

**ecogerma 2009**

Trade Fair and Congress on Sustainable Technologies

Ministério da  
Ciência e Tecnologia

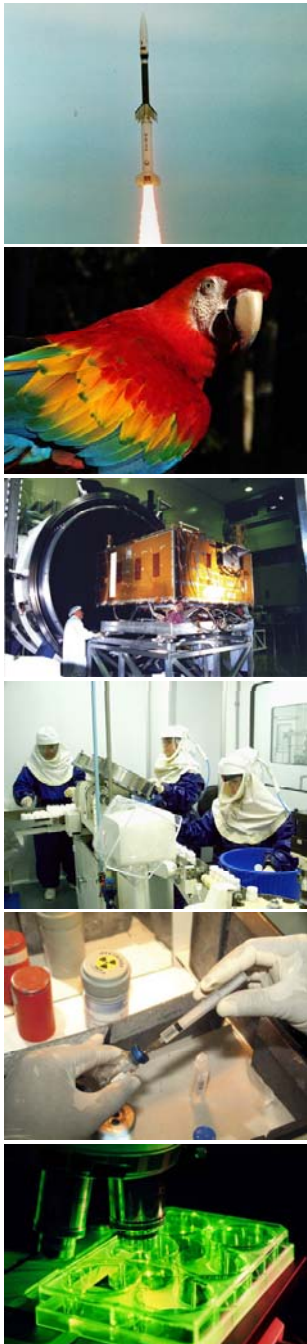


# Clean Development Mechanism of the Kyoto Protocol

## *Opportunities and Perspectives in Brazil*

São Paulo  
March 13<sup>th</sup>, 2009

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Brazilian Ministry of Science and Technology



# Contents

- CDM – concepts
- Brazilian Government Support
- Opportunities
- CDM projects
- Program of Activities
- Perspectives

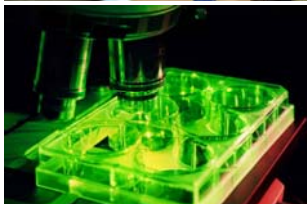
## Clean Development Mechanism – CDM

- United Nations Framework Convention on Climate Change – UNFCCC
  - **Common but differentiate responsibilities**
  - Annex I Parties: with targets
  - Non-Annex I Parties: without targets
- Kyoto Protocol



## Clean Development Mechanism – CDM

- Based on the proposal by Brazil in 1997 of a Clean Development Fund, adopted by the G77 and China and adopted in Kyoto, modified as a mechanism,
- Brazil was the first country to assign a DNA
- One Brazilian project methodology was the first approved by the EB (Landfill – Salvador da Bahia)
- A Brazilian project was the first CDM project registered (Nova Gerar)



## Clean Development Mechanism – CDM

- Objective

- Non Annex I Parties:
  - Sustainable development
  - Contribute for the final objective of the Convention

- Annex I Parties :
  - Meet their reduction or limitation targets

- Idea

- The **Annex I Parties** (developed countries) **buy** the GHG reductions (**carbon credits**) made by projects hosted in **Non Annex I Parties** (developing countries) and use them to meet their reduction or limitation targets.
- These projects spread the **environmentally sound / sustainable technologies**.



## Clean Development Mechanism – CDM

- Definition:

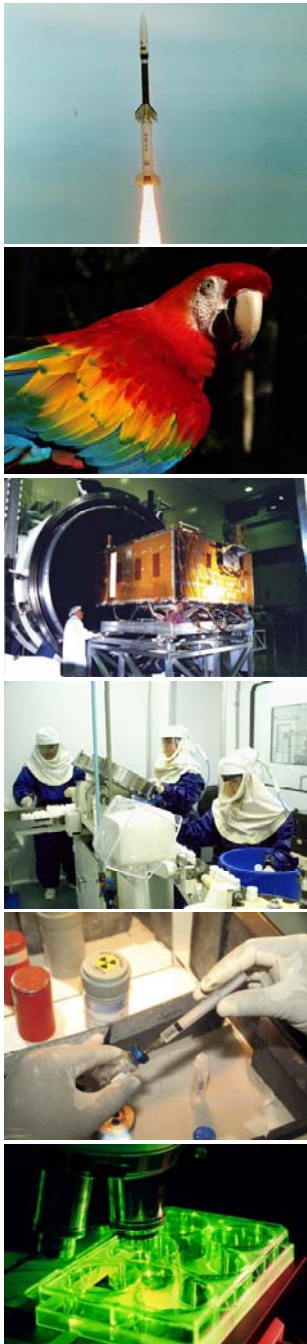
**Emission reductions** resulting from each project activity shall be **certified** by **operational entities**, on the basis of:

- **Voluntary participation** approved by each Party involved;
- **Real, measurable, and long-term benefits** related to the mitigation of climate change; and
- **Reductions** in emissions that are **additional** to any that would occur in the absence of the **certified** project activity.



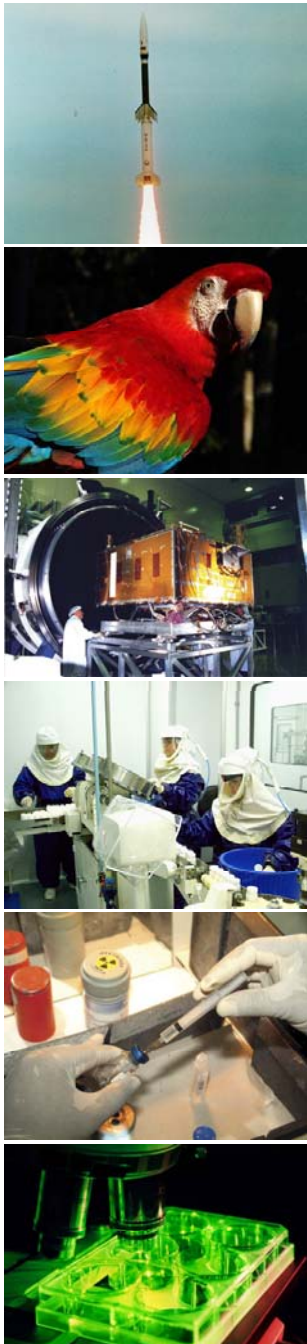
# The ADDITIONALITY Concept

- The project generates GHG reductions which would not occur in its absence.
- This project is only being made due to CDM.



# CDM Project Cycle in Brazil

- Approval by the DNA is analyzed after Validation Report has been issued.
  - voluntary participation
  - contribution to sustainable development





# National Framework

- Presidential Decree July 1999
- Interministerial Commission on Global Climate Change
  - Composed of representatives from 11 Ministries
  - Chair Minister of Science and Technology
  - Vice-chair Minister of Environment
- Commission meets bimonthly



# Interministerial Commission

- Ministry of Science and Technology;
- Ministry of Environment;
- Ministry of Agriculture, Livestock and Supply;
- Ministry of Transportation;
- Ministry of Mines and Energy;
- Ministry of Development, Industry and Trade;
- Ministry of Cities;
- Ministry of Foreign Relations;
- Ministry of Planning, Budget and Management;
- Ministry of Economy
- Civil House of the Republic's Presidency



## Attributions of the Interministerial Commission

- to provide a statement, whenever requested, **on proposals for sectorial policies, legal instruments and norms** that contain a relevant component for the mitigation of global climate change and the Country's adaptation to its impacts;
- to provide inputs on the **Government's positions in the negotiations** under the United Nations Framework Convention on Climate Change and subsidiary instruments of which Brazil takes part;
- to establish **agreements with representative entities of the civil society**, in order to promote actions by the governmental and private bodies with a view of meeting the commitments accepted by Brazil under the United Nations Framework Convention on Climate Change and subsidiary instruments of which Brazil is part;



## Attributions of the Interministerial Commission

- **to define eligibility criteria** additional to those considered by the Bodies of the Convention in charge of the Clean Development Mechanism (CDM), as provided for in Article 12 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, pursuant to national sustainable development strategies;
- **to analyze projects** that result in emission reduction and that are considered eligible to the Clean Development Mechanism (CDM), as referred to in the previous item, and **approve them, when appropriate;**



## Resolutions:

Nº 1, 11/09/2003

Nº 5, 11/04/2007

Nº 2, 10/08/2005

Nº 6, 06/06/2007

Nº 3, 24/03/2006

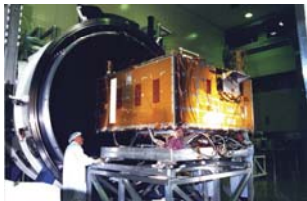
Nº 7, 05/03/2008

Nº 4, 06/12/2006

Nº 8, 26/05/2008

- **Necessary documents** for submission.
- **Letter of Approval** issued by MCT.
- **Schedules.**
- Public **data bank** covering the projects.
- Definition of the **forest parameters**: crown cover (30%), area (1 ha) and tree height (5m).
- **Low income communities**: monthly income of half minimum salary.
- **New facts** known by the Commission that could **lead to the annulment** or revocation of the LoA.
- **Other information** (e.g. stakeholder consultation process, emission factor for electricity).





