



## **Sectoral and Cross-Sectoral Integration of Biodiversity in China**

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## **1. Introduction**

China reported<sup>1</sup> (2008) on mainstreaming activities in agricultural sector, forestry, urban and rural development sector, marine sector, water resources sector , education sector, science and technology sector, poverty alleviation and development sector, land and resources management sector, commerce sector, customs sector, traditional Chinese medicine management sector, intellectual property management sector, national plans and programs. Its new strategy set out future directions in mainstreaming.

## **2. Agricultural Sector**

### **1. Actively integrating biodiversity conservation into agricultural development strategies and plans**

The MOA formulated the Rules on Conservation of Agricultural Wild Plants to put the conservation of agricultural wild plants on a more solid legal footing; the MOA also formulated the Plan for the Establishment of Seven Major Agricultural Systems and the 11th Five-Year Plan for National Agricultural and Rural Economic Development to strengthen the establishment of protection systems for agricultural resources and ecological environment.

The MOA issued the 11th Five-Year Plan for National Animal Husbandry Development, the National Master Plan for Grassland Conservation, Construction and Utilization, the Measures for Management of Forage-Livestock Balance and the Notice on Further Strengthening Grassland Supervision and Management; together with the National Development and Reform Commission, the MOA issued the Recommendations on Strengthening Grassland Conservation and Construction and the Recommendations on Further Improving Policies and Measures for Returning Grazing Land to Grassland. These plans, measures and notices have fully considered grassland biodiversity conservation.

The State Council distributed the Action Plan for China Aquatic Biological Resources Conservation and the MOA issued the 11th Five-Year Plan for National Fishery Development. These plans set out the targets to preserve fishery resources, to improve the ecological environment of waters and to conserve rare and endangered aquatic wildlife.

China has formulated the Action Plan for Agricultural Biodiversity Conservation (1993).

— Plan for the Construction of Seven Major Agricultural Systems. As one of the major contents of the Plan, the program for agricultural resources and ecological environment protection system sets the following targets: by 2010, a number of areas for wild plants in-situ conservation and grassland and forestry nature reserves will be 12

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<sup>1</sup> China (2008). China's Fourth National Report on Implementation of the Convention on Biological Diversity, Ministry of Environmental Protection, November 2008, 110 pp.

established, agricultural wild plant resources, natural grasslands, rare and endangered aquatic wildlife and endemic fish resources will be effectively conserved; 0.8 million ha of agricultural non-point sources of pollution will be comprehensively treated, 1.2 million ha of conservation tillage will be completed and the quality of agricultural ecological environment will be improved noticeably.

— Plan for Conservation and Development of New Agricultural Plant Varieties. Issued by the Ministry of Agriculture (MOA) at the beginning of 2007, the Plan contains the following targets: by 2010, legislation and policies related to the conservation of new plant varieties will be further improved, construction of the technological supporting system for new agricultural plant varieties will be strengthened, the level and efficiency of law enforcement concerning variety rights will be greatly increased and the ability to participate in variety rights related international affairs will be further improved.

## 2. Concrete measures

### (1) Strengthening institutional capacities

In order to promote agricultural biodiversity conservation, the MOA established the Leading Group for Wild Plants Conservation, the Expert Committee for Wild Plants Conservation, the National Committee for Livestock and Poultry Genetic Resources, the Regulatory Committee for Fishery Resources of the Yellow River Basin and the National Coordination Committee for Prevention and Control of Alien Species.

### (2) Carrying out surveys on and collection of crop germplasm resources and agricultural wild plant resources. 33

In recent years, the MOA organized surveys on and collections of crop germplasm resources and agricultural wild plants. More than 5,000 accessions of important agricultural wild plants were collected and well preserved in national genebanks or field genebanks.

### (3) Establishing in-situ conservation sites for agricultural wild plants

Since 2001, the MOA began to establish in-situ conservation sites for agricultural wild plant resources with high endangerment levels. By the end of 2007, a total of 116 sites were established.

### (4) Controlling invasive alien species

In 2003, the MOA launched the annual Campaign on Eliminating Invasive Alien Species in One Hundred Counties of Ten Provinces, organizing local governments to particularly weed out invasive alien species such as *eupatorium adenophorum*, ragweed, *Solenopsis invicta*, alligator weed, *cenchrus pauciflorus* and *lissorhoptrus oryzophilus*. Substantial success was achieved in these campaigns.

