

**CHINA NATIONAL REPORT
ON THE IMPLEMENTATION OF UNITED NATIONS CONVENTION
TO COMBAT DESERTIFICATION AND
NATIONAL ACTION PROGRAMME TO COMBAT
DESERTIFICATION**

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United Nations Convention to Combat Desertification
(CCICCD)**

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CHAPTER ONE: PREFACE

China is one of the most severely affected countries suffering from desertification. The total area of desertification affected land in China is approximately 2,622,300 sq. km., occupying 27.32% of the total land territory, or 79.1% of the total areas of arid, semi-arid and dry sub-humid areas (average global percentage is 69%).

Desertification affected lands are mainly distributed in the Northwest China, North China and the Northeast China. Along with the acceleration of drought, increasing population pressure and limited progress of rehabilitation, desertification process is spreading with an annual growth of 2,460 sq. km. As consequences, desertification worsens ecological environment, accelerates further poverty and invades the survival space of Chinese people. In some regions, under the impact of desertification, people's living environment is being severely threatened and villagers have to emigrate from their native places to other regions as environmental refugees. Desertification brings about huge losses to national economic and social development and it is hidden trouble and first danger to Chinese people.

China is one of the countries parties has ratified the UNCCD and China has committed to the international community that the implementation of the UNCCD is the must obligation of China. During the past years, China Government, in collaboration with international communities, has made great contribution to the inter-national, regional and inter-regional cooperation. China does not only attach great importance to desertification rehabilitation in China and to the implementation of her NAP, but also pay serious attentions to the cooperation between countries of Parties, to the implementation of the UNCCD and to the global efforts to combat desertification.

CHAPTER TWO: DESERTIFICATION HAZARDS AND ITS CONTROL

Desertification in China is serious. It is estimated that there are 400 million populations is being threatened by desertification and the annual direct economic loss caused by desertification is approximately 6.5 billion US Dollars. Desertification brings about severe impacts and destruction to communication facilities, water conservancy projects, mining fields, defence installations and threats to the development of industries and negative effect of the environment in cities. Desertification causes further poverty in rural areas. One sixth less developed counties and one-fourth poor villagers and farmers in China are mainly living in the affected land areas, which is the most difficult region needs poverty alleviation. It is estimated that the per capita output value in the affected areas in rural regions is only one third of the average in China.

The patterns of desertification affected land are complex with high variation of causes and formation, including: the desertification affected lands caused by wind erosion, occupying 1,607,400 sq. km.; the desertification affected lands caused by water erosion, covering 204,600 sq. km.; the desertification affected lands caused by freezing and melting processes at cold plateau, representing 363,300 sq. km.; the desertification affected lands caused by salinization/alkalization, forming 233,200 sq. km.; and the affected lands caused by other factors is 213,800 sq. km.

Both physical element and human factors are the main causes of desertification. Physical geographic condition and climate variation is the important element to cause desertification, but the developmental process is slower. Human factors activate and accelerate the processes of desertification as the primary dynamics to cause desertification.

The rapid growth of population and the increase of population pressure accelerates the irrational utilization of land resource and brings about unceasingly spread and enlargement of desertification affected lands. According to data of national survey of desertification, average population density in the arid, semi-arid and dry sub-humid areas in 12 provinces in Northern China is approximately 24 person/sq. km. and in some regions even as high as 30 person/sq. km. Such population density exceeds the limitation of carrying capacity of the mentioned regions. Over-grazing, deforestation, undue collection of fuel wood, medicine herbs and native fungus, mis-management of water resources and plunder-like cultivation and reclamation of steppe and grazing lands are the artificial causes of occurrence and development of desertification.

Land desertification is developing with a rapid process of spreading and accelerating. The annual invading speed of desertification process in 1950s was 1560 sq. km.; desertification was expanded in an annual rate of 2100 sq. km. per year in the 1970s, and it was further developed in an annual rate of 2460 sq. km. since the 1980s. This invasion is equal to a loss of the land area of a mid-sized county every year in China.

Most of desertification affected lands are the places of origin of the Yellow River, the Yangtze River and other rivers in China, and these regions are characterized by densely populated with minority ethnic people (one third of the total population of minority ethnic people of China). However, expansion of desertification threatens people's survival condition and living environment. River courses were dried up; wind disasters, dust devil and sandstorms were frequent. All these negative impacts brought about crucial hazards to people. In 1977, the Yellow River was dried up 13 times in a total duration of 226 days and the length was more than 700 km, occupying 80% of the total length of the lower reach of the River. The Yellow River faces the danger of being a seasonal river and it is possible that the River will become into a continental river.

Sand storms and dust devils are frequent in the Northwest China with rapid increase of intensity and

scope. From the third century BC to 1949, it is recorded that there were 70 times of sandstorm and dust devil took place with an average of occurrence in 31 years. During the last 50 years since the early 1950s, it was recorded that severe sand storm and dust devil in 1960s was 8 times, 13 times in 1970s, 14 times in 1980s and 23 times in 1990s. There was sandstorm in all most every year. On April 15th and 16th 1999, a very heavy sandstorm has hurt the half of the land territory of China, and even the eastern part of China. This sandstorm, along with the mud-rain, has closed airports and has discontinued the traffic and communication. This disaster of the sandstorm was historically exceptionally serious impact in China.

On April 4th 1999, a serious sandstorm swept across the most provinces in North China and dust storm attacked Beijing and other cities again. Going in the same way, Beijing City will be buried by drifting sands, not just be impacted by sandstorm and dust devil, after decades. It is reported that nearest sand sheets around Beijing are only 70 km away from the downtown. From early March to early April 2000, there were 7 times of serious sandstorm and dust devil took place in North of China and the west part of the Northeast China and the Northwest China. As severe consequences of the sandstorm and dust storm, visibility was weak during the daytime in Beijing and Tianjin. Transportation and communication were threatened by dust disaster and Beijing international Airport was closed with a huge economic loss. The sandstorm brought about another alarm bell to both the Chinese Government and people.

Desertification threatens directly people's productive and living environment. With the impact of desertification, river courses were deposited with sand accumulation, the water areas of lake and river were reduced and serious soil and water loss occurred. It is estimated that there are 1.6 billion tons of silt and sand were annually transported into the Yellow River, in which 1.2 billion tons is from the desertification affected land areas. It is predicted that the Qinghai Lake is annually declined by 12 cm and the annual reduction of the area of the lake is 10.12 sq. km. Newly formed sand sheets and megadunes were widely distributed around the lake. Arable lands and steppe and grazing lands are under the impacts of degradation and their acreage is being narrowed. Since the early 1950s, totally 670,000 ha of arable lands and 2.35 million ha of rangeland and steppe areas were invaded by shifting sands and sand encroachment. Because of the dense population in the arid and semi-arid areas of Ningxia, Shaanxi and Shanxi, the estimated rate of rangeland degradation is 90-97%. The population density is low in the arid, semi-arid and dry sub-humid areas in Xinjiang, Inner Mongolia and Qinghai, and the rate of rangeland degradation is 80-87%.

The Chinese people have a long history in fighting with desertification; in particular since the beginning of 1950's from when the Chinese Government has been attaching great importance to desertification rehabilitation. Nation-wide survey of desert and investigation of natural resources have been successively organized. In 1959, the National Desert Survey has been sponsored under the leadership of the Chinese Academy of Sciences. The National Conference on Desert Reclamation was held in Beijing in 1958. In 1991 and 1993, two national conferences on desertification rehabilitation and ecology restoration have been organized in Lanzhou, Gansu and Chifeng, Inner Mongolia respectively under the

leadership of the State Council. Combating Desertification has been incorporated into the State Economic and Social Development Plan. Up to the end of 1998, seven million ha of the affected lands have been rehabilitated through implementation of the national project to combat desertification, in which, two millions are artificial plantation, 2.5 millions of the fenced areas for establishing desert reserves and revegetation, 500,000 ha have been revegetated with air-seeding, one million ha have been constructed for fodder farms and rangeland improvement, 700,000 ha of low-productive fields or sandy lands have been transformed into high yield croplands. A relatively sound eco-system has been primarily established in a certain regions where tree belts play a role of farmland protection, high-yield cereals provide food security, and rich fodder sources meet the need of animal production.

A series of experiences and models for combating desertification, for preventing land from degradation and developing and utilizing resource, which are easier to be understood and grasped and have sound ecological and economic value, have been accumulated and created through running years hard efforts, active adaptation of traditional knowledge and practical techniques as well as the development and application of new technologies in the past decades. The following experiences and knowledge show the obvious achievements made in desertification combating, the remarkable ecological and economic potential in the development of sandy land. They include the techniques of narrow shelterbelts, small grit tree networks, desertification rehabilitation and technique for stabilizing sand dunes along highway or railway in desert region, water-saving irrigation techniques, plastic film sub-soil technique for cultivating rice in sandy land, micro-eco-farm, greenhouse cultivation and high efficiency economic development of sandy land, complex ecosystem of combination of different plantation and revegetation, and the models of inter-cropping system in combination of fruits-cereal cultivation, tree belt-cereal cultivation and tree-medicine inter-cropping on sandy land.

CHAPTER THREE: SUSTAINABLE DEVELOPMENT PROGRAMME AND THE PRIORITY AREA

The Government of China has determined “promoting the state with science advancement and education development” and “sustainable development” as two major national developmental strategies 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 rehabilitation has been incorporated into the State Economic and Social Development Plan. China has developed a number of important documents such as “China 21st Agenda”, “China Environment Protection 21st Agenda”, China 21st Agenda—Forestry Action Plan”, “China National Action Programme to Implement the United Nations Convention to Combat Desertification (NAP)”, “China Eco-environment Promotion Plan”. In China, economic reconstruction and environment protection is stressed in integrated forms of synchronous planning, synchronous implementation and synchronous development.

3.1 STATE AGENDA AND PRIORITY AREAS IN RELEVANT SOCIAL AND ECONOMIC FIELDS

3.1.1 CHINA AGENDA 21

China Agenda 21—the White Paper of Population, Resources, Environment and Development of China in 21st 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 co-ordinate and organize various sector, 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. At the same time, it is stressed to protect natural resources and improve ecological environment and to achieve the objectives of long and stable development of state.

“CHINA AGENDA 21” contains strategies, policies and action framework of the sustainable development of population, economy, society, resource and environment. It includes 20 chapters and 78 programme areas. This principle document is developed in line with China’s actual condition and absorbed, adapted and centralized various proposed plans of various government agencies. It is characterized by integration, guidance and operation function. “China Agenda 21” expounds the strategy and countermeasures of sustainable development in China. It touches upon the contents of general strategy of the sustainable development, social and economic sustainable development, rational utilization and sound protection of resources and environment, etc. In which desertification combating is particularly emphasized as the main components of the document in a separated 16 chapter.