## **Mandatory document: description of how the project assists Brazil to achieve sustainable development**

- Contribution to **local environmental sustainability**
- Contribution to **labor conditions development** and **net employment creation**
- Contribution to **income distribution**;
- Contribution to **capacity building** and **technological development**;
- Contribution to **regional integration** and **sectoral relationship**;



## Other particularities:

- Documents confirming **compliance with labor and environmental Brazilian legislation** in force, whenever necessary;
- **Invitation** to following Stakeholders mandatory;
  - Municipality and Municipal Representatives;
  - State and Local Environment Agencies;
  - Brazilian Forum of NGO's and Social Movements;
  - Community Associations related to the project type;
  - Federal and State Prosecution;

# Project Opportunities in Brazil

- **Energy Sector** ( $\text{CO}_2 - \text{CH}_4 - \text{N}_2\text{O}$ )
  - Increase energy efficiency
  - Less greenhouse gas intensive fuel
  - Renewable energy (alcohol, sugar-cane bagasse, biomass, wind, solar)

- **Industry** ( $\text{CO}_2 - \text{N}_2\text{O} - \text{HFCs} - \text{PFCs} - \text{SF}_6$ )
  - Technological improvements of processes

- **Agriculture** ( $\text{CH}_4 - \text{N}_2\text{O}$ )
  - Cattle feeding
  - Manure handling systems
  - Rice cultivation

- **Waste Management** ( $\text{CH}_4$ )
  - Methane combustion in landfills
  - Industrial/domestic waste water management

- **Afforestation and Reforestation** ( $\text{CO}_2$ )
  - Riparian forests
  - Timber/energy production
  - Rubber plantation
  - Recovering of degraded areas/biodiversity corridors

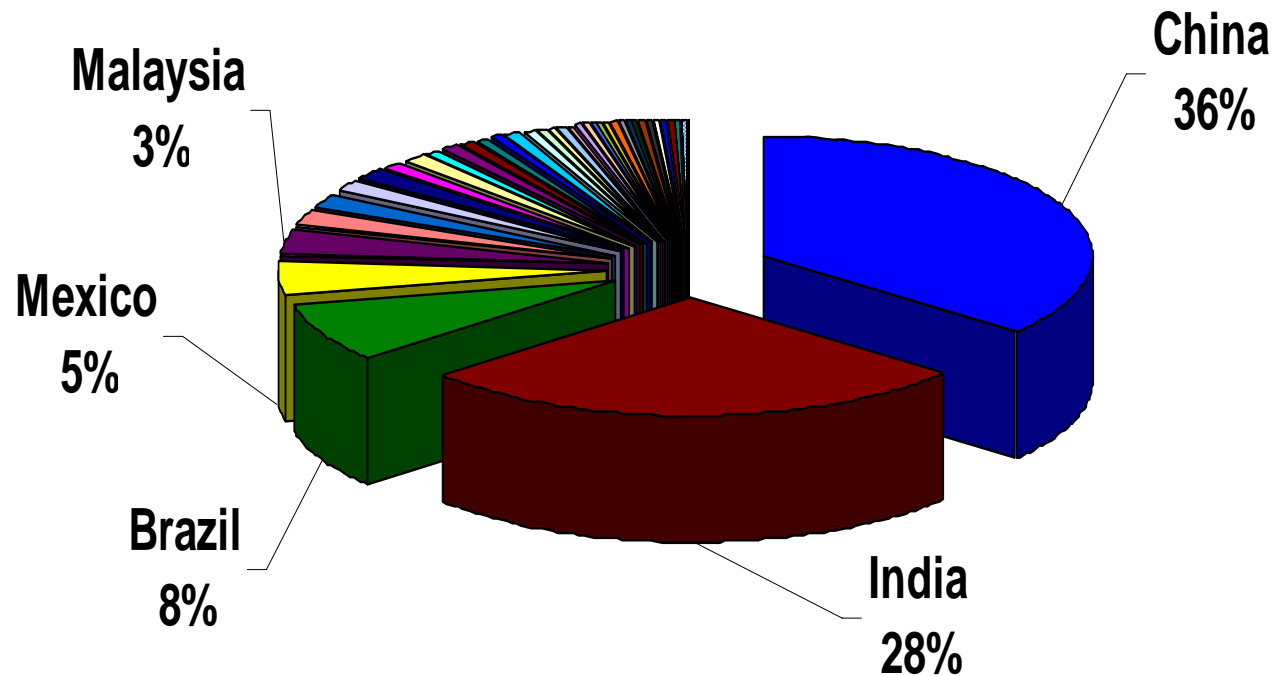
Gás	GWP
HFCs	
HFC-23	11.700
HFC-32	650
HFC-41	150
HFC-43-10mee	1.300
HFC-125	2.800
HFC-134	1.000
HFC-134a	1.300
HFC-152a	140
HFC-143	300
HFC-143a	3.800
HFC-227ea	2.900
HFC-236fa	6.300
HFC-245ca	560





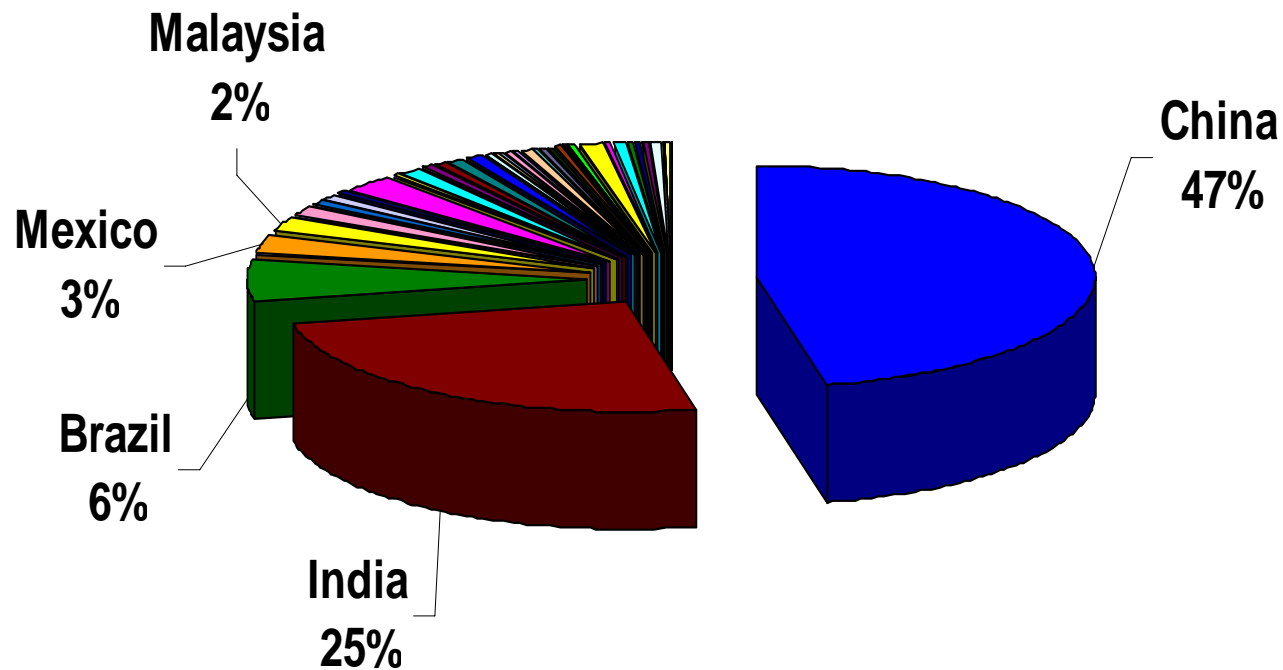
# Total of CDM Project Activities in the World

4350



China	India	Brazil	Mexico	Malaysia	Indonesia	Thailand	Chile
Philippines	Rep. of Korea	Viet Nam	Colombia	Israel	Peru	South Africa	Argentina
Honduras	Sri Lanka	Ecuador	Guatemala	Panama	Emirats	Egypt	Pakistan
Morocco	Bolivia	Costa Rica	El Salvador	Uganda	Armenia	Nicaragua	Uzbekistan
Cyprus	Georgia	Moldova	Kenya	Dominican Rep.	Cambodia	Singapore	Paraguay
Uruguay	Bangladesh	Cuba	Jordan	Mongolia	Nigeria	Azerbaijan	Bhutan
Nepal	Tanzania	Congo	Côte d'Ivoire	Jamaica	Macedonia	Mali	Senegal
Tunisia	Fiji	Guyana	Equatorial Guinea	Lao P D R	Madagascar	Malta	Mauritius
Mozambique	P. N. Guinea	Qatar	Kyrgyztan	Tajikistan			

