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China's Strategy and Financing For Forestry Sustainable Development

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Introduction

Forestry is an important fundamental industry with special features of the public welfare. From the forestry point of view, the process of social development is also that of human use of forest, in which human is reaching an even wider forest utilization, changing the way of forestry uses, and improving use contents according to the forestry sustainable development. Of course, the seed of these changes sown firstly in cognitive change of human's forest view. Human discovered the import role of forest played in land ecosystem restoration, addressing climate change, social economic development and reducing rural poverty. As a result, human's forest view is specified as a global consensus about reducing deforestation, increasing afforestation and reforestation, forest protection and forest sustainable development, with global forest and forestry problems are politicization and internationalization.

As a developing and agricultural country, a sound development for forestry is very significant in China. Forest is seen as national important natural resources, fundamental forestry production factors and rural farmer's necessary means of living. Forestry has played more and more important way in social economic development, ecosystem restoration, agriculture and rural economy growth, farmers' employment and income. In 2009, in the Central Forestry Conference of CCPCC the prime minister Wen Jiabao pointed out that "forestry plays an important role in implementing the national strategy of sustainable development, a principal role in the ecosystem restoration, a fundamental role in the Western Development and a special role in addressing climate change." The vice prime minister Hui Liangyu considered that "to achieve scientific development, China must take forestry development as a Major initiatives; to build an ecological civilization society, must take forestry development as a major task; to address climate change, must take forestry development as a strategic choice; to address agricultural, rural and farmer related issues, must take forestry development as an important approach."

The Central Forestry Conference of CCPCC and the central leaders' important speech sketch out the new position, new mission, new targets of forestry, and new requirements for forestry in new period. But, as a matter as a fact, China is also a developing country for forestry, and the quantity, quality and per capital of forest resource, and the level of forestry development are lagged behind that of global levels. Those differences also generated in a certain extent from the big gap between the current financing and its real needs.

This study was commissioned by UNFF Secretariat and the Department of International Cooperation, the State Forestry Administration of China. The report aims at analyzing China's strategic objectives and implementation of forestry development and the financing. The references and date we used in the paper mainly come from the formal documents, statistics and publications by the State Forestry Administration of China and experts. We have introduced the importance of forestry development in

China, and Chinas' strategic objectives, approaches and implementation for forestry development; we assessed financing for SFM and its impacts and the experiences as well. We have analyzed the opportunities and challenges for Sustainable Forestry Development and sustainable forest management in China, and illustrated the current forest financing, the real needs and the gaps. We have attempted to propose the recommendations for improving forest financing in China to support the implementation of China's strategy on sustainable forestry development in context of the national sustainable development strategy and the implementation of the Non-legally Binding Instrument on All Types of Forests.

The report is organized into eight sections and structured as follows:

Section 1 describes strategic objectives of China's forestry development. With China takes ecosystem construction as the strategy of forestry development, China's forestry tries to do well in forest ecosystem, wetlands ecosystem, desert ecosystem, biodiversity to rehabilitate and protect forestry ecosystems, to construct advanced forestry industrial system, develop flourish forestry eco-cultural system, to increase forest multi-products and services, to meet social multi-demands for forestry.

Section 2 introduces the forestry strategic measures taken by the government to implement forestry strategic objectives. Such measures as key forestry programs, public financial mechanism and non-governmental investment have been proved very useful and play important roles in forestry financing and development.

Section 3 analyzes in detail the situation of forest financing in China. Annual data of China's forestry development reflects rapid growth of forestry investment in decade years, the government as the main forestry investor, and the key forestry programs as the main object for investment.

Although section 4 depicts the effects of China's forestry development from different aspects, the situation of Chinese forestry is not very sound. Chinese forestry development may have such opportunities as special role in addressing climate change, important function in national sustainable development strategy, getting more support by public financing, but more attention should be paid to challenges about low level development, poor infrastructure, more difficulties in forestation, etc.

Facing up to challenges of Chinese forestry development means more investment and supports than ever. But the situation seems serious since the gap between forestry financing and its real needs is very big, and the financing bottleneck has affected and restricted Chinese forestry sustainable development. For such problems as small scale, low standard, narrow coverage and many blanks in forestry financing and investment, this paper in the end suggests the Chinese government to reform forestry financing mechanism, enhance financing capacity, improve financing environments, and found and use such internal financing mechanism as REDD++, etc. to get more international support and opportunities for cooperation, and receive more overseas fund to promote Chinese forestry sustainable development.

1. Strategic objectives of China's forestry development

Chinese government has given high priority to forestry development. Especially, since the 21st century, China made a new strategy for forestry development and initiated a series of important forestry policies and regulations in the interests of social and economic development.

In 2003, Chinese Communist Party Central Committee (CCPCC in short) and the State Council (SC in short) issued the *Resolution to Accelerate Forestry Development*, which is called *No.9 Document*, taking ecosystem construction as the top priority.

In 2008, the CCPCC and the SC claimed *Notion on Promotion of the Collective Forestry Tenure Reform comprehensively* (*No.10 Document*) , which proposed to conduct collective forest tenure reform, so as to promote sustainable forestry development.

In 2009, the CCPCC held the Central Forestry Conference which further pointed out the functions and roles of forestry in implementing national sustainable development strategy. It was pointed out that "forestry plays an important role in implementing the national strategy of sustainable development, a principal role in the ecosystem restoration, a fundamental role in the Western Development and a special role in addressing climate change."

It was proposed by the SC that "to achieve scientific development, China must take forestry development as a Major initiatives; to build an ecological civilization society, must take forestry development as a major task; to address climate change, must take forestry development as a strategic choice; to address agricultural, rural and farmer related issues, must take forestry development as an important approach."

Consequently, the main functions and tasks of forestry sector in China are to try very means to establish and protect forest ecosystem, to manage and rehabilitate wetlands ecosystem, to combat and improve desert ecosystem, and to maintain and increase biodiversity.

In order to implement the strategy of ecosystem construction and contribute to the sustainable development, China takes the forestry sustainable development as the main objective, that is, to rehabilitate and protect forest ecosystems, to construct advanced forestry industrial system, develop flourish eco-cultural system, to increase multi-products and ecosystem services, to meet the multi-demands of the society and to alleviate poverty and improve livelihoods.

2. The strategic measures of China's forestry development

In order to accelerate China forestry development and the implementation of the Non-legally Binding Instrument on All Types of Forests, and the achievement of four

global objectives on forests, Chinese government has been further promoted forestry reform and supported forestry development.

2.1 Initiate key programs as the main carrier for ecosystem construction

Since 1998, the Chinese government had instituted a new national forest policy focused on sustainable management of forest resources and environmental protection. The policy is underpinned by a series of major forestry initiatives aiming at rehabilitating and protecting forest ecosystem, combating desertification and improving desert ecosystem, protecting and restoring wetlands ecosystem, conserving biodiversity. All these programs were invested mainly by the government at different levels and implemented by the forestry sectors. The programs related with forest farmers, enterprises and other sectors like agriculture.

2.1.1 Rehabilitate and protect forest ecosystem

(1) The Natural Forest Protection Program (NFPP)

In order to restore and increase forest resources and to improve the ecosystem and environment, China launched formally the NFPP after 2 years of trial in 2000. The Program is implemented during 2000 to 2010 covering 734 counties and 167 forest enterprise (forest bureaus) in 17 provinces along the upper reaches of the Yangtze River and Yellow River and in the North-east and Inner Mongolia which were traditionally key state-owned forest regions. The total planned investment was 120.7 billion yuan, in which, 102.9 billion yuan from the central governmental finance. The main goals of the NFPP are to: (1) reduce timber harvests from natural forests from 32 million m^3 in 1997 to 12 million m^3 by 2003; (2)conserve nearly 90 million ha of natural forests; and (3)afforest and reforest and an additional 8.7 million ha by 2010 by means of mountain closure, aerial seeding and planting.

By the end of 2009, the planned goals of program have almost been achieved with: (1) 2.66 million ha of plantations，3.19 million ha of forests established by aerial seeding and 12.08 million ha of newly enclosed non-forested land and open forest land for natural regeneration；(2) 101.23 million ha forests taken into managing and protecting; (3) 621,500 loggers and other workers in the downstream of timber and products supply chain were displaced.

Since the NFPP will finish at 2010, the Central government is considering the requirement for prolonging the program by forestry sector. The next phase of the program will be focus on supporting the sustainable forest management and state-owned forest reform. The reform will include restructuring of social support arrangements that would reduce or eliminate direct dependence on state-owned forest enterprises as sources of finance and replace them with a sustainable source of tax and other revenues. For a transitional period, a significant financing gap would need to be bridged for schools, health centers, pensions, and other public services.

(2) The Conversion of Cropland to Forest Program (CCFP)

Conversing croplands to forests is one of the key measures to improve the environment and fragile ecological situation in the program areas and to control the flood by Chinese government. The croplands which will plan to be converted to forests mainly the sloping (more than 25 degree) and serious sandy lands. Although, the yield of grain production from those lands were generally low and unstable and it is not much effect on the food security, government also need to strength the fundamental improvement of existing croplands in order to increase the grain yields instead of the deduction by the program. The program was planned for the period of 2000~2016 (in two phases, i.e. 2000-2007 and 2008-2016) covering 80% of the country and benefit to 2291 counties and 120 million farmers in 25 provinces (autonomous regions and municipalities). The planned main goals of CCFP are to: (1) convert 14.67 million ha sloping and sandy croplands to forests; (2) afforests 17.33 million ha in barren mountain and lands; (3) increase 4.5 points of forest and grass coverage in the program areas. The farmers' lost revenues by the conversion would be compensated by the government.