### (5) Conserving grassland biodiversity

The MOA strived to restore grassland vegetation and increase grassland productivity by implementing the Project of Returning Grazing Land to Grassland and measures such as grazing ban, grazing land non-

use period, rotational grazing and accommodation of carrying capacity. These projects and measures have boosted more balanced development between grassland ecology and animal husbandry.

#### (6) Managing and conserving fishery resources

The MOA implemented the plan of “zero increase” and “negative increase” on marine catches, the summer non-fishing season system and the closed season system in the Yangtze River Basin and put more efforts into rescuing and preserving aquatic wild animals and establishing aquatic nature reserves. Fishery resources and aquatic biodiversity were well conserved.

### **3. Forestry Sector**

#### 1. Integrating biodiversity conservation into forestry development strategies and plans

As the responsible authority for forest, wetland and desert resources, forestry departments attached more and more importance to biodiversity conservation in sectoral development strategies and plans. Biodiversity conservation was introduced into the following plans as a major content: the Decision on Speeding up Forestry Development, the Plan for Natural Forest Resources Conservation Project (2000-2010), the Project Plan for National Wildlife Conservation and Nature Reserve Establishment (2001-2050), the Implementation Plan for National Wetland Conservation Projects(2005-2010), the National Plan for Forestry Nature Reserve Development and the 11th Five-Year and Long- and Medium-Term Plan for Forestry Development.

#### Forest biodiversity conservation plans

China has developed the China Forestry Action Plan for Biodiversity Conservation (1992), the Forestry Action Plan for China’s Agenda 21 (1995), the Plan for Natural Forest Resources Conservation Project (2000-2010), and other related plans and programs.

— Plan for Natural Forest Resources Conservation Project. Implemented from October 24 of 2000 upon approval of the State Council, the Plan covers the period from 2000 to 2010 and addresses three major issues: ceasing all deforestation activities in the upper reaches of the Yangtze River and the upper and middle reaches of the Yellow River; significantly reducing the timber output of northeast China, Inner Mongolia and other major state-owned forest regions; conserving natural forest resources in other regions.

— National Plan for Wildlife Conservation and Nature Reserve Construction. The Plan puts forward that, by 2010, China will have 1,800 nature reserves, and the total area of nature reserves will take up 16.14% of China’s land area; and by 2030, there will be 2,000 nature reserves in China, with the total area taking up 16.8% of China’s land area, and populations of 60% of the wildlife under special state protection will be restored and increased; and by 2050, the number of nature reserves will reach 2,500, and their area will account for 18% of the national land area, populations of 85% of the wildlife under special state protection will be restored and increased, and the priorities for rescue, population restoration and

maintenance will include 15 species such as giant panda, tiger, Tibetan antelope and *Procapra przewalskii*.

— National Plan for Establishment of Forest Nature Reserves. Issued by the SFA in July 2006, the Plan specifies that, by 2030, the area of forest nature reserves in China will take up about 15% of the national land area, all species under special state protection and typical ecosystems will be conserved effectively and 85% of species resources under special state protection will be restored and increased.

— National Project Plan for Establishing Coastal Protective Forest System. Implemented in 2007 upon approval of the National Development and Reform Commission, the Plan covers the period from 2006 to 2015 and proposes to construct basic coastal shelterbelts and protective forests, preserve and restore mangroves and wetlands, maintain the ecological safety of national land and conserve biodiversity along the coastline.

— Decision of the Central Committee of the Communist Party of China and the State Council on Speeding up Forestry Development. The Decision lays down the targets that by 2010, China's forest coverage will reach over 19% and the general tendency of ecological deterioration will be basically controlled; by 2020, forest coverage will rise to over 23%, ecological issues of major regions will be basically addressed and ecological condition across the country will be substantially improved; by 2050, forest coverage will increase to and be kept at more than 26%, the country will be basically covered with beautiful landscapes and ecological conditions go into a sound cycle.

