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## CHINA NATIONAL REPORT ON THE IMPLEMENTATION OF THE UNITED NATION'S CONVENTION TO COMBAT DESERTIFICATION

China National Committee for the Implementation of the UNCCD

### (CCICCD)

### June, 2006

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### **1. ABSTRACT**

China is one of the countries in the world suffering from severe desertification over a vast area, wide distribution and complex. The area prone to desertification is 3.317 million km<sup>2</sup> accounting for 34.6% of the total territory. According to the findings of National desertification and sandification monitoring operation in 2004, by the end of 2004, the area of desertification is 2.6362 million km<sup>2</sup>, taking up 27.46% of the total territory and 79.48% of the area prone to desertification, which is higher than the world's average of 69%. The desertified land in China is mostly distributed in 498 counties in 18 provinces, including Xinjiang, Inner Mongolia, Tibet, Qinghai, Gansu, Hebei, Ningxia, Shaanxi, Shanxi, etc. The area of desertified land as a result of wind erosion totals 1.839 million km<sup>2</sup>, taking up 19.16% and 69.77% of the total territory and desertified land respectively and it is distributed in 13 provinces in northwest, north and northeast China. It thus forms a sandified zone, which is 4,500 km long east-to-west and 600 km wide north-to-south and stretches from Tarim Basin in the west to the Songnen Plain in the east. The area of desertified land as a result of water erosion totals 259,300 km<sup>2</sup>, distributed mostly in the Loess Plateau in the upper and middle reaches of the Yellow River. The area of desertified land as a result of freezing and thawing totals 363,600 km<sup>2</sup>, distributed mostly in the alpine zone of the Qinghai-Tibet Plateau. The area of salinized desertification land totals 173,700 km<sup>2</sup>, distributed mainly in the oasis around Tarim Basin, the alluvial plain at the north foot of the Tianshan Mountain, Hetao Plain and Huabei Plain. In addition, another 104,900 km<sup>2</sup> of rocky desertification affected land is mainly distributed in 3 Provinces including Yunnan, Guizhou and Guangxi.

The Government of China has always attached great importance to combating desertification and has been paying more attention to it. Especially since the start of the  $21^{st}$  century, the Government has incorporated ecological improvement into the overall strategy of the national economic and social development, with combating desertification as main task. Consequently, several significant actions have been taken, including promulgation and execution of the Law on Combating Desertification, and implementation of a series of integrated ecological improvement programs. The pace of prevention and control of desertification is speeding up, with historic breakthroughs being made. The tendency for desertification and sandification to expand has started to be restrained. The process of desertification has been reversed from an average annual expansion of 10,400 km<sup>2</sup> in late 20<sup>th</sup> century to an average annual contraction of 7,585 km<sup>2</sup> during 1999-2004.

However, because of the fragile ecological condition, poor stability of man-made plant community, poverty in the affected areas, existence of natural and social factors resulting in desertification, the possibility of climatic variation induced droughts, the elementary feature of the current achievements, the challenges ahead are still huge and the task still arduous.

The program (2005-2010) has been worked out based on the present situation and the

achievements and experiences gained in combating desertification over the past 5 decades, in accordance with the State Eco-environment Improvement Program. The program integrates programs from relevant sectors, absorbing comments and suggestions from grass-root levels in the affected areas, in line with the principle of integrated ecosystem management. It has a focus on the major problems challenging desertification combating in China.

The Program maps out the guiding thought and management principles for combating desertification and defines a three-step strategic objective and measures up to 2050. The program works out the zones and categories for combating desertification in China in accordance with the types of desertification and the practicalities of combating desertification. It divides the desertified land into 3 zones, including a zone of integrated sandification prevention and control, a zone of serious soil and water erosion on the Loess Plateau and a zone of degraded natural grassland rehabilitation in the north. The program categorizes the project to combat desertification into 3 levels, i.e. key national projects, regional demonstration projects and local, non-governmental and private projects. The program defines a whole society participating desertification combating system, with the key national projects as core; establishes and improves a policy mechanism for combating desertification; develops a system for combating desertification on a sound legal basis; intensifies a scientific support framework for combating desertification; strengthens and builds the capacity for combating desertification; establishes and improves a monitoring and early warning system and a drought-relief system; introduces and promotes the desertified zones to establish such immediate priority programs as sustainable industrial system; and develops supporting measures accordingly.

Related basic information as follows:

1		
Name of focal point	State forestry Administration	
Address including e-mail address	Address: 18 Hepingli Dongjie. Beijing, 100714 E-Mail: <u>cciccd@forestry.gov.cn</u>	
Country-specific websites relating to desertification	<ol> <li>http://www.desertification.gov.cn</li> <li>http://www.forestry.gov.cn/</li> <li>http://www.gefop12.cn/</li> <li>http://www.gefchina.org.cn</li> </ol>	

### 1. Focal point institution

### 2. Status of NAP

Date of validation         Body/institution/Government le		
	validated the NAP	
NAP reviews	Date	
NAP has been integrated into poverty	Yes in 1996	
reduction strategy (PRSP)		
NAP has been integrated into the national	Yes in 1996	

development strategy	
NAP implementation has started with or	Yes
without the conclusions of partnership	
agreements	
Expected NAP validation	
Final draft of a NAP exists	Yes
Formulation of a draft NAP is under way	Revised NAP available
Basic guidelines for a NAP have been	Yes
established	
Process has only been initiated	
Process has not yet started	No

### 3. Member of SRAP/RAP

Name of sub regional and/or regional	Involvement specifically in topics such a	
cooperation framework	water harvesting techniques, soil erosion etc.	
1.Specific network of desertification	Task managar	
monitoring and assessment in Asia (TPN1)	Task manager	
2.TPN2	Country member	
3.TPN3	Country member	
4.TPN4	Country member	
5.TPN5	Country member	
6.TPN6	Country member	

### 4.Composition of the NCB

Name of institution	Government ( $$ )	NGO(√)	Male/female
1.Ministry of Foreign Affairs			Male
2.National Development and			Male
Reform Commission			
3. Ministry of Commerce			Male
4.Ministry of Science and	$\checkmark$		Female
Technology			
5. Ministry of Civil Affairs			Male
6.Ministry of Finance			Male
7. Ministry of Land and	$\checkmark$		Female
Resources			
8.Ministry of Water Resources			Male
9.Ministry of Agriculture			Male
10.Ministry of Railways			Male
11.Ministry of			Male
Communications			
12.State Forestry			Male
Administration			
13. State Administration of			Male

Taxation	
14.State Environmental	 Male
Protection Administration	
15.China Meteorological	 Female
Administration	
16.People' Bank of China	 Male
17. State Rural Development	 Male
Office	
18. The State Council Leading	 Male
Group Office of Poverty	
Alleviation and Development	
19.Chinese Academy of	 Female
Sciences	

5.Total number of NGOs accredited to the process:

Has an NGO National Coordinating	Yes
Committee on desertification been	
established; if yes, how many NGOs or civil	
society organizations participate in it?	

6.Total number of acts and laws passed relating to the UNCCD: 20\_\_\_\_

Name up to five most relevant acts and laws and/or regulations

Title of the law	Issued time
1. Law of the People's Republic of China on	2001-8-31
Desert Prevention and Transformation	
2. Law of the People's Republic of China on	1991-06-29
Water and Soil Conservation	
3. Environmental Protection Law of the	1989-12-26
People's Republic of China	
4. The Law of Land Administration of the	1986-06-25
people's Republic of China	
5. Water Law of the People's Republic of	1988-01-21
China	

7. The consultative process

Number of partnership agreements that have been concluded and/or are being initiated within the framework of the UNCCD

Official title of partnership	Donor(s),international organization(s),and/or agencies of the UN	Date of(expected) conclusion
1.Capacity Building for the Implementation of the UN Convention to Combat	UNDP	1996

Desertification		
PRC-GEF Partnership on Land Degradation in Dry land Ecosystems	The Global Environment Facility (GEF),	2000

List of consultative meetings on UNCCD implementation

Name of consultative meeting	Date/year	Donor countries involved	International organizations or agencies of the UN system involved
Coordination Meeting on Partnership Building and Resource Mobilization for UNCCD Implementation in China, Particularly in the Western Region	2001	Germany, Japan	UNEP, UNDP, GM, GEF, IFAD, ADB, WB,WMO,

The countries as the leading role: <u>ADB, UNDP</u>\_\_\_\_

8.Name up to 10 projects currently under implementation, which are directly or indirectly to the UNCCD

-	ule UNCCD					
	Name of project	Project implemented within the framework of the AP/SRAP/RAP?(Yes/N o)	Project implemented within the framework of	Timefra me	Partner s involve d	Overall budget (10,000 dollar)
1	Forest resources Management project in Qinghai Province	yes	National action program	2002-200 7	Austral ia	805
2	Protective forest Construction Project in the middle reaches of the Yellow River in Shanxi Province	yes	National action program	2005-200 6	Japan	335
3	Tree Planting and Afforestation Project in five Provinces of Western China	yes	National action program	2002-200 7	Korea	500
4	Demonstration Project of Forest Comprehensive Management and in Beijing District	yes		2005-200 8	Korea	100
5	Sustainable Forest Management of Western China	yes	National action program	2004-200 8	Germa ny	600
6	Soil and Water Conservation of Miyun Reservoir in	yes	National action program	1997-200 7	Germa	600

	Beijing				ny	
7	The Second Phase of	yes				
	Implementation on Forest		National action program	2004-200 7	Netherl ands	168
	Protection and the					
	Community Development of					
	Biodiversity					
8	China-UE Collaborative	yes	National action	2002-200	UE	2028
	Project of Natural Forest		program	6		
9	The Project on the watershed	yes	National action	2004-201	Englan	1309
	Management in China		program	0	d	
	China-Switzerland Capacity	no				
1	building of project on			2005-200	Swede	134
0	Environment Management in			8	n	
	Bijie District					

### 2. SUSTAINABLE DEVELOPMENT PROGRAMME AND THE PRIORITY AREAS

The Government of China has determined 'sustainable development' as the state's major national development strategy and has defined environmental protection as the basic national policy. China harmonizes the developmental strategies of economy, society, resources, environment and population. As the major efforts to protect environment and to realize sustainable development, desertification combating has been incorporated into the State Economic and Social Development Plan. China has developed a number of important documents such as 'China 21<sup>st</sup> Agenda', 'China Environment Protection 21<sup>st</sup> Agenda', 'China 21<sup>st</sup> Agenda — Forestry Action Plan', 'China National Action Programme to Implement the United Nations Convention to Combat Desertification (NAP)', 'China Eco-environment Promotion Plan', China National Master Plan for Combating Sandification (2005-2010), etc. In China, economic reconstruction and environment protection is stressed in integrated forms of synchronous planning, synchronous implementation and synchronous development.

## 2.1 STATE AGENDA AND PRIORITY AREAS IN RELEVANT SOCIAL AND ECONOMIC FIELDS

### 2.1.1 CHINA AGENDA 21

China Agenda 21—— the White Paper of Population, Resources, Environment and Development of China in 21<sup>st</sup> Century, ratified by the Government of China, is the guideline document for state sustainable development. It is aimed, in accordance with the general objective, to coordinate and organize various sectors, local governments, civil societies and the whole nation to take action on the realization of the plan to increase per capita GNP output value that is equal to the medium-developed country in the mid-2100s. Meanwhile, it

is stressed to protect natural resources and improve ecological environment and to achieve the objectives of long and stable development of the state. In order to implement China Agenda 21, China will have more effective bilateral and multilateral cooperation with the other countries in the world, and strive for building a safer, more prosperous, more beautiful future.

### 2.1.2 The 11th Five-Year Plan of China National Economic and Social Development

The 11<sup>th</sup> Five-Year Plan of China National Economic and Social Development expressly states the requirement of the work of protecting and rehabilitating nature and ecosystem: the priority of ecological conservation and construction should be transferred from aftermath control to pre-damage conservation, from man-made efforts to natural rehabilitation, and reverse the deterioration of the ecosystem by targeting the source of the deterioration. Establish key ecological function zones in the natural forest protection areas, important water source conservation areas, so as to promote the natural rehabilitation process. Improve the legal system, make clear divisions of the responsibilities, and enhance the supervision and management of the nature reserves. Effectively protect the biodiversity, prevent alien harmful species' endangering China's ecosystem. Set up an ecological compensation mechanism in accordance with the principle of "those who explore the resources should do protection them, those who benefit should make compensations".

## 2.1.3 CHINA'S ENVIRONMENTAL PROTECTION AGENDA 21 AND ITS IMPLEMENTATION PLAN

In consideration of sustainable development strategy in environmental field, the State Environment Protection Administration (SEPA) has compiled the China's Environmental Protection Agenda 21 in 1995. This document is the guideline document for carrying out the affairs of environment protection at national level. The document reviews the developmental processes, analyzes the challenges, raises the objectives and prepares the action programmes in the following aspects: guidance of environmental policy, legal guarantee on environment, environmental institution building, publicity and education on environment, natural environment education, environment protection in urban and rural areas, control of industrial pollution, environmental monitoring, environment sciences, international cooperation and exchange in environment field.

### 2.1.4 FORESTRY ACTION PLAN FOR CHINA AGENDA 21

The Forestry Action Plan for China Agenda 21 has been developed, in combination of actual condition and real forestry situation of China, by the forestry agency in charge of ecological improvement on the basis of China Agenda 21. The Forestry Action Plan has raised the general strategic objectives and countermeasures of the forestry development in China and is characterized by its integration, guidance and operability and it is an important guideline document of the forestry development in China.

