

United Nations Forum on Forests  
Ad Hoc Expert Group on forest financing  
Country Case Study\*

# **China's Strategy and Financing For Forestry Sustainable Development**

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\* The views conveyed in this case study are meant to spur discussion during the first meeting of the ad hoc expert group on forest financing (13-17 September 2010- Nairobi, Kenya) and do not necessarily reflect the views of the UN Forum on Forests



## **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.

China, and China's 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 21<sup>st</sup> 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

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

Converting 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)

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



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

**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	<ul style="list-style-type: none"> <li>' Sloping or sandification cropland is converted into ecological/economic forest, and grassland; ecological forest should account for 80% of the converted land.</li> <li>' The central government subsidizes farmers with seeds or seedlings, grain, and cash.</li> <li>' 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.</li> </ul>	<ul style="list-style-type: none"> <li>' The estimated total investment is 431.14 billion yuan.</li> </ul>	



The Key Shelterbelt Development Program in the Three-norths (SDP-TN), covering 13 provinces, during 2001-2010

- ' Including the Three Norths (northwest, north, and
- ' Mobilization of public agencies, civil society, and individuals to participate in shelterbelt development and tree planting.
- ' Encouraging regional governments and local labor contribution, and adopting new silvicultural techniques.

The Program on Integrated Combating Land Desertification in Karst Regions

(PICLD) covering 8 provinces (2006-2015)

The Wetlands Conservation and Rehabilitation Program (WCRP), covering (2005-2010)

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

government, while smaller and less critical areas are managed by the regional governments.

Including wetlands protection, rehabilitation, reasonable utilization and capacity building.

- ' Market-driven and profit-orientated efforts for increasing domestic timber supply.
- ' As high as 70% of the investment may come from loans

' Still in pilot stage

' Total planned investment is 9.00 billion yuan

' Total invested 460.8 million yuan

' Total invested 1.1 billion yuan

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

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 themselves. 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





#### 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(b(F-1.87(M)TJ-2.0036 -2.9504 TD-.00038Tc.00016Tw[Chin)6n)-5.87a tbeq-5.87a).6(ng

