

Inventory and Mitigation Measures for Waste Sector in China

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(CRAES)**

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- ④ **General information**
- ④ **Present Status of GHG Inventory**
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- ④ **Present Status CDM in China**
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General information

➤ **City:** A larger settlements which based on non-agricultural industries and the formation of non-agricultural population (including the city and town established by state administrative institution).

In general, the more populated areas are called city or urban, includes residential, industrial and commercial areas, and have administrative function.

➤ **Town:** usually defined as the settlements with a certain scale commercial and industrial scale based on their non-agricultural population.

In china, towns are defined as:

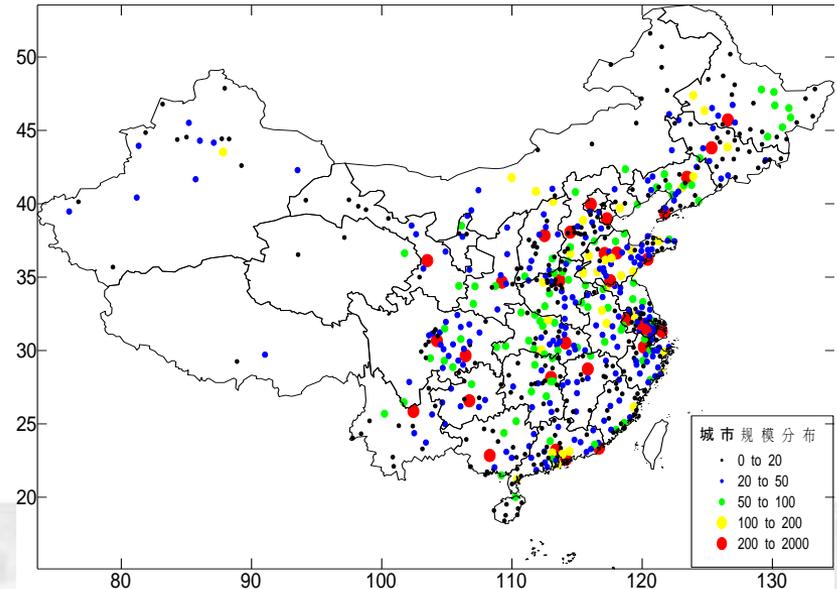
local authorities place of county and above

the resident population more than 2000 and less than 10 million, in which non-agricultural population accounts for 50%.

China National Committee for Terms in Sciences and Technologies

The Total Number of Cities: 655 (2008)

City	Population
44	>2 Million
148	1 ~ 2 Million
267	500,000 ~ 1 Million
156	200,000 ~ 500,000
40	<200,000