## 2. Concrete measures

### (1) Boosting biodiversity conservation through key ecological projects

Since 2000, China have successively launched a number of national key forestry ecological projects such as those to conserve natural forest resources, restore farmland into forest, construct protective forest systems in north, northeast and northwest China, conserve wildlife and set up nature reserves, control sources of sandstorms in Beijing and Tianjin, conserve wetlands and restore ecosystems. As a result, forest vegetation grew quickly and ecological environment improved significantly. During the 11th five-year plan period, China further improved policies regarding the nature forest conservation and the returning farmland to forest.

### (2) Changing classification of forests and the implementing forest ecological benefit compensation system

Forest resources are classified into noncommercial forest and commercial forest according to their main functions and are managed differently. The forest ecological benefit compensation system was established and upgraded at central and local levels. The compensation fund for key noncommercial forests appropriated from central government finance increased each year to hit 3 billion yuan. Besides, Guangdong, Zhejiang, Fujian, Jiangxi and other provinces included the compensation fund for

noncommercial forest in the budgets of local governments at all levels and increased the fund a year-to-year basis.

(3) Strengthening the management and sustainable use of forest resources and wild animals and plants

The logging quota system was introduced and promoted nationwide. The Guideline for Sustainable Forest Operation in China and the Outline for Implementation of Forest Operation Models were printed and distributed. The in-situ conservation of wild animals and plants was stepped up. An in-situ conservation network with nature reserves as the main body and forest parks, wetland parks, mini-nature reserves, game sanctuaries and forest sanctuaries as supplements was basically established. More efforts were made to strengthen law enforcement and address management issues. Special campaigns were launched to crack down on activities causing damage to wildlife resources. Artificial breeding measures were taken for endangered species whose populations were hard to restore through in-situ conservation. Artificially bred populations continued to increase. Breakthroughs were made in technologies for rescuing, feeding and breeding more than 100 endangered species such as the Siberian tiger, the South China tiger and the golden monkey.

(4) Carrying out surveys on and monitoring of ecosystems and biodiversity of forests, wetlands and other resources

The national surveying and monitoring systems for forests, wetlands, wildlife and deserts have been basically established. National survey on and monitoring of forest resources was conducted once every 5 years since 1973. Monitoring of deserts was initiated in 1994 and 3 national monitoring campaigns were completed up till now. The first survey on terrestrial wild animals, plants and wetland resources was completed in 2004. The national forest resources database, desert information base, wildlife information platform and wetland resources management database were set up based upon the statistics obtained from surveys and monitoring activities.

(5) Carrying out comprehensive law enforcement reform in forestry sector

Steady progress was made in the comprehensive reform of law enforcement in the forestry sector. Law enforcement was strengthened and standardized and the construction of more upright, practical, competent and qualified law enforcement teams was deepened.

(6) Encouraging the development of private forestry

Relevant stakeholders were encouraged to invest in and develop forestry across ownerships, sectors and regions. The contracting, leasing and bidding and auctioning of uncultivated mountains and land suitable for afforestation were quickened. The rights and interests of investors are protected in accordance with relevant laws.

(7) Publicizing extensively

The entire society was called upon to participate in and support forestry construction. Forestry-related scientific and technological knowledge was widely promoted. Public and media oversight intensified and illegal activities which harmed forest resources were curbed.

#### **4. Urban and Rural Development Sector**

##### **1. Integrating biodiversity conservation into campaigns for “garden cities” and “ecological garden cities” and urban construction plans**

With regard to the campaign for “national garden cities”, the Ministry of Housing and Urban-Rural Development (MOHURD) disseminated the Measures for Application and Evaluation of National Garden Cities and the Standards for National Garden Cities, requiring applicants to develop and implement plans for biodiversity conservation in urban planning areas, use native species as garden plants and conserve urban wetland resources.

With regard to the campaign for “ecological garden cities”, the MOHURD issued the Notice on Recommendations on the Building of “Ecological Garden Cities”, requiring cities to further improve urban green space systems and conserve natural landscapes, vegetations, water systems and wetlands.

##### **2. Concrete measures**

###### **(1) Carrying out publicity and education concerning biodiversity conservation**

Publicity and education efforts concerning urban biodiversity conservation were increased continuously while campaigning for “garden cities” and “ecological garden cities”. Through publicity and education activities, both government officials and the public have generally realized the significance of biodiversity conservation and gradually raised the “Prevention-Oriented and Conservation-First” awareness.