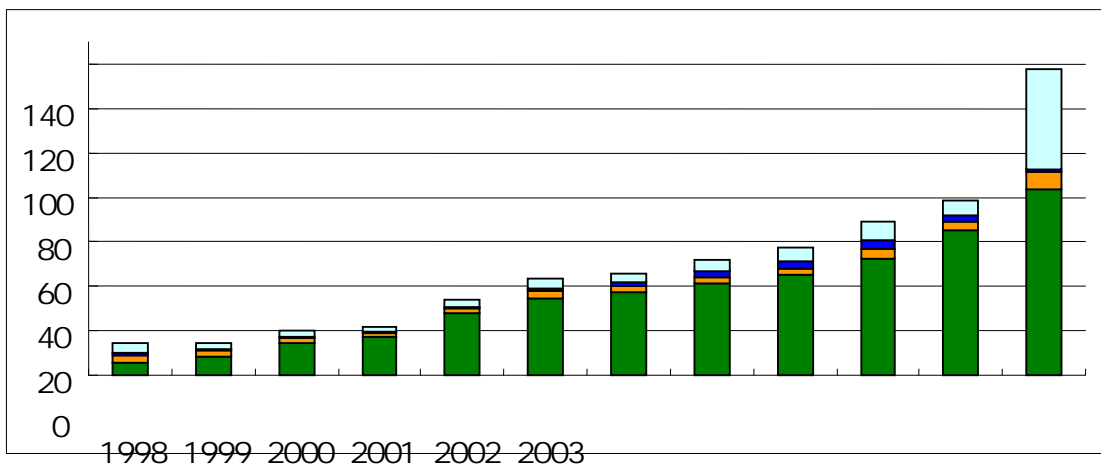
### 3. Forest financing in China

#### 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.

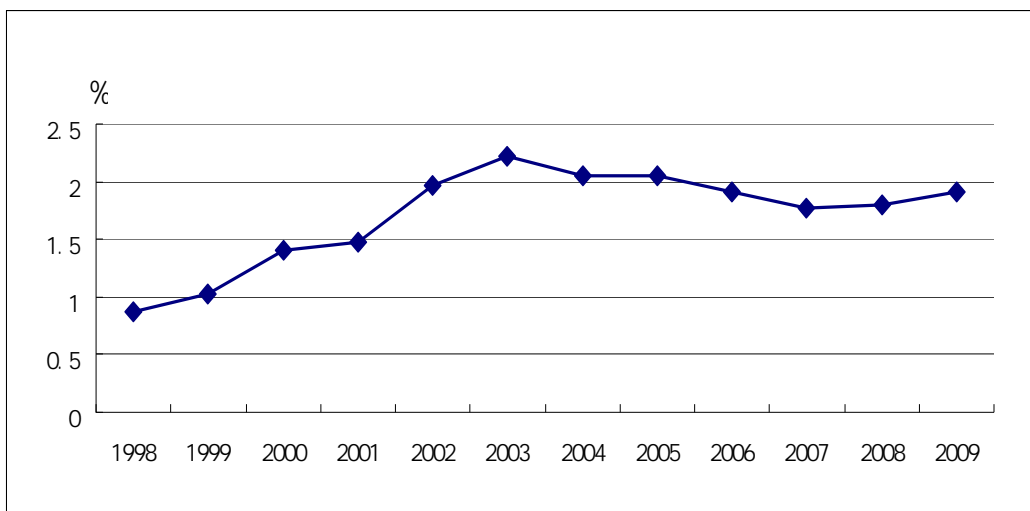
##### 3.2.1 Governmental financing taking main part

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).

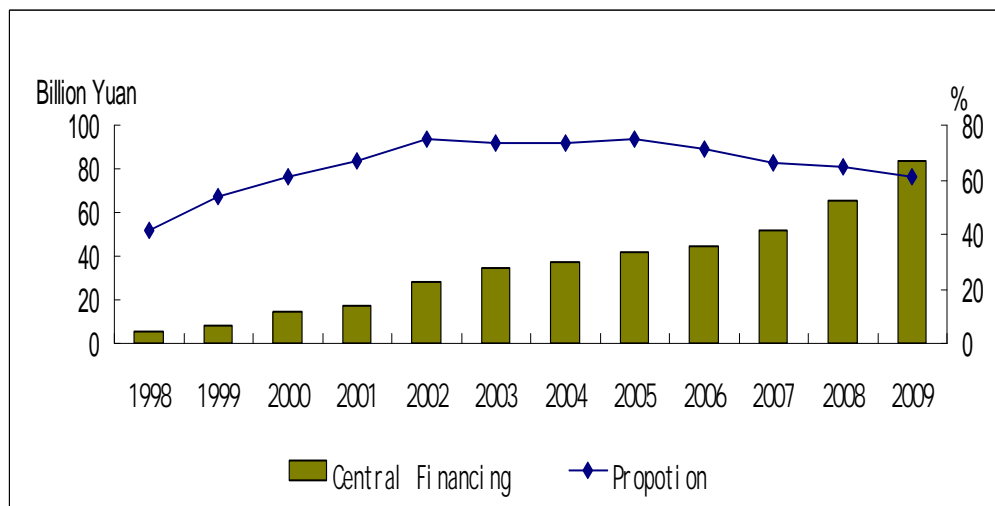
From 1998 to 2009, central investment on forestry increase from RMB5.653 billion yuan to RMB83.824 billion yuan, with an annual growth of 27.78%.

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.

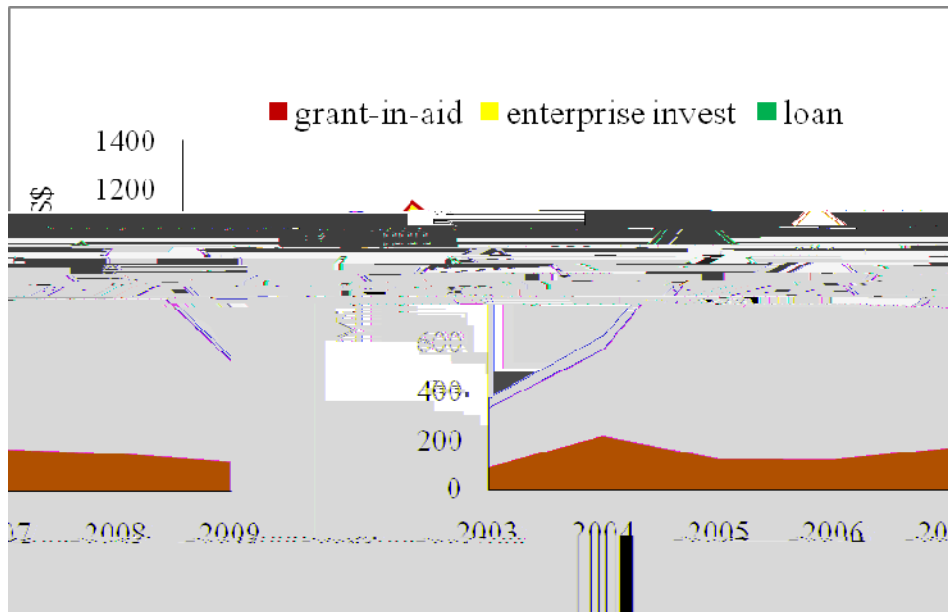
(1) Domestic non-governmental investment

