CDM Process & Opportunities in SE Asia

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EU- EAGA Business Seminar

Miri, 18 November 2009




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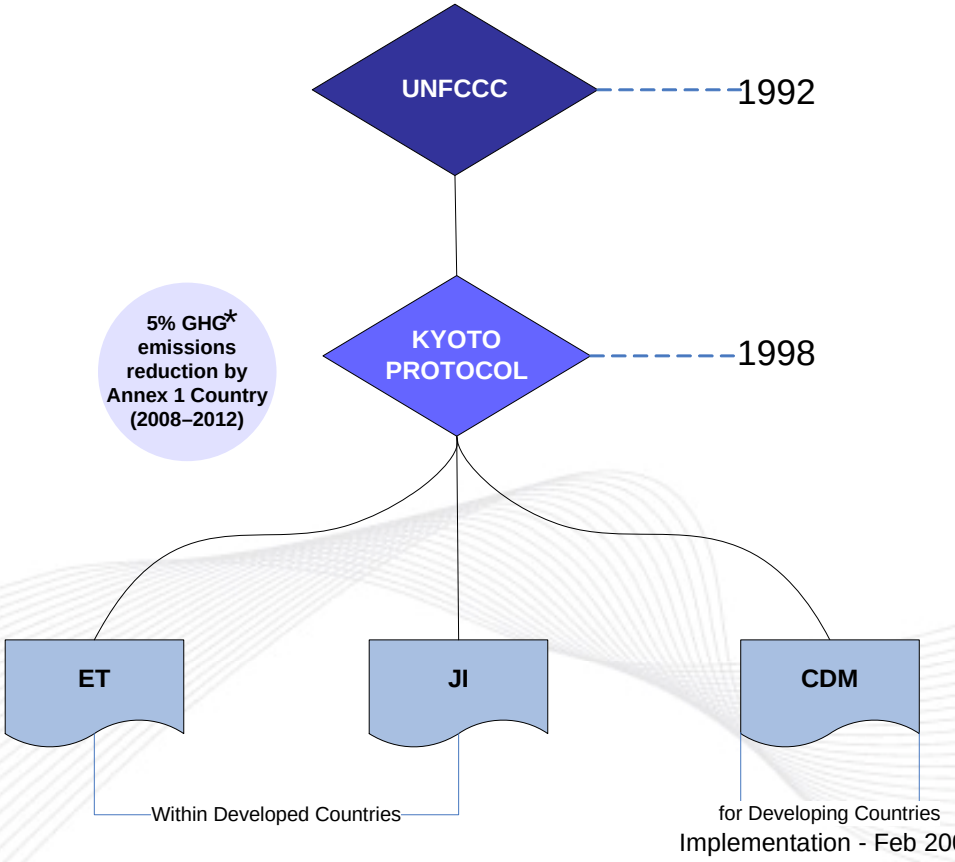
Background



List of Annex 1 countries (37 countries)

- Australia
- Austria
- Belarus
- Belgium
- Bulgaria
- Canada
- Croatia
- Czech Republic
- Denmark
- Estonia
- European Community
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Japan
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Monaco
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Romania
- Russian Federation
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- Ukraine
- UK

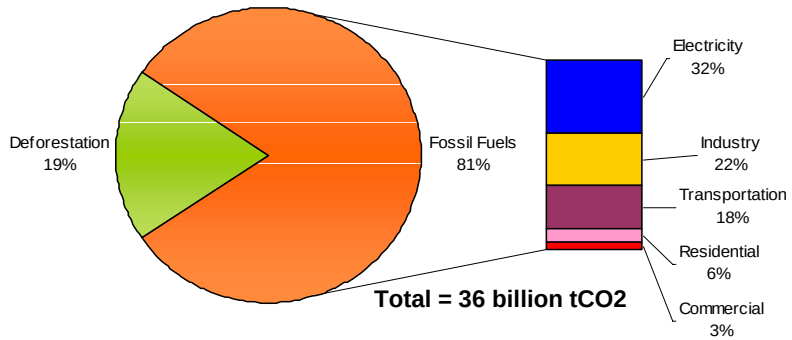
*** 6 Greenhouse Gases : CO2, CH4, N2O, SF6, PFCs, HFCs**

