Sustainable Development S&T Projects and Policy in China

Prof. Yang Qiquan
National Research Center for Science and Technology for Development (China)
1. A Sustainable Development Strategy

Since 1992, the Chinese Government has taken a host of major actions with a view to bolstering the implementation of Agenda 21.

2. The preliminary legal system for sustainable development

- One law concerning population and family planning,
- 6 laws on environmental protection,
- 13 laws relating to natural resource management and
- 3 natural disaster prevention and reduction laws.

Over 100 administrative rules and regulations on population, resources, environment and natural disasters providing a feasible system for law enforcement.
3. The sustainable development strategy in the State Development Plan

Under the 9th Five-Year Plan (1996-2000) the concept of sustainable development as a major strategy for China to push forward its modernization program.

The 10th Five-Year Plan (2001-2005) lists specific goals for each phase in various fields of sustainable development and presents planned implementation of some key ecological construction and environmental protection projects.
4. A coordinating body to bolster of the sustainable development strategy

In 1992, the Chinese Government established a inter-department leading group composed of SPC and SCST.

In 2000, that leading group office was renamed as the leading group for the nation-wide facilitation of the sustainable development strategy.
6. The major R&D Programs Concern Sustainable Development

- (1) National High-tech R&D Program (863 Program)
- (2) Key Technologies R&D Program
- (3) National Program on Key Basic Research Projects (973 Program)
- Natural Science foundation
7. Basis for Formulating of the Priority Project

programme areas of China's Agenda 21, and the foundation laid down by the previous work.

More than five hundred project proposals suggested by lin ministries of the State Council, local governments, industrial sectors, academic institutions and other organizations.

The international community’s suggestion
8. Selection Criteria for Projects

- Special attention is given to environmentally sound technologies and demonstration projects in agricultural, industrial and energy development.
- The priority is given to important projects on environmental pollution control and conservation and sustainable utilization of natural resources.
- Family planning, human health and poverty alleviation have a high priority.
9. Population, health and social safeguards:

- The Chinese Government has continued its State family planning policy.
- Income of both urban and rural populations has sustained rises while education and health levels have been substantially upgraded.
- Women and children are better protected and old-age insurance and a medical safeguard system have been gradually improved.
Population, and Human Health Projects

- Research and Development of Contraceptive Vaccine
- Protection of Endangered Species Used in Traditional Chinese Medicine and Development of Alternatives
- Prevention and Cure of AIDS, Cancers and Drug Abuse with Traditional Chinese Medicine
- Prevention of Occupational Diseases and Protection of the Working Environment in the Mining Industry
10. Urbanization and human habitat

Between 1992 and 2000, the level of urbanization has risen from 27.6% to 36.1%.

The quality of habitat for urban and rural inhabitants has been improved.
Comprehensive Pilot Area for Human Settlement Construction

- Sustainable Development through Industrial Transformation and Cleaner Production: Benxi City
- Sustainable Development and Enhancement of Women's Status in Hainan Province
- Sustainable Development of A Small Town in the Huai River Flood Plain
- Sustainable Development of A Model Large City: Shenyang's Shenhe District
11. Agriculture and rural development

- China’s food problems have been solved once and for all.

- The Government is actively promoting eco-friendly and water-saving agriculture.
Sustainable Agriculture Projects

- Sustainable Agriculture in Rural Areas in Huang-Huai-Hai Plain
- Sustainable Agriculture and Protection of the Environment in the Hilly Red-yellow Soils of Southern China
- Integrated Development and Management of Mountain-River-Lake Region of Jianxi Province
- Sustainable Management of Water Resources for Agriculture and A Demonstration Project
- Information System for Land Use and Crop Yield Estimation in China by Using Remote Sensing
- Development of Biological Pesticides and "Green" Foods
12. Sustainable Industry

- China has actively changed its strategy of industrial pollution treatment.

