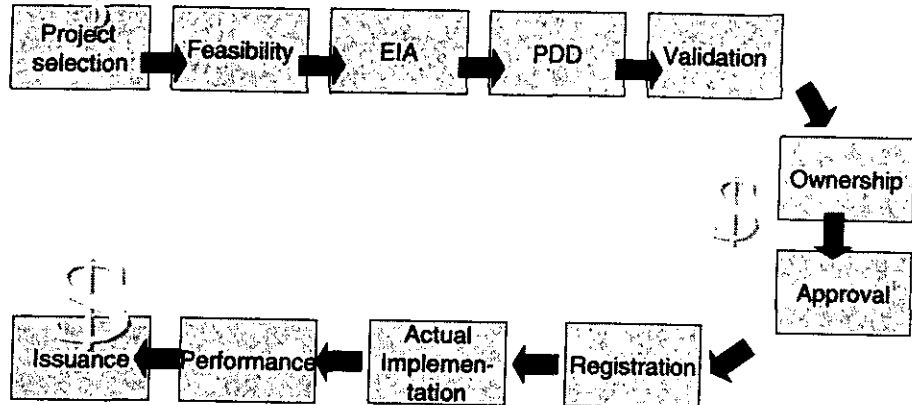
- Extraction/capture rate of projected gas
- Extent to which the extracted gas is provided to proposed end user, and
- Price paid by the proposed end-user for the projected gas, based on equivalent energy substitute price

**Sensitivity Testing**

- 80% extraction rate, 70% Delivery rate, 80% equiv energy price = 22% IRR (pre-CERs)
- 80% extraction rate, 90% Delivery rate, 80% equiv energy price = 37% IRR (pre-CERs)



## Stages of risk



## Select and understand the transaction alternatives:

### UNILATERAL

- Is Japan in the market to purchase CER's?
- ERPA's and DPA's
- What prices?
- What risks?
- The future....

### BILATERAL

- Which partnerships should be formed?
- Based on technology?
- Costs and subsidies?
- What's in it for SA?
- How to find a partner?



## Technology transfer in bilateral projects

- Need a constant exchange of information
- Good mutual understanding of where the opportunities lie
- Mutual understanding of the CDM rules
- Leverage the Japanese subsidies



## Transaction of the Project...



get an investor ..... or ..... finance it and sell

- PCF
- CERUPT
- Danes?
- Brokers
- Pros and cons
- In house financing
- Sell credits forward
- Sell credits on issuance
- Pros and cons

**bilateral**

**unilateral**





## Resume

Sandra Greiner

Sandra Greiner, born in 1970 in Hamburg, Germany, is an economist who has worked and published in the fields of climate policy and sustainable development since 1996. Her present occupation is with the Carbon Finance Business Unit of the World Bank (formerly known as Prototype Carbon Fund) where she is a member of the quality assurance team and contributes to the development of baseline and monitoring methodologies for CDM and JI projects. She also coordinates CDM projects in the South Asia region and is frequently involved in training activities for project developers and host country officials. Before joining the World Bank, she has been employed by the Hamburg Institute of International Economics (HWWA) and has worked as a researcher in the field of international climate policy, focusing on the emerging guidelines for JI and CDM as well as on German and European climate policy. During that time, she has also worked as climate policy consultant for Volkswagen, GTZ and the Technology Assessment Office of the German Parliament. Preceding that occupation, she has worked as a research assistant at Hamburg University, teaching economics of public goods and sustainable development. In 2002, she received a Ph.D. from the Department of Economics of Hamburg University.

**AAITPC Project: CDM Workshop**

**CER Buyer's Perspective and Alternatives  
in Financing CDM projects**

**Sandra Greiner**

[Sgreiner@worldbank.org](mailto:Sgreiner@worldbank.org)

Johannesburg, 13-14 November 2003

1

**Overview of today's  
Carbon Market**

2

## Carbon Market Drivers

- Regulations constraining carbon emissions are being developed
  - UNFCCC and the Kyoto Protocol
  - Regional initiatives (EU-wide trading)
  - National policies (UK, The Netherlands, etc.)
  - Sub-national regulations (e.g. some US States)
- Some firms are taking voluntary emission commitments due to shareholder pressure

3

## Volumes in Kyoto w/o the US

Gross annual demand for ERs between 2008 and 2012 1400 – 2400 MtCO<sub>2</sub>e

- Credits for *hot air* 950 – 2150 MtCO<sub>2</sub>e

- Credits for Annex B Sinks 330 MtCO<sub>2</sub>e

---

= Net demand 0 – 1800 MtCO<sub>2</sub>e

**World Bank Assessment is that about 600MtCO<sub>2</sub>e would come from project based mechanism**

*Based on UNFCCC Technical Paper 2001/01 "Comparison of emission projections" and in-house analysis.*

## Demand from EU Emission Trading (ETS)

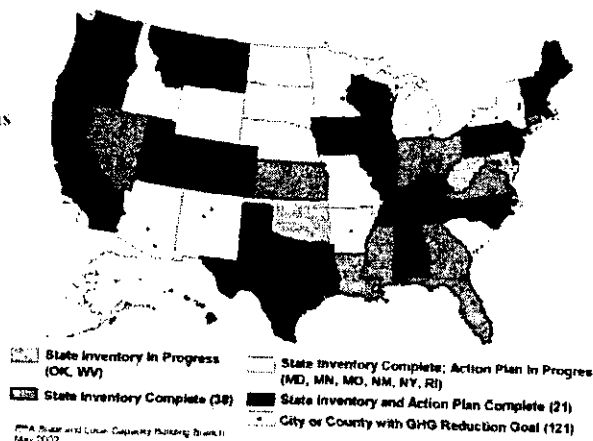
- As of 2005, Cap-and-Trade system covering 10,000 installations in the EU
- Allowance based system
- JI and CDM credits allowed under Linking Directive
  - from 2008 onwards
  - Exclusion of nuclear, large hydro and of LULUCF during pilot phase
  - A cap may be introduced if credits exceed 6% of total allowances (~500 Mt CO<sub>2</sub>e)

5

## State level initiatives in the US

- Reducing GHG intensity
  - 27 states - GHG action plans
    - » voluntary programs
    - » state incentives
    - » R&D on energy technologies

- Improving record keeping:
  - 40 states GHG inventories
  - 5+ states GHG registries



## State level initiatives in the US (2)

- ◆ GHG reduction goals (e.g., New York: 5% < 1990 by 2010)
- ◆ New England Governors (with Eastern Canadian Premiers) Climate Action Plan
  - Goal: Reduce to 1990 emissions by 2010
  - Multiple activities, including reduction goals, regional registry, emissions trading
- ◆ Electricity emissions disclosure (>15 states)
- ◆ Renewable portfolio standards (~ 11 states)

7

## Some existing buyers in the CDM/JI market

- World Bank Carbon Funds: ~ 300M USD
- Dutch Government: ERUPT, CERUPT (closed)
- Rabo Bank (10 Mt CERs), CAF (40 M USD), IFC (44 M Euro) for Dutch government
- Finnish CDM/JI Pilot programme: 20M Euro
- Swedish Energy Agency: small JI (open) and CDM (closed) tenders
- Private companies (electric companies)