Regarding to the implementation of “China Agenda 21”, China is ready to establish linkage and make contribution for a more safe, more prosperous and more glorious future through conducting effective bilateral and multilateral cooperation with various states and regions. The preparation of “China Agenda 21” was funded by UNDP as one of the official cooperative projects between the Government of China and UNDP.

3.1.2 NATIONAL FORESTRY ACTION PLAN FOR CHINA’S 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. The Forestry Action Plan has pointed out that forestry in China faces both opportunity and challenge. The plan has stated the strategic consideration and objectives of the sustainable forestry development; it has expounded the key development areas of forestry of China in future; and has raised the supporting guarantee condition

to implement the Forestry Action Plan for China Agenda 21.

3.1.3 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 existing issues, 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.

In 1996, the fourth session of the Eighth Plenary of People's Congress has adopted the Ninth Five-year Plan and Long-term Objective Outline of 2010. The Outline has determined the general requirements of the environment protection in future 15 years at national level, namely, up to 2000, the accelerating trend of environmental pollution and ecological destruction will be primarily controlled and the environmental quality in some cities and regions will be improved; up to 2010, the worsening processes of environment degradation will be slowed down and the urban and rural environments will be remarkably improved.

In light of the above-mentioned requirements, SEPA has worked out the Ninth Five-year Plan and Long-term Objective Outline of the National Environment Protection in 2010, including the Controlling Plan of Total Pollutants Release in some major cities during the Ninth Five-year period. It is requested that the controlling criteria, controlling indicators and management system of major pollutants release be prepared according to the real facts in different time and different locations. It is also emphasized that the periodical announcement system be created.

Therefore, The Environment protection plan has extended six items of total control indicators of pollutants in 1977. Environment protection indicator systems were re-oriented from mono-control of concentration to the combination of the control of concentration with total pollutant control. In addition,

the Re-greening Project Plan Striding into New Century in China has been worked out. All the projects

Being managed according to the procedure of fixed investment project and they were prior to be incorporated into the Ninth Five-year plans and annual plans of fundamental construction and technical transformation of local governments, state agencies and the central government. The budgets planned projects required are mainly from local governments and enterprises and the central government provides supports of loans, preferential policies of application of foreign capital and economic aspect.

3.1.4 STATE NATURE PRESERVATION STRATEGY

In consideration of reality of the ecological environment improvement of China, the State Council has 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 international relevant conventions. The plan has considered all most important aspects of the territorial ecological environment at national level, including: protection and preservation of natural resources such as natural forests, Reforestation and revegetation, soil and water conservation, combating desertification, rangeland construction and improvement, and ecological farming, etc.

The Plan emphasizes the importance of encouragement and organization of people and the function of science advancement while establishing nature reserves and combating desertification in future five decades.

The general objective of the plan is focused on the following aspects:

- 1) To strengthen the protection of existing natural forests and wildlife resources;
- 2) To conduct on large scale the re-plantation and revegetation;
- 3) To control the soil and water losses;
- 4) To combat desertification and land degradation;
- 5) To construct ecological farming;
- 6) To improve productive and living condition;
- 7) To strengthen the integrated rehabilitation;
- 8) To implement a series of important projects to improve ecological environment, and
- 9) To stop the worsening process of environmental degradation.

It is planned to, up to the mid-century:

- Rehabilitating basically the affected areas of soil and water losses in the whole country;
- Re-planting all the areas suitable to reforestation;
- Revegetating primarily the degraded rangeland;
- Establishing perfect preventive, monitoring and protective system of ecological environment;
- Improving remarkably ecological environment in all most region that affected by desertification;

---Re-greening on large scale the bare lands and drylands.

The general arrangement of the plan has divided the nation-wide ecological environment construction into eight areas of different pattern. They are:

- 1) The upper and middle reaches of the Yellow River;
- 2) The upper and middle reaches of the Yangtze River;
- 3) The integrated rehabilitative area of the wind-sand impacted lands in the Three North Regions;
- 4) The hilly and red soil areas in Southern China;
- 5) The loess and rocky mountain areas in Northern China;
- 6) The Black Soil and flooded plain areas in the Northeast China;
- 7) The cold plateau and frozen areas in Qinghai-Tibet Plateau;
- 8) The rangeland and steppe areas;

The key locations and main projects of the priority areas of the plan include:

1. The upper and middle reaches of the Yellow River: Natural forest protection project; Integrated control project of soil and water losses; reforestation and revegetation project in the seriously impacted areas with soil and water losses; water-saving and irrigation project; ecological farming construction project in dry-farming areas;
2. The upper and middle reaches of the Yangtze River: integrated project for controlling soil and water conservation with tree plantation and orchard development; natural forest resources protection project; ecological farming project;
3. The wind-sand impacted land areas: Three North Regions shelterbelts project; desertification rehabilitation project; integrated project for controlling soil and water losses; ecological farming construction project;
4. The rangeland and steppe areas: Hulun Bir Rangeland improvement project; Xilinggol Rangeland improvement project; Ordos Steppe transformation project; grazing land protection project around the Qinghai Lake; Improvement project of degraded grazing land in southern Qinghai; pasture land improvement project in Gannan of Gansu; pasture land protection project in Ganzi of Sichuan; pasture land protection project in Aba of Sichuan; Rehabilitation Project of rangeland degradation in Tianshan mountain areas of Xinjiang; Rodent and pest control project in rangeland areas.

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

Since the signature of the Convention, China has developed her NAP and determined the strategic objectives to combat desertification. These objectives were divided into three phases, namely, the period from 1996 to 2000, 2001 to 2010 and 2011 to 2050. This arrangement is coherent to the National Economic and Social Development Plan.

Up to 2000, it is estimated that 3.177 million ha of desertification affected lands caused by wind erosion will be rehabilitated; about 3.5 million ha of desertification affected lands caused by water erosion on the Loess Plateau will be revegetated; nearly 10 million ha of degraded rangeland will be improved;

roughly 2 million ha of salinized/alkalized lands will be transformed; 6.855 million ha of re-plantation and grass growing will be completed; and 165 nature reserves and preservation will be established. The total area of the mentioned efforts will be 59.5 million ha. These initiatives will slow down basically the continuous expanding process of desertification, improve regional ecological environment on a certain scale and qualify obviously people's livelihood and living environment.

Up to 2010, it is planned that 7.45 million ha of desertification-prone lands caused by wind erosion will be rehabilitated; about 700,000 ha of desertification-prone lands caused by water erosion on the Loess Plateau will be reforested; approximately 22 million ha of degraded rangeland will be improved; nearly 6.165 million ha of re-plantation and revegetation will be established; and the total areas of nature reserves and preservation will increased by 6.868 million ha. These efforts will improve effectively regional ecological environment of the affected regions and people's living quality will be remarkably raised.

Up to 2050, it is designed to control the spreading development of the affected lands and rehabilitate them in sustainable way. The total area of nature reserves and preservation will be enlarged by 9.135 million ha. These efforts will ensure to developing the ecological environment and economic growth in the affected land areas in favourable circle.

It is stressed in the Master Plan to Combat Desertification in China, compiled by the State Forestry Administration in 1999, that about 17.87 million ha of the affected land areas will be rehabilitated and prevented from further degradation from the duration of 2000 to 2010.

CHAPTER FOUR: CONCRETE ACTIVITIES FOR IMPLEMENTAING UNCCD AND EFFECTS

4.1 COORDINATION UNIT

4.1.1 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. In 1994, the Chinese government has set up China National Coordinating Group to Combat Desertification and China National Committee for the Implementation of the UNCCD (UNCCD) composed of members from 17 ministries of the State Council. The Coordinating Group members meet at least once a year and meet when necessary. The Coordinating Group and CCICCD has improved the organization, coordination, management and supervision for combating desertification across the country and played an important role in terms of addressing the key issues facing combating desertification and coordinating various departments' involvement in this regard.

The Office of the Coordinating Group or the Secretariat of CCICCD is located in the State Forestry

Administration with its Director General, Deputy Director General or Secretary General, Deputy Secretary General are concurrently the Secretary General, Deputy Secretary General of China National Greening Committee. The office or the secretariat is mainly responsible for guiding, coordinating and supervising the work in combating desertification in China.

The National Bureau to Combat Desertification was established in 1997 in a bid to intensify the work for combating desertification and strengthen the work for implementation of the UNCCD. Its main role rests on the management of projects of combating desertification and ecological construction. Meanwhile, as the business agency of the Coordinating Group and CCICCD, its main responsibilities are coordination of external and internal affairs in combating desertification and implementation of the UNCCD.

Coordinating groups or leading groups for combating desertification has also been set up in key provinces/autonomous regions/municipalities. Therefore, the effective management system for combating desertification from central to local level is formed, which has ensured the organized, planned and procedural implementation of the national undertaking of combating desertification.

4.1.2 RESOURCES

4.1.2.1 Financial Resources

The financial resources of the Office of the Coordinating Group and the Secretariat of CCICCD are from the national allocation, which are mainly used for publicity, technology extension, training and staff salary. Their respective ministries provide the salary of the members of the Coordinating Group or CCICCD and of liaison officers. The National Action Programme has been started implementation and its financial resources are from three channels, i.e. central government allocation, local raised funds and loans with deducted interest of the People's Bank of China. For example, the accumulated loans figure has reached 360 million RMB Yuan from 1992 through 1999 with interest paid each 50% by the central government and local government. In addition, the Ministry of Finance also provided funds for China's desertification monitoring.

4.1.2.2 Information Resources

The URL of <http://www.din.net.cn> with information of China's combating desertification has been made available in internet since 1997 with equipment coming from UNDP assisted project and the operational cost from the secretariat of China National Committee and the Ministry of Science and Technology. The county-level Desertification Information and Data Exchange Prototype in Yijinhuoluo County of Inner Mongolia has been established since 1999 with URL of <http://nic6.forestry.ac.cn/sts> in internet and the equipment was provided by UNDP assisted project. So far, many institutions have visited the address.

4.1.3 INTER-MINISTERIAL COOPERATION

China National Coordinating Group to Combat Desertification and China National Committee for the Implementation of the UNCCD has reflected the characteristics of inter-ministerial cooperation. The State Forestry Administration as the leading agency always organizes meetings of the Coordinating Group and CCICCD and invites competent leaders of the State Council to attend a meeting when the meeting is crucial important. The liaison system has been set up for the Coordinating Group and CCICCD with each liaison officer from each ministry. The periodical journal of “The Dynamic Status of Combating Desertification in China” builds a bridge between the Office of the Coordinating Group and the Secretariat of CCICCD and other members so as to keep each other well informed. Members are representing their respective ministries and they ought to fulfil their mission.

4.1.4 COMPONENT AND OPERATIONAL FORM

The Chinese government has executed the responsibility system in combating desertification, which means that each of the relevant institutions should take its responsibility, make its investment and record its achievement. This has made combating desertification as a society undertaking.

