CDM IN BRAZIL AND INDIA

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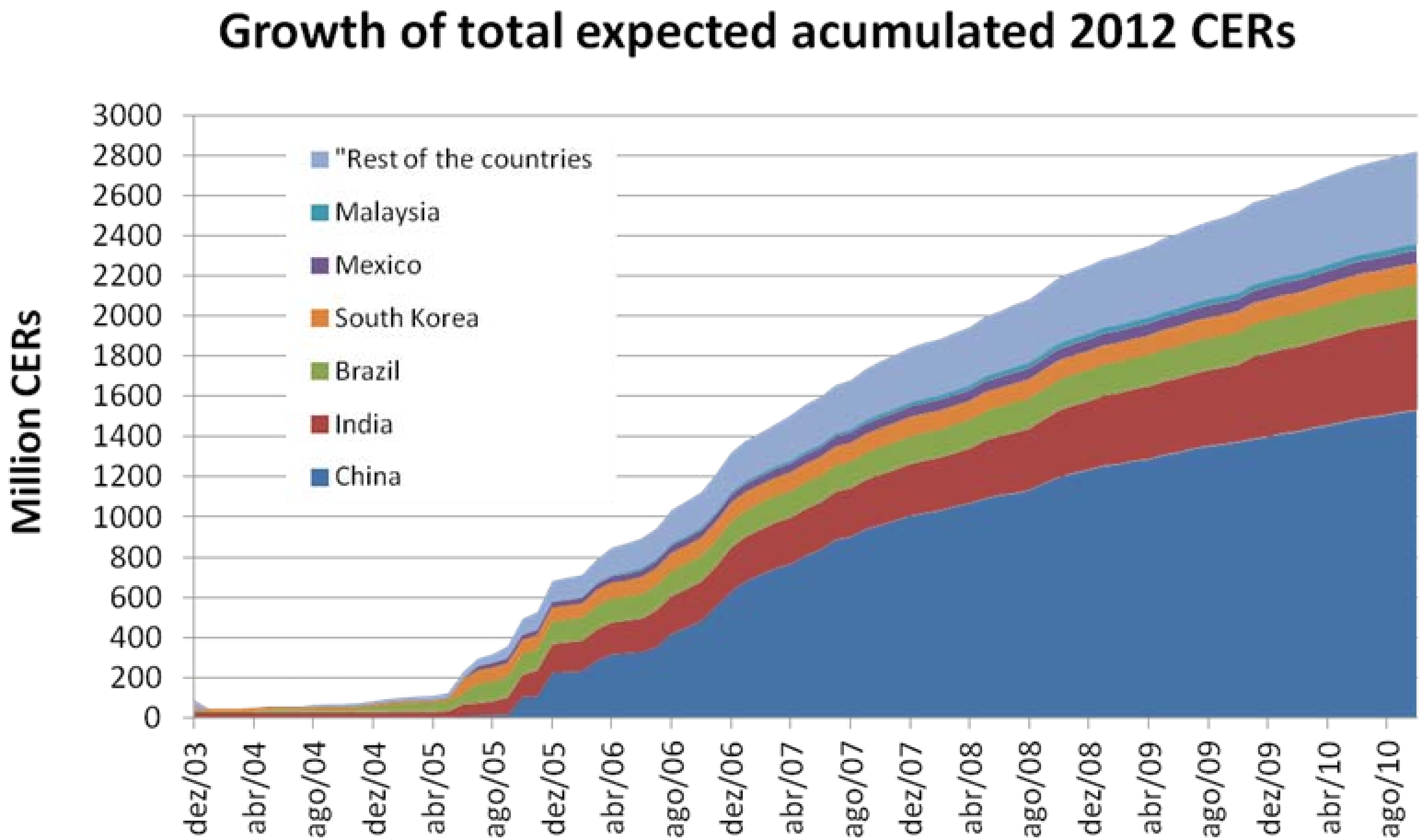
Motivations