8



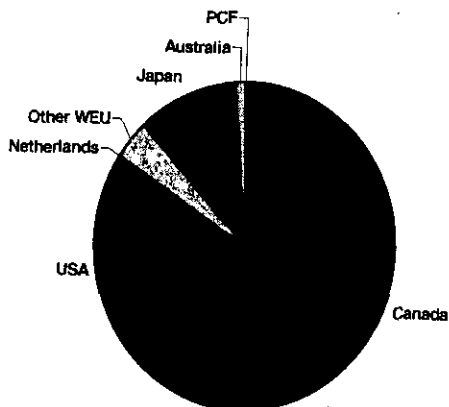
## In design/capitalization phase

- GG Cap (Natsource): operational 2004, target volume 200M USD
- KfW Fund: operational second half 2004, target volume 50-100M Euro
- Danish government announcement: 27M Euros annually for JI/CDM between 2004-2007
- Spanish Carbon Fund (CO<sub>2</sub>e, CO<sub>2</sub> Spain): volume unclear
- Austrian tender
- Japanese Carbon Fund

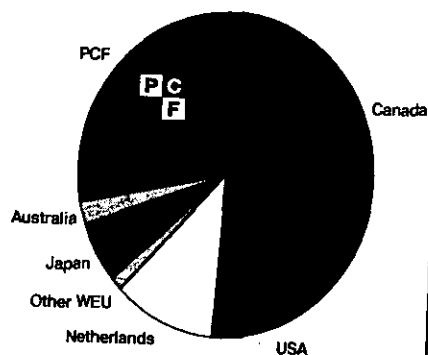
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## Current market shares (buyers)

1996-2000



2001-2002



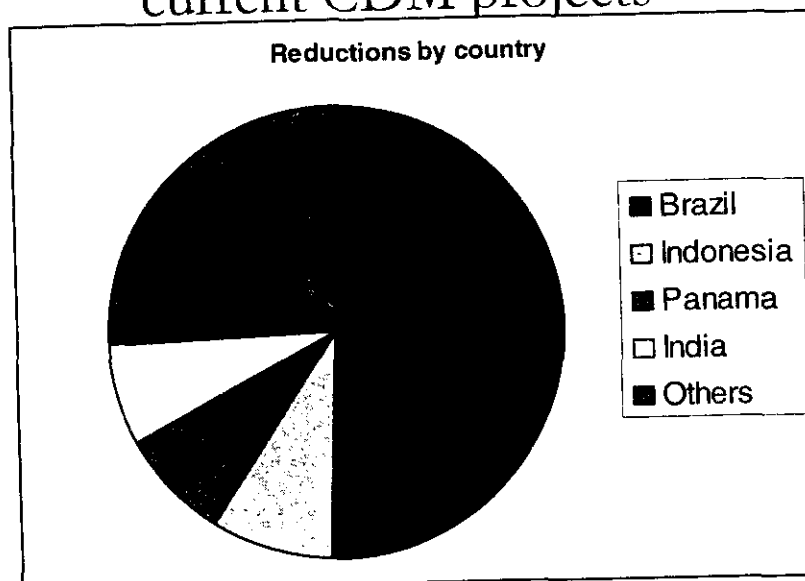
10

Source: WB internal calculation, based on transaction database assembled with Natsource, Co2e.com and PointCarbon

## Demand for CDM Emission Reduction

Country	Total planned CER purchase, 1st Kyoto commitment period (2008-12)
Austria	20-30 MtCO <sub>2</sub> e (JI&CDM)
Canada	50 MtCO <sub>2</sub> e (CDM, JI and ET)
Denmark	6.25MtCO <sub>2</sub> e, but ≈ € 120 million to be invested in JI/CDM -2007
EU	400-600MtCO <sub>2</sub> e But depends on linking directive
Italy	At least 60MtCO <sub>2</sub> e (JI&CDM)
Japan	At least 95MtCO <sub>2</sub> e (JI&CDM)
Netherlands	67MtCO <sub>2</sub> e

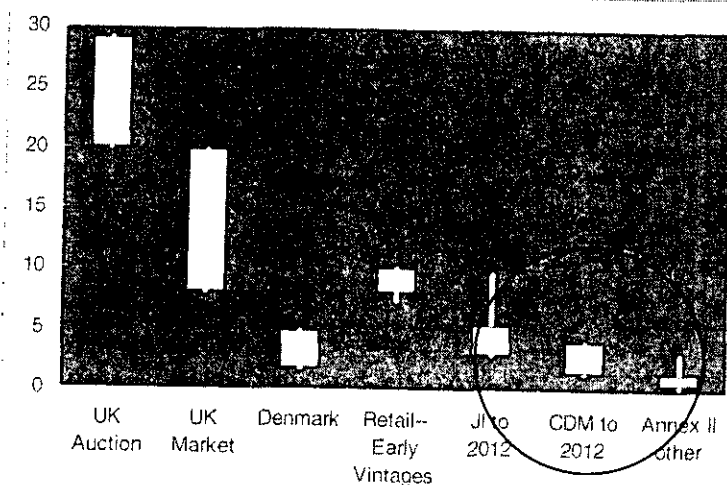
## Sources of Emission Reduction current CDM projects



## Key characteristics of the C market

- **Still overwhelmingly project-based** (national allowances < 3% total volume), but allowance trading is growing.
- **Primarily intra OECD** (2/3 volume), but share of projects out of OECD increasing (nearly 50% recent transactions).
- Since 1996, **211 transactions recorded for 160 MtCO<sub>2</sub>e exchanged** (228 MtCO<sub>2</sub>e including post 2012 vintages).
- Based on limited price information, **total value of market** so far could be in the range of **\$350m-\$500m**.
- **Regulations (but not only Kyoto) still main driver of C market**. Other drivers emerging, e.g. voluntary commitments by firms.
- **Activity has increased significantly since Marrakesh** (at least 21 MtCO<sub>2</sub>e exchanged in Q1-Q2 2002) <sup>13</sup>

## Carbon Prices

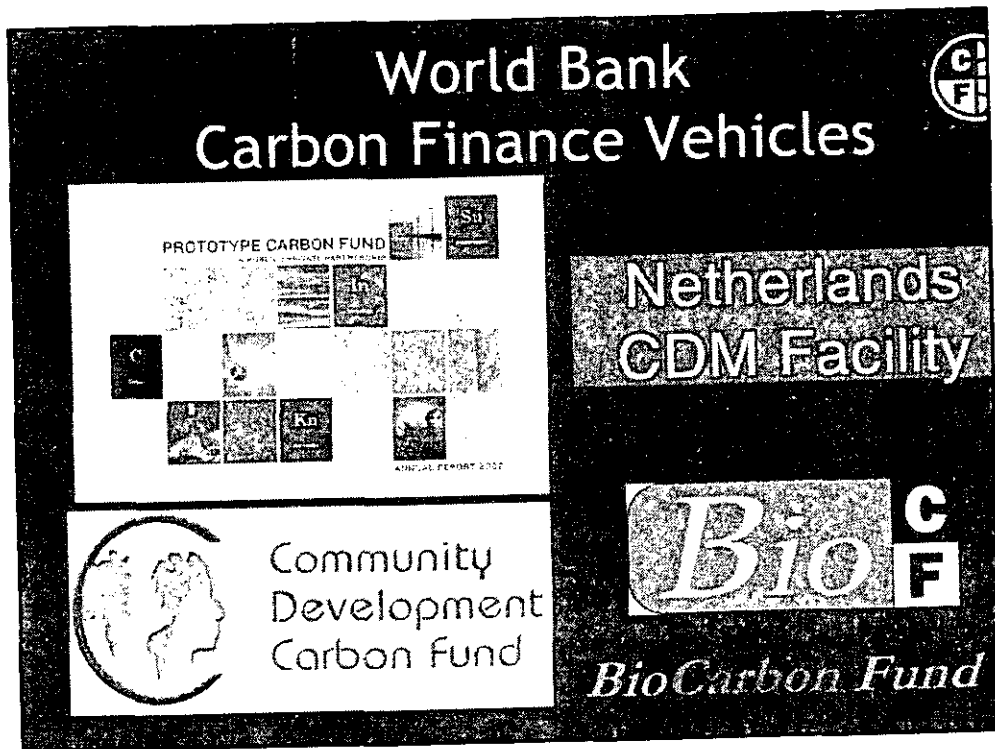


<sup>14</sup>  
*Source: PCF estimates, based on database assembled with Natsource, Co2e.com and PointCarbon*

# The World Bank in the Carbon Market

15

## World Bank Carbon Finance Vehicles



The graphic features a dark background with several logos and text elements. At the top right is the World Bank logo. Below it, the title 'World Bank Carbon Finance Vehicles' is written in white. On the left, there is a collage of documents, including one titled 'PROTOTYPE CARBON FUND' and another 'ANNUAL REPORT 2002'. In the center, the text 'Netherlands CDM Facility' is displayed. At the bottom left, there is a logo for the 'Community Development Carbon Fund' featuring a globe and a person's profile. At the bottom right, the 'BioCarbon Fund' logo is shown, with 'Bio' in a stylized font and 'C F' in a box.