By the end of 2009, 9.06 million ha croplands had been converted to forests, 14.14 million ha of barren hills and waste lands had been forested and 1.93 million ha of non-forested lands and open forest lands had been enclosed for natural regeneration.

(3) The Key Shelterbelts Development Programs in Such Areas as the Middle and lower Reaches of Yangtze River (SDP-YR)

Since 1989, the Programs of Yangtze River Shelterbelt, Coastal Shelterbelt, Pearl River Shelterbelt, Taihang Mountain Greening and the Plain Greening were launched early or late so as to turn deteriorated environmental situation in these areas. From 2001, these five programs were combined into SDP-YP and re-planned for the second phase construction with more investment which covers totally more than 1900 counties within 31 provinces, autonomous regions and municipalities. The SDP-YR will be implemented from 2001 to 2010 and plan to afforest 16.77 million ha and improve 9.45 million ha of low effective shelterbelt forests.

(4) The Coastal Shelter-belt Program (CSP)

In 2007, *The Plan of Coastal Shelter-belt Program for (2006-2015)* was approved by the State Council which covers 261 counties in 11 provinces and the areas of the program 44.71 million ha accounting for 4.7% of the total country area. The initial investment planned was RMB 9.98 billion yuan.

The main planned goals are that: (1) forest coverage in coastal areas will reach 37.3%; (2) 95.1% of mangroves will be restored; (3) 85.0% of farmlands will be controlled by the shelterbelt forests; and (4) 90.0% of the villages' will be beautified by planting trees around houses and roads in the program areas by the end of 2015.

2.1.2 Combat desertification and improve desert ecosystem

（1）The Key Shelterbelt Development Program in the Three-north (SDP-TN)

The SDP-TN program was started in 1978 which aimed at control the desertification in three-north areas (northwest, north and northeast of China). The program was planned initially for the period of 73 years (1978-2050) in 8 phases. It involves 551 counties in 13 provinces, autonomous regions and municipalities, and covers 406.9 million ha accounting for 42.4% of the whole country. The total planned investment was RMB57.68 billion yuan and 35.08 million ha of afforestation was planned.

By the end of 2008 , total 24.47 million ha afforestation had been conserved by the program and the coverage increased from 5.05% in 1978 to 10.51% in 2008. 27.8 million ha sandy lands had been treated and 38.6 million ha of water and soil erosion areas had been controlled. The eco-environment of the program areas has much been improved by establishing shelterbelts forests for farmlands and pastures as well as afforestation on the barren lands. It much help to increase food production and to promote socio-economic sustainable development in these areas.

（2）The Sandification Control Program in the Vicinity of Beijing and Tianjin (SCP)

The SCP program was launched in 2001 which involves 75 counties in 5 provinces and implemented from 2001～2010. It was planned to treat 10.13 million ha of sandy lands with increasing 5.21 million ha afforestated and grass lands and forest coverage reaches to 20.1%.

By the end of 2009, there were 8.15 million ha dandification lands treated including 5.33 million ha of afforestation, 2.03 million ha planting grass and 784,100 ha of drainage areas treated by water conservancy measures, with total RMB 21.84 billion yuan investment.

（3）The Program on Integrated Combating Land Desertification in Karst Regions (PICLD)

The outline of the Planning on Integrated Combating Land Desertification in Karst Regions (2006-2015) was approved by the State Council in 2008. The program covers 451 counties (banners, cities, districts) of 8 provinces (autonomous region and

municipalities) with a total land area of 105.45 million ha, including 44.99 million ha of karsts lands, of which 12.96 million ha of rocky lands are desertification. The program is to establish 9.42 million ha of forest and grass vegetation, build and improve 770,000 ha of arable land on slopes and construct relevant animal husbandry infrastructures.

By the end of 2009，160,200 ha of lands were planting trees and grass accounting for 60% of the planned 267,000ha.

2.1.3 The Wetlands Conservation and Rehabilitation

The Wetlands Conservation and Rehabilitation Program (WCRP) was initiated in 2005 and it will be implemented from 2005 to 2010. The program was designed to protect effectively 50% of total natural wetlands including 70% of international importance wetlands in China by establishing wetlands reserves and restoring wetlands activities such as complementing water. A protection network for natural wetlands will be established. The main contents of the program consist of four aspects, i.e, wetlands protection, rehabilitation, reasonable utilization and capacity building.

By the end of 2009 ,there were 100 national pilot wetlands parks, covering an areas of 415,000 ha, and 37 international importance wetlands covering 3.91 million ha and 2.48 million ha wetlands for demonstration with total RMB 1.1 billion yuan had been funded from the central government.

2.1.4 Conservation of biodiversity

The Wildlife Conservation and Nature Reserve Development Program (WCNRDP) started in 2001 and it will be implemented from 2001 to 2050 with three phases. In the first phase (2001-2010), 155 million ha natural reserves will be protected accounting for 16.14% of the total country lands. The main tasks of the program in this phase is to establish a basic system for breeding the endangered wildlife, create and improve the administrative system for the conservation of wildlife, and enlarge and establish newly national natural reserves for conservation, rehabilitation and development of biodiversification.

By the end of 2009，2012 forest natural reserves had been established covering 123 million ha, accounting for 12.8% of total county area, in which, 247 national reserves covering 77.02 million ha. There were 675 wildlife breeding base, 4526 wildlife protection stations and 638 research and monitoring institutes and stations, with 49,700 staffs.

Besides the programs mainly aiming at ecosystem protection and rehabilitation, China also initiated a program, *the Forest Industrial Base Development Program in Key Regions with a Focus on Fast-growing and High-yielding Timber Plantations*

(FIBDP), which was approved by the state Development Planning Commission in 2002. The program covered 18 provinces (autonomous regions) which suitable for development of fast-growing and high-yielding timber plantations in order to increase the timber supply to meet the domestic timber demand. The financing of the program mainly rely on the non-governmental input like private sectors and individuals include foreign enterprises and the favorable policies were given to the investors.

Table 1 **Key policy measures of the Six Priority Forestry Programs**

Program	Key policies	Financing	
		Plan	By the end of 2009
The Conversion of Cropland to Forest Program (CCFP), covering 25 provinces during 2000-2016	● Sloping or sandification cropland is converted into ecological/economic forest, and grassland; ecological forest should account for 80% of the converted land. ● The central government subsidizes farmers with seeds or seedlings, grain, and cash. ● Subsidies last 8 years for ecological forest, 5 years for economic forest, and 2 years for grassland. The central government also makes fiscal transfers to compensate the entailed losses to local fiscal revenues.	● The estimated total investment is 431.14 billion yuan. ---The annual grain subsidy is 1,500 kg/ha in the Yellow River basin and 2,250 kg in the Yangtze River basin at the beginning. From 2007, the subsidy is in cash instead, 1575 yuan/ha in the Yellow River basin and 1050 yuan/ha in the Yangtze River basin. ---The annual cash subsidy is 300 yuan/ha.	● Total investment was 181.66 billion yuan, in which, 165.79 billion yuan by government input. ---Total grain subsidy was 161.05 billion yuan. ----Total cash subsidy was 19.532 billion yuan.
Natural Forest Protection Program (NFPP), covering 17 provinces during 2000-2010	● Complete ban on commercial logging in the upper Yangtze and upper and middle Yellow River basins and sharp reduction in commercial harvests in other regions. ● Shutting down certain processing facilities, compensating logging firms, and dealing with displaced workers and equipment. ● Promotion of afforestation and forest management wherever necessary. ● Strengthening administration and law enforcement, including forest protection.	● The initial investment commitment is 120.7 billion yuan, in which 102.9 billion yuan from the central government. ● Subsidy for forest protection is10,000 yuan/person.year, ● Subsidy for aerial seeding is 750yuan/ha ● Subsidy for open forest lands enclosed for natural regeneration.：210yuan/ ha. year，continually subsidy for 5 years.	● Total investment was 77.27 billion yuan, in which 71.11 billion yuan from government input.

	● Restructuring the forest industry, and improving the efficiency of timber utilization.	● Susidy for artificial planting: 3000 yuan/ha in the Yangtze River basin，4500 yuan/ha in the Yellow River basin.	
The Wildlife Conservation and Nature Reserve Development Program (WCNRDP), scattered all over the country during 2001-2050	● Priority protected areas are administrated by the central government, while smaller and less critical areas are managed by the regional governments. ● Established reserves will reach 1,800 by 2010, 2,000 by 2030, and 2,500 by 2050. ● Included wildlife breeding and ecotourism development. ● Encouraging domestic and involvement of private sector. ● Strengthening the role of science and technology, particularly nature reserve and biodiversity monitoring and evaluation.	● Total planned investment is 135.65 billion yuan，with roughly a half covered by the central government.	● Total investment was 4.93 billion yuan, in which 2.81 billion yuan from government input.
The Key Shelterbelts Development Programs in Such Areas as the Middle and lower Reaches of Yangtze River (SDP-YR), covering 31 provinces (2001-2010)	● Including Yangtze River Shelterbelt, Coastal Shelterbelt, Pearl River Shelterbelt, Taihang Mountain Greening and the Plain Greening ● Mobilization of public agencies, civil society, and individuals to participate in shelterbelt development and tree planting. ● Encouraging regional government investment and local labor contribution, and adopting new silvicultural techniques.	● Total planned investment is 34.61 billion yuan.	● Total invested 14.96 billion yuan, in which, 6.13 billion by government.

