

2007

**Report on the State of the Environment in
China**

Ministry of Environmental Protection
The People's Republic of China

The “2007 Report on the State of the Environment of China” is hereby released in accordance with the Environmental Protection Law of the People’s Republic of China.

A handwritten signature in black ink, consisting of three characters: 周 (Zhou), 生 (Sheng), and 贤 (Xian).

Zhou Shengxian

Minister

Ministry of Environmental Protection

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On October 15, 2007, the 17th National Congress of the Communist Party of China was held in Beijing. President Hu Jintao reported to the meeting and clearly proposed to build the conservation culture.

Photo by Xinhua News Agency



On April 27, 2007, the State Council held the National Teleconference on Energy Saving and Pollution Reduction. Premier Wen Jiabao presented the meeting and delivered important remarks.

Photo by Xinhua News Agency

In 2007, under the wise leadership of the CPC Central Committee and the State Council, all provinces, autonomous regions & municipalities and government departments thoroughly implemented the scientific outlook on development, took pollution reduction as one of the major tasks, adopted comprehensive measures, sped up pollution control, made more efforts, and further carried out relevant policies and measures. As a result, they made a breakthrough in pollution reduction with both decrease of COD and SO₂ emissions, and made active progress in environmental protection work.

First, the CPC Central Committee and the State Council highly valued environmental protection work. President Hu Jintao gave important instructions on intensifying the administration by law, devoting more efforts to pollution treatment and striving for the achievement of the target for the control of total amount of pollutants. The State Council printed and distributed a number of important documents, including the *Circular on Printing and Distributing the Integrated Work Plan on Energy Saving and Emissions Reduction*, *Circular on Printing and Distributing the 11th Five-Year Plan on Environmental Protection*, and *Circular on Transmitting the Implementation Plan and Approach for Statistics, Monitoring and Assessment of Energy Saving and Emissions Reduction*. The 17th National Congress of the CPC included the efforts to build a resource-saving and environment-friendly society in the CPC Constitution, and regarded the building of conservation culture as a new requirement for achieving the target of building a *Xiaokang Society* in an all-round way.

Second, a breakthrough was achieved in pollution reduction. COD and SO₂ emissions decreased by 3.2% and 4.7% respectively than that of 2006, it is the first time to experience a drop in both COD and SO₂ emissions.

Third, the government tried hard to solve prominent environmental problems that threaten public health and adversely affect sustainable development. More efforts were made to prevent and control pollution in key basins and regions with active progress in cracking down on illegal pollutant discharge enterprises. Special law enforcement inspection was carried out in the drinking water source protection areas, investigating the basic information of such areas. Environmental protection work was launched in rural areas in an all-round way, and all kinds of environmental emergencies were actively responded to and properly handled.

Fourth, the government adopted the policy of regional ban the approval of new projects due to excessive environmental pressure, in order to control pollution at the source. The environmental authority suspended the approval of environmental impact assessment statements of ten cities, two counties, five development zones and four power groups, which frightened the behaviors in violation of environmental laws.

Fifth, the government further improved the legal and economic policies and

standardization systems in the environmental sector. It has amended the *Law of the People's Republic of China on Prevention and Control of Water Pollution*, identifies enterprises with outdated production capacity in heavy pollution industries, introduced environment-friendly fiscal, tax, credit, trade, securities, insurance, and pricing policies, and issued 104 national standards for environmental protection.

Sixth, the government launched three fundamental and strategic projects, i.e., the first national census on pollution sources, study on China's macro environmental strategy, and the special S&T project on treatment and control of water pollution.

Seventh, the supervision on nuclear and radiation safety was intensified.

Eighth, the environmental publicity was also intensified. The environmental authority issued the *Measures for the Disclosure of Environmental Information (for Trial)* in order to safeguard public right to know about, participate in and supervise on environmental protection.

Ninth, the government actively implemented environmental conventions with major breakthrough in international environmental cooperation. Both multilateral and bilateral environmental cooperation have been intensified, and the Chinese government further enhanced its resolute resolve to intensify environmental protection and erected the image of a responsible country in the new era, which won the positive comments from the international community.

In 2007, the overall environmental quality of the whole country turned better but the situation was not inspiring. Surface water pollution was still serious, the seven major water systems suffered from medium pollution, and the offshore areas at large experienced light pollution. The air quality in urban areas was good at large, but some cities still suffered from heavy pollution. Acid rain distribution areas remained stable. The overall urban acoustic environment was good across China and the overall ecological environment remained stable.

Reduction of the Total Amount of Major Pollutants

Basic goals

The Outline of the 11th Five-Year Plan on National Economic and Social Development proposes the obligatory target to reduce energy consumption per unit GDP by around 20% and the total amount of major pollutants by 10% during the 11th Five-Year Plan period. The two obligatory targets for pollution reduction during that period are, by 2010, to reduce both COD and SO₂ emissions by 10% compared with that of 2005. That is, COD emission will be cut down at 12.728 million tons from 14.142 million tons in 2005, and SO₂ emission be cut down at 22.944 million tons from 25.494 million tons.

The main targets for pollution reduction in 2007 included the followings. Cities that have subordinate county-level cities would have sewage treatment capacity up by 12 million tons/year, the capacity of using recycled water at one million tons/year, and the capacity to cut down COD at 600,000 tons/year. The existing coal-fired power plants would have desulfurization facilities for 35 million kW output, reducing SO₂ emissions at 1.23 million tons/year. A total of 31.5 million tons of coal equivalent would be saved, reducing 400,000 tons of SO₂. More efforts are devoted to phase out outdated production capacity in paper making, alcohol, monosodium glutamate, and citric acid sectors with COD reduction by 620,000 tons.

Reduction of major pollutants

In 2007, COD emission in the country amounted to 13.818 million tons, down by 3.2% than the previous year; SO₂ emission amounted to 24.681 million tons, down by 4.7% than that of 2006. COD and SO₂ emissions decreased by 2.3% and 3.2% respectively compared with that of 2005, being the first time of both drop of COD and SO₂ emissions.

After efforts, 60% of urban sewage water was treated in 2007, up from 57% in 2006. The installed capacity of the thermal power units equipped with desulfurization facilities amounted to 266 million kW. 48% of the units were equipped with such facilities in 2007, up from 32% last year. In 2007, permanganate index in 759 surface water sections under national monitoring program was 6.5mg/L on average, down by 7% than that of the previous year. The proportion of the days in a year with good air quality in the 113 major cities on environmental protection was up by 2.3 percentage points.