PROTOTYPE CARBON FUND

ANNUAL REPORT 2002

Netherlands CDM Facility

Community Development Carbon Fund

Bio C F  
BioCarbon Fund

## World Bank Carbon Business at a Glance

- PCF: \$180m funding—17 private + 6 OECD Govts
- NCDF: ~Euro 95m funding
- CDCF - \$30m now, \$70m by end 2003
- BioCF – to Board now; operational Feb 2004
- OECD Country Funds – Italy, Spain in negotiations, and possibly 2-3 others
- TA facilities:
  - PCF-plus at \$1.5 mm per year
  - CDCF+ at \$1.2+ million per year

17

## CDCF and BioCF

### Community Development Carbon Fund (CDCF)

- CF to small-scale projects (SSc def., but >30,000 tCER/y)
- Generate high-value ERs (contract prices: \$4-5t/CO<sub>2</sub>e)
- "Development + Carbon": project has measurable community benefits
- CDM countries only
- At least 25% in LDC countries
- Multiple tranches

### BioCarbon Fund

- CF to agricultural, forestry, and land use
- Generate cost-effective ERs (contract prices: \$3-4/tCO<sub>2</sub>e)
- Carbon + biodiversity cons., fight against desertification, reduction in rural poverty
- CDM and JI
- Learn-by-doing prototype

## World Bank Carbon Finance Capacity Building Vehicles

- CF-Assist Program
  - Support for host country institution building
- Parallel TA Facilities to Carbon Funds
  - Project related support, e.g. feasibility studies
  - Training activities
  - PCF*plus* for PCF
  - CDCF*plus* for CDCF
  - BioCF*plus* for BioCF

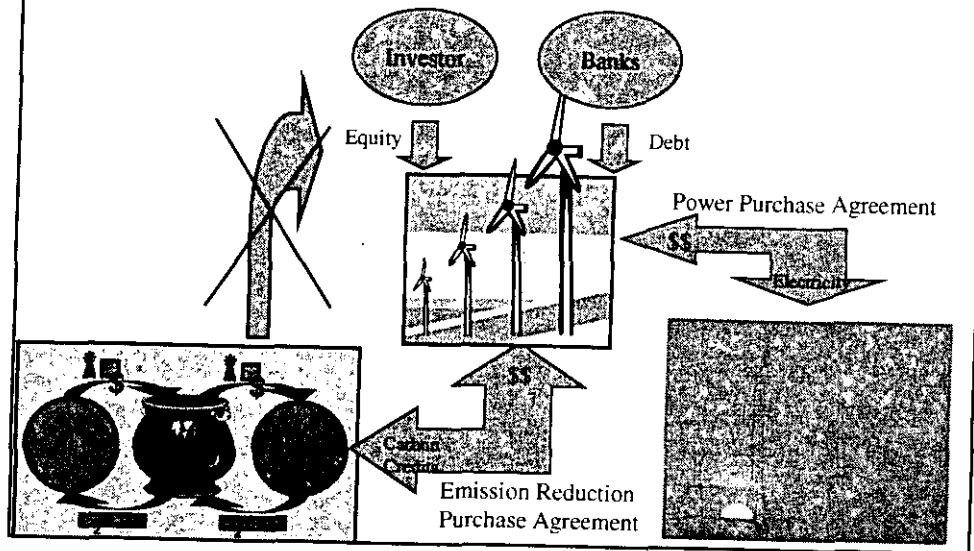
} About \$2.7  
million per  
year

19

## Contracting for Carbon: the PCF experience

20

## Nature of Carbon Financing Contract



## Pricing of Emission Reductions

- Price range offered depends on the
  - Legal jurisdiction of the ER
    - Kyoto Protocol, EU trading system, domestic trading systems such as those in UK or Denmark or the voluntary market
  - Price signal in the market for the jurisdiction
  - Willingness to pay of the buyers
- Price outcome in a project depends on risk sharing in the contracts including
  - Regulatory risk (e.g. Kyoto Protocol entry into force, eligibility of project, verification and certification)
  - Project performance and delivery risk

## Sources of Risk (1)

- **Project Risks**
  - Construction risk (built/operated on schedule?)
  - Performance risk (e.g. resource risk)
  - Counterparty risk (will offtakers pay on time?)
  - Financial and business risk (is capital structure viable, debt serviceable? Is parent company sound? Will product sell?)
- **Baseline Risk**
  - Eligibility--will ERs be Kyoto-compliant?
  - Baseline design--is the baseline robust? Will its assumptions remain valid over time?

23

## Sources of Risk (2)

- **Market/Price Risk**
    - Will there be a market for project-based ERs?
    - Will contract price exceed market price?
  - **Policy/Compliance Risk**
    - What if no Kyoto Protocol?
    - What if host country does not ratify or comply?
- ⇒ Market and Policy Risk are closely linked

24



## Assigning Risk

General Principle of Project Finance: allocate risks to the parties with the greatest ability and incentive to manage it. So:

- Sponsor bears:
  - *most project risks*
- PCF bears:
  - **baseline risk**
  - **market/price risk**
  - **policy/compliance risk**
  - *limited project risk*
- Overall: price offered depends on the risk to PCF <sup>25</sup>

## PCF Carbon Prices

Uganda small hydro (5&1.5 MW) remote area	\$3.00
Chile: 25 MW hydro run-of-river	\$3.50 [+option]
Brazil sustainable charcoal replacing coal/coke	\$3.50
Poland District Heating Fuel Switch – Coal to Geothermal and Biomass	\$3.50
C. America small wind/hydro	\$3.50
Romania Afforestation	\$3.60 [+option]
Colombia wind farm	\$3.50 + 0.5
South Africa Durban waste management	\$3.75 + 0.2
Czech small-scale energy efficiency	\$4.00

## Impact of Carbon Finance on Project Financial Rate of Return

Technology	$\Delta$ IRR
Hydro, Wind, Geothermal	0.8-2.6
Methane Kick	
Crop/Forest Residues	3-7
Municipal Solid Waste	5-10+

- Revolution in Solid Waste Management
- Important impact on small-holder crop-processors and animal production

27

## Marcos Castro Rodríguez



In charge of the Direction of the National Clean Development Mechanism Promotion Office CORDELIM, at the Ministry of the Environment in Ecuador, Quito-Ecuador. Including technical coordination for planning and execution of two programs for institutional enhancement and national CDM capacity development, financed by international cooperation (Latin-American Carbon Program/CAF and Risø Laboratory/UNEP). He works also for the Ministry of the Environment as a Consultant for the Power and Communications Sectors Modernization Project PROMEC (National Council for Modernization - CONAM - & the World Bank). Advisor for environmental issues handled by PROMEC, including assistance on the execution of GEF/Climate Change components. He offered his assistance on several institutional arrangements and capacity building for the national participation in the carbon international market. Co-responsible of institutional arrangements for Climate Change management in Ecuador: National policy advisor on climate negotiation. Negotiator on the following topics: "Flexibility Mechanisms" and "Landuse, landuse changes and forestry activities". He has published and translated several papers and articles related to the Clean Development Mechanism for some organizations such as the Interamerican Development Bank (IDB).  
\* *Main publication*: "The functions of CDM National Authorities". Co-author. Included in "Establishing National Authorities for the CDM", Christiana Figueres, editor. 2001. CSDA/Climate Change Knowledge Network/International Institute for Sustainable Development.

