

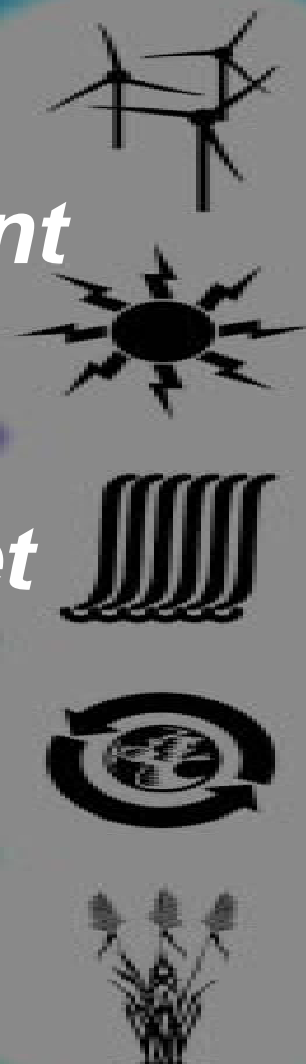


***National Authority of Environment
(ANAM) as The Designated
National Authority
and its role in the Carbon Market
By Eduardo Reyes***

**EUROPEAN UNION (EU)-LATINA AMERICA
CARIBBEAN (LAC) EXPERTS' SEMINAR ON
ENERGY**

BRUSESELS, BELGIUM

APRIL, 20-21/2006



**autoridad
nacional del
ambiente**

El MDL en Panamá

Donde el Clima propicia la Inversión

Republic of Panama

Caribbean Sea

Pacific Ocean

- Area: 77,082 Km²
- Population. 3×10^6
- 75% GDP out of Int. Serv.
- Unemployment < 10%
- Per Capital Income > 5,000 USD/year
- New Invest. > 2.5 B USD with CDM
- 33.6 % of Area under Protected Area
- Panama Canal Basin: 552,761 Ha represents 7% of the territory of the Rep. of Panama

A DNA engaged with the well being of CDMs and the Sustainable Development

Climate Change is priority for the Government of Panama, at both axis Adaptation and Mitigation (***Climate Change Policy***).

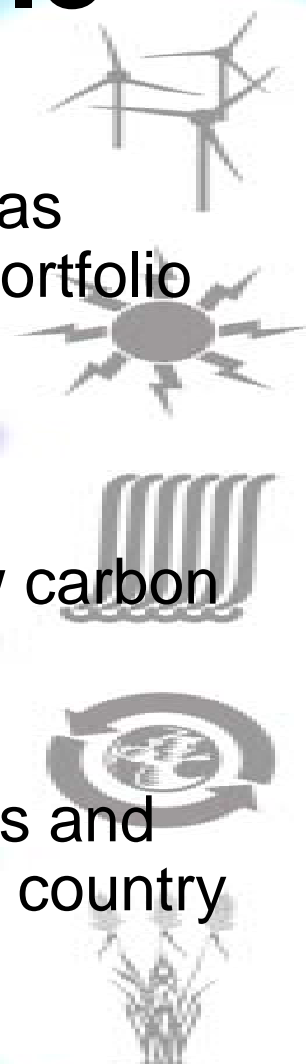
We see a great opportunity to foster projects of special National interest by means of the Clean Development Mechanisms as well as to overcome the global oil prices crisis through the implementation of renewable energies.

The CDM is an instrument that contributes to Sustainable Development and if well applied it has the capability to encompass adaptation measures too.

CDMA

IN PANAMA

- The National Authority of Environment (ANAM) has played a significant role in positioning the CDM portfolio into the international arena.
- ANAM as the DNA has mainstreamed into the governmental Institutions the importance of a low carbon economy and its environmental benefits.
- Furthermore, this support has improved the status and feasibility of the use of renewable energies in the country as a whole.



Local Procedure to emit Letter of Approval

- Presentation for Evaluation of EIA (Projects after year 2000); or Adecuación and Environmental Management Plan (PAMA-Projects before 2000) to ANAM . ANAM emits *Letter of No Objection to those ones guided by TUCC;*
- EIA or PAMA get approved, ANAM will emit *Letter of Complacency;*
- PDD Formulation and ready for validation by DOE, ANAM will emit Letter of Approval.