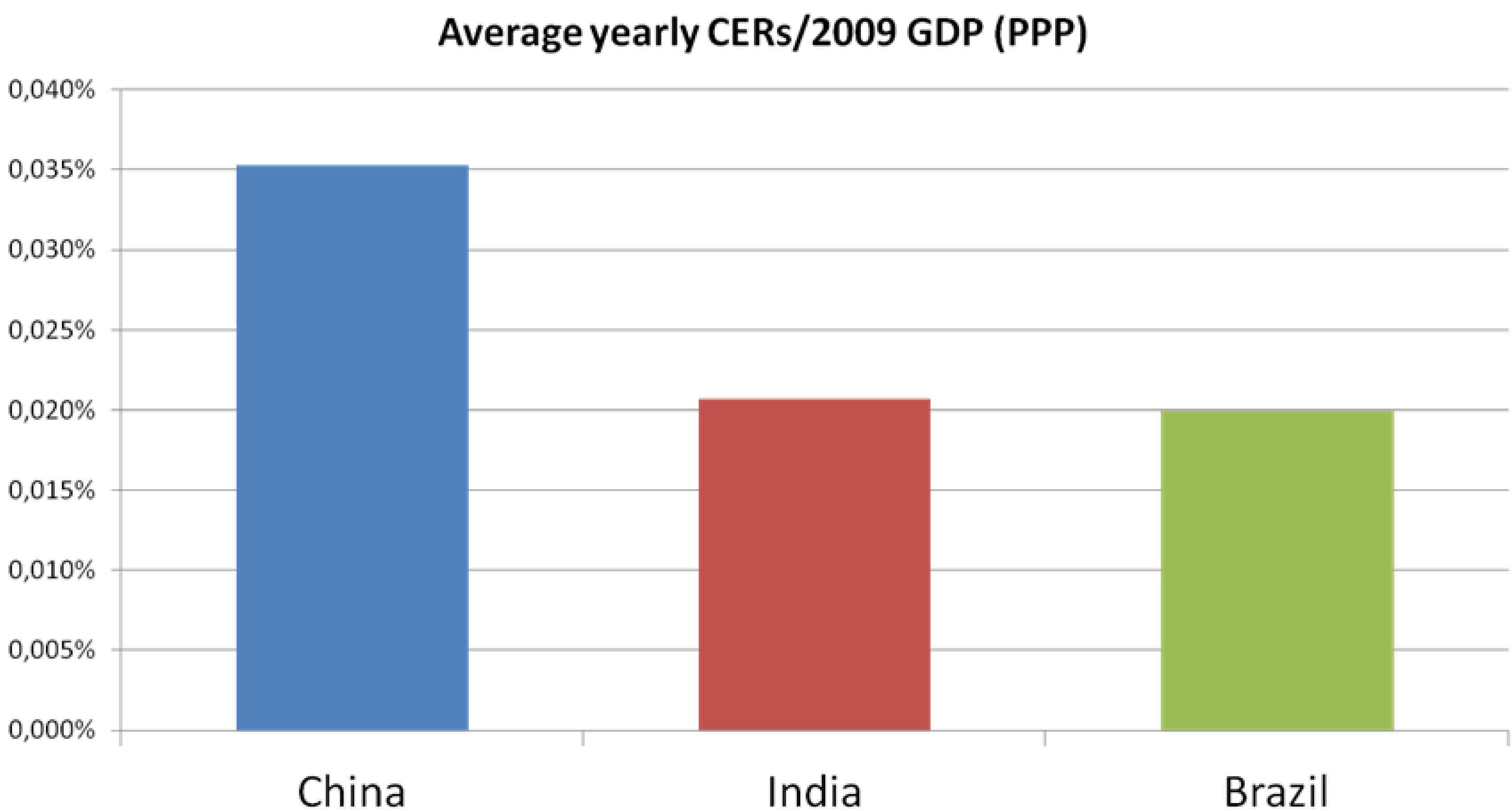
CDM AS A SITE TO INVESTIGATE DYNAMICS OF PRIVATE SECTOR CLEAN ENERGY INVESTMENT IN EMERGING ECONOMIES