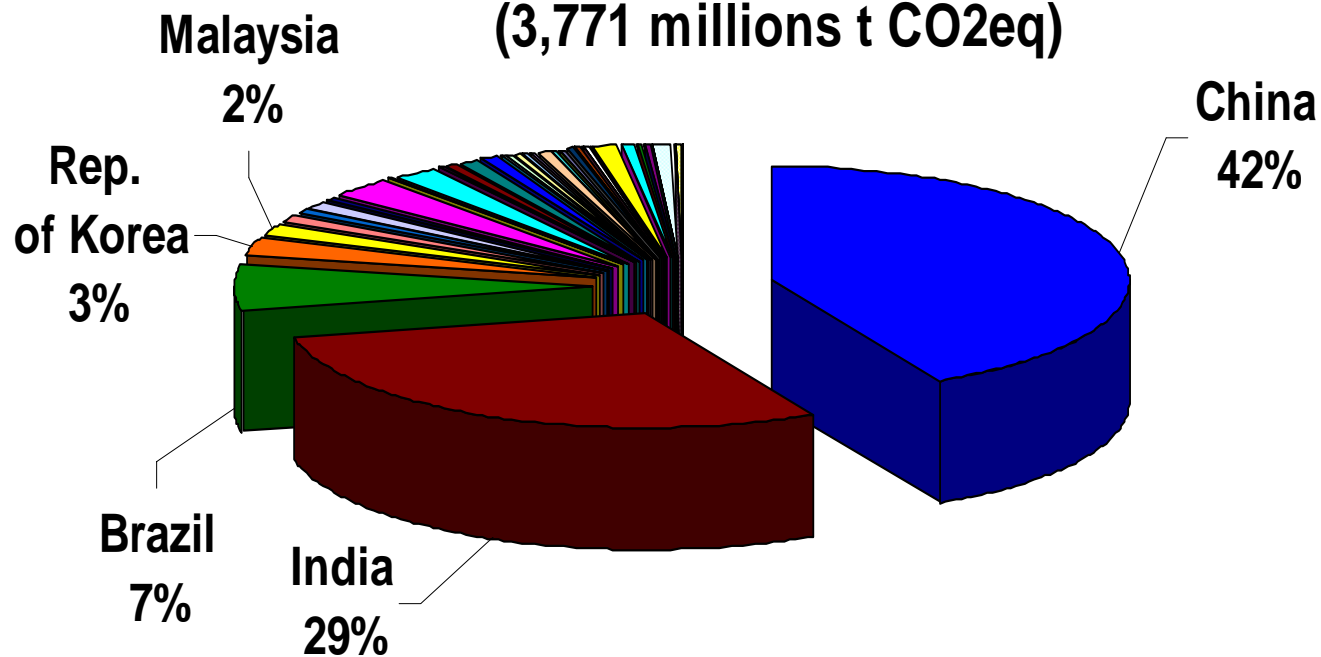
## Reduced Emission on the First Crediting Period (5,396 millions t CO<sub>2</sub>eq)



China	India	Brazil	Mexico	Malaysia	Indonesia	Thailand	Chile
Philippines	Rep. of Korea	Viet Nam	Colombia	Israel	Peru	South Africa	Argentina
Honduras	Sri Lanka	Ecuador	Guatemala	Panama	Emirats	Egypt	Pakistan
Morocco	Bolivia	Costa Rica	El Salvador	Uganda	Armenia	Nicaragua	Uzbekistan
Cyprus	Georgia	Moldova	Kenya	Dominican Rep.	Cambodia	Singapore	Paraguay
Uruguay	Bangladesh	Cuba	Jordan	Mongolia	Nigeria	Azerbaijan	Bhutan
Nepal	Tanzania	Congo	Côte d'Ivoire	Jamaica	Macedonia	Mali	Senegal
Tunisia	Fiji	Guyana	Equatorial Guinea	Lao P D R	Madagascar	Malta	Mauritius
Mozambique	P. N. Guinea	Qatar	Kyrgyzstan	Tajikistan			

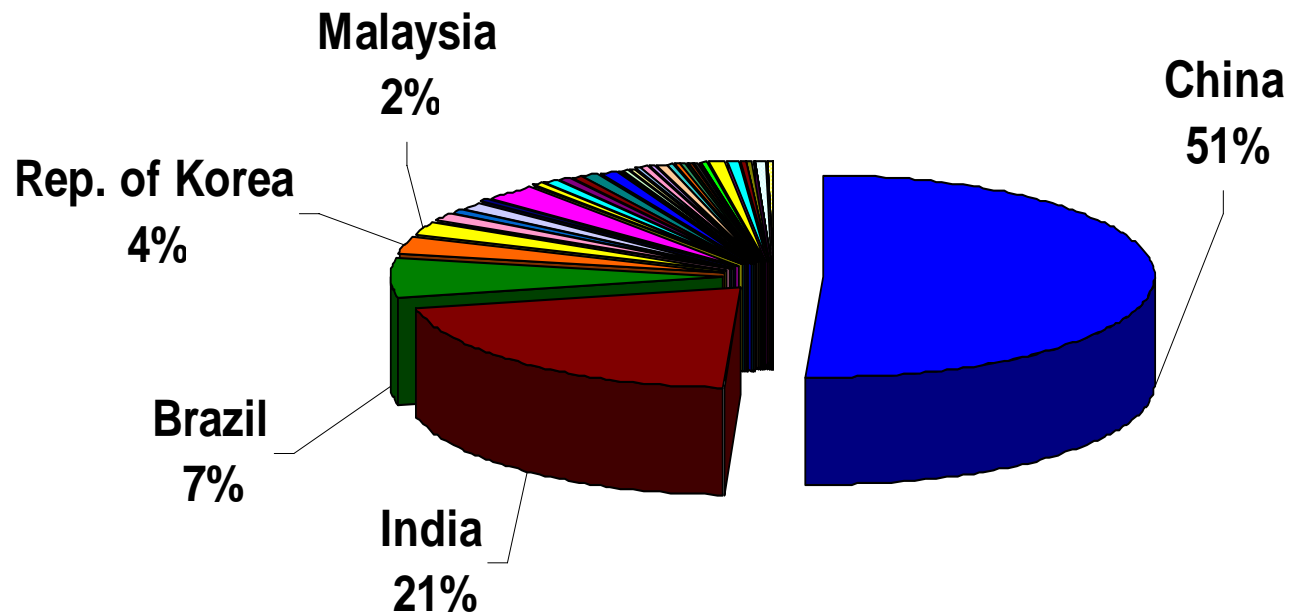
## Emissions Reduction since the Start of Crediting Period until 31 December 2012

(3,771 millions t CO<sub>2</sub>eq)



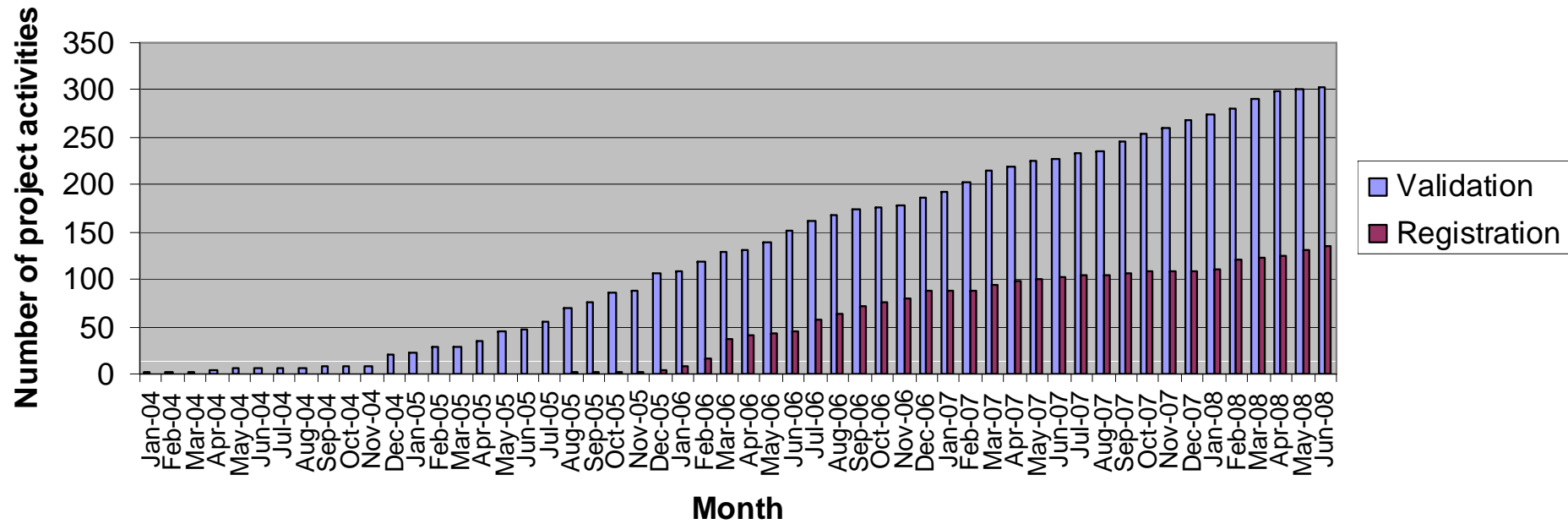
China	India	Brazil	Mexico	Malaysia	Indonesia	Thailand	Chile	Philippines
Rep. of Korea	Viet Nam	Colombia	Israel	Peru	South Africa	Argentina	Honduras	Sri Lanka
Ecuador	Guatemala	Panama	Emirats	Egypt	Pakistan	Morocco	Bolivia	Costa Rica
El Salvador	Uganda	Armenia	Nicaragua	Uzbekistan	Cyprus	Georgia	Moldova	Kenya
Dominican Rep.	Cambodia	Singapore	Paraguay	Uruguay	Bangladesh	Cuba	Jordan	Mongolia
Nigeria	Azerbaijan	Bhutan	Nepal	Tanzania	Congo	Côte d'Ivoire	Jamaica	Macedônia
Mali	Senegal	06/27/09	Fiji	Guyana	Equatorial Guinea	Lao P D R	Madagascar	Malta
Mauritius	Mozambique	P. N. Guinea	Qatar	Kyrgyzstan	Tajikistan			