The DNA will make sure that contribution to sustainable development actually takes place in the long term run within these communities where projects are to be implemented.

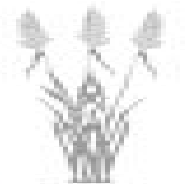
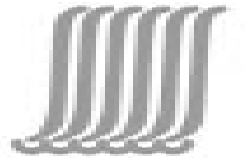


MDM

IN PANAMA

PROJECTS THAT ARE BEING NEGOTIATED

Project	Capacity
• Algarrobos	10 MW
• Dolega (Hidro)	3 MW
• Macho de Monte (Hidro)	2 MW
• Concepción (Hidro)	10 MW
• Bonyic (Hidro)	34 MW
• Bajo de Mina (Hidro)	54 MW
• Lorena (Hidro)	34 MW
• Prudencia (Hidro)	54 MW
• Caldera	17 MW
• Estrella del Sur	10 MW
• Bajo Frío	24 MW
• Sindigo	10 MW
• Biorefinería de Biodiesel	13 MW
• Biorefinery BioEthanol ACOS	



CDMA

IN PANAMA

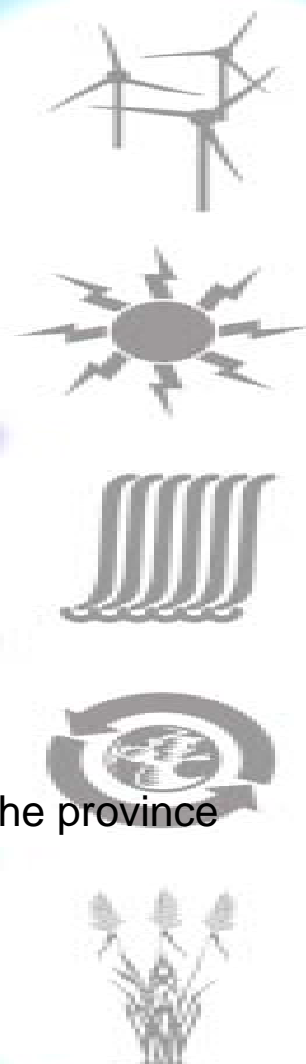
Projects

Capacity (MW)

- Gualaca 34
- El Alto 45
- Baitun 70
- Cerro Tute Wind Project (Finland) 80
- Chang 75 154
- Biomass (Spain) 30
- Public Sector Projects
 - Sanitation of the Bay of Panama (Waste Water Treatment Plan)
 - Massive modernization of Public Transport (Panama City)
 - Panama Canal Enlargement
 - Fuel Saving on Post Panamax Ships (> 25, 000,000 TCO₂eq/year)
 - Biofuels (Equipment and Machinery) (> 500,000 TCO₂eq/year)
- Methane Recovery for Electricity Generation. About 11 municipalities on the province of Chiriqui and Panama 2 and 4 MW
- All the aforementioned projects account for 691 MW .
- RE=2,300,000 TCO₂eq; SB=330,000 TCO₂eq; LF=330,000 TCO₂eq.

»

Per year



STRATEGICS ALLIANCES

I N P A N A M A

- **Netherlands** (Dic. 2001)
- **Finland** (Aug. 2003)
- **Canada** (Nov. 2004)
- **Spain** (Dic. 2004)
- **Italy** (Dic. 2004)
- **NatSource** (Dic. 2004)
- **CAF** (Panama is an alternative member)
- **CIP: Climate Investment Partnership** (Dec. 2004)
- **SGS-Panama (DOE)** (operating since Jan. 2005)



CDM

Generating working relationship

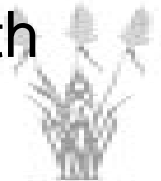
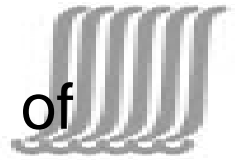
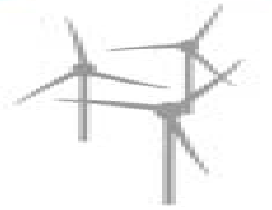
TALLER DE ENERGIA RENOVABLE Y FINANCIAMIENTO DE CARBONO
Panamá, 24 y 25 de noviembre de 2005



ANAM in its role as a knowledge facilitator, stimulates the international link at local level.