CDM in emerging economies



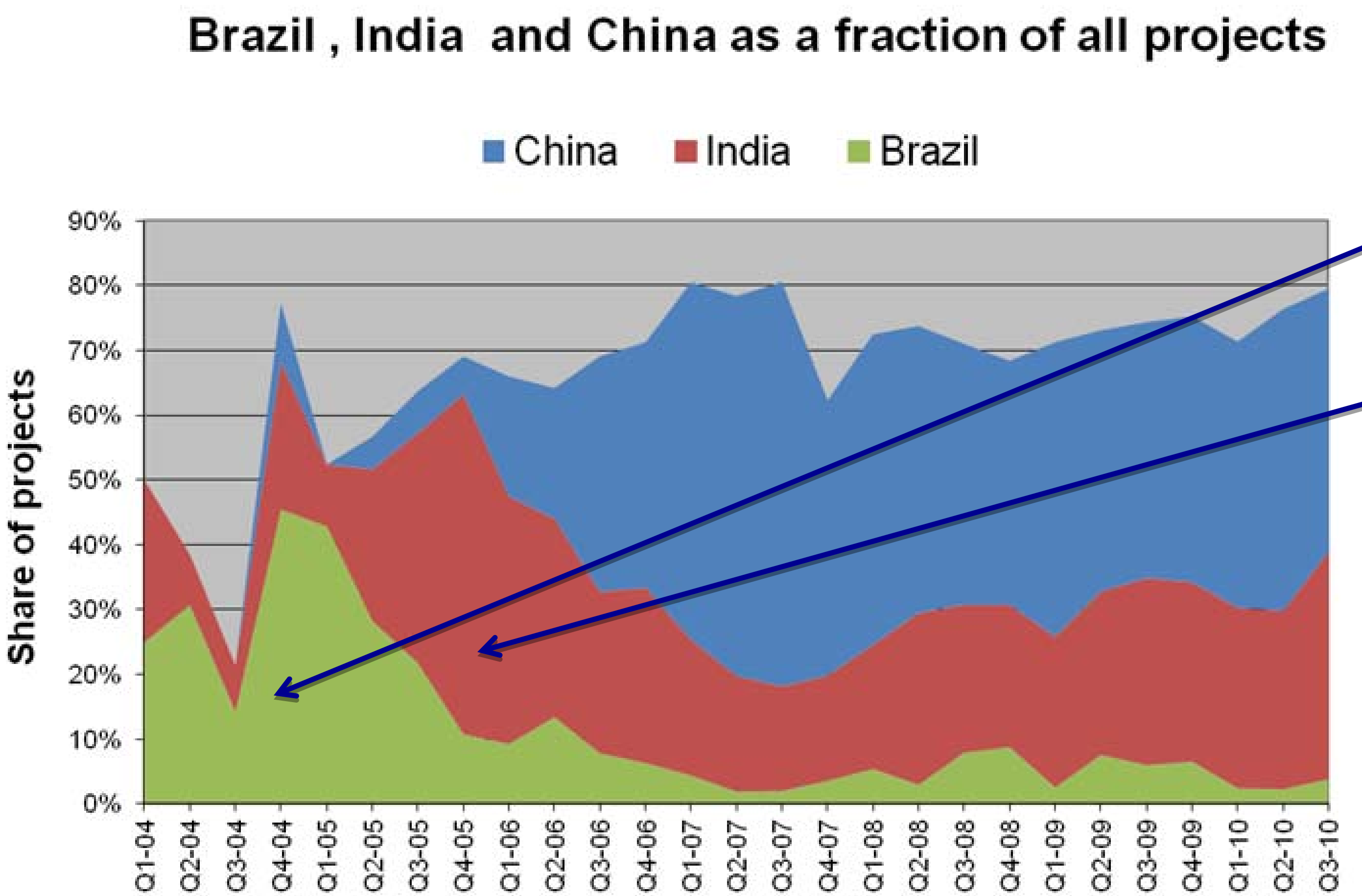
Source: Risø Centre CDM Pipeline October 2010

