FORESTRY FOR ECOSYSTEM AND LIVELIHOOD

STATE FORESTRY ADMINISTRATION OF CHINA
A review of human history shows that the changes of ecosystem often play a decisive role in the rise and fall of human civilization. A sound ecosystem has now emerged as a core competitive edge of a region or a country and a vital benchmark for green growth and scientific development. As China enters into a critical period of transition toward achieving ecological civilization after over 30 years of fast growth, the Chinese forestry is faced with two core tasks in transformation and upgrading, namely to improve the ecosystem and to improve people's livelihood. These are two central, fundamental and significant tasks and responsibilities.

Forests are the main body of terrestrial ecosystem and forestry is the main actor in ecological development. To accomplish the fundamental task of ecological development and play an irreplaceable role in promoting human subsistence and development, the Chinese forestry has established the development strategy centering on ecological development. At present, China's forest area stands at 208 million hectares, its forest coverage is 21.63%, and its forest stock and total forest carbon stock have reached 15.137
billion cubic meters and 8.427 billion tons respectively. Amid the overall decline of global forest resources, China's forest resources have registered sustained growth for over 30 years, winning high acclaim of the international community. Nevertheless, China's ecosystem is still very fragile and the ecological problem remains one of the most serious challenges for China. Green growth, land desertification control and conservation of forest resources, wetland ecosystem and biodiversity, among others, have all added to the heavy workload of the undertaking of China's forestry ecological development.

To safeguard and improve people's livelihood is the ultimate objective of the Chinese government. To improve people's livelihood, it is essential to meet their demands in various aspects, including those for ecosystem, subsistence and production. Forestry, given the extent of forest areas, the variety of forest industries and the diversity of its projects, is closely related to people's livelihood. China's collective forest tenure reform gives over 89 million farming households the right to use forest land amounting to more than 180 million hectares in area and ownership of forest assets worth trillions of yuan. More than 300 million hectares of forest land across China provides a wealth of ecological products and meets the huge demands for green forest products. Increased employment, deepening tenure reform, land resources conservation and guarantee of forest product supply are all for the purpose of improving people's livelihood.

Ecological forestry and livelihood forestry are two banners of China's forestry and two pillars for building ecological civilization and beautiful China. The forestry sector must further implement the forestry development strategy focusing on ecological development with promotion of ecological civilization as the general target and improvement of ecosystem and people's livelihood as the main task. We will speed up development of modern forestry and fulfill
six important responsibilities in protecting the natural ecosystem, implementing major ecological restoration projects, fostering an ecological security architecture, promoting green growth, building beautiful China and contributing to combating global climate change. We must make efforts to establish six systems including the national eco-space planning system, the major ecological restoration projects system, the production system of ecological products, the ecological development policy support system, the institutional system to safeguard ecological security and the system of ecological culture. All this will contribute to the building of ecological civilization and beautiful China, and help usher in a new era of ecological civilization in China.

Minister of State Forestry Administration, P.R.China
Ecological civilization calls for harmony between man and nature and fundamental change of the modes of production and living. It is a long-term strategic undertaking concerning people’s welfare and our nation’s future. The Chinese government emphasizes that forestry development must be taken as a top priority in developing ecological civilization, thus entrusting even greater responsibilities on the shoulder of the forestry sector.
Chinese Forestry: Main Responsibilities

I. Protecting the Natural Ecosystem

The terrestrial natural ecosystem mainly includes forests, wetland, desert and grassland. The forestry sector of China is responsible for protection, development and management of the three ecological systems of forest, wetland and desert. It also shoulders the responsibility of protecting and upholding biodiversity. Administering nearly two-thirds of the country's total land area, the forestry sector plays an irreplaceable role in safeguarding people's subsistence and development. Although China has made remarkable achievements in ecological development, the problems of ecological degradation, uneven ecological layout, low ecological capacity and reduction of biodiversity in China still pose serious challenges, and the problems of fragmentation of forest distribution and lack of high quality forest with strong functions are especially pronounced. Half of the wetland is not well protected, resulting in decrease of areas and degradation of functions. Desert ecosystem is more problematic. Desertification area accounts for 18% of the total land area, and land desertification has become the biggest ecological problem in China. On the whole, large chunks of ecologically fragile areas in China need to be protected. The forestry sector at all levels must make concerted efforts to preserve the ecological system, enhance its functions and provide a fundamental safeguard for development of ecological civilization.