The Key Shelterbelt Development Program in the Three-norths (SDP-TN), covering 13 provinces, during 2001-2010	● Including the Three Norths (northwest, north, and northeast) ● Mobilization of public agencies, civil society, and individuals to participate in shelterbelt development and tree planting. ● Encouraging regional government investment and local labor contribution, and adopting new silvicultural techniques.	● Total planned investment is 35.41 billion yuan in the period of 2001-2010.	● Total investment was 11.15 billion yuan, in which, 5.66 billion from government input.
The Sandification Control Program in the Vicinity of Beijing and Tianjin (SCP), including 5 provinces and municipalities during 2001-2010	● Converting Sandification land into forestland and grassland by means of flexible and diversified measures based on the local conditions. ● Changing herding and animal husbandry practices to control overgrazing and rehabilitate degraded grassland. ● Developing irrigation projects and resettling people away from fragile areas. ● Extension of suitable production technology and energy sources. ● Establishing desertification monitoring and dust storm forecasting systems. ● Restored forest and grass vegetation ● Constructing and improving sloping arable lands ● Construct relevant animal husbandry infrastructures. ● Priority protected areas are administrated by the central	● Total projected investment is 57.7 billion yuan. ---Plantation: 20 yuan/ha --- Aerial seeding: 8 yuan/ha ---Closed for regeneration:4.7yuan/ha ---Grass planting: 8 yuan/ha. ---Pasture construction:33.3 yuan/ha ---Water conservancy engineering:200 yuan/ha ---Ecological emigration: 5000 yuan per person.	● 21.84 billion yuan

The Program on Integrated Combating Land Desertification in Karst Regions (PICLD)，covering 8 provinces (2006-2015)	government, while smaller and less critical areas are managed by the regional governments.	● Still in pilot stage	● Total invested 460.8 million yuan
The Wetlands Conservation and Rehabilitation Program (WCRP), covering (2005-2010)	● Including wetlands protection, rehabilitation, reasonable utilization and capacity building.	● Total planned investment is 9.00 billion yuan	● Total invested 1.1 billion yuan
The Forest Industrial Base Development Program in Key Regions with a Focus on Fast-growing and High-yielding Timber Plantations (FIBDP), covering 18 provinces during 2001-2015	● Market-driven and profit-orientated efforts for increasing domestic timber supply. ● As high as 70% of the investment may come from loans subsidized by the National Development Bank. ● Tax incentives are provide. ● Encouraging active participation by various enterprises state or collectively owned, shareholder based, or fully private. ● Planned area of establishment is 4.69 million ha by 2005, 9.2 million ha by 2010, and 13.33 million ha by 2015. ● Projected total investment is 71.8 billion yuan.	● Total planned investment is 71.8 billion yuan.	● Total invested 1.67 billion yuan, in which, 92 million yuan by government.

2.2 Set up and improve public financial system / mechanism to support forestry development

It is time to set up and improve public financial system / mechanism and preferential fiscal and taxation policy to support the Forestry Sustainable Development

2.2.1 To support sustainable forest management

Since 2009, the subsidy for forest management was taken as the part of central budget for the key national ecological forests. In 2009, central government input RMB 500 million yuan for subsidizing middle and young-aged stands tending in 11 pilot provinces and Daxing'anling special forest zone, covering 333,300 hectares. The sum increased to RMB 2 billion yuan and the coverage was enlarged to 27 provinces with area of 1,333,300 hectares.

2.2.2 Establish the compensation system for forest environmental services

The forests in China are divided into ecological (public-benefit) forests and commercial forests, and each was run separately in policy. From 2004, Central Compensation Fund was established for the key national ecological forests and the government initiated to input RMB 75 yuan per hectare annuallyand the compensation for those forests which managed by farmers households has been rised to RMB 150 yuan per hectare since 2010. The compensation level will be increased gradually. Compensation funds in local level should be established for local ecological forests by local government's budget.

2.2.3 Subsidize loan policy for forestry development

After the freezing disaster happened in 2008, the Ministry of Finance decided to subsidize the interest of loan for supporting the forestry reconstruction and restoration projects and to the forestrydevelopment projects like managing bamboo and fruit forests in post-tenure reform. By the end of 2009, the loan for forest managers from financial institutions reached to RMB 24 billion yuan, in which, 16 billion yuan with 3% of the interest rate (the basic rate is 5.31%) were subsidize.

2.2.4 Forest tenure mortgage for micro credit

In 2009, Bank of China, the Ministry of Finance, China Banking Regulatory Commision, China Insurance Regulatory Commision and the State Forestry Administration jointed issueing *the Guidance on Financing Services to Support Forestry Development in Context of Collective Forest Tenure Reform*. It includes the policy that allow farmer households to get loan from banks by mortgaging the standing timbers on their contracted forest lands to the banks or some other mortgagees By the end of 2009, there are 25 provinces launched forest tenure mortgage to farmer households, cover the spread of 1.63 million hectares and the total loan of RMB 22.14 billion yuan. Micro credits for farmers were supported and the duration was extended 10 years. The duration for fast-growing and high-yield

plantations, camellia forest, bamboo grove and bio-energy forests and related forest industries was extended 15 to 20 years.

2.2.5 Pilot premium subsidies for forest insurance

From 2009, central budget carried out pilot of premium subsidies for forest insurance in Fujian, Jiangxi and Hunan provinces. In which, central government subsidize 30 percent and provincial government subsidize 25 percent of premium and the other 45 percent pay by the manager themselve. In 2010, Zhejiang, Liaoning and Yunnan provinces were included to pilot.

2.2.6 Input to improve the people's livelihood in forest regions

In order to promote the development of impoverished state-owned forest farms and improve the people's livelihood in forest zones, central government input special funds for staff housing and infrastructure like road construction and maintenance, water supply etc. In 2009, central government input RMB2.35 billion to the construction of squatter settlements in state-owned forest zones. RMB 69.1 billion was put into the roads and water supply in forest zones.

2.3 Other measures to attract non-governmental investor to forestry

Chinese government attaches importance to the effect of social investment to forestry. (1) By the reform of forest tenure, the farmers became the managers and investors of forest lands. (2) The National Compulsory Tree-planting Campaign contributed to the social awareness of planting and forest protection. (3) Preferential policies were provided for forestry development to attract private sector and individuals investment flow into forestry.

2.3.1 Forestry reform

(1) Collective forest tenure reform

China's collectively owned forests total approximately 170 million hectares and are home to more than 400 million people Since 2008, central government promoted collective forest tenure integrated reform. Farmers were given rights and obligations by contracting collective forest lands to households. The reform mobilized the enthusiasm of farmers and increases the productivity of forestland.

The new national policy was officially publicized by the Central Committee of the Communist Party of China and the State Council on July 14, 2008, and is entitled *Guidelines on Fully Promoting Collective Forest Tenure System Reform*. This reform encourages collective forest owners to reassess and reallocate their forest use rights (not the land itself) based on a majority vote — a two-thirds vote either by the entire village assembly or the committee of village representatives.

In the reform, collectives have the option of reallocating forest rights to individual households, collections of households (so-called "partnerships"), or private contractors; alternatively, they may maintain collective management either at the level

of hamlets (so-called village clusters, very often natural villages) or at the full community level. Although the reform maintained collective ownership of the land, it does offer a stronger possibility of transferring the long-term rights that households have to the forest, including the right to transfer and mortgage. In sum, the reform is widely seen as another important step toward increasing the private ownership of the land allocated to individual households. The government has also financed the delimitation, surveying, titling, and registration of the new plots, investing approximately US$370 million in 2008 alone for these tasks

(2) State-owned forests reform

Since 2004, the pilot reform of state-owned forest enterprises was carried out in Yichun city of Heilongjiang province by contracting a tiny part of state forest lands to the individual workers of the state-owned enterprises to manage. Meanwhile, the State Forestry Administration has been seeking the route for the state-owned forest farms reform. All these efforts aimed at improving the institutional mechanisms for state-owned forests sustainable management.

2.3.2 Initiate National Compulsory Tree-planting Campaign

In 1981, the People's Congress adopted Resolution on Initiate National Compulsory Tree-planting Campaign, which stipulates that the citizens who more than 11 years old, except the old and weak ones, have obligation to planting 3 to 5 trees or same working time of activities related to planting every year. Later on, the compulsory tree planting activities have become a common action and Up to 2009, 11.52 billion man-hours have been invested resulting in 53.85 billion trees planted.

2.3.3 Provide preferential taxation and fees

A series of preferential tax policies for timber and non-timber products production were issued to attract social investment on forestry.

(1) Decreasing the level of regeneration fee reached to 10% of the total sale income of timber products since July 1, 2009 from 20%.

(2) Continue to implement the policy which stipulated the value-added tax for wood integrated products of taxpayer will be drawback from January 1 of 2006 to December 31 of 2008. The wood integrated products are the products were made of the residuals from logging, cross-cutting and wood processing or small diameter log or fuel wood. Since 2009, , this favorable policy will be continue and the value-added will be drawback 100% in 2009 and will drawback 80% in 2010.

2.4 Actions for implementation of NLBI

In order to implement the Non-legally Binding Instrument on All Types of Forests and the international obligations and to achieve the four global objectives on forests, China has taken mainly the following actions to increase forest areas and prevent from deforestation and degradation.

2.4.1 Strengthening afforestation and protection

Since 2008，China increase financing further to extend forest areas, to protect and restore forest and wetlands ecosystems. The Conversion of Cropland to Forest Program had be prolonged 8 years for subsidy and to consolidate the achievements. The Natural Forest Protection Program is very hopeful to prolong and the other programs will continue to implement

In 2008，a total of 5.35 million ha of plantation was established in China, an increase of 37% compared with that in 2007, of which 3.68 million ha was established by planting, an increase of 34.53%, 154,100 ha by aerial seeding, an increase of 29.83%, and an additional 1.51 million ha of non-forested land and open forest land was enclosed for natural regeneration, an increase of 44.25%.

In 2009, total afforestation areas were 6.26 million ha increasing 16.79% compared with that in 2008.