Elaboration of Guides for CDM projects formulation in prioritized sectors". Co-author and editor of the mentioned guides for CORDELIM, supported by CAF and Risø/UNEP. Magazine articles, Project CD4CDM, Risø/UNEP Centre - 2002, among others.

# “What are requirements to host CDM projects as a country?”

Module #5  
UNIDO-AAITPC Workshop on CDM  
Johannesburg, 13-14 November 2003



Marcos Castro R.  
Oficina Ecuatoriana de Promoción del MDL  
mcastro@ambiente.gov.ec , mcastro@cordeim.net

## Overview

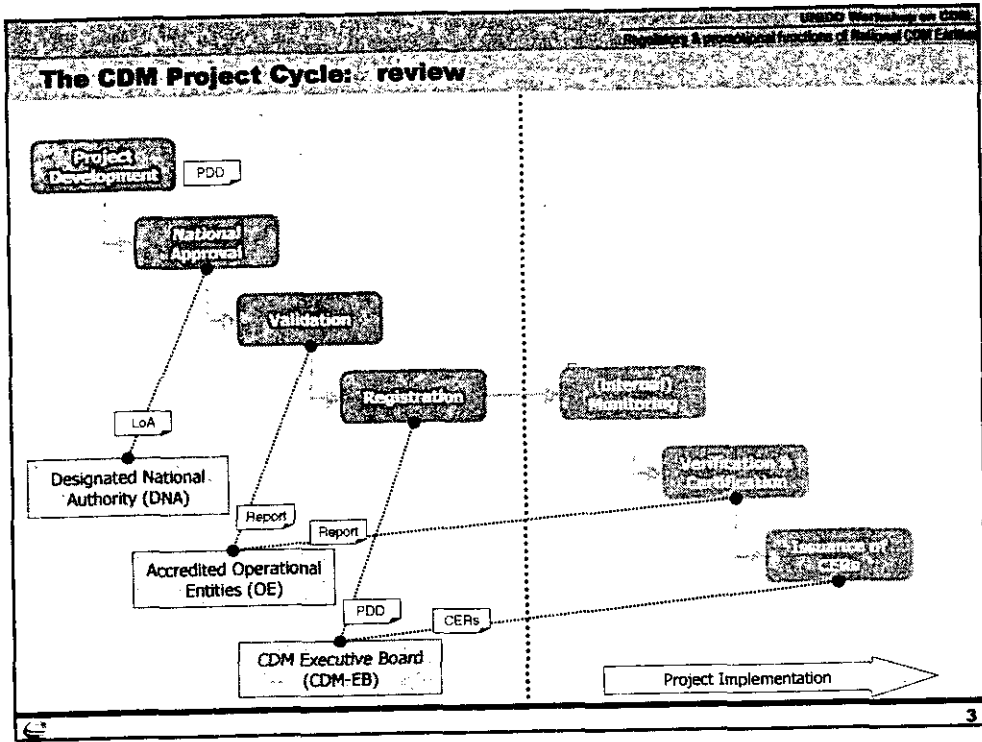
CDM project cycle

Requirements to host CDM projects & regulatory functions of the DNA

Promotional functions of a national CDM entity

Institutional arrangements for the CDM in some countries

*Conclusions & discussion*



**Regulatory functions:  
establishment of the DNA**

### Participation requirements

As established in UNFCCC decision 17/CP.7 on "Modalities & Procedures for a Clean Development Mechanism" (= CDM-M&P)

#### Host country participation requirements (=non-Annex I Party) :

1. Party to the Kyoto Protocol
2. Designation of a CDM National Authority (=DNA)

For a particular CDM project activity: project participants need written confirmation of the DNA regarding...

1. Participation on a voluntary basis
2. Project activity assists the host Party in achieving sustainable development  
(→ scope of "Letter of Approval/LoA"?)

### Functions of a Designated CDM National Authority (DNA)

- Participation of any developing country in the CDM requires establishment of a DNA.
- DNA must perform key **regulatory** functions at the national level, in order to enable international validation & registration of local CDM projects.
- Legal nature & structure chosen for DNA may vary, according to national circumstances.

Functions, explicitly requested by the CDM-M&P:

- Evaluation and national approval of project proposals

Functions, implicit in the CDM project cycle:

- National registry and follow-up of (1) approved project proposals during validation and of (2) registered projects along its implementation (accreditation period)

Other activities, inter alia:

- national CDM focal point for UNFCCC negotiating process (evolving rules & modalities under CDM-EB, SBSTA, etc.)

### Evaluation & National Approval (1)

Evaluation & approval process **must** assess whether:

- Participation of national stakeholders is voluntary.
- Project contributes in achieving sustainable development.
  - Establish national criteria for project approval
  - Develop either additional sections to the PDD or design an additional project presentation format (for the purposes of national approval).



Evaluation & approval process **may/should** assess/review whether:

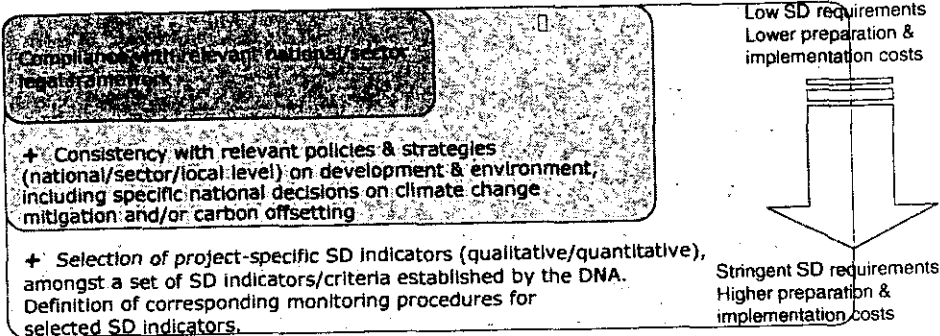
- Project will comply with CDM-M&P related to carbon certification (= will result in "real, measurable, long-term and additional emissions reductions").
  - Review of PDD, including baseline & monitoring information, and submission of recommendations/comments to project participants.
  - DNA **does not validate** projects (for registration under the CDM)

### Evaluation & National Approval (2)

A project's contribution to sustainable development?

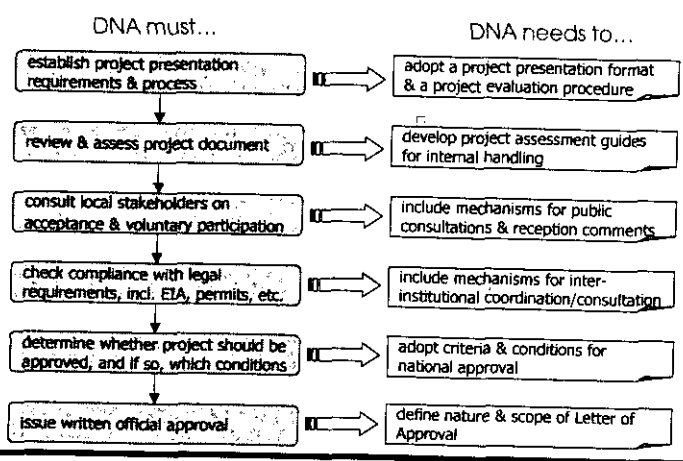
It is the host country's prerogative to define nature & scope of SD assessment, according to national circumstances & priorities, keeping in mind international credibility & commitment with global SD goals.