II. Implementing Major Ecological Restoration Projects

By pooling the resources and fully leveraging the initiative of its people, China has launched 16 major ecological restoration projects since 1978, involving the three ecological systems of forest, wetland and desert. These projects rank the first in the world in terms of construction areas, scale and investment and play a dominant part in China's ecological restoration efforts, which remain an uphill battle
in China. The Chinese government has decided to implement major ecological restoration projects to strengthen the production capacity of ecological products and promote desertification control, strengthen water and soil conservation, increase areas of forests, lakes and wetlands, and protect biodiversity. The forestry sector will make earnest efforts to implement the major ecological restoration projects already underway, and explore the possibility of launching new restoration projects to achieve full coverage of such projects in China, give full play to the dominant role of ecological restoration, and create more enabling conditions for the harmony between man and nature.

III. Fostering an Ecological Security Architecture

The ecological security of a country or a region should be safeguarded by a scientific ecological security architecture. The Chinese government has decided to accelerate implementation of the main function zone strategy and establish a feasible and enabling ecological security architecture. The strategy identifies four types of main function zones for optimized development, priority development, limited development and prohibited development and calls for an earlier establishment of an ecological security architecture mainly featuring "two screens and three belts", which include the ecological screens of Qinghai-Tibet Plateau and Loess Plateau-Sichuan and Yunnan and the northeast forest shelterbelt, the northern desertification combating shelterbelt and the southern mountainous shelterbelt. To implement the strategy, the 12th Five-Year Plan for Forestry
Development provides the establishment of ten ecological screens, including the northeast forest screen and the wind-control and sand-fixing screen in northern China, which form the basic framework of the national ecological security architecture. China will accelerate development of the ten ecological screens, work to achieve the goal of increasing forest coverage by 40 million hectares and forest stock by 1.3 billion cubic meters by 2020 from the levels of the year 2005 and safeguard the bottom line of national ecological security and constantly optimize and expand the space for subsistence and development of the Chinese nation.

**IV. Promoting Green Development**

The Chinese government has made efforts to promote green, circular and low carbon development. The advantage and potential of promoting green growth lie in forests. As the largest and most promising circular and low carbon industry, forestry must be strengthened so as to play an irreplaceable role in promoting green, circular and low-carbon development. To promote green growth, efforts must be focused on deep and intensive processing of forest products to improve comprehensive use and produce added value, and gain the maximum economic value at the minimum cost of resources. New products need to be developed to meet the new demand of the society. Ten major forest-related industries will be developed with a view of drastically increasing the income of farmers and promoting green growth. China’s forestry sector should tap into the huge potential of forest resources, species and market, expand the industrial scale, improve the quality, increase the proportion of green economy and contribute more significantly to green, circular and low-carbon development.
V. Building Beautiful China

Building a beautiful China is the grand blueprint of the Chinese government. Green is the basic color and core factor of beautiful China. To build a beautiful China, we need to build more platforms so that people will be motivated to add green to their surroundings, preserve green mountains and clear water to create a more beautiful environment and produce more and better ecological products. In recent years, China has launched many signature projects throughout the country in this regard, such as the Four Green Project in Fujian, the Forest City and Beautiful Village Project in Zhejiang, the Greenbelt Project in Guangdong, the Greening Project in Hunan, the Water Ecosystem Project in Shandong, the Green Plain Project in Beijing, the Forest Growth Project in Anhui, the Afforestation Project in Jiangxi, the Greening Project in Guangxi, the Green Mountain Project in Liaoning, the Ecological Promotion Project in Henan, the Green Village Action in Qinghai and the Green Action in Shanxi. All these projects have scored remarkable achievements. The forestry sector at all levels must work creatively, continue to speed up the urban and rural afforestation and do our share to build China into a beautiful homeland at an early date.