### 2.1.5 STATE NATURE PRESERVATION STRATEGY

In consideration of reality of the ecological environment improvement of China, the State Council announced China Action Plan of Ecological Environment Improvement in November 1998 and the plan was incorporated into the National Economic and Social Development Plan. It is aimed to protect and construct the ecological environment and to realize the sustainable development. The plan is also a concrete activity of China to implement pertinent international conventions.

The ecological protection key programmes planned in the 11<sup>th</sup> five year plan includes: Natural Forest Protection Programme, the Programme of Converting Cropland into Forestland and Grassland, the Programme of Converting Free Grazing Land into Grassland, the Programme of Combating Desertification in the Wind/Sand Source Areas Affecting Beijing and Tianjin, the "Three-North" Forest Shelterbelt Programme, the Wetland Conservation and Rehabilitation Programme, the Three River Source Nature Reserve Programme, the Water and Soil Conservation Programme, the Wildlife Protection and Nature Reserve Construction Programme, and the Rock Desertification Control Programme.

### 2.2 CHINA'S NAP DEVELOPED IN LIGHT OF CHINA AGENDA 21 AND UNCCD

After signing the Convention, China submitted NAP in 1996. Based on the NAP 1996, China updated the NAP in 2005 for 2005-2010. The objectives listed in the new NAP is: within around 50 years' time, i.e. By the mid of Century 21, to set up a stable ecological protection system, a high efficient sand industry system and a perfect ecological and environment protection and natural resources utilization system, thus make all the controllable desertified land be primarily controlled, leading to concerted development of the population, natural resources and national economy. It is planned to be accomplished in three steps:

Immediate objective: from now until 2010, 22,000,000 ha desertified land will be controlled, 1,700,000 ha forest shelterbelt system will be established, 3,720,000 ha Aeolian desertification land will be enclosed for protection, primarily control an amount of desertified land which has relatively big impact and severe damages, prevent man-caused new desertification, contain the expansion trend of desertification, and make remarkable improvement in key controlled areas.

Intermediate objective: within 10 years (2011-2020), 20,000,000 ha desertified land will be controlled, 1,200,000 ha forest shelterbelt system will be established, 11,000,000 ha sandy land will be enclosed for forest and grassland regeneration. The focus will be on improving the ecological shelterbelt systems, and forming the sand industry system with a certain scale, and remarkably improving the ecological environment in desertified areas.

Long-term objective: by 2050, 35,000,000 ha desertified land will be harnessed, 34,000,000 ha forest and grassland will be established, 1,800,000 ha forest shelterbelt system will be established, 19,000,000 ha sandy land will be enclosed for forest and grassland regeneration, most controllable desertified land is brought under control, focusing on constructing setting up a relatively complete ecological shelterbelt system and relatively developed sand industry system, the ecological environment in the desertified areas is greatly improved.

The arrangement in the NAP is coherent to the National Economic and Social Development Plan.

### 3. CONCRETE ACTIONS AND THE EFFECT OF IMPLEMENTING UNCCD

## 3.1 INCORPORATION OF THE NAP INTO NATIONAL SOCIAL AND ECONOMIC DEVELOPMENT PLAN

## 3.1.1 COINCIDENCE BETWEEN NAP AND NATIONAL ECO-ENVIRONMENT PROMOTION PLAN

The strategic objectives of combating desertification have been determined by China National Programme for Ecological Environment Improvement that has been incorporated into the National Economic Development Plan. The objectives are as follows.

### (1) SHORT TERM OBJECTIVE (2001-2010)

Immediate objective: from now until 2010, 22,000,000 ha desertified land will be controlled, 1,700,000 ha forest shelterbelt system will be established, 3,720,000 ha Aeolian desertification land will be enclosed for protection, primarily control an amount of desertified land which has relatively big impact and severe damages, prevent man-caused new desertification, contain the expansion trend of desertification, and make remarkable improvement in key controlled areas.

### (2) Mid-term Objectives:

Intermediate objective: within 10 years (2011-2020), 20,000,000 ha desertified land will be controlled, 1,200,000 ha forest shelterbelt system will be established, 11,000,000 ha sandy land will be enclosed for forest and grassland regeneration. The focus will be on improving the ecological shelterbelt systems, and forming the sand industry system with a certain scale, and remarkably improving the ecological environment in desertified areas. (3) Long-term objectives:

Long-term objective: by 2050, 35,000,000 ha desertified land will be harnessed, 34,000,000 ha forest and grassland will be established, 1,800,000 ha forest shelterbelt system will be established, 19,000,000 ha sandy land will be enclosed for forest and grassland regeneration, most controllable desertified land is brought under control, focusing on constructing setting

up a relatively complete ecological shelterbelt system and relatively developed sand industry system, the ecological environment in the desertified areas is greatly improved.

### 3.1.2 RELATIONSHIP BETWEEN NAP AND LOCAL ACTION PROGRAMME

NAP is the mainstreaming and synthesizing of the desertification combating plans of various sectors, which are based on each sector's planning. And each sector's planning is set up on the basis of the local action programmes, which is the mainstreaming and synthesizing of each local government's desertification combating action programme. Therefore, nearly all the local action programmes are incorporated into the NAP. The large-scale, Trans-regional, Trans-watershed ecological improvement programme organized by the Chinese government has played a very important role in controlling desertification. All these programmes are organized and executed by the local government

## 3.1.3 RELATIONSHIP BETWEEN NAP AND SUB-REGIONAL/REGIONAL ACTION PROGRAMME

### 3.1.3.1 China's Involvement in the Sub-Regional Action Programme

With the assistance of the Asia Regional Coordinating Unit (A-RCU) of UNCCD, the ESCAP, ADB and UNEP, China is cooperating with neighboring countries to jointly apply for GEF's support on preventing and controlling sandstorms.

### 3.1.3.2 China's Involvement in the Regional Action Programme

China has actively participated in the implementation of the Regional Action Programme. The Chinese government hosted the First Meeting of Asia-Africa Forum to Combat Desertification in May 1996 with the assistance of the Secretariat of the UNCCD, UNSO and the Japanese government. The forum passed the Report on Asia-Africa Cooperation Framework, whose decision is to set up the Asia-Africa Research and Development Training Center. In May of 1997, China hosted the Beijing Ministerial Conference on Regional Cooperation to Implement the UNCCD in Asia at which the 'Beijing Declaration' was passed, and the meeting endorsed six priority thematic programme areas (TPNs) for regional cooperation in Asia. China hosted the Asia-Africa Technical Workshop on Early Warning System, Second Asian Meeting of the UNCCD National Focal Points and the Launching Meeting for the Thematic Programme Network on Desertification Monitoring and Assessment (TPN1) in 1999. By now, over 20 countries have participated TPN1. In 2000, the Chinese Government hosted an ad hoc expert meeting on the benchmark and indicators for desertification monitoring and assessment for the Asian region. In 2005, with the assistance from relevant cooperation partners, China finishes the first Asia Map of Desertification, with its own resources.

### 3.1.3.3 Synergies with other environment conventions

Synergies between UNCCD and environment or bio-diversity issues concerned by the other conventions have been incorporated into China Agenda 21, with same attentions paid to. The various conventions are comparatively independent, whereas, they are connected. The independence is that the environmental issues targeted are different. The connection is that when one convention is solving some environmental issue, it will affect somewhat the other environmental issues. Therefore, China attaches same importance to other conventions while solving issues concerned by UNCCD. The Law on Combating Desertification provides that protection areas should be set up and enclosed, which is aimed at preventing desertification, while at the same time effectively protects bio-diversity in the desert eco-system. Various environmental issues concerned by different conventions are also coordinated in the GEF projects. For example, in the land degradation project, desertification, bio-diversity and wetland resources are protected, and it will help decrease green house air and increase oxygen production.

### 3.1.4 AGREEMENT BETWEEN GOVERNMENTS

Since 2002, through the channel of commercial ministry, the number of foreign aid projects in relation with combating desertification has reached 23, with a total of approximately 140 million USD. The projects have brought positive effects in promoting China's forest, water resources protection and combating desertification.

In terms of science and technology cooperation research and in other fields, the PRC-GEF Partnership on Land Degradation in Dry land Ecosystems, Sino-Germany programme supporting northern China in combating desertification, China-Israel cooperating programme on research and testing integrated desert control technologies, China-Germany cooperation programme on research of the driving force and development of Aeolian landscape in the Qinghai-Tibet Plateau, EU-China joint research on climate change's impact on dry land agriculture ecosystem and water resources, Sino-Japan research on countermeasures and evaluation on the Horqin sandy land, the evaluation of desertification in the source areas of the Yangtze River in Qinghai, etc. During the 10<sup>th</sup> five-year plan period, the MOST set up an "International Cooperation Key Research Plan", aiming at the national S&T development strategies and the world advanced sciences, through fully using international practices, by organizing high-level, high-standard key international S&T cooperation, so as to increase China's S&T innovation capacities, accelerate advanced S&T, realize industrialization and serve for increasing China's Comprehensive National Capacity.

### **3.2 COORDINATION UNIT**

### 3.2.1 POSITION AND FUNCTION OF COORDINATION UNIT

In order to implement the UNCCD, the Chinese government has established various management agencies at different levels to strengthen the institutional guarantee for combating desertification. As an inter-ministry coordination agency, the Coordinating Group/CCICCD has improved the organization, coordination, administration and supervision of the nation's desertification combating by the government. It has played an important role in terms of addressing the key issues facing combating desertification and coordinating various departments' involvement in this regard.

In the provinces, which have relatively huge task on combating desertification, coordinating groups or leading groups have also been set up. To guarantee the smooth implementation of UNCCD, a Senior Expert Group of Combating Desertification has also been set up at the national level, with an independent expert group set up. Meanwhile, the learned societies and civil societies also play an important role in combating desertification in China.

### 3.2.2 RESOURCES

### **3.2.2.1 Financial Resources**

The financial resources of the Office of the Coordinating Group and the Secretariat of CCICCD are from the national allocation, which is approximately equal to 183,000 USD. The budget is mainly used for publicity, technology extension, and training and staff salary. The respective member ministries provide the salary of the members of the Coordinating Group/CCICCD and of liaison officers.

### **3.2.2.2 Information Resources**

The URL of <u>http://www.din.net.cn</u> with information of China's combating desertification has been made available in Internet since 1997. In 2005, the official government website for UNCCD implementation was launched, as at (http://www.desertification.gov.cn). The email address of the Secretariat of CCICCD is <u>CCICCD@forestry.gov.cn</u>.

### 3.2.3 INTER-MINISTERIAL COOPERATION

The composition and institutional structure of China National Coordinating Group to Combat Desertification and CCICCD reflects the characteristics of inter-ministerial cooperation. As regulated by the State Council, the State Forestry Administration (SFA) as the leading agency always organizes and coordinates each member ministry. The whole Group cooperates closely to strengthen the effort for combating desertification.

### **3.3 DOMESTIC DECISION MAKING UNITS**

## 3.3.1 FRAMEWORK OF ORGANIZATIONS DEALING WITH DESERTIFICATION COMBATING

The administrative organization of China's combating desertification is composed of forestry departments of central, provincial, prefecture, county and township government at five levels,

divided into three managerial levels of macro management, micro management and interim management between the macro and the micro level. Specifically, the central and provincial administrative forestry departments take the responsibility for macro management of combating desertification, county and township forestry bureaus are in charge of micro management, and the prefecture forestry agencies are responsible for interim management, i.e. both for macro and micro management.

Like China National Coordinating Group to Combat Desertification and CCICCD, the local coordinating or leading groups are composed of relevant sectors including forestry, agriculture, water conservancy, environmental protection, science and technology, finance, planning, etc.

### 3.3.2 INSTITUTIONAL BUILDING AT NATIONAL AND LOCAL LEVELS

### 3.3.2.1 National Level

In order to strengthen the institutional capacity of desertification combating, the National Bureau to Combat Desertification was established by the Chinese central government. The administration body is set up in the State Forestry Administration. The bureau's role and function is to administrating desertification combating across the country. Its main tasks are as follows.

(1) to participate in drafting guidelines, policies and regulations in regard to desertification control projects, and supervise the implementation;

(2) to participate in working out mid term and long term national plan for combating desertification, and instruct the local government's preparing mid term and long term for combating desertification and to organize the implementation of Trans-province (autonomous region, municipality) regional programs;

(3) to participate in working out annual plan for combating desertification and sandification and to provide macro control proposals. In charge of instructing, inspecting and check and accept of projects;

(4) to be responsible for organizing national desertification monitoring. In charge of gathering and coordinating the monitoring results;

(5) to collect, mainstream, gather and report the information on national combating desertification and sandification;

(6) to organize personnel training and science and technology dissemination for national desertification combating;

(7) to undertake implementation of UNCCD;

(8) to undertake organizing international cooperation and exchange of combating desertification;

(9) to assist international project proposing and application in the field of combating desertification, and organize the management of international projects;

(10) to be responsible for administrating the professional business of China Combating Desertification and Desertification Association, China National Research and Development Center of Combating Desertification, China National Training Center of Combating Desertification and China National Desertification Monitoring Center; (11) to act as the Secretariat of CCICCD and the Office of National Coordinating Group to Combat Desertification and do the routine work.

### 3.3.2.2 Local Level

Local government's coordinating or leading groups to combat desertification and forestry/agriculture departments/bureaus has been remained at the current institutional reform.