Focus on Brazil and India …By CDM share of economy



Source: Risø Centre CDM Pipeline October 2010

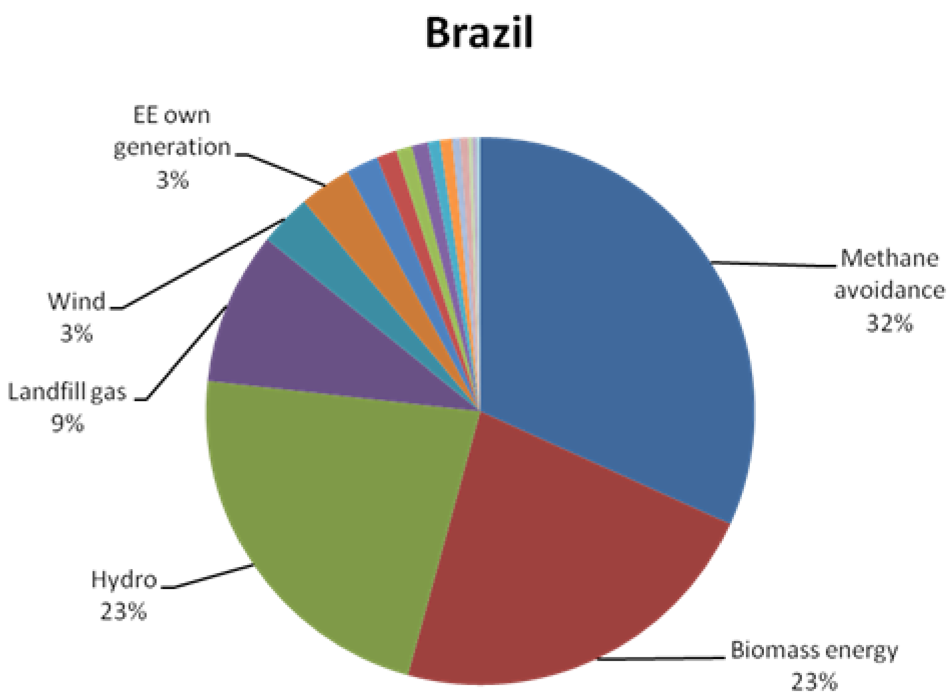
…By timing

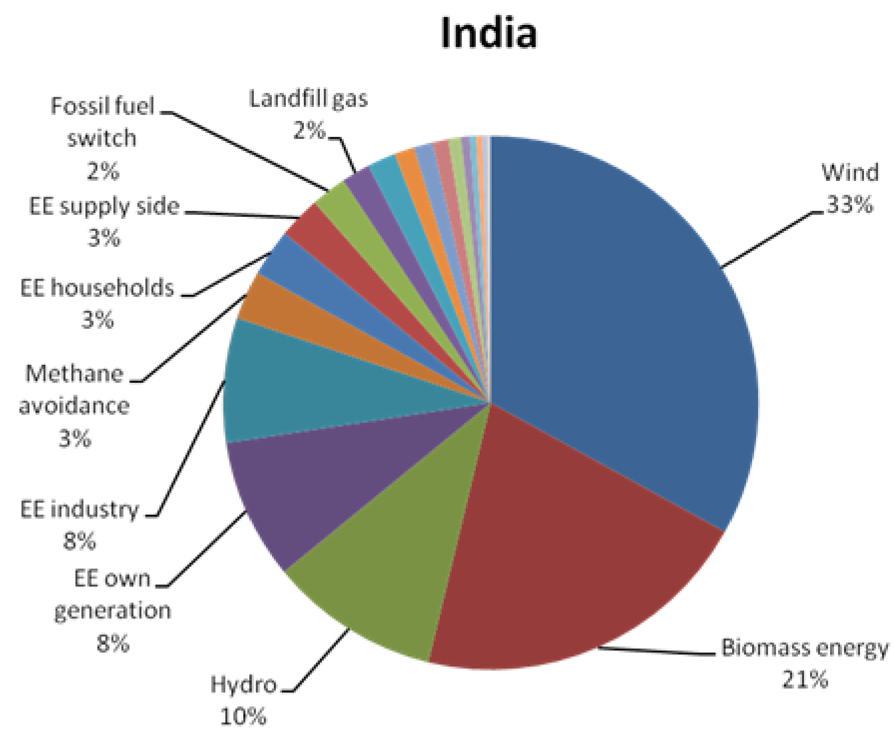


- Brazil = 46% of projects in late 2004
- India = 53% of projects in late 2005
- China then grows to dominate

Source: Risø Centre CDM Pipeline October 2010

…By project type





Source: Risø Centre CDM Pipeline October 2010

…By registration, issuance and rejection

Projects to date	**Brazil**	**India**	**Ratio I:B**
Registered # of projects 2012 kCERs Average project size	179 136,649 763	547 251,509 459	3.1 0.6
Issued # of projects kCERs Average project size	98 43,236 441	227 79,542 350	2.3 0.8
Rejected – EB # of projects	21	44	2.1
Rejected – DOE # of projects	86	332	3.9

Research Question

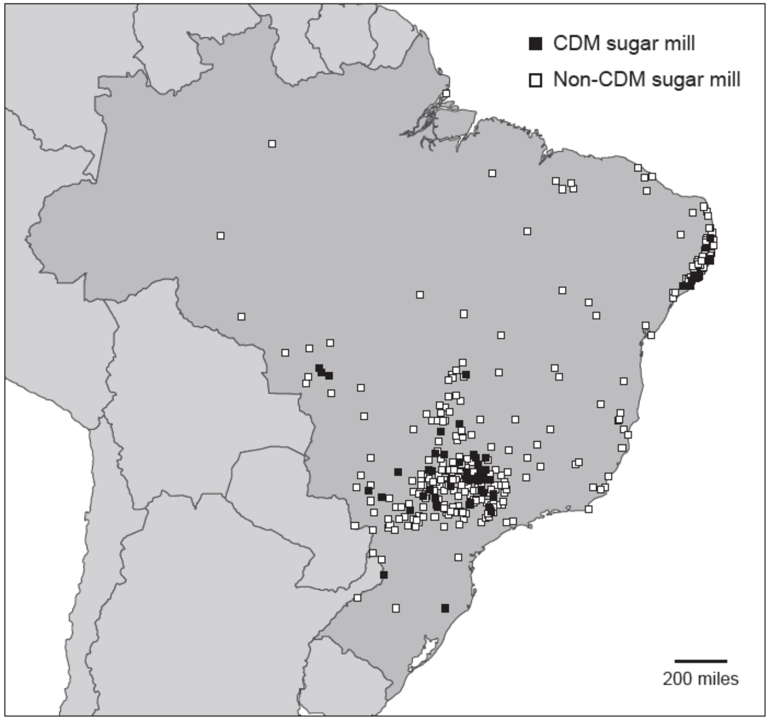
WHAT DRIVES THE DYNAMISM IN THE INDIAN CDM MARKET?