###### **(2) Implementing the measures for management of urban green lines**

Through implementation of the Measures for Management of Urban Green Lines, the planning and construction of green space systems of cities at all levels were effectively implemented and urban green spaces are becoming more integrated in types and more balanced in distribution. Increasing attention was paid to urban biodiversity conservation and outstanding achievements were made in this aspect.

###### **(3) Developing and implementing plans for biodiversity conservation in urban planning areas**

A great majority of cities in China have developed and implemented plans for biodiversity conservation in urban planning areas to strengthen reasonable and effective conservation of landscapes, hydrological resources, vegetations and species.

#### **5. Marine Sector**

##### **1. Integrating biodiversity conservation into marine strategies and plans**

The Regulations on the Prevention and Control of the Marine Environmental Pollution from Construction Projects include specific provisions on the impacts of project development and construction on marine ecology and biodiversity. The National Program for Marine Development stipulates explicitly that marine ecological environment shall be protected and implementation of the total pollutant discharge control system based on marine environmental capacity shall be accelerated. The Program also identifies detailed measures for the protection of marine ecological environment. China is also developing a national plan for zoning of main functional regions and marine biodiversity conservation will be taken into account during the division of different types of main marine functional regions. The State Oceanic Administration is developing a plan for coastal protection and utilization to control the impact of sea enclosures and land claiming activities on marine biodiversity.

## 2. Concrete measures

### (1) Strengthening the establishment and management of marine protected areas

Over the past several years, more than 50 local marine nature reserves and 11 special marine protected areas were established along China's coastal areas. The SOA developed a series of regulations and systems such as those to build marine surveillance teams for marine protected areas, manage the use of sea areas and examine and approve exploitation activities. Management bodies for marine protected areas stepped up work related to plan development, patrolling for law enforcement, scientific research and surveying, ecological monitoring, disaster prevention and control and publicity and education.

### (2) Energetically protecting the environment of islands and islets

Together with related departments, the SOA initiated the formulation of national legislation and plans for protecting and wisely utilizing islands and islets and the layout and establishment of island and islet reserves. To well protect island and islet resources and the marine environment, the SOA also worked with related departments to promulgate the Regulation on Protection and Utilization of Unpopulated Islands and Islets.

### (3) Conducting marine ecological surveys

The SOA organized the first national marine ecological survey, during which many new and major marine ecological problems were discovered. The SOA also made a general assessment on the overall ecological status of China's seas based on the survey.

### (4) Actively carrying out marine ecological restoration

By carrying out a variety of marine ecological restoration projects, marine departments of local governments in coastal areas greatly promoted marine biodiversity conservation and gained substantial comprehensive benefits.

### (5) Strengthening examination and approval of use of sea areas and assessment of the environmental impacts of marine projects



Through examination and approval of use of sea areas and assessment of the environmental impacts of marine projects, marine biodiversity conservation was strengthened in aspects of project site selection, sea area to be used, manner of sea land claiming, plane layout and environmental protection measures.

## **6. Water Resources Sector**

### **1. Fully considering biodiversity conservation in water conservancy plans**

The Ministry of Water Resources (MWR) gave high priority to ecological environmental protection and fully considered ecological water demand during the development of a number of programs such as the comprehensive program for national water resources. The MWR also set down the basic and total ecological water demands at the control nodes of major rivers, the reduction in shallow and deep groundwater use in over-exploited areas as well as measures to restore and conserve water ecology in major areas.

### **2. Concrete measures**

(1) Great importance was attached to biodiversity conservation during construction of water conservancy projects

The MWR attached great importance to biodiversity conservation and fully considered the targets of water ecology conservation during the planning, design, construction and operation management of water conservancy projects. For example, to mitigate the impacts of dam constructions on fish's survival, the MWR required fish passes to be built or artificial breeding and baby release efforts to be made to replenish biological resources.

(2) Carrying out pilot campaigns to protect and restore water ecosystems

In 2004, the MWR issued the Recommendations on Protecting and Restoring Water Ecosystems and launched pilot campaigns in some cities.

## **7. Education Sector**

### **1. Strengthening establishment of biodiversity-related disciplines**

The Ministry of Education (MOE) gave high priority to the establishment of disciplines related to the conservation of biological resources (biodiversity). Ten disciplines and dozens of specialties were set up in three disciplinary categories.