VI. Contributing to Combating Global Climate Change

The Chinese government will take a more active part in international affairs, play its role as a responsible country and make joint efforts with other countries to meet global challenges. China's forestry sector, charged with the responsibility of implementing the U.N Framework Convention on Climate Change (UNFCCC), UN Convention to Combat
Desertification (UNCCD), Wetland Convention, Convention on International Trade in Endangered Species of Wild Fauna and Flora, Convention on Biological Diversity, Protection of New Varieties of Plants (UPOV) and the Non-Legally Binding Instrument on All Types of Forests, has become an important actor in combating global ecological crises. The capacity of forest for reducing carbon emissions was recognized by the Kyoto Protocol and UNFCCC conferences including those held in Copenhagen, Durban and Doha. In contrast to the overall decline of global forest resources, China has achieved double growth of is forest areas and forest stock, contributing significantly to combating global ecological crises including climate change. China's forestry sector will continue to strengthen the management of forest resources, reduce deforestation, increase forest carbon sinks, play its special role in combating climate change, and make greater contributions to maintaining global ecological security.

**Chinese Forestry: Main Tasks**

Forestry is a very important fundamental industry as well as a public welfare sector. Along with economic and social development, the role of forestry is getting more important with expanded functions and mandate. The forestry sector in China is responsible for protection, restoration and management of forest, wetland and desert, and these three natural ecosystems play an irreplaceable role in safeguarding the subsistence and development of the Chinese people. Forest is the lung, wetland the kidney and biodiversity the immune system of the earth. Therefore, forestry relates to ecological security and human subsistence and development.
I. To deepen various forestry reforms

China's forestry sector is in a development stage of restoration marked by intertwining of conflicts and competition of positive and negative energies. The basic situation of inadequacy of forest stock, low quality, weak function and uneven distribution of forest remain unchanged and the conflict between the lack of ecological resources and mounting ecological and livelihood demands is still pronounced. Chinese forestry has come a long way and is presented with good opportunities, but it is also faced with many challenges and heavy tasks. Since the beginning of the new century, China's forestry reform has achieved three major outcomes. First, marked by implementation of the forestry development strategy centering on ecological development, China has initially established a system and mechanism for protection and development of its ecological system. Second, marked by the collective forest tenure reform, hundreds of millions of Chinese farmers are offered their property rights in a real sense. Third, marked by China's entry into the WTO, China's forestry forms a basic pattern of market-oriented and globalized development. China's forestry achievements are attributable to reform. And settlement of the difficulties and problems arising in the process of its development also relies on reform. We must further deepen the reform measures already underway, and improve the relevant mechanisms. We need to take the following measures. First, improve the collective forest tenure system reform. The collective land ownership should be separated from the contracting and operational rights.
Second, improve the forest-related subsidy system. Subsidy standards and scale should be improved for universal coverage. Forest cultivation, woody grain oil trees, special economic forest, under-forest economy, and timber strategic reserve deserve greater support. Third, improve the system of forest ecological benefits compensation fund. A dynamic adjustment mechanism for compensation standards should be established and compensation standards improved gradually. We need to explore the possibility of setting up a market-oriented ecological compensation mechanism, and seek multiple channels for compensation fund raising. Fourth, improve the system for forest right mortgage. This measure will provide unimpeded channels for loans and expand the scale of loans. Fifth, improve the forest insurance system. It is important to increase the coverage of forest insurance, improve insurance compensation standards, and push for the establishment of an insurance reserve fund system for massive disasters. Sixth, hold the perpetrators accountable for the damage they cause to the forest and improve the system of collecting restoration fees for damaged forest vegetation. Seventh, improve the system of collecting forest cultivation fees. Eighth, further market-oriented reform for forest industries. The role of government in directly allocating the forest resources should be reduced to give way to the
decisive role of market in forestry development and ensure maximal profits and efficiency for forestry based on market rules, market prices and market competition.