## Annual Emission Reduction (660 millions t CO<sub>2</sub>eq)



China	India	Brazil	Mexico	Malaysia	Indonesia	Thailand	Chile
Philippines	Rep. of Korea	Viet Nam	Colombia	Israel	Peru	South Africa	Argentina
Honduras	Sri Lanka	Ecuador	Guatemala	Panama	Émirats	Egypt	Pakistan
Morocco	Bolivia	Costa Rica	El Salvador	Uganda	Armenia	Nicaragua	Uzbekistan
Cyprus	Georgia	Moldova	Kenya	Dominican Rep.	Cambodia	Singapore	Paraguay
Uruguay	Bangladesh	Cuba	Jordan	Mongolia	Nigeria	Azerbaijan	Bhutan
Nepal	Tanzania	Congo	Côte d'Ivoire	Jamaica	Macedonia	Mali	Senegal
Tunisia	Fiji	Guyana	Equatorial Guinea	Lao P D R	Madagascar	Malta	Mauritius
Mozambique	P. N. Guinea	Qatar	Kyrgyztan	Tajikistan			

## Number of CDM Project Activities in Brazil



## Sectoral Scope of Brazilian Projects

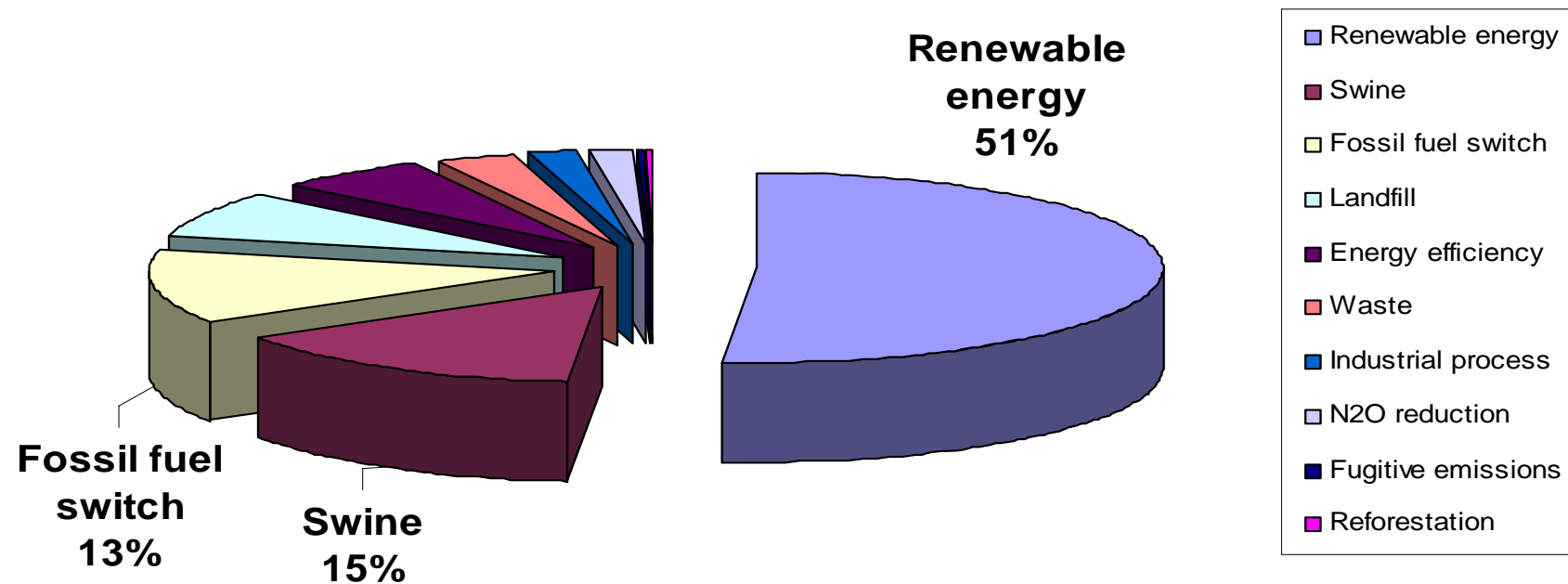
Projects under Validation/Approval Process	Number of projects	Annual emission reduction	Emission reductions on the 1st crediting period	Number of projects	Annual emission reduction	Emission reductions on the 1st crediting period
Renewable energy	163	16.971.045	119.565.353	48%	39%	36%
Swine	58	2.854.044	26.834.620	17%	7%	8%
Landfill	30	10.156.054	75.048.699	9%	24%	23%
Industrial process	7	832.946	6.131.592	2%	2%	2%
Energy efficiency	21	1.490.288	14.535.192	6%	3%	4%
Waste	13	1.270.537	10.255.823	4%	3%	3%
N2O reduction	5	6.373.896	44.617.272	1%	15%	14%
Fossil fuel switch	40	2.944.658	24.541.512	12%	7%	7%
Fugitive emissions	1	34.685	242.795	0%	0%	0%
Reforestation	1	262.352	7.870.560	0%	1%	2%

# Brazilian Projects

Projetos Brasileiros							
	Interministerial Commission		Executive Board				
	In validation or not submitted	Already validated and submitted	In validation	Approved, to be registered	Requesting registration	Rejected or withdrawn	Registered
<b>Approved</b>		198		20	12	21	150
Approved with restrictions		5					
In revision		8	8				
New projects submitted		3	3				
<b>Sub-total - submitted</b>		<b>214</b>					
Not submitted	132		132				
<b>Total</b>	<b>346</b>				<b>346</b>		