There are now 26 people working in the National Bureau to Combat Desertification. “Chinese Association of Combating Desertification and Desertification” is a non-governmental organization, representing the interest of non-governmental organizations and being actively involved with the work of combating desertification both internationally and nationally. The National Bureau to Combat Desertification also recruited 4 senior experts to work for it. The Bureau has drafted the National Action Programme on the basis of substantial discussions among NGO experts and the government officials from the 17 ministries and has been responsible for organizing, guiding and implementing the Programme.

Other institutions (resources) of China National Coordinating Group to Combat Desertification and CCICCD are as follows.

(1) The Senior Expert Group of China National Coordinating Group to Combat Desertification

The Senior Expert Group of China National Coordinating Group to Combat Desertification is also the Senior Expert Group of China National Committee for the Implementation of the UNCCD, which was established in 1994 and composed of 16 senior scholars. These scholars come from the scientific research and educational institutions, including 7 academicians, 2 professors, 3 research fellows, 3 senior engineers, 1 senior animal husbandry expert and 1 senior agronomist, who represent the highest academic level in the field of combating desertification. The mission of the Senior Expert Group is to provide decision-making advises on key issues of China’s combating desertification so as to enhance the decision-making process of the government. Meeting of the Senior Expert Group members is organized annually or organized when

necessary. The Senior Expert Group has provided a lot of valuable advises on the National Action Programme, China Country Paper to Combat Desertification, desertification monitoring and the nationwide inventory on desertified land.

(2) Liaison Officers of China National Coordinating Group to Combat Desertification

The liaison officers of China National Coordinating Group to Combat Desertification are also the liaison officers of China National Committee for the Implementation of the UNCCD. The liaison officers system was set up in 1991 and the composition was modified twice with each in 1994 and 1998. There are currently 18 liaison officers, representing each of the member agencies, who are responsible for liaison business between the members and the Office of China National Coordinating Group. The meeting of liaison officers is normally organized once or twice a year, which focuses on progress reports of the Coordinating Group or CCICCD and the National Bureau to Combat Desertification, discussion on important issues and future work plan. The liaison officers meetings had discussions on the National Action Programme, network building on National Action Programme, publicity on combating desertification, etc. and put forward quite a number of recommendations.

(3) Independent Expert Roster for China's Combating Desertification

In accordance with the UNCCD and its own need, the Secretariat of CCICCD for the Implementation of the UNCCD since 1995 has selected 151 experts as the first group of independent expert to provide consultation on various fields. These experts were chosen based on the nominated experts by relevant departments, scientific research institutes, educational institutions and NGOs. Since the availability of the independent roster, the Secretariat of CCICCD has organized a series of consultations on information network design and building, data base construction, reform of animal husbandry system, applicable methods of technical extension for farmers and herdsman, social and economic issues in rural areas, agroforestry technology, GIS, county-level information network design, desertified land use classification, etc.

(4) China National Research and Development Center of Combating Desertification

China National Research and Development Center of Combating Desertification was set up in 1995, affiliated to the Secretariat of CCICCD and located in the Chinese Academy of Forestry. The Center has more than 100 staff, including those experts engaged in theoretical research and production practices in desertification combating. The main task of the Center is described as follows: to provide scientific basis for decision-making on the priorities of combating desertification; to provide scientific support for key research and production projects; to positively introduce and digest foreign technologies and develop export-oriented technologies; to carry out personnel training, technical consultation and extension of scientific achievements; to help contract international projects; and to perfect China national desertification combating information network in order to provide technical information for the purposes of scientific research and others. Since the establishment of the Center, it has undertaken a lot of activities such as organizing two seminars with one on data base and network design and another on benchmark and criteria,

training for network staff, establishing the county-level Desertification Information and Data Exchange Prototype in Yijinhuoluo County of Inner Mongolia, etc. The Center is also responsible for the maintenance of the above-mentioned network and the prototype. The center has been involved in organizing a number of regional or international conferences or seminars such as the First Meeting of the Asian-African Forum to Combat Desertification (August 1996), Beijing Ministerial Conference on Regional Cooperation to Implement the UNCCD in Asia (May 1997), the Benchmark and Criteria Expert Meeting of the *Ad Hoc* Group of CST of the COP2 of the UNCCD (June 1998), Asia-Africa Technical Workshop on Early Warning System (July 1999), the Second Asian Meeting of CCD National Focal Points (July 1999), the Launching Meeting for the Thematic Programme Network on Desertification Monitoring and Assessment (July 1999), etc. Authorized by the Secretariat of CCICCD, the Center is establishing the Thematic Programme Network on Desertification Monitoring and Assessment and preparing for the establishment of Asia-Africa Research, Development and Training Center of Combating Desertification.

(5) China National Training Center of Combating Desertification

China National Training Center of Combating Desertification was set up in 1995 affiliated to the Secretariat of CCICCD and located in Beijing Forestry University. There are totally 60 staff working in the Center and the staff is experienced educational, scientific and managerial personnel. The main task of the Center is to train senior/middle level personnel in the field of combating desertification. Since its establishment, the Center has trained more than 1000 people at central, provincial and county levels. The Center also participated in the preparation of the National Action Programme.

(6) China National Desertification Monitoring Center

China National Desertification Monitoring Center was set up in 1995, affiliated to the Secretariat of CCICCD and located in the Forest Resources Inventory and Design Institute of China State Forestry Administration. The Center has over 60 experienced scientific staff. The Center is mainly responsible for national desertification monitoring. Specifically, the Center is in charge of the following work: the establishment and operation of the national desertification monitoring system, formulation of the relevant technical methods and organization of the implementation of the system; management of the collected information in combating desertification, information analysis and forecasting of the desertification trend; provision of guidelines and assistance to the establishment of local level desertification monitoring systems; study on the basic technologies and their dissemination in regard to desertification; working out the operational plan for the national and regional desertification combating projects and evaluation of the progress. Since its establishment, the Center has participated in the nation-wide inventory on the desertified land, worked out the Principled Technological Plan of China's Desertification Monitoring and the China's Desertification Criteria Classification System and so forth.

(7) China Combating Desertification and Desertification Association

China Combating Desertification and Desertification Association is a non-governmental organization, established in September of 1993. The main tasks of the Association includes: carrying out

academic exchanges; organizing scientific evaluation meetings on keys issues relating to desertification combating, workshops and national or international study tours; putting forward recommendations to the general and specific policies as well as the technical measures applied to the implementation of the National Combating Desertification Project, and providing advises to various desertification combating departments. The Association has made achievements in terms of spreading knowledge on combating desertification and desertification, disseminating advanced technologies and providing scientific and technical consultations. Since its establishment, the Association has played a good role and involved in a lot of practical work in combating desertification, including participation in the technical consultation on the National Combating Desertification Project, organization of study tour, involvement in publicity and education, participation in the revision of the Desertification Combating Law, and publishing technical journals.

4.1.5 ESTABLISHMENT OF INFORMATION NETWORK

To effective exchange and disseminate desertification information is very important for enhancing the information flow at trans-department, trans-agency and trans-region level. With the assistance of UNDP, the Secretariat of CCICCD established the national desertification combating information URL of <http://www.din.net.cn> on the basis of the China scientific and technological network set up by the Ministry of Science and Technology at RDCCD. The URL has the functions of data exchange, information sharing, information announcement, information management and synergetic operation.

The establishment of the URL has made rapid and convenient information exchange possible. Various countries, international organizations and individuals can easily get access to the URL for obtaining the information in regard of combating desertification and implementation of the UNCCD in China. The Secretariat of the CCICCD exchanges information with and keeps in touch with Chinese government departments, provinces, counties as well as foreign agencies through the E-mail address of cciccd@din.net.cn.

4.2 DOMESTIC DECISION MAKING UNITS

4.2.1 SKELETON 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. Specifically, the central and provincial administrative forestry departments take the responsibility for macro

management of combating desertification, county and township forestry bureaux are in charge of micro management, and the prefecture forestry agencies are responsible for interim management, i.e. both for macro and micro management.

The highest coordination body of China's combating desertification is China National Coordinating Group to Combat Desertification or CCICCD. The Office of the Coordinating Group or the secretariat of CCICCD is located on the premise of the National Bureau to Combat Desertification of the State Forestry Administration. The National Bureau is responsible for the implementation of the National Action Programme in China and the work of combating desertification across the country. There are 14 provinces (municipalities or autonomous regions) those have set up coordinating or leading groups to combat desertification with the offices located at their respective forestry departments or departments of forestry and agriculture. The coordinating or leading groups are in charge of organizational coordination and coordination in combating desertification. Likewise, various prefectures have also established desertification combating coordinating or leading groups those are responsible for combating desertification at their respective prefectures. Competent forestry departments of various counties are in charge of their desertification combating work and forestry stations at township level are responsible for concrete activities in terms of combating desertification.

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.

4.2.2 INSTITUTIONAL BUILDING AT NATIONAL AND LOCAL LEVELS

4.2.2.1 National Bureau to Combat Desertification at 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, with authorized staff number of 20 people. During the reforming period in 1998, the State Forestry Administration increased the bureau's staff number from 20 to 40 people because of its importance and more workload. The bureau's main function is to improve the ecological environment including the work of combating desertification across the country and the detailed tasks are as follows.

- (1) to participate in drafting policies and regulations in regard to projects implementation;
- (2) to work out procedures and criteria of projects implementation and to supervise the implementation;
- (3) to participate in working out project plan and to provide guidance to local people when they are preparing local plans;
- (4) to be responsible for the management of projects implementation;

- (5) to guide the local institutions to implement ecological environment improvement projects and to organize annual, periodical and final checking and evaluation of the projects;
- (6) to comprehend dynamic status of forestry ecological projects construction, to collect projects implementation information and to carry out investigation in a bid to provide services to the State Forestry Administration for decision making;
- (7) to put forward recommendations for forestry ecological projects implementation and to participate in preparation of the annual plan of projects;
- (8) to organize to undertake the work such as technical extension, demonstration, experiences exchange, personnel training and publicity of projects construction;
- (9) to take the responsibility of organizing the country's desertified land monitoring work and to be in charge of the ecological benefits monitoring work of the projects; and
- (10) To organize the work to implement the UNCCD, to carry out international exchange of projects implementation and combating desertification and to participate in foreign-assisted projects application, formulation and projects implementation.

4.2.2.2 Respective Local Institutions at Provincial, Prefecture and County levels

Local government coordinating or leading groups to combat desertification and forestry/agriculture departments/bureaux has been remained at the current institutional reform. Chinese central government and local governments are undertaking ecological counties construction in west desertification prone areas of the country by using bond investment means and the offices of ecological counties construction have been set up and are composed of government officials and experts. For instance, Chifeng City and Huhhot of Inner Mongolia Autonomous Region and Yulin Prefecture of Shaanxi Province have been carrying out the work of constructing ecological counties and ecological prefectures.