Clean Development Mechanism (CDM) under Kyoto Protocol

- Objective
  - To reduce GHG emissions via clean technology transfer
- CDM allows developing countries to earn *Certified Emission Reduction (CERs)* credits for emission-reduction projects, each equivalent to one ton of CO2.
- These CERs can be traded, sold, and used by industrialized countries to help meeting their emission reduction targets under the Kyoto Protocol, thus ***provides additional financial benefit***.
- Sustainable development is the KEY criteria
- CDM projects range from renewable energy, energy efficiency, landfill gas capture, gas flaring reduction, etc.

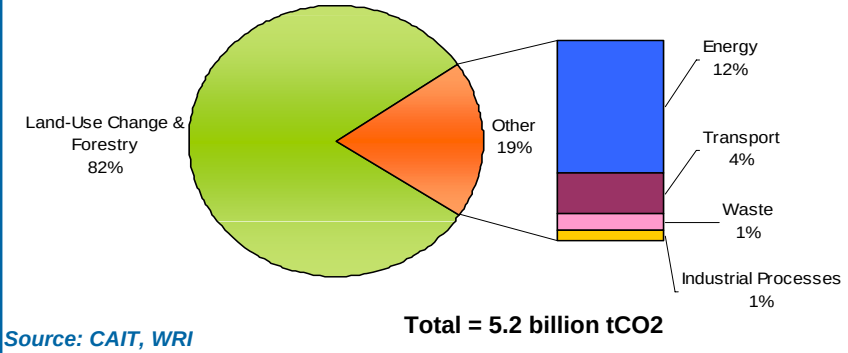
Emission Profiles

GLOBAL CO_2 EMISSION



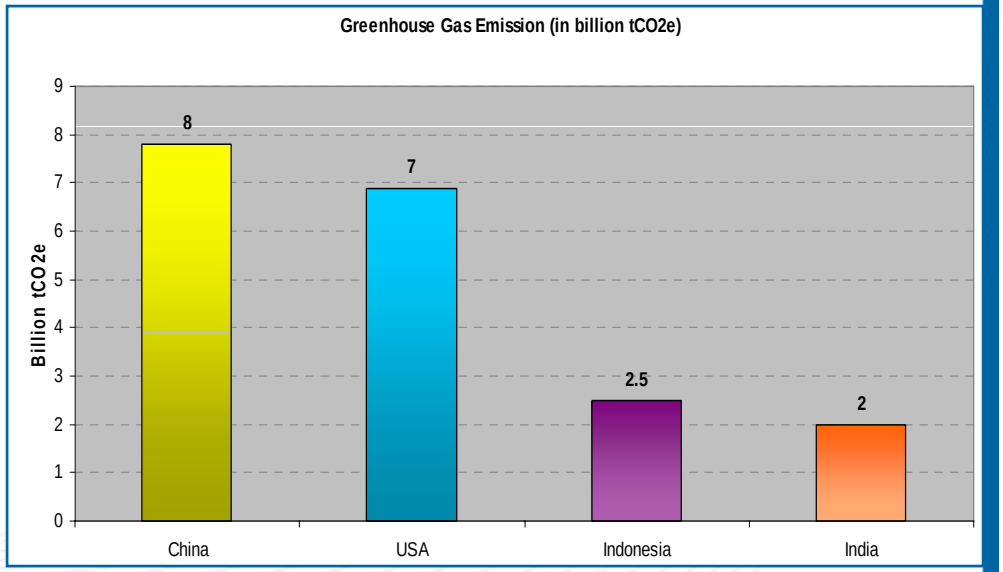
Source: Common Wealth: Economics for a Crowded Planet (Jeffrey Sachs, 2008)