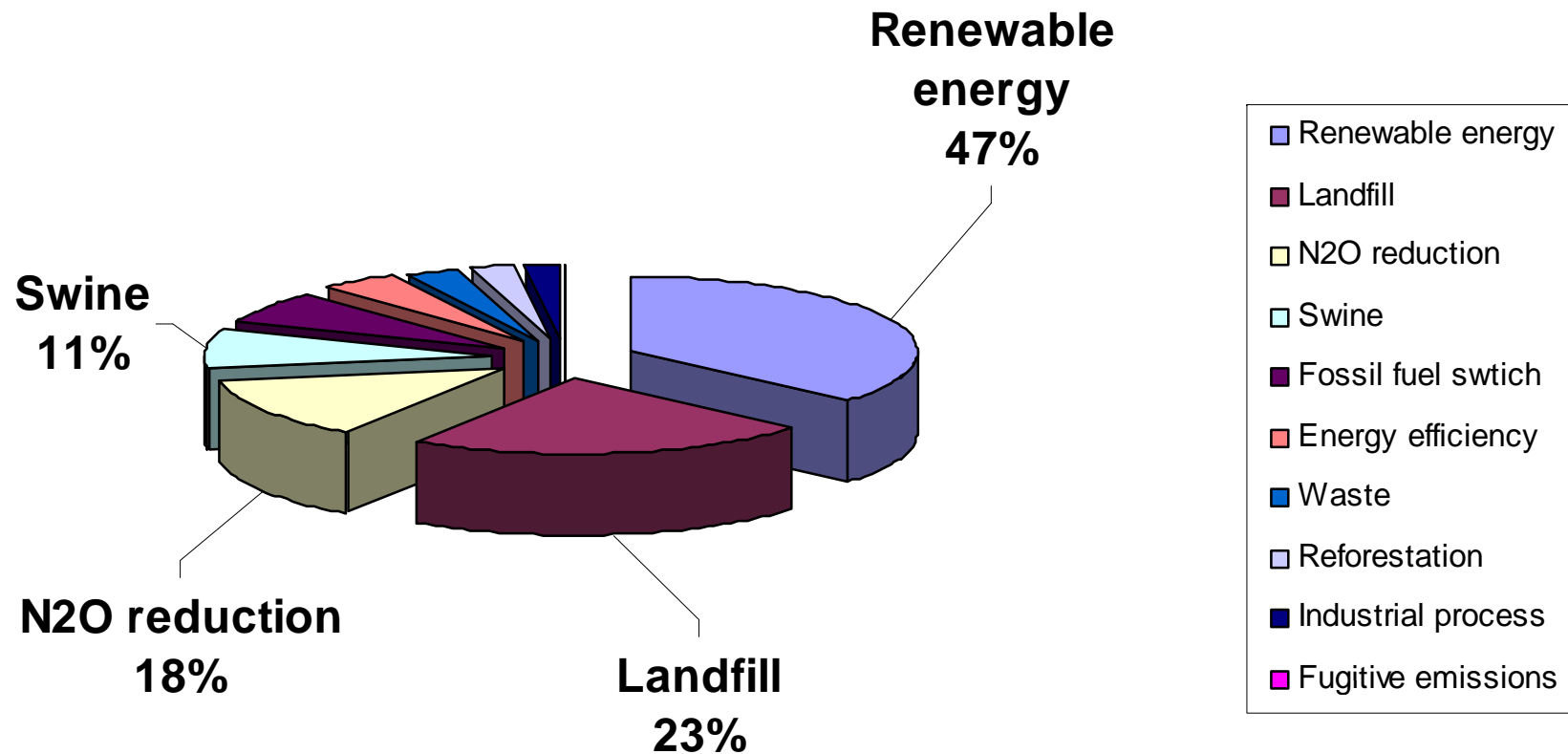
Position of 06/03/2009

## Number of Brazilian Projects by Sectoral Scope





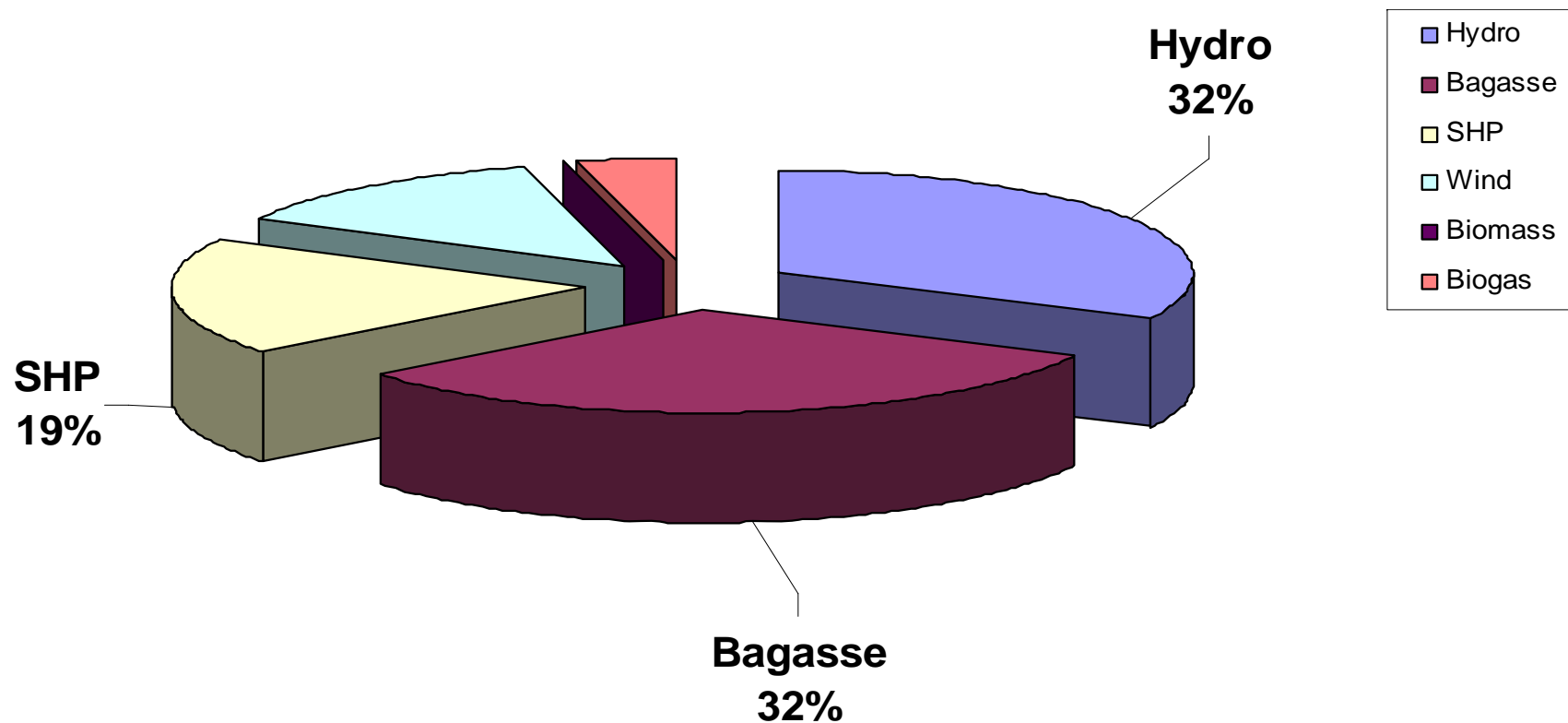
## Emission Reductions on the First Crediting Period by Sectoral Scope in Brazil



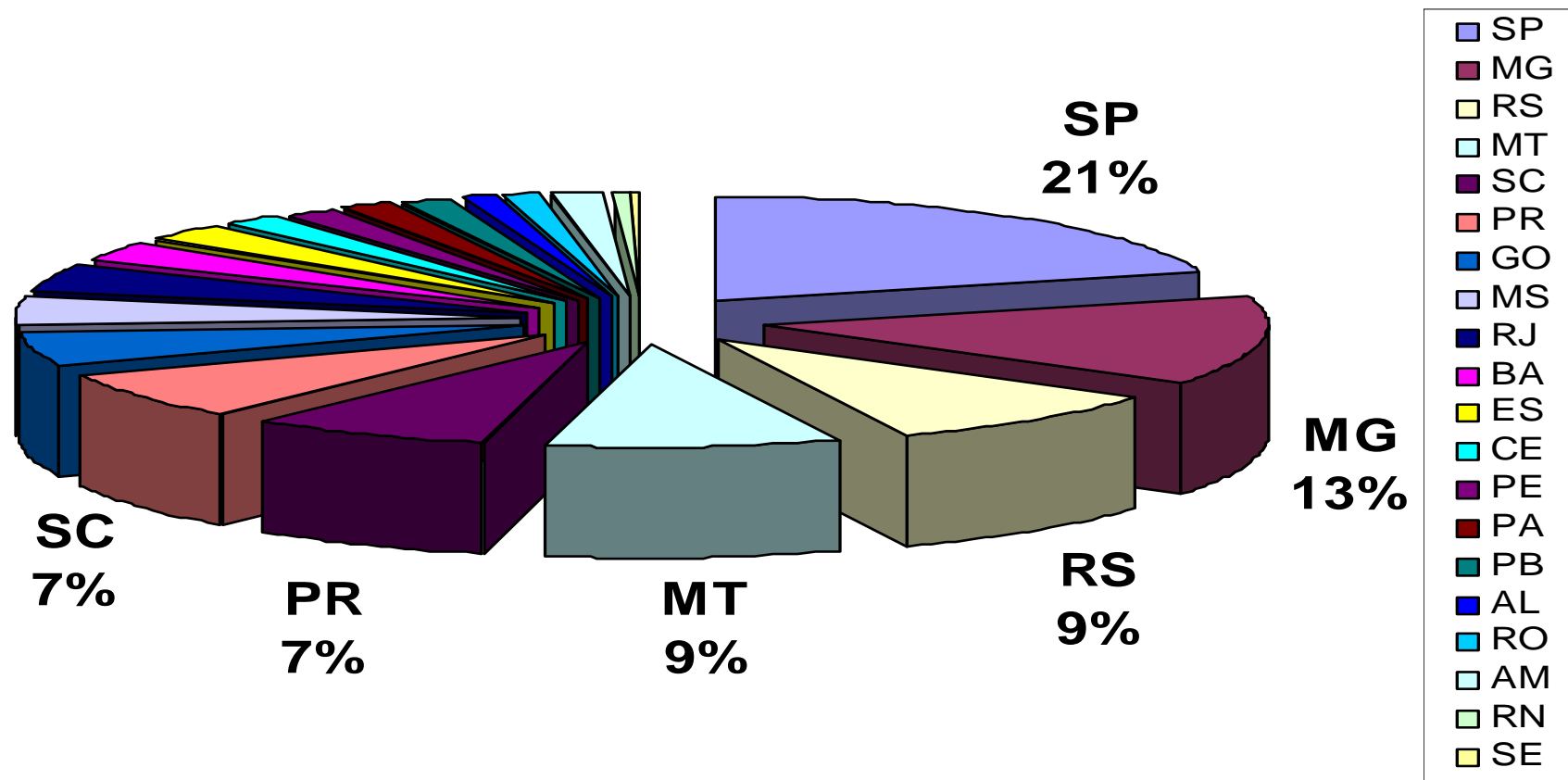
## Installed Capacity (MW) of the project activities approved by the CIMGC