Major measures

In 2007, the State Council held the National Teleconference on Energy Saving and Emissions Reduction, printed and distributed the *Integrated Work Plan on Energy Saving and Emissions Reduction*, approved & transmitted the *Implementation Plan and Approach on Statistics, Monitoring, and Assessment for Energy Saving and Emissions Reduction*. All provinces, autonomous regions and municipalities as well as government departments paid close attention to these documents and issued a series of policies and measures to promote the work on energy saving and emission reduction with more efforts. Each province (autonomous region and municipality directly under the Central Government) organized working meetings on energy saving and emission reduction, arranged relevant work, and enhanced the guidance and coordination for such work.

Centering on the overarching task of emissions reduction, environmental authority organized meetings on prevention and control of pollution in the Songhua River Basins and major lake and river basins, proposed the policy to rehabilitate the rivers, lakes and seas unable to bear heavy loads, identified new ideas and measures for treatment of water environment, and promoted the pollution control in major basins; amended and promulgated a number of pollutant discharge standards and clean production standards to reduce pollutant load of major industries. The government has issued fiscal, tax, credit, pricing, insurance and trade policies and measures, and established a long-term mechanism to encourage emission reduction. With “regional banning the approval of new projects” and higher environmental access to new projects; it controlled new pollution at the source. It launched special campaigns on environmental protection to severely punish environmental infringement. With the special funds on emission reduction from the Central budgets, the government focused on its support to the development of three key systems, that is, the statistic system, monitoring system and assessment systems for emission reduction, which provided a solid foundation for emission reduction work. It has printed out and distributed the *Guidelines for Developing Plans on Reduction of Total Amount of Major Pollutants (on Trial)*, *Measures for the Inspection on the Reduction of Major Pollutants Specified in the 11th Five-Year Plan (on Trial)* and *Detailed Rules for Measurement of the Reduction of Total Amount of Major Pollutants (on Trial)*, and established a number of management systems for the assessment and filing of pollution reduction plans, on-the-spot inspection, quarterly regulation, and early warning of emission reduction projects, and management systems for the joint review, examination, and release of data on emissions reduction.

The decreases of both COD and SO₂ emissions in 2007 were mainly attributed to three key measures which gradually played their roles. The three key measures included introducing new pollution treatment projects, industrial restructuring, and regulation. The first key measure of emission reduction is by new pollution treatment

projects. A total of 482 sewage treatment plants were built in urban areas during 2007 with total new treatment capacity at 13 million tons/day. As a result, 60% of the urban sewage was treated, up from 57% in 2006. A total of 2,700 enterprises in major sectors have newly built tertiary effluent treatment facilities. 345 new coal-fired power units equipped with desulfurization facilities were built up with installed capacity of 120 million kW. The installed capacity of thermal power units with desulfurization facilities amounted to 266 million kW, accounting for 48% of the total thermal power units, up from 32% last year. A group of projects were completed for desulfurization of the flue gas from sintering machine and for recycling coal gas from coking plant and sulfur from flue gas of oil refinery. The second key measure of emission reduction is by industrial restructuring. The authority has shut down 2,018 outdated paper mills, nearly 500 chemical enterprises and 400 enterprises in textile, printing and dyeing industry. Small thermal power units with total capacity of 14.38 million kW were suspended and shut down, and 52 million tons of outdated cement production capacity, 46.59 million tons of outdated iron making capacity, 37.47 million tons of outdated steel making capacity and 6.5 million heavy containers of plate glass productivity were phased out. The third key measure of emission reduction is by supervision & regulation. The authority took intensified examination on clean production as one of the important tools to promote pollution reduction and enhanced the examination on clean production and environmental management in major industries including manganese electrolysis industry. It provided training programs for 2,746 managerial and technical staff on clean production and made public 1,855 major enterprises subject to mandatory examination on clean production. Local capacity in statistics, monitoring and law enforcement supervision was enhanced at large, and on-line monitoring systems for pollutant sources were gradually established at provincial level environmental protection departments, and connected with desulfurization facilities, urban sewage treatment plants and key enterprises under national monitoring program. As a result, more and more enterprises discharged pollutants in compliance with relevant national standards.

The Eleventh Five-Year National Plan for Environmental Protection

On November 22, 2007, the State Council issued the *Eleventh Five-Year National Plan for Environmental Protection* (hereinafter referred to as the Plan). It is the first time for the State Council to print and distribute a special plan as one of the documents issued by it. The Plan, a guideline for thorough implementation of the scientific outlook on development and balanced development of the economy, society and environment, is a milestone in the history of environmental protection in China.

The Plan identifies the guidelines, targets, major tasks and main measures for environmental protection during the 11th Five-Year Plan period. The main characteristics of the Plan are to simplify the indicators, highlight priority areas, identify the funding channels, and add the climate change issue. The essence of the Plan can be nailed down as upholding one guideline, grasping one philosophy, identifying one planning goal, highlighting capacity building of one area, and paying attention to a new area. The above said guideline is that the key to doing well environmental protection during the 11th Five-Year Plan period is to speed up the historical transformations. The philosophy is to make progress in all sectors with breakthroughs in priority areas. The said target of the Plan is that by 2010, SO₂ and COD emissions will be under control, the environmental quality in key regions and cities will be improved, the ecological degradation trend will be under basic control, and nuclear and radiation safety will be guaranteed. To highlight capacity building means actively carrying out the projects on capacity building for environmental supervision & regulation. The said new area in need of close attention is the control of greenhouse gas emissions. All these are practical measures to carry out the spirit of the 17th National Congress of the CPC.

Developing Environment-friendly Economic Policies

One of the important guarantees for making a leapfrog progress in pollution reduction is, centering on the promotion of the historical transformations in environmental protection, to consider environmental protection issues in the context of economic and social development, solve environmental problems at the macro and strategic level, and develop environmental economic policies in the life-cycle process.

First, develop green credit policies. The environmental authority, together with People's Bank of China and China Banking Regulatory Commission, issued the *Opinions on Implementing Environmental Policies, Laws and Regulations and Guarding against Credit Risks*. The authority also printed and distributed the *Circular on Relevant Issues on Sharing Environmental Information among Enterprises* with People's Bank of China, incorporating information about environmental infringements of 18,000 enterprises into the bank's credit information system. According to estimate, five large banks retrieved 3.934 billion yuan of loans from the enterprises not following the State's policy on energy saving and emissions reduction. For the first time, the environmental authority signed an information-sharing agreement with China Banking Regulatory Commission.

Second, carry out pilot projects on green insurance policy. The environmental authority has issued the *Guiding Opinions on Environmental Pollution Liability Insurance* with China Insurance Regulatory Commission, developed environmental pollution liability insurance products in selected high-risk industries, enhanced environmental management through market mechanism, and improved the enterprises' ability to guard against environmental risks.

Third, improve environmental inspection system for listed companies. The environmental authority printed and distributed the *Circular on Further Standardizing Environmental Inspection of Production or Operation Companies Applying for Being Listed or Refinancing in Heavy Pollution Industries*, and has stopped ten companies with environmental problems from financing through going listed.