SE Asia CO_2 Emission



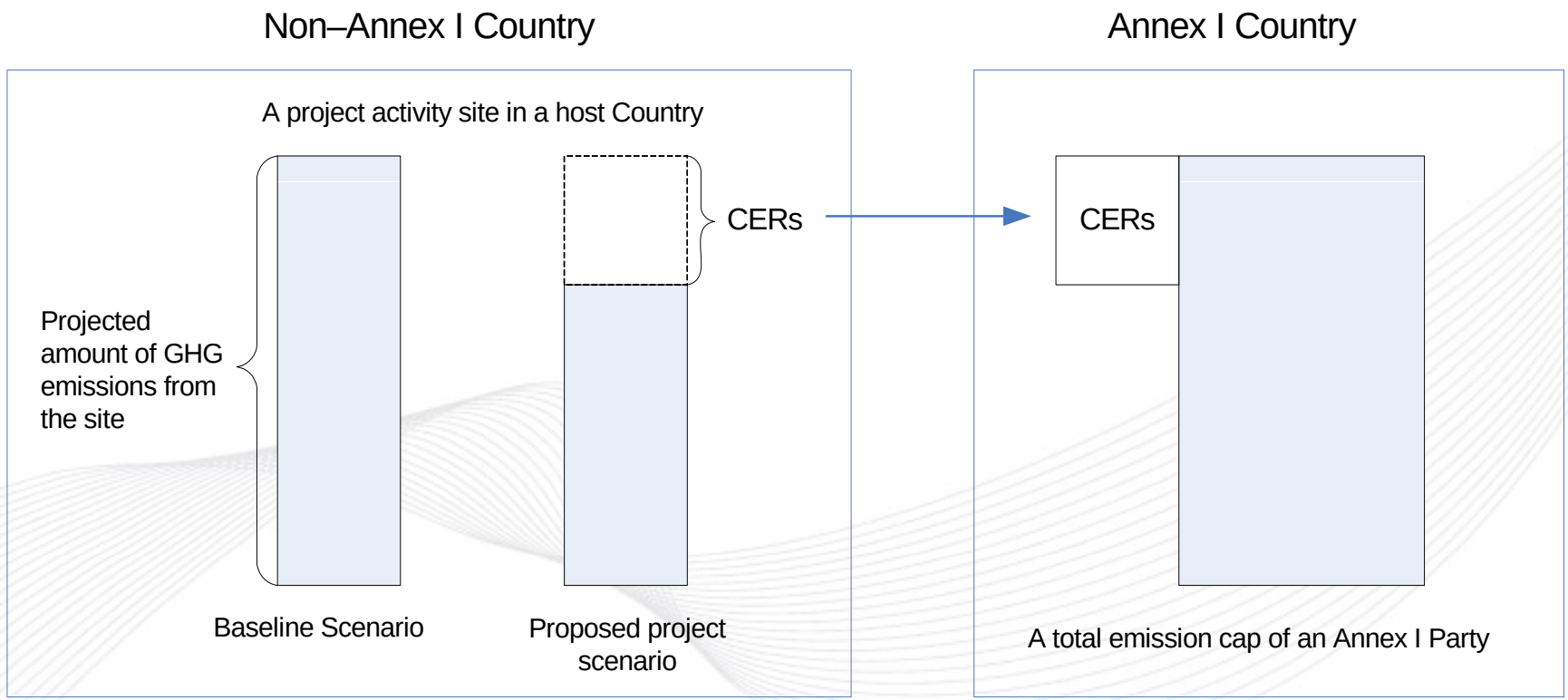
Source: CAIT, WRI

Top Emitter Countries



Source: Reproduced from World Development Report 2010 - Figure 1.1 (World Bank, 2009)

CDM Concept


Non–Annex I Country
Annex I Country
A project activity site in a host Country
CERs
CERs
Projected amount of GHG emissions from the site
Baseline Scenario
Proposed project scenario
A total emission cap of an Annex I Party

CDM Concept and Terms (continued)