II. To Establish a National Eco-space Planning System

Ecological planning is the red line for forest conservation and utilization. In China, the total area of forest, wetland and desert amounts to over 600 million hectares and accounts for 63% of the national territory. So the forestry sector figures prominently in the development of ecological civilization and shoulders the main tasks of national eco-space planning.

First, defend the ecological red line. The State Forestry Administration has identified red lines for forest areas and forest, wetland, desert vegetation and species respectively: national forest area shall be no lower than 4.68 billion mu, forest no lower than 3.74 billion mu, forest stock no lower than 20 billion cubic meters; national wetland no lower than 800 million mu; afforested sandified
land and restored vegetation no lower than 530,000 square meters nationwide. We have further clarified the functions, objectives and management measures for eco-space and formed the overall arrangements for forestry sector to promote ecological civilization. Similar red lines at the provincial level will also be identified accordingly and get approved by the provincial government to form synergy so that the forestry sector can play its role in promoting ecological civilization.

Second, accelerate the formulation of plans for protection and development for 25 key ecological function zones according to the national strategy for developing function zones, and gradually establish the ecological space pattern that meets the needs of different function zones.

Third, optimize the planning for forest growth and land greening, and in a long-term manner, tap the potential of forest land, farmland and grassland shelterbelts, water system shelterbelts, road shelterbelts and urban greening on the basis of the Outline of National Forest Land Protection and Utilization Plan and the Outline of National Afforestation Plan.

Fourth, improve the planning for wetland on the basis of 12th Five-Year
Implementing Plan of National Wetland Conservation Project and the national wetland survey.

Fifth, improve the national plan for desertification and rocky desertification control. Long-term and periodic plans should be formulated for desertified land that can be improved, sandy land and rocky desertified land that need to be closed up for protection on the basis of the National Plan for Desertiﬁcation Control and the Outline of the Plan for Comprehensive Control of Rocky Desertification in Karst Region and updated results of monitoring surveys.

Sixth, improve the plans for special forestry projects. Special plans need to be formulated or amended for protection of bird migratory channels, special ecosystems and habitats of endangered species. According to preliminary estimates, there are over 80 national forestry eco-space plans, which, together with local plans, will form a scientific system for ecological planning and further optimize the ecological pattern, expand the ecological space, increase the total ecological capacity and lay a solid foundation for development of ecological civilization.

III. To Foster a System of Major Ecological Restoration Projects

Major ecological restoration projects are the strategic pillars to safeguard national ecological security, and the major projects implemented by the forestry sector are among the most important national efforts in ecological restoration.

First, continue implementation of the major forestry projects underway. Higher standards need to be adopted and procedures and plans formulated to improve the quality of these projects.

Second, design and launch new major projects. The national projects such as the project on establishment of strategic timber reserve base will be launched soon. New ecological restoration projects will be designed in light of special ecological locations and needs.

Third, launch a batch of provincial, municipal and county-level ecological restoration projects according to the actual local conditions and establish a complementary ecological restoration system to coordinate the national and local projects.
with a view to promoting the overall restoration of the national ecosystem.

**IV. To Establish the Production System of Ecological Products**

Forestry plays a dominant role in producing ecological products, which can be divided into two categories, visible and invisible. Visible or not, ecological products are in great shortage and have large social demand and production potential. Visible ecological products are mainly forest products with both ecological and commodity features. To produce visible ecological products, it is important to optimize the production layout and structure, improve the quality and ensure supply so as to satisfy the demand without over exploitation and achieve sustainable utilization. Invisible ecological products are rich and irreplaceable, such as functions to absorb carbon dioxide, produce oxygen, conserve watersheds, provide freshwater, purify water, conserve soil and water, prevent wind and sand storms, reduce noises, moderate climate, absorb dust and provide ecological therapy. No matter producing visible or invisible ecological products, it is essential to respect the laws of nature, economy and market. Taking into account the not-for-profit nature of ecological products, two principles should be followed when promoting the substantial development of ecological products. One principle is to provide sufficient support and protection for producers, and the other is to ensure that consumers bear certain costs. Where market can allocate the resources, the role of the market mechanism should be brought into full play. Otherwise, the ecological products should be included in public expenditure as public goods. A productive system of ecological products should be established and the production capacity should be further improved so as to ensure the unique role of ecological products in promoting green, circular and low-carbon economy.