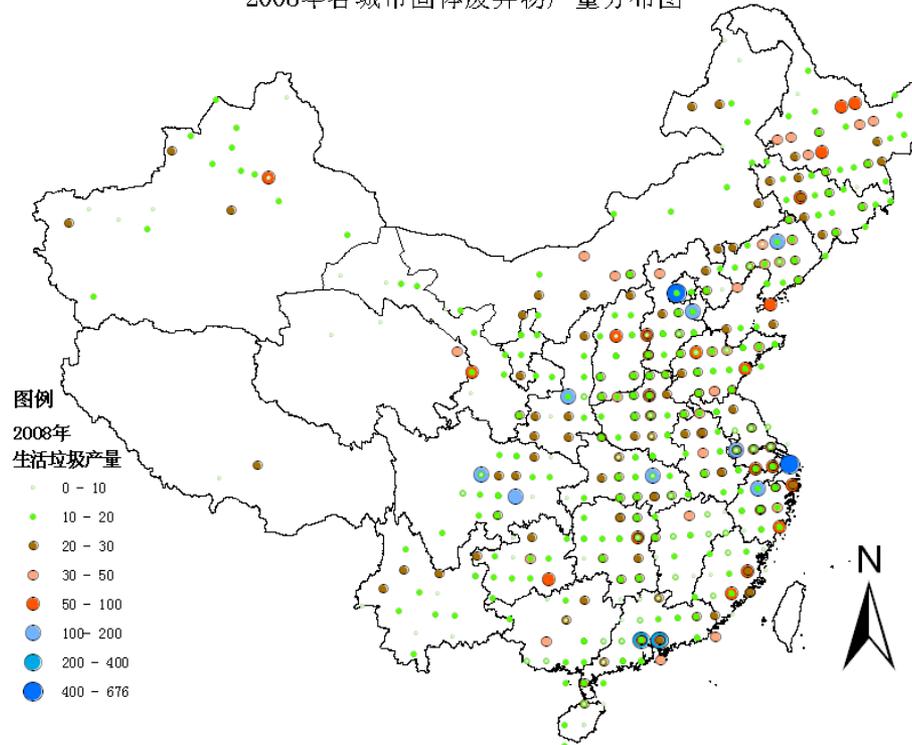


Urban size distribution in China

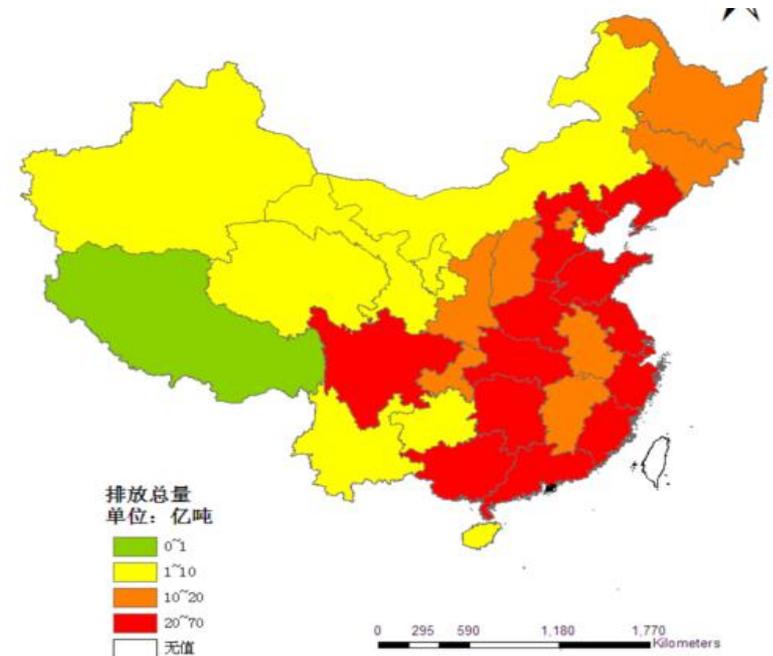
- The total urban population in China is 515.11 million (1996) and over 606.67 million (2008).
- Total Population is 1.32802 billion (about 20% of total population in the world, about 33% of total population in the Asian).

The waste generation and disposal in China (2008)

2008年各城市固体废物产量分布图



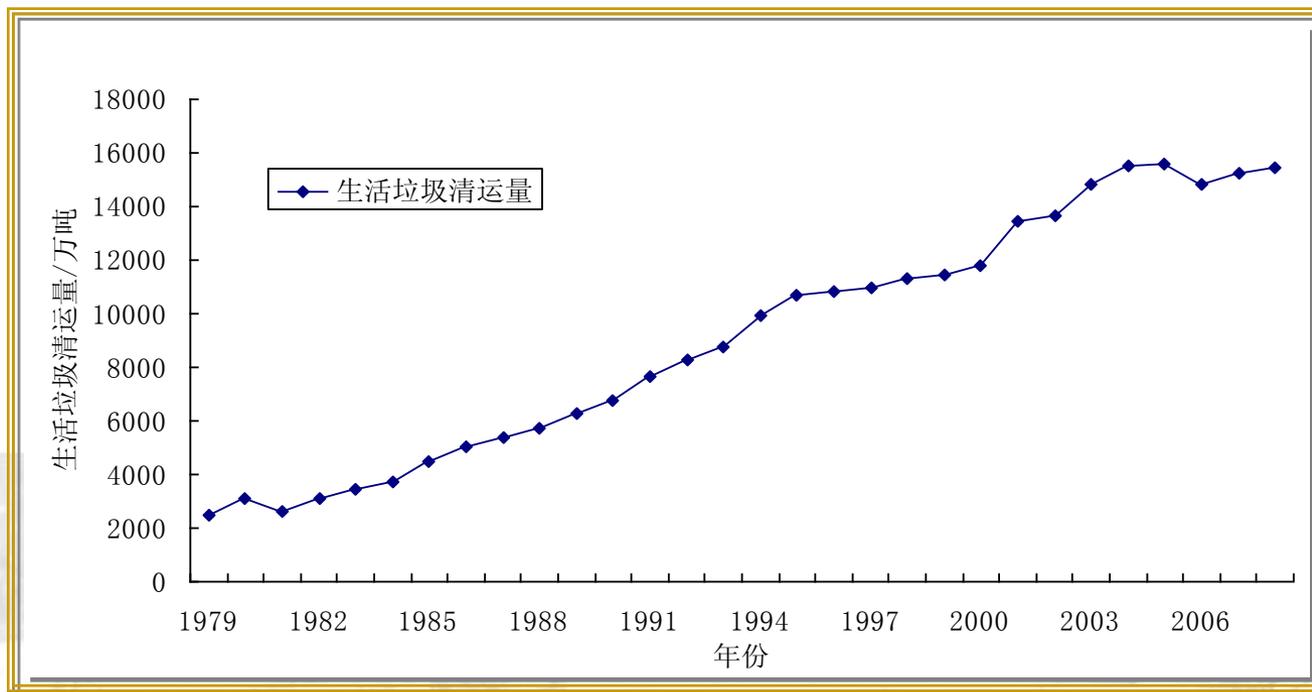
Waste water generation amount distribution in China



MSW generation amount distribution in China

The waste generation and disposal in China (2008)