### **3.4 LEGAL GUARANTEE SYSTEM**

At present, China has promulgated about 20 laws relating to environmental protection and a series of environmental regulations and standards, the local by-laws system has been continuously enhanced. The legal guarantee system combining environmental protection laws, other relevant laws and regulations promulgated by the State and local governments have been primarily formed.

The 23<sup>rd</sup> Meeting of the ninth Standing Committee of the National People's Congress passed the Law on Combating Desertification on August 31, and the law came into force on January It marks that China's combating desertification has been on the legal track and a new phase of preventing and controlling desertification by law. The law sets out the basic guidelines, responsibilities and obligations, management system, main system, guarantee measures and the legal responsibility of violating the law.

The Law of Water and Soil Conservation came into force on June 29, 1999, which has exerted a remarkable effect on controlling water and soil loss, protecting the water and soil resources, and improving the eco-environment. According to the law, many local government has the mandate to incorporate the water and soil conservation into the high agenda of the government, and a system of reporting to the same level congress and a system of responsibility checking for government leaders have been set up.

The other laws, such as the Environmental Protection Law, the Land Administration Law, the Water Law, the Grassland Law, the Renewable Energy Law, and the Rural Land Contracting Law, in parallel with the Law on Combating Desertification, are also very important in promoting combating desertification.

In 2005, the State Council ratified the National Master Plan on Combating Sandification (2005-2010), which stated that by 2010, 13 million ha. Sandified land will be harnessed, with 3.72 million ha. Enclosed. It is estimated that the trend of expansion of sandification will be effectively contained. In 2005, the State Council's Decision of Further Accelerating Combating Sandification was issued.

### 3.5 GOVERNMENTAL EFFORTS AND INITIATIVES TO IMPLEMENT UNCCD

The Chinese government always attaches great importance to desertification combating.

Especially in recent years, the Chinese government has taken a series of powerful measures to strengthen combating desertification and has made remarkable achievements, which has improved ecological environment in some areas, with economic and society developed and people's living standard increased.

# 3.5.1 PULLING UP BY THE KEY NATIONAL PROJECTS, THE CHINESE GOVERNMENT POSITIVELY IMPLEMENTS THE NAP, WITH THE ECOLOGICAL DEVELOPMENT REMARKABLY PROMOTED.

The National Agriculture Integrated Development Programme continuously increased its investment in forestry projects, targeting the Shelterbelt Programme of the Mid Reach of the Yangtze River, the Programme of Greening the Taihang Mountain, the Integrated Demonstration Programme of Combating Sandification in the Old River Bed of the Yellow River, and the High Grade Economic Forest/Shrub and Flower Plantation Programme. A total of afforestation of 707,300 ha. has been accomplished. The Agriculture Integrated Development Programme has been a key demonstration factor in improving ecological situation in the project areas, which has promoted the forestry industry development, enlarged the collective economy and increased farmers' income. During the 10<sup>th</sup> Five-year Plan period, The Agriculture Integrated Development Programme put a strong emphasis on improve the low yield cropland, increase crop yield and forestry ecological development, which has completed 742,400 ha. Of tree and grass planting, 219,600 ha. of enclosing mountain/sand for cultivating forest/shrub and grass, 22,800 ha. of aero seeding, 58,800 ha of low efficient forest improvement, 1,004,1000 ha of grassland development, 7,844.52 km2 of water and soil loss control, with 645,100 ha of newly increased forest/shrub land acquired, 186,500 ha. sandy land controlled, and 4,628,700 ha. forest shelterbelt network newly increased.

In 2001, the Chinese government systematically integrated the existing forest programmes into the six key national programmes. As planned, in the first ten years of Century 21, not to mention the other activities, only forestation will reach 76 million ha., with a total investment of around several hundred billions RMB Yuan.

Meanwhile, the Chinese government has strengthened efforts on protecting the grassland, desertified land along the railways and roads, and the control of water and soil loss. The wood cutting quota and cropland protection rules are strictly followed, grazing prohibition, rotational herding and grazing land resting and other grassland protection policies and measures are carried out, with large scale of grassland naturally rehabilitated and part of the grassland artificially rehabilitated. The government has also enhanced the integrated management and control of the water resources, rationally allocate ecological use of water, with achievement of preventing the Yellow River from zero-flowing, the water quality of the Tai Lake improved, and the environment in the lower reach of the Tarim River and the Heihe River primarily repaired. In part of the northern China's areas where ground water are over exploited, the water exploitation has been restricted and water recharge measures have been taken. The environment evaluation system has been carried out for the construction projects, with the efficiency of the evaluation remarkably improved, and the damage to natural

resources and environment has been primarily contained. In 2004, China has greening 993,900 km of roads, accounting for 53.1% of the nation's total road length.

The Chinese government pays great significance to grassland protection and development, in recent years, the government has increased investment in protection the developing grassland. During  $2002 \sim 2005$ , the government invested in over 8 billion Yuan. The project of natural grassland vegetation rehabilitation, pasturing seed plantation, grassland fencing, converting grazing land to grassland, the programme of desertification control in the wind/sand source areas affecting Beijing and Tianjin, grass nurturing fund, grassland fire prevention, grassland pest and mice control, and other projects have benefited from the investment, with great ecological, economic and social benefit acquired. By the end of 2005, the total well-preserved grass-planting areas have surpassed 26,666,700 ha., fenced grassland is over 33,333,300 ha, grazing area of over 33,333,300 ha has been banned from grazing. Through the development of the programmes, the deterioration trend has been effectively contained, with vegetation remarkably rehabilitated, and the capability of preventing sand and wind and water and soil conservation of the land has been remarkably enhanced.

Since 1981, the Chinese Meteorological Administration has set up an agriculture (cropland and grassland) observation network, based on over 580 monitoring stations, which has played a positive role guiding the agriculture and herding industry as well as drought and desertification prevention and control. Since 2005, CMA has launched a programme of constructing 100 automatic monitoring stations on soil water, covering almost all types of land ecosystems in China, which helps people identify the moving features of soil water in various types of ecosystems and plays a guiding role in combating desertification and drought. China Central Meteorological Observation launched sandstorm weather forecasting business on March 1, 2001 and began to broadcast sandstorm weather forecast through major medias. Since 2002, CMA and SFA have began to jointly convene a stakeholder meeting on the trend of sandstorm weather in northern China every January and jointly report the meeting results to the State Council. As shown by the sixth National Forest Survey, the forest resources in China are presently well protected and in a good trend of development, with forest area continuously increasing, forest commutation stably increased, forest quality improved. As shown by the National Survey on Wildlife, Wild Plant and the Giant Panda, China's biodiversity protections have made efficient achievements, with most wild animals has increasing numbers. The most endangered animal species such as the Giant Panda, Chinese alligator (Alligator sinensis), and red-crowned crane (Grus japonensis) effectively protected. As shown by the newly updated National Water and Soil Loss Monitoring, China's water and soil loss control has made encouraging achievements, with the area of water and soil loss decreased, the water and soil loss in 11 main river basins in China has been greatly decreased.

3.5.2 CHINA ATTACHES GREAT IMPORTANCE TO SCIENCE AND TECHNOLOGY RESEARCH AND POPULARIZATION ON COMBATING DESERTIFICATION, WHICH HAS BROUGHT THE ROLES OF SCIENTISTS AND TECHNICAL PERSONNEL INTO FULL PLAY.

The Senior Expert Group of China National Committee for the Implementation of the

UNCCD was established, which was composed of 20 senior scholars from different departments to enhance the technical assistance to combating desertification. Researches on desertification combating were defined as the key strategic research commitment, with scientific and technological research programs organized, large number of popularization handbooks edited and disseminated. In 2001, the government organized an activity of '100 Science and Technology Professional Go to the Rural Areas Sending Science and Technologies'. China has made great efforts in popularizing practical technology on desertification combating. China has incorporated the "Desertification Control Technologies and Demonstration Project" into the national science and technology programme. During the ninth five-year plan period, 25 science and technology achievements have been authenticated, 25 achievements have been disseminated and applied. The "Capital surrounding areas desertification control emergent technology and demonstration project was launched, the desertification assessment indicators system was set up. The researches on basic research, desertification dynamic situation, sight-view ecology, plant adversity physiology, sustainable development, high efficiency utilization of water resources, control models and technologies and other research programmes.

The early 21<sup>st</sup> Century has seen China's desertification and sandification monitoring into a scientific, standardized and institutional phase. In order to enforce the Law on Combating Desertification, implementing UNCCD, in 2004, organized by SFA, participated by the institutions and experts from the agriculture, water resources, meteorology and CAS, the Third Round of Desertification and Sandification Monitoring and Survey has been accomplished. In the monitoring, ground survey is combined with interpretation of remote sensing data, with ground survey as the focus. The 3S (Remote Sensing, GIS, GPS) technology is adopted. Over 4000 technicians were involved in the survey, 5.02 million compartments were zoned and contained, with 156 million units of information obtained. A National Geography Information Management System for Desertification and Sandification has been established, which provides significant support for combating desertification and sandification.

### 3.5.3. IMPROVING POLICIES, ACCELERATING PUBLIC PARTICIPATION AND SETTING UP LONG-EFFECT MECHANISM FOR ECOLOGICAL CONSTRUCTION

The Government of China has carried out a series of policies to motivate the public go-aheadism for ecological construction. In 2004, Ministry of Finance and State Forestry Administration jointly started-up compensatory fund for forest ecological benefits. This special fund is to provide some subsidy to the managers of the key forests of public welfare for their expenditures in afforestation, tendering, protection and management. The scope of the compensatory fund covers the forestry lands designated by State Forestry Administration, such as the afforested land within the key forestry lands of public welfare as well as the thin-stocked woodland, shrub-land and shrubbery land at the areas suffering from serious problems of land desertification and water erosion and soil loss. In 2004, the Central Government allocated for the first-phase RMB 2000 million to compensate the forest

ecological benefits over 26,666,700 ha of the key forests of public welfares throughout China. The public go-aheadism has been greatly motivated by a series of governmental policies. For instance, lots of governmental loans at subsidized rates have been released for combating land desertification. Auctions of "four barrens" (barren hills, barren gullies, barren sand-lands and barren waste lands) have been pushed forward. The policy of "One who plants trees is the one who will manage them and benefit from them" has been carried out. Lots of marginal farmland of serious sandification has been converted for tree planting and grass growing. The Government has provided financial subsidy for the construction of ecological forests. At most of the pastoral areas, the system of grassland contracted responsibility has been practiced. On the basis of public ownership, grassland has been divided to each household under contracted responsibility and household livestock raising is supported with socialized services. In the program of restricting free-grazing for vegetation rehabilitation, the Government has contributed lots of financial input to help herdsmen construct grassland fences and made lots of efforts to push forward the activities of free-grazing ban, seasonal grazing and rotational grazing, so that the production and livelihood patterns of the farming herdsmen have been improved. For seriously degraded grassland, the Government has implemented programs of vegetation enrichment and grass seeds are subsidized at 150 RMB/ha. The farming herdsmen who carry out free-grazing ban and seasonal grazing are subsidized with feed grains to make sure that their normal situation of production and livelihood is not impacted. At the Tibetan Plateau, the feed grain subsidies for all-year free-grazing ban and seasonal grazing amount to 41.25 and 10.35 kg/ha per year, respectively, and the duration of subsidies is calculated on the basis of 10 years. For other areas, the feed grain subsidies for all-year free-grazing ban and seasonal grazing amount to 82.5 and 20.625 kg/ha per year, respectively, and the duration of subsidies is calculated on the basis of 5 years.

To protect the ecological environment at the western provinces and regions, the Government has particularly worked out favorable policies of taxation. It is stipulated in Income Tax Law of the People's Republic of China for Enterprises with Foreign Investment and Foreign Enterprises that the income tax of the royalty received for transferring technical know-how from a foreign enterprise into China may, upon approval by the competent authority, be exempted. In accordance with legal regulations, it is compulsory for each of the Chinese citizens (11~60 years old males and 11~55 years old females) to plant 3~5 trees annually. Everybody is responsible to make contribution to greening the motherland and combating land desertification. Throughout China, there are more than 2000 non-governmental organizations (NGO) related with environmental protection. They are important NGO forces combating land desertification.

### **3.5.4. UPGRADING PUBLIC AWARENESS OF ECOLOGICAL PROTECTION**

Taking advantages of the yearly commemorating days for improving ecological environment and combating land desertification, the days such as World Day to Combat Desertification, World Environment Day, World Meteorological Day, World Water Day and China Tree Planting Day, varieties of activities of information publicity, workshops and popular science extension on ecological environment are carried out in all the social fields throughout China, so that a social atmosphere of public participation and supervision in/on the construction of ecological environment has been preliminarily formed. The compulsory tree-planting of the whole people has become an action of self-knowledge, and the construction and maintenance of a nice residential environment have become one of the public requirements.

There has been a progress in publicizing ecological environmental information. National reports are regularly publicized, the reports such as on desertification monitoring, forest resources, environmental situation, territory greening and water resources. As a result, the public can have better and timely knowledge of the national ecological situation and the implementation of national strategy of sustainable development, and all levels of governments and the public have realized higher responsibility and consciousness of ecological environmental protection.

## **3.5.5. IMPLEMENTING UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION (UNCCD)**

In 2003, Chinese Academy of Forestry signed an agreement with UNCCD Secretariat on the establishment of UNCCD International Training Center. On the basis of International Center for Bamboo and Rattan, training facilities, equipments, experimental sites and teaching personnel are provided for the international training on combating desertification. China hosts TPN1 of Asia, in close cooperation with 20 country members, and the Asia Map of Desertification was preliminarily worked out in 2005 on the basis of self resources and technology.