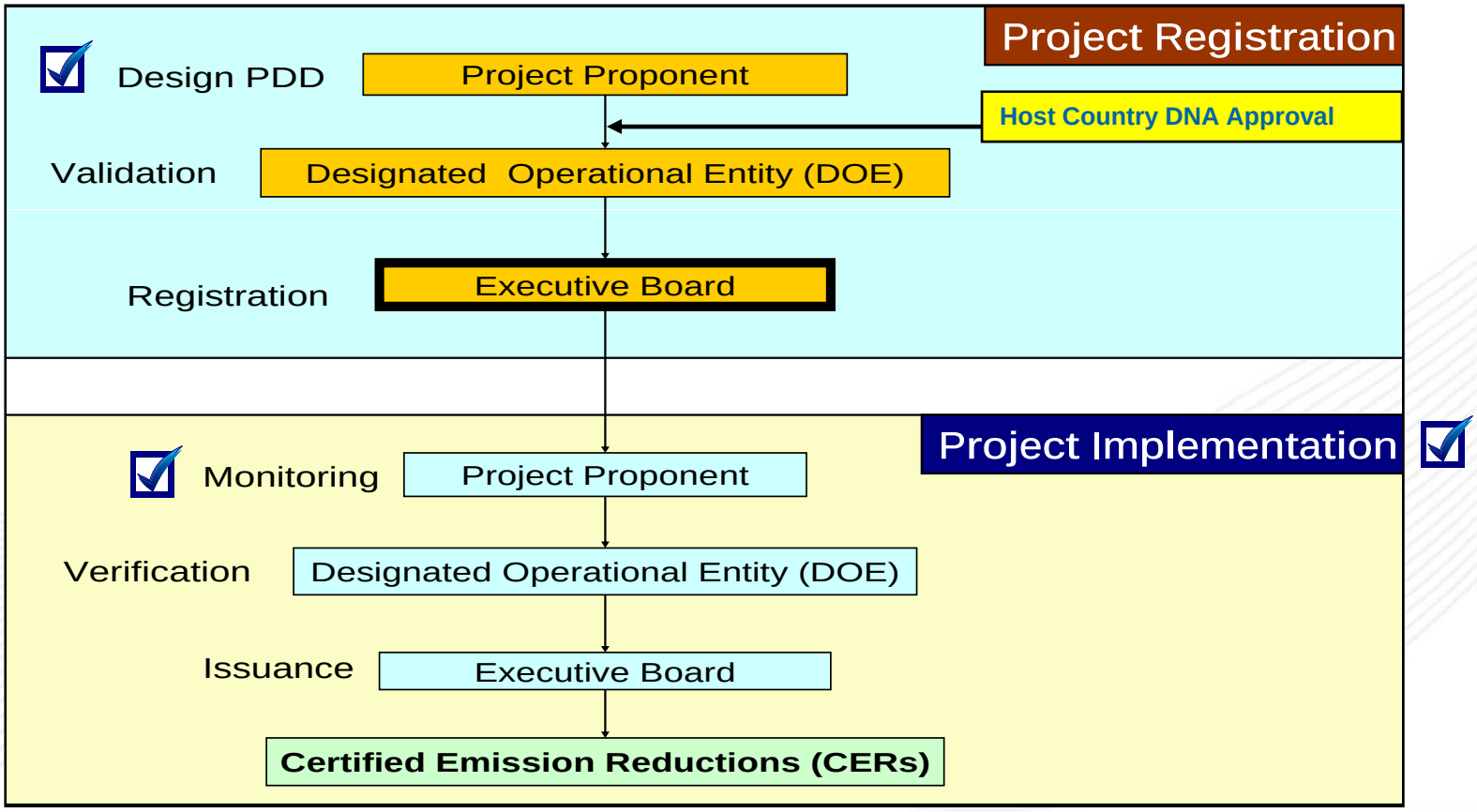
- Baseline

  Emissions that occur with business-as usual scenario
- Additionality (Barriers)

  Project will result in GHG reduction and is only feasible with CDM scenario – VERY IMPORTANT
  - Financial Barrier
  - Technological Barrier
  - Institutional Barrier
- Approved methodology required
- DNA Approval and Registration by the Executive Board
- Emissions Reduction Purchase Agreement (ERPA)