Domestic waste

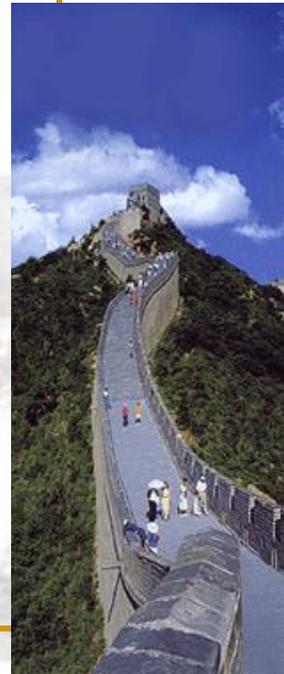


Year	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2008	1986-2008
Increase rate (%)	14.49	7.81	8.73	2.22	3.70	0.99	6.81



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Present Status of GHG Inventory

➤ Gases:

- ❑ CO₂、CH₄、N₂O、HFCs、PFCs and SF₆

➤ Emission sources:

- ❑ IP Including Aluminum and Magnesium Produce

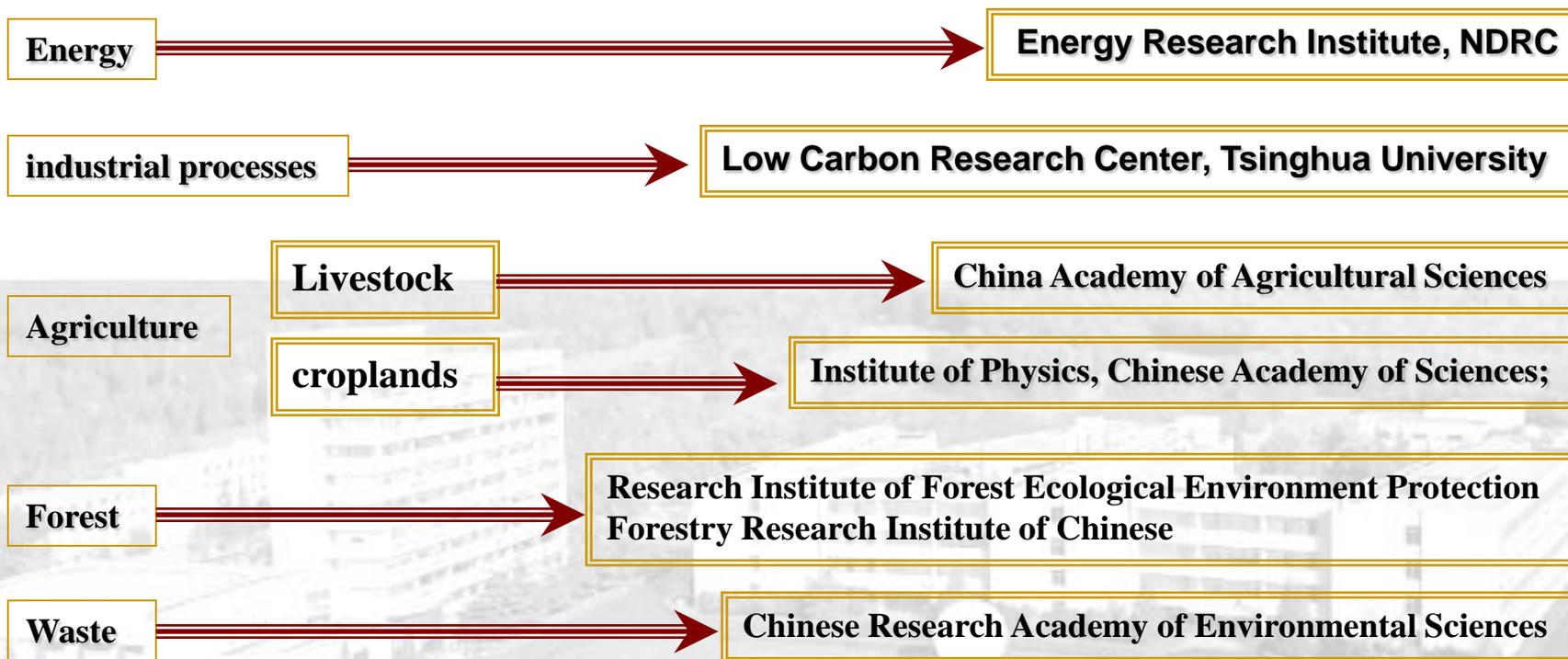
➤ Region:

- ❑ SNC include Hong Kong SAR and Macao SAR



Present Status of GHG Inventory

Institutional arrangement of SNC



Present Status of GHG Inventory

	INC	Methodology	SNC	Methodology
CH₄ MSW Landfill	√	Tier 1	√	Tier 2 FOD
CH₄ Waste water	√	IPCC Default	√	IPCC Default (CS)
N₂O Waste water	×		√	IPCC Default (CS)
CO₂ Waste Incineration	×		√	IPCC Default (CS)