Diverse scope of SD assessment:



### Evaluation & National Approval (3)

DNA needs to develop efficient, transparent and consistent procedures & tools for project evaluation & approval, keeping in mind the CDM M&P (int'l CDM project cycle, PDD requirements, etc.)



### National Registration & Follow-up (1)

**Short-term follow-up:** tracking of approved projects during next steps of independent validation and registration under CDM-EB.

- professional activities of operational entities in host countries
- review of validation report, inter alia regarding information of national circumstances & scenarios; consistency of applied validated baseline & monitoring methodologies
- fulfillment of approval conditions, once project is validated & registered
- official statements on project proposal during public comments phase, particularly if critical review requests are submitted
- "political" support to approved projects, particularly important during early stages of CDM



### National Registration & Follow-up (2)

**Long-term follow-up:** basic surveillance of implemented CDM projects along crediting period.

- gathering together *relevant information* generated by hosted projects → depending on scope of control: annual reports, internal monitoring protocols, verification/certification reports, others.
- fulfillment of approval conditions during project implementation: emission reduction targets, sustainable development goals (→ performance of SD indicators?)
- fulfillment of validation conditions during project implementation: emission reduction targets (→ anticipate problems & risks for CER deliverance according to ERPAs?)
- registering & tracking the holding and transfer of CERs generated in hosted CDM projects → adjust national system in line with accounting system of CDM-Registry
- annual/periodic reporting to the UNFCCC Secretariat and other requests of CDM-EB
- others

### Promotional functions

### Promotional functions of a national CDM Office

- Optional promotional functions can be performed at the national level, in order to enable and enhance participation of national stakeholders under the CDM.
- These optional functions have no international regulations and will respond to national circumstances & priorities.
- As such, institutional arrangements for performing promotion activities should be designed to best fit the country's needs.

Optional promotional functions include inter alia:

- Information dissemination
- Capacity building
- Technical assistance for project development & marketing
- "think-tank": generation and recommendation of policies & measures for addressing barriers to CDM project implementation

### Information dissemination & Capacity building (1)

Broad line of action:

- *Different target groups*: private project developers; investors & financiers; national & local governments; NGOs & indigenous groups; policy-makers; academic sector; etc.
- *Different sectors* (= GHG mitigation options): power supply & demand; transport; waste management; land use & forestry; agriculture; etc.
- *General themes*: CDM & carbon market; climate change & sustainable development; environmental services; urban/rural development; etc.
- *Specific themes* related to project development & implementation : carbon management issues; financial & marketing issues; legal issues; etc.
- *Different tools*: workshops & courses; guides & other specific publications; web site & other internet resources; etc.

→ **therefore**: build alliances & prioritize goals!

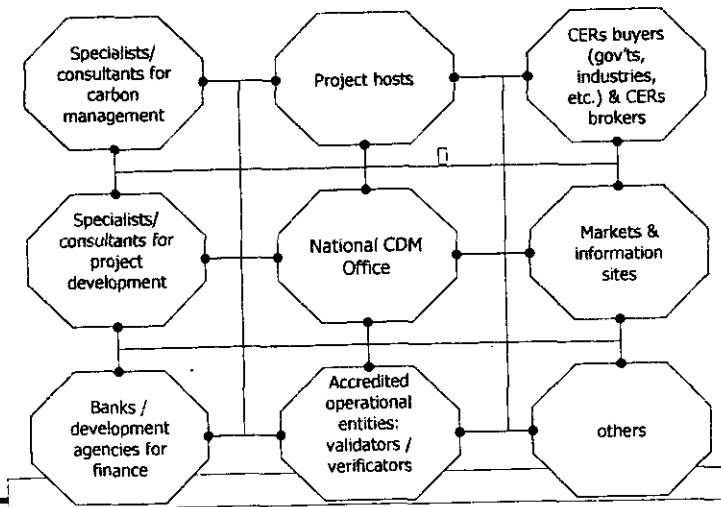
### Assistance for project development & marketing

CDM Promotion Office must address project developers needs:

- > Technical issues: carbon management
  - > Identification & feasibility; eligibility for the CDM
  - > Baseline determination & other additionality issues
  - > Emissions reduction quantification
  - > Monitoring procedures; etc.
- > Finance & legal issues
  - > Financial assessment: project performance with & without CERs incomes?
  - > Advise for pre-investment & investment procurement
  - > Technical/legal advise on ERPA negotiation ("emission reductions purchase agreement"); etc.
- > Marketing
  - > Global carbon market knowledge: buyers & sellers
  - > Management of a high-quality project portfolio, etc.
- > Others

### Assistance for project development & marketing (2)

**Key function of CDM Office:** build network of specialists & institutions, in order to develop the carbon market in the country. *Size expectations: no need & not possible to have all required skills in place.*



### Think-tank: policies & measures

Under the umbrella of (a sort of) a national strategy for the CDM, a CDM promotion office may perform/arrange key assessments and recommend policies & measures in order to:

- Identify carbon offset options in different sectors
- Develop "high-standards" CDM project portfolio
  - Methodological guidance on additionality & monitoring
  - Contribution to sustainable development
- Address barriers for project development, negotiation & implementation
  - Mechanisms for pre-investment/investment allocation
  - Legal & tax issues
  - Risk management, etc.
- Maximize benefits for national stakeholders
  - Pricing, brokerage, supply regulations, etc.

### Institutional arrangements

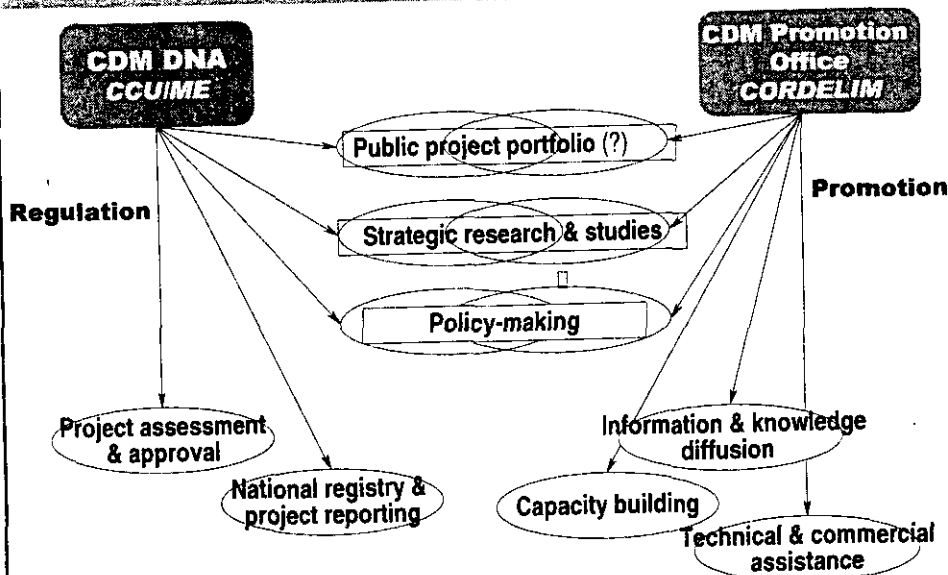
### Institutional arrangements: challenges