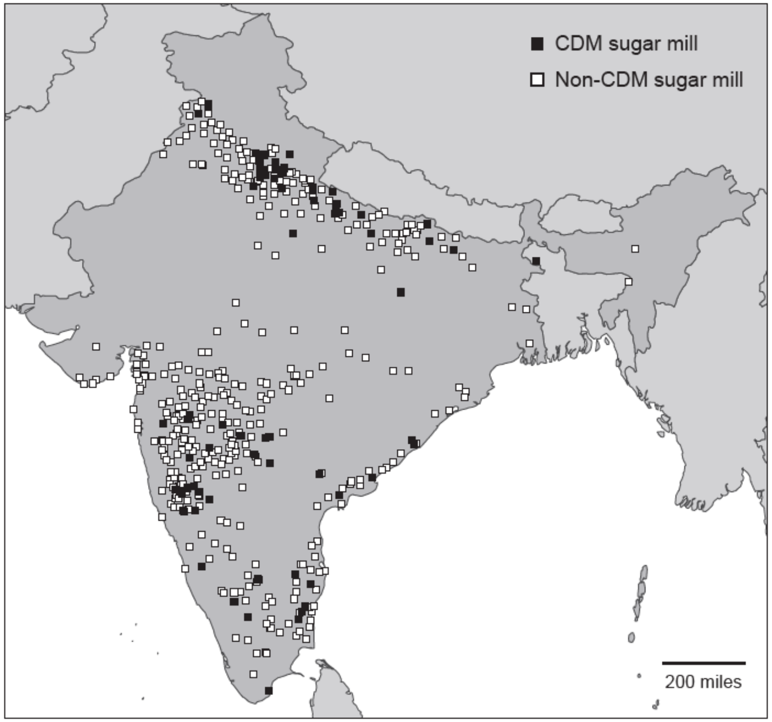
Research methodology

- Comparative case analysis - Brazil and India
- 66 interviews with carbon market experts
- Random sample of cement and sugar firms (2006)
  - 30 CDM plants and 30 non-CDM plants(N=60)
  - for each of four country/sector pairs (N=240)

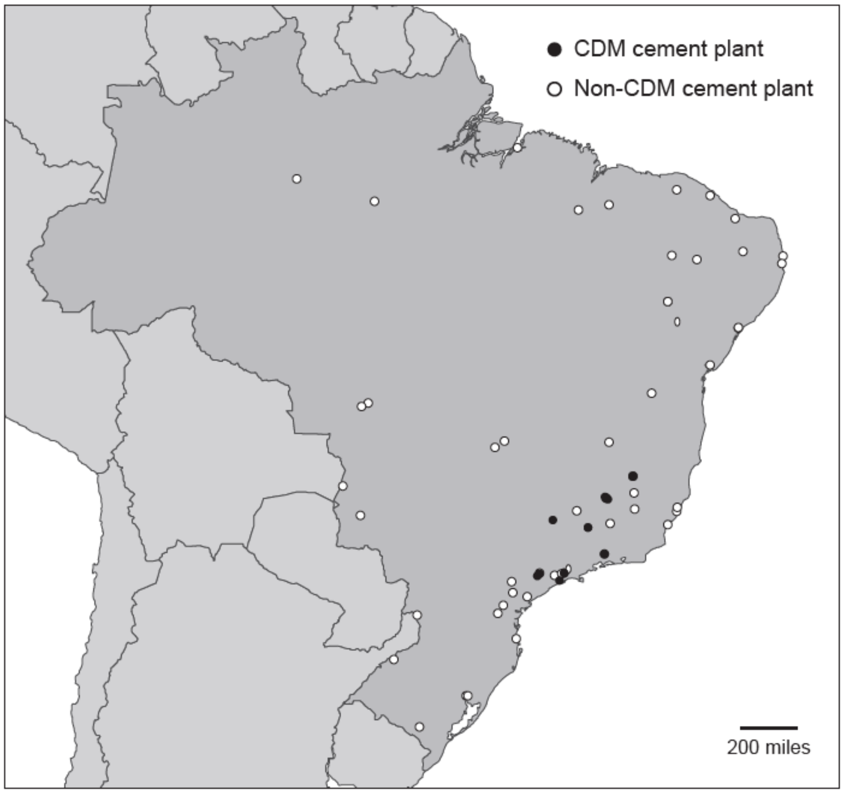
- Firm interviews
  - Plant size
  - Region
  - Ownership
  - Technical capacity
  - Export orientation
  - Network membership