  Agreement between project owner and carbon credits buyer. Common practice are:
  - Fixed type
  - Floating type
  - Combination

CDM Cycle



GHD's Service Area

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CDM Project Eligibility

- Implemented in developing nations (Non-Annex I Countries)
- CDM concept must be incorporated early in the planning stage of the project
- Contribute towards sustainable development
- Projects not funded by Official Development Assistance (ODA)
- No nuclear project
- Result in GHG reduction. This reduction must be *real* and *measurable*
- Measurement must be verifiable

CDM Players – Carbon Management

- Investors, Developers (GHD), Carbon buyers
- 2 sides (technical & financial)
- Partnership to provide one stop shopping (GHD's alliance with Tricorona)

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GHD Tech Services in CDM Activities

- CDM Feasibility study
- CDM Project Design & Development (PDD)
- Assistance in validation process, incl. validator selection process
- Facilitating registration process
- Engineering / Design
- Monitoring & reporting
- Assistance in verification process, incl. verifier selection process
- Project Management

Other Climate Change Services Leading to CDM :

- Carbon footprints
- Life Cycle Assessment
- Energy Audits
- Green Building Assessment

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List of CDM Sectors

1. Energy industries / supply (renewable - / non-renewable sources)
2. Energy distribution
3. Energy demand
4. Manufacturing industries
5. Chemical industry
6. Construction
7. Transport
8. Mining/Mineral production
9. Metal Production
10. Fugitive emissions from fuels (solid, oil and gas)
11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride
12. Solvents use
13. Waste handling and disposal
14. Afforestation and reforestation
15. Agriculture

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Opportunities for CDM in SE Asia

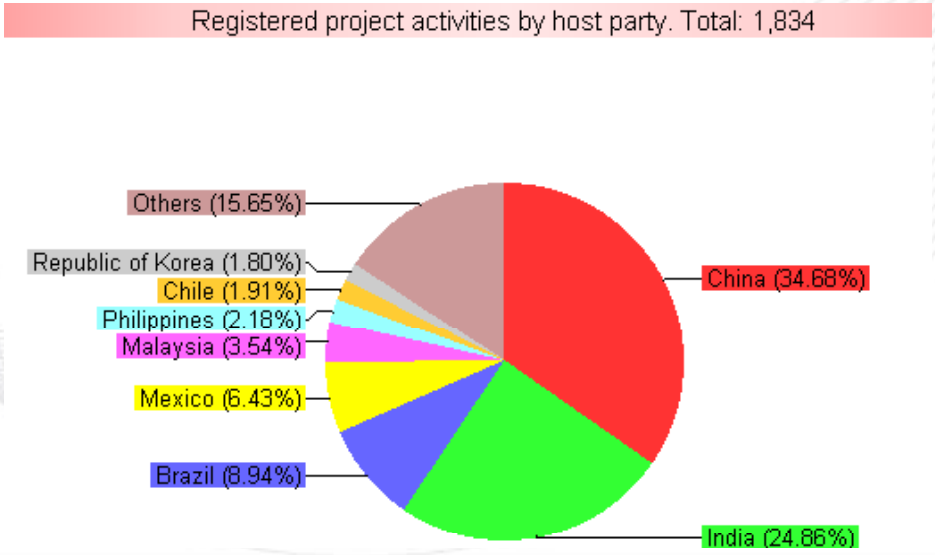
- Renewable Energy (geothermal, hydropower, wind and solar)
- Biomass / Biogas (sugar, rice and agro-forestry waste)
- Solid waste (methane gas capture from landfills, animal farms)
- Wastewater treatment (methane capture – tapioca, pulp & paper)
- Fuel switching to biofuels, CNG, LPG (power plant, transport,industry)
- Energy efficiency e.g. CFL, generation & transmission (power plant, industry, buildings, urban centres)
- Gas flaring reductions (oil & gas)
- Fugitive emissions monitoring & reductions (oil & gas)
- HFCs/PFCs thermal treatment
- Coal Bed Methane Capture
- Carbon Capture & Storage