- The enforcement of laws relating to environmental protection in industry has been enhanced and a timeframe set to meet criteria for discharge and emissions.

- Instead of the preventive strategy against industrial pollution adopted so far clean production becomes the order of the day,
Cleaner Production and Environmental Protection Industry

- Enhancing Management, Standards, Policies and Regulations for Cleaner Industrial Production
- Cleaner production demonstration in Paper-making, chemical fibre pulp factory and steel factory
- Promoting Development of China's Environmental Protection Equipment Manufacturing Industry and Management Capacity
- Introduction and application of desulphurisation technologies
- A. Application of a dry scrubber system for control of industrial emissions
  B. Application of integration technology equipment for flue gas desulfuration and NO removal
The Tapping and Using of Energy

- The 10,000-yuan GDP energy consumption has decreased from 5.32 tons of standard coal in 1990 to 2.77 tons in the beginning of 21st century.

- The ratio of the coal consumption in the total consumption volume of one-off energy reduced from 76.2% in 1990 to 68% in 2000.

- An Action Plan for clean energy and clean cars is under way.
Clean Energy and Transportation

- Construction of Integrated Gasification Combined Cycle Demonstration Power Plant
- Construction of 150 MW Pressurized Fluidized Bed Combustion Combined Cycle Demonstration Power Plant
- Nuclear Heating Plant and Improvement of Safety Capacity
- Emission Control, Energy Economy and Improvement of Safety for Automotive Products
- Development, utilization and demonstration of renewable energy
- Solar Thermal and Photovoltaic Power Utilization
- The Development of A Large Size Wind Turbine Generator
- Projects of Biomass Energy
- Increasing Energy Efficiency in Buildings
14. Environmental Pollution Control

- Water resource protection
- Solid waste management
- Atmospheric protection
Water resource protection

- The pursuit of water-saving irrigation methods is encouraged and water-saving industries are promoted.
- Pollution prevention and the cleaning up of the key rivers and lakes.
- Construction of waste water treatment facilities in cities have been accelerated.
Solid waste management

- the industrial solid waste discharge volume fell by 69.2%.

- the comprehensive utilization rate increased by 15.1%.

- The construction of city garbage treatment facilities is being pushed forward.
Atmospheric protection

The control areas for sulfur dioxide and acid rain are delineated, where the overall volume of sulfur dioxide is controlled.

Priority is being given to develop public transport and the reduction and control of motor vehicle exhaust emissions and the improvement of air quality in urban areas.
Environmental Pollution Control

- Water Pollution Control and Waste Water Reclamation Demonstration in Sanya and Qingdao Cities
- Comprehensive Renovation of Regional Water Environment
- Water Pollution Control and Environmental Recovery of Lakes
- Acid Rain Control along China's Eastern Coastal Areas
- Municipal Solid Waste Management Systems, Technical Standards and Capacity Building in China
- Technical Support and Disposal Demonstration Project of Hazardous Wastes and Toxic Materials in China
- Safe Management and Disposal Technique for Radiactive Wastes
Conservation and Sustainable Utilization of Natural Resource

- Natural Resource Accounting: Research and Experimental Application
- Prevention and Control of Soil Erosion and Land Degradation in the Middle and Upper Reaches of the Yangtze River
- Conservation and Sustainable Utilization of Wetland Resources
- Management and Reclamation of Mine Tailings
- Establishing a dynamic monitoring network of ecology and the environment in China
- Remote sensing monitoring on coastal urbanization and the environment
- Conservation of dinosaur eggs in Xixia, Henan province and research on global change Resulted from the paleo-environment
Global Change and Biodiversity Conservation

- Establishing the East Asia Centre for Global Change
- Establishing the National Climate Centre for China
- Country study on climate change
- Establishment of A Biodiversity Network and Conservation of Endangered Species
- Conservation and Restoration of Tropical Rain Forest in Southern China
- Prevention of Desertification: A Demonstration Project in China
Thank you