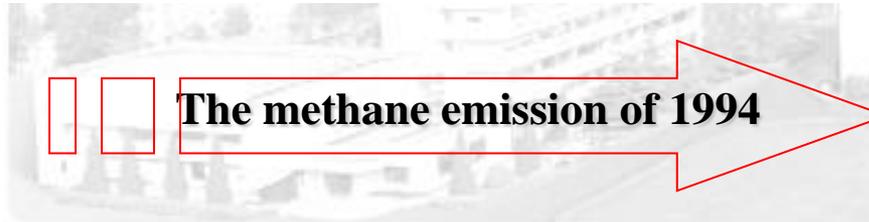
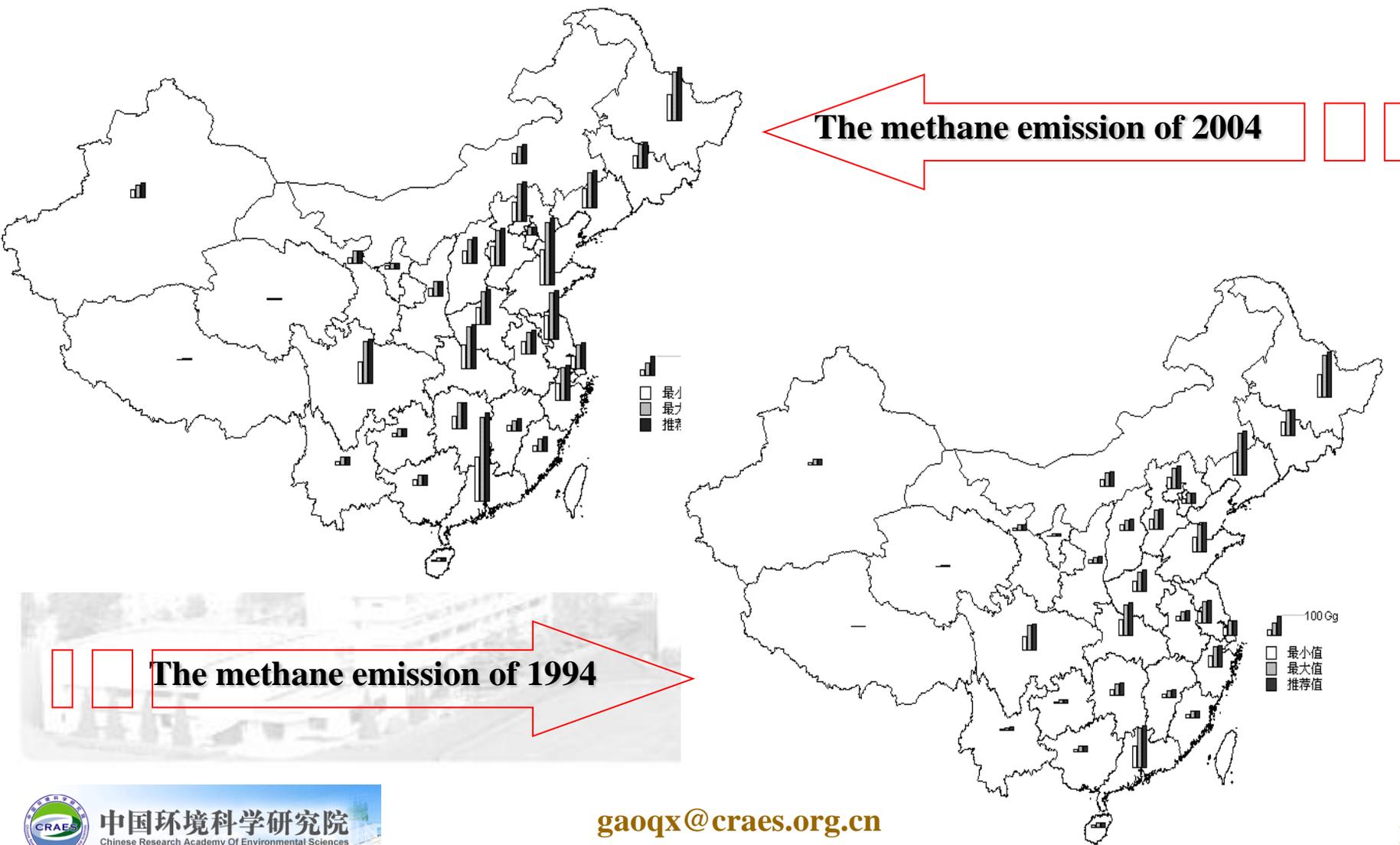
Present Status of GHG Inventory

Inventory of waste sector including :

- ❑ China's landfill CH₄ emission inventory;
- ❑ China's waste incineration CO₂ emission inventory;
- ❑ China's industrial wastewater CH₄ emission inventory and living sewage water CH₄ emission inventory;
- ❑ China's wastewater / sewage treatment N₂O emission inventory.



