

中华人民共和国  
气候变化初始国家信息通报

**The People's Republic of China  
Initial National Communication on  
Climate Change**

2nd Workshop on GHG Inventory in Asia Region

Shanghai February 7, 2005



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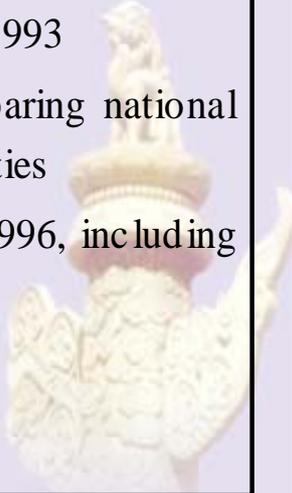
## Contents

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- Institutional Arrangement
- Process of Developing the INC
- Contents of the INC
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## *Preparation for the INC*

- China ratified the Convention in early 1993
  - COP2 adopted the guidelines for preparing national communications from non-Annex I parties
  - China started preparation its work in 1996, including consultation with UNDP China Office
  - A PDF project was initiated in 1999
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## *Preparation for the INC*

### *PDF Process*

- **Budget:** 324,000 US dollar
  - **Duration:** 12 month
  - **Objective:** To assess previous works and identify the capacity needs in China for preparation of initial national communication, in particular national GHGs inventory.
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## *Preparation for the INC*

### *Focusing Areas*

- National GHG inventories:
  - Energy;
  - Industrial processes;
  - Agriculture;
  - Land use change and forestry;
  - Waste management
- Vulnerability and adaptation assessment:
- **Climate change scenarios, Agriculture, Water resources, Ecosystem, Coastal zone and sea level, Health**

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## *Preparation for the INC*

### *Previous Works Reviewed*

- **Response Strategy on Global Climate Change in China** supported by ADB and completed in 1993;
- **China: Issues and Options in GHG Emissions Control** supported by the GEF and UNDP (executed by World Bank) and completed in 1994;
- **China Climate Change Country Study** supported by the US Country Studies Program and completed in 1998;
- **Asian Least-Cost GHG Abatement Strategy (ALGAS)** funded by GEF/UNDP, executed by ADB and completed in 1998;
- Other domestically supported projects

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## *Preparation for the INC*

### *Some Results from PDF*

#### ● **Needs identified:**

- ✓ Understanding the methodology
- ✓ Expanding the coverage of the inventories
- ✓ Developing national emission factors
- ✓ Collecting of data and Improving data quality
- ✓ Analyzing climate change related policies
- ✓ Enhancing public awareness of climate change

- A project proposal for “ Enabling China to prepare its initial national Communication ” was developed based on the outcomes of the PDF project.

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## *Preparation for the INC*

### *Design of the “ Enabling China to Prepare Its INC ” Project*

- Seven immediate objectives
- Project activities including training, workshops, collection and analysis of data, development of emission factors, study tours, involvement of international consultants, experts review of the reports, government review of the reports, etc.
- Project output: INC
- Project budget
- GEF: \$3,500,000
- Chinese government: \$240,000
- Project duration: 28 months

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## *Institutional Arrangement*

### ● **Executing Agency**

- National Development and Reform Commission (NDRC), under the guidance of National Coordination Committee on Climate Change

### ● **Establishment of the Steering Committee**

- Providing guidance to the project implementation
- Chaired by NDRC, consisting of members from MoFA, MOST, MoF, SEPA, CMA, ERI, and UNDP China Office

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## *Institutional Arrangement*

### ● **Designation of the NPD, NPM and NPC**

- NDRC appointed Mr. Gao Guangsheng, Director general of the Office to NCCCC, as the National Project Director (NPD)
- Mr. Ma Aimin, Deputy Division Director of the NCCCC, was appointed as the Project Manager
- Mr. Xu Huaqing, Director of Research Center for Energy, Environment and Climate Change, ERI, was recruited as the Project Coordinator

### ● **Project office**

- Established within ERI, NDRC

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## *Institutional Arrangement*

- Selection of the contractors through bidding process
- Criteria for contractors
- Evaluation Committee established to make final selection
- Five organizations contracted for the project

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## *Institutional Arrangement*

### *Contractors*

- **Energy Research Institute**, for **energy** sector and **industrial processes** inventories
- **Institute of Atmospheric Physics**, Chinese Academy of Science, for **agricultural** sector inventory
- **Chinese Academy of Forestry**, for **land use and forest** sector inventory
- **Chinese Research Academy of Environmental Sciences**, for **municipal waste** inventory
- **Administrative Center for China 's Agenda 21**, for public awareness

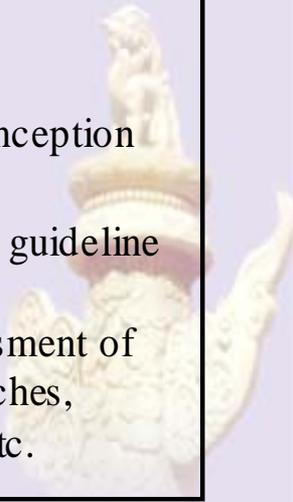
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## *Process of Developing the INC*