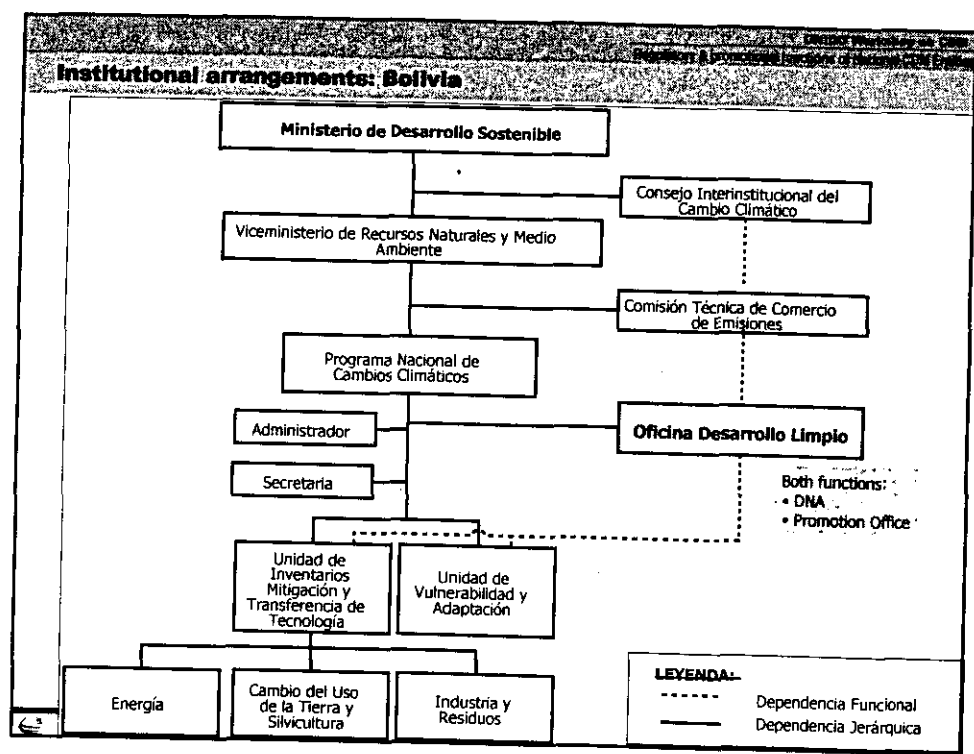
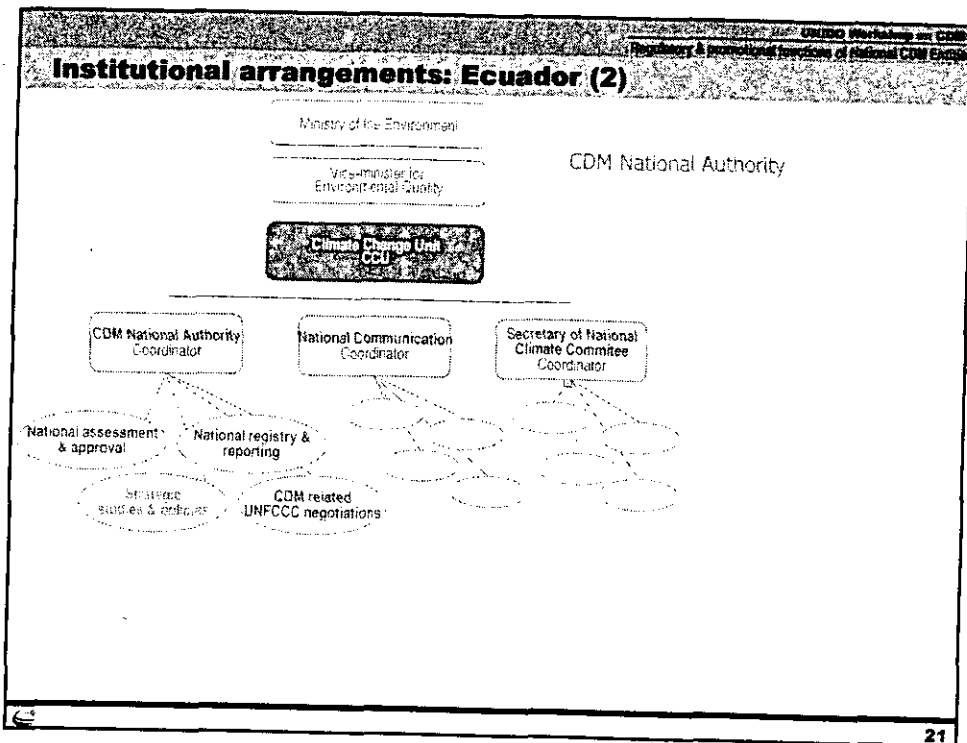
- Different approaches are possible for establishing a country's institutional framework for enabling and promoting participation of national stakeholders in the CDM.
- The selected scheme has rather to respond to national needs & to availability of resources.

When defining the institutional framework, key factors to take into account include:

- Awareness raising
- Political willingness/support
- Consensus of institutional stakeholders
- Sectoral coordination
- Leadership: choice of organizational structure
- Priorities: short- and long-term objectives

### Institutional arrangements: Ecuador

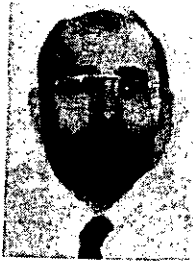




## **Institutional arrangements: some conclusions**

0

**Thank you  
for your kind attention!**



## Resume

Guillermo Jimenez



Mr. Guillermo Jimenez currently holds the position of Head of the Climate Change Unit in the Multilateral Environmental Agreements Branch at the United Nations Industrial Development Organization (UNIDO).

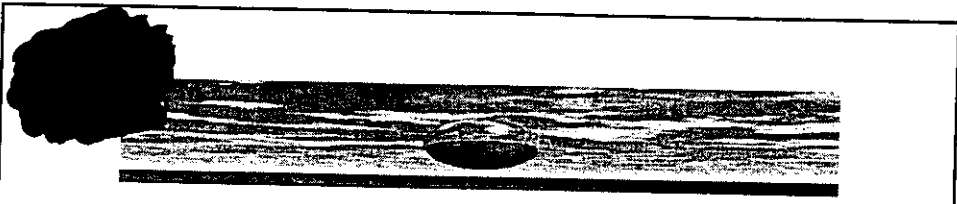
The involvement of Mr. Jimenez with energy and climate change dates back to his work in both the Spanish private and public sectors. He has also worked for several private firms in the energy and engineering area, both in Spain and as an expatriate. In UNIDO, he has worked in the climate change team, mainly in technology-transfer and capacity-building related activities. He was also involved in the organization of the joint UNIDO/MRI Forum on CDM and Kyoto Protocol, held in Tokyo June 2002.

The Climate Change team of UNIDO has been supporting its member states in issues related to the UNFCCC and the Kyoto Protocol in many ways, most notably in organizing Expert Group Meetings to conceptually contribute to the Kyoto process, as well as in building capacities for identification and formulation of JI/CDM projects, including their financial aspects, and in manuals and methodologies connected with baseline formulation for CDM and JI project proposals.

Mr. Guillermo Jimenez was born in 1958. He graduated as Ph. Mag. Eng. at the University of Comillas, as BA in Law at the Complutense University and as MBA at the Instituto de Empresa, all of them in Madrid.