Promotes the development of projects that can apply to Carbon Market.

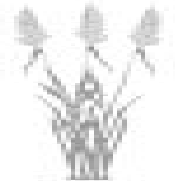
Helps to the establishment of The Carbon Center (TCC) with a Regional Reach at Panama.



CDM IN PANAMA

The Carbon Centre (TCC), Panama

- **The Carbon Centre (TCC) is a Panama-registered private Foundation**
 - TCC resulted from **ANAM-DEG (Germany)** Workshop on Renewable Energy & Carbon Finance held in Panama City, 24-25 November 2005
 - TCC is affiliated with:
 - Panama's Ciudad del Saber (City of Knowledge)
 - Centro del Agua del Tropico Humedo para America Latina y el Caribe (CATHALAC)
- **TCC's mission is to promote the development of the Carbon Market in Latin America and the Caribbean by focusing on:**
 - 1. Awareness-raising activities**
 - Seminars, workshops, trade fairs, data, etc
 - 2. CDM project finance (equity, debt, guarantees, etc)**
 - Financial arranging for **BANKABLE** CDM projects
 - Services to enhance the **BANKABILITY** of CDM projects
 - Promoting Panama as a (Non-Annex I) regional centre for carbon finance
 - 3. CDM Project origination and registration services**
 - CDM management and CER marketing services

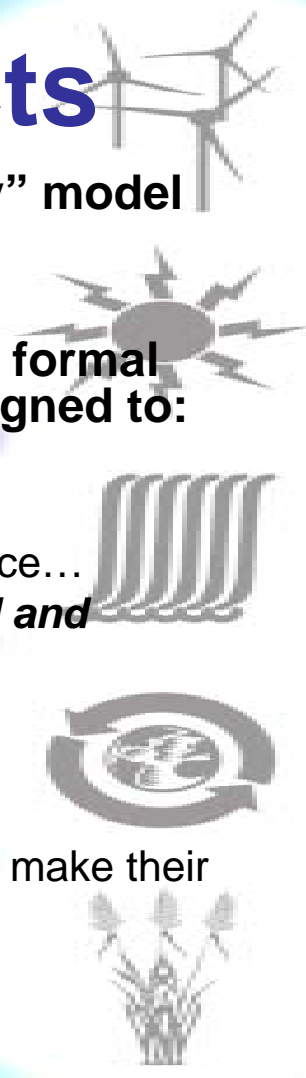


Effective CDM Implementation

(1): Financing CDM Projects

Promoting CDM project finance via the “Carbon Finance Facility” model

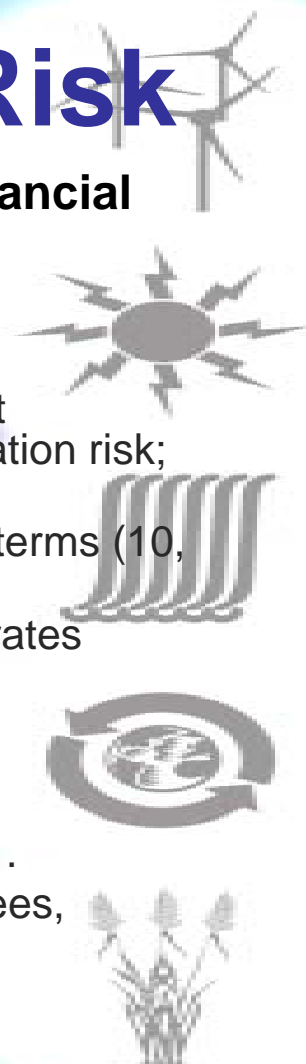
- An alternative to carbon investment funds...
- **The Renewable Energy Carbon Finance Facility (RECAF) is a formal arrangement between investors and project developers, designed to:**
 - Create a pool of renewable energy CDM projects
 - Create a pool of investment resources (equity, debt, guarantees, etc)
 - Match investment opportunities with project finance and carbon finance...
 - RECAF Initiative under development in Panama together with **ANAM and National Bank of Panama (BNP)**.
- **RECAF is NOT an “Investment Fund”**
 - Investors are not required to invest in a mutual fund vehicle
 - Investors in RECAF will continue to manage their own resources and make their own independent investment decisions
 - Under the RECAF, returns and exit strategies are project specific
 - No centralized Fund Manager is required
 - Project developers retain ownership & control of projects and CERs