### **2. Putting more efforts into the training of biodiversity professionals**

Biodiversity science is a new science with ecology as the core discipline and associated with other related disciplines. At present, most universities and normal universities in China offer ecology courses. Nearly 50 institutions of higher learning offer bachelor's degree in ecology, 38 offer master's degree and 22 offer doctor's degree. According to incomplete statistics, from 2004 to 2006 alone, China's

institutions of higher learning have awarded about 50,000 masters and doctors in disciplines related to the conservation of biological resources.

### 3. Accelerating course and textbook development

Institutions of higher learning began to offer a wide range of ecology courses and published ecology textbooks for students of all educational levels. Meanwhile, a number of outstanding overseas ecology textbooks were introduced into China. Monographs and reports on the study of ecology teaching have also been developed.

## 8. Science and Technology Sector

### 1. Fully considering the research needs of biodiversity conservation in the National Program for Long- and Medium-Term Science and Technology Development

Much attention was paid to scientific research and technological development concerning the conservation and sustainable use of biodiversity in the National Program for Long- and Medium-Term Science and Technology Development (2006-2020). Themes such as “efficient use of marine resources”, “protection of marine ecology and environment”, “function restoration for regions with vulnerable ecosystems”, “monitoring of and response to global environment change”, “use, storage and innovation of germplasm resources and guided breeding of new species” and “biosafety management” are all related to the conservation and sustainable use of biodiversity.

### 2. Establishing biodiversity-related research projects in national science and technology programs

The Ministry of Science and Technology (MOST) established special projects on conservation and sustainable use of biodiversity in the National Key Technology Research and Development Program, the National Fundamental Research Program, the National High Technology Research and Development Program and other special funds. The National Key Technology Research and Development Program for the 11th five-year plan period initiated major projects such as those to establish a national support system for the comprehensive monitoring, assessment and decision-making concerning terrestrial ecosystems and develop technologies for and demonstrate restoration of typical and vulnerable ecosystems. The National Fundamental Research Program initiated projects to study the biodiversity evolution and conservation in China’s Himalayan regions and the theories and methodologies for disease and pest control and germplasm resources preservation in agricultural biodiversity conservation. The National High Technology Research and Development Program (named as 863 Program) included the fields of marine technology, resource and environment technology and modern agricultural technology. Some projects in these fields concern development of technologies related to the conservation of biodiversity and sustainable use of biological resources. With regard to construction of natural science-technology resource platforms, resource survey and collection, information platform construction as well as material and information sharing concerning animal, plant, microorganism and germplasm resources were organized and promoted. These researches generated a number of valuable and influential research achievements and provided strong scientific and technological support for

biodiversity conservation in China. Some achievements were well received by the international academic communities.

## **9. Poverty Alleviation and Development Sector**

### **1. Integrating biodiversity conservation into national poverty alleviation plans**

In 2001, the Chinese government promulgated and implemented the Program for Poverty Alleviation and Development of China's Rural Areas (2001-2010). The Program specifies that poverty alleviation and development must be linked with resource conservation and ecological construction so as to realize a sound cycle of resources, population and environment and increase the capability of poverty-stricken areas for sustainable development.

### **2. Concrete measures**

(1) Paying special attention to developing human resources and easing population-resource conflict in poverty-stricken areas

The Chinese government addressed poverty alleviation by improving the quality of labor forces in poor areas. Extensive training in working skills and practical agricultural techniques was provided to labor forces from poor households to migrating rural labor forces, ease population-land conflict and improve the ecological environment and biodiversity conservation in poor areas.

(2) Realizing poverty alleviation by relocating and reducing the ecological pressure of areas with extremely severe natural conditions

With regard to areas short of basic living conditions, residents were relocated on a voluntary, flexible and affordable basis to fundamentally improve the living conditions of poverty-stricken areas, reduce the population pressure of these areas and create external conditions for biodiversity conservation.

(3) Vigorously trying out new approaches that integrate poverty alleviation with biodiversity conservation

With regard to areas with extremely vulnerable biological diversity such as the Qinghai-Tibetan Plateau, deserts and rocky deserts, comprehensive control measures were taken to improve local natural, transportation, education and sanitary conditions. New approaches to poverty alleviation and biodiversity conservation were actively tried out.