Present Status of GHG Inventory



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Present Status of National Communications

- **Project No.:** 00054162 CPR/08/G03
- **Project Title:** **Enabling China to Prepare Its Second National Communication To the UNFCCC (ECP-SNC)**
- **Duration:** **2 Year and 4 Months**
- **Management Arrangement:** **National Execution**
- **Designated Institution:** **National Development and Reform Commission**
- **Project Sites:** **Beijing and Provinces**



Present Status of National Communications

Enabling China to Prepare Its Second National Communication
To the UNFCCC [Others]

Improving public awareness and informing policy-decision making on climate change

-----→ **China Economic Information Network (CEI), Co.,Ltd;**

China's inventory of GHG emissions from the energy sector

-----→ **Energy Research Institute of NDRC**

China's GHG inventory database

-----→ **Energy Research Institute of NDRC**

China's GHG Emission Forecast Methodology

-----→ **Energy Research Institute of NDRC**

Assessment on impact of, vulnerability and adaptation to climate change

-----→ **China Academy of Agricultural Sciences**

Present Status of National Communications

➤ Outline of SNC

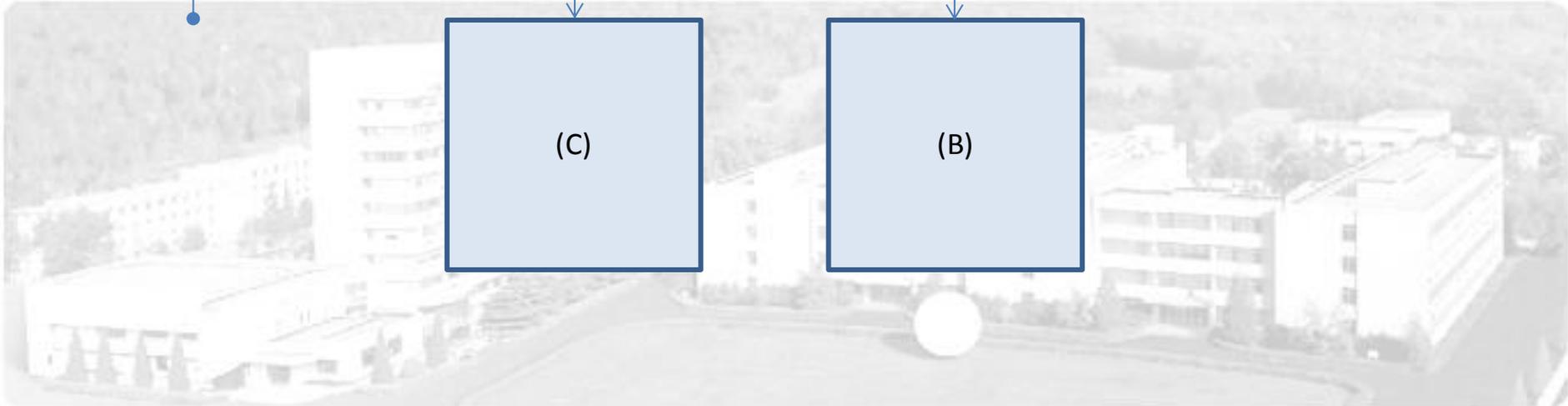
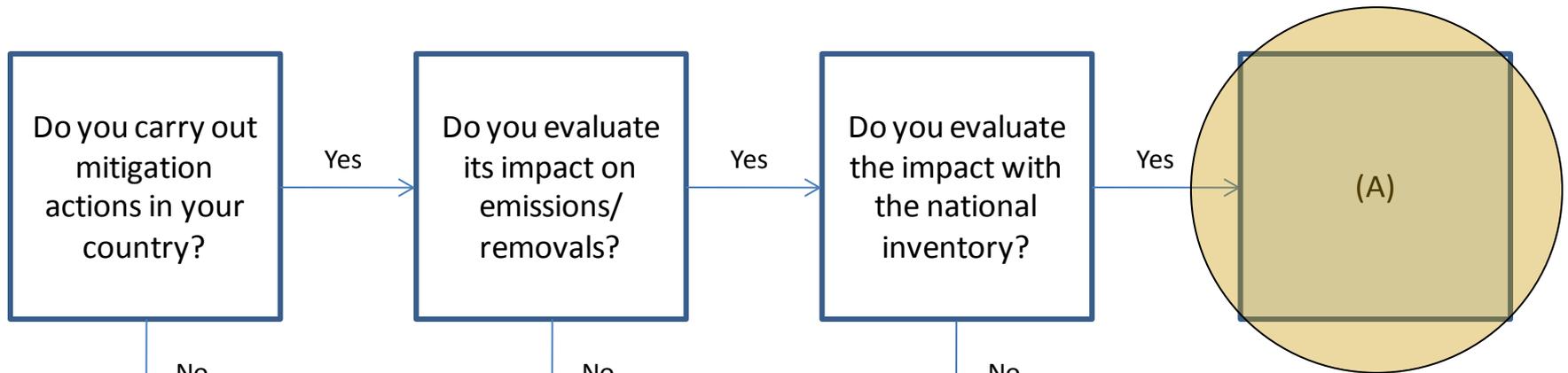
- ❑ Background
- ❑ Inventory
- ❑ Impacts and Adaptation
- ❑ Measures and Action of Mitigation
- ❑ Related activities about tackling climate change
- ❑ Funds, Technologies and Capacity Building