Effective CDM Implementation (2): Hedging CER Delivery Risk

Enabling greater access to CDM project equity via the use of financial guarantees on down payments for CERs

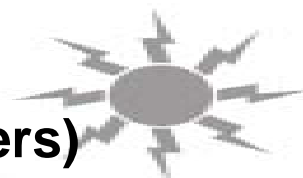
- **CER buyers are generally averse to CER delivery risk:**
 - Key risks include: Kyoto regulatory risk; CDM registration risk; project construction and operational risk; technology risk; emission quantification risk; seller counterparty credit risk; CER price risk; etc.
 - Preference for long term forward contracts with payment on delivery terms (10, 14, or 21 years)
 - Insurers have failed to provide CER delivery risk cover at affordable rates
- **Some CER buyers offering down payments for CERs:**
 - Generally 15-20% of the value of the contract
 - One CER buyer offering up to 30% of the value of the CER contract...
 - Subject to terms and conditions, including: financial closure, guarantees, registration of the project with the CDM Executive Board, etc



CDM IN FINANCE

Financial Guarantees on Down Payments for CERs...

- **The Challenge: How to transform carbon finance into project equity...**
- **Financial Guarantees (on down payments by CER buyers)**
 - We aim to provide 100% **FINANCIAL GUARANTEE** on down payments by CER buyers against future delivery of CERs
 - **FINANCIAL GUARANTEES** will encourage and enable CER buyers to make substantial upfront payments to sellers...
 - Give CDM project developers greater access to project equity by integrating CER value into project finance
 - TCC is promoting a pilot initiative with A-rated Panamanian banking and insurance group to provide 100% cover for CER down payments
 - The TCC guarantee scheme will complement the activities of the Carbon Finance Facility
 - **TCC, ANAM and BNP** is interested in strategic partnership arrangements with carbon funds, traders, brokers & CDM project developers...



CDM Portfolio, Dec.2005 version

Electricity Generation - Hidro Power Plants

Nº	Name of the Project	Location	Capacity MW	Approx. CERs/year	Status	Developer	Tel. (507)	Fax (507)	E-mail
1	Las Perlas Norte, S.A	Chiriquí, Boquerón	6.43	28,192	-	Alejandro Hanono	263-4400	269-9458	Alex@Vicsons.com
2	Las Perlas Sur, S.A	Chiriquí, Boquerón	6.43	28,192	-	Alejandro Hanono	263-4400	269-9458	Alex@Vicsons.com
3	El Porvenir Norte, S.A.	Chiriquí, Pedregal, Boquerón	63.20	277,093	-	Alejandro Hanono	263 4400	269-9458	Alex@Vicsons.com
4	El Porvenir Sur, S.A.	Chiriquí, Pedregal, Boquerón	6.34	27,797	-	Alejandro Hanono	263 4400	269-9458	Alex@Vicsons.com
5	Hidro Palmira, S.A.	Chiriquí, Dolega, Potrerillos	6.00	26,306	-	Leonidas Rodríguez	691-9876	266-1869	leonidas280@cwpanama.net
6	Hidromáquinas de Panamá, S.A. (Cochea)	Chiriquí, Altos de Boquete	6.00	26,306	-	Leonidas Rodríguez	6691-9877	266-1869	leonidas280@cwpanama.net
7	Fuerza Hidráulica del Caribe S.A. (Potrerillo)	Chiriquí, Dolega, Potrerillos	4.20	18,414	-	Leonidas Rodríguez	6691-9878	266-1869	leonidas280@cwpanama.net
8	Hidronorth Corp (El Chorrito)	Veraguas, Calobre, La Yeguada	1.20	5,261	-	Guillermo Torres	6676-5216 / 315-1100		gtorres@pa.soluzion.com
9	Hidronorth Corp (El Jobo)	Veraguas, Calobre, Monjarás	1.25	5,480	-	Guillermo Torres	6676-5216 / 315-1100		gtorres@pa.soluzion.com
10	Hidronorth Corp (El Los Guayacanes)	Veraguas, Santa Fe, El Cuay	2.00	2,324	-	Guillermo Torres	6676-5216 / 315-1100		gtorres@pa.soluzion.com
11	Hidronorth Corp. (Amanacer)	Veraguas, Santa Fe	530 KW	2,324	-	Guillermo Torres	6676-5216 / 315-1100		gtorres@pa.soluzion.com
12	Hidronorth Corp. (La Huaca)	Veraguas, Calobre, San José	4.00	17,538	-	Guillermo Torres	6676-5216 / 315-1100		gtorres@pa.soluzion.com
13	Hidroibérica, S.A. (El Fraile)	Coclé, Olá	3.90	17,099	-	José Ma.Troitiño.	271-0380/ 236-2459	290-9921	eyosa@sinfo.net
14	Hidro Boquerón, S.A. (Chuspa)	Chiriquí, Boquerón, Paraiso y Guayabal	6.60	28,937	-	José Ma.Troitiño.	271-0380/ 236-2459	290-9921	eyosa@sinfo.net
15	Hidro Boquerón, S.A. (Chiriqui)	Chiriquí, Gualaca, Paja de Sombrero	7.90	34,637	-	José Ma.Troitiño.	271-0380/ 236-2459	290-9921	eyosa@sinfo.net
16	Hidroibérica, S.A. (Brazuelo)	Colón, Portobelo	820 KW	3,595	-	José Ma.Troitiño.	271-0380/ 236-2459	290-9921	eyosa@sinfo.net
17	Hidro-Panamá, S.A. (Anton I)	Coclé, Antón, El Valle	1.40	6,138	-	Jesús Sáiz	269-2067	264-8493	jsaiz@hidropanama.com
18	Hidro-Panamá, S.A. (Anton II)	Coclé, Antón, Cabuya	1.40	6,138	-	Jesus Saiz S.	269-2067	264-8493	jsaiz@hidropanama.com
19	Hidro-Panamá, S.A. (Anton III)	Coclé, Antón, Caballero	1.40	6,138	-	Jesus Saiz S.	269-2067	264-8493	jsaiz@hidropanama.com