Fourth, issue the catalogue of products with heavy pollution and high risks. The environmental authority developed the catalogue for two times, including more than 190 kinds of such products, and suggested canceling their export rebate and forbidding their processing and trade.

Fifth, issue the *Measures on the Dispatch of the Power from Energy-saving or Environment-friendly Generation Sets (on trial)* and *Measures on the Administration of Pricing of Electricity Generated by Coal-fired Power Units with Desulfurization Facilities and the Operation of Such Facilities*. The environmental authority, together with Ministry of Finance, issued the *Interim Measures on the Administration of Special Funds Allocated from the Central Budget for Reduction of Major Pollutants* and *Interim Measures on the Administration of the Supporting Pipes of Urban Sewage Treatment Facilities and of the Funds Used as Post-event Awards to Replace Initial Subsidies*. The government added 0.015 yuan to the unit price of the electricity generated by coal-fired power units equipped with desulfurization facilities, and facilitated scientific dispatching of the power from energy-saving and environment-friendly generating sets as well as the development of the urban sewage collection pipes.

Sixth, the environmental authority in active cooperation with NDRC and other departments identified the list of small thermal power plants to be suspended and closed during the 11th Five-Year Plan period and the list of

Water Environment

General Situation

The country still suffered from serious surface water pollution. The seven major rivers were under intermediate pollution, rivers in Zhejiang Province and Fujian Province and southwest and northwest China enjoyed good water quality. Lakes had prominent eutrophication problems.

● Rivers

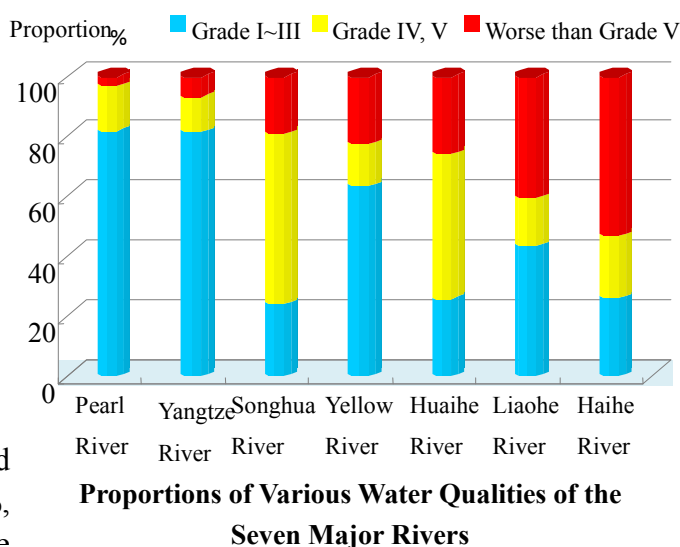
The water quality of the seven major rivers, i.e., the Yangtze River, Yellow River, Pearl River, Songhua River, Huaihe River, Haihe River and Liaohe River remained the same as in the previous year. Among 407 monitored sections of 197 rivers, 49.9%, 26.5% and 23.6% had Grade I-III,

Grade IV-V, and worse than Grade V water quality respectively. Among others, the Pearl River and Yangtze River enjoyed good water quality, Songhua River was slightly polluted, Yellow River and Huaihe River were moderately polluted, and Liaohe River and Haihe River were under heavy pollution.

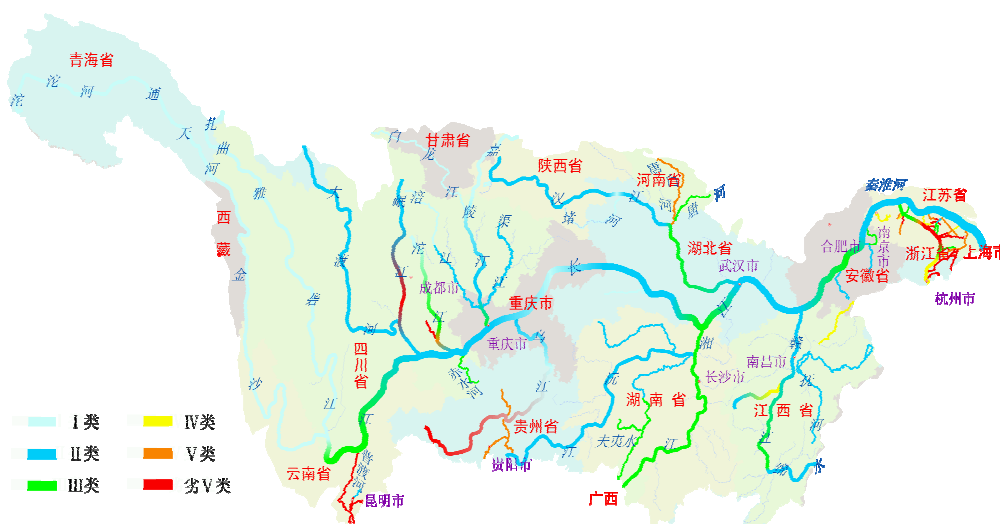
The Yangtze River Waters – The Yangtze River waters enjoyed good water quality on the whole. 81.5%, 3.9%, 7.8% and 6.8% of the 103 surface water sections under national monitoring program fell into Grade I-III, Grade IV, Grade V, or worse than Grade V standards. The major pollutants were ammonia nitrogen, oils, and BOD₅.

The mainstream of the Yangtze River enjoyed excellent water quality, and compared with last year, there were no obvious change in water quality.

In general, the tributaries of the Yangtze River enjoyed good water quality, which turned better compared with that of the last year. The Yalong River, Dadu River, Jialing River, Wujiang River, Yuanjiang River, and Hanjiang River had excellent water quality. The Minjiang River, Tuojiang River, Xiangjiang River, and Ganjiang River had good water quality. However, the Minjiang River section in Meishan city



was under heavy pollution, and the Tuojiang River section in Zigong city and Ganjiang River section in Nanchang city were under moderate pollution. The major pollutant was ammonia nitrogen.



Water Quality of the Yangtze River Waters

The Yellow River Waters – The Yellow River waters were under moderate pollution. 63.7%, 9.1%, 4.5% and 22.7% of the 44 surface water sections under national monitoring program had water quality at Grade II-III, Grade IV, Grade V standards or worse than Grade V standards respectively. The major pollutants were ammonia nitrogen, oils and BOD₅.

The mainstream of Yellow River enjoyed excellent water quality, which turned better compared with that of the previous year. The river sections in Heze city of Shandong Province and Sanmenxia city of Henan Province were slightly polluted. Other sections enjoyed excellent or good water quality.