4.3 INCORPERATION OF THE NAP INTO NATIONAL SOCIAL AND ECONOMIC DEVELOPMENT PLAN

4.3.1 CONICIDENCE 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) The Immediate Objectives:

An estimated 12 years will be spent on stopping further desertified land and striving to contain desertification from 1998 till 2010 so as to achieve initial success in controlling those keys desertified

areas from deterioration. About 22 million hectares of desertified areas will be controlled by various means.

(2) Mid-term Objectives:

During the period from 2011 to 2030, the nation's eco-environment in desertified areas will be improved remarkably when the trend of eco-environmental deterioration has been contained. About 40 million hectares of desertified areas will be controlled by various means. Therefore, the goal of making the eco-environment in key control area get on the track of favorable cycle will be realized.

(3) Long-term objectives:

During the period from 2031 to 2050, a favorable ecosystem, which basically fits in with sustainable development in the nation's desertified areas, will be established.

4.3.2 RELATIONSHIP BETWEEN NAP AND LOCAL ACTION PLAN

The large-scale, trans-regional, trans-watershed ecological improvement programme organized by the Chinese government has played a very important role in controlling desertification. Since 1978, Chinese government has launched a series of forestry ecological programmes one after another aiming at improving ecological environment and combating desertification, such as the National Desertification Control and Combating Programme, "Three North" (Northeast, North and Northwest China) shelterbelts Development Programme, Plain Farmland shelterbelts Development Programme, the Taihang Mountain Afforestation Programme, the shelterbelts Development Programme along the Middle Reaches of the Yellow River, etc. As of 1999, the existing forest plantations aiming at combating desertification have reached 10 million hectares and 10% of the desertified land has been brought under preliminary control. Meanwhile, the rehabilitation and improvement of the degraded grassland has been strengthened, and both biological and engineering measures have been adopted in order to control soil and water erosion. The establishment of the above-mentioned ecological projects has made obvious ecological, social and economic achievements, which has brought the desertified land in the projects areas under effective control.

4.3.3 RELATIONSHIP BETWEEN NAP AND SUB-REGIONAL/REGIONAL ACTION PROGRAMME

4.3.3.1 China's Involvement in the Sub-Regional Action Programme

China has not participated in the Regional Action Programme yet. However, China actively participated in some meetings and activities organized by ESCAP.

4.3.3.2 China's Involvement in the Regional Action Programme

China has actively participated in the implementation of the Regional Action Programme. 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. China attended the Second Meeting of the Asia-Africa Forum to Combat Desertification in the Niger of Africa from August 31 to September 7, 1997. China also hosted the Beijing Ministerial Conference on Regional Cooperation to Implement the UNCCD in Asia and the meeting endorsed six priority thematic programme areas for regional cooperation in Asia.

China is the host country of the Asian Thematic Programme Network on Desertification Monitoring and Assessment (TPN1). 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.

4.3.4 AGREEMENT BETWEEN GOVERNMENTS

Chinese government has signed bilateral cooperation agreements on aided projects with the governments of Germany, Japan, Netherlands, Australia, Canada, Norway, Sweden, etc. Although these agreements are beyond the framework of the UNCCD, they have played a good role to China's combating desertification. For example, there are 3 ecological afforestation projects assisted by Germany at the desertified areas. The 3 projects are as follows: the Ecological Afforestation Project in West Part of Shaanxi Province with granted fund of 13 million DM, which was incepted in 1993; the Ecological afforestation Project in Helan Mountain of Ningxia and North Shanxi Province with granted fund of 12 million DM, which began in 1995; the Ecological Afforestation Project in Hebei Province with granted fund of 13 million DM, which started in 1996. It is planned that China and Germany sign 3 more projects focusing on ecological improvement, including the Ecological Afforestation Project in Chifeng of Inner Mongolia, the Ecological Afforestation Project in Chaoyang of Liaoning Province and the Ecological Afforestation Project in Yanan of Shaanxi Province. Chinese government wishes that Japan and other developed countries could provide assistance for ecological improvement in Xinjiang, Shanxi, Ningxia and other provinces.

4.4 LEGAL GUARANTEE SYSTEM

As of present, China has promulgated about 20 laws relating to environmental protection and a series of by-laws and regulations. The legal guarantee system combining environmental protection laws, other relevant laws and regulations promulgated by the State and local governments has been primarily formed. The National People's Congress has begun the legislative process of formulating a law in combating

desertification since 1998. Under the guidance of the Committee of Environment and Resources of the National People's Congress, the State Forestry Administration is currently drafting the Law of Combating Desertification. The guidelines of this law are as follows:

-- To implement sustainable development strategy, prevent land areas from desertification, bring desertified land under control and manage land wisely;

-- To make economic and social development and ecological environment improvement into consideration simultaneously;

-- To guide the economic development in the desertified areas on the basis of environmental protection;

-- To put more efforts on protection of vegetation including forest and grass;

-- To establish effective legal system so as to address the key issues regarding combating desertification and make the Law of Combating Desertification in harmony with other related laws; and

-- To have a management system of a unified planning, division of labour with individual responsibility, step-by-step implementation, and level-by-level management and centralized law enforcement.

The main issues need to be tackled by the Law of Combating Desertification and the considerations of the legal system are as follows:

-- To adjust the relationship between economic development and ecological environmental protection in order to resolve the problems of land desertification by human factors through the promulgation and implementation of the Law;

-- From the point view of desertification prevention, to solve the problems of short-sighted economic interest pursuit and unrealistic development speed resulting in excessive land reclamation, overgrazing, illegal cutting, excessive firewood collection, blind collection of Chinese medicinal sandy herbs, vegetation damage and unwise use of water resources; and

-- From the point view of undertaking work to combat desertification, to handle the issues of clear responsibility, explicit task of planting protection vegetation, investment and policies, that who brings the desertified land under control who gains benefits and that the beneficiaries compensate the people who did the work to combat desertification.

It is necessary to sum up the good experiences in combating desertification in a bid to facilitate the formulation of the Law of Combating Desertification. In the meantime, a series of by-laws and regulations have been promulgated by the State and local governments at different levels so as to strengthen law

enforcement and provide a legal framework for combating desertification.

4.5 GOVERNMENTAL EFFORTS AND INITIATIVES TO IMPLEMENT UNCCD

4.5.1 REALIZING COMMITMENT, BEARING OBLIGATION AND PROMOTING REGIONAL COOPERATION

Since the Standing Committee of the National People's Congress approved the UNCCD in 1996, Chinese government has made great efforts to implement the UNCCD. In 1996, Chinese government hosted the Asia-Africa Forum on Combating Desertification in collaboration with the Secretariat of the UNCCD and other developed party countries and the Beijing Framework for Action on Asia-Africa Cooperation on Combating Desertification was produced. In 1997, Chinese government hosted the Beijing Ministerial Conference on Regional Cooperation to Implement the UNCCD in Asia. Chinese government attended the COP1, COP2 and COP3 held in Rome of Italy in 1997, Dakar of Senegal in 1998 and Recife of Brazil in 1999 respectively. China attaches importance to the summarization of the traditional knowledge and practical techniques for combating desertification. In accordance with the Resolution 20 of the COP1, Chinese government, from January to October of 1998, organized the professionals of over 10 research institutions and production departments to compile a book entitled "Traditional Knowledge and Practical Techniques for Combating Desertification in China" both in Chinese and English. The English version books were distributed during the period of the COP2 and appreciated by the international society. The book also gained the "Best Practices Award on Indigenous Technology in Combating Desertification and Mitigating Effects of Drought" presented by UNDP.

According to the decisions of the COP1, the first meeting of the *Ad Hoc* Group of the CST of the UNCCD was held in Beijing and gained strong support from CCICCD. The organization of the meeting was recognized by the Secretariat of the UNCCD and the Group and the meeting played a good role of expediting China's cooperation with international society and facilitating regional cooperation.

4.5.2 PREPARING THE ESTABLISHMENT OF ASIA-AFRICA RESEARCH, DEVELOPMENT AND TRAINING CENTER FOR COMBATING DESERTIFICATION

In accordance with the Beijing Framework for Action on Asia-Africa Cooperation on Combating Desertification adopted at the Asia-Africa Forum on Combating Desertification in 1996, it was decided that the Asia-Africa Research, Development and Training Center for Combating Desertification would be set up in China. Starting from 1996, the CCICCD Secretariat has made contacts with international organizations, donor countries through various means. The Feasibility Report of the Establishment of the Asia-Africa Research, Development and Training Center for Combating Desertification was prepared and

Chinese government exchanged views with quite a number of international organizations and developed party countries regarding the Center at the Second Meeting of the Asia-Africa Forum on Combating Desertification in 1997. The Feasibility Report was presented to the Secretariat of the UNCCD in October of 1997. The initial preparations of selecting host institution, facilities, demonstration bases and identifying priority cooperative fields have been carried out. China is sure that its scientific and research institutes and production departments will provide unselfish support to the establishment of the Center. The conditions are mature for the establishment of the Asia-Africa Research, Development and Training Center for Combating Desertification in China. It is called upon that international society supports the decisions made at the two meetings of the Asia-Africa Forum on Combating Desertification for the soon establishment of the Center in China. China will make its commitments in fulfilling its mission.

4.5.3 CREATION OF THE ASIAN REGIONAL THEMATIC PROGRAMME NETWORK OF DESERTIFICATION MONITORING AND ASSESSMENT (TPN1)

On the basis of the already carried out work, the CCICCD Secretariat has invited the Secretariat of the UNCCD to send experts to China to undertake feasibility studies in terms of establishing the captioned network. In a bid to set up the Network as soon as possible, China has made great efforts on repairing the offices of the network equipment, procurement of new facilities and recruitment of network professionals. China has also linked with some Asian party countries through e-mail communication ways and created domain page of combating desertification. All of this work has laid a consolidate foundation for the host institute of TPN1 to provide training services on criteria and benchmarks of desertification monitoring and assessment in Asia. That the host country is China was endorsed by the International Expert Group Meeting in Bangkok on the Preparation of the Regional Action Programme for Combating Desertification and Mitigating the Effects of Drought in Asia in 1998. Chinese competent departments are currently seeking cooperation channels wishing that donor countries could provide assistance to the operation of the network so as to bring its functions into full play. It is wished that all Asian countries could pay due attention to the growth and development of the network.

4.5.4 EFFORTS FOR RAISING PUBLIC AWARENESS FOR COMBATING DESERTIFICATION

Since the first time of the World Day to Combat Desertification and Drought on 17 June 1995, China has carried out large-scale publicity and public awareness raising activities for combating desertification in Beijing and other dozens of large cities. A series of activities which have made fruitful achievements on raising public awareness have been organized by means of exhibition, video tapes, newspapers, TV, seminars and workshops at different levels, publicity month for combating desertification, etc. Chinese people, from the top leaders down to ordinary civilians, are aware of the harmfulness of desertification.