2.4.2. Enhance SFM

China begin to pay attention to SFM with forest tending, improving or reconstructing the low-yiels forests. Since 2009, 11 provinces had been taken as pilot for forest management with subsidy from central financing. 9.56 million ha young and middle-aged and 10.61 million mature forests were tended totally; 543,400 ha of low-yield and low-efficient forests were improved. SFM and forest certification has been to pilot implementation. The forest fireproofing capacity building and reasonable cutting and untilization of forests are also emphasized

The Asian Pacific Forest Rehabilitate and Sustainable Management Network was established in Beijing in 2008 with the initiated by China. It aims at promote the abroad cooperation between the countries in this region and joint to address the climate change and implementation of the international obligations.

2.4.3 Propose the goals for increase of forest areas and volume

In September of 2009, Chinese President Hu Jintao proposed at the global climate summit in New York that China will energetically increase forest carbon. China will endeavor to increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels.

2.4.4．Put forward the collective forest tenure reform in whole country

In 2008, the Central Committee of Chinese Communist Party Committee (CCPC) held Central Forestry Conference which decided to carry out the collective forest tenure reform. It aimed at to encourage farmer households to invest forestry and release the potential productivity of forest lands by matching a series of policies to support SFM.

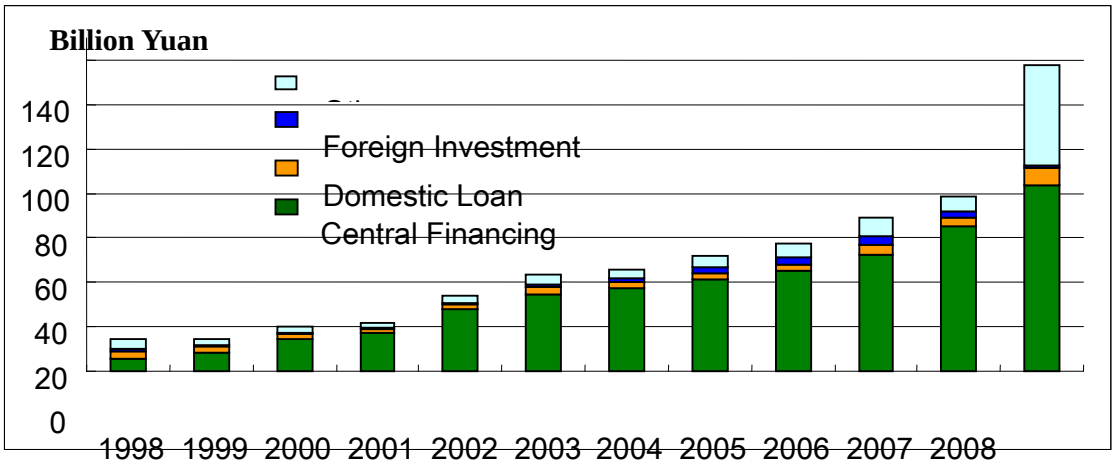
3. Forest financing in China

3.1 Total investment on forestry increase rapidly

Since 1998, the Chinese government continued to strengthen ecosystem restoration and protection by initiated key forestry ecological programs like the Natural Forest Protection Programs. By taking tenure reform and improving policy and investment environment gradually, the total investment of forestry was gradually increased.

From 1998 to 2009, total investment had increased from RMB 13.53 billion yuan to RMB 137.79 billion yuan, with an annual growth of 23.48% (see Figure 1).

Figure 1 The total investment of forestry in China 1998-2009



3.2 Source of financing

Source of financing for Chinese forestry development comes from public sector including central and local governments; financial institutions; foreign investment; private sector, enterprises and individuals; other social input including NGO's.

3.2.1 Governmental financing taking main part

Government investment funds consist of central and local funds. Central budget financing accounted for 0.8% of the total central budget expenditure in 1998 and gradually rose to 2.2% in 2003. From 2004 to 2009, it was keeping at about 2% (see Figure 2).

From 1998 to 2009, central investment on forestry increase from RMB5.653 billion yuan to RMB83.824 billion yuan, with an annual growth of 27.78%.

Central government financing accounting for the total central government expenditure rose dramatically since 1998; from 2002 to 2006, the proportion of central government financing was more than 70%; from 2007, with the increase of social investment government, the proportion of central government financing gradually decreased and accounted for 60.84% in total investment in 2009（Figure 3）.

Figure 2 Proportion of Forestry Investment in the Central Government Expenditure

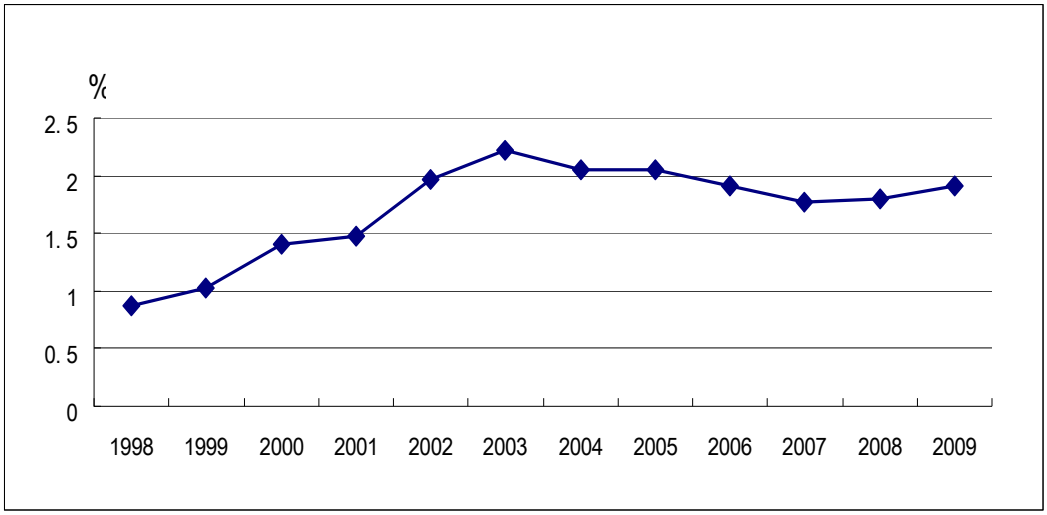
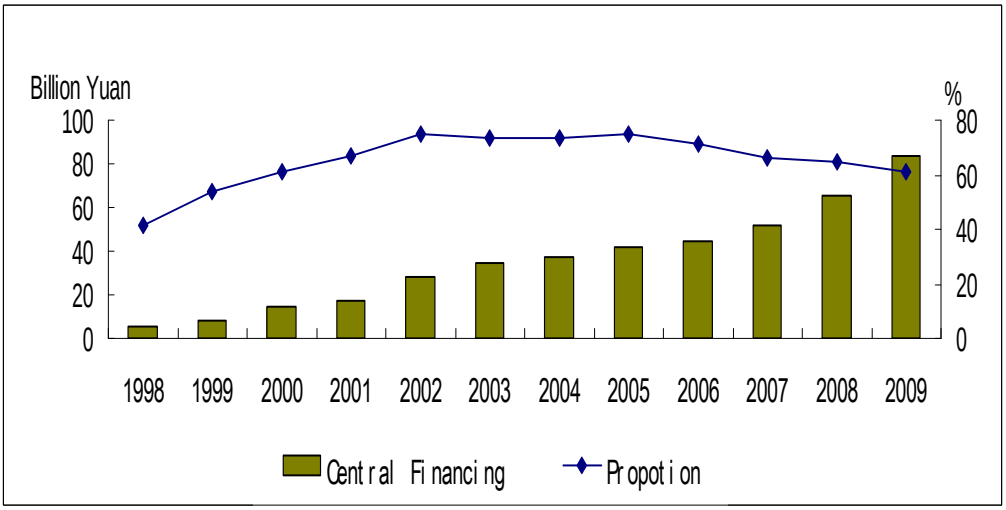


Figure 3 Central government investment shares in total forestry funds



3.2.2 Non-governmental funds increase fast

Besides governmental financing, the funds for forestry development in China include other sources such as borrowing from bank, investing by enterprises and individuals, as well as foreign investment and civil society.

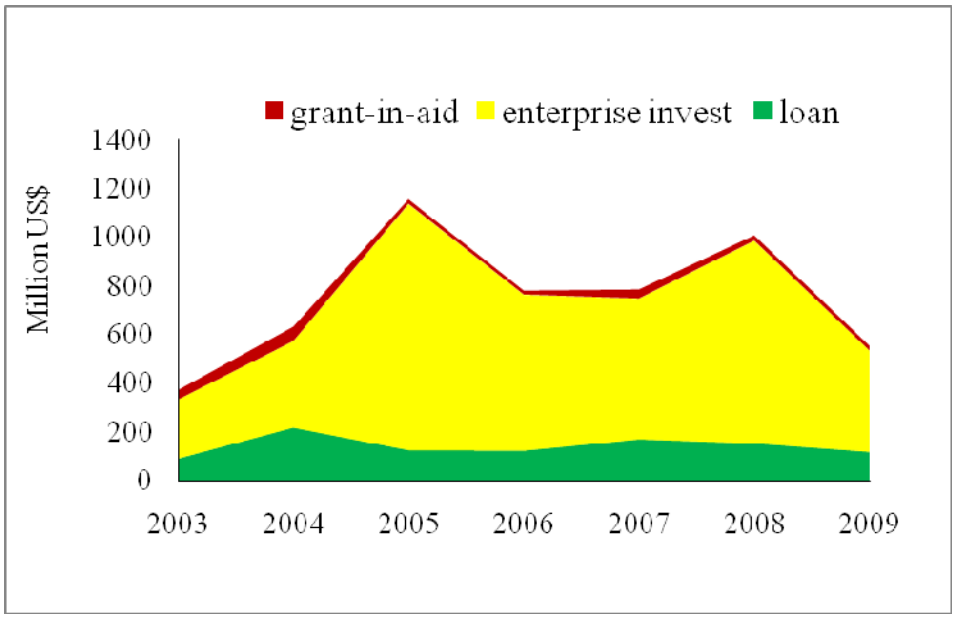
(1) Domestic non-governmental investment

From 2006 to 2009 ,non-governmental funds increase with 34.9% annually, especially over 50% in 2008 and 2009.

