Adapting Bamboo for **CDM**

International Network for Bamboo and Rattan (INBAR)
13:00-17:00, 21st April, Hanoi, Vietnam
During Asia-Pacific Forestry Week

Mitigating CO2 emission by Afforestation & Reforestation in CDM : The role of bamboo

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What is inside:

- Background study
- Constraints analysis
- Opportunity analysis
- Conclusions & Recommendations

1. Background study

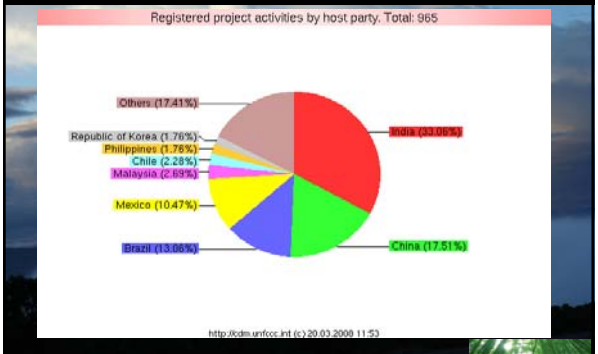
1.1 General information on CDM project development in the World

1. Background study

Registered CDM Projects by host party, by 2008-3-20

Country	No. of Projects
India	319
China	169
Brazil	126
Mexico	101
Global Total	965

1. Background study

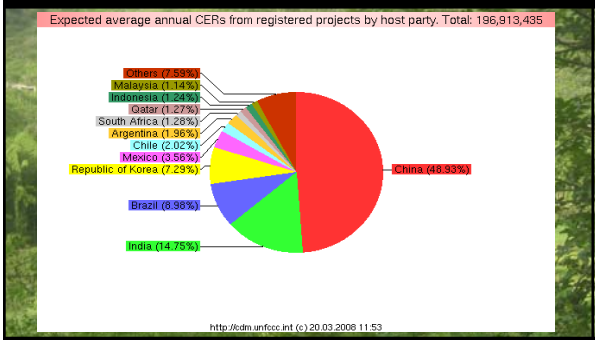


1. Background study

Expected Average Annual CERs from registered projects by host party
by 2008-3-20

Country	Registered CER (t-CO_2/year)
India	29,036,333
China	96,344,351
Brazil	17,685,346
Mexico	7,006,185
Global Total	196,913,435

1. Background study

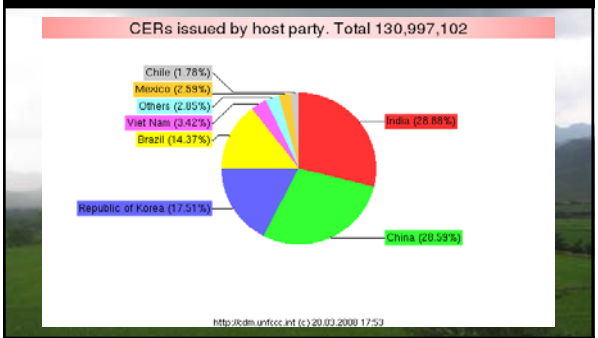


1. Background study

Issued CERs by Host Party
By 2008-3-20

Country	Issued CER (t-CO_2)
India	37,837,923
China	37,450,234
Brazil	18,827,224
Mexico	3,396,342
Global Total	130,997,102

1. Background study



1. Background study

1.2 Afforestation/Reforestation for CDM

Two ways to

1.Reduce CO2 emission by industry
2.Sink carbon by planting trees

1. Background study

A/R CDM Projects in China, and in the World?

1. Approved projects by the DNA: 1150 , by Feb. 29 2008

Only one project is on Afforestation/Reforestation in Guangxi Province in West China, first one in the world

2. Registered at UNFCCC: 169, by March 20 2008

1. Background study

Introduction to the successful CDM project on Afforestation/R in Guangxi Province in West China

Facts on the project:

• Fully funded by WB. Without the WB funding……

• 4000 ha. in two counties (3 major species, masson pine, Chinese fir and Liquidambar formosana Hance)

1. Background study

• 30,000-40,000 tons CO2/year, till 2035 is 770,000 tons CO2 fixed estimated. (yearly 10 tons CO2/ha.)

• CERs sold at 2.2 million US dollars for 20 years, 18.3 dollars/ha. year

1. Background study

CERs of AR / Total CERs registered in CER: 770,000/ 196,913,435 = 1/255

In number:
Globally 1/ 965
Gn China:
• 1/169, registered,
• 1/1150 approved by DNA,

1. Background study

1.3 What has been done on Bamboo for CDM at INBAR

• INBAR Bamboo Carbon Report to FAO in 2007

• A Concept Note on Development of Methodologies on Adapting bamboo for CDM to British Embassy in 2007

• This workshop in Vietnam

• One workshop is planned with ICBR in this November

1. Background study

Two major conclusions in Bamboo Carbon Report to FAO

1. It is reasonable to resume that bamboo CDM projects will not be less profitable than those involving timber tree crops.