- PDF project in mid-1999
  - INC Project approved by GEF Council on May 9<sup>th</sup>, 2000
  - Project document signed in July, 2001
  - Project inception in October, 2001
  - First disbursement in November, 2001
  - Submission in November, 2004
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## *Process of Developing the INC*

- **Phase 1: inception**
    - Oct.2001-April, 2002
    - Project inception workshop and Inception workshops of contractors
    - Better understanding of UNFCCC guideline and IPCC methodologies, experts identification and networks, assessment of data availability, technical approaches, examination of previous works, etc.
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## *Process of Developing the INC*

### ● Phase 2: **implementation**

- May, 2002-Dec.2003
- Development of GHG inventories by sectors
- Activity data, emission factors
- Draft of INC report outline and the first draft

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## *Process of Developing the INC*

### ● Phase 3: **finalization**

- Jan.2004-Nov.2004
- Compilation of national GHG inventory
- Experts and government review and improvement of INC reports (draft 2-draft 5)
- Approval procedure
- Submission of China ' s INC through UNFCCC secretariat

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## *Process of Developing the INC*

### *Promulgation of China ' s INC*

- The Initial National Communication was approved by the State Council
- A promulgation ceremony was conducted on Nov. 9th, 2004

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## *Contents of the INC*

- **National Circumstances**
- **National GHG Inventory**
- Impacts of Climate Change and Adaptation
- Policies and Measures Related to Climate Change Mitigation
- Research and Systematic Observation
- Education, Training and Public Awareness
- Needs for Funds, Technologies and Capacity Building

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## *Contents of the INC*

### *National Circumstances*

- Located in the east of the Asian continent, on the western shore of the Pacific Ocean
- China has a landmass of 9,600,000 km<sup>2</sup>
- Extremely diverse: tropical in the south and frigid in the north

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## *Contents of the INC*

### *National Circumstances*

- China has a shortage as well as an uneven distribution of water resources
  - ✓ **Per capita water resources are about one fourth of the world average**
- Coal dominant energy reserves
  - ✓ **Per capita energy resources are less than half of the world average**

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## *Contents of the INC*

### *National Circumstances*

- Huge population (1267 million ), although the growth rate is less than 1% in the year 2000
- Two thirds of population living in the rural areas
- Low income developing country with per capita GDP USD 1,000
- Need for development in many areas

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## *Contents of the INC*

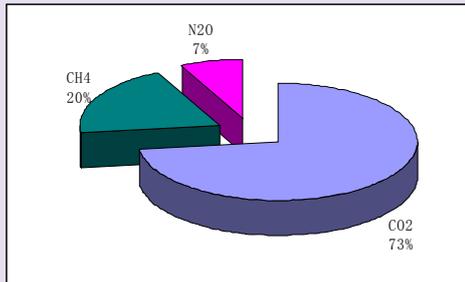
### *National GHG Inventory*

- **Sectors:** Energy, industrial processes, agriculture, land use change and forestry, wastes
- **GHGs:** CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O
- **Methodologies:**
  - ☑ Revised 1996 IPCC guidelines adopted;
  - ☑ IPCC good practice guidance and uncertainty management in national greenhouse gas inventory used as reference;
  - ☑ Necessary improvement in accordance with China ' s circumstances

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## Contents of the INC

### National GHG Inventory



- **CO<sub>2</sub>** : 2.666 billion tons (728 million ton-C) from fossil fuel combustion and industrial processes
- **CH<sub>4</sub>**: 34.29 million tons from rice growing, animal husbandry, energy production and waste management
- **N<sub>2</sub>O**: 0.85 million tons, from agriculture, industrial processes and energy sectors

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## Contents of the INC

### National GHG Inventory

- Difficulty in forecasting the future emission
- Analysis of factors which will influence the future trends of GHG emission
- These factors include:
  - Population growth and increasing urbanization, improvement of living standard
  - Economic development
  - Changes of economic structure and technological progress
  - Changes in forestry and ecological preservation and construction

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## *Contents of the INC*

### *Impacts of Climate Change and Adaptation*

#### **The trend of climate change:**

- the warming would continue in the future

#### **Water:**

- The runoff of major rivers has decreased in the past 40 years
- It is likely that the runoff of major rivers will decrease in northern China and increase in southern China.