Recently, there are a large number of volunteers including the aged and the young, women, officials, scholars and soldiers, who appear on days of Tree-Planting Day, World Environmental Day, World Water Day and World Day to Combat Desertification and Drought to carry out activities such as planting trees so as to combat desertification and improve environment.

4.5.5 DYNAMIC MONITORING, PREDICTION, AND EARLY-WARNING SYSTEM OF DESERTIFICATION, SERVING AS SCIENTIFIC EVIDENCES FOR DECISION-MAKING

A nation-wide inventory on desertified land was carried out in China from 1994 to 1996. In accordance with the spirits of the UNCCD, the China Country Paper to Combat Desertification was compiled and China's desertified land area distribution map with a scale of 1:2.5 million was made. The report and the map systematically unveiled the desertified land area, distribution and causes and analyzed the desertification expansion trend. Starting from 1999, the nation-wide desertification monitoring with thousands of sampling plots has been carried out, aiming at collection of information, being aware of the dynamic status of desertification, periodical announcement of the results of monitoring so as to provide scientific evidences for decision making.

4.5.6 REVIEW ON BENCHMARK AND INDICATORS OF DESERTIFICATION MONITORING AND ASSESSMENT

Benchmark and indicators are an effective tool for nation-wide or regional desertification monitoring, providing a channel for description, monitoring and assessment of desertification. According to the informal process initiated by the INCD on the basis of the decisions of 9/12 and 10/9, international, regional, sub-regional, NGOs and the interested members of INCD will discuss benchmark and indicators relating to the UNCCD.

Chinese government has attached great importance to the establishment of desertification benchmark and indicators of desertification monitoring and assessment. 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 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. In 1998, the National Natural Resources Committee approved and funded a research project of "Desertification Occurrence Mechanism and Optimistic Model for Combating Desertification" (1999 - 2002) that again includes the topic of "Indicators System of Desertification Classification and Expert System". In the meantime, China Desertification Monitoring Center drafted "the Master Plan of China Desertification Monitoring

Technology” and “the Regulations of the Fixed Location Monitoring Technology in the Typical Desertified Areas of China” and both of them were revised three times.

As of present, the establishment and application of the benchmark and indicators for desertification monitoring and assessment is still in 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.

-- Indicators to Implement the UNCCD

The indicators to implement the UNCCD is inclusive of overlooking whether the National Action Programme includes relevant parameters for desertification monitoring and assessment system and operational mechanism or not. The indicators to implement the UNCCD are composed of 8 indicators and 27 parameters.

-- 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.

-- Impact Indicators

Impact indicators are intended to reflect that what impact and negative effects 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, their information collection, analysis and announcement will be undertaken by government statistics departments. 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 influential indicators are composed of 13 indicators and 37 parameters.

The UNCCD will possibly seek technical backstopping when assess the influences of the National Action Programme. However, the mechanism of managing the National Action Programme and its results assessment, extension and feedback is not available yet.

4.6 ACCELERATION OF INTERNATIONAL COOPERATION

Chinese government has built up a good cooperation relationship with many international organizations and countries such as Germany, Japan, Norway, Brazil, etc. through various means including bilateral and multilateral channels in the field of combating desertification. The State Forestry Administration has successively trained a lot of managerial and technical staff in a bid to beef up management and technology level of decision-making departments, scientific and research institutions, extension services, institutions of higher learning and grass root production units. The trained people have applied what they gained into their work practices, which has facilitated China's work on combating desertification and provided a technical guarantee.

CHAPTER FIVE: PARTICIPATORY PATTERN OF RELEVANT SECTORS IN NAP PROCESS

5.1 PARTICIPATORY PATTERNS OF RELEVANT SECTORS

The Chinese government calls on all walks of life across the country to take active part in the cause of combating desertification. First of all, the mass media are mobilized to promote publicity and education for raising public awareness of combating desertification. On June 17, the World Day to Combat Desertification and Drought, the Secretariat organizes educational programmes and publicity activities. On one hand, consultation, commemoration meetings and distribution of publicity materials are carried out in more than 100 cities in relevant provinces, autonomous regions and municipalities and top provincial leaders give speeches in this regard; meanwhile, the mass media are organized to visit the affected areas for news reporting and release of special issues. On the other hand, a meeting to commemorate the World Day to Combat Desertification and Drought is held every year in Beijing for which large volume of publicity materials are compiled and videotapes produced. Furthermore, other commemoration activities are carried out such as symposium, seminars and training courses. Since 1996, large volumes of training materials have been compiled and printed every year under the organization of the Secretariat to help farmers, women in particular, raise the awareness of combating desertification, disseminate knowledge and popularize techniques of combating desertification in rural areas. Secondly, preferential policies are adopted including discounted loan from the government for projects on combating desertification, deduction or exemption of taxes on benefits generated from development of barren hills and waste sandy land. In recent years, such new policy measures as auctioning of "four-barrens" (barren hill, barren gully, barren desert and barren land), returning slope farmland to forestry, mountain closure, household contract and work relief have been promoted to encourage farmers to purchase the usufruct right for further development so as to speed up restoration of vegetation and mobilize the public enthusiasm to combat

desertification. Thirdly, the national compulsory tree planting campaign has been promoted throughout the country. It is stipulated in law that any Chinese citizen, 11-60 for male and 11-55 for female should plant 3-5 trees every year and everybody should make his/her due contribution to the cause of territory greening and combating desertification.

The State has listed combating desertification as a research topic of great significance and efforts have been made to strengthen study on basic and theoretical issues in a bid to achieve technical breakthrough. Practical techniques for combating desertification have been extended, research institutions and technical staff are encouraged to provide technical service and enter into technical contracts on combating desertification so as to increase the technical input in combating desertification and promote transfer of technical achievements into productivity. Meanwhile, education on combating desertification has been strengthened to incorporate extensive on-job training and special education in order to train technical personnel for combating desertification. The State Planning Commission has organized the implementation of national eco-county programme, the railway and communication sectors carried out a number of green corridor projects, the water resources sector facilitated control of water and soil erosion in the desertification affected areas, the agricultural sector set up model counties for eco-agriculture development, the People's Bank of China increased the amount of discounted loans for combating desertification with an annual contribution of RMB 1.2 billion Yuan and the National Agricultural Development Office increased the ratio of input on combating desertification in its comprehensive agricultural development programme. Other sectors have also made contribution to the implementation of NAP.

5.2 MUTUAL UNDERSTANDING

From the national point of view, a bottom-up approach should be adopted in development of an action programme or plan, which requires incorporation of local comments and suggestions and consideration of local needs for ecological development. Appropriate amendments to fit local practices are also necessary during implementation of the action programme or plan.

From a local viewpoint, consideration should be given to solving the major existing problems and meeting the needs of farmers. Problems identified should be incorporated into the local action programme or plan and eventually into the national action programme or plan.

Field visits, in-office research, discussions and seminars about different types of ecological programmes are ways the Secretariat and relevant departments used to understand situations at the grass-roots level. Every year, investigation groups are organized to inspect implementation of NAP, probing into major existing problems and synthesize for extension of successful experiences, techniques and practices. Efforts have been made to hold seminars and symposia for people from the educational and research

institutions and NGOs in counties, prefectures and cities of relevant provinces and autonomous regions. Government officials are assigned to grass-roots organizations for practical experiences or work in selected villages to gain firsthand information and feed back pending issues to the State's decision making body. Every year, the Secretariat and agencies in charge of combating desertification at different levels make comments on the proposals regarding ecological development from various sources, e.g.: the People's Congress, Chinese Political Consultative Conference, villagers committee and other social institutions at different levels and individuals. All proposed major projects or programmes should be evaluated prior to implementation.

CHAPTER SIX: BASIS FOR SUPPORTING THE COMPILATION OF NAP

6.1 GOVERNMENTAL CONCERNS FOR COMBATING DESERTIFICATION

The Chinese government has always attached great significance to combating desertification, which is stressed every year as a top priority in the important decisions made by the government on agriculture and rural affairs. In recent years, State leaders have repeatedly emphasized in their important speeches the significant role of combating desertification in promoting sustainable socio-economic development. The local governments and people in desertification affected areas are called on to raise their awareness of the challenging situation to combat desertification and increase their sense of urgency, responsibility and mission.

6.2 COMPILATION OF NATIONAL ECO-ENVIRONMENT PROTECTION PLAN

Along with the economic development, the Chinese government has realized indeed the significance of environmental issues for sustainable socio-economic development and hence taken environmental protection as a fundamental policy of the State. As early as in the 1990s, a task force was formed to compile the National Eco-environment Protection Plan, which was promulgated by the Chinese government in November 1998.

The National Eco-environment Protection Plan presents a blueprint and strategic policies for ecosystem and environmental protection in China between 1998 and 2050. From the viewpoint of strategic layout, the country is divided into 8 major zones to be tackled and the integrated wind and sand control zone in the "Three-north" region, known as desertification combating programme is given high priority.

6.3 SURVEY AND ANALYSIS ON EXPERIENCES FOR IMPLEMENTING NAP

In recent years, the State Forestry Administration organized an in-depth survey and analysis of the on-going national desertification-combating programme, which commenced in 1999. Experiences and existing problems were summed up and appropriate countermeasures proposed. These survey and analysis have played a critical role to secure the scientific and practical foundation of NAP.

Despite of the remarkable achievements in Chinese undertaking of combating desertification, there are still many problems and the major ones are as follows:

- Bad shortage of financial input, limited coverage and slow speed. As a developing country, China has limited financial capacity and the economy in the affected areas is least developed resulting in slow development and poor quality. The expanding trend of desertification can hardly be reversed.
- Weak technical extension system. Some advanced techniques can not be timely extended and applied, the overall technical input in projects is low, silviculture techniques are dominated by traditional practice with few modern ones and this situation has been worsened by ambiguous understanding of the process and mechanism of desertification. Many critical techniques to combat desertification have not been fully developed and the favourable effects of projects have been weakened.
- Weak capability of forecast and early warning for desertification with fewer monitoring plots less advanced equipment and low accuracy. A network has not yet been established, bringing adverse impact on desertification combating activities and prevention of calamities such as sandstorm.
- Shortage of technical personnel in the affected areas and the overall personnel quality is to be improved.

Last but not least, a series of other pending problems remain to be tackled such as policy and legal development and poor management.

CHAPTER SEVEN: FRAMEWORK OF NAP

The Chinese government has updated some components of the 1994 version of the NAP in light of new developments so as to make the NAP more effective, practical, operational and in line with the international practice.

7.1 NATURE OF NEWLY REVISED NAP

7.1.1 PRINCIPLE OF PREVENTION AND CONTROL

The cause of desertification in China is mainly due to fragile natural environment and unwise human activities. In this connection, the principle of “prevention first” must be stressed should the expanding trend of desertification be reversed fundamentally. That is, efforts should be made in the first place to prevent the land prone to desertification from turning into desertified land. Apart from teaching farmers to use water, land resources and other biological resources and related techniques in a wise and appropriate manner, the administrative functions of governmental organs should also be brought into play.