CDM Portfolio, Dec.2005 version

Electricity Generation - Wind Farm

Nº	Name of the Project	Location	Capacity MW	Approx. CERs/year	Status	Developer	Tel. (507)	Fax (507)	E-mail
55	Cerro Tute	Veraguas, Santa Fe	80.00	350,750	LoNO	Roberto Moreno	264-1157		ramt@pananet.com
56	Los Pinos Altos del Tigre	Panama, San Carlos	19.80	86,811	PIN	Nelson Martínez	260-4611	260-2665	nmartinez@grupomg.net
-	Quijada del Diablo	Chiriquí, Gualaca	30.00	131,531	PIN	Manuel Armijo	236-0882	261-9558	manoliniv@gmail.com

Methane Capture

Nº	Name of the Project	Location	Category	Approx. CERs/year	Status	Developer	Tel. (507)	Fax (507)	E-mail
57	Waste water treatment plant Bay of Panama	Panama, Panama City	Methane recovery	308,000	PIN	Ministry of Health / Eduardo Reyes	315-0668	315-0654	e.reyes@anam.gob.pa
58	Landfill Gas Management	Panama, Panama City	Methane recovery	240,000	PIN	Municipality of Panama / René Paniza	6613 4497	236-4710	paniza@cwpanama.net
59	Landfill Gas Management	Chiriquí	Methane recovery	64,000	PIN	Municipality of David / Eduardo Reyes	315-0668	315-0654	e.reyes@anam.gob.pa
60	Waste water treatment ships in transit (through Panama Canal)	Panama, Panama City	Methane recovery	178,240	PIN	Mark Thomas Ford	229-1880	229-8352	fordmt@grupo-fsi.com
61	Treatment of residual waters and solid waste of the sugar mill "La Victoria"	Veraguas, Santiago	Methane recovery	-	PIN	Eric Del Valle	959-0444	959-0444	
-	Landfill Gas Management	Bocas del Toro, Cocle Veraguas	Methane recovery	10,000	PIN	Municipality of Colon Island, Changuinola, Penonome and Santiago/	261-8441	229-7143	ecobiosfera2003@ayhoo.com