The tributaries of Yellow River were under heavy pollution, and no obvious changes were observed in water quality compared with in last year. Apart from the Yihe River, Luohe River, and Qinhe River, which enjoyed excellent or good water quality, other tributaries were generally badly polluted. Among others, the Xi'an section and Weinan section in the lower reaches of Weihe River, Xining section in the lower reaches of Huangshui River, Taiyuan, Linfen, and Yuncheng sections of Fenhe River, Weinan section of Beiluo River, and Yuncheng section of Sushui River were under heavy pollution.



Water Quality of the Yellow River Waters

The Pearl River Waters – In general, the Pearl River waters had good water quality. 81.8%, 15.2% and 3.0% of the 33 surface water sections under national monitoring program had water quality at Grade I-III, Grade IV, or worse than Grade V respectively. The major pollutants were oils, dissolved oxygen and ammonia nitrogen.



Water Quality of the Pearl River Waters

In general, the mainstream of the Pearl River enjoyed good water quality with no obvious change compared with that of the last year. Guangzhou section of the Pearl River was under slight pollution.

The tributaries of Pearl River had good water quality in general with no obvious

change as compared with that of 2006. But the Shenzhen River was badly polluted.

Of the rivers in Hainan Island, the Wanquan River enjoyed excellent water quality, and Haidian Brook was under slight pollution. The major pollutant was oils. Compared with last year, no obvious change was observed in water quality.

The Songhua River Waters- In general, the Songhua River waters were under slight pollution. 23.8%, 52.4%, 4.8% and 19.0% of the 42 surface water sections under national monitoring program had water quality at Grade I-III, Grade IV, Grade V, or worse than Grade V respectively. The major pollutants were permanganate index, oils and BOD₅.



Water Quality of the Songhua River

The mainstream of the Songhua River was slightly polluted with no obvious change in water quality as compared with that of 2006.

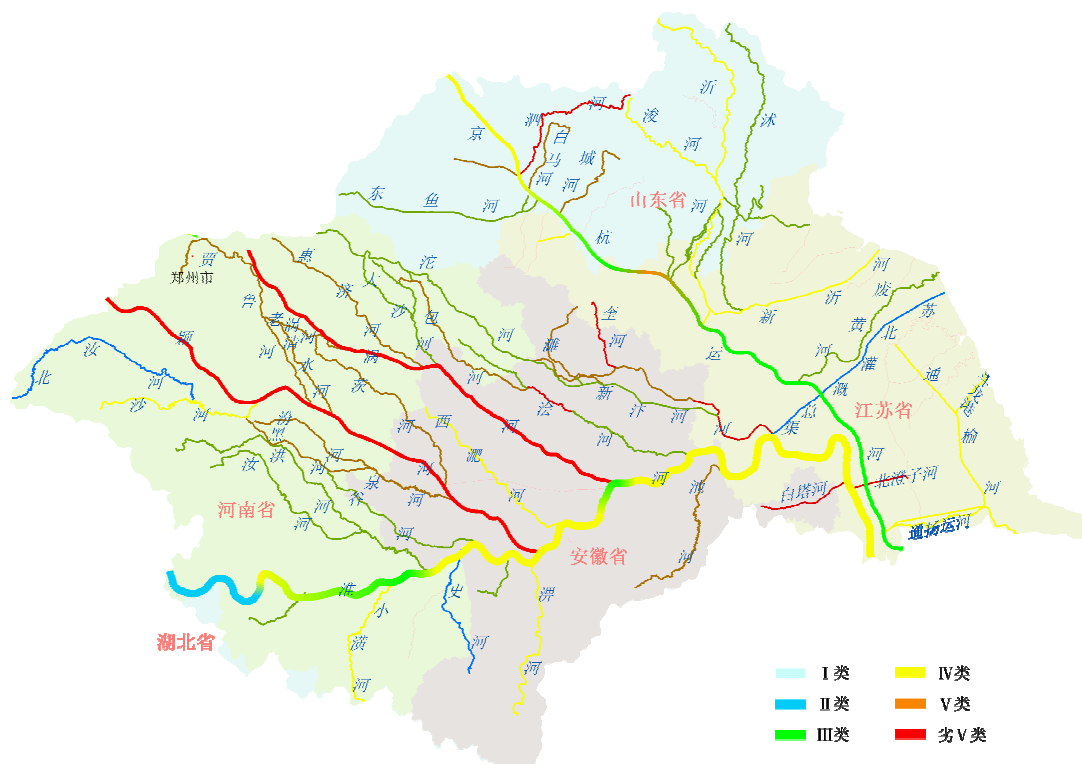
The tributaries of Songhua River were under moderate pollution with water quality turning better as compared with that of the last year.

The Huaihe River Waters – The Huaihe River waters were under moderate pollution in general. 25.6%, 39.5%, 9.3% and 25.6% of the 86 surface water sections under national monitoring program had water quality at Grade II-III, Grade IV, Grade V, or worse than Grade V respectively. The major pollutants were permanganate index, BOD₅ and ammonia nitrogen.

The mainstream of Huaihe River was under slight pollution with some degradation in water quality as compared with that of 2006.

In general, the tributaries of the Huaihe River were under moderate pollution with no

obvious change in water quality as compared with that of 2006. Among the main primary tributaries, the Shiguan River enjoyed excellent water quality, Xifei River and Huanghe River had good water quality; Honghe River, Tuohe River, Shihe River, and Kuaihe River were slightly polluted, and Wohe River and Yinghe River were under heavy pollution. The Yihe River, Shuhe River and Sihe River waters were under moderate pollution at large.



Water Quality of the Huaihe River

The Haihe River Waters – In general, the Haihe River waters were under heavy pollution. Among 62 surface water sections under national monitoring program, 25.9% was at Grade I-III water quality, 9.7% at Grade IV, 11.3% at Grade V, and 53.1% was worse than Grade V. The major pollutants were ammonia nitrogen, permanganate index and BOD₅.

In general, the mainstream of Haihe River was under heavy pollution with no obvious change in water quality as compared with that of the last year.

Other main rivers of the Haihe River waters were also badly polluted with no obvious change in water quality as compared with that of the last year. The Yongding River and Luanhe River enjoyed good water quality. Beiyun River, Zhangweixin River, Dasha River, Ziya River, Majia River and Tuhai River suffered from heavy pollution.



Water Quality of the Haihe River

The Liaohe River Waters – In general, the Liaohe River waters suffered from heavy pollution. Among 37 surface water sections under national monitoring program, 43.2% of them had water quality at Grade II-III, 10.8% at Grade IV, 5.5% at Grade V, and 40.5% was worse than Grade V. The major pollutants were ammonia nitrogen, BOD₅ and permanganate index.

The mainstream of Liaohe River was under moderate pollution in general. The Laoha River, Xiliao River and Dongliao River enjoyed good water quality, but the Liaohe River was under heavy pollution. Compared with that of the last year, Xiliao River and Dongliao River had better water quality. But there was no obvious change in water quality of the Laoha River and Liaohe River.

In general, the tributaries of Liaohe River suffered from heavy pollution. However, the Xilamulun River was under slight pollution, and Tiaozi River and Zhaosutai River were badly polluted. No obvious change occurred in water quality compared with that of the previous year.

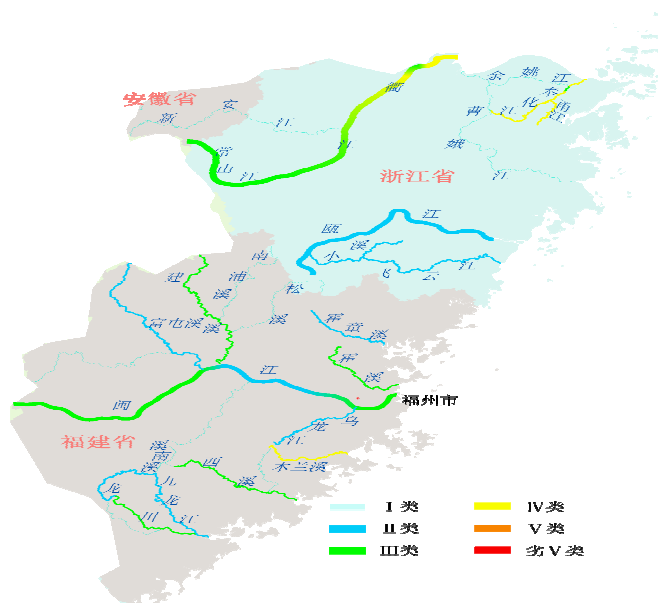


Water Quality of the Liahe River Waters

The Daliao River and its tributaries were badly polluted in general with no obvious change in water quality compared with that of 2006. The Daling River was also under heavy pollution. The major pollutants were ammonia nitrogen, permanganate index and BOD₅.

The Rivers in Zhejiang Province and Fujian Province –

In general, rivers in Zhejiang Province and Fujian Province enjoyed good water quality. 78.2% of the 32 surface water sections under national monitoring program were at Grade I-III water quality, and 21.8% of them at Grade IV. The major pollutants were oils, ammonia nitrogen and BOD₅.

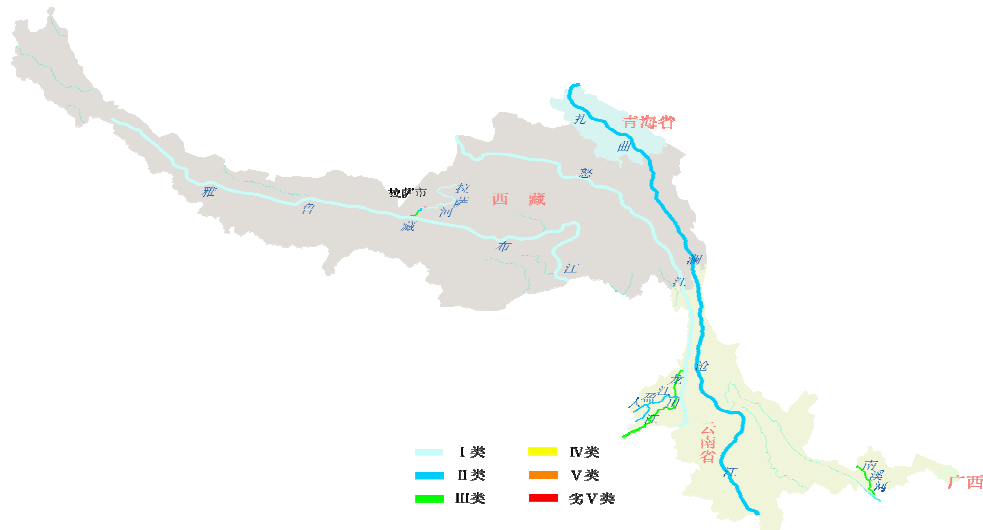


Water Quality of Rivers in Zhejiang Province and Fujian Province

● **Rivers in Southwest and Northwest China**

Rivers in Southwest China – In general, rivers in Southwest China enjoyed good water quality. Among 17 surface water sections under national monitoring program, 82.4% of them had water quality at Grade I-III, 11.7% of them at Grade IV-V and 5.9% was worse than Grade V. The major pollutants were lead, permanganate index and oils.

Rivers in Northwest China - Rivers in Northwest China enjoyed good water quality in general. Among 28 surface water sections under national monitoring program, 82.1% had water quality at Grade I-III, 14.3% at Grade IV, and 3.6% was worse than Grade V. The major pollutant was ammonia nitrogen.



Water Quality of Rivers in Southwest China



Water Quality of Rivers in Northwest China

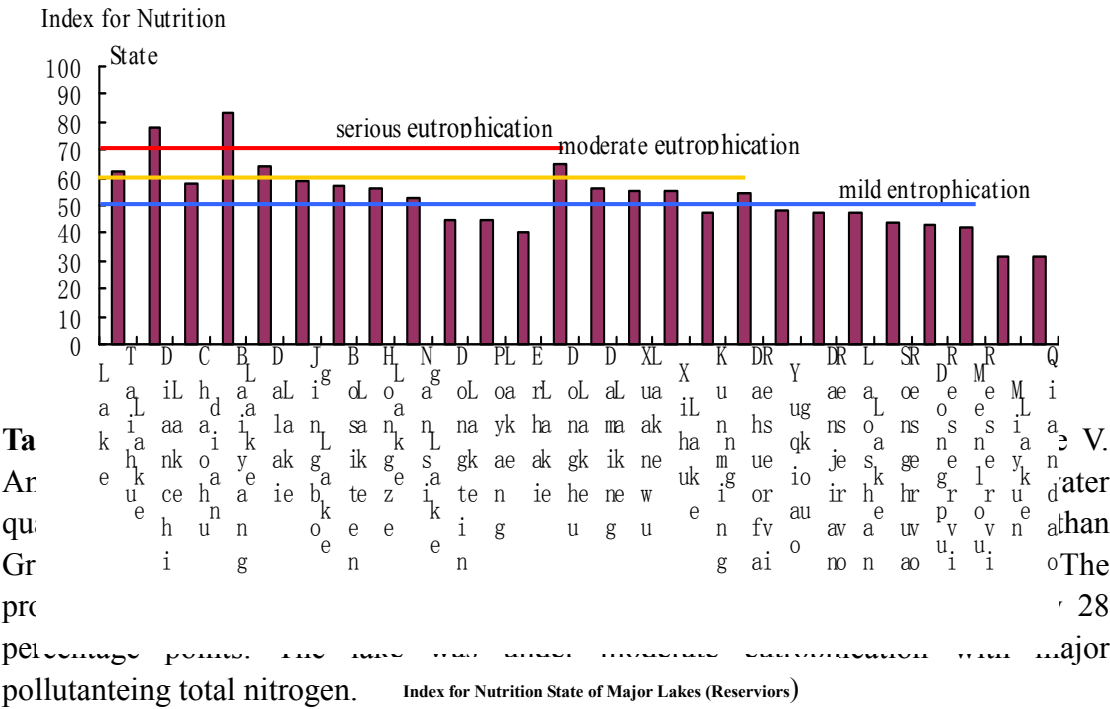
● Lakes (Reservoirs)

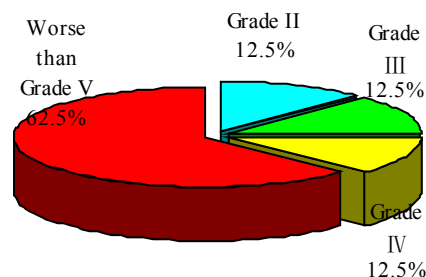
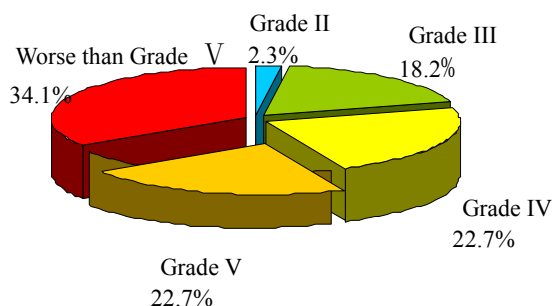
Among the 28 major lakes (reservoirs) under national monitoring program, two had Grade II water quality, accounting for 7.1%; six had Grade III water quality, accounting for 21.4%; four had Grade IV water quality, accounting for 14.3%; five had Grade V water quality, accounting for 17.9%; and 11 had water quality worse than Grade V, accounting for 39.3%. The major pollutants were total nitrogen and

total phosphorus. Among the 26 monitored lakes (reservoirs), two suffered from heavy eutrophication, taking up 7.7%; three suffered from moderate eutrophication, taking up 11.5% and nine experienced mild eutrophication, taking up 34.6%.

Category of Water Quality in Major Lakes (Reservoirs)

Waters \ No.	No.	Grade I	Grade II	Grade III	Grade IV	Grade V	Worse than Grade V
Three major lakes	3					1	2
Large freshwater lakes	10			2	4	1	3
Lakes in cities	5			1			4
Large reservoirs	10		2	3		3	2
Total	28		2	6	4	5	11
Proportion (%)		0	7.1	21.4	14.3	17.9	39.3





Proportions of Different Water Quality of Rivers Surrounding Taihu Lake

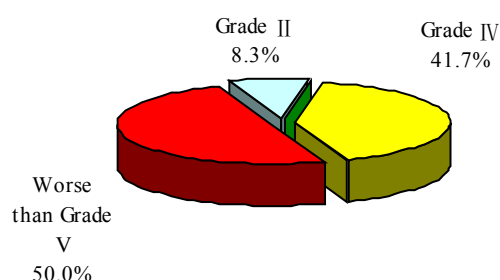
Proportions of Different Water Quality of Rivers Surrounding Dianchi Lake

The rivers surrounding the Taihu Lake were moderately polluted with no obvious change in water quality compared with that of the last year. The major pollutants were ammonia nitrogen, BOD₅ and oils.

Dianchi Lake -The overall water quality of Dianchi Lake was worse than Grade V. Caohai Lake suffered from serious eutrophication with Waihai Lake under moderate eutrophication. The major pollutants were total nitrogen, total phosphorus and permanganate index.

Rivers surrounding the Dianchi Lake were badly polluted. Among the eight surface water sections under the national monitoring program, 25.0% had Grade II-III water quality, 12.5% had Grade IV water quality and 62.5% had water quality worse than Grade V. There was no obvious change in water quality compared with that of the last year. The major pollutants were BOD₅, ammonia nitrogen and permanganate index.

Chaohu Lake – In general, Chaohu Lake had Grade V water quality with no obvious change as compared with that of 2006. The western part of the Lake suffered from moderate eutrophication and the east part mild eutrophication. The major pollutants were total phosphorus, total nitrogen and BOD₅.



Proportions of Different Water Quality of Rivers Surrounding Chaohu Lake

Rivers surrounding the Chaohu Lake were under heavy pollution. Among 12 surface water sections under national monitoring program (including two sections for the control of the pollutant bearing capacity), 8.3% had Grade II water quality, 41.7% of them had Grade IV water quality and 50.0% had water quality worse than Grade V. The major pollutants were oils, ammonia nitrogen and BOD₅.

Other large freshwater lakes - Among the ten major freshwater lakes under national monitoring program, the Bositeng Lake and Erhai Lake had Grade III water quality; Jingbo Lake, Dongting Lake, Poyang Lake and Xingkai Lake had Grade IV water quality; Nansi Lake had Grade V water quality; Baiyangdian Lake, Dalai Lake and Hongze Lake had water quality worse than Grade V. Compared with that of the last year, Nansi Lake, Dongting Lake and Poyang Lake saw better water quality, and other large freshwater lakes had no obvious changes in water quality. The major pollutants were total nitrogen and total phosphorus.

The Erhai Lake, Poyang Lake and Dongting Lake were under mesotrophic state; Nansi Lake, Hongze Lake, Bositeng Lake and Jingbo Lake had mild eutrophication; Dalai Lake had moderate eutrophication and Baiyangdian Lake suffered from serious eutrophication.

Water Quality of Major Large Freshwater Lakes

Name	Index for nutrition state	Nutrition state	Levels of water quality		Major pollutants
			2007	2006	
Baiyangdian Lake	83	Serious eutrophication	Worse than Grade V	Worse than Grade V	Ammonia nitrogen, total phosphorus, total nitrogen
Dalai Lake	64	Moderate eutrophication	Worse than Grade V	Worse than Grade V	pH value, permanganate index
Jingbo Lake	59	Mild eutrophication	IV	IV	Volatile phenol, total phosphorus
Bositeng	57	Mild eutrophication	III	III	-
Hongze Lake	56	Mild eutrophication	Worse than Grade V	Worse than Grade V	Total nitrogen, total phosphorus
Nansi Lake	53	Mild eutrophication	V	Worse than Grade V	Total phosphorus, total nitrogen, oils
Dongting Lake	45	Mesotrophic state	IV	V	Total phosphorus, total nitrogen
Poyang Lake	45	Mesotrophic state	IV	V	Total phosphorus, total nitrogen
Erhai Lake	40	Mesotrophic state	III	III	-
Xingkai Lake	-	-	IV	II	Volatile phenol

Lakes in cities – The Kunming Lake (Beijing) had Grade III water quality, Xihu Lake (Hangzhou), Donghu Lake (Wuhan), Xuanwu Lake (Nanjing) and Daming Lake (Jinan) had water quality worse than Grade V. There was no obvious change in water quality compared with that of the last year. The major pollutants were total nitrogen and total phosphorus.

The Kunming Lake was under mesotrophic state. Xuanwu Lake, Xihu Lake and Daming Lake suffered from mild eutrophication, and Donghu Lake was under moderate eutrophication.

Evaluation Results of the Water Quality of Lakes in Cities

Name	Index for nutrition state	Nutrition state	Levels of water quality		Major pollutants
			2007	2006	
Donghu Lake	65	Moderate eutrophication	Worse than Grade V	Worse than Grade V	Total phosphorus, total nitrogen
Daming Lake	56	Mild eutrophication	Worse than Grade V	Worse than Grade V	Total nitrogen, BOD
Xuanwu Lake	55	Mild eutrophication	Worse than Grade V	Worse than Grade V	Total nitrogen, total phosphorus
Xihu Lake	55	Mild eutrophication	Worse than Grade V	Worse than Grade V	Total nitrogen, total phosphorus
Kunming Lake	47	Mesotrophic state	III	III	—

Large reservoirs - Compared with that of the last year, Dahuofang Reservoir and Miyun Reservoir had better water quality and Yuqiao Reservoir had worse quality. Other seven major reservoirs experienced no obvious change in water quality. The major pollutant was total nitrogen.

Dahuofang Reservoir had mild eutrophication and eight large reservoirs including Yuqiao Reservoir were under mesotrophic state.

Evaluation Results of the Water Quality of Large Reservoirs

Name	Index for nutrition	Nutrition state	Levels of water quality		Main pollutants
			2007	2006	
Dahuofang Reservoir	54	Mild eutrophication	V	Worse than Grade V	Total nitrogen
Yuqiao Reservoir	48	Mesotrophic state	V	IV	Total nitrogen
Danjiangkou Reservoir	47	Mesotrophic state	III	III	-

Laoshan Reservoir	47	Mesotrophic state	Worse than Grade V	Worse than Grade V	Total nitrogen
Songhua Lake	44	Mesotrophic state	V	V	Total nitrogen
Dongpu Reservoir	43	Mesotrophic state	III	III	-
Menlou Reservoir	42	Mesotrophic state	Worse than Grade V	Worse than Grade V	Total nitrogen
Miyun Reservoir	32	Mesotrophic state	II	III	-
Qiandao Lake	32	Mesotrophic state	III	III	-
Shimen Reservoir	-	-	II	II	-

● Groundwater

Compared with last year, groundwater tables in the sites under national monitoring program remained stable, and deep-layer groundwater tables changed more than lower-layer tables. Groundwater quality in major sites of the monitored areas ranged from good to poor. The quality of deep-layer groundwater was better than that of shallow-layer groundwater, and the quality of groundwater in areas with lower groundwater exploitation level was better than areas with higher level exploitation.

Groundwater table - According to the monitoring results of groundwater tables in 169 cities, groundwater tables in monitored areas did not fluctuate much and remained stable at large compared with that of 2006 with bigger change of deep-layer groundwater table than that of shallow-layer. The areas with obvious change in groundwater tables were mainly concentrated in the North, Northeast, Northwest and East China, where more groundwater was exploited. Among others, East China had obvious rise in the groundwater table due to rainfall and the policy of sealing wells and limiting the exploitation of groundwater resources. However, groundwater in North, Northeast and Northwest China still had high development intensity with the decline of groundwater table in most areas.

Among the 148 cities under shallow-layer groundwater table monitoring program, 25 of them witnessed rising trend in their water tables, 98 of them were stable and 25 had declining trend compared with that of the previous year.

Among the 71 cities under deep-layer groundwater table monitoring program, 10 of them had rising water tables, 40 of them were stable and 21 had declining water tables compared with that of the previous year.

Groundwater quality - According to the monitoring data of the groundwater quality in 189 cities, groundwater quality in major sites of the monitored areas ranged from good to relatively poor. The quality of deep-layer groundwater was better than that of shallow layer, and the quality of groundwater in areas with less groundwater exploitation was better than areas with intensive exploitation. The overall

groundwater quality across China did not change much compared with in 2006, and areas with deteriorating water quality were mainly distributed in North, Northeast, and Northwest China. Areas with improving groundwater quality were sparsely distributed.

Among the 159 cities under shallow-layer groundwater quality monitoring program, 16 of them had deteriorating trend of the groundwater quality in major monitoring sites, 137 were stable and six were improved compared with that of the last year.

Among the 76 cities under deep-layer groundwater quality monitoring program, four of them witnessed the groundwater quality in major monitoring sites deteriorating, 68 remained stable and four had improvement compared with that of the last year.

Groundwater drawdown funnel - There were 212 regional groundwater drawdown funnels across the country. Among them, 136 were shallow drawdown funnels, 65 were deep drawdown funnels and 11 were karst drawdown funnels. Compared with last year, groundwater drawdown funnel situation remained stable, and the funnels experiencing obvious change were mainly distributed in North and East China, where were seriously affected by groundwater exploitation.

● **Major Water Conservancy Projects**

The Three Gorges Reservoir Area – The Three Gorges Reservoir area enjoyed excellent water quality. All the six sections under national monitoring program in the reservoir area had water quality ranging from Grade I to Grade III. Among others, Cuntan section, Shaiwangba section and Peishi section of the Yangtze River enjoyed Grade I or II water quality; Qingxichang section of the Yangtze River, Daxigou section of the Jialing River and Maliuzui section of the Wujiang River had Grade II or III water quality. No obvious changes were observed in water quality compared with that of the last year.

Waters along the East Line of the South-to-North Water Diversion Project- Waters along the East Line of the South-to-North Water Diversion Project were under moderate pollution in general. Among the ten sections under national monitoring program, 30% had Grade II-III water quality, 40% had Grade IV-V water quality, and 30% had water quality worse than Grade V. No obvious change was observed in water quality compared with that of the last year. The major pollutants were permanganate index, BOD₅ and ammonia nitrogen.

● **Amount of the discharge of wastewater and major pollutants**

In 2007, the total amount of wastewater discharged was 55.67 billion tons, up by

3.7% than the previous year; COD emission was 13.818 million tons, down by 3.2% than the previous year. The discharge of ammonia nitrogen was 1.323 million tons, down by 6.4% compared with that of the last year.

Amount of Wastewater and Major Pollutants Discharged in China during the Past Three Years

Item Year	Wastewater discharged (100 million tons)			COD emissions (10,000 tons)			Ammonia nitrogen discharge (10,000 tons)		
	Total	From industrial source	From Domestic source	Total	From industrial source	From Domestic source	Total	From industrial source	From Domestic source
2005	524.5	243.1	281.4	1414.2	554.8	859.4	149.8	52.5	97.3
2006	536.8	240.2	296.6	1428.2	542.3	885.9	141.3	42.5	98.8
2007	556.7	246.5	310.2	1381.8			132.3	34.0	98.3

Measures and Actions

【Initiating the Major S&T Projects on the Control and Treatment of Pollution of Water Bodies】 In order to increase the inputs in environmental science and technology and enhance the staying power of the environmental cause, the State took the project of “control and treatment of pollution of water bodies” (hereinafter referred to as Water Project) as one of the 16 national major science and technology projects. The project, included in the *Outline of the National Plan for Medium- and Long-term Scientific and Technological Development (2006-2020)*, aimed to provide scientific and technological support to achieving the target of 10% reduction of the discharge of major pollutants during the 11th Five-Year Plan period and rehabilitating the rivers, lakes and seas that cannot bear any pollution load, and solve water pollution problem, a major bottleneck restraining economic and social development of China.

On December 26, 2007, Premier Wen Jiabao chaired the standing meeting of the State Council, which adopted the implementation plan for Water Project. Water Project included 33 projects targeting at the following six topics, that is, control and treatment of eutrophication of lakes; integrated treatment of water environment of rivers; control of water pollution and urban water environment; guarantee of safe drinking water; monitoring, early warning and integrated management of water environment of river basins; and strategies, policies and management of water environment. Focusing on the studies of the “three rivers” (the Huaihe River, Haihe River and Liaohe River), “three lakes” (Taihu Lake, Chaohu Lake and Dianchi Lake), “one large river” (the Songhua River) and “one reservoir” (the Three Gorges Reservoir), the Water Project will integrate key technologies on the control of pollutant sources and ecological restoration, make breakthroughs in the protection of drinking water sources and

guarantee of safe drinking water, and make innovations in the monitoring and early warning technologies as well as policy management mechanism for water quality in river basins. The State will invest more than 30 billion yuan in the Water Project, which, according to the principle of making steady progress, will be implemented in three stages over the next 13 years, in order to establish two technological systems that comply with our national conditions, that is, the monitoring and early warning technology for the prevention and control of water pollution and the water pollution control system, which facilitates the development of national technical platform for comprehensive management of water environment.

【Implementing the policy of “regional banning EIA approval of new projects in areas with excessive environmental load”】 In early 2007, targeting on a number of construction projects in the iron & steel, power and metallurgy industries which seriously violated the environmental impact assessment regulations and the “three simultaneities” system, the former State Environmental Protection Administration (SEPA) carried out “regional banning EIA approval of new projects in areas with excessive environmental load (hereinafter referred to as ‘regional banning’)” for all construction projects in Tangshan city of Hebei Province, Lvliang city of Shanxi Province, Laiwu city of Shandong Province and Liupanshui city of Guizhou Province as well as Datang International Power Generation Co., Ltd., China Huaneng Group, China Huadian Corporation and China Guodian Corporation. On July 3, 2007, SEPA also carried out ‘watershed banning’ policy in six cities (Baiyin, Bayannaoer, Weinan, Zhoukou, Bengbu, and Chaohu), two counties or county-level cities (Hejin, Xiangfen) and five zones (Lanzhou High-tech Development Zone, Handan Economic Development Zone, Puyang Economic Development Zone of Henan Province, Shenxian Industrial Park of Shandong Province, and Wuhu Economic Development Zone) in the Yellow River basins, Huaihe River basins, Haihe River basins and Anhui section of the Yangtze River, which had heavy water pollution and serious environmental infringements. With the implementation of ‘watershed banning’ policy, a total of 1,162 construction projects were sorted out. Among them, 400 were shut down, 249 suspended production for correction, and 102 were ordered to complete pollution control within a given period of time. Focusing on addressing serious environmental problems within a region, ‘regional banning’ has not only solved a group of prominent environmental problems but also promoted economic restructuring and transformation of the growth pattern in the region.

【Carrying out China-Russia joint monitoring program】 To enhance China-Russia joint monitoring is the embody to intensify environmental regulation over cross-border rivers and display the image of a responsible country. As arranged by the Environment Subcommittee under the Committee for China-Russia Premiers’ Regular Meeting and according to the *Plan for China-Russia Joint Monitoring of the Quality of Cross-border Water Bodies* and the *2007 Implementation Plan for Joint Monitoring of the Quality of Cross-border Water Bodies* that were developed by both sides, the two countries monitored in June and August 2007 respectively cross-border

water bodies including Argun River, Heilongjiang River, Ussuri River, Suifen River, and Xingkai Lake. The monitoring results were recognized by both sides.

【Developing the Eleventh Five-Year Plan for Major River Basins】 The State Council wrote instructions and approved the plan for prevention and control of pollution in the Songhua River basins, Danjiangkou Reservoir and its upper reaches, developed plans for the prevention and control of pollution in major river basins including the “three rivers and three lakes”, the Three Gorges Reservoir area and the mid and upper reaches of the Yellow River. With the implementation of environmental control of major river basins and regions, the authority carried out the idea of “making progress in all sectors and making breakthrough in priority areas” in terms of environmental management and pollution treatment. It is expected that by 2010, all centralized drinking water sources in the six major river basins including the Huaihe River, Haihe River, Liaohe River, Chaohu Lake, Dianchi Lake basins and the mid and upper reaches of the Yellow River will be treated and protected, the water quality of trans-province boundary sections will enjoy remarkable improvement. All major industrial enterprises will meet pollution discharged standards in an all round way. Higher percent of urban sewage will be treated. The total discharge amount of water pollutants will be under effective control. The capacity in supervising water environment and the capacity in early warning of and emergency response to water pollution accidents will enjoy obviously improvement. Plans for major river basins are the basis for the prevention and control of their water pollution, and the economic activities of these river basins must comply with such plans.

【Rehabilitating rivers and lakes】 The practice of rehabilitation is the important experience in Chinese history to make the country prosperous and stable and embodies the care for water environment. Rehabilitating rivers and lakes means exercising the strictest system for controlling the total amount of pollutants, and identifying the development pattern and scale according to the capacity of water environment; showing respect for the law of nature, giving full play to the self-restoration capacity of the water ecological system, and gradually curbing the ecological degradation; applying engineering, technical and ecological approaches, intensifying the efforts in the control of water environment in order to promote water ecological system entering a benign circle; fully using legal, economic and necessary administrative approaches, imposing strong pressure by discharging pollutants strictly following standards and conducting development activities in a rational way, creating initiatives to treat water environment, and solving longstanding environmental problems with effective methods.

Rehabilitating rivers and lakes is a