## **10. Land and resources management sector**

The Ministry of Land and Resources (MLR) integrated biodiversity conservation into the overall land use plans of all levels. For instance, while determining the scale for land use, the MLR made it one of the planning targets to uncompromisingly protect forest land and increase forest coverage. During functional or regulatory division of land use areas, the MLR marked out nature reserves and ecologically sensitive areas and prohibited use of land in protected areas as construction land. With regard to mudflats and sea enclosure and land claiming projects, the MLR coordinated regulations in the Marine

Function Zoning Plan and the Overall Land Use Planning and formulated sound policies for mudflat development and sea land claiming activities. Through implementation of land use plans, activities like use of land in nature reserves as project sites were effectively eliminated and biodiversity conservation was enhanced accordingly.

### **11. Commerce sector**

The Ministry of Commerce (MOC) stressed biodiversity conservation in the following two aspects: first, together with related departments, the MOC adjusted the Control List attached to the Regulations on Export Control of Dual-Use Biological Agents and Related Equipment and Technologies by adding viruses such as avian influenza virus and SARS coronavirus and practiced a licensing system for the export of items in the Control List. Second, in sessions of the Council for Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO), China actively promoted discussions about the relation between TRIPS Agreement and CBD and advocated amending TRIPS Agreement in accordance with CBD so that disclosure of the origin of genetic resources and evidence of prior informed consent and benefit-sharing would become the substantive conditions for patent applications. China also suggested the results of these discussions be included in the "package deal" of Doha talks and urged quicker move towards text negotiations. Besides, China was in favor of inviting as soon as possible the Secretariat of CBD to attend meetings of the TRIPS Council as an observer.

### **12. Customs sector**

As the national authority for import-export supervision and management, the General Administration of Customs (GAC) gave high priority to the import-export management of biological resources. Over the years, the GAC devoted itself to boosting the establishment of a biodiversity-related import-export legislation system. The GAC engaged in the formulation of the Regulations on Administration of Import and Export of Endangered Wild Animals and Plants and other regulations, and together with related departments, adjusted and released related import-export management catalogues including the HS Commodity Appendix of Import and Export on Wild Fauna and Flora and the Control List of the Import and Export License for Dual-Use Items and Technologies. Chinese customs carried out periodic training to improve the law enforcement capacities of customs officers, performed strict supervision and control over the import and export of biological species in accordance with related laws and regulations and severely cracked down on all kinds of smuggling and illegal activities.

### **13. Traditional Chinese medicine management sector**

In 2007, the State Administration of Traditional Chinese Medicine (SATCM) jointly issued the Recommendations on Strengthening the Development of Traditional Medicines of Ethnic Minorities with 10 ministries and commissions under the State Council, laying emphasis on protecting resources of traditional medicines of ethnic minorities, establishing breeding and cultivation bases for endangered traditional medicine varieties and genuine medicinal materials, establishing nature reserves for traditional medicines and intensifying research on domestication of medicinal animals and plants. The SATCM initiated the amendment of the Regulations on Conservation of Wild Medicinal Resources to

further highlight the conservation of wild medicinal resources. Specific recommendations were made as to how to improve the management system and rules for wild medicinal resources.

#### **14. Intellectual property management sector**

To regulate the use of genetic resources, the draft amendment on Patent Law introduced the disclosure system for the origin of genetic resources and clarified that no patent right shall be granted if the acquisition or use of genetic resources violated related laws and regulations. The integration of genetic resources conservation and patent system will provide certain institutional guarantees for achieving the objectives of CBD.

#### **15. National plans and programs**

— The 11th Five-Year Plan for National Economic and Social Development. Adopted by the National People's Congress (NPC) in March 2006, the 11th Five-Year Plan contains the main targets for China's economic and social development from 2006 to 2010. Specific targets related to natural resources and the environment include reducing energy consumption per unit of GDP by about 20%, reducing water consumption per industrial added value by 30%, increasing the effective utilization coefficient of agricultural irrigation water to 0.5, increasing the comprehensive utilization rate of solid industrial waste to 60%, basically controlling the tendency of ecological and environmental degradation, reducing the total discharge of major pollutants by 10%, increasing forest coverage to 20% and achieving substantial progress in greenhouse gas emission control. The 11th Five-Year Plan proposes a number of strategic tasks, including building a resource-efficient and environment-friendly society and effectively conserving biodiversity and biological resources.