7.1.2 BIOLOGICAL MEASURES AND INTEGRATED REHABILITATION

In light of the specific situations in China’s desertification affected areas, the control measures adopted in NAP are dominated by biological measures. That is, vegetation rehabilitation and increase of vegetation cover are to be realized through desert closure for natural regeneration of trees and grass and through afforestation under the prerequisite of sound conservation of the existing vegetation.

7.1.3 CONTROLLING STEPS FROM POTENTIAL RISK TO SEVERE SITUATION

In accordance with China’s specific situations, the current strategy to combat desertification is to start controlling activities in less difficult areas while giving due priority to rehabilitation of areas with greater difficulties but closely related to national economic development and living of the local people.

7.2 STRATEGIC OBJECTIVES IN DIFFERENT PHASES

China’s strategic objectives for combating desertification shall require implementation of the principle of prevention first and integration of prevention, control and utilization, adopting the tactics of overall control and breakthrough in critical areas so as to check the expanding trend of desertification. To this end, three phases are designed: 1996-2000, 2001-2010 and 2011-2050, which are in consistence with China’s national economic and social development plan.

By 2000, the continuous expansion of desertification has been mitigated to some extent, the environmental conditions in some areas have been improved and people's living standards raised substantially. During this process, 2.8 million hectares of wind eroded sandy land and 2.4 million hectares of water eroded sandy land (on which 0.6 million hectares of plantations were established) have been rehabilitated, 7.15 million hectares of pastureland been restored or improved, 2 million hectares of saline land been controlled, 165 nature reserves of various types been established covering a total area of 68.68 million hectares.

By 2010, regional environmental conditions in desertification affected areas will have been improved considerably and people's living standard been greatly improved. By then, large stretches of desertification affected areas will have been controlled or improved, including rehabilitation of 6 million hectares of wind eroded sandy land and 4.8 million hectares of water eroded sandy land (with 0.6 million hectares of plantations), 17.5 million hectares of pasture, 5 million hectares of saline land and 68.68 million hectares of nature reserves.

By 2050, the overwhelming majority of the desertification affected land, excluding areas with extremely adverse conditions, will have been brought under effective control, the total area of nature reserves will have covered 91.35 million hectares and the local environment and economic development in the desertification affected areas will have entered into a virtuous cycle.

7.3 PRIORITY AREAS OF NAP

7.3.1 ACCELERATION OF REVEGETATION IN THE AFFECTED REGION

The objective of protection are natural forest and grass vegetation of great value and/or in the critical areas; revegetation indicates that plantations and grass growing are urgently needed in the programme area.

7.3.2 CAPACITY BUILDING FOR DESERTIFICATION MONITORING, PREDICTION AND EARLY WARNING SYSTEM

In accordance with the needs of combating desertification, national desertification monitoring is carried out at intervals to gain timely and accurate understanding of the national trend of desertification and provide professional information for macro decision-making in combating desertification.

The national desertification monitoring is designed at three levels, i.e.: national macro-monitoring, typical monitoring in sensitive areas and special monitoring in selected positions.

Macro monitoring mainly employs sampling techniques that obtains the overall and general data on national desertified land and sandy land through sampling survey methods which takes province as a unit. One cycle is 5 years.

Typical monitoring in sensitive areas primarily indicates special monitoring on actively expanding areas of desertification, controlled areas with remarkable success and emergent events such as sand and dust storms, flood and mining. The scope and interval of monitoring are determined to meet practical needs.

Special monitoring in selected positions of different zones indicates establishment of fixed positioning and monitoring stations or plots in different affected zones to undertake long-term and systematic monitoring on the relevant factors related to the formation of desertification aiming to provide the causes and process of formation and development of desertification, countermeasures and results.

These activities are materialized through development of the monitoring stations/plots, use of modern equipment, introduction of advanced techniques, training of monitoring personnel and establishment of national network system.

7.3.3 EXTENSION SERVICE AND ADAPTATION OF ADVANCED PRACTICAL TECHNOLOGY

Extension and adaptation are realized mainly through establishment of demonstration bases and extension networks, training of technical staff, farmers' training in particular. Meanwhile, advanced techniques are introduced to increase the benefits of afforestation in arid zones.

7.3.4 CREATION OF NETWORK OF PUBLIC EDUCATION FOR COMBATING DESERTIFICATION

This is achieved mainly through establishment of publicity networks and stations, increase of communication facilities, compilation and distribution of publicity materials and training of backbone publicity personnel so as to strengthen the national publicity and educational capacity, raise the public awareness of environmental protection, particularly the women's sense of participation in combating desertification.

7.4 OBJECTIVES OF NAP

In accordance with the objectives set in NAP, the forest and grass cover in the programme area will be increased from the present 6.9% to 11.38% with a net increase of 4.84%, the expanding trend of desertification will be primarily brought under control and the environmental conditions be improved.

7.5 SCOPE OF BACKBONE PROJECTS OF NAP

As the most severe and most urgent issue in China's undertaking to combat desertification is land desertification, the setting of the priority fields in the action programme takes prevention of wind eroded land as a prime task in the immediate future for combating desertification. The programme area mainly includes 390 counties in 16 provinces, autonomous regions and municipalities, namely: Xinjiang, Qinghai, Gansu, Ningxia, Inner Mongolia, Shanxi, Hebei, Beijing, Tianjin, Heilongjiang, Jilin, Liaoning, Shandong, Henan and Tibet, covering a total area of 2.7632 million square kilometers. In addition, experimental and demonstration bases will also be set up in other affected provinces and autonomous regions.

7.6 DURATION OF THE IMPLEMENTATION OF NAP

The duration is 11 years between 2000 and 2010.

7.7 TASK AND OVERALL ARRANGEMENT OF BACKBONE PROJECTS OF NAP

7.7.1 DETERMINED TASK OF BACKBONE PROJECTS

The determined task of backbone projects is 17.867 million hectares, of which protection of existing vegetation covers 5.4 million hectares, afforestation and grass growing covers 12.373 million hectares and development of seed and seedling production base covers 75 000 hectares. Among the areas of afforestation and grass growing, 2.813 million hectares are plantations, 1.48 million hectares aerial seeding and 8.08 million hectares desert closure for natural regeneration.

As far as step of implementation is concerned, phase one (2000 – 2005) will complete 6.6813 million hectares of afforestation and grass growing including 1.5187 million hectares of plantations, 0.7993 million hectares of aerial seeding and 4.3633 million hectares of desert closure for natural regeneration.

Development of 75 100 hectares of seed and seedling production base is fully arranged in phase one.

Phase two (2006 – 2010) will complete 5.692 million hectares of afforestation and grass growing including 1.2947 million hectares of plantations, 0.6807 million hectares of aerial seeding and 3.7167 million hectares of desert closure for natural regeneration.

The component of natural vegetation protection covers 5.4 million hectares, which is not divided into phases, thus requiring continuous implementation throughout the process.

7.7.2 OVERALL ARRANGEMENT OF BACKBONE PROJECTS

In light of the climatic and physical conditions, status and features of distribution of desertified land, the existing problems and similarity in control measures, the programme is subdivided into arid marginal and oasis zone; arid, semi-arid and semi-moist desertified land zone and frigid alpine wind and sand affected zone. 11 major control projects are arranged as needed in the above mentioned 3 special zones.

7.7.2.1 Arid Marginal and Oasis Zone

This type zone includes mainly Xinjiang, Gansu and the western part of Inner Mongolia. Distributed in this zone are China's largest deserts such as Taklimakan Desert Gurban Tonggut Desert Tengger Desert Baidan Jilin Desert and Ulan Buh Desert. From macro point of view, deserts and oases in this zone are distributed in a mosaic pattern, whereas, from local point of view, oases distribute primarily in the marginal areas of the deserts. The climatic conditions are extremely severe, dry and windy, with a humidity index between 0.05 ~ 0.25 resulting in extremely sparse distribution of vegetation. The current major problems include invasion of deserts into oases and further development of the oases in addition to sharp decline of vegetation and environmental deterioration due to shortage of water resources and its unwise use and distribution. Thus, under the precondition of sound protection of existing natural vegetation, priorities of NAP in this type zone are to establish windbreaks and sandbreaks in the frontier of deserts and develop shelterbelts networks around the severely affected cities/towns and along major communication lines to control expansion of deserts.

There are 3 key control projects covering 6.9393 million hectares, of which 2.838 million hectares are for protection of existing vegetation, 4.0773 million hectares for afforestation and grass growing, 24 000 hectares for establishment of seed and seedling production bases. Among the area for afforestation and grass growing, there are 0.62 million hectares of plantations, 13 300 hectares of forest and pasture established by means of aerial seeding and 3.442 million hectares of desert closure for natural regeneration.

(1) The Protection and Control Project around the Taklimakan Desert

This project lies around the Taklimakan Desert, the largest desert in China, where the landform undergoes a transition from oasis to desert. This area is the driest area in China with a humidity index slightly over 0.05. The oases are maintained with ice water from the melting glacier on the high mountains surrounding the basin and the water resource is very limited. The oases are under serious threat from expansion of deserts. Furthermore, the Tarim River Basin is the largest natural range of *Populus Euphratica*, the world's rare and precious tree species. Ever increasing and unwise use of water for farming along the upper and middle reaches in recent years have resulted in sharp decline in water storage and even dry-up of water flow along the lower reaches of the river, leading to quality decline and death of large areas of natural *Populus Euphratica* forests.

Priorities of the project are, first of all, to secure wise use of water and integrate water use for ecological purpose into the general water distribution plan for the basin area so as to save rare desert vegetation dominated by natural *Populus Euphratica* forests and promote regeneration of the *Populus Euphratica* forests through closure and management measures, diversion of flood for irrigation, secondly, to establish biological protection system through afforestation and desert closure for natural regeneration in the conjuncture of desert and oases to check expansion of desert into oases.

(2) The Vegetation Protection Project in the Gurban Tonggut Desert

This project lies in the Gurban Tonggut Desert and its surrounding area in the Zhenggar Basin in north Xinjiang Autonomous Region. The annual precipitation in this area is close to or higher than 200 mm with a humidity index over 0.2. Distributed in this area is the Gurban Tonggut Desert, the only desert in China dominated by semi-mobile sand dunes with China's largest natural *Haloxylon ammodendron* forest. In recent decades, overall land reclamation and cultivation, over-grazing and over-cutting have resulted in destroy of valuable natural vegetation and development of mobile sand dunes.

In light of the specific conditions in the project area, the pre-determined priorities are, firstly, to secure sound protection of the existing natural *Haloxylon ammodendron* forest from further destruction and restore the natural vegetation through measures such as desert closure for natural regeneration; meanwhile, to establish shelterbelts system along major highways and railways and around urban areas and mining sites; to undertake small scale aerial seeding experiments where appropriate for experience acquisition and future extension.