Summary of CDM Statistic in Asia

SE Asia Country	Registered Project	Expected Annual Reductions (tCO2)
Malaysia	65	4,419,496
Philippines	40	1,434,956
Indonesia	30	3,609,760
Thailand	24	1,655,642
Vietnam	10	973,744
Cambodia	4	124,356
Lao PDR	1	3,338
Total	**174**	**12,221,292**

Source: UNFCCC, September 2009

Country	Registered Project	Expected Annual Reductions (tCO2)
China	636	188,402,172
India	456	36,134,925
Total	**1092**	**224,537,097**



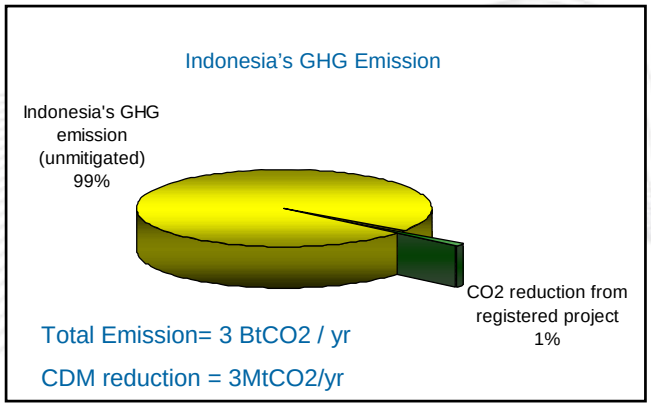
CDM Investment Index

CDM investment climate index (CDM ICI), Asia January 2008 (excerpt)

Rank	Country	CDM ICI (max. 100 pts)	Regional classification
1	Korea (Rep.)	90,2	Very good climate
2	PR China	83,8	Good climate
...	...	...	...
5	Indonesia	78,7	Good climate
...	...	...	...
62	Afghanistan	6,6	Unsatisfactory climate

Source: DEG - Deutsche Investitions - und Entwicklungsgesellschaft mbH

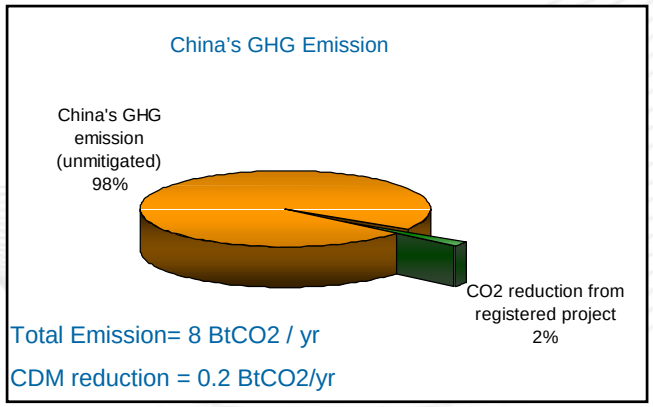
CDM Potential for Indonesia & China



Indonesia's GHG Emission

Total Emission= 3 BtCO2 / yr

CDM reduction = 3MtCO2/yr



China's GHG Emission

Total Emission= 8 BtCO2 / yr

CDM reduction = 0.2 BtCO2/yr

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CDM Barriers

- Complex Difficult Matter (CDM)
- Lack of understanding and awareness
- Requires CDM infrastructure
- Capacity limited
- One-stop-shop facility
- Regulatory barriers
- Limited incentives for development tools

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Future of CDM

- Programmatic CDM
- Sectoral CDM (e.g. cement, Iron & Steel)
- Streamlined process – less bureaucratic
- Beyond 2012 (after Kyoto Protocol)
  - Post-Copenhagen
  - US joining
  - Emission target for developed countries
  - NAMA for developing countries (National Appropriate Mitigation Actions)
  - Technology Transfer & Financing


GOOD NEWS! AT THE CURRENT RATE OF GLOBAL WARMING WE SHOULD BE ABLE TO JUST SWIM OVER THERE AND EAT HIM IN UNDER FIVE YEARS..!
SEA-LEVEL RISE

Thank you