Transport

Nº	Name of the Project	Location	Category	Approx. CERs/year	Status	Developer	Tel. (507)	Fax (507)	E-mail
62	Reconversion of transportation system	Panama, Panama City	Transport	121,840	PIN	National Authority of Ground Transportation Arturo Gonzalez	290-4842 / 6612-1205	290-0516	agonzalez@transito.gob.pa
63	Enlargement of the Panama Canal Reduction of fuel consumption	Panama, Panama City	Transport	25,558,760	PIN	Panama Canal Authority / Carlos Vargas	276 2351	276 2046	cvargas@pancanal.com

Reforestation, Biomass & Biofuels

Nº	Name of the Project	Location	Category	Approx. CERs/year	Status	Developer	Tel. (507)	Fax (507)	E-mail
64	Prime Forestry Panama (8,000 ha)	Umbrella, nation wide	reforestation	200,000	LoNO	Dominique Leuba	314-1942	314-1944	dleuba@primeforestry.com
65	ANARAP (10,000 ha)	Umbrella, nation wide	reforestation	250,000	-	Beatrice de Harrick	225-8673	225-6053	harrick01@cwpanama.net
66	Biorefinery for bioetanol production	Veraguas	fuel switch	853,062	PIN	ACOS - Ettiene Parisis	263 6438		hans@c-com.net.pa

Status of CDM RE Projects



Capacidad Instalada MW	Proys	CERs/AÑO	LoNO	LoCo	LoA
LESS THAN 10 MW	30	579,961	4	7	5
BETWEEN 10 AND 20 MW	10	583,561	2	5	0
GREATER THAN 20 MW	30	2,033,907	8	6	0



STRATEGICS ALLIANCES

I N P A N A M A

- **Netherlands** (Dic. 2001)
- **Finland** (Aug. 2003)
- **Canada** (Nov. 2004)
- **Spain** (Dic. 2004)
- **Italy** (Dic. 2004)
- **NatSource** (Dic. 2004)
- **CAF** (Panama is an alternative member)
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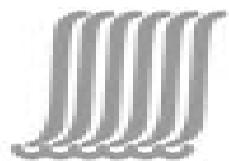
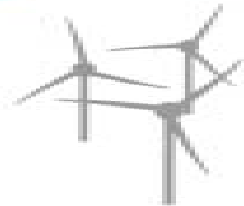