## 4. THE PARTICIPATORY PATTERN IN PREPARATION AND IMPLEMENTATION OF NATIONAL ACTION PROGRAMME

### 4.1. Participatory Patterns of Related Institutions and Societies

The Government of China is motivating the whole society for wide participation in combating land desertification. Firstly, varieties of measures of information publicity have been taken to publicize the harmfulness of land desertification, the countermeasures and the effects and experiences of combating desertification, so that the national strategy and policy measures to combat desertification are popularized, the public are educated with environmental protection and ecological civilization, the whole society become better aware of the seriousness and pressure of land desertification, the long-term and painstaking tasks of combating desertification are widely recognized, and the varieties of resources are motivated for voluntary devotion in combating desertification. It is World Day to Combat Desertification on 17<sup>th</sup> June. At this day every year, varieties of activities of information publicity and education are carried out. On one hand, activities such as consultancies and commemorations are done

over 100 large and medium cities, materials of information publicity are distributed, the major leaders of every province, autonomous region and municipality make speeches calling for combating desertification, and all levels of information publicity institutions send journalists to desertified areas for on-the-spot reporting and publish special journals. On the other hand, commemorating activities are organized, materials of information publicity are prepared and printed, and video tapes are edited. Secondly, symposiums and workshops are held, and training classes are organized. To help farming herdsmen (especially women) upgrade their awareness of the importance of combating desertification, practical training materials for grass-root level are prepared each yearn to intensify the technical extension of desertification control in the countryside. Thirdly, favorable policies are worked out. Lots of governmental loans at subsidized rates have been released for the projects combating land desertification. The income tax from managing and developing barren hills and barren sandlands is reduced or exempted in a certain period.

There are more than 2000 NGOs in China respectively dealing with varieties of environmental issues. China Desert Control and Sand Industry Society and Chinese Society of Water and Soil Conservation are 2 of the important NGOs in the field of desertification control in China. Its members participated in working out National Action Programme, and the Programme also encapsulated the intelligence of NGO's other societies relevant.

Desertification control has been listed as one of the national major subjects of scientific research. Basic research and applied research are strengthened, scientific and technical resources are mobilized to deal with key problems, practical technology of desertification control are intensively extended, scientific research institutions and research workers are encouraged to provide technical services and take technical responsibility on contracted basis for desertification control, efforts are made to enrich the contents of science and technology in desertification control, and measures are taken to accelerate the transferration of scientific and technical achievements into practical productivity. At the same time, education of desertification control is strengthened, and on-working-post training and professional education are intensified to bring up more personnel of science and technology for desertification control.

From 2002 to 2005, the Government input more than RMB 8000 million for the implementation of many projects of ecological construction, such as for the rehabilitation and construction of natural grassland vegetation, the construction of fodder grass seed production bases, the construction of grassland fences, the program of restricting free-grazing for vegetation rehabilitation, the project of grassland ecological construction within The Programme of Combating Desertification in the Wind/Sand Source Areas Affecting Beijing and Tianjin, the establishment of grass growing fund, the prevention of grassland fire and the project of controlling grassland pests and rats. Good benefits in ecological improvement, economic development and social progress have been achieved.

The State Council Leading Group Office of Poverty Alleviation and Development (OPAD) has combined poverty alleviation and development with ecological construction to accelerate the sustainable development at the poverty-stricken areas. The national institutions of territorial resources are making a new round of territorial resource survey and land resource evaluation and a revision of land use planning. The national meteorological institutions have preliminarily set up sandstorm monitoring, early warning and prediction systems at national and provincial levels. The systems have achieved good effects in timely and effective information service for the governmental decision-makers in favor of the management of desertified and degraded land resources and the reduction of drought impacts. To support the strategy of West China Development, the national taxation institutions have adjusted taxation policies. OPAD has worked out The China Rural Poverty Reduction and Development Program (2001~2010). The institutions of science and technology have conducted Research and Demonstration of the Key Technology for Desertification Prevention and Control. Other comprehensive institutions relevant have also actively made great contribution to the implementation of National Action Programme. National Development and Reform Commission has organized the implementation of ecological construction in the major counties selected. The institutions of railway and communications have done many projects of afforestation along railways and highways, so that green channels of multiple layers, reasonable structures and improved functions have been built at the combination among vegetation belts, networks and blocks. The green channels have been integrated with ecological environment and artificial vegetation to build a much beautiful landscape.

### 4.2. Mutual Understanding

On the basis of the common participation of all levels of governments and institutions, the Programme was worked out with bottom-up approach. In the preparation of the Programme, the comments and recommendations of science & technology society and local governments were sufficiently integrated, and the local needs of ecological construction were considered. Within the national macro program set by the central government, the local governments are responsible to enrich the program with local details, and the local plans will be improved in the implementation of the Programme or program on the basis of actual situations.

The local governments put into their consideration both the existing problems and the farmers' needs in the actual situation. These issues are dealt with in the local schemes or plans and integrated in the national Programme or program. On the basis of the task quantities and their difficult degrees, the institutions and individuals in desertification prevention and control are encouraged with favorable policies such as financial subsidies, loans at subsidized rates and tax reduction or exemption. For the institutions and individuals who invest in desertification prevention and control, all the taxes are exempted during the investing period. After a certain economic return is achieved, the related taxes can be exempted or reduced. At the event that state-owned desertified land resources are used for sandland control activities, the legal approval at and above county-level government is required, and the validity of land

use right can be up to 70 years.

For the different levels and types of ecological projects, the Secretariat and the national institutions relevant get construction information at the grass-root level mainly by means of on-the-site working, investigations, interviews and workshops. The implementation of National Action Programme is checked annually, the major problems existing are investigated, and the successful experiences, technologies and practices are summarized and extended. Interviews and workshops are regularly held with participants from provincial, prefecture and county institutions, from units of scientific research and education and from NGOs. Governmental official are arranged to take a temporary post at local institutions for capacity building, to investigate practical issues at rural grass-root level by means of on-the-site working and finally to feed back to the governmental decision-makers the problems that farmers urgently need to solve. The Secretariat and all levels of authorities in charge of desertification control answer ecological construction proposals from varieties of aspects. These proposals either come from people's congresses, people's political consultative committees, village commissions, social agencies, individuals or relevant institutions. The implementation of any key-point projects is not conducted until it is passed the examinations by expertise.

## 5. THE BASIS FOR SUPPORTING COMPILATION OF THE NATIONAL ACTION PLAN

## 5.1. THE GREAT ATTENTION PAID BY THE CHINESE GOVERNMENT ON DESERTIFICATION COMBATING

The Chinese Government has always paid a great attention on desertification combating and listed desertification combating into the national economy and social development plan as an important project. In recent years, the Chinese Government has given priorities to development of ecological environment programs with desertification combating as a core, enhanced strength of development of ecological programs. The local governments at various levels have listed desertification combating into their important agendas.

## **5.2. THE OVERALL IMPLEMENTATION OF THE NATIONAL ECO-ENVIRONMENT DEVELOPMENT PLAN**

The Chinese Government formulated and implemented the National Eco-environment Development Plan in November 1998, which provided the basis for working out the long--term strategic objectives for desertification combating.

In accordance with the National Eco-environment Development Plan, the three-step strategic objectives and measures up to the year 2050 have been defined. In light of desertified land types and control directions, the desertified land areas will be divided into three types, i.e. integrated wind and sand disaster control area, key water and soil control area in Loess Plateau, rehabilitated and control area for degraded natural grasslands in north China. According to these types of areas, the desertification combating programs will be divided into different projects at various levels, i.e. the national key project, regional demonstrative project, local project, non-public and individual projects.

### 5.3. THE NATIONAL SURVEY AND MONITORING OF DESERTIFICATION

The monitoring of desertification has been officially listed into the national economic development plan. Starting from 1994, with over 10 years of development, a rather complete desertification monitoring organization and technical system has taken shape in China. A framework with macro monitoring, monitoring in sensitive areas and positioned monitoring has been formed and the national desertification monitoring system, one cycle in 5 years, been established. The desertification and sandification monitoring nationwide were respectively conducted in 1994, 1999 and 2004, the national and provincial maps and data base set up. In combination of systematic sorting out, comparison and analysis of scientific research results already achieved, the dynamic changes and trend of land desertification in China have been mastered, which has provided a reliable basis for formulating the National Desertification Combating Plan and the Action Plan . The Law on Desertification Combating implemented from January 1, 2002, has specific regulations on land desertification monitoring nationwide.

In addition, the forest resource monitoring system, the wetland resource monitoring system, the wild fauna and flora resource monitoring system, the energy and water balance monitoring system, a short-term climate forecasting system, the national arid monitoring, forewarning and impact evaluating professional system, the sandstorm forewarning and service system, the land use dynamic monitoring network, the water and soil conservation monitoring network, the agricultural environment monitoring network, the ecological positioned research station network, the environment monitoring network and the meteorological observation network have been established.

The Ministry of Agriculture has conducted monitoring work on land degradation, covering mainly monitoring of land physical and chemical status and production capacity degradation. In light of arable land types, 201 national monitoring posts have been set up covering 149 counties (cities and prefectures) of 30 provinces (autonomous regions and municipalities). The soil fertility and quality evaluation of arable land have been surveyed and the situation of arable land degradation in some regions of China has been clearly grasped. The above-mentioned systems and networks will jointly support monitoring work of land desertification in China and form the integrated desertification monitoring system with strong function and dense networks.

### 5.4. INTERNATIONAL COOPERATION AND EXCHANGES

Since the approval of the Convention, the Chinese Government has actively conducted international cooperation and exchanges with other countries including Japan, Republic of Korea, Germany, Italy and Australia and international organizations such as UNDP, International Agriculture and Development Fund, the World Bank, WFP, FAO and GEF. The step of combating desertification has been speeded up due to introduction of foreign fund, advanced technology and management model. The Chinese Government has, since 2002, signed and is implementing such cooperation plans as the Capacity Building of the Natural Forest Protection Program, GEF/P.R.China Partnership on Land Degradation in Dry-land Ecosystem, which has given great supports to development of the Desertification Combating Program. Starting from 2001, the Ministry of Science and Technology has provided supports, in its international plan, to international cooperation projects related to sandification control and desertification combating including "Sino-Australia Technical Demonstration Project for Sandification Control (2001-2003)", "Technical Research and Demonstration on Construction of Eco-environment and Rural Development (2002-2004)" and "Integrated System Evaluation and Research on Climate Change, Desertification, Water Resource and their Calamities in West Region of China (2003-2005)". China has also conducted some international cooperative projects in renewable energy, including the Project of Capacity Building of Renewable Energy with UNDP, REDP and CRESP with the World Bank. The international cooperation, introduction of theories and demonstration of methods including sustainable land management in arid areas, integrated eco-system management and participatory rural development have accumulated some experiences for formulation of the National Action Plan.

## 5.5. THE ANALYSIS OF PROBLEMS FACED BY DESERTIFICATION COMBATING IN CHINA

The result of the third desertification monitoring shows that the desertification in China has been primarily harnessed and the remarkable achievements have been made in the cause of desertification combating. However, some problems still exist:

Firstly, the desertified land is in large area and the task of desertification combating is very arduous. China has totally 263.6 million ha of desertified land, which is in large area, wide distribution and complicated types and needs to be harnessed and, therefore, the task of desertification combating is very heavy. The eco-system is very fragile, the artificial vegetations are unsteadily, and the possibility of accelerating desertification due to draught caused by climate changes should not be under estimated.

Secondly, the poverty that causes expansion of desertification is still prominent. The desertified land areas are mostly located in the poverty areas where ecology is very fragile, natural condition adverse, economic basis poor and the local people's livelihood difficult. The governments at various levels have faced a great pressure of developing regional economy and getting rid of poverty, resulting in prominent problem of poverty due to expansion of desertified land areas.

Thirdly, the fund for desertification combating is inadequate. China is still a developing country and its economic basis is very weak. In recent years, China has increased input into key ecological development programs. However, the funds for desertification combating are obviously inadequate through the seriousness of inadequate funds for desertification combating is alleviated.

Fourthly, the capacity building of desertification combating is weak.

Fifthly, the legal system for desertification combating is uncompleted. Some policies need to be improved. The technical extension system is weak, the monitoring and forewarning capability is limited and the talents in desertified land areas are insufficient.

### 6. THE FRAMEWORK OF THE NAP

Reviewing the over 50 years' achievements and experiences of combating desertification in China, in accordance with China's China Action Plan of Ecological Environment Improvement, China Agenda 21, the 11<sup>th</sup> Five-Year Plan of National Economic and Social Development, the National Master Plan of Combating Sandification, etc. combining relevant sectoral plans and absorbing the comments from the affected local areas, by applying the Integrated Ecosystem Management theories, targeting the main challenges in combating desertification in China, the Chinese government formulated the NAP (2005-2010).

Features of the NAP (2005-2010): the principle of the control is taking prevention as priority, the measures of the control is taking biological measures as priority, the orders of the combating activities is taking the easier areas as priority.