Content

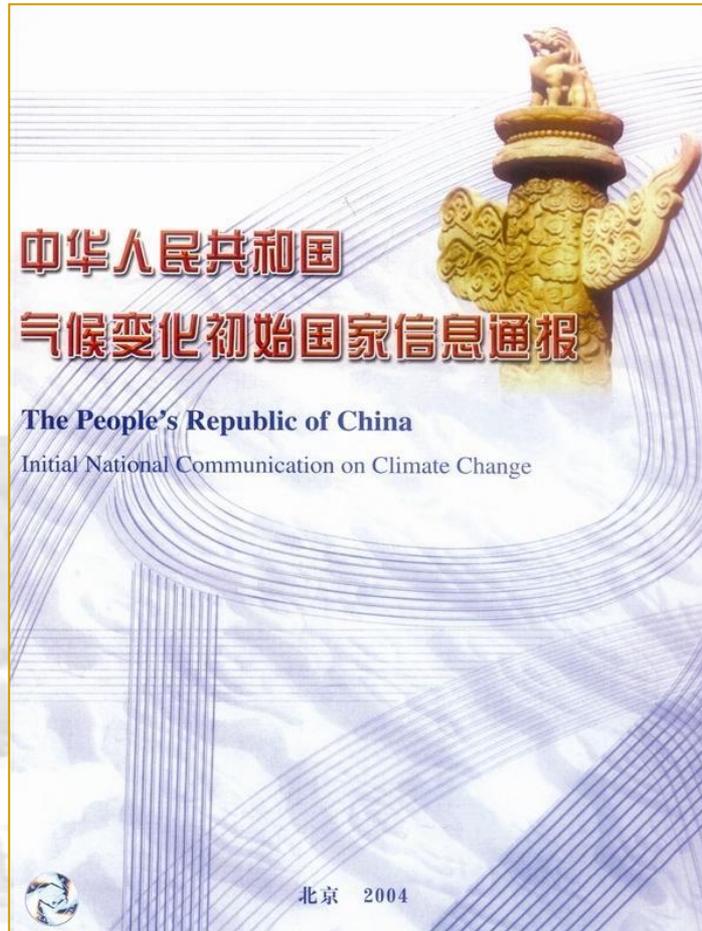
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Mitigation measures in China



Mitigation measures in China



In December 2004, the Chinese government officially submitted to UNFCCC Initial National Communication on Climate Change of People's Republic of China: **"National communications" includes:**

- ❑ the basic situation of countries;
- ❑ national greenhouse gas inventories;
- ❑ climate change impacts and adaptation;
- ❑ mitigation policies and measures related to climate change;
- ❑ climate systematic observation and research;
- ❑ advocacy, education and public awareness;
- ❑ funding, technology and capacity building needs of other sections.



Mitigation measures in China

Preparation and implementation:

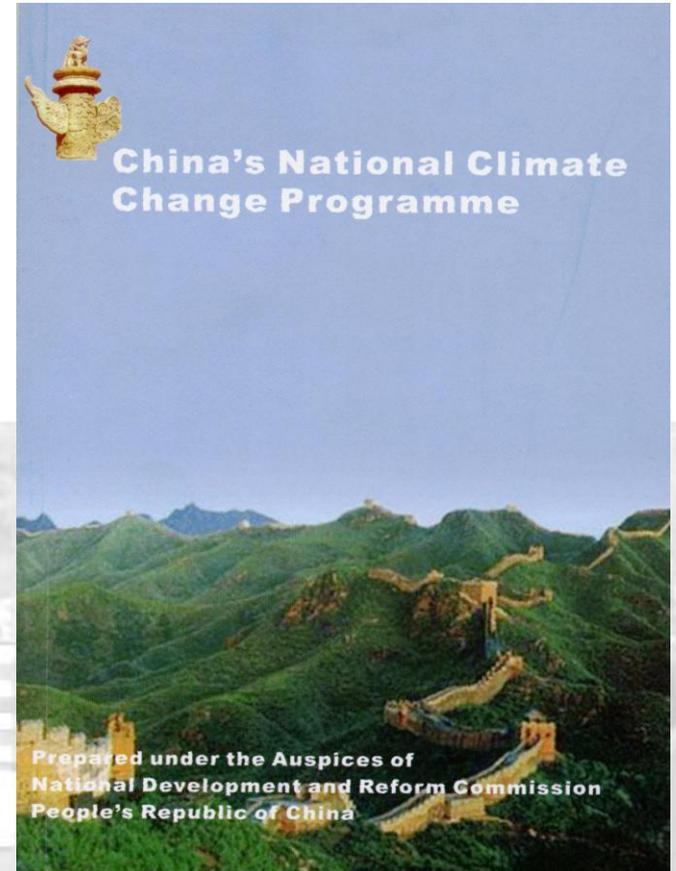
China's National Climate Change Programme