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**



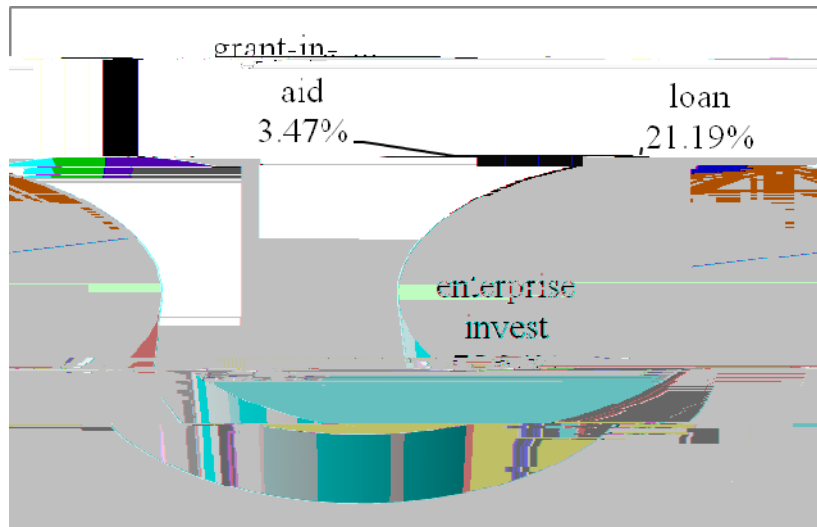
**3.3 Utilization of forest financing**

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**

	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
	Sub-total	18105.02	12370.54			2474.46	3260.02
Specific subsidies	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 SDP-TN & SDP-YR includes the new approved Coastal Shelterbelt Development Program.

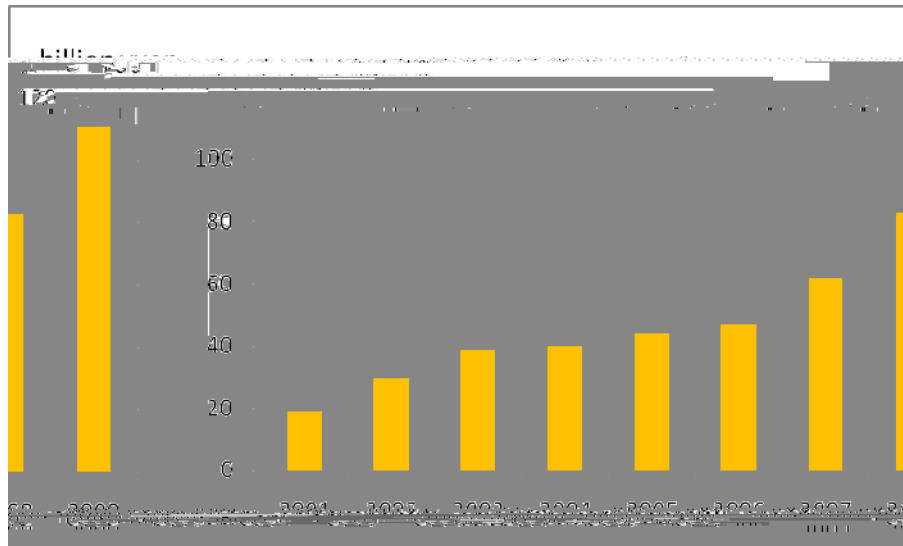
(1) Central governmental funds

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

(2) Non-governmental financing

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

Improving of low  
productive forests

	Inventory & planning	30.27	31.00	85.18	60.21	88.65	144.92	128.44	158.51	209.59
	Forest parks	110.52	124.73	136.13	413.88	441.78	569.12	337.27	742.34	684.77



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 from 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

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

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

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 mainly 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

## **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 is 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	Afforestation invest is low. Take forest shelterbelt as an example, in 2009, afforestation invest is 200yuan/mu but real

	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 inspection. 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.
	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 (23 provinces) 75 provinces (91%) only 45(25%) conservation of freshwater

	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
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## **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

### **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.