## 6.1 THE OBJECTIVES AND COUNTERMEASURES OF COMBATING DESERTIFICATION

### 6.1.1 THE STRATEGIC OBJECTIVES LISTED IN NAP IS AS FOLLOWS:

By the mid of Century 21, to set up a stable ecological protection system, a high efficient sand industry system and a perfect ecological and environment protection and natural resources utilization system, thus make all the controllable desertified land be primarily controlled, leading to concerted development of the population, natural resources and national economy. It is planed to be accomplished in three steps:

Immediate objective: from now until 2010, 22,000,000 ha desertified land will be controlled, 1,700,000 ha forest shelterbelt system will be established, 3,720,000 ha Aeolian desertification land will be enclosed for protection, primarily control an amount of desertified land which has relatively big impact and severe damages, prevent man-caused new desertification, contain the expansion trend of desertification, and make remarkable

improvement in key controlled areas.

Intermediate objective: within 10 years (2011-2020), 20,000,000 ha desertified land will be controlled, 1,200,000 ha forest shelterbelt system will be established, 11,000,000 ha sandy land will be enclosed for forest and grassland regeneration. The focus will be on improving the ecological shelterbelt systems, and forming the sand industry system with a certain scale, and remarkably improving the ecological environment in desertified areas.

Long-term objective: by 2050, 35,000,000 ha desertified land will be harnessed, 34,000,000 ha forest and grassland will be established, 1,800,000 ha forest shelterbelt system will be established, 19,000,000 ha sandy land will be enclosed for forest and grassland regeneration, most controllable desertified land is brought under control, focusing on constructing setting up a relatively complete ecological shelterbelt system and relatively developed sand industry system, the ecological environment in the desertified areas is greatly improved.

### 6.1.2 STRATEGIC MEASURES FOR DESERTIFICATION COMBATING IN CHINA

Based on the different period of formation, desertified lands in China could be categorized into two types: those formed in modern age and those formed in geologic age. The desertified lands formed in modern age are of priority status in China's desertification combating for their possibility or comparative easiness to be controlled. To tackle the problem of desertification radically, which is a complex social systems engineering, it requires integrated control, through using integrated ecosystem managing measures, taking into account local conditions and natural and social economic features of different regions. The measures include: Protecting the Existing Vegetation and Planting Forest and Grass, Rational Use of water Resources to Ensure the Use of Water for Ecological Purposes, Population Control in Desertified Areas and Resettlement, Strengthening Information Publicizing and Education, Increasing Public Awareness of Combating Desertification, Changing the Way of Production and Management in Animal Husbandry to Ease the Pressure on Pastureland, Readjusting the Energy Structure to Ease the Pressure on Vegetation, Readjusting the Industrial Structure and Carrying Out Protective Development, Optimizing the Land Use Structure, and Promoting Sustainable Development of Social Economy and Ecological Environment, and Implementing National Ecological Rehabilitation Engineering Programs.

### **6.2 PRIORITY AREAS OF THE NAP**

In accordance with the strategies of combating desertification in China, the priority areas of the NAP are as follows: Setting up a Programmatic System Focused on National Priority Programs, Establishing and Improving a Policy Support System, Establishing and Strengthening Legal System for Desertification Control, Strengthening Research and Development and Extension System for Combating Desertification Technologies, Intensifying Capacity Building in Desertified Area, Improving Monitoring and Early Warning System for Desertification and Drought, and Guiding and Facilitating the Establishment of A Sustainable Industry System in Desertified Area.

## 6.3 ZONING AND PROJECT LAYOUT FOR DESERTIFICATION COMBATING IN CHINA

### 6.3.1 ZONING

China is vast in territory, diverse in ecological systems and varied in social and economic situations. To follow the principle of adjusting measures according to local conditions and the strategic approach of classified implementation, desertified areas are categorized into 3 typical regions for integrated control in accordance with desertification type and the real situation in desertification control in China, namely the Region for Integrated Wind and Sand Disaster Control (I) (which is further divided into 4 sub-regions: I-1, Management Zone in the Edge of Desert and Oasis in Arid Areas; I-2, Semi-arid Sandy Land Controlling Zone; I-3, Sandy Land Management in Arid Sub-humid Region; and I-4, Sandified Land Management in High and Cold Areas of Plateau.), the Key Region for Soil and Water Erosion Control in Loess Plateau (II), and the Region for Rehabilitation and Control of Degraded Natural Grassland in North China (III), and relevant control measures will be taken according to the characters in different types of region.

### 6.3.2 PROJECT LAYOUT

Desertification combating programs could be categorized to three levels: national key programs funded by the central government, regional programs and pilot projects implemented under the organization of local governments, and those implemented by NGOs and individuals. National key programs mainly distributed in environmentally fragile areas, areas seriously affected by desertification and areas of ecological importance are key to tackling desertification in China. National key desertification combating programs mainly include the following:

1) The Program of Combating Desertification in the Wind/Sand Source Areas Affecting Beijing and Tianjin

The Program locates in Type I-2 and I-3 regions, involving 75 counties in Beijing, Tianjin, Hebei, Shanxi, and Inner Mongolia, with a total project area of 460,000 km<sup>2</sup>, including 102,000 km<sup>2</sup> Aeolian desertified lands.

2) The 4<sup>th</sup> Phase of the Three-North Shelterbelt Development Program

This program locates in Type I -1, I -2, I -3 and -4 regions, including 590 counties in 13 provinces in the northwest, north and northeast China, with a total land area of 27,560,000 ha.

3) The Programme of Converting Degraded Farmland to Forest and Shrub land

This program involves 6 type regions, among which the Aeolian and sandified areas in northwest and north China, the water and Aeolian area in northeast China, the soil and water eroded areas in Loess Plateau and the river headwater regions in Qinghai and Tibet Plateau

overlap with desertified areas (Type I-1, I-2, I-3, I-4 and II), including 14 provinces of Qinghai, Xinjiang, Gansu, Ningxia, Shaanxi, Inner Mongolia, Shanxi, Hebei, Beijing, Tianjin, Liaoning, Jilin, Heilongjiang and Henan.

### 4) National Integrated Demonstration Plot Programme of Combating Desertification

This program is mainly located in Type I areas. In light of the different natural, climatic and economic situation in different type of desertification zones, distribute a number of integrated demonstration zones in the different characteristic areas. Through mid and long term of planning, incorporate the regional, national and even international environmental targets into local development strategies and programmes, experiment a cross sectoral environmental and resource integrated management mechanism. The experiment is a comprehensive trial of three types of styles, i.e. technology model style, policy mechanism style and industrial development style.

### 5) Pastureland Conversion in the Natural Grassland in Western China

This program is located in Type 1-1, 1-2, 1-4 and III, including degraded and desertified grassland in 96 counties in Inner Mongolia, Xinjiang, Qinghai, Sichuan, Yunnan, Gansu, Ningxia and the grassland in the river headwater regions in the Qinghai and Tibet Plateau.

### 6) Grassland Ecological Protection and Development Program

The Program includes 5 type regions of arid, semi-arid steppe zones in north China. The high and cold pasture land and arid, semi-arid steppe zones in north China, overlapping with Type 3 and Type 1.1 regions of desertified areas, are the focus of this program, which includes 238 counties in Inner Mongolia, Shaanxi, Ningxia, Gansu, Xinjiang, north Shanxi, Bashang of Hebei, and 140 counties in Qinghai, Tibet, Sichuan, Yunnan and Gansu.

### 7) Natural Forest Protection Program (NFPP)

NFPP in the desertified areas mainly distributes in Type I and II region, including 13 provinces (Yunnan, Sichuan, Guizhou, Chongqing, Hubei, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, Inner Mongolia, Shanxi, Henan), with a total program area of 229,110,000 ha.

### 8) National Agriculture Integrated Development and Ecological Rehabilitation Project

The project focuses on the ecologically fragile areas in the Northwest China, Inner Mongolia, Bashang Area of Hebei Province and the old riverbed areas of the Yellow River. The activities include: forest and grassland integrated ecological rehabilitation. The project supports sandy land control, small watershed control, and grassland improvement and promote combating desertification. Meanwhile, SFA and MWR cooperate closely to support the water basin forest/shrub shelterbelt in the mid and lower reaches of the Yangtze River and the Huaihe River, greening of the Taihang Mountain, combating sandification, water and soil conservation in the mid and upper reaches of the Yangtze River and the Yellow River, rehabilitation of the sinking areas of the mineral sites, so as to accelerate combating desertification.

9) Key Soil and Water Conservation Program in the Yellow River Basin Area

This Program locates in Type II region, including 126 counties in 7 provinces of Shaanxi, Shanxi, Gansu, Inner Mongolia, etc.

10) Key Inland River Basin Area Soil and Water Conservation Program

This program locates in Type 2 region, involving Xinjiang, Inner Mongolia, Gansu, Qinghai, and includes the inland river basins in Inner Mongolia, the west part of the Yellow River, Zhungeer Basin, Tarim Basin and Qinghai.

11) Short-term Programme of Controlling the Tarim River Basin

Scope of the Programme: Tarim River Basin locates in Type I-1 region. It includes the trunk Stream of Tarim River, and the rivers, which has surface water connections with the trunk stream and has direct impacts on eco-environment of the trunk, incl. Aksu River, Yarkant River, Hotan River, Kaidu-Konqi River. Total area is 258,600 km<sup>2</sup>.

12) Integrated Control Programme of the Heihe River Basin

Scope of the Programme: Heihe River is the second inland river in Northwest China. It originates from the north side of the Qilian Mountain. It flows through Qinghai Province, Gansu Province and Inner Mongolia Autonomous Region. The total length of the trunk stream is 821 km. The south boundary of the basin is the Qilian Mountain; the north reaches to the boundary between China and Mongolia. The east of the basin is Shiyang River basin; the south is Sule River basin. The area of the basin is 143,000 km<sup>2</sup>, it locates in I-1 region.

## 7. FUNDING MECHANISM AND CAPACITY GUARANTEE FOR THE IMPLEMENTATION OF NATIONAL ACTION PLAN

### 7.1 APPROVED FINANCIAL MECHANISM

## 7.1.1 MEASURES TO FACILITATE LOCAL INSTITUTIONS TO ACCESS TO CURRENT FINANCE RESOURCE

The Chinese government has incorporated desertification combating into the national economy and social development plan, providing the undertaking of desertification combating and the comprehensive development of desertified land with special project funds, discount loans, special funds for comprehensive agricultural development, and funds for poverty alleviation and disaster relief. Besides the funds from the central government, it is demanded

that all provinces (autonomous regions, municipalities) should provide respective counterpart funding for the projects. The support for the implementation of the National Action Plan for desertification combating is to be sought from various channels including financial appropriation from the government, locally collected fund, offering job opportunities for poverty relief, and local people's input of labor.

As to the project investment, the Chinese government adopts the following policies: the funds from the central government should be the primary investment for national ecological programs and the secondary investment for local ecological programs; the funds for public welfare should be employed for free while those not for public welfare shall be used with compensation; the regions with better financial status should provide more funds than poorer regions, and; provincial funds for the comprehensive agricultural development projects should cover at least 70% of the total counterpart funds, otherwise the funds allocated from the central government for the next year will be reduced.

The Chinese government has begun to set up pilots for compensated use of forest for public welfare, in which the units and individuals managing the forest for public welfare are provided with financial subsidy. The fundamental solution of the financial source of forest for public welfare signifies the end of the history when the ecological value of forest for public welfare was used for free in China.

# 7.1.2 EXPLORING NEW PROPER WAYS TO COLLECT INTERNAL AND EXTERNAL FUNDS

To collect funds through various channels at all levels.

First, in order to protect the ecology and environment of West China, the central government has developed preferential taxation policies, including the Circular of the General Office of the State Council on the Transmission of the Suggestions Submitted by the Office of the Leading Group for Western Region Development of the State Council on Implementation of Some Policies on Western Region Development (No. 73 [2001], Guobanfa), and the Circular of the Ministry of Finance, the State Administration of Taxation, the General Administration of Customs on the Preferential Taxation Policies for Western Region Development (No. 202 [2001] Caishui). The Circulars stipulate that tax on the income from special agricultural products in protecting ecology and environment and converting farmland to forest in western regions shall be exempted for ten years ever since the income is generated.

Second, Article 19 of the Income Tax Law of the People's Republic of China for Enterprises with Foreign Investment and Foreign Enterprises and Article 66 of the Implementation Regulations of the Law stipulate that in order to facilitate the scientific management of the production of agriculture, forestry, animal husbandry and fishery, protect ecology and environment and strengthen the ability to fight against the natural diseases, the royalties of foreign enterprises received from the transferring of patents in China should be exempted

from withholding income tax after approval.

Third, banks are encouraged to increase loan input by arranging discount loan for sand control.

Fourth, different options are adopted to combat desertification, such as controlling, developing, and managing desertified land in an open manner and share-holding system, in order to attract various social investment and foreign investment and increase input to desertification combating. The following measures are applied: those who plant trees shall manage the woods and be benefited from which; converting farmland to forest; closing mountains for greening; individual contracting; and food for relief. The contracting period is generally 50-70 years, within which contract inheriting and transferring are both permitted. When the contract comes to end, the contractor can continue to sign a new contract based on the relevant laws and regulations. All economic entities are encouraged to invest in the desertification combating in China. The government provides grain subsidy to the households participating in land conversion. Food subsidy is provided by the standard of 2,250 kg per hectare of converted land per year for the regions along the upper reaches of the Yangtze River and 1,500 kg for the regions along the upper and middle reaches of the Yellow River. Cash subsidy is provided for a certain period of time by the standard of 300 yuan per hectare per year. The subsidy of seedlings for afforestation and grass growing is provided by the standard of 750 yuan per hectare of plantation established on converted land and barren hills and land suitable for afforestation.