Guillermo Jimenez  
Head of the Climate Change Unit  
Multilateral Environmental Agreements Branch  
UNIDO  
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Tel. 43-1-260263612  
Fax: 43-1-213463612  
email: [gjimenez@unido.org](mailto:gjimenez@unido.org)

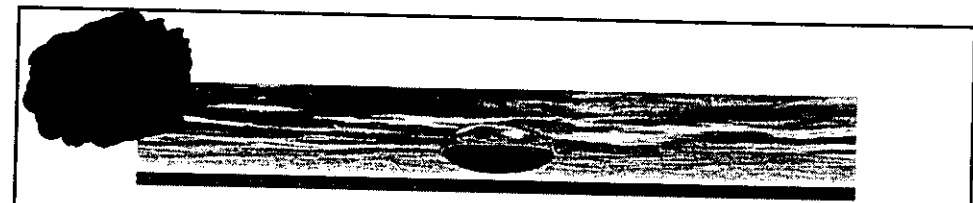




# **UNIDO & CLIMATE CHANGE**

## **A short review of activities**

*Johannesburg, November 14, 2003*



### **UNIDO's**

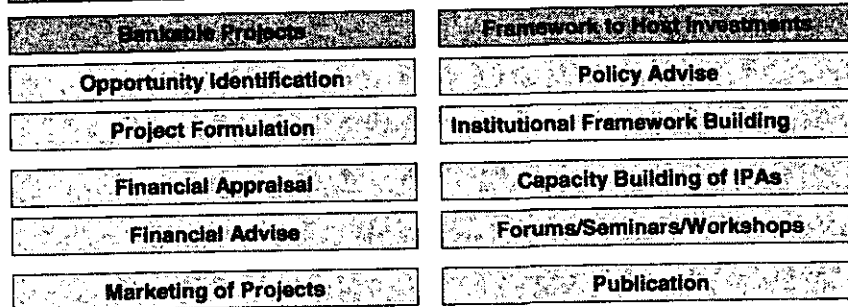
- Experience in Energy and Investment Promotion
- Climate Change Team
- Capacity Building Activities
- CDM Delegate Programme
- Summary

## UNIDO and Climate Change

- UNIDO HQ (Vienna)
  - Multilateral Environmental Agreements Branch (MEA)
  - Industrial Promotion and Technology Branch (IPT)
  - Also related expertise in areas like Agro-industries, Energy and Cleaner production, etc.

## INVESTMENT PROMOTION

### Investment Promotion and Technology Transfer



## Renewable Energy and Energy Efficiency Projects

- UNIDO has a 30 yrs. long experience in design and implementation of industrial energy projects fostering:
  - Capacity building to enable and increase local participation
  - Technology transfer and absorption, including for local assembly or manufacture of energy equipment
  - Productive and rational use of energy


## Climate Change Mitigation Activities

- CDM/JI-related capacity building
  - Baseline and Additionality Analysis & Methodologies
  - Preparation of Background studies, PINs and PDDs
  - Identification and Formulation of Projects
  - Details under <http://www.unido.org/en/doc/3941>
- Assessment of mitigation options
- Promotion of CDM/JI projects
- Conferences/workshops
- Information and networking



## Capacity Building Activities

- Developing National Capacity to Implement CDM projects in Africa (1999/2001)
  - Congo, Ghana, Kenya, Nigeria, Senegal, Tanzania, Zambia, Zimbabwe
  
- Capacity Mobilization to Enable Industrial Projects under the CDM in Nigeria (2000/2004)
  - 2 Project Idea Notes (PINs & PDDs completed with PINs accepted by the World Bank PCF)



## Capacity Building Activities

- Developing National Capacity to Implement CDM projects in ASEAN (2001)
  - Indonesia, Malaysia, Philippines, Thailand and Vietnam
  
- Engaging the private sector in Clean Development Mechanism (1999-2003)
  - Brazil and South Africa, with comprehensive CDM Investment guides:
    - Brazil: ([http://www.unido.org/file-storage/download?file\\_id=11229](http://www.unido.org/file-storage/download?file_id=11229))
    - South Africa: ([http://www.unido.org/file-storage/download?file\\_id=12074](http://www.unido.org/file-storage/download?file_id=12074))



## Industry Building Activities

- EGM "Industry & the CDM in Asia"
  - Bangkok, December 2001
  
- Forum "CDM and the Kyoto Protocol: Opportunities for Japan in Asia"
  - Tokyo, June 2002
  - UNIDO/MRI Collaboration
  - [http://www.unido.org/userfiles/PembletP/UNIDO\\_MRI\\_Report.pdf](http://www.unido.org/userfiles/PembletP/UNIDO_MRI_Report.pdf)



## Industry Building Activities

- Holistic approach to CDM/JI issues
  - Legal and Policy framework
  - Institutional structures
  - Information flow/know-how on CDM/JI
  - Financial constraints
  - Private sector involvement on CDM/JI
  - Public/private partnerships
  - Project development & promotion

## Capacity Building Activities

- Engaging the Private Sector in Clean Development Mechanism (1999-2003)
  - UNDP, UNIDO, UNCTAD, WBCSD
- CDM Forum in Tokyo (2002)
  - Encouraged private/public sector dialogue
- Climate Change Meetings for Eastern Europe and Central Asia
  - CTI/UNIDO and EGM on Industrial Energy Efficiency and Carbon Financing
  - Vienna, 27-31 October 2003

## Capacity Building Activities

- Executed under UN Interagency Project
- Invited CDM experts from Brazil and South Africa to Japan
- 1-on-1 meetings with private sector (Tokyo and Nagoya)
- Workshops and press interviews
- Projects promoted: 53 for Brazil and 21 for South Africa
- Brazil and South Africa CDM Investment Guides published

## CC-related Future Activities

- Expand Delegate Programme to other Host Countries through UNIDO's ITPO Network (i.e. Italy, France, UK), with several CDM delegates per year
- Linking Industrial Energy Efficiency and Climate Change
  - Application of CDM/JI for Industrial Energy Systems
- Increase Focus on Facilitation for Industry, project identification, formulation and promotion.

## Project-based Carbon Credits

### Objective:

To provide *the Things to know* in negotiation and drafting of contracts on sales and purchase of carbon credits, in order to help smooth the process and minimize risks

### Status:

Now under drafting and due for publication in early 2004 for nominal price



## Summary

- Host countries
  - Develop know-how and expertise for Project development & promotion
  - Promotion of Focal Points and closer linkage between government and the private sector
- Annex 1 countries
  - Information dissemination on Host countries
  - Invite experts from Host countries to meet private sector
  - Proactive project development in Host countries
  - Closer linkage between government and the private sector



## Contacts

- UNIDO Industrial Promotion and Technology Branch
    - [dliang@unido.org](mailto:dliang@unido.org)
    - [mtsukiji@unido.org](mailto:mtsukiji@unido.org)
- For more information on the Capacity Building activities of UNIDO:
- [www.unido.org/en/doc/3941](http://www.unido.org/en/doc/3941)





## Resume

Masato Tsukiji

Based in Vienna and the Project Manager of UNIDO's Asia-Africa Investment and Technology Promotion Centre (AAITPC) Project and Senior Technical Advisor at Industrial Promotion and Technology (ITP) Branch of UNIDO in the area of investment promotion. He is also the Project Manager of a publication project of Investor Guidebook on Transfer and Acquisition of Project-based Carbon Credits under Kyoto Protocol, which is now under implementation with an aim to assist the sellers and buyers in their negotiation and drafting the purchase contracts of carbon credits. His industrial backgrounds are in iron & steel industry and engineering and construction industry involving various kinds of industrial plants including hydro-carbon processing plants, chemical and petrochemical plants, environment protection plants like De-SOx, De-NOx and De-Dioxin, iron and steel making plants as well as their offsite facilities. He was born in 1947 and holds Master in International Business Studies (MIBS) from University of South Carolina, USA. He can be reached by e-mail at [mtsukiji@unido.org](mailto:mtsukiji@unido.org).