— China Biodiversity Conservation Action Plan. Officially released by the State Council in June 1994, the Action Plan defines the overall target for China's biodiversity conservation as "taking effective measures as soon as possible to avoid further losses of biodiversity by reversing or reducing the current rate of loss of biodiversity". The overall goal includes the following 7 concrete objectives: (1) intensifying basic research on China's biodiversity; (2) improving the national network of nature reserves and other protected areas; (3) protecting wild species of particular importance to biodiversity; (4) conserving the genetic resources of crops and livestock; (5) strengthening in-situ conservation outside nature reserves; (6) establishing a national network of biodiversity information and monitoring ; (7) coordinating biodiversity conservation and sustainable development. Under these objectives, 26 actions and 18 key projects have been identified.

— China's Agenda 21. Adopted by the State Council in March 1994, the Agenda identified the following objectives concerning biodiversity conservation: (a) establishing and improving a national network of nature reserves; (b) conserving habitats and species outside nature reserves; (c) intensifying biodiversity cataloguing and other scientific research efforts; (d) strengthening ex-situ conservation of rare and endangered animals and plants; (e) achieving the balance between biodiversity conservation and sustainable use of biological resources and establishing sustainable use patterns.

— National Program for Nature Reserves (1996-2010). This Program sets the targets that, by 2010, the total number of nature reserves will reach about 1,200 (including 160~170 national nature reserves), and the area of nature reserves will occupy 10% of China's land area; a complete legislation system for nature reserves will be established; about 90% of nature reserves will have effective management bodies and adequate personnel, and over 70% of nature reserves will be equipped with advanced conservation and management facilities.

— National Ecological Environment Plan. Promulgated by the State Council in November 1998, the Plan sets the overall target to devote the next 50 years to strengthening conservation of existing natural forests and wildlife resources, carrying out afforestation projects and grass-growing activities vigorously, controlling soil and water loss, preventing and controlling desertification, developing ecological farming and curbing the degradation of ecological environment. The short-term target of the Plan is to bring under control water and soil loss caused by human beings and to strive to curb further desertification by 2010.

— National Ecological Environment Protection Plan. Promulgated by the State Council in 2000, the Plan aims to basically control ecological environment deterioration by 2010, and by 2030, to control completely ecological environment deterioration and effectively conserve the ecological environment of areas with important ecological functions, areas with abundant species and major areas for resource exploitation, and by 2050, to strive to generally improve the ecological environment across the country and create beautiful landscapes in most part of the country .

— National Program for Conservation and Use of Biological Resources. Released upon the approval of the State Council in 2007, this Program sets the targets to effectively check the current dramatic decline of biological resources by 2010, basically control the loss and drain of biological resources by 2015 and effectively conserve biological resources by 2020. The Program has also identified short-, medium- and long-term tasks in 12 major fields as well as 10 priority actions and 55 priority projects during the 11th five-year planning period.

— National 11th Five-Year Plan for Environmental Protection. Promulgated by the State Council in November 2007, this Plan provides that by 2010, the emissions of sulfur dioxide and chemical oxygen demand shall be brought under control, the quality of environment in major regions and cities shall be improved, the deterioration of ecological environment shall be basically controlled and nuclear and radiation safety shall be guaranteed.

— National Master Plan for Land Use (1997-2010). Issued by the State Council in 1999, this Plan defines the overall target of national land use as maintaining the dynamic balance of total farmland while ensuring the conservation of biological environment, shifting from extensive land use to intensive land use, noticeably improving land use structure and layout, and significantly increasing the yield per unit of land area and the comprehensive utilization rate of land. By 2010, land ecological environment will improve markedly, land degradation be brought under control and initial successes be accomplished in land management.

— National Ecological Functional Zoning Plan. Jointly issued by the MEP and the Chinese Academy of Sciences (CAS) in July 2008, this Zoning Plan analyzes major ecological issues of key ecological functional regions and provides guidance for regional ecological conservation, ecological construction, sectoral development layout, resources utilization and economic and social development.

