Actions of China Forestry in Response to Climate Change

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Forestry and Climate Change

- **Forest is the absorptive sink of greenhouse gas**
  - Forest can absorb CO2 through photosynthesis, and fix them in the form of biomass, so as to fulfill carbon sequestration function and slow down global warming.
- **Forest is also the emission source of greenhouse gas**
  - Forest may emit CO2 to the atmosphere and speed up global warming in case of natural disasters (e.g. fire, plant diseases and insect pests), human damage (e.g. deforestation and occupation of forestland) or degradation due to poor management.
- **Scientific assessment showed the world forests currently are still the emission sources of greenhouse gas (carbon) in general.**
- **Forest itself is influenced by global climate change**
  - The impacts of global warming to forest eco-system can be divided into positive and negative impacts, but the negative ones is generally more than the positive ones. In the face of negative impacts of climate change, we will actively take measures adaptive to climate change in forestry practice to maintain the health of forest eco-system.

Approach of forest to relieve climate change

- **Carbon sequestration**
  - Promote afforestation and reinforce sustainable forest management to increase carbon absorption ability of forest
- **Emission reduction**
  - Control confiscation and occupation of forestland, improve logging measures and effectively control fire, plant diseases and insect pests so as to reduce emissions from forests
- **Storage**
  - Develop bio-energy to partially replace fossil energy and utilize timber to partially replace raw materials produced by fossil energy to reduce emissions due to use of fossil energy
- **Replacement**
  - Increase timber use, extend timber lifecycle and improve carbon storage ability of wood products

The Impacts of Climate Change to Chinese Forestry

The observation and forecast demonstrated the following impacts to Chinese forestry:

- Exert negative impacts to the stability, structure and function of forest eco-system, and threaten the conservation of bio-diversity in China
- Increase the frequency and intensity of forest fire
- The distribution of plant diseases and insect pests in forests extends to the north, the occurrence time is advanced, the generation number is increased, the occurrence cycle is shortened, the suffering range and hazardous degree are increased.
- Cause reduction of wetland area, dysfunction and great harm to the eco-system of seaside mangroves.

Main Afforestation Practices in China

- From 1978, Chinese Government initiated and implemented several national forest projects, forcefully promoting afforestation nationwide and effectively recovering and protecting forests.
  - Before 1998, carried out 10 major forest eco-projects and fast-growing forest-used material construction project in “three north”, Changjiang River, seaside, plain, Taihang Mountain and the Pearl River areas.
  - After 1998, Chinese Government initiated and implemented six forestry projects, including natural forest conservation, grain for green, wind and sand source control in areas around Beijing and Tianjin, regional protection forest construction in “three north” area and middle and lower reach of Changjiang River, fast-growing and high-yielding forest construction and wildlife protection.
- Now the average annual planned afforestation area nationwide remains at 4 million hectares or so.

The Contributions of Chinese Forestry to the Relief of Global Warming

- Through unremitting efforts, China's forest resource area and stock are continuously increasing. The forest area nationwide has reached 175 million hectares, forest coverage has reached 18.21% and total standing volume stock has reached 13.6 billion m3. The conserved plantation area has reached 54 million hectares or so, ranking first worldwide.
- Forest area and stock are continuously increasing, which improved China's timber self-support and China's ecological environment, while absorbed and fixed large amount of CO2. According to experts' estimation, in 1980-2005, China's forests absorbed 4.68 billion tons of CO2, and reduced 430 million tons of CO2 emission through controlling deforestation, which added up to 5.11 billion tons.
- According to experts' estimation: In 2004, the total greenhouse gas emission equaled to about 6.1 billion tons of CO2, the forests across the country absorbed about 500 million tons of CO2, accounting for 8% of the total industrial discharge at the same period, by which Chinese forestry contributed greatly to relieve global warming.

The Status Quo of Carbon Storage in Forests across China

- From the late years of 1970s, the carbon pools of forests in China obviously increased, from 430 million tons at the beginning of 1980s (1977-1981) to 585 million tons at the beginning of the 21st century (1999-2003), the average annual increase reached 7.5 million tons. The carbon density in unit forest area has also increased from 36.9 tons per hectare at the beginning of 1980s to 41 tons in 2003.
- Especially in 1999-2003, the carbon sequestration in forests nationwide reached 17 million tons each year, the contribution rate of plantations to the carbon sequestration of forests across the country exceeded 80%.
- However, the carbon sequestration spaces in China are unequally distributed.

Basic Principle of Forestry in Response to Climate Change

- Forestry development shall be included in the national strategy to address climate change
- Combine extension of forest area with sustainable management
- Combine extension of forest carbon sequestration with control of forest emission
- Innovate development mechanism and stimulate participation of the whole society
- Combine relief of climate change with adaption to climate change

Approaches of Chinese Forestry to Relieve Climate Change

- Extend forest area and increase carbon sequestration through afforestation
- Improve the quality of existing forest resources and increase carbon sequestration
- Reinforce forest protection and reduce carbon discharge from forests
- Develop biofuels and increase the use of biofuels in replace of fossil fuels
- Appropriately increase timber use, extend timber lifecycle and increase the carbon storage of wood-based forest products.

Actions to Address Climate Change (I)

- **Based on key projects to extend forest area and increase forest coverage**
- **Strengthen scientific afforestation and improve the adaptability and stability of plantations**
- Continue to increase mountains closed for afforestation, and carry out low-yielding and low-efficiency forest upgrade in scientific manner
- Implement national sustainable forest management project to popularize the guidance on sustainable forest management and relevant technical standards
- Implement project integrating development, processing and utilization of forest tree and biofuels.

Actions to Address Climate Change (II)

- Reinforce and improve management over logging of forest resources. According to forestry development layout and main forest functions in different area, we shall adopt different logging management patterns, and effectively combine forest logging management with area-based policy implementation and forest management schemes.
- Adopt the most strict protection measures and strictly implement the vegetation recovery system for confiscated forest lands, realizing balance of occupied and recovered forestlands.
- Reinforce law governance and fight against any damage to forest resource by law.

Actions to Address Climate Change (III)

- Stick to the principle of “prevention-based active elimination” and take comprehensive measures, improving comprehensive forest fire prevention and control standard, reducing fire occurrence and controlling the influenced scopes to the maximum.
- Strengthen and complete emergency management measures, improve plant diseases and insect pests monitoring alarm system to further upgrade the prevention and control ability of forests.
- Develop and utilize biofuels to partially replace fossil fuels
- Strengthen efficient recycled use of timber

Actions to Address Climate Change (IV)

- Establish typical natural forest species reserves according to special characteristics of different climate zones
- **Make clear the priority and strengthen protection of key species**
- **Reinforce study and monitoring over forests' response to climate change**
- Strengthen protection of existing wetlands, establish and complete natural protection network of wetlands
- Promote the ecological recovery of degraded wetlands

Main Measures to Implement Forestry Campaigns

- Reinforce governance to actively implement actions of forestry to address climate change
- Highlight the main emphasis to promote scientific study over forestry's response to climate change
- Increase trainings to improve forestry's ability to address climate change
- Reinforce publicity to increase public awareness to forestry's response to climate change
- Innovate mechanism to promote forestry's system construction to address climate change
- Highlight the main emphasis to increase investment in forestry to address climate change
- Actively carry out international cooperation to address climate change

Thank you!