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CDM

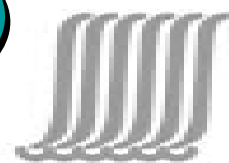
IN PANAMA



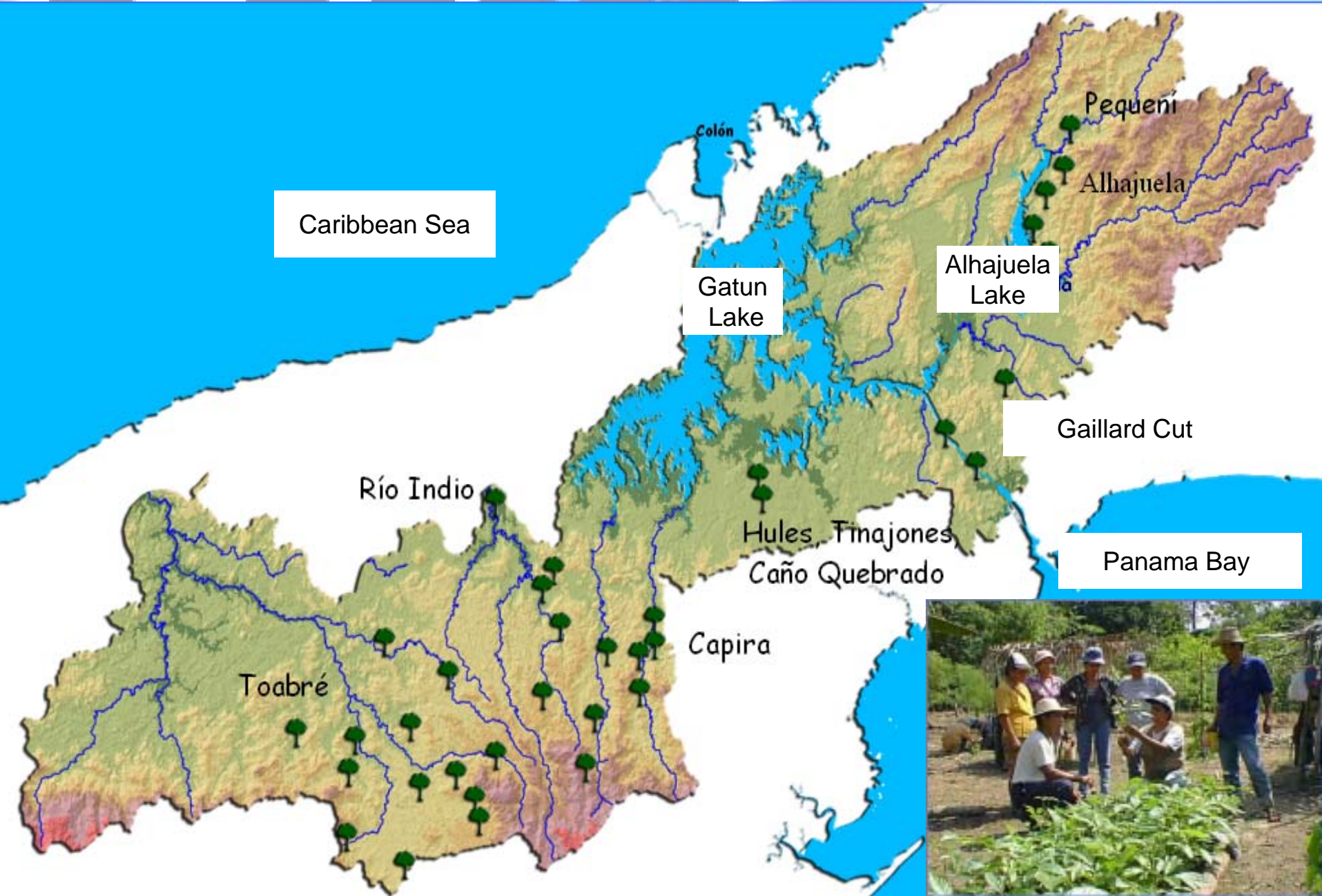
CDM

IN PANAMA

Panama Canal Expansion Project: Clean Development Mechanism (CDM)



Panama Canal Reforestation Program



CDMAM

IN PANAMA

Transportation and Equipment: Use of Biodiesel

Over 51 million gallons of diesel could be utilized in the expansion of the Panama Canal. The use of a Biodiesel is strongly considered mainly because the potential to build on sustainable development among communities inside the Canal Watershed



Connections using Suez Canal, the Intermodal System and the Panama Canal

I N P A N A M A



- Intermodal System
- Suez Canal
- Panama Canal

Source: ACP and ComPairData, July 2004

CDMA

IN PANAMA

Estimated Carbon Reduction Yokohama (Japan) to New Orleans (USA)

10,000 TEU Mega Post Panamax Ship

Average speed of 22.5 knots

Bunker consumption of 200 Tons bunker/day

Route	Distance (Miles)	Navigation time (days)	Bunker consumption (Tons)
Panama	9,129	17	3,383
Suez	14,500	27	5,373

Savings (T bunker): 1,990 T/ship

Emission factor: 3,212 g/kg

Emission reduction: 6,391 T/ship

8 Transits/day/year = > 25 x10⁶ CO₂ eq

Upcoming International CDM Events taking place in Panama



SUPER FORUM on Renewable Energy and Carbon Finance

EU meets LA on Renewable Energies

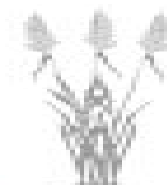
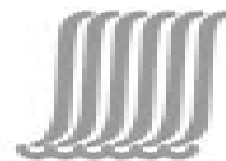
October 9-11, 2006

As part of the activities Finland has planned for its EU's Presidency together with Panama

Latin American Carbon Finance Trade Fair
First Trade Fair: Panama City,

February 2007

TCC, DEG and ANAM





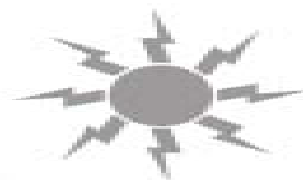
GRACIAS

**Autoridad Nacional del Ambiente (ANAM)
UNFCCC Focal Point and Designated National Authority (DNA)
Eduardo Reyes, Sub – Administrador General**

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**autoridad
nacional del
ambiente**

El MDL en Panamá

Donde el Clima propicia la Inversión