(3) The Control Project around Baidan Jilin Desert, Tengger Desert and Ulan Buh Deserts

This project lies primarily in the Alax Plateau and the conjuncture of Hexi Corridor and the three deserts in Helan Mountain Range and to the west of the Yellow River. Precipitation along the eastern border sustains with a humidity index of approximately 0.2, which decreases from east to west gradually

down to about 0.05.

The key problem in this project area is the invasion of desert into oases under the effect of strong wind, threatening security of the oases. In addition, slash and burn to expand farmland in some areas has resulted in lowering of underground water table, abandonment of large stretches of desertified farmland, decline and decay of man-made and natural vegetation, and eventually shrinkage of oases.

In this connection, future priorities of the project are to establish shelterbelts system around the oases and in the conjuncture with deserts (wind gaps in particular) through afforestation and grass growing, to stop adverse human disturbance such as deforestation and unwise land reclamation, to protect and restore the natural *Populus Euphratica* and *Tamarix* forests in the Ejina Oasis in the west of the Alax Plateau. Priority in the eastern part of the project area is to secure sound protection of the natural *Haloxylon ammodendron* forest in the desert.

7.7.2.2 Semi-arid and dry sub-humid Desertified Land Zone

This type zone encompasses the vast expanse of land to the east of Helan Mountain Range and to the west of the Great Wall and includes sandy land in western part of the Northeast and in the old course of the lower reaches of the Yellow River. It covers entirely the 4 largest deserts in China and its administrative range mainly includes Shaanxi, Ningxia, Shanxi, central and east Inner Mongolia, Hebei, Beijing, Tianjin, Liaoning, Jilin, Heilongjiang, Shandong, Henan provinces, autonomous regions and municipalities. From climatic point of view, it falls under the semi-arid and semi-moist desertified zone with a humidity index between 0.2 ~ 0.65. Natural precipitation can sustain normal growth of natural vegetation.

Main problems include land desertification resulted from over-grazing, excessive land use and over-cutting. The degradation process is extremely severe; some fixed and semi-fixed sand dunes have been activated to cause more frequent sandstorms. In consideration of the high population density and frequent economic activities in the project area, the direct and indirect damages of desertification are enormously large.

As the conditions in this zone are fairly favourable, future control priorities are to increase vegetation cover through measures such as plantation, aerial seeding, desert closure for natural regeneration to prevent expansion of desert, to develop and wisely use the desert resources, speed up the pace of control and promote realization of such a situation in which people advance and deserts retreat.

There are 5 key control projects in this type zone covering a total area of 9.6714 million hectares, of which 2.1287 million hectares are for protection of existing vegetation, 7.4967 million hectares for afforestation and grass growing and 46 000 hectares for development of seed and seedling production bases. Among the areas for afforestation and grass growing, plantation covers 2.092 million hectares,

aerial seeding 1.4667 million hectares and desert closure for natural regeneration 3.938 million hectares.

(4) The Integrated Control Project in Mu Us Sandy Land and Surrounding Areas

This project is in Mu Us Sandy Land including north Shaanxi, south Inner Mongolia and most parts of Ningxia. The natural conditions are fairly favourable here with a humidity index between 0.2 ~ 0.65. The current main problems are land desertification and degradation due to over-grazing, over-cutting and uncontrolled digging of medicinal herbs. Lying along the middle reaches of the Yellow River, the project area is in a transitional zone from wind and sand affected areas to the Loess Plateau, water and soil erosion is very serious due to loose soil structure in east and south and rolling landform. There are many successful experience and models in combating desertification in this area where people have accumulated rich experiences and developed appropriate techniques for aerial seeding in deserts. Thus, practical techniques and models are available for future practice of combating desertification.

Top priorities in this project area are to restore vegetation, decrease sand and mud flow into the Yellow River and prevent land from desertification by using the appropriate and rich aerial seeding experiences and through such measures as aerial seeding, desert closure for natural regeneration and artificial endeavors such as plantation establishment and grass growing.

(5) The Integrated Control Project of the Wind and Sand Sources Affecting Beijing City

This project is in Beijing's windward areas including central and south Inner Mongolia, Shanxi, north Hebei, Beijing and part of Tianjin with a humidity index between 0.2 ~ 0.65. The main problem in this area lies in the fact that the windward areas of Beijing and Tianjin are thousand-meter higher than the urban areas with abundant sandy substances. In recent years, over-grazing, deforestation and land reclamation, uncontrolled digging of medicinal herbs and excessive fuel wood collection have led to activation of sand dunes and southward movement of shifting sand, becoming the main cause of sand and dust storms in Beijing and Tianjin areas.

Priorities of the project are to restore vegetation, prevent shifting sand from moving southward, decrease flow-around of ground sand by means of desert closure for natural regeneration, aerial seeding and afforestation so as to upgrade the sandy and dusty climate prevailing in winter and spring in Beijing and Tianjin cities.

(6) The Vegetation Establishment and Utilization Project in Korqin Sandy Land

This Project covers the Korqin Sandy Land and Songnen Sandy Land, administratively encompassing east Inner Mongolia, Liaoning, Jilin and west Heilongjiang. Precipitation here is close to that in Mu Us Sandy Land. As evaporation is low, the humidity index is around 0.5 ~ 0.6 with favourable conditions for

project activities.

Problems in this area mainly include land degradation, desertification and expansion of shifting sand due to excessive land reclamation and over-grazing. In addition, vegetation destruction has resulted in adverse wind and sand damage on crops and villages.

Priorities of this project area are to restore vegetation, combat desertified land in appropriate scale, decrease wind and sandy damages and fix shifting sand by means of such measures as afforestation and grass growing, desert closure for natural regeneration and aerial seeding to promote growth of trees and grass vegetation. Meanwhile, it is also endeavored to raise people's living standard through appropriate utilization of natural and economic vegetation resources and development of cultivated medicinal and edible plants.

(7) The Vegetation Rehabilitation Project in the Hulun Bir Sandy Land

This Project lies in north-east Inner Mongolia to the west of Daxing'anling Mountain Ranges with a humidity index between 0.5 ~ 0.65. The main problems are activation of fixed sandy land and sandy dunes and threats of shifting sand on development of agriculture and animal husbandry resulted from over-grazing and deforestation and inappropriate land reclamation. The local conditions are favourable for combating desertification. Priorities of the project are to rehabilitate vegetation, mitigate land desertification and prevent shifting sand from moving forward through such measures as desert closure for natural regeneration of trees and grass, plantation establishment, grass growing and aerial seeding.

(8) The Integrated Desertified Land Control Project in the Old Course of the Lower Reaches of the Yellow River

This project lies in the sandy area formed after historic change of river course at the lower reaches of the Yellow River, encompassing administratively sandy areas in eastern and northern Henan, eastern Hebei and Shandong provinces with a humidity index over 0.5.

The main problems in this area lie in the fact that, despite of the control efforts in past years and disappearance of large stretches of shifting sand, the impact of wind and sand has not yet been rooted out. Winter and spring are seasons when wind and sand damages in some areas are still very serious posing threat on people's living environment and agricultural activities. The conditions here are the most favourable in all the key projects.

Priorities in this area are to establish and improve the shelterbelts system, bring desertified land under thorough control and eradication of wind and sand damages by taking such measures as plantation establishment, development of farmland shelterbelts networks or practice of inter-cropping.

7.7.2.3 Frigid Alpine Wind and Sand Affected Zone.

This type zone is in the alpine zone of the Qinghai-Tibet Plateau, 3000 ~ 4000 meters above the sea level. The sandy land mainly distributes around the river sources above the Qaidam Basin and Gonghe Basin in Qinghai Province and in the river valley at the middle reaches of the Yarlung Zangbo River in Tibet. Administratively, it encompasses Qinghai Province and Tibet.

Despite of the low precipitation in the Qaidam Basin, the general annual precipitation around river sources and along the middle reaches of the Yarlung Zangbo River is over 300 mm with a wide range of humidity index between 0.05 ~ 0.65. Coldness and sparse distribution of arid vegetation feature the typical climate of this area. It is one of the few alpine and arid sandy lands in the world with fragile ecological environment prone to damage and hard to restore. Population density at the lower part of the river sources is high and the population density is low in other parts of the project area. In the Yarlung Zangbo River valley, population concentrates to certain extent. The current main problems include land desertification in Qinghai due to over-grazing and over-cutting and strong wind and sand in the Yarlung Zangbo River valley posing great threat on people's living.

Priorities in this project area are to protect and rehabilitate vegetation, establish biological shelter to control expansion of desertification and mitigate the effect of wind and sand damages through such measures as desert closure for natural regeneration, afforestation and grass growing by taking into consideration of specific local conditions while give due emphasis to sound protection of the existing vegetation.

The project covers a total area of 997, 800 hectares, of which 433, 300 hectares are for protection of existing vegetation, 799, 300 hectares for afforestation and grass growing and 51, 000 hectares for establishment of seed and seedling production bases. Among the area for afforestation and grass growing, 99, 300 hectares are for plantation establishment and 70 000 hectares for desert closure for natural regeneration.

(9) The Integrated Desertified Land Control project in the Qaidam Basin

This project lies in China's largest alpine arid desert in Qinghai Province. It is extremely dry with a humidity index between 0.05 ~ 0.2. The current main problems are featured by destruction of vegetation and aggravating wind and sand damages resulting from alpine arid climate, sparse distribution of vegetation, over-cutting, over-grazing and unwise land reclamation along with accelerating human economic activities.

Priorities of the project are to strengthen desert closure for natural regeneration, establishment of shelterbelts networks around oases, urban areas, mining sites and living quarters to prevent wind and sand

damages and protect the normal industrial and agricultural activities and people's living environment while giving due emphasis to sound protection of the existing vegetation.

(10) The Integrated Desertified Land Control Project around River Sources in Qinghai Province

The project is around the river sources of the Yellow River and the Yangtze River in Qinghai Province at an elevation of over 3000 meters, dry and cold with fragile environment. As the source of water supply for China's two largest rivers, it is known as "the water tower of China" which has extremely great significance for the security and water supply for the lower reaches.

The current main problems are decline of water conservation function in the river sources, sharp increase in sand and mud flow into rivers and dry-up at the Yellow River source which are results of land desertification and water and soil erosion due to over-grazing and cultivation of slope farmland. These adverse effects have direct impacts on the security and life span of the water conservancy and hydroelectric facilities along the rivers and pose threats on the sustainable economic development and security of human living at the middle and lower reaches of the rivers.

Priorities in this area are: (1) in the water and soil erosion area in the east, to stop farming on slopes and return slope farmland back to forestry, to increase vegetation cover for water and soil conservation so as to decrease mud and sand flow into rivers through such measures as afforestation and grass growing, desert closure for natural regeneration of trees and grass; (2) in the middle part, to increase forest cover and enhance the water conservation function of forests by means of protection of natural forests, afforestation and grass growing; (3) in the western river sources, to determine the carrying capacity of pastureland in accordance with the volume of grass produced so as to release pressure from pastureland and reverse the trend of land desertification.