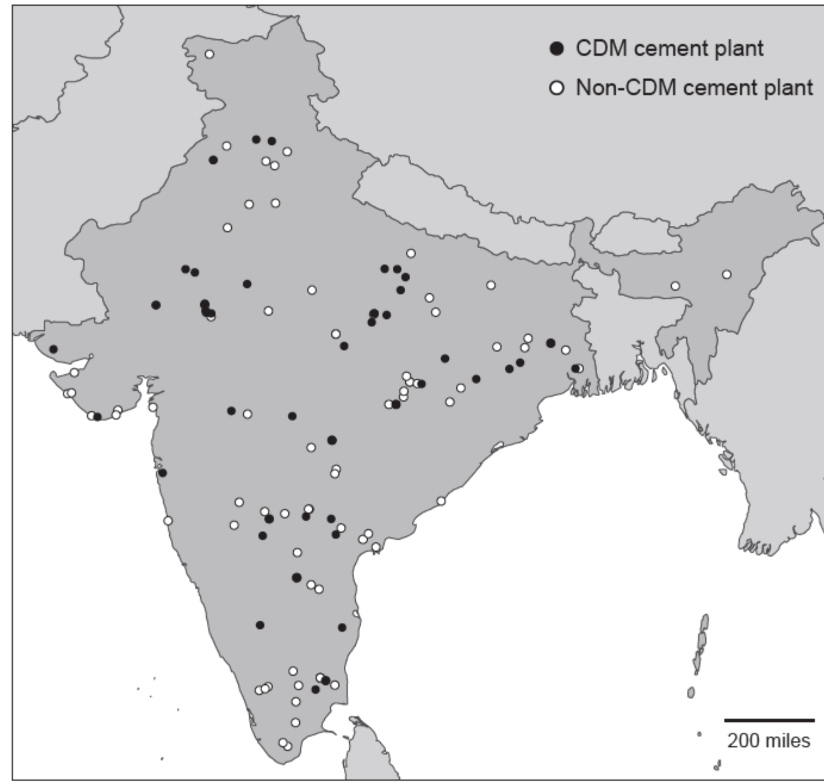
Sugar mills in Brazil and India



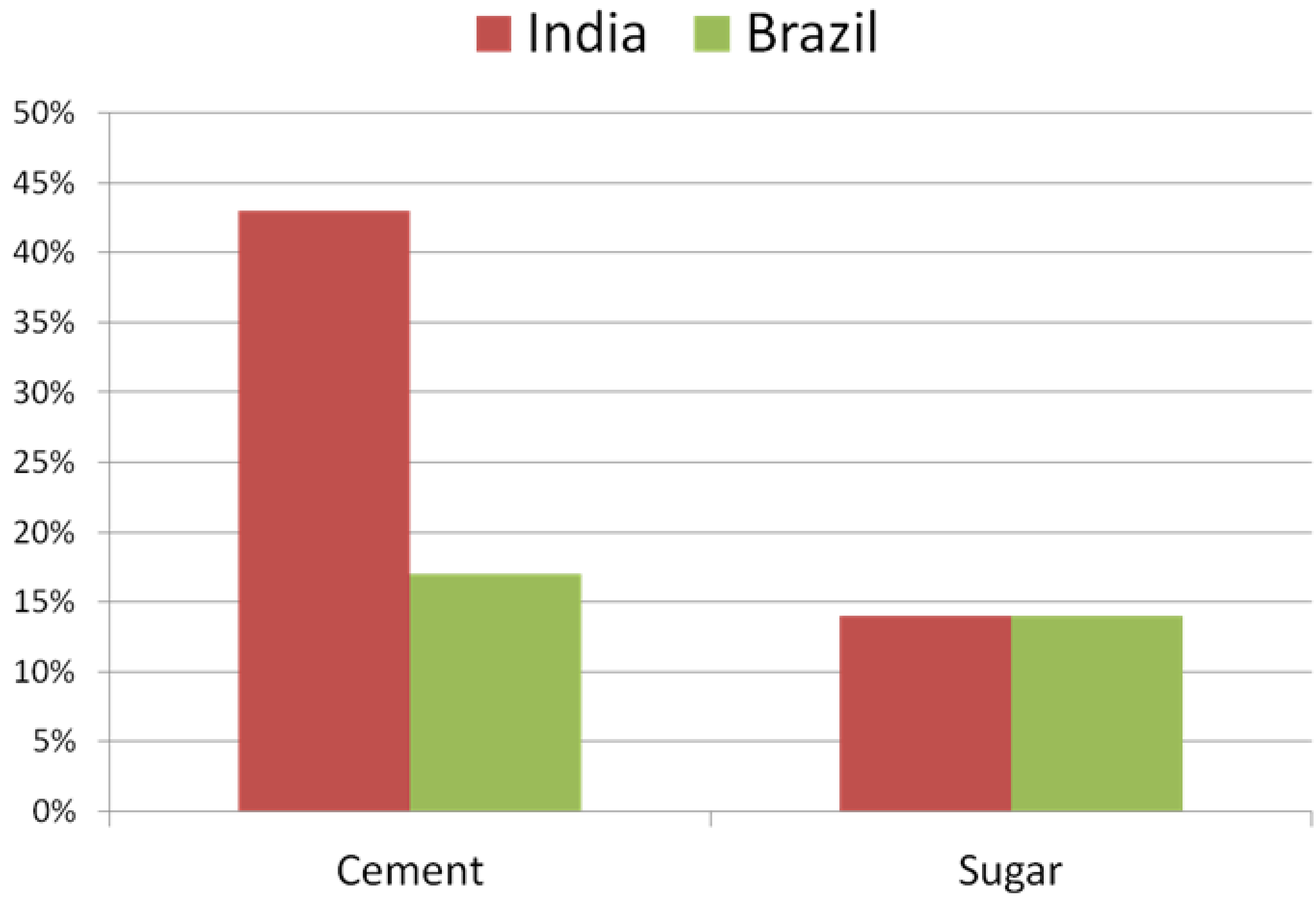


Cement plants in Brazil and India

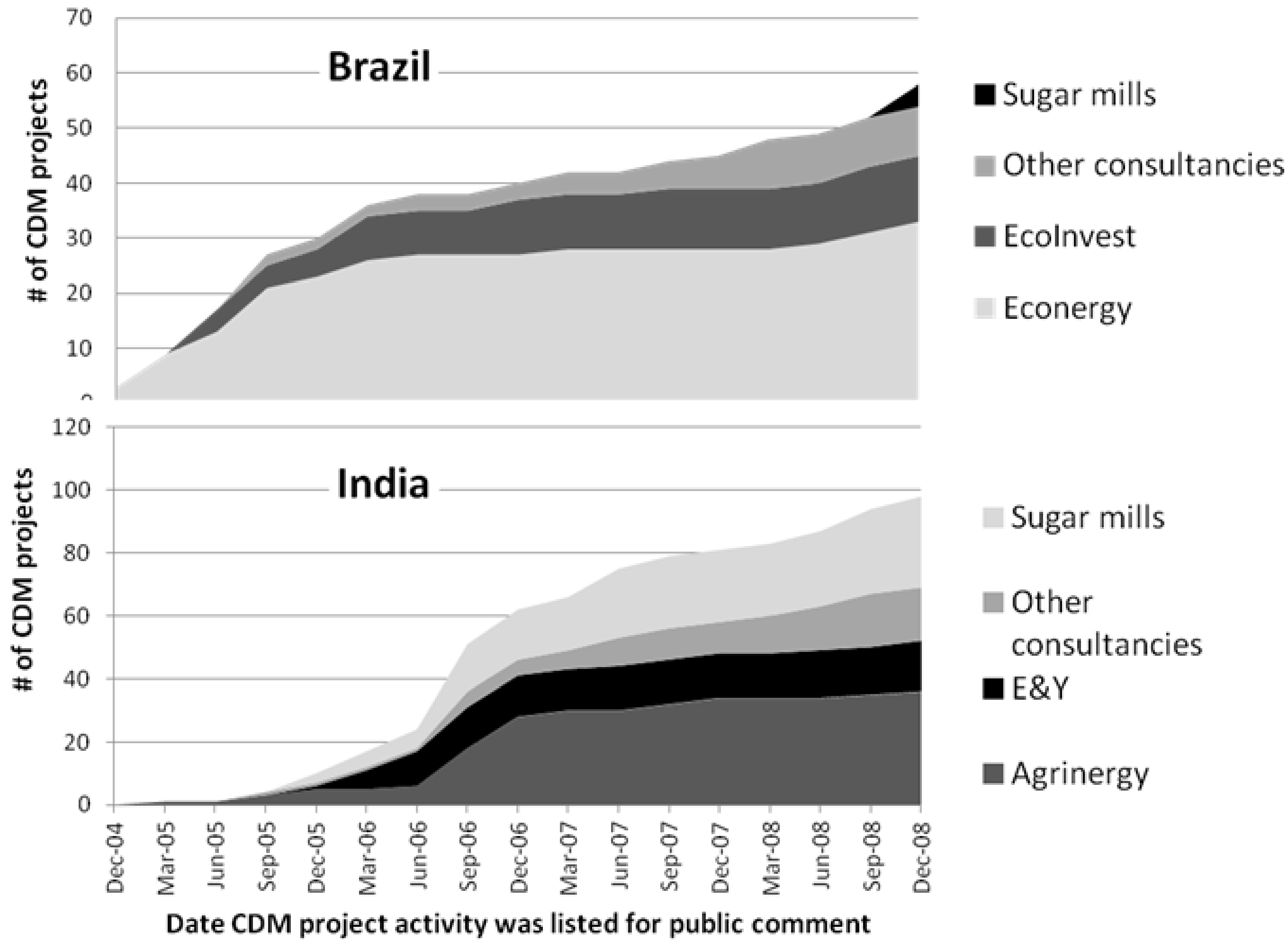




Plant-level CDM participation

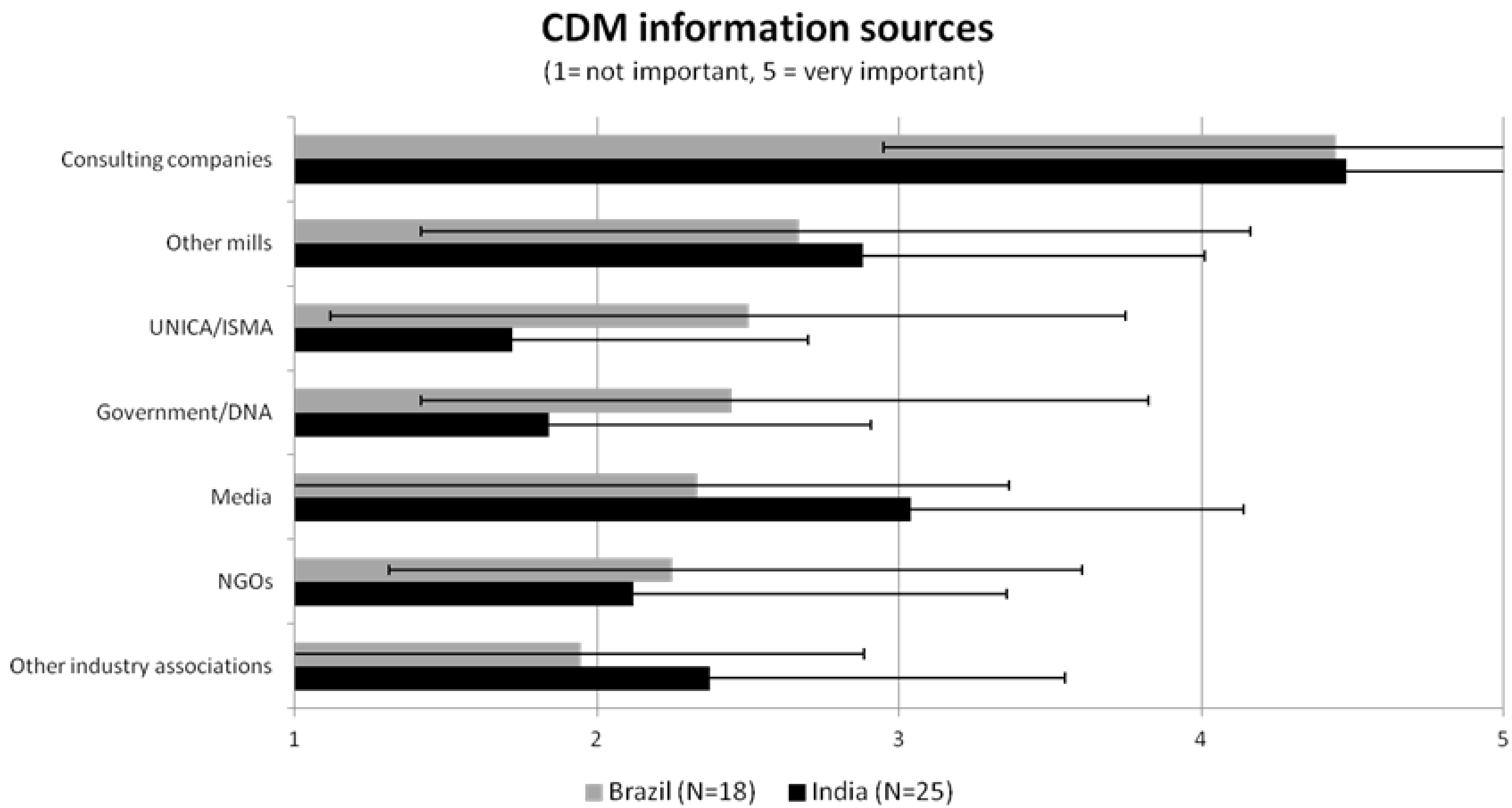


1. CDM consultants



Source: Risø Centre CDM Pipeline March 2009

2. CDM information sources



Relative importance of CDM information sources. Average ranking by sugar mills of different information sources on a scale of 1–5, w/error bars of one standard deviation.

3. Lessons from cement sector

	Cement Brazil	**Cement India**
# of plants (CDM)	60 (11)	116 (50)
Concentration (plants/firm)	5	3.1
% rejected	63%	12%
# of second/ third projects	0%	24%

4. Lessons from sugar sector

	Sugar Brazil	**Sugar India**
# of mills (CDM mills)	417 (60)	558 (78)
Firm size (TCD)	26,000	2,500
Concentration (mills/firm)	1.2	1.1
Management style	Family Professional	Cooperative Professional
Participation **Professional** **Cooperatives**	14% 30% 0.03%	14% 14% --

Conclusions

1. Government support matters
    - Brazil early action/India delayed action
    - Degree of DNA scrutiny
2. Carbon consultants launched industry
3. Physical constraints matter
    - Firm size
    - Grid emissions factor
    - Energy prices