**V. To Establish the Policy Support System for Ecological Development**

Enhancing ecological development and safeguarding ecological security are the public services to be provided by the government. It consists of the following components.
First, improve the public fiscal support policies. The compensation system for ecological benefits and the forestry subsidy system shall be intensified, the current financial funds for special purposes upscaled, and the transfer payments increased, so as to provide strong support for forestry reform and development and production of ecological products, fully leverage the initiative of and give incentives to producers for enlarging production, unleash the potential for development and improve the quality and profits of production.

Second, enhance infrastructure investment policies. The standards and scale of investment in forestry infrastructure will be gradually increased. The infrastructure construction in forest areas shall be incorporated into public investment plans in order to increase the investment and improve the living and production conditions of the local communities.

Third, intensify the financial and taxation support policies. Enabling policies that encourage the development of ten green forestry industries will be formulated and improved. Such ecological industries as under-forest economic production and the development of strategic timber reserve bases shall be supported. The management system of forest right mortgage loan shall be set up. Such polices as ecological industry loan with fiscal interest discounts, fiscal subsidies to insurance premium and preferential tax relief shall be improved.

Fourth, increase support for forestry capacity building. Favorable policies on science and technology, education and human resources shall be intensified in order to smoothly implement the Strategy of Invigorating Forestry through Science and Technology and the Strategy of Strengthening Forestry by Human Resources. Through the development of the policy system, the investment channel and growth mechanism compatible to the economic development level shall be set up in order to ensure the long-term, steady and vigorous policy and financial support to ecological development.
VI. To Establish the Institutional System to Safeguard Ecological Security

A comprehensive, sound system is the important guarantee for development of ecological civilization. Currently, forest land, wetland, and sandy land are encroached and seriously damaged by human activity. Some damage may take a few or even dozens of generations to restore and some cannot be reversed. Thus, to establish an institutional system to safeguard ecological security, the priority is to improve relevant laws and regulations.

First, strengthen national legislation. It is important to amend and improve the Forest Law and other existing forestry laws, and formulate regulations, rules and normative documents for ecological conservation and restoration.

Second, strengthen local legislation. Local laws must be formulated in accordance with national laws and
regulations. In areas where national legislation is difficult, local laws and regulations can be formulated first. Through these measures, a sound legal system will be established to reflect the concept of ecological civilization. It is important to ensure that the laws are abided by and strictly enforced, and lawbreakers punished.

**VII. To Establish a System of Ecological Culture**

Ecological culture is the foundation of ecological civilization. If ecological civilization is the mansion, ecological culture would be the foundation.

First, it is important to cultivate a culture of respect for nature. The concept and action of conquering and dominating nature should be abandoned. We must foster a relationship of harmony and equality between man and nature. As for nature, we should love it, respect it, live with it and protect it.

Second, we should develop a culture of frugality. With full knowledge of the limitations of natural resources, we cannot go after economic growth and excessive consumption at the cost of the environment. We must cultivate a culture of frugality and moderate utilization and consumption.

Third, it is important to develop ecological ethics. We should educate the children and instill in them the environment-friendly ethics and habits.

Fourth, ecological cultural carriers should be diversified. Efforts will be made to develop forest parks, wetland parks and nature reserves, and build ecological culture museums, science museums and herbariums. Forest-related activities should be carried out to promote building of beautiful countryside and urban greenway. We need to raise ecological awareness to make the concept of harmony between man and nature part of the socialist core value and the principal ethic of the whole society.