(11) The Integrated Desertified Land Control Project in the Valley along the Middle Reaches of the Yarlung Zangbo River

This project lies in the river valley at the middle reaches of the Yarlung Zangbo River and at the lower reaches of Nianchu River and Lhasa River with an elevation of 3300 ~ 4000 meters above sea level and an annual precipitation between 300 ~ 400 mm. It is an example of the few alpine arid valley desertified land in the world.

The main problems are severe wind and sand damages threatening industrial and agricultural activities, communication and transport and people's living in the valley and absence or incomplete windbreak and sand fixation networks.

Priorities in this area are to establish and improve windbreaks and sand fixation networks through

afforestation and desert closure measures in the valley area so as to improve the local environment and protect industrial and agricultural activities and the living conditions of local people. The project covers a total area of 50 000 hectares.

7.8 BUDGET ESTIMATION OF BACKBONE PROJECTS OF NAP

In accordance with the project workload and actual cost survey and estimation of different control measures in project zones, the total input in the backbone projects between 2000 ~ 2010 will be RMB 22.89 billion Yuan.

7.9 FINANCIAL MECHANISM

In light of China's specific conditions, the guiding principle of investment in the backbone projects is dominance of investment from the central government supplemented by input from local governments while efforts will be made to apply for overseas financial support.

7.10 GUARANTEE SYSTEM TO IMPLEMENT PROJECTS

7.10.1 DEFINITE RESPONSIBILITY OF LOCAL GOVERNMENT OFFICIAL

Local governments at different levels shall take main and overall responsibility for project implementation. Expansion or decrease of desertification affected areas shall be a major indicator in assessing the political achievements of leading officials in local governments at different levels. The routine examination, check-up and award/punishment systems shall be set up. The State shall be responsible for inspection, monitoring and coordination with regard to project implementation.

7.10.2 ESTABLISH SOUND MECHANISM TO IMPLEMENT PROJECT

Local people are the major force to implement the project and special attention should be given to women's role in project implementation. The project shall adopt such means of implementation as individual contract and management so as to mobilize the enthusiasm of local farmers to participate in combating desertification; all kinds of economic sectors are encouraged to purchase the usufruct rights of

the sandy land for development and control purposes; efforts shall be made to promote the shareholding system and joint ventures; people who plant trees shall own and benefit; those who take control measures shall have the priority in future development of the sandy land, the successful control results can be transferred and inherited.

7.10.3 ADAPT ADVANCED PRACTICAL TECHNOLOGIES AND RESEARCH RESULTS

Endeavors shall be made to publicize and popularize the scientific knowledge on combating desertification. The State shall organize brainstorm projects to tackle major scientific problems affecting project implementation; the project shall extend all kinds of practical techniques and establish high-standard and advanced scientific and technical extension and demonstration bases to increase the role of science and technology in project implementation.

7.10.4 PERFECT LEGAL SYSTEM

Laws and regulations shall be used to standardize and bind human activities of economic nature in the sandy areas, prohibiting destructive activities such as deforestation, illegal land reclamation, uncontrolled digging of medicinal herbs and edible fungus; The examination and approval procedures for development and utilization of the sandy land shall be strictly followed and the sandy land development permit system be established; All the mining companies and communication projects in the sandy area should take measures to protect vegetation and those who make disturbance shall be responsible for rehabilitation; Efforts shall be made to promote early promulgation of the Law on Combating Desertification.

7.10.5 PROMOTE AND OPTIMIZE MANAGING MECHANISM OF PROJECT

Special regulations governing project implementation shall be formulated in line with the requirements of the State's management procedures for capital construction projects and the examination, acceptance and auditing systems improved. Standard management shall be followed in which project formulation should be in line with planning, management under project principles, implementation according to design and acceptance against criteria; legal person responsibility system shall be adopted in project development, project monitoring system be adopted in implementation and reimbursement system be adopted in financial management.

CHAPTER EIGHT: FINANCIAL MECHANISM AND ENABLING MEASURES TO IMPLEMENT NAP

8.1 RATIFICATION OF FINANCIAL MECHANISM

8.1.1 MEASURES TO PROMOTE LOCAL UNITS FOR SEARCHING FINANCIAL SOURCES

In order to guarantee and strengthen capacity building endeavors, the Chinese government has appropriated special project funds; government discounted loans and certain portion of the integrated agricultural development fund and poverty eradication and relief funds for combating desertification and integrated development of the sandy land. In addition to the input from the central government, provinces, autonomous regions and municipalities also provide local financing for project implementation. The inputs for implementing NAP shall be met through such measures as financial appropriation from the central government, local financing, and work relief and labour contribution by farmers.

8.1.2 SUITABLE PATTERNS TO RAISE INTERNAL AND EXTERNAL FINANCIAL SOURCES

The general principle is that people who invest shall benefit and own. Investment and benefits can be inherited and transferred. All kinds of economic sectors are encouraged to invest in China's undertaking of combating desertification

8.2 FINANCIAL SOURCES OF NAP

8.2.1 DOMESTIC SOURCES

Despite of the very limited financial resources, the State has made the decision of giving priority to the national desertification-combating programme.

8.2.2 INTERNATIONAL SOURCES

UNDP and FAO have provided financial support, GEF and IFAD projects are in the process of application. Multilateral and bilateral sources are welcome to provide more contribution to China's undertaking on combating desertification.

8.2.3 FINANCIAL SUPPORT FROM GLOBAL MECHANISM

China hopes that the Global Mechanism will start substantial operation and provides financial support to its member States including China.

8.2.4 PARTNERSHIP PROVIDING FINANCIAL SUPPORT

Contribution of the CCICCD members was described above. The international partners providing financial support to implementation of NAP were described in section 8.2.2.

8.2.5 AMOUNT OF POSSIBLE FINANCIAL SOURCES

The available amount of financial resources for the implementation of NAP was described in sections 4.1.2 and 6.1.1 respectively. CCICCD has received requests from local governments for financial support and the State Forestry Administration has provided certain amount of financial support for pre-project preparation and project consultation.

8.3 TECHNICAL COOPERATION

8.3.1 ENCOURAGEMENT OF TECHNICAL COOPERATION

China has requested FAO, UNDP and UNSO to provide technical support and has enjoyed technical support from international experts.

UNSO has provided some technical support for China's National Desertification Combating Fund and China Development Bank has also provided some assistance to the national secretariat to develop concept for establishment of the National Desertification Combating Fund.

8.3.2 DETERMINATION OF PRIORITY REQUIREMENT OF TECHNICAL SUPPORT

With regard to the requested technical support, the following activities are necessary, i.e.: establishment of partnership, integration of local actions and State policies, participation of NGOs and private sectors, etc.

8.4 ABILITY GUARANTEE TO IMPLEMENT NAP

In order to speed up the pace of implementation of NAP on combating desertification, the Chinese

government has strengthened capacity building and improved necessary organizational setting. However, China's capacity in combating desertification needs to be further enhanced particularly in fields related to financing and high-tech in which there are still some difficulties. Effective improvement of the agricultural environment, coordination of the relationship between environment and development, production of greater amount of agricultural, forestry and animal husbandry products and realization of sustainable economic and environmental development in desertification affected areas are the strategic goals of China in combating desertification. In a bid to achieve such strategic goals, effective measures have been taken, which includes recent endeavors to enhance the capacity of China's decision makers and local people, training of large groups of specialized personnel for combating desertification, development of the desertified land still suitable for farming by using the successful experiences gained in demonstration bases and establishment of increasing numbers of artificial oases. Meanwhile due consideration shall be given to wise use and effective protection of the biological diversity and other resources in the desertification affected areas so as to ensure that needs of one region will not jeopardize or weaken the ability of other regions to meet their needs and that needs of the present generation will not be detrimental to the ability of future generations to meet their needs. China is engaged in development of the Law on Combating Desertification and future educational programmes for public awareness will be legalized, standardized and institutionalized.

Desertification is a very serious problem in China, which is challenged by heavy pressure of a large population and limited land resources. The national economy is still in a development period. China wishes and is willing to carry out cooperation with UN organs and its member States so as to make due contribution to the common course of combating desertification. During the prolonged process of combating desertification, China hopes to gain concrete support and assistance from international organizations and the developed countries.

The human society is facing many great challenges in combating desertification and realization of the goal of sustainable development. The Chinese government and its people will, as always, work together with people of other countries to take appropriate actions and strive for the global course of combating desertification, protection of the human dependant environment and development of a beautiful homeland for the mankind.

Postscript of the report

According to the decisions of 11/COP1? 5/COP 2 and 5/COP 3, The Secretariat of China National Committee for the Implementation of the UNCCD has organized a group of expert, headed by Mr. Lei Jiafu, Director-general of National Bureau to Combat Desertification and the National Focal Point to UNCCD, to prepare the National Report to Implement the UNCCD and NAP in Dec. 1999, just after the COP3 in Brazil. Mr. Liu Tuo is pointed to be responsible of the organization of the expert and the preparation of draft report. It is very much appreciated that the following governmental agencies and institutions have contributed great efforts to the report during the preparation of the report:

Department of Forest Management and Silviculture, ASF;

Department of Finance and Plan, SFA;

National Bureau to Combat Desertification, SFA;

Institute of Forestry Survey and Inventory, SFA;

Chinese Academy of Forestry;

Beijing Forestry University;

Ministry of Foreign Affairs;

Ministry of Science and Technology;

State Committee of Development and Plan;

Research and Development Centre, State Council.

It is also appreciated that the Secretariat of the UNCCD and China national Bureau to Combat Desertification has financed the compilation of the report.

Two expert panels have been held to review and discuss the report after the draft copy was prepared. This final report was re-prepared on the basis of wide discussion with experts from various sectors and valuable consultation and constructive comments.

The report was compiled as following arrangement:

Chapter one and two: Yang Youlin and Zhou Guolin, Senior Engineer of the National Bureau to Combat Desertification;

Chapter three to five: Luo Bin; Associated Professor of the National Bureau to Combat Desertification;

Chapter six and seven: Yang Weixi, Professor of the National Bureau to Combat Desertification;

Chapter eight: Lu Qi, Professor of China National Research and Development Centre for Combating Desertification, he also formatted and edited all the chapters of the report.

Chief Editor of Chinese version: Mr. Lei Jiafu;

Proof-reading of Chinese version: Liu Tuo;

Editor and proof-reading of English version: Yang Youlin.

Translators:

Chapter one-three: Yang Youlin, Senior Engineer of Desertification Combating;

Chapter four: Zhou Guolin, Senior Engineer of Forestry Management;

Chapter five to eight: Wu Zhimin, senior Engineer of the Dept. of Interl. Cooperation, SFA.

Expert Group for compiling national Report for Implementing the UNCCD

Beijing, April 20, 2000