## Minutes of the CDM Roundtable by IPA delegates

**Time/Date:** 14:00 ~ 15:00 November 21, 2003

**Place:** Sandton Sun Intercontinental, Johannesburg

**Theme:** *What is the role the Investment Promotion Agencies must and can best play to maximize the benefits under CDM as a host country?*

**Moderator:** Mr. M. Tsukiji, UNIDO HQs

**Participants:**

Cote d'Ivoire (Côte d'Ivoire Investment Promotion Centre)  
Mr. Gode Pierre DAGBO, Director General  
Ms. Léonie KONIAN, Marketing Director

Ghana (Ghana Investment Promotion Centre)  
Mr. Kwasi ABEASI, Chief Executive  
Dr. Peter ANKRAH, Director for Promotion & Public Relations

Tanzania (Tanzania Investment Centre)  
Mr. Samuel SITTA, Executive Director  
Mr. John Mathew MNALI, Senior Investment Promotion Officer

Uganda (Uganda Investment Authority)  
Dr. Maggie KIGOZI, Executive Director  
Mr. Issa MUKASA, Assistant Director

Mozambique (Investment Promotion Center = CPI)  
Dr. Mussa USMAN, Deputy Director  
Ms. Belarmina CAPITINE, Project Officer

South Africa (Department of Trade and Industry)  
Mr. Xolile Mtwa, Assistant Director

Dr. Tadashi AOYAGI, General Manager Mitsubishi Research Institute  
Mr. Thomas BLACK-ARBELAEZ, Executive Director Andean Center for Economics in Environment  
Dr. Sandra GREINER, Economist, The World Bank Carbon Finance Unit  
Mr. Satoshi IWASAKI, First Secretary Permanent Mission of Japan to UNIDO  
Mr. Guillermo Luis JIMENEZ BLASCO, Head Climate Change Unit, UNIDO HQs  
Mr. Mikio Nagata, Executive Director, JETRO Johannesburg  
Mr. Osamu Hattori, Director of Research, JETRO Johannesburg  
Ms. Louise Binge, Personal Assistant to Executive Director, JETRO Johannesburg  
Mr. Jason Joffa, Researcher, JETRO Johannesburg  
Mr. Etinne Botha, Researcher, JETRO Johannesburg

[1] Mr. Tsukiji

The CDM is considered to offer significant opportunities to developing countries in attracting new investments but, at the same time, it costs to satisfy the requirements by UNFCCC notably in establishing and running the Designated National Authority (DNA). How do you assess potential benefits relative to cost that would be associated?

Uganda

- CDM is a huge opportunity for developing countries and economies and can be used as a tool for drawing investment into these regions.
- This Workshop has brought the complex CDM process down to understandable level.
- We need it to be simplified so that the man on the street can understand it.

Ghana

- We are upset that the United States has not ratified the Kyoto Protocol as it does not set a *positive mindset about the future of the CDM process*.
- We are considering setting up a CDM department within the Investment Promotion Agency with international help in capacity building.
- The benefits of setting up such an agency to deal with the CDM process will definitely have benefits that will exceed the costs.

Ivory Coast

- We will be prioritizing this mechanism by looking into it deeper, and presenting it to our higher authorities.

Mozambique

- Before we can even look at the CDM, we need more industry – however we could use the CDM process as a tool for attracting investment and creating sustainable industry.

Uganda

- Disturbed by United States not ratifying the Kyoto Protocol.
- We are worried there may be a struggle over DNA of Uganda between UIA and the Ministry of Environment when we return back to Uganda.

Dr. Sandra Greiner

- Problem in developing countries is finance for such projects.
- We have to act now in order to get CDM projects off the ground, as it can well take as much as three years from decision to invest to verification/certification and issuance of CERs, if we want to meet the first commitment period of the Protocol, which is for 2008 to 2010.

Mr. T Black

- Emphasized that Mass transit Systems offer an ideal case of potential CDM projects
- Local economic benefits from Mass transit system can often outweigh the CDM Economic benefits.
- We must not only think about the current situation but also the future one when there is really going to be a *great demand for CER credits*.

[2] Mr. Tsukiji

We have learnt from the presentation materials of Mr. Marcos Castro that there are a couple of approaches in designating the National Authority (DNA) who has compulsory function and, optionally, promotional function. Many IPAs have been claiming that they are the "One Stop Shop" for foreign investors. If DNA is set up separately, it would make two shops for a country. What is your opinion on this issue?

Uganda

- I feel the IPAs would make the best DNA as they can offer a *one stop shop* in receiving application for approval of investments.

Mozambique

- The Environmental ministry because the Ministry is compulsory once Kyoto is finalized, and they have the capacity to deliver with regard to such technical details.

Tanzania

- Kicks start the DNA in the IPA. Once matured, the unit may become independent. – The idea of a *one stop shop* is vital in helping the potential investors. \_\_\_\_\_

Mr. T Black

- There must be universal approval and consistency in the issuance of CERs, and corruption must be combated in these areas.
- There cannot be any signs of favoritism in awarding a CERs.

[3] Mr. Tsukiji

Supposing that the IPAs would become DNA, what are you going to do with technical expertise which you are not likely to have but are required to perform its functions?

Uganda

- We have the capacity through our CDM secretariat, which is established in the IPA – in this secretariat we have energy and environmental specialists as well as mathematicians etc.

Mr. Jimenez (UNIDO)

- It is perfectly possible to have a setup in which the regulatory and the promotion (marketing) function of the DNA would rely on two different bodies or departments. In doing so, the different departments can specialize in their respective fields of competence, yet coordinating their activities to deliver a comprehensive product at the end of the day.

Ghana

- The IPA can be the starting point for such a project; once it reaches a level of maturity we can pass it on to other department.

Tanzania

- We will interact between our different departments
- We would want to start a small team, which would head the CDM initiative without the risk of this project collapsing in over itself by getting too big too fast.
- We have many potential projects such as a mass transit system by converting disused railways in Dar-es-salam into a commuter network etc.

[4] Mr. Tsukiji

A developing country whose country risk is perceived high may not be able to successfully attract foreign investments under the CDM. In this context, we discussed Unilateral Model where a developing country initiates CDM projects by themselves, without foreign investments, and sell the carbon credits later, when they are actually issued, as a part of income for the investments. What do you think about this alternative?

Uganda

- We will assist private sectors by providing information/assistances in this regard.

Tanzania

- We are interested in the Unilateral Program and see a lot of opportunity in infrastructure projects.

Ghana

- We are very much interested in doing it by ourselves as Government. Palm oil projects and Mass transit system project can be possibilities.

[5] Mr. M. Tsukiji

What is the general attitude of potential Japanese investors/buyers of carbon credits?

Mr. Nagata (JETRO)

- Japan is watching the development of detailed methodologies of CDM process carefully.
- The CDM Process is new to JETRO and we are excited about interacting between the different investors.
- It may not be before effectuation of Kyoto Protocol when more positive steps are taken by potential investors and, in this connection, watching Russia's decision.

Dr. Tadashi Aoyagi

- Japanese companies who may need CERs are watching for the Protocol to become effective before making commitments.
- Generally Japan is looking for low risk projects that therefore generate high quality CERs.
- It is important for a host country to have a reliable focal point i.e. a DNA with strong capacity in order to attract investors under CDM.

Mr. M. Tsukiji

- Some Japanese trading companies (Sogo Shoshas) told me, when asked about existing barriers in pursuing possibilities in CDM projects, that 1) a host country should establish DNA as soon as possible if they are really serious in attracting investment thru CDM otherwise we have been pushed around among ministries, 2) transparent procedures in application for approval as CDM project have to be made public by a host country as well as criteria for approval or disapproval, 3) more involvement of host country governmental agencies/subunits in approval and monitoring of implementation in many cases mean more time and more costs on the part of investors and the less governmental intervention the better and 4) web site may be used to disseminate the transparent procedures and criteria.

Uganda

- This is exactly the information we need to become receptive of CDM investments.

(End)