(2) Foreign investment

Foreign investments include (a) loan and grant-in-aid from international organizations like WB, ADB, FAO, GEF; (b) loan and grant-in-aid form foreign governments like Japan, Germany, EU, which mainly use for afforestation and forest ecosystem rehabilitation and protection as well as poverty alleviation; (c) business investment by foreign companies for forest industry. From 2003 to 2009 , foreign investments increase annually 6.87% (Figure 4). Taking 2009 as an example , total multi- or bilateral cooperation and foreign enterprises investing projects were more than 580 with US$554 million, in which, loan US$117 million accounting for 21.19% , enterprises directly investing US$418 million accounting for 75.34% and grant-in-aid US$19 million for 3.47% (Figure 5).

Figure 4 Changes of foreign investment in 2003-2009



3.3 Utilization of forest financing

3.3.1 Use of forest funds

The investment of forestry in China mainly use for the forest ecosystem construction by key programs which included forest ecosystem protection and rehabilitation, and

infrastructure, etc. In 2009 , the funds use for the key programs was 73.62 billion yuan , accounting for 53.43% of the total investment ; 13.67 billion yuan for infrastructure accounting for 9.92% of the total ; 18.11 billion yuan use for the compensation of forest ecosystem service and improving livelihoods of the people in forest regions accounting for 13.14% ; the others including for administrative 32.40 billion yuan, taking up 23.51% of the total funds (Table 2).

Figure 5 Composing of foreign investment in 2009

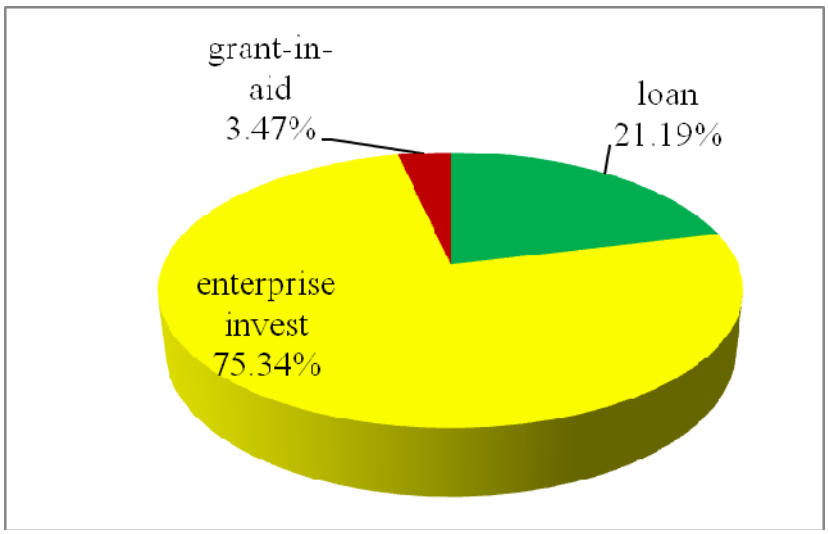


Table 2 Source and expenditure of forest funds in 2009

Utilizations		Total	Governmental funds	Domestic loan	Foreign investment	Private investment	Other funds
Total investment (million yuan)		137785.76	83824.39	7410.40	1353.17	21814.24	23383.56
Ecological restoration programs	Sub-total	73615.56	56720.83	2007.84	433.44	10096.84	4356.61
	1. NFPP	8387.60	8102.08			31.04	254.48
	2. CCFP	35532.23	34981.42	0.25	1.85	309.64	239.07
	3. SCP	2718.95	2714.15			3.66	1.14
	4. SDP-TN & SDP-YR	5368.83	3703.69	0.20		1010.66	654.28
	5. WCNRDP	607.55	494.42		2.24	14.87	96.02
	6. FIBDP	476.72	8.20	181.13	119.75	152.84	14.80
	7. PICLD	347.96	345.49				2.47
	8. WCRP	2314.03	206.86			2094.68	12.49
	9. Other programs	17861.69	6164.52	1826.26	309.60	6479.45	3081.86
Infrastructure	Sub-total	13669.91	6119.47	361.81	59.87	4027.94	3100.82
	1. seedlings	839.19	354.02	20.00	13.30	226.96	224.91

	2. Fireproofing	1036.25	668.28			182.84	185.13
	3. Prevention and cure harmful life-form	920.54	480.10		6.95	183.62	249.87
	4. Forest public security	192.87	110.13			12.19	70.55
	5. Forestry science and technology and education	194.51	122.63			42.53	29.35
	6. Other fundamental construction	10486.55	4384.31	341.81	39.62	3379.80	2341.01
Specific subsidies	Sub-total	18105.02	12370.54			2474.46	3260.02
	1. Ecosystem service compensation funds	7172.76	6267.56			49.59	855.61
	2. Poor forest farms alleviated funds	266.60	224.24			8.14	34.22
	3. Disaster rescue subsidy	1025.18	969.62			2.92	52.64
	4. Working expenditure for tenure reform	1051.26	777.01			65.13	209.12
	5. Other specific funds	8589.22	4132.11			2348.68	2108.43
Others	Sub-total	32395.27	8613.55	5040.75	859.86	5215.00	12666.11
	Administrative &governance expenditures	8152.28	5066.03				3086.25

Source: State Forestry administration(SFA), China Forestry Statistical Yearbook，2009。

Note：① SDP-TN & SDP-YR includes the new approved Coastal Shelterbelt Development Program.

(1) Central governmental funds

Government input consists of central and local input. From the content of construction, central governmental input is mainly used for forest rehabilitation and protection, infrastructure and special subsidy. According to the distribution of the funds by regions, central governmental input is mainly to the western areas, where with poor ecological environment. For example, in 2009, total central input reached RMB 83.82 billion yuan, mainly for (see Figure 6):

----Key forestry programs. In 2009, central governmental input for key forestry programs was RMB 56.721 billion yuan, accounting for 67.67% in the total central investments on forestry.

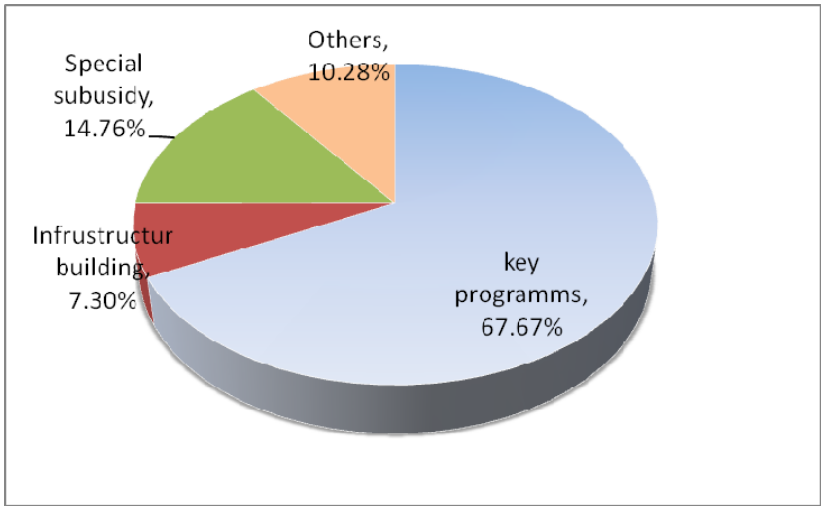
---- Infrastructure. In 2009, central governmental inputs for infrastructure, like seedling cultivation, fire and disease prevention scientific research was RMB 6.12 billion yuan, accounting for 7.3% in the central investment on forestry.

----Special subsidy. In 2009, special subsidy, like compensation for environmental service, poverty alleviation and rescue of disasters, was RMB 12.37 billion yuan, accounting for 14.76% in the central investment on forestry.

----Others. In 2009, central governmental input for monitoring and inventory of forest resources, administration expenditure and others was RMB 8.614 billion yuan, accounting for 10.28% in the central investment on forestry.

Local governmental input is mainly used for matching the quota of central financing, compensation for environmental services of local ecological-oriented forests and local forestry construction.

Figure 6 Expenditure of central financing in 2009



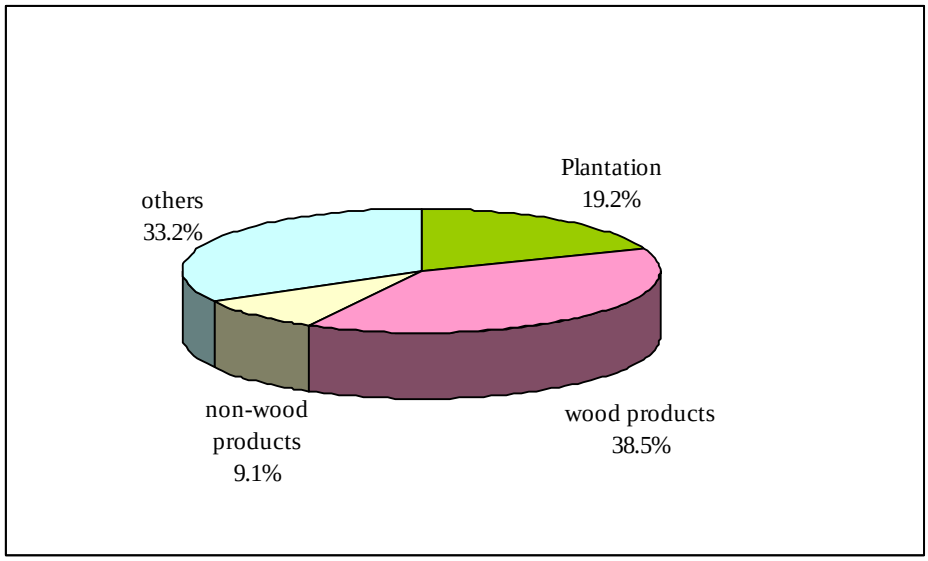
(2) Non-governmental financing

Non-governmental financing is mainly used for commercial forests (such as fast-growing and high-yield plantations and non-timber forest products), biodiversity conservation and desertification combat, etc. At present, the plantations of non-governmental sector accounts for about 50% in the total newly-plantation per year.