Fifth, the auctions of the use right of barren hills, land, valley and sandy land are promoted actively.

Sixth, according to the law, that each male citizen between the age of 11-60 and female citizen between the age of 11-55 should plant 3-5 trees per year. All citizens should contribute to greening the motherland and desertification combating.

### 7.2 COLLECTING FUNDS FOR THE NATIONAL ACTION PLAN

Based on the situation of China, backbone project investment follows the general principle that the investment from the central government should take the primary share, the investment from the local governments plays an auxiliary part and the investment from foreign countries is to be won over as much as possible.

### 7.2.1 COLLECTING DOMESTIC FUNDS

The financial appropriation from the Chinese government used for desertification monitoring has risen from over US\$600,000 per year to over US\$1,200,000 per year. Since 2001, the central and local governments allocated about US\$6 billion to US\$8.5 billion per year for forestry ecological projects, US\$42 million per year for comprehensive agricultural

development for desertification combating, US\$200 million per year for control of soil and water erosion, US\$1.2-2.4 million per year for sand control along railways, US\$76 million per year for greening along highways, and US\$70 million per year as discount loan for sand control. Besides, a large amount of funds is used for grassland improvement, poverty alleviation, scientific research, and farmland reclamation in desertified areas. According to relevant regulations of the Chinese government, 3% of the investment for key forestry ecological projects and 10% of the investment for the comprehensive agricultural development should be used to support scientific researches.

The People's Bank of China supports the program of converting farmland to forest by improving the implementation of credit policies and assisting the Agricultural Development Bank to issue policy-based financial bonds. On July 2nd 2004, the People's Bank of China helped the Agricultural Development Bank successfully release the first issue of the financial bonds through the interbank lending market, with a total of 8 billion yuan at an interest rate of 3.46% for a duration of one year. Since 1998, commercial banks have continued their efforts in supporting desertification combating. The statistics from the Agriculture Bank shows that until the end of 2005, the balance of the special loans for forestry lent by the bank is 6.999 billion yuan and the balance of the special loans for desertification combating by issuing regulations for the management of forest right hypothecation and supporting the leading agricultural enterprises.

### 7.2.2 COLLECTING FOREIGN FUNDS

Since 2002, 23 international grant projects concerning desertification combating in China have been implemented with the support of the Ministry of Commerce, introducing a total fund of US\$140 million. The implementation of these projects plays an active role in the shelterbelt development, water resource conservation and desertification combating in China.

### 7.2.3 COOPERATION PARTNERS PROVIDING FINANCIAL SUPPORT

The contribution made by the members of the CCICCD has been mentioned above. The following countries and international organizations have provided financial support as well: Japan, Germany, Australia, the Netherlands, Republic of Korea, Israel, Belgium, Canada, the United Nations Development Program (UNDP), the United Nations Food and Agriculture Organization (FAO), the United Nations Environment Program (UNEP), the World Bank (WB) and the Asia Development Bank (ADB).

### 7.3 TECHNICAL COOPERATION

#### 7.3.1 MOBILIZATION OF TECHNICAL COOPERATION

Technical cooperation projects funded by the FAO, the UNDP/UNSO, the GTZ and the ADB have won technical supports from international experts during the project implementation.

# 7.3.2 CONFIRMATION OF THE DEMANDS OF PRIORITY IN TECHNICAL SUPPORT

As to the technical support, the following aspects are of primary necessity: the establishment of partnership, sandstorm control and desertification monitoring, local action, the formulation of national policies and supporting laws and regulations, the demonstration projects for desertification combating, the NGOs and social participation.

# 7.4 CAPACITY GUARANTEE FOR THE IMPLEMENTATION OF THE NATIONAL ACTION PLAN

#### 7.4.1 GUARANTEE FOR PROGRAMS IMPLEMENTATION

#### 1) Improving institutional guarantee

Desertification combating is a significant responsibility of local governments at all levels. Some management tools are operated for enhancing the leadership of governments at all levels including executing term-target responsibilities system, by which the performance of officials in desertification combating has been included as one of the assessment criteria for rewards and punishment to be conducted regularly on the one hand, and establishing and improving programme steering groups and operational agencies on the other hand for mobilizing joint efforts to promote the process of combating desertification from all concerned departments with different functions under close cooperation.

#### 2) Increasing public awareness

Publicity measures are to be effectively strengthened to increase the whole society's awareness of the seriousness and urgency of land desertification, and the duration and hardness of desertification combating task, and to mobilize all walks of life to voluntarily devote to desertification combating cause. Efforts are made to conduct education on desertification combating in different forms at all levels to help local farmers and herdsmen to grasp the fundamental knowledge and basic techniques of desertification combating.

#### 3) Intensifying supervision and management

The monitoring and supervision agencies of competent administrative departments related to desertification combating are being consolidated and integrated in order to establish and improve the monitoring system of resources status and the supervision system of resources utilization related to desertification combating. The system for publicizing monitoring and supervision information is to be set up to realize the transfer from supervising "combating efforts" to supervising "prevention measures" in desertification combating with the help of the public and the mass media.

#### 4) Ensuring financial input

Since desertification combating is a large-scale systematic ecological program, it is doubtless that large-scale national ecological programs should be taken as its propellant drive, and there is a need of long-term input from the public finance source. Desertification combating is to be incorporated into national infrastructure construction programs as an important content. The investment is to be increased and the scale of combating be enlarged. In the mean time, efforts are also made to collect fund from the society through various channels. Private funding is encouraged to be input in ecological development; foreign governmental and non-governmental resources are introduced.

#### 5) Enhancing program management

The Management Rules on Desertification Combating Program is formulated and implemented according to the management requirements of the national infrastructure construction projects. The project assignments are being carried out by relevant institutions at all levels allocated with respective responsibility. The policies and measures are practiced with specific construction standards and distinguished rewards and punishment. Endorsement of the projects is to be conducted strictly in line with the management requirements of the national infrastructure construction projects. The management, implementation and examination of the projects are based on the approved plan, design and criteria, adopting project corporate system, bidding system and supervision system. The technical standards of project implementation are to be strictly applied and the project implementation be managed and supervised throughout the whole span of the management is conducted accordingly. Reimbursement system is to be set up, and program implementing fund and special financial allocation be managed specifically. The use of fund is to be supervised through auditing and inspecting.

#### 6) Conducting international cooperation

Domestic and foreign resources are being fully made use of to introduce funding, technology and management experiences. The aim of fitting international cooperative projects into the overall domestic planning is to be highlighted to increase the scale of utilizing foreign capitals in desertification combating and the ecological and environmental industries in desertified areas,

explore bilateral and multilateral cooperation opportunities of different forms in broad fields via various channel. Lessons are to be drawn from foreign experiences and export-oriented industry in desertified areas developed, so as to achieve the wise use and improvement of resources in desertified areas. On the basis of mutual benefit, regional information sharing and exchange is enhanced. Equal attention has been paid to "bringing in" and "going out", taking especially the opportunity of implementing OP12 project of GEF, to actively conduct international technical exchange and training in various forms. The funding and technological supports provided by the UNCCD to developing countries are to be effectively used to enhance the development of desertification combating program. Regional and trans-regional cooperation is to be actively conducted to facilitate the implementation of the Convention in Asia and promote Asian-African cooperation. The international exchange and cooperation in relevant ecological conservation fields are to be enhanced, and the coordination strengthened between desertification combating and other global environmental issues, such as biodiversity and climate change.

#### 7.4.2 REGULARLY MONITORING DESERTIFICATION

According to the need of desertification combating, the Chinese government carries out national desertification monitoring regularly to grasp the dynamic status of desertification across the country timely and accurately and provide reference for the macro decision making related to desertification combating. In accordance with the practical need, the national monitoring is decided to be conducted every five years. In the desertification-sensitive areas or in some special areas, monitoring is to be carried out at any time as necessary. Positioning observatories are set up in the typical desertified areas to carry out long-term positioning monitoring over factors relevant to desertification.

The national desertification monitoring is categorized to three levels: macro national monitoring, typical monitoring and positioning monitoring in sensitive areas. The national desertification monitoring also follows up and evaluates the effectiveness of the implementation of the National Action Plan so as to improve the benefits of the NAP continuously.

#### 7.4.3 ESTABLISHING EFFECTIVE INCENTIVE MECHANISM

Favorable taxation policy has been developed as incentive for desertification combating: for the income of agricultural special products generated from implementing the Program on Converting Farmland to Forest and Grassland to protect the ecology and environment in the western region, the agricultural special product tax will be exempted for 10 years starting from the year when the income is generated. In 2004, a decision by the State Council was issued that all agriculture taxes, except those for tobacco, should be exempted. In 2004, a pilot project for exempting agriculture tax was carried out in Jilin Province and Heilongjiang Province, while in the other provinces,

agriculture tax rate was lowering down. Among these provinces, 6 provinces decided by themselves that agriculture tax be exempted, which include: Beijing, Tianjin, Shanghai, Zhejiang, Fujian and Tibet. In 2005, agriculture tax was further exempted and lowered, and animial husbandry tax was totally cancelled. In 2005, a further 20 provinces had decided to cancel agriculture tax. Thus, 28 provinces have cancelled agriculture tax. By 2006, all provinces have cancelled agriculture tax.

# 8.REVIEW ON BENCHMARK AND INDICATORS OF CCD IMPLEMENTATION MONITORING AND ASSESSMENT

China's work relevant to the development of benchmark and indicators in reviewing and comprehensive assessment on CCD implementation are reflected in two aspects: one is development of physical status indicator system reflecting the dynamic change of desertification processing in response of implementing the NAP, and to what extent the objectives of the NAP has been achieved in a designated time span, which has been brought into the phase of application. The other is the development of implementing indicator system for monitoring the progress of the efforts made by the central and local government at various levels during its implementation of the NAP to ensure actions to be done following the requirements of NAP.

## 8.1 NATIONAL MONITORING SYSTEM: ESTABLISHMENT OF THE STATUS INDICATORS—THE NATIONAL DESERTIFICATION MONITORING SYSTEM

#### 8.1.1 BACKGROUND

# 8.1.1.1 Great Importance Attached To The Establishment Of Benchmark And Indicators For Desertification Monitoring

The Government of China attaches great importance to the establishment of benchmark and indicators of desertification monitoring. As early as 1995, the Former State Commission of Science and Technology initiated the research project of "Indicators for Desertification Monitoring and Assessment System and Evaluation Method". The Commission, in 1996, listed a topic of "Indicators System for Sandy Desertification and Dynamic Evaluation" at the Ninth Five-year Plan (1996 -2000) key project of "Desertification Combating Technology Study and Demonstration". In 1998, the National Natural Science Foundation Committee approved and funded a research project of "Desertification Occurrence Mechanism and Optimistic Model for Combating Desertification" (1999 - 2002), which again includes the topic of "Indicators System of Desertification Classification and Expert System". In the meantime, on the basis of the outcomes of and cooperation with relevant institutions, China Desertification Monitoring Center drafted "The Technical rules of Desertification Monitoring" in 1994, which has been further revised in the following two rounds of monitoring.

### 8.1.1.2 Application of the Results of the National Desertification Monitoring

China has carried out three rounds of desertification monitoring respectively in 1994, 1999 and 2004 successively, which identified hotspots and bright spots, diagnosed the causes of symptoms and recommended appropriate practices for treatment. Those outcomes have been directly applied in national and local desertification combating programming as baseline information. National monitoring has provided important scientific evidence and backup for the national macro-decision making in prioritizing control areas and selecting countermeasures.

# 8.1.1.3 Incorporating Desertification Monitoring into the Nation's Economic and Social Development Plan

Since 1995, desertification monitoring has been budgeted into special line of the central government financial package. The Law on Combating Desertification came into force on January 1, 2002 substantially stipulated the legal status of national desertification monitoring. Different from other parties to UNCCD, desertification monitoring in China has enter into a productive phase for serving directly the nation's economic, social development and eco-environment construction, but not a scientific research contained within a small scope. In another words, in China, desertification monitoring is an economic productive activity, not a research project. The monitoring directly serves for the state economic development by providing basic information about desertification.

# **8.1.2 THE PRINCIPLES SET FOR THE BENCHMARK & INDICATORS OF MONITORING**

Besides the common principles recommended by UNCCD, in China identification of the benchmark & indicators of desertification monitoring obeys the principles that the indicators should be adapted to China's special condition, maneuverability and relatively persistent and stable to ensure the comparable of chronological data resulting from national monitoring.

## **8.1.3 NATIONAL ACTION**

#### 8.1.3.1 Operational mechanism for monitoring and assessment

Article 14 of The Law on Combating Desertification, which came into force in 2002, provides that "The Forestry Administration of the State Council shall organize other concerned agencies to undertake monitoring, statistics and analysis relating to the status of land desertification in the whole country, and regularly release the results." The Law is the legal basis for desertification monitoring. As early as 1994, China set up the National Monitoring Center, which is the technical backbone of the nation's desertification monitoring and assessment under direct leadership of the CCICCD secretariat. Besides, provincial monitoring centers has been set up in more than 30 provinces. A monitoring system with three levels, national, provincial, and county levels has been initially set up.

China also pays high attention to training the technicians who grasp benchmark and indicators. Training is provided to the technicians at different levels before each round of monitoring. The technicians who do not passing the exams cannot engage in monitoring. At every phase of monitoring, the technical leadership agencies at different levels will dispatch investigation teams to check the monitoring all across the country according to the quality guarantee rules, so as to ensure the actual implementation of the benchmark and indicators.