June 3, 2007, the State Council requires local governments

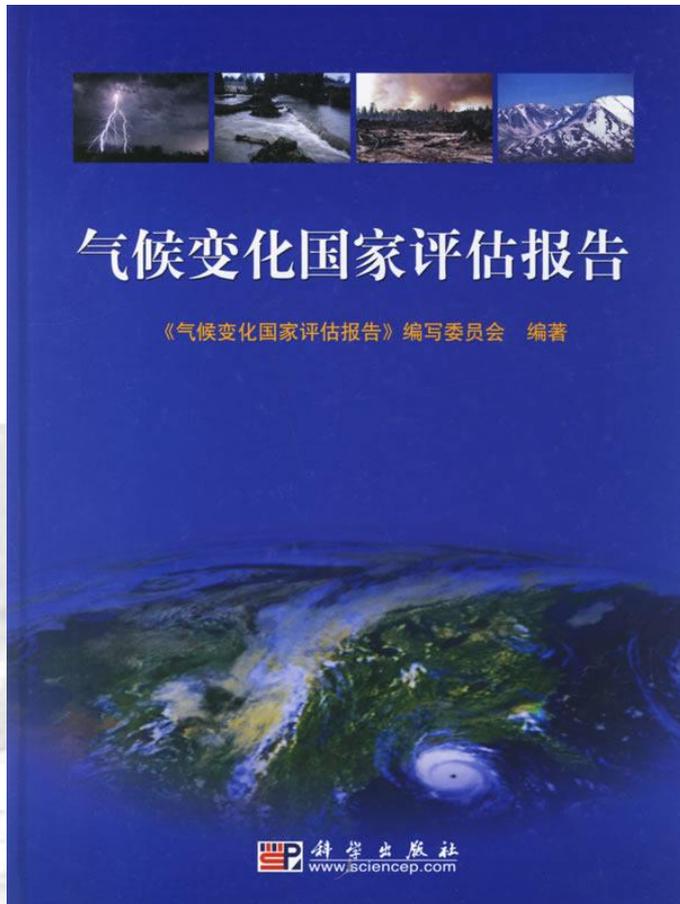
To strengthen organizational leadership for regional response to climate change;

To pay close attention to the development of the region's climate change program;

To organized and implemented the programme carefully.



Mitigation measures in China



December 2006 China release and published "National Assessment Report on Climate Change", the report is divided into three parts:

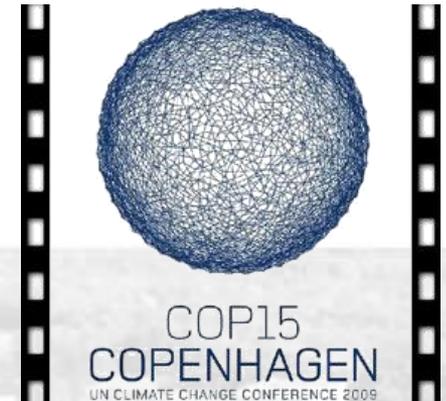
- Climate change and its future trend**
- Climate change impacts and adaptation**
- Mitigate climate change, socio-economic assessment**

The second "National Climate Change Assessment Report" and "China Climate and Environmental Change: 2012" is read for publishing.



Mitigation measures in China

November 26, 2009, the Chinese government announced its action targets for controlling greenhouse gas emissions, by 2020 carbon dioxide emissions per unit of GDP than in 2005, down from 40% to 45%.



Mitigation measures in China

2010 July 19, National Development and Reform Commission (NDRC) carry out low carbon development pilot provinces and cities:

Specific tasks

- ❑ To complete a low-carbon development planning;**
- ❑ To formulate supporting policies for green and low-carbon development;**
- ❑ To accelerate the establishment of industrial system with low carbon emissions characteristics;**
- ❑ To establish greenhouse gas emission statistics and management systems;**
- ❑ To actively promote low carbon green lifestyle and consumption patterns**



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Mitigation measures in waste sector

- To Promulgate a series of regulations, rules and standards
 - ❑ Measures on Household Waste Management in Cities
 - ❑ Promoting Industrialization of Municipal Sewage and Waste Treatment
- To formulate tax reduction or exemptions policies of waste treatment for power generation and utilization
- Use cement kiln to disposal hazardous waste, MSW and sludge etc.
- CDM project development: waste incineration power generation and recovery of landfill gas for power generation

Mitigation measures in waste sector

- **Municipal waste treatment and disposal of technical policies and standards**
 - ❑ **Technical Standards for Civil Waste Landfill**
 - ❑ **The Standard on Burning of Civil Waste and Pollution Control**
 - ❑ **Discharge standard of pollutants for municipal wastewater treatment plant**
- **Set up a payment system for waste discharge**
- **Accelerate reform of waste management system**
- **Introduce a competition mechanism**
- **Use bidding, select qualified enterprises for MSW treatment**