(3) Foreign investments

In 2009 , total US$1.17 billion foreign funds invested in forestry development, in which, plantation projects accounting for 19.24% , wood processing and pulp projects 38.45% , non-wood products production and processing projects 9.09% , others including scientific research taking up 33.22% (Figure 7). 78.97% of total foreign investments distributed in eastern provinces of China.

Figure 7 Main uses of foreign funds in 2009



3.3.2. Financing for sustainable forest management

To increase forest resources and enhance the timber and products supply and ecosystem service functions, recently, China has been strengthening and investing increasingly (Figure 8 and Table 3) afforestation and reforestation as well as forest protection. Meanwhile, Forest sectors in China also begin to pay more attention to sustainable forest management by supporting the pilots for reconstruction or improvement of low yield forests and tending of young and middle aged forests to

improve the quality of forest and its productivity. The State Forestry Administration had dispatched the Guideline for Sustainable Forest Management and is organizing to design the National Layout for Forest management and the Implementation Compendium of Sustainable Forest Management. The institutional building for forest management and the research on the modes and key policies are emphasized.

Figure 8 Investment for SFM from 2001 to 2009

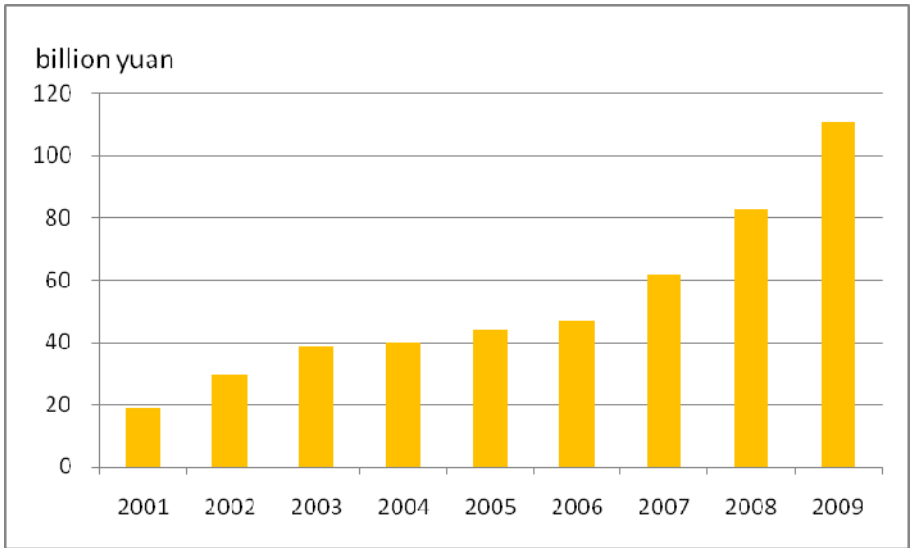


Table 3 Financing for SFM in 2001-2009

Investment area		2001	2002	2003	2004	2005	2006	2007	2008	2009
Total investment (million yuan)		19161.82	29613.67	38847.08	39845.06	43978.42	47076.72	61510.56	82771.70	110951.68
Afforestation & reforestation	Afforest	7367.50	14361.70	23139.39	21011.18	22648.04	23900.44	28611.91	37014.43	51212.51
	Reforest	194.87	178.41	123.43	170.24	168.76	126.99	438.59	732.32	942.41
	Seedling	1242.34	1573.47	1484.31	1197.33	858.47	691.26	779.42	728.34	980.41
	Flower	15.74	75.97	247.38	127.54	125.48	199.10	391.08	993.00	1240.13
Forest management	Improving of low productive forests	94.88	96.71	68.82	102.55	127.64	185.81	332.61	413.53	456.57
	Tending young& middle forests	132.97	221.81	312.07	488.05	512.10	666.75	740.75	732.93	1745.91
Forest protection & governance	Personnel expenditure for guarding	2037.06	2622.50	2434.01	2619.54	3530.32	3859.98	4332.09	5064.65	5346.33
	Fireproofing	302.69	263.33	542.97	583.94	682.56	643.82	738.66	774.18	1048.43
	Pest & disease prevention & controlling	170.73	141.12	222.19	225.35	401.32	434.04	622.80	642.39	682.58
	Working station	49.63	42.01	51.25	85.69	96.27	77.33	274.10	212.17	102.61
	Forest police	232.15	255.64	320.85	363.87	359.40	358.78	376.56	431.70	425.32
	Governance & inspection	24.71	19.29	34.17	38.12	73.50	46.30	80.10	101.54	109.72

	Inventory & planning	30.27	31.00	85.18	60.21	88.65	144.92	128.44	158.51	209.59
Conserve biodiversity & environmental services	Forest parks	110.52	124.73	136.13	413.88	441.78	569.12	337.27	742.34	684.77
	Natural conserves	129.39	305.98	311.40	316.08	348.95	321.82	509.65	522.52	596.44
	Wetlands protect & restore						89.56	172.23	303.96	1581.77
	Eco-compensation fund	1000.00	1000.00	1000.00	2000.00	2000.00	3000.00	3339.12	4661.76	7172.76
Forest science& education	Education	374.99	300.93	645.78	897.65	570.65	541.41	544.79	544.02	608.99
	Science & key laboratories	63.77	79.36	158.65	94.32	114.00	151.16	143.35	232.69	259.76
Poor alleviation & livelihoods improvement for forest region	Poor alleviation fund			211.74	225.06	286.56	298.57	310.85	223.49	266.60
	Disaster rescue aids								957.91	1025.18
	Working expenditure for forests tenure reform								1539.57	1051.26
	Others（interest subsidy	5587.61	7919.71	7317.36	8824.47	10543.97	10769.56	18306.19	25043.75	33201.63

Source: SFA, China National Forestry Statistical Yearbook, 2001-2009.

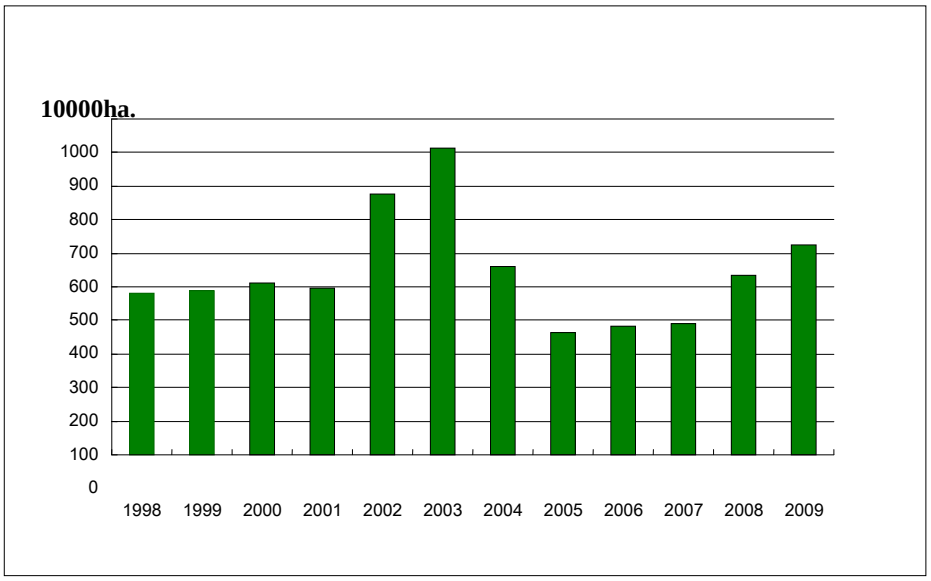
4. Impacts of China forestry development

First, the forest area and stock volume are growing continuously, with a steady raise of forest coverage. From 1998 to 2009, the total afforestation was 65.258 million hectares with the average annual afforestation of 5.438 million hectares (Figure 9). According to the Seventh (2004-2008) National Forest Inventory, the total forest area has reached 195 million hectares, with 20.36% forest coverage, and standing stock volume reached 13.72 billion cubic meters.

Second, natural forests area and stock volume increased dramatically. Compared the seventh (2004-2008) with sixth(1999-2003) National Forest Inventory, the net area increment of natural forests was 3.93 million hectares., and net volume increment was 676 million cubic meters.

Third, plantations area and stock volume reserved rapid growth. The area of plantations reached 61.69 million hectares, with net increment of 8.43 million hectares, volume of plantations of 1.96 billion cubic meters and net increment of 447 million cubic meters.

Figure 9 Annual Afforestation areas 1998-2009



Fourth, the quality of forests improved and the ecological function enhanced. The volume of standing stock for arbores increased 1.15 cubic meters per hectare with an average annual increment of 0.30 cubic meters per hectare. The proportion of mixture forests increased 9.17%.

Fifth, biodiversity received effective protection. 2538 natural reserves have been set

up and covered over 15% of total terrestrial lands. 90% of terrestrial ecosystem, 85% of total species of wild animals and 65% of high-level floristic habitat received effective protection. Endangered species like Panda, Crested Ibis etc. have increased and their habitats have improved dramatically.