**Total: 3453 MW**

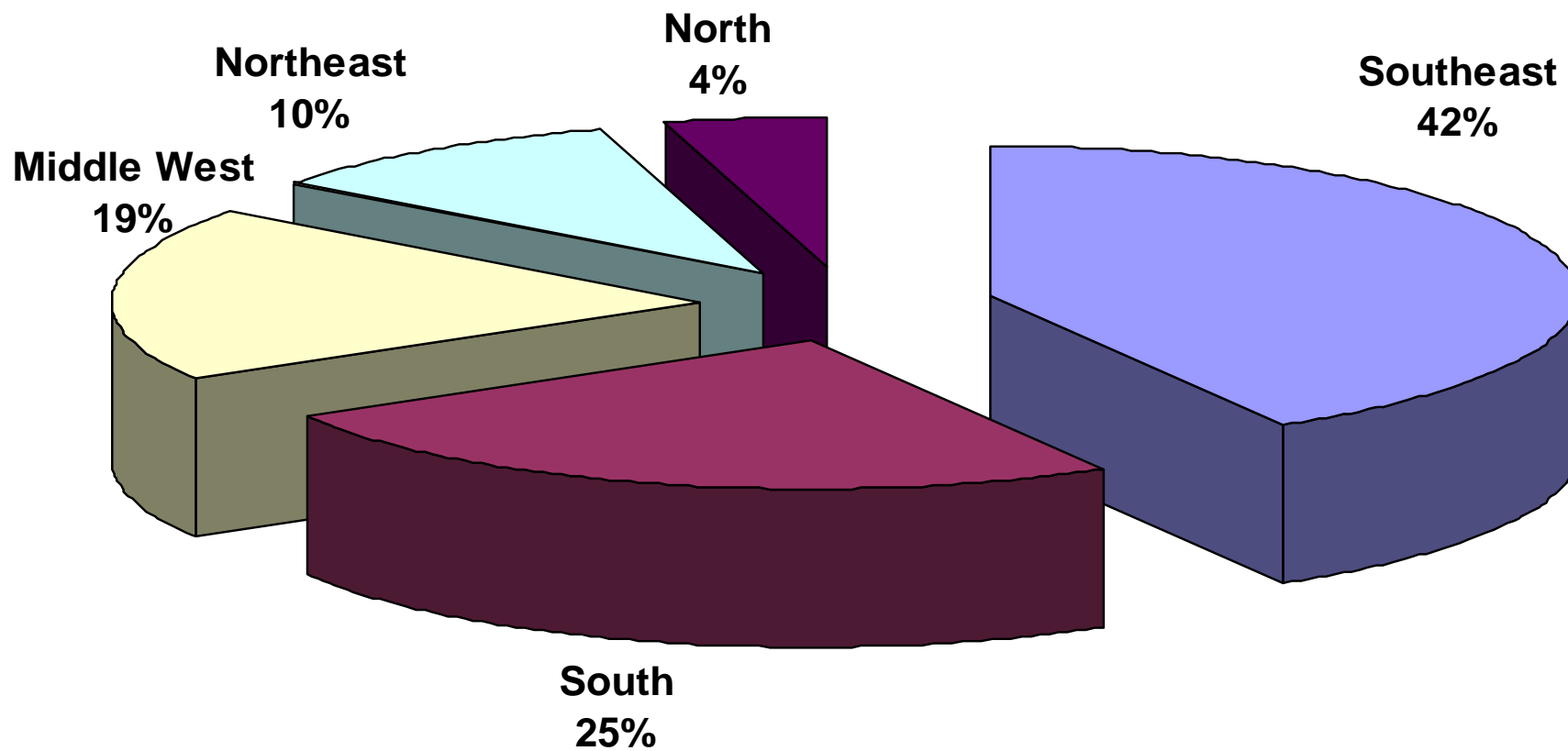
PROINFA: 432,7 MW



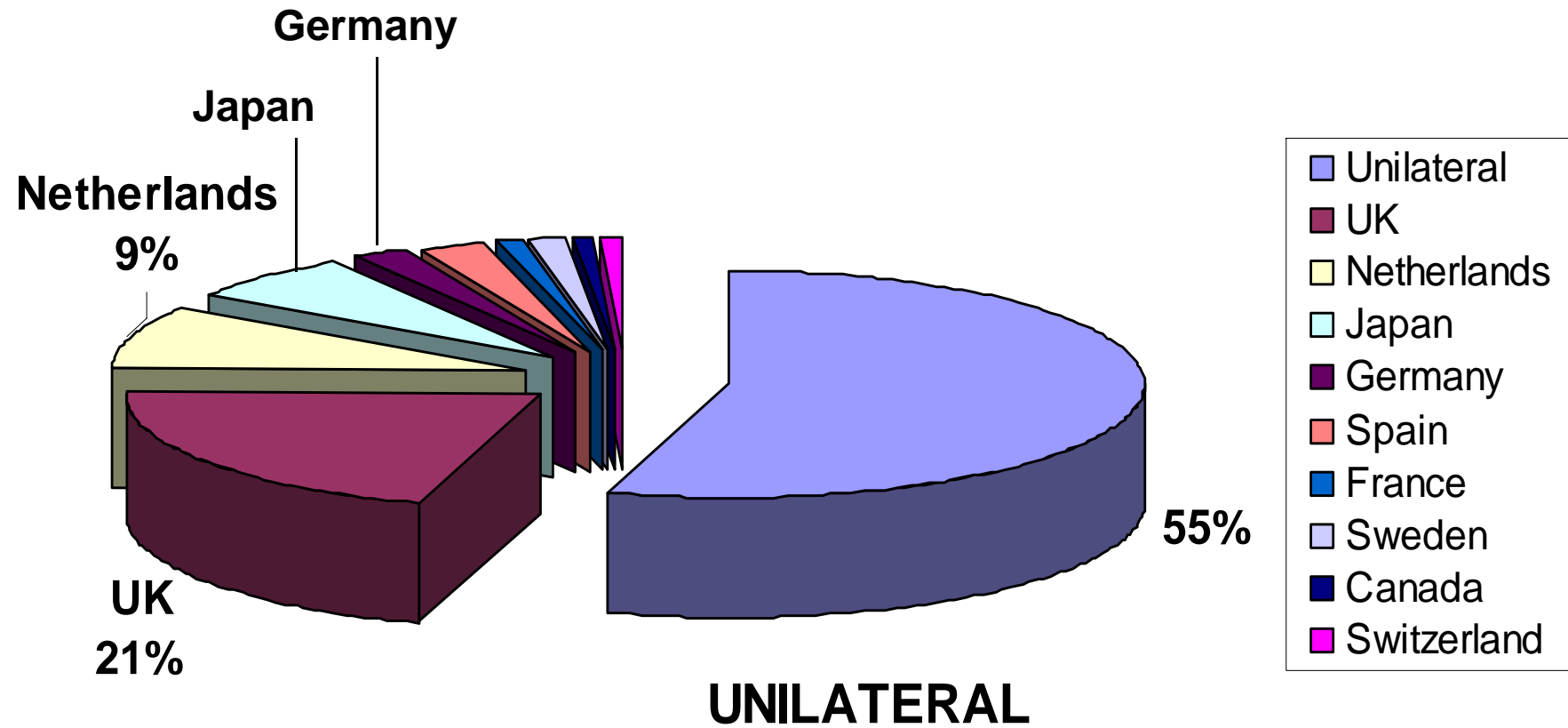
## Number of CDM project activities in Brazil per state