— National Climate Change Programme. Promulgated by the State Council in 2007, the Programme boasts an overall target to reduce greenhouse gas emissions and improve China's ability to adapt to climate change. Targets related to climate change adaption include the following: by 2010, about 90% of typical forest ecosystems and wildlife under special state protection will be well conserved, the area of nature reserves will account for about 16% of the national land area, 22 million hm<sup>2</sup> of deserts will be brought under control and mangrove regions will be restored on a full scale.

— Program for Poverty Alleviation and Development of China's Rural Areas (2001-2010). The Program sets the target to continue ensuring the provision of food and clothing for rural poor people, promote full-scale development of poverty-stricken areas and create conditions for achieving better life in those areas.

— National Intellectual Property Strategy. Issued by the State Council in June 2008, the strategy aims to improve the intellectual property regime, vigorously create favorable legal, market and cultural environments for intellectual property rights, largely improve the ability to create, utilize, protect and administer intellectual property rights and effectively protect and rationally utilize trade secrets, geographical indications, genetic resources, traditional knowledge as well as folklores.

— The 11th Five-Year Plan for Ethnic Minorities Affairs. Issued by the State Council in February 2007, the Plan aims to greatly improve public infrastructures and ecological environment for ethnic minorities and ethnic autonomous regions, constantly increase the self-development ability of ethnic minorities, develop industries with competitive advantages and unique economies, effectively alleviate poverty, markedly improve people's living standards and practically guarantee the legal rights and interests of ethnic minorities.

In its new strategy, China (2010) indicated a strategic task to promote the inclusion of biodiversity conservation into relevant planning. It will include biodiversity conservation into national economic and social development planning and sectoral planning, and promote preparation of local biodiversity conservation strategies and action plans. It will establish assessment and monitoring mechanism for implementation of relevant strategies and plans, to promote effective implementation.

## **16. Future directions**

In its new strategy, China (2010) indicated<sup>2</sup> that a priority field is to include biodiversity conservation into sectoral and regional planning, and promote the sustainable use, including:

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<sup>2</sup> China (2010). China Biodiversity Conservation Strategy and Action Plan (2011-2030), in Chinese, 65 pp.

1) Including biodiversity conservation into sectoral and regional strategies and plans

- The sectors in charge of biological resources, such as forestry, agriculture, construction, water resources, marine, pharmaceutical, will develop their sectoral biodiversity conservation strategy and action plan.
- Reflect biodiversity conservation requirements in the related sectoral strategies and plans of science and technology, education, commerce/business, land resources, water resources, energy, tourism, transport, publicity, and poverty alleviation.
- The provincial governments will develop their own biodiversity conservation strategies and action plans.
- The development of river basin biodiversity conservation strategies and action plans.
- Establishment of assessment and monitoring mechanisms for strategy and plan implementation to promote effective implementation.

2) Sustainable use of biodiversity protection

- Carry out pilot biodiversity impact assessments, and undertake assessment of the effectiveness of biodiversity conservation measures in the large-scale construction projects that have been completed.
- Further carry out the establishment of ecological demonstration zones such as ecological provinces, eco-cities and eco-counties, ecological villages and towns, eco-village, as well as national garden cities (county and towns), and national ecological garden cities.
- Promote philosophy and code of conduct beneficial to biodiversity conservation in the field of agriculture, forestry, fisheries, water resources, industry and energy, transport, tourism, and trade.
- Advocate consumption pattern and food culture conducive to biodiversity conservation.

3) Action to reduce the impact of environmental pollution on biodiversity

- Continue to implement water pollution control projects in the "three rivers three lakes", the Three Gorges reservoir area, the upper reaches of the Yangtze River, the upper and middle reaches of the Yellow River, Songhua River, Pearl River, the South-to-North water source area and surrounding areas.
- Continue to carry out the comprehensive treatment of sulfur dioxide of power plants, iron and steel, nonferrous metals, chemicals, and building materials industries, and carry out the treatment of urban soot, dust, and fine particulate matter and automobile exhaust.
- Continue to construct medical waste and hazardous waste disposal facilities, municipal solid waste disposal facilities, and medium-to-low-level radioactive waste disposal facilities, and undertake comprehensive treatment of the stockpiling of chromium slag and contaminated soil.



- Promote the village and township sewage and garbage treatment, and undertake control and repair work for rural sewage, garbage, agricultural non-point source, pollution of livestock breeding, legacy pollution of soil and industrial and mining enterprises.