#### 8.1.3.2 Information Obtainig and Application of the Monitoring Outcomes

The results of the two rounds of monitoring have been formed into the national and provincial data bank and map bank. Users can consult detailed data on desertification-affected land in any geological or administrative area in China as long as they have abided the pertinent procedure. The administrative body of the central government or provincial governments officially releases the main results of national or provincial desertification monitoring, which domestic or foreign agencies or individuals can freely use. At present, the desertification monitoring results has been widely applied in the local and central government programming. The national and provincial data bank and map bank have directly provided foundations for macro decision-making for China's combating desertification and formulation of the national and local action plans, which have achieved excellent social and economic benefits.

### 8.2 Indicators System to Monitor UNCCD Implementation

#### 8.2.1 BACKGROUND

Benchmark and indicators is an effective tool for nation-wide or regional desertification monitoring, providing a channel for description, monitoring and assessment of desertification. According to the process initiated by the UNCCD CST and relevant international, and sub-regional regional research institutes, in 1997, the UNDP assisted project of CPR/96/111 – Capacity Building for the Implementation of the UNCCD (1997 -2000) also includes the work of desertification monitoring and assessment. An expert group composed of 8 persons carried out field research and held workshops to study the construction of China's Monitoring and Assessment system for combating desertification. Some of the recommended indictors have been used for monitoring national actions with further modification of following relevant activities.

## 8.2.2 PRINCIPLES TO BE FORMED

Measurability: indicators can be measured for a certain objective or goal. Therefore, no matter it is for qualitative or quantities indicators, they should be easily measured and understood through valid information.

Relevance: indicators should effectively reflect a certain issue, and can reflect its change.

Reliability: the data or information related to indicators should be reliable and can be used

and can be easily updated. Reasonable analyzing method and relevant knowledge should be applied to identify monitoring and assessment indicators.

Reality: the data or information needed for collecting, analyzing and identifying indicators should meet the requirement of economical, technological feasible and social satisfaction, etc. therefore, the indicators system should involve the consideration of cost and benefit.

Practicability: indicators should be simple and easy to understand. And they should directly and effectively reflect or well express an issue. They should be closely linked with the objectives or goals of the society. So the expression of indicators should tally the objectives or goals of the society.

### 8.2.3 NATION'S ACTION

### 8.2.3.1 OPERATION MECHANISM FOR MONITORING AND ASSESSMENT

Under authorization of concerned CCICCD member ministries, some independent institutions bearing certificate will carry out monitoring and assessment on the relevance, effectiveness, efficiency and ecological impacts of National key programs in line with the National Desertification monitoring timely. Each member ministries will be provided an assessment report by the independent institutions. The report endorsed by each ministerial members will be passed to the secretariat of CCICCD to formulate a synthesis, National Report, according to the requirement of UNCCD.

China is under preparation of a set of suitable rules and regulations to be attached to The Law On Combating Desertification with detail indicators to regulate inappropriate practices conducted by local governments, companies and individuals and monitor if the action of combating desertification required by law has been done.

# 8.2.3.2 BUILDING AND DEVELOPING NATIONAL MONITORING AND OBSERVING CAPACITY

Based on the documents of UNCCD regarding bench mark and indicators, the outcome of UNDP project 96/111, national scientific researches, and existing relevant indicators, China is considering establish a set of appropriate tools and indicator framework to be accepted by all relevant sectors fro national action monitoring. The indicators and assessment tools at community level are under experiment by joint efforts of GEF-China Land degradation project and LADA.

### 8.2.3.3 THE NATIONAL DESERTIFICATION INFORMATION NETWORK

National Desertification information Network (DIN) (www.desertifiaction.gov.cn) was launched in 1997 with a 3-year support by UNDP project 96/111, present managed by the Asian TPN1 task force of China Academy of Forestry under CCICCD secretariat.

Network reflects National actions and its effect, how extent the goals of the NAP and UNCCD has been achieved on the basis of information from National desertification monitoring, implementation reports at central and local levels, information of national policy making and programming from focal points of CCICCD members, experts group and relevant institutions and official mess media. Establishment of the network aims:

To collect, coordinate and processing the information from various fields and various levels and produce knowledge which can comprehensively reflect the national and local situation on desertification and combating desertification. Meanwhile it will continuously update and renew the data on DIN.

To promote the information exchange among desertification research, training, monitoring and preventing agencies and individuals, to form a wider cooperation among agencies and individuals form various fields, so as to enhance the development and popularization of desertification combating technologies.

To establish a integrated monitoring & assessment system through interlinking websites of CCICCD members and relevant research institutions and carry out synthesized analysis on the data from network and assist the government and its decision-making circle to strengthen its ability of decision-making and the national and local ability of combating desertification. At same time, increase the visibility of desertification.

For the afore-mentioned purposes, the DIN was designed with the following functions: 1) data exchange; 2) information sharing; 3) information dissemination; 4) information management; 5) synergetic operation.

DIN has internal and external two parts, of which the internal part serves mainly for the pertinent national agencies, some key prefectures (counties) and CCICCD secretariat and the external part opens to public and access to all interested agencies and individuals. This will help make contributions to the world's combating desertification.

## 8.2.3.4 MAIN AGENCY'S OBTAINING OF THE EXISTING INFORMATION

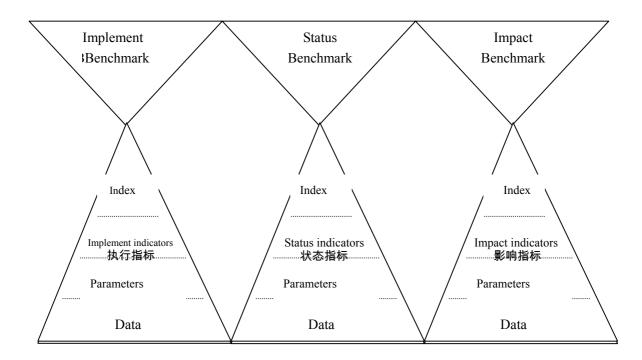
The 'China Desertification Information Network' made by the China Research and Development Center on Combating Desertification and shares task force with the 'Asia Desertification Monitoring and Assessment Network' (TPN1), DIN and TPN1 were separately launched in July 1997 and March 1999. Now they are operating in gear.

# **8.3 SUMMARY OF RESULTS ACQUIRED AT THE PRESENT PHASE -- CHINA'S FRAMEWORK OF BENCHMARK AND INDICATORS SYSTEM**

China established benchmark and indicators system is mainly on the basis of UNCCD recommended framework including three categories: implement Indicators, status indicators and impact indicators. Implement Indicators are used for monitoring and assessing the implementation and progress of UNCCD at national level; status indicators are used for monitoring processing of desertification; impact Indicators are used for assessing overall impact of desertification on resources, society and economy and other factors. The three kinds of indicators can be used in various time and space scale. One indicator can be got out via three kinds of benchmark and indicators and several parameters involved, so as to facilitate global comparison. The levels and interrelations of the three are as the chart.

At present, the establishment and application of the benchmark and indicators for desertification monitoring and assessment is still at the initial stage and it will take several years to provide necessary information to precisely assess the situation of desertification and combating desertification as well as to make a decision to raise the level of desertification combating in other countries. Meanwhile, it has to be recognized that the establishment of benchmark and indicators is a step-by-step process and they need to be adjusted and collated according to the increase of information and experience, enhancement of capacity, advancement of technologies, social demand and changes of priorities.

The Framework of General Benchmark and Indicators System



#### 8.3.1 IMPLEMT INDICATORS

The implement indicators is inclusive of that whether the country parties' NAP has

included desertification monitoring system, setting up coordination body, encouraging civil society's participation, operational mechanism or not etc according to the requirements of the Convention. The indicators to implement the UNCCD are composed of 8 indicators and 27 parameters, which have been partially used in National Actions' implementing.

#### 8.3.2 STATUS INDICATORS

The status indicators are used to describe and interpret the status and trend of desertification. For instance, the work through remote sensing and mapping means will produce the information on the dynamic status of desertification occurrence and expansion, and predict and forecast the future trend of desertification so as to provide basic data for establishing early warning system on desertification combating. The status indicators comprise 5 indicators and 27 parameters, which have been applied in the national monitoring system.

### 8.3.2 IMPACT INDICATORS

Impact indicators are intended to reflect that what impact of desertification on and positive or negative effects of the desertification combating actions vis-à-vis social and economic development will produce and what feedback it will produce. Because what the influential indicators will reflect is a process of the social and economic development of the whole society, governmental statistics departments will undertake the relevant information collection, analysis and announcement. Therefore, all social and economic influential indicators should be found out in the information bulletin announced by the State and other relevant information can be made available from various competent departments. The impact indicators are composed of 13 indicators and 37 parameters, which are still under research and experimental stage.

#### 8.3.3 REPORT PERIODICALLY

The aforesaid assessment and periodical implementation report are the most detailed assessment for institutional and policy capability.

### 8.3.4 ASSESSMENT AND FEEDBACK TO PROGRAMME MANAGEMENT

The mechanism for assessment and evaluation of the National Key programs has started experimental phase, independent assessment agencies conducts the role of assessment on implementation process and effects of the projects under framework of NAP. The assessment report and evaluation will be submitted to the government for endorsement and the final results will be released to the public. Adjustment of project size, budget and relevant policies will feed back from the responsible governmental agencies accordingly.

# China National Report on Implementation of UNCCD<sup>1</sup> May 30, 2006

#### Abstract

China is one of the countries in the world suffering from severe desertification over a vast area, wide distribution and complex. The area prone to desertification is 3.317 million km<sup>2</sup> accounting for 34.6% of the total territory. According to the findings of National desertification and sandification monitoring operation in 2004, by the end of 2004, the area of desertification is  $2.6362 \text{ million km}^2$ , taking up 27.46% of the total territory and 79.48% of the area prone to desertification, which is higher than the world's average of 69%. The desertified land in China is mostly distributed in 498 counties in 18 provinces, including Xinjiang, Inner Mongolia, Tibet, Qinghai, Gansu, Hebei, Ningxia, Shaanxi, Shanxi, etc. The area of desertified land as a result of wind erosion totals 1.839 million km<sup>2</sup>, taking up 19.16% and 69.77% of the total territory and desertified land respectively and it is distributed in 13 provinces in northwest, north and northeast China. It thus forms a sandified zone, which is 4,500 km long east-to-west and 600 km wide north-to-south and stretches from Tarim Basin in the west to the Songnen Plain in the east. The area of desertified land as a result of water erosion totals 259,300 km<sup>2</sup>, distributed mostly in the Loess Plateau in the upper and middle reaches of the Yellow River. The area of desertified land as a result of freezing and thawing totals 363,600 km<sup>2</sup>, distributed mostly in the alpine zone of the Qinghai-Tibet Plateau. The area of salinized desertification land totals 173,700 km<sup>2</sup>, distributed mainly in the oasis around Tarim Basin, the alluvial plain at the north foot of the Tianshan Mountain, Hetao Plain and Huabei Plain. In addition, another 104,900 km<sup>2</sup> of rocky desertification affected land is mainly distributed in 3 Provinces including Yunnan, Guizhou and Guangxi.

<sup>&</sup>lt;sup>1</sup> The Chinese version of this report and the abstract is official and dominates, this English version is for reference use only.

The Government of China has always attached great importance to combating desertification and has been paying more attention to it. Especially since the start of the 21<sup>st</sup> century, the Government has incorporated ecological improvement into the overall strategy of the national economic and social development, with combating desertification as main task. Consequently, several significant actions have been taken, including promulgation and execution of the Law on Combating Desertification, and implementation of a series of integrated ecological improvement programs. The pace of prevention and control of desertification is speeding up, with historic breakthroughs being made. The tendency for desertification has been reversed from an average annual expansion of 10,400 km<sup>2</sup> in late 20<sup>th</sup> century to an average annual contraction of 7,585 km<sup>2</sup> during 1999-2004.

However, because of the fragile ecological condition, poor stability of man-made plant community, poverty in the affected areas, existence of natural and social factors resulting in desertification, the possibility of climatic variation induced droughts, the elementary feature of the current achievements, the challenges ahead are still huge and the task still arduous.

The program (2005-2010) has been worked out based on the present situation and the achievements and experiences gained in combating desertification over the past 5 decades, in accordance with the State Eco-environment Improvement Program. The program integrates programs from relevant sectors, absorbing comments and suggestions from grass-root levels in the affected areas, in line with the principle of integrated ecosystem management. It has a focus on the major problems challenging desertification combating in China.

The Program maps out the guiding thought and management principles for combating desertification and defines a three-step strategic objective and measures up to 2050. The program works out the zones and categories for combating desertification in

China in accordance with the types of desertification and the practicalities of combating desertification. It divides the desertified land into 3 zones, including a zone of integrated sandification prevention and control, a zone of serious soil and water erosion on the Loess Plateau and a zone of degraded natural grassland rehabilitation in the north. The program categorizes the project to combat desertification into 3 levels, i.e. key national projects, regional demonstration projects and local, non-governmental and private projects. The program defines a whole society participating desertification combating system, with the key national projects as core; establishes and improves a policy mechanism for combating desertification; develops a system for combating desertification on a sound legal basis; intensifies a scientific support framework for combating desertification; strengthens and builds the capacity for combating desertification; establishes and improves a monitoring and early warning system and a drought-relief system; introduces and promotes the desertified zones to establish such immediate priority programs as sustainable industrial system; and develops supporting measures accordingly.