## Number of CDM project activities in Brazil per region

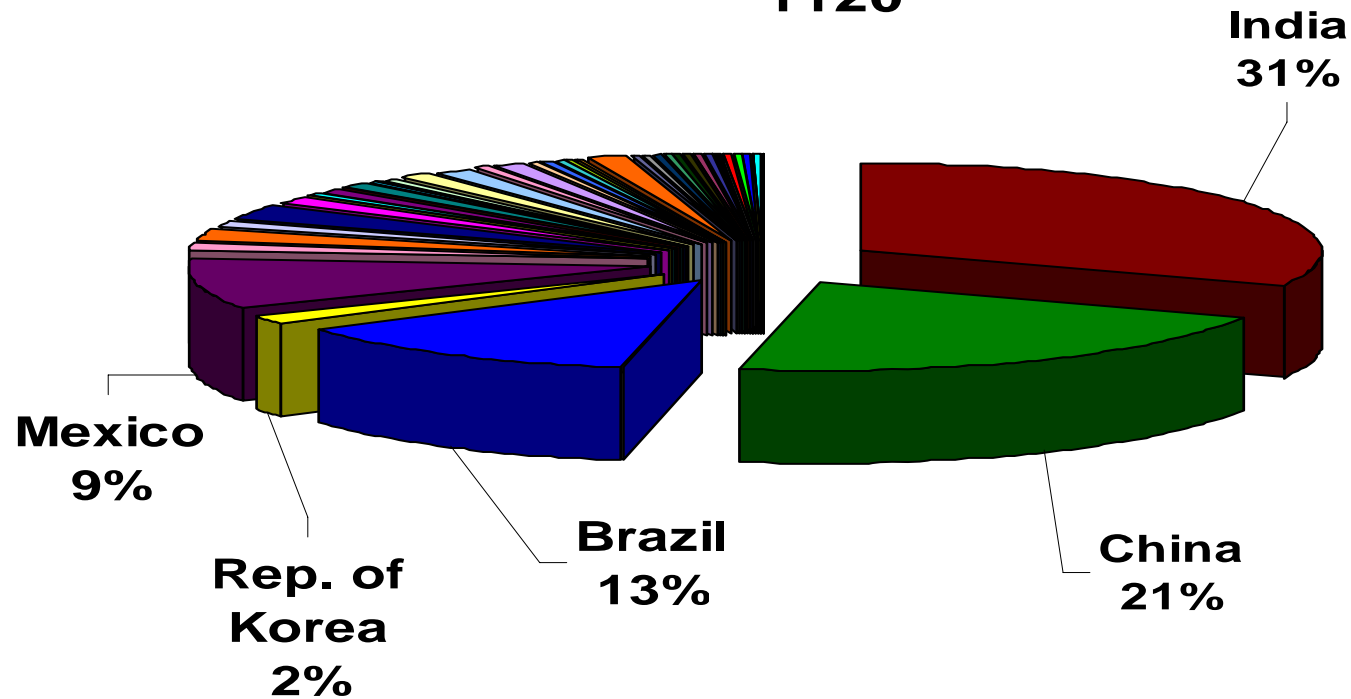


## Number of CDM Project Activities in Brazil by Country Parties



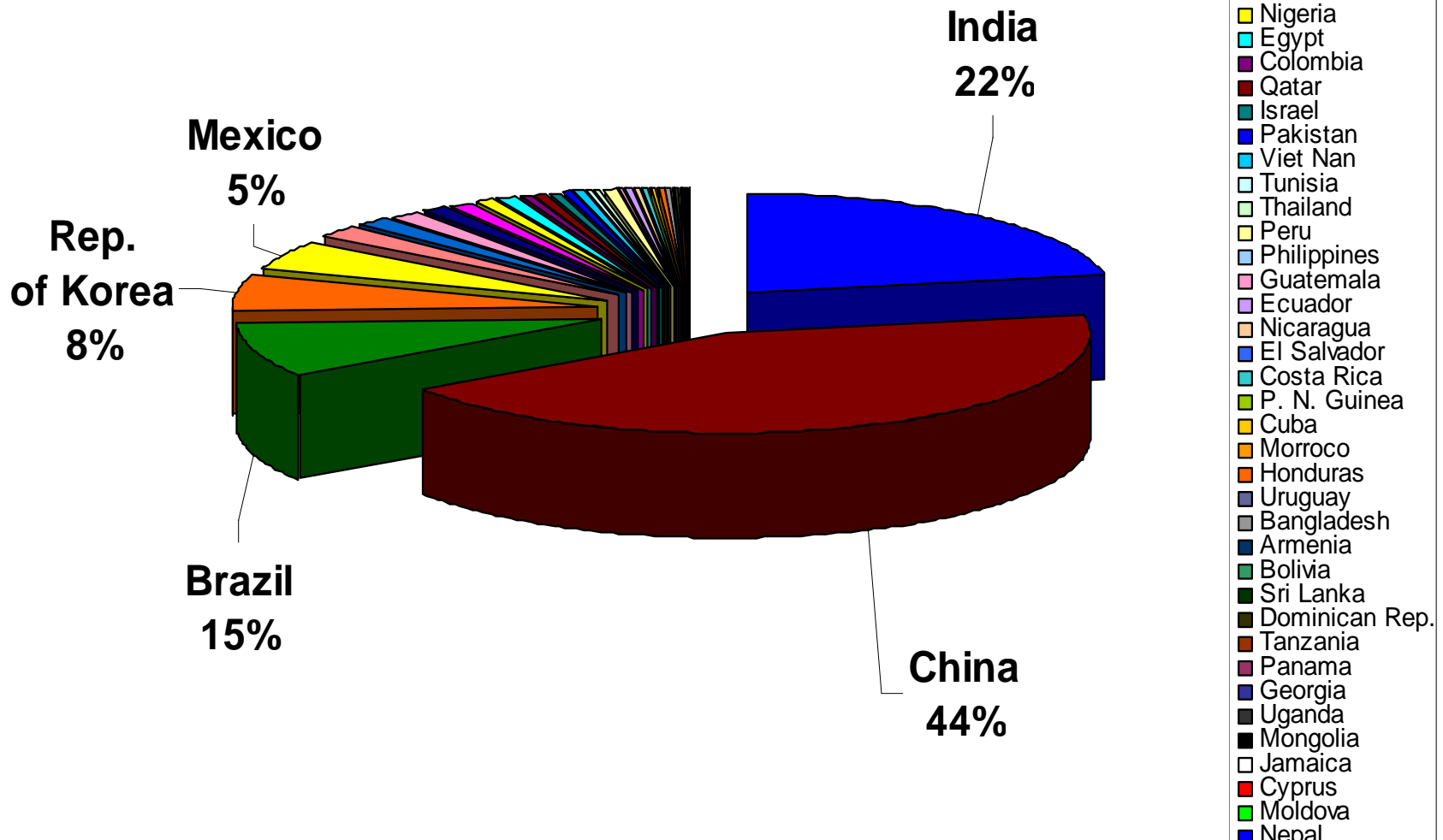
## Number of CDM Projects Registered at the Executive Board

1120

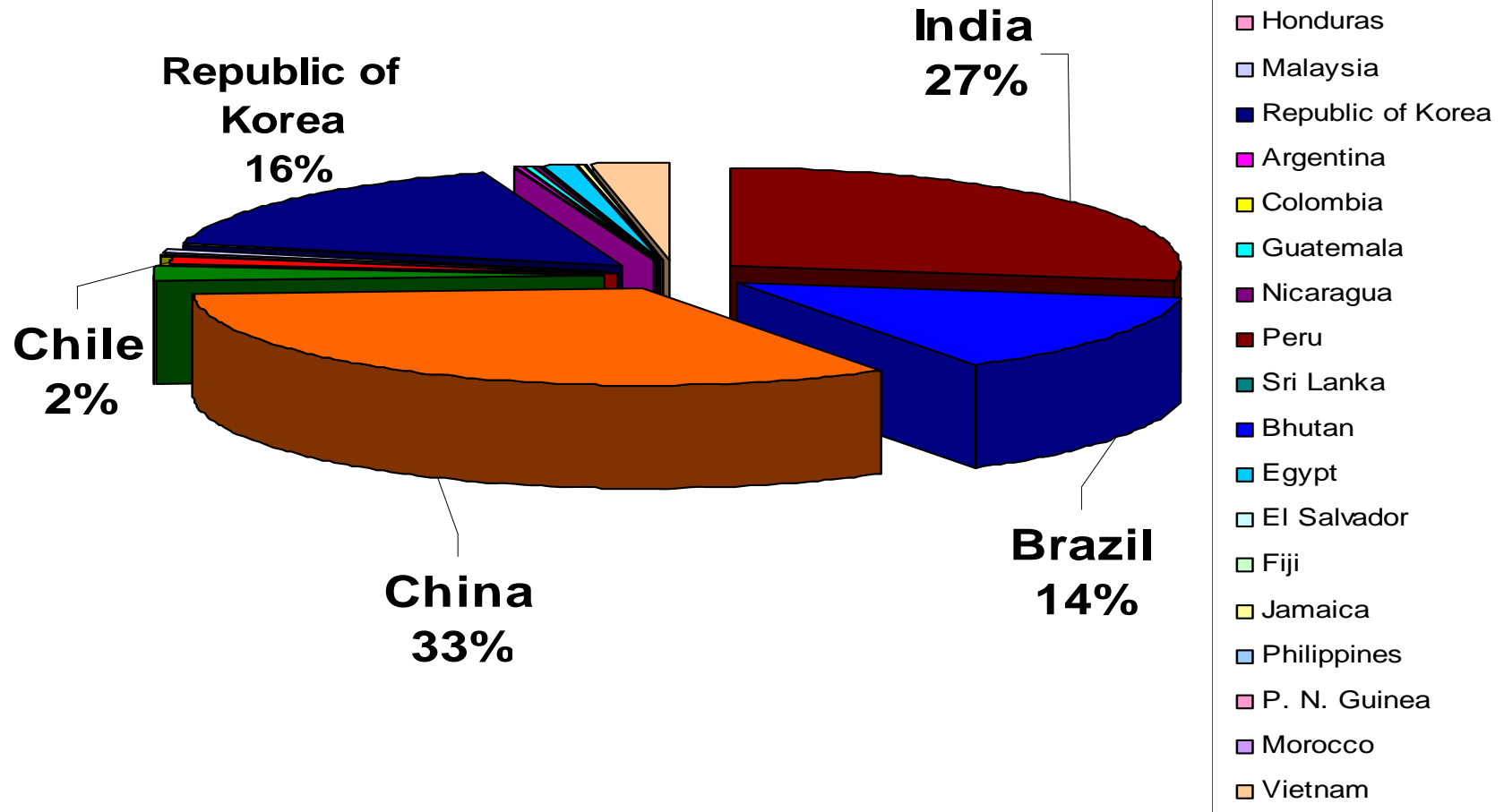


- India
- China
- Brazil
- Rep. of Korea
- Mexico
- Argentina
- Chile
- South Africa
- Malaysia
- Indonesia
- Nigeria
- Egypt
- Colombia
- Qatar
- Israel
- Pakistan
- Viet Nam
- Tunisia
- Thailand
- Peru
- Philippines
- Guatemala
- Ecuador
- Nicaragua
- El Salvador
- Costa Rica
- P. N. Guinea
- Cuba
- Morocco
- Honduras
- Uruguay
- Bangladesh
- Armenia
- Bolivia
- Sri Lanka
- Dominican Rep.
- Tanzania
- Panama
- Georgia
- Uganda
- Mongolia
- Lao P D R
- Jamaica
- Moldova
- Nepal
- Cambodia
- Fiji
- Lao P D R
- Bhutan