Sixth , desertification was put under control. The coverage of sandification changed from an extension of 3436 square kilometers late in last century to the decline of 1283 square kilometers annually.

Seventh, forestry industry developed fast, which contributed significantly to the development of national economy and the increase of farmer households' incomes. From 1999 to 2009, total forestry output annually increased 18.56% and reached to RMB1749.37 billion yuan in 2009. Plantations by private sector and individuals accounted for about 50% of new planted areas in 2009. Development of forestry industry has promoted the regional economic development, farmer household income increase and employment.

Eighth, civil environmental awareness rose obviously. Since 1978, 12.11 billion person-times participated in compulsory tree-planting and 56.33 billion trees were planted. In 2009, 590 million person-times participated in compulsory tree-planting and 2.48 billion trees were planted.

5. Opportunities for Chinese Forestry Development

With the implementation of national sustainable development strategy, the role of forestry in the socio-economic development is the increasingly important, the status of forestry is becoming more and more prominent, and the preferential policies form central governments are increasing, which post excellent opportunities for the sustainable development of forestry.

5.1 Special role for forestry to addressing climate change

It has been recognized that one of the important means to climate change mitigation and adaptation is to increase forest carbon sequestration and protecting forests to reduce carbon emissions. The Chinese Government attaches great importance to the special status and roles of forestry in addressing climate change. In September 2009, at the United Nations Climate Change Summit, President Hu Jintao proposed that China would endeavor to increase carbon sequestration and attain the goal in 2020 of forest area reaching more than 40 million hectares in 2005, forest stand volume increasing 1.3 billion cubic meters than 2005. This is also the measures the main content of China's promise to the world to control greenhouse gases and raises new and higher requirements for forestry development.

5.2 Important function of forestry in national sustainable development strategy

In 2009, the Central Forestry Conference proposed that forestry be given the

important status and roles in implementing national sustainable development strategies, in terrestrial ecosystem restoration, in western development and in addressing climate change.

It was further emphasized that the important role of forestry in the national sustainable development, particularly in addressing climate change and in solving the issues related agriculture, rural development and farmer's livelihoods.

5.3 Establish and improve public supportive and protective policies for SFM

In 2009, the Central Forestry Conference determined that the construction of supportive and protective mechanism to forestry be strengthened and investing environment be improved and it consists of the following measures.

5.3.1 Set up Forestry Public Financing Mechanism and Strengthen Investment.

Put infrastructure construction such as forest fire fighting, forest disease and insect pests prevention and control as well as forestry enforcement into all levels' government basic construction plan. Put road construction, water supply, electricity supply, communication, etc. into related government sectors' development plan. Establish forest ecological benefit compensation mechanism, which will gradually raise compensation standards by central public finance to collective owned national ecological forests according to central public revenue. In addition, local public finance should also enlarge its role in ecological forestry compensation. Set up forest management subsidy system, in which, central government finance will provide subsidy to good quality of seedling, young and middle aged forest tending as well as reconstruction/improvement of low yield and low profit forests. Reform the levy, use and management of the Afforestation Fund, and set up Forestry Development Fund. Continue implementing value add tax drawback policy for processing products by integrated use of 'three surplus products' including wood surplus from logging, cross-cutting and processing, and small diameter logs and fuelwoods which could be processing chips and other products. Strengthen favorite tax policy for forestry processing industry.

5.3.2 Create and improve financing supportive mechanism

Increase forestry crediting, developing forestry credit products, broaden forestry investment channel, improve subsidized interests policy, establish mortgage mechanism for forest tenure and set up government supported forestry insurance mechanism. Forestry loan should consider the feature forest production and postpone the longest loan period to 10 year according to the principle of longer term, low interest rate and acceptable. The interest rate for mortgage of forest tenure should lower than that of credit loan, and for micro-credit to forest farmers, the interest rate should not surpass 1.3 times of that of basic loan. Improving central government finance to subsidize forestry loan interest policy by appropriately extending period of forest loan and increasing subsidized interest rates. Improving forestry insurance subsidy mechanism and further enlarge trial scope.

5.3.3 Reform the current forest annual allowable cutting policy

Based on the principle of sustainable forest management, reduce timber harvesting

approving process and set up harvest quota public presentation system. Classify forests harvest management mechanism into different groups. Woods from non-forestland will not bring into the forest harvest quota (or annual allowable cutting) system and forest owner will decide harvesting by themselves. For commercial forests, its harvest quota could be used within five years instead of annual basis. Lead forest owners to compile forest management plan by incentive policy and identify harvesting quota according to the plan.

5.3.4 Establish integrated forest tenure transfer mechanism to protect owners' benefits

The use right of forestlands could be transferred freely according to the rules in the condition of not change forestland nature, not change the use of the land and not hazard forest farmers forestland rights and interest. The transfer measures include subcontract, lease, dispose of. Forest tenure could interchange, become a shareholder and mortgage, and could also be condition of joint venture and cooperation. Encourage setting up forestry cooperatives, and conducting scaled and intensified forestry management. Prevent farmers lose their forestlands early. Establish forest tenure transfer market, regulate forest tenure transfer, and set up forest resources assets mechanism.

5.3.5 Forestry industrial development

Strengthen 10 supportive forestry industries development, ie. timber processing, forest tourism, grain and oil from forests, bamboo and rattan, flower, utilization of wild animal and plants, wooden pulp, bio-energy, forest chemistry and forestry production from desertification combating. Make great efforts to build china a strong forestry industry nation, and let the industry benefits to rural households by means of increasing income and employment opportunities.

5.3.6 Improve social services system for sustainable forest management

According to the ideas of 'Guidelines to speed up development of forest farmer forestry cooperatives', it is necessary to speed up development of forestry cooperatives by means of family cooperative forest farms as well as stock sharing forest farms.

6. Challenges to Chinese Forestry Sustainable Development

From the overall perspective, China is a country lacking in forest resources and the conflict between the supply and demand of forest products and services is becoming increasingly intense. The situation of sustainable forestry development is still extremely serious.

6.1 Poor basic condition or low level of forest resources for SFM

This is mainly reflected in the lack of total forest resources, the poor quality and environmental services function. (1)Forest coverage is only 2/3 of the global average level. (2) Forest areas per capita is less than 1/4 of the world average. (3) Forest stock per capita is only 1/7 of the world average. (4) Arbores stock per hectare is only 78% of the world average level. (5) Young and middle forests account for 2/3, and

forest stands are either too dense or too sparse, with poor quality and low productivity. The basis for sustainable forest management is relatively weaker.

6.2 Insufficient for wood supply or big pressure from wood demand

In China, self-sufficiency of forests is weaker and the structural contradiction of supply and demand is prominent. With the growth of China's economy, demand for timber remains high; meanwhile, domestic timber can not meet the needs and 40% of wood supply depended on import. Moreover, as the traditional timber-exporting countries reduce or restrict log exports, China is confronted with enormous pressure in the sustainable management of forest resources.

6.3 Constraints existing in institutions and mechanism for SFM

China's forestry sector is still in the transition, with irrational institutions, mechanisms and arduous task of forestry reform. Collective forest tenure reform needs further expand. By the end of 2009, 64.7% of the total collective forest lands had been clarified the rights and contracted to the farmer households, and about 50% of the total collective forest lands had been certified with a formal certification of property and use rights and which involved in 55.42 million farmer households. The reform has not finished and related policies are also need to improve. State-owned forest reform is still in pilot, and tenure system for sustainable forestry development has not yet been fully established.

6.4 More difficulties for forestation and management

At present, high productive forest lands account for only 13% and lower productive or marginal forest lands account for 52%. 60% of forest lands which for forestation are located in Inner Mongolia and north-west provinces, which are equipped with desertification, poor geography condition. The more difficult to plant trees, the higher cost will become. On the other hand, due to the insufficient forest ecosystem service compensation fund, the pressure of management and protection is serious.

With the climate change, especially the increase of the weather in the extreme, forest fireproofing and prevention and control for harmful life-form are facing the more serious situation. Meantime, the loss of forest lands and wetlands and illegal hunting is still difficult to stop. So that, the consolidating and expanding the achievements of forestry development become more and more difficult.

6.5 Livelihoods of people in forest regions need to improve

Since the infrastructure in forest regions has be serious getting behind and the socio-economy in these areas develop slowly, the income of forest workers and farmers have been much lower than other sectors. There are totally 4507 state-owned forest farms, in which 3774 farms have not yet got rid of poverty because of lacking financing. Most of the farms do not have water (1595 farms)and power (170 farms)

supply system， poor roads and housing (3163 farms) . Taking 2008 as an example, the average annual wages of workers in state-owned forestry enterprises were only 10231 yuan and 13465 yuan in the state-owned farms, accounting separately for 35% and 46% of the national annual average rate (29229 yuan) of the staff and workers.