1. Background study

2. Bamboo can easily meet current requirements for CDM , yet the methodologies need to be developed under CDM requirements. FAO, INBAR and national partners should take the initiative to develop such projects within the next few years for the benefit of carbon sequestration and development.

2. Constraints analysis

2.1 Constraints:

1. Policy
2. Technology
3. Economy/finance

Constraints analysis

1. Policy

Uncertainty: A. Harvesting; B. Natural disasters (snow, insects, fires…..); C. Un-predictable Growth

- National government did not put the A/R as an important and priority area since the beginning
- Critical constraints: the land for AR must not be afforestation and reforestation since Jan. 1,1990.

Constraints analysis

2. Technical constraints

Main TC remains on A/R methodology development

- Complicated
- Costly
- Time consuming (about 2 years)
- No intellectual property rights

Constraints analysis

3. Financial constraints:

Low CERs with large amount of work and investment in AR CDM project comparing to industrial projects

1. Financial and time investment on methodology
2. Uncertainty and high risk!!!

Constraints analysis

Methodology on bamboo afforestation/r for CDM

1. Bamboo AR need its own methodology because of the significantly different growth and harvesting patterns to trees.
2. A methodology could be developed in line with a CDM project developed or independently

Constraint analysis

Dynamic of CDM methodologies, by 31 March 2008

Methodology approved by the EB:

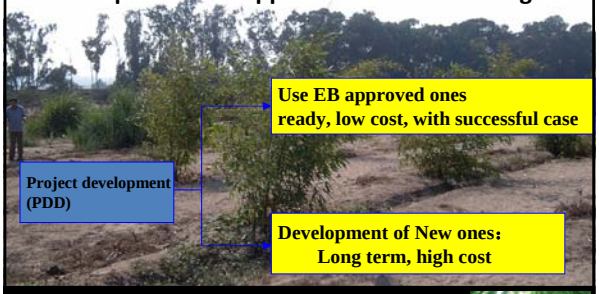
- **General 65**
- **Small project 33**
- **AR 9**
- **General for AR 1**
- **Small AR 3**

Total: 111

But no one for bamboo

Constraints analysis

Development and Application of methodologies



3. Opportunity analysis

1. Bamboo is one of the fast growing plants in the world, with high biomass, which gives a possibility to sequestrate more carbon than trees in certain period.

Opportunity analysis

There is no systematic observation and analysis on bamboo species that would have been appropriate and the opportunity cost of not choosing them, in terms of carbon sequestration as well as sustainable development.

Opportunity analysis

Carbon content comprises usually about 50% of the total bamboo biomass.

Opportunity analysis

It is estimated (in China) bamboo biomass at 167 = +/- 137 ton/ha for the abundant "moso" bamboo (P. heterocycla "pubescens") and 119 = +/- 92 ton/ha for the other species.

Opportunity analysis

This translates to about 83 t C/ha on average for moso and 60t C/ha for other varieties.

Opportunity analysis

Naturally, biomass and potential carbon stock in the tropical bamboos are higher than temperate bamboos such as moso bamboo in China.

Opportunity analysis

2. Bamboo is multi-use and with high economic possibility for poverty alleviation.

Opportunity analysis

Bamboo is usually cultivated exactly for pro-poor livelihood development in rural tropical areas and or for soil conservation and the promotion of biodiversity.

Opportunity analysis

- Bamboo for AR CDM is technically and economically feasible, but difficulties on policy, technology and finance should be solved.
- Because of existing great gaps, it is a great opportunity for the bamboo sector to promote bamboo for CDM.

4. Conclusion & Recommendation

1. Get a better understanding of the net carbon content of different bamboo species & stands with scientific research.
2. Address technical and procedural matters related to bamboo's involvement in the CDM.
3. Trial bamboo methodologies for the Clean Development Mechanism (CDM) in different locations.

Conclusion & Recommendation

4. Promote cooperation among governments, researchers and commercial companies in bamboo CDM projects.
5. Form a network of partners from a range of different organization types and regions who will work to help include bamboo in the CDM or its successor.

Meeting Announcement

International Workshop –Developing bamboo CDM Projects

3-5 November, 2008,
Beijing, China

International Network for Bamboo and Rattan (INBAR)
International Center for Bamboo and Rattan (ICBR)

Thank you for your attention!