## Emissions Reduction of Registered Projects for the 1st Crediting Period (1,822 millions of t CO<sub>2</sub> eq)



## Units Issued (CERs) 164,845,603 t CO<sub>2</sub> eq





# CER Demand

- Most of Western European countries increase their emissions above Kyoto targets
  - Exceptions: Germany and United Kingdom
- Most of Eastern European countries have Kyoto targets greater than current emissions (“hot air”)
  - Exception: Slovenia
  - Politically difficult to use “hot air”
    - Preference to Joint Implementation projects
- Emissions may increase up to 2012 if additional measures are not undertaken

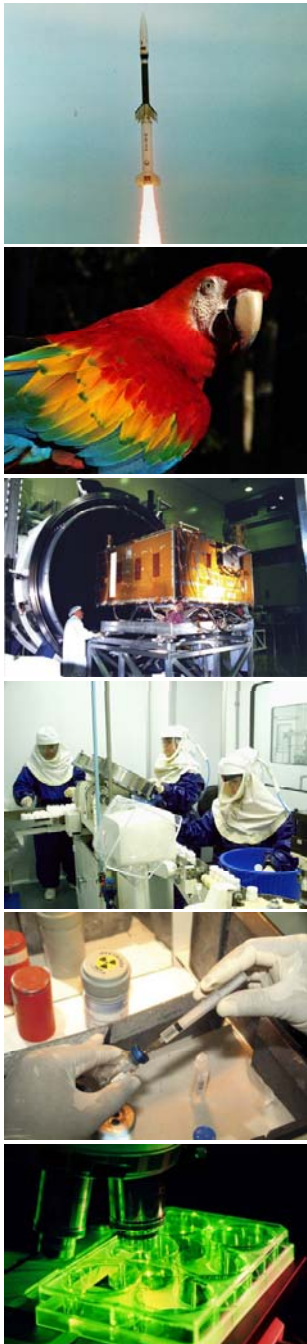
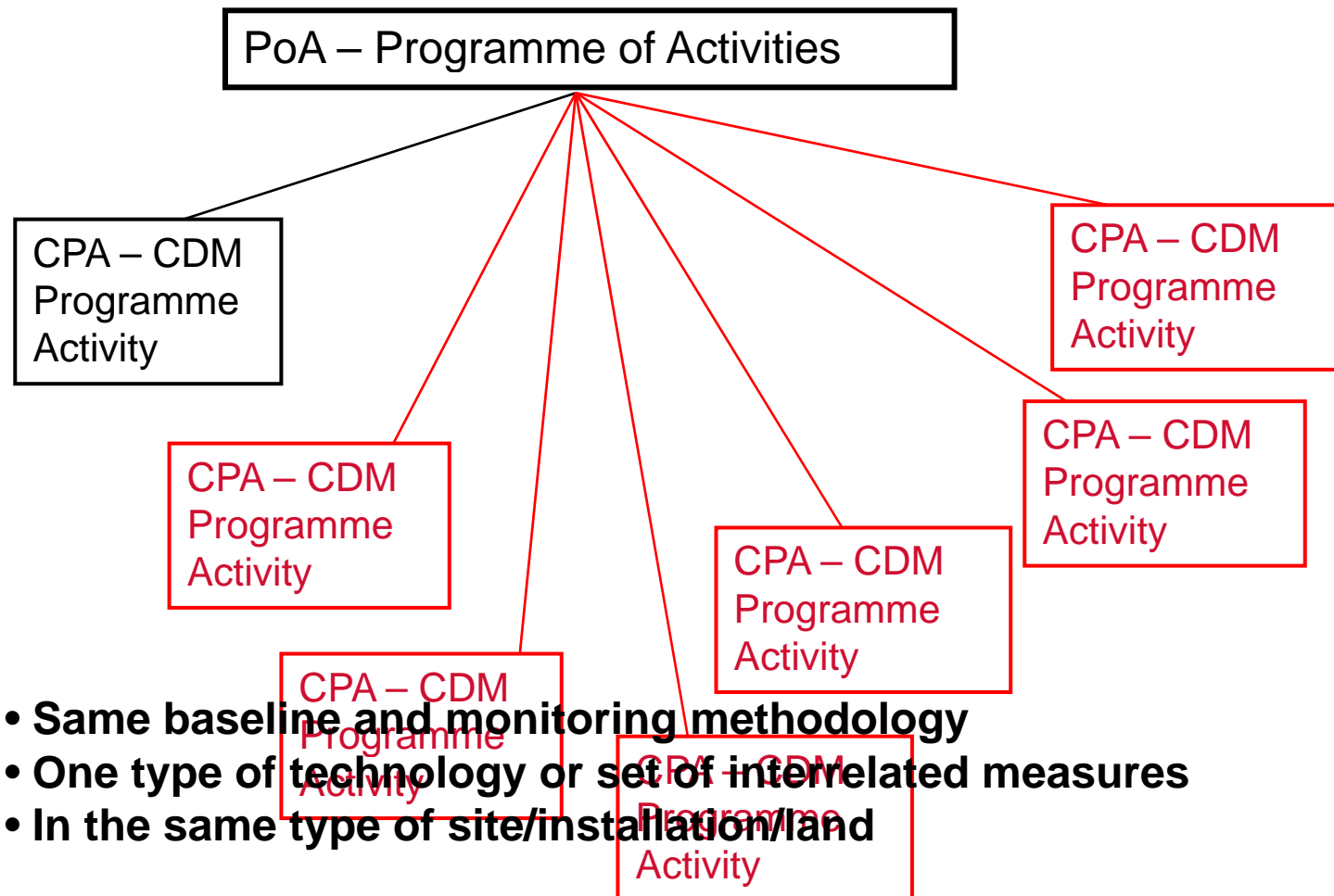


# The CDM is a market mechanism

- Mechanism **oriented to the private sector**.
- **It does not substitute investments**, but establishes better finance conditions through the selling of CERs (**carbon credits**).
- **The arrival of CDM resources**, or the use of the **carbon credits**, can occur in several phases of the projects, under different forms:
  - In the form of a new technology package
  - As an amount of money in the earlier phases of the project
  - In **carbon credits** auctions after the emission of the CERs
  - So, the value of the “**carbon credit**” varies because of the several risks related to the each phase of the cycle project
- **Support to the government priorities:**
  - Employment
  - Income generation
  - Health
  - Sanitary conditions



# Programmatic CDM (Dec.7/CMP.1)



# www.mct.gov.br/clima

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Endereço <http://www.mct.gov.br/index.php/content/view/3881.html>

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### MUDANÇA DE CLIMA

Seções

#### Comissão Interministerial

- Projetos Submetidos à Comissão Interministerial no âmbito do Mecanismo de Desenvolvimento Limpo
- Procedimentos para Submissão de Projeto de MDL à Comissão Interministerial de Mudanças Globais de Clima
- Decreto de 10 de janeiro de 2006
- Resolução nº 2 de 10 de agosto de 2005
- Circular do Banco Central nº 3291 de 08.09.2005

#### Protocolo de Quioto

- Status da Ratificação do Protocolo de Quioto pelo Brasil
- Elementos propostos pelo Brasil para o Protocolo

Destaque

#### Convenção sobre Mudança do Clima

...*"A Convenção sobre Mudança do Clima enfoca um problema especialmente inquietante: nós estamos mudando a forma com que a energia solar interage com a atmosfera e escapa dela e corremos o risco de alterar o clima global. Entre as consequências possíveis, estão um aumento na temperatura média da superfície da Terra e mudanças nos padrões climáticos mundiais..."*

Publicações

#### Texto da Comunicação Nacional Inicial do Brasil

#### Status de Ratificação do Protocolo de Quioto

Atualização dos Países que Ratificaram o Protocolo de Quioto até o dia 28/02/2006.

Eventos

#### Reunião da CIGMC

de 21/06/2006 a 21/06/2006

Áreas de Atuação

Mudanças Climáticas

- Ciência da Mudança do Clima
- Convenção-Quadro das Nações Unidas
- O Brasil e a Convenção
- Comunicação Nacional
- Negociações
- Protocolo de Quioto
- Programa Mudanças Climáticas
- Comissão Interministerial de Mudança Global do Clima
- Fórum de Liderança em Sequestro de Carbono (CSLF)
- Fórum Brasileiro de Mudanças Climáticas
- Coordenação Geral de Mudanças Globais de Clima
- Eventos

http://www.mct.gov.br/index.php/content/view/4016.html

Internet

Iniciar

16:02

Interministerial Commission: [cimgc@mct.gov.br](mailto:cimgc@mct.gov.br)

Thank you very much!  
Muito obrigado!

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