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## *Contents of the INC*

### *Impacts of Climate Change and Adaptation*

 The mountain glaciers have been shrinking and the water supply in western China might be threatened in the future

#### **Agriculture:**

- Plant growth will be speeded up and crop growing period will be shortened;
- The cost for agricultural production will increase;
- The distribution of crops will change, with the northern boundary extending northwards;
- The grain production potential will be reduced due to climate change and extreme weather

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# Contents of the INC

## Impacts of Climate Change and Adaptation

### 🌍 Sea level:

- ☑ It is projected that the sea level rise over five typical coastal zones would range from 31cm to 65 cm by 2100;
- ☑ The map shows the areas which are likely submerged in Guangzhou, south China when the sea level rises 30 cm



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# Contents of the INC

## Policies and Measures Related to Climate Change Mitigation

### Cross-sector policies and measures

#### 🌍 Sustainable development strategy:

- ☑ China ' s Agenda 21 developed in 1994, Sustainable development strategy integrated into national economic and social development plans

#### • Relevant laws and regulations:

- ☑ Law for promotion of clean production;
- ☑ Energy conservation law;
- ☑ Renewable energy law (under preparation)



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# *Contents of the INC*

## *Policies and Measures Related to Climate Change Mitigation*

### ● Industrial policies:

- ☑ Providing guidance for investment;
- ☑ Inventories of products and technologies to be encouraged;
- ☑ Equipments and technologies to be phased out

### • Economic incentives:

- ☑ Tax reduction;
- ☑ Low interest loan



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# *Contents of the INC*

## *Policies and Measures Related to Climate Change Mitigation*

### ● Policies and measures in different sectors:

- ☑ Management system;
- ☑ Public awareness;
- ☑ Technology improvement;
- ☑ Standard, labeling, certification;
- ☑ Demonstration projects;
- ☑ .....



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## *Contents of the INC*

### *Policies and Measures Related to Climate Change Mitigation*

- Energy supply
- Energy conservation
- Industry
- Building
- Transportation
- Agriculture
- Forestry
- Waste management
- International cooperation

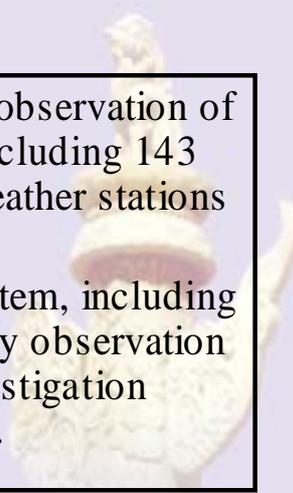


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## *Contents of the INC*

### *Research and Systematic Observation*

- A large three-dimensional network for observation of the atmosphere has been established, including 143 reference climate stations, 530 basic weather stations and 1736 ordinary weather stations.
- Marine observation and monitoring system, including stations for ocean observation, voluntary observation vessels, buoy observations, marine investigation vessels, seashore ice-monitoring radars.



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## *Contents of the INC*

### *Research and Systematic Observation*

- Terrestrial observation system mainly consists of a network measuring data for hydrological systems, ice-snow, ecological systems, agro-meteorology and environmental protection.
- Meteorological satellite also plays important role for remote-sensing observation.

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## *Contents of the INC*

### *Research and Systematic Observation*

- Climate change related research in the past years, including those sponsored by the Government and by international communities.
- Needs for future scientific research also identified, including research on the atmosphere science, impact of and adaptation to climate change, and national strategy and policies for addressing climate change issues.

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## *Contents of the INC*

### *Education, Training and Public Awareness*

- Survey was made on the public awareness of climate change
- Education through media (newspapers, radios and TVs)
- Establishment of websites on climate change ([www.ccchina.gov.cn](http://www.ccchina.gov.cn))

- Training and workshops
- Publications: Books, newsletters
- Works by artists

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## *Contents of the INC*

### *Needs for Funds, Technologies and Capacity Building*

- Development of national GHG inventory
  - ☑ Training
  - ☑ Statistics system
  - ☑ Improvement of emission factors
- Mitigation and adaptation
  - ☑ Technologies for mitigation
  - ☑ Technologies for adaptation
  - ☑ Research and systematic observation
- Capacity building
  - ☑ Needs identified primarily, self-assessment is going on

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## *Experiences*

- Lack of activity data:
  - ☑ Statistics system can not provide all necessary data, some rely on experts' judgment.
- Reliability and quality of data
  - ☑ Different data from different sources
- Emission factor:
  - ☑ IPCC default data could not be applied directly in China;
  - ☑ Data from specific sample observation may not fully reflect the situation due to time and financial constrains

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## *Experiences*

- Lack of work for impact assessment and adaptation options
- The models used for assessing the impacts of climate change have mainly been introduced from abroad, whilst few models have been developed in China
- The assessment on the impacts of climate change is preliminary and there are still a lot of uncertainties

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## *Experiences*

● A time-consuming process, adequate time allocation is necessary for ensuring the quality of the INC report:

- ✓ Complicated procedure for applying financial resources
- ✓ Difficulties with implementing agency
- ✓ Understanding of UNFCCC guidelines and IPCC methodologies
- ✓ Collection and analysis of information
- ✓ Review and approval process

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## *Experiences*

● A resource-demanding process, full financial support critical for the success:

- ✓ In addition to the input from GEF, the Chinese government also provided resources;
- ✓ Based on works completed in the past years

● Capacity building, an important part of the exercise:

- Professional expert team;
- ✓ Training, continuous learning by doing process;
  - ✓ International exchange of information and expertise

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## *Experiences*

- Political and Public Awareness, support from the different stakeholders needed
- Early preparations for the future
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*Thanks for your  
attention!*



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