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Present Status CDM in China

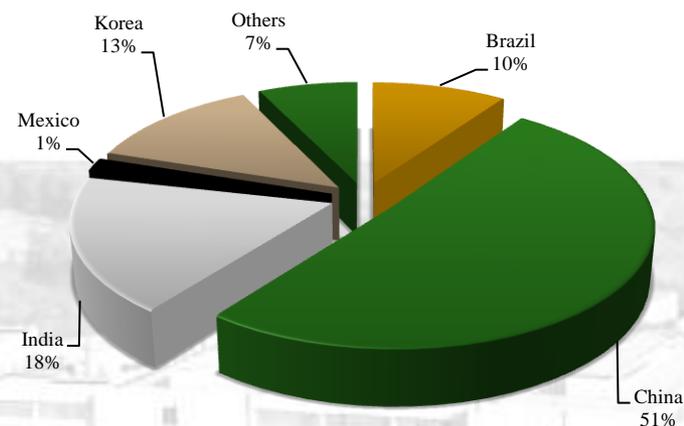
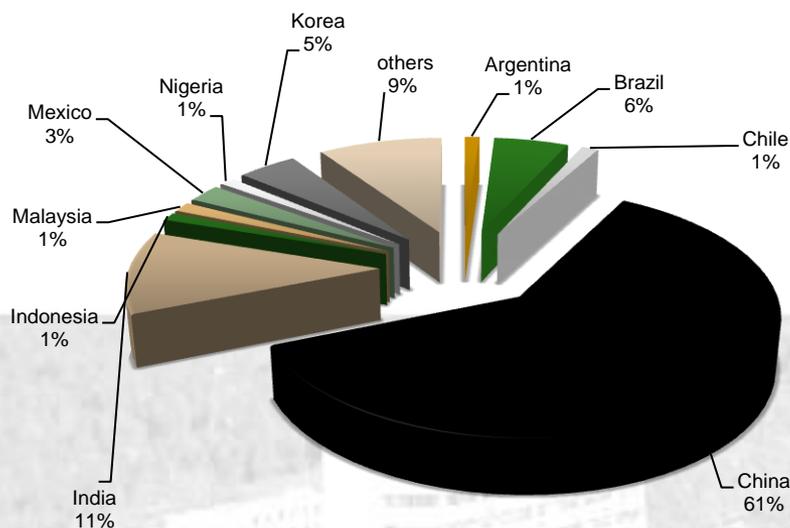
- China is pushing forward with a framework for **Clean Development Mechanism (CDM)** cooperation with other countries.
- Established a National CDM Management Office, and has sought funding from several international donors for CDM-related capacity building and technical programs.
- Finished a Guidelines for a National CDM Management.

Present Status CDM in China

- China have a "one-stop" CDM project approval process.
- Chinese provincial or local government bodies is not allowed to clear or approve CDM projects independently.
- The national CDM Board is composed of working-level officials, and organize experts for reviewing each project.
- The Board reviews each proposal within a week to ten days, before forwarding each project to a Minister or Vice Minister for final approval.
- The CDM official approve each project and is responsible for issuing approval letters to project participants .

Present Status CDM in China

The situation issued of Certification Emission Reductions (CER) from registered projects in UNFCCC to Sep., 2010



The expected annual average Certification Emission Reductions from registered projects in UNFCCC to Sep., 2010

Present Status CDM in China

- By April 2011, China has already approved the 2941 CDM project, of which 1295 projects were resisted in the EB
 - ❑ new and renewable energy projects account for 71%,
 - ❑ energy saving and energy efficiency project accounts for 17.2%,
 - ❑ methane recovery projects account for 6.8%.

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CDM linkage with emissions and inventory

➤ **CDM and other market mechanisms in the next commitment period for developed countries to bear a higher goal to provide the possibility of emission reduction obligations**

❑ **A new market mechanism after 2012, and complementary co-existence of CDM carbon market larger**

❑ **A huge needs, from 2013 to 2020 the demand for emission reduction from developed countries may reach around **92 to 110** billion ton CO₂e**

❑ **Big supply sources, at the same period the emissions reduction from CDM mechanism and other alternative sources of supply will reach **116 to 137** billion ton CO₂e in developing countries, on average the total supply will reach up to 29 billion ton CO₂e**

CDM linkage with emissions and inventory

➤ CDM project to reduce the contribution of fossil fuel consumption

- ❑ Quantitative analysis of the new energy and renewable energy, energy conservation and energy efficiency, methane recovery and use of alternative fuels such as the implementation of CDM projects in four areas can be avoided fossil fuel consumption
- ❑ For various industries to determine the emission reductions will translate into a "reduce consumption of fossil fuel energy" conversion factor
- ❑ CDM projects to reduce fossil energy consumption has contributed significantly. In 2009, China has approved the project to avoid the consumption of fossil fuels accounts for provinces where the proportion of total energy consumption is between 0.04% to 3.81%
- ❑ Higher proportion (greater than 2.0%) including Yunnan, Gansu, Sichuan and Inner Mongolia province

CDM linkage with emissions and inventory

➤ CDM project linkage with emissions, no direct links with inventory

❑ Waste sector recycling by project of CDM :

- waste incineration power generation
- recovery of landfill gas for power generation

❑ Reduction amounts of GHGs emissions must deduct from waste disposal GHG emissions inventory.

Thanks for your attention!