## **Related basic information as follows:**

1. Pocal point institution			
Name of focal point	State forestry Administration		
Address including e-mail address	Address: 18 Hepingli Dongjie. Beijing, 100714 E-Mail: <u>cciccd@forestry.gov.cn</u>		
Country-specific websites relating to desertification	<ol> <li>http://www.desertification.gov.cn</li> <li>http://www.forestry.gov.cn/</li> <li>http://www.gefop12.cn/</li> <li>http://www.gefchina.org.cn</li> </ol>		

#### 1. Focal point institution

#### 2. Status of NAP

Date of validation	Body/institution/Government level which	
	validated the NAP	
NAP reviews	Date	
NAP has been integrated into poverty reduction	Yes in 1996	
strategy (PRSP)		
NAP has been integrated into the national	Yes in 1996	

development strategy	
NAP implementation has started with or	Yes
without the conclusions of partnership	
agreements	
Expected NAP validation	
Final draft of a NAP exists	Yes
Formulation of a draft NAP is under way	Revised NAP available
Basic guidelines for a NAP have been	Yes
established	
Process has only been initiated	
Process has not yet started	No

# 3. Member of SRAP/RAP

Name of sub regional and/or regional	Involvement specifically in topics such as water
cooperation framework	harvesting techniques, soil erosion etc.
1.Specific network of desertification	Teals menager
monitoring and assessment in Asia (TPN1)	Task manager
2.TPN2	Country member
3.TPN3	Country member
4.TPN4	Country member
5.TPN5	Country member
6.TPN6	Country member

# 4.Composition of the NCB

Name of institution	Government ( $$ )	$NGO(\sqrt{)}$	Male/female
1.Ministry of Foreign Affairs	$\checkmark$		Male
2.National Development and			Male
Reform Commission			
3.Ministry of Commerce			Male
4.Ministry of Science and			Female
Technology			
5. Ministry of Civil Affairs			Male
6.Ministry of Finance			Male
7.Ministry of Land and		Female	
Resources			
8. Ministry of Water Resources			Male
9.Ministry of Agriculture			Male
10.Ministry of Railways			Male
11.Ministry of Communications			Male
12.State Forestry Administration			Male
13. State Administration of			Male
Taxation			

14.State Environmental	$\checkmark$	Male
Protection Administration		
15.China Meteorological		Female
Administration		
16.People' Bank of China		Male
17. State Rural Development		Male
Office		
18. The State Council Leading		Male
Group Office of Poverty		
Alleviation and Development		
19.Chinese Academy of	$\checkmark$	Female
Sciences		

## 5. Total number of NGOs accredited to the process:

Has an NGO National Coordinating Committee	Yes
on desertification been established; if yes, how	
many NGOs or civil society organizations	
participate in it?	

## 6.Total number of acts and laws passed relating to the UNCCD: 20\_

# Name up to five most relevant acts and laws and/or regulations

Title of the law	Issued time
1. Law of the People's Republic of China on	2001-8-31
Desert Prevention and Transformation	
2. Law of the People's Republic of China on	1991-06-29
Water and Soil Conservation	
3. Environmental Protection Law of the	1989-12-26
People's Republic of China	
4.The Law of Land Administration of the	1986-06-25
people's Republic of China	
5. Water Law of the People's Republic of China	1988-01-21

## 7. The consultative process

## Number of partnership agreements that have been concluded and/or are being initiated

## within the framework of the UNCCD

Official title of partnership	Donor(s),international organization(s),and/or agencies of the UN	Date of(expected) conclusion
1.Capacity Building for the	UNDP	1996

Implementation of the UN Convention to Combat Desertification		
PRC-GEF Partnership on Land Degradation in Dryland Ecosystems	The Global Environment Facility (GEF),	2000

# List of consultative meetings on UNCCD implementation

Name of consultative meeting	Date/year	Donor countries involved	International organizations or agencies of the UN system involved
Coordination Meeting on Partnership Building and Resource Mobilization for UNCCD Implementation in China, Particularly in the Western Region	2001	Germany, Japan	UNEP, UNDP, GM, GEF, IFAD, ADB, WB,WMO,

The countries as the leading role: <u>ADB, UNDP</u>\_

# 8.Name up to 10 projects currently under implementation, which are directly or indirectly to

## the UNCCD

	Name of project	Project implemented within the framework of the AP/SRAP/RAP?(Yes/No)	Project implemented within the framework of	Timeframe	Partners	Overall budget (10,000 dollar)
1	Forest resources Management project in Qinghai Province	yes	National action	2002-2007	Australia	805
2	Protective forest Construction Project in the middle reaches of the Yellow River in Shanxi Province	yes	National action program	2005-2006	Japan	335
3	Tree Planting and Afforestation Project in five Provinces of Western China	yes	National action program	2002-2007	Korea	500
4	Demonstration Project of Forest	yes		2005-2008	Korea	100

	Comprehensive Management and in						
	Beijing District						
_	Sustainable Forest Management of		National	action	2004-2008	Germany	600
5	Western China	yes	program				
(	Soil and Water Conservation of		National	action	1997-2007		(00
6	Miyun Reservoir in Beijing	yes	program		1997-2007	Germany	600
7	The Second Phase of Implementation on Forest Protection and the Community Development of Biodiversity	yes	National program	action	2004-2007	Netherla nds	168
8	China-UE Collaborative Project of Natural Forest	yes	National program	action	2002-2006	UE	2028
9	The Project on the watershed Management in China	yes	National program	action	2004-2010	England	1309
1 0	China-Switzerland Capacity building of project on Environment Management in Bijie District	no			2005-2008	Sweden	134

#### **UNCCD Country Profile**

(People's Republic of China)

#### This UNCCD country profile has been provided by:

The Secretariat of China National Committee for the Implementation of the United Nations

Convention to Combat Desertification (CCICCD)

#### Name of focal point institution/ministry/office:

The Secretariat of China National Committee for the Implementation of the United Nations Convention to Combat Desertification (CCICCD)/ State forestry administration, P. R. China/China National Center of Combating Desertification

Date : April 2006

Mailing address: 18 Hepingli Dongjie, Beijing, 100714

Telephone: +86-10-84238831Telefax: +86-10-84238848E-mail: cciccd@forestry.gov.cn

Biophysical indicators relating to desertification and drought

**1. Climate** Map to be attached

1.1. Index of aridity

1.2. Normal rainfall

Table 1 and Map 1

Map 2

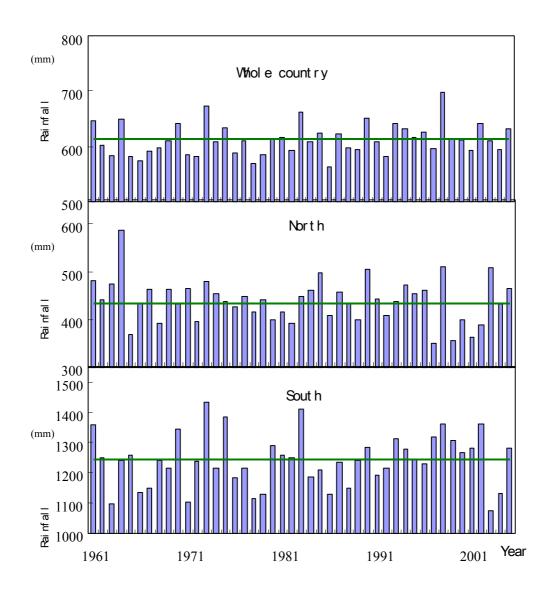
Table 1. Index of Aridity (the ratio of annual precipitation to potential evaportranspiration)

Types of Climate	Index of Aridity	Area $(10^3 \text{ km}^2)$
1.arid	0.05~0.20	1,427
2. semi-arid	0.20~0.50	1,139
3.dry sub-humid	0.50~0.65	751

(Source: China Country Paper to Combat Desertification, China Forestry Publishing House, 1997)

1.3. Rainfall standard deviation

See Figure 1



## 2. Vegetation and land use

2.1. NDVI (normalized difference vegetation index)

May-October, 2005, China

2.2. Vegetation cover (% of total land area)

Ref.	Map	3:	Mean	NDVI	Map,.
	-				-

18.21

2.3. Land use (percent of total land)

Land use		1990-1999	2000-2005
Arable crop land		N/A	13.93%
	Irrigated	N/A	39.8% <sup>1</sup>
	Rain fed	N/A	60.2% <sup>2</sup>

Pasture	N/A	27.37%
Forest and woodland	N/A	42.70%
Other land	N/A	16.00%

2.4. Surface albedo	N/A
3. Water resources	
3.1. Fresh water availability (million m <sup>3</sup> )	<u>1100000</u>
3.2. Fresh water resources per capita $(m^3)$	2098
3.3. Agricultural water use (million m <sup>3</sup> )	351414
3.4. Industrial water use (million $m^3$ )	<u>144470</u>
4. Energy	
Consumption	
4.1. Energy use per capita (kg oil equivalent)	959.52 (National Bureau of
Statistics, 2002)	
4.2. Agricultural energy use per hectare (millions of BTU)	N/A
Production	
4.3. Energy from renewables excluding combustible	
renewables and waste (% of total supply)	N/A
Renewables - Consumption by sector	
4.4. Industry (% of total renewable consumption)	N/A
4.5. Residential (% of total renewable consumption)	N/A
4.6. Agriculture (% of total renewable consumption)	N/A

5. Types of land degradation

Type of degradation	1990-1999	2000-2005		
	million ha	Percent of total area	million ha	Percent of total area
Wind-erosion desertification	187.31	19.51%	183.94	19.16%
Water-erosion desertification	26.48	2.76%	25.93	2.70%
Salinization	17.29	1.80%	17.38	1.81%
Freezing-thawing desertification	36.40	3.79%	36.37	3.79%

## 6. Rehabilitation

Lands under rehabilitation	1990-1999	2000-2005
Rehabilitation of degraded crop land (km <sup>2</sup> )	N/A	N/A
Rehabilitation of degraded rangeland (km <sup>2</sup> )	N/A	N/A
Rehabilitation of degraded forest (km <sup>2</sup> )	N/A	N/A

Socio-economic indicators related to desertification and drought

# 7. People and economy

7.1. Population (total)	<u>1299880000</u>
·Population: urban (percent of total)	41.76%
·Population: rural (percent of total)	58.24%
7.2. Population growth (annual %)	0.587%
7.3. Life expectancy (years)	
7.4. Infant mortality rate (per 1,000 live births)	25.5‰
7.5. GDP (current US\$)	1696.07 billion (RMB)
7.6. GNI per capita (current US\$)	1692.45 billion (RMB)
7.7. National poverty rate (% of population)	1
7.8. Crop production (metric tons)	1342930000
7.9. Livestock production (metric tons)	77000000
8. Human development	
8.1. Primary education completion rate (% age group)	<u>52.07%</u>
8.2. Number of women in rural development (total number)	<u>633810000</u>
8.3. Unemployment (% of total)	4.2%
8.4. Youth unemployment rate (age 15-24)	N/A
8.5. Illiteracy total (% age 15 and above)	10.32%
8.6. Illiteracy male (% age 15 and above)	5.49%
8.7. Illiteracy female (% age 15 and above)	14.86%

9. Science and technology

<sup>&</sup>lt;sup>1</sup> Rural Poverty Population as in 2005: 23, 650 million

9.1. Number of scientific institutions engaged in

Desertification-related work (total number)

around 30

#### 10. Please specify the data sources

#### Ref.

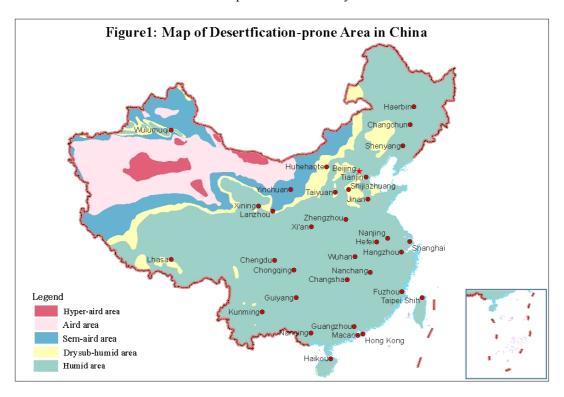
China Statistical Yearbook, 2005

China Statistical Gazette of desertification and desertization, 2005

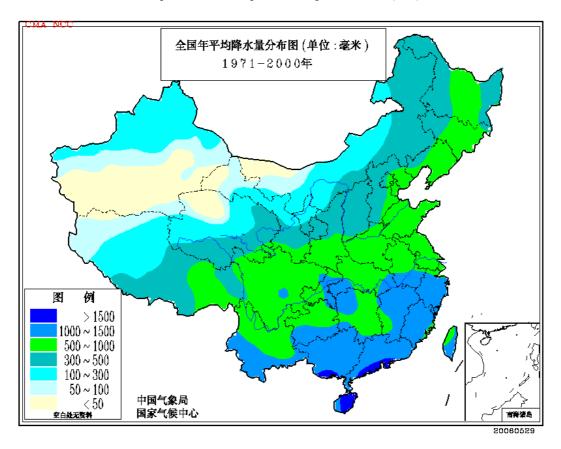
China Statistical Summary of the sanitation, 2005

The World Bank 2005 the Little Green Data Book

China Climatic Zoning



Map 1. Index of Aridity



Map 2. China Precipitation Map 1971-2000 (mm)

Map 3. Mean NDVI, May-October, 2005, China