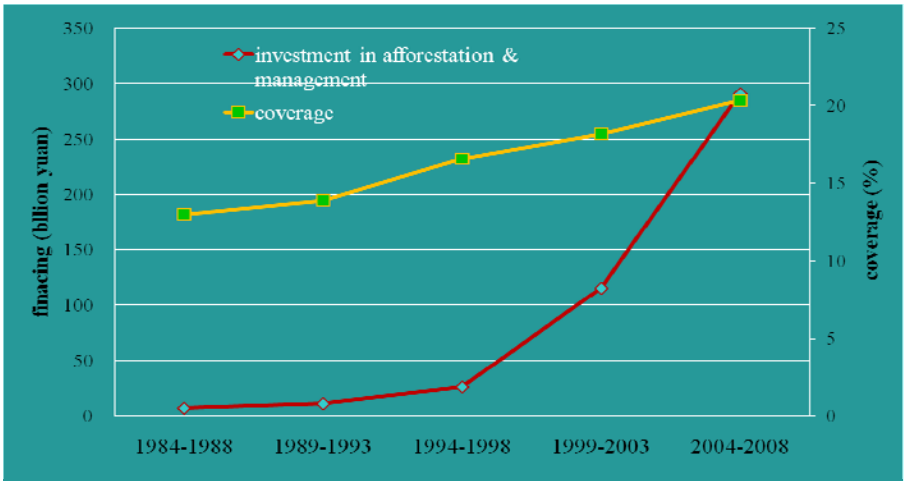
7. The needs and gaps of forest financing

7.1 Total demand

As for China, a country with more than 1.3 billion populations, this in rural area accounts for 54.32%. Mountainous areas account for 69% of the country, with a population accounting for 56%. Since forests locate mainly in mountainous areas with poor socio-economic development level and the livelihoods of local farmer depend mainly on forest resources forestry development means synchronous improvement of local farmers living standard and local social economic development. The task of forestry development in China is still serious. There is a growing demand for funds. It could be explained by the trend of forest coverage and financing shown by the figure 10 that investment increase dramatically in recent decades. On the other hand, with the current conditions, forest coverage rate increases by one percent, the cost rises dramatically according to the real needs in recent years which manily caused by the labour cost rising and the soil condition getting worse

This also means that government investment alone can not meet the needs of funds. Investment and financing sources must be broadened to put more non-governmental funds including foreign or international financing into forestry，to meet the needs for sustainable forest management and forestry development.

Figure 10 Investment and forest coverage change



7.2 Structural demand

From forestry investment structure, the conflicts between increasing demand for forestry development from the society to the insufficient forestry investment are intense. This can be seen from following aspects (Table 4).

7.2.1 Investment scale is too small which cannot meet the demand for overall development of forestry region. For instance, in 2009, total subsidies forestry investment was 16 billion yuan, which only account for 11.61% of total forest investment;

7.2.2 Investment standard is low, which is lower greatly than real costs. For example, in the Natural Forestry Protection Program, average forests protection fee per day in only 3% of local day wage level, and the ecological compensation fee per mu was only equal to the price of one piece of bamboo.

7.2.3 Some of incentive policy has been implemented slowly and the scope is narrow. At present, tending subsidy and high quality of seedling subsidies are just start to trial. It will take time to fully implement.

7.2.4 There are many investment gaps which need to fill in. For instance, at present, there isn’t forestry disaster prevention and control fund in China.

Table 4 Forest sustainable management investment status and gaps

Content of investment		Investment demand and gaps
Afforestation & reforestation	Afforestation	Afforestation invest is low. Take forest shelterbelt as an example, in 2009, afforestation invest is 200yuan/mu，but real needs is around 600-800yuan/mu.
	Reforestation	Low reforestation subsidy, bad operation condition, reforestation measures cannot meet the requirement of forest management, structure of forest type is not good and structure of standing volume is not reasonable.
	Seedling project	High quality seedling was no more than 30%. In 2010, high quality seedling subsidy trial is set to start. Subsidy standards are as follows: 600 yuan per mu for seedling nursery and seedling resources storage; 300yuan per mu for tress collection garden and 100 yuan/mu for seeds forest and experiment forests.
Forest management	Low yield forest improvement	Some 1.6 million mu of oil tea forests has been improved, and other forests hasn't yet start trials.
	Young and middle age forests tending	Subsidy is 100yuan per mu, about half of the costs; start trial in 2009 with 5 million hectare, 0.32% of total yang and middle aged forests area
Forest protection and management	Forest guarding	The standard of forest guarding in the Natural Forestry Protection Program is 1.75-2.22 yuan/mu since 1997, only 3% of local dayly wage. Backward infrastructure, low level of working and living condition for forestry workers.
	Forest fireproofing	In some places, supporting policy didn'reinforced, organization was incomplete, lack of staff and investment, bad fire fighting equipment.
	Forest deases and insects protection	Backward technique and infrastructure, lack of monitoring, prevention and cure, quarantine equipment and transportation communication instruments, insufficient quarantine station.
	Forestry working station	57% staff wage come from government budget, 43% come from forestry taxation and fee and other measures. 21.5% of forestry stations haven't office, 39.9% of the station haven't vehicle and 19.7% of the stations haven't communication equipment.

	Forestry policy	Lack of investment and some place had to raise funds from penalty; poor infrastructure and in some places, there isn't transport vehicle not office buildings.
	Forestry inspection and timber checking stands	Checking equipment is backwards with simple building. Lack of investment and penalty replaced inspectation. In some places, timber checking stands have become fee collection stands.
	Forestry inventory and planning	Lack of investment, backward technique and equipment which mostly at 1960-1970s level.
Biodiversity conservation and environmental service	Forest parks	Insufficient investment, small construction scale, large area of rare forest landscape resources hasn't been put into forest parks.
	Wild animal and plants conservation reserves	52% of wild animal and 48% of wild plants are facing several threaten by overuse. Only 5 provinces whose area of natural conservation accounting for more than 10% of its total land area. There are 15 provinces whose conservation reserve area is less than 5% of their land area, and in some province, the figure is less than 1%.
	Restoration and conservation of wetland	Average investment for wetland was less than 5yuan/ha, and 0.08 yuan/ha per year. wetland resources is facing problems of reduces areas and function degradation
	Ecological compensation	From year 2010, the standard will increase from 5yuan to 10 yuan per mu, which equals to price of one pieces of bamboo
Technique and education	Forestry education	Lack of investment for incumbency training, and backward education measures, contents and manners
	Forestry technique and key laboratories	Weak on key forestry lab and field ecological observation research station. Local extension system was not efficient with simple equipment
Poverty allivation and improve forestry livelihoods	Fund for poverty forest farms	85% of state forest farms are ecological forest farms on poverty, 45% of the forest farms have no main road, 18% of them have no drinking water and 1/4 of population of forest farms are reside endangered houses. Government fund for poverty forest farms could only meet half of its need.
	Subsidy for disaster rescue	Government budget for forest fire fighting and forest diseases and insect pests was far beyond demand. There isn't fund and drought.

	Investment for collective forest tenure reform	Government budget for collective forest tenure reform is 1yuan/mu, but, in some places, real costs was 3-4yuan/mu

8. Recommendations

8.1 Improving forestry investment and finance mechanism

8.1.1 Set up long term and stable national investment mechanism. Further getting support from national government to important forestry policy and forestry programs, implementation of central government financing afforestation mechanism, improving ecological forest compensation mechanism and establish forestry financing supporting system.

8.1.2 Establishing long term and stable forestry infrastructure construction input mechanism. Put infrastructure construction such as forest fire fighting, forest disease and insect pests prevention and control as well as forestry enforcement into all levels' government basic construction plan. Put road construction, water supply, electricity supply, communication, etc. into related government sectors' development plan.

8.1.3 Improving local government forestry input mechanism. Reduce local forestry input ratio for Western part of China, and central government investment should be allocate according to local inputs fulfillment.

8.1.4 Improving forestry investment approach. Allocation afforestation and forest management tasks according to national needs, focus investment to priority areas.

8.2 Enhance financing ability

8.2.1 Try to obtain national government investment. Ecological forestry programs, processing industry, infrastructure as well as social welfare, etc. should be put into national government plan;

8.2.2 Seeking local government investment. Put forestry into local government's development plan and strengthen local government forestry investment via forestry key programs which fit with local needs, have local features and strong development potentials.

8.2.3 Obtain investment from other government sectors. Put infrastructure construction in the forest region into related development plan of related government sectors.

8.2.4 Effectively attracting social investment. Effectively attracting social forestry investment via reform and formulating incentive forestry policy.

8.2.5 Effectively make use of foreign investment. Strengthen current project funds from the World Bank, the Asian Development Bank, EU, etc. at the same time, seeking more foreign investment and more cooperation project. Since China's ecological compensation mechanism is in the starting stage and the fund much lower than the real needs/costs, especially, although Chinese government decides to continue protecting the natural forests, but without question, the big gap of financing for those activities related protection and rehabilitation and extending forests is great challenge. So, China needs to expand the sources of finance including using mechanism of REDD+.

8.3 Improving investment environment

8.3.1 Put forestry development strategy into the ‘12th five-year’ National Economic and Social Development Plan, seeking national support for forestry by putting forestry development as national development strategy.

8.3.2 Strengthen forestry infrastructure construction, improving forestry investment hardware environment and alter forestry development approach.

8.3.3 Formulating forestry incentive policy, seeking forestry products export tax withdraw policy, reducing forest farmers’ tax burden and fully implement afforestation and forest management subsidies policy.

8.3.4 Deepen international cooperation and implementation of international protocol and bilateral agreement, optimizing international forestry investment environment.

8.4 Seeking foreign investment and cooperation

Broaden and stable international cooperation channel and seeking various cooperation programs and funds.

8.4.1 Use foreign investment to solve insufficient forestry investment problems. There is an investment gap to fulfill Chinese forestry development plan, which need foreign investment.

8.4.2 Promoting Chinese forestry management level by introducing advanced forest sustainable development measures via foreign projects.

8.4.3 Through cooperation with foreign partner and introducing modern forestry management technique and idea, to develop modern forestry technology and management model which is coincided with sustainable forestry development.

To sum up, concepts for sustainable forest management and sustainable forestry development are well known in China and policy environment has been improved. Forest financing in China has been largely increased, mechanism of finance has been improved and environment for forest investment has been much improved. Great achievements and sound results have been made in forest ecosystem restoration and forestry industry development.

There are also gaps for financing. The current funds for forestry construction can not meet the needs of funds in the sustainable development because of the poor basis, low quality and under-developed infrastructure. Further input from government and society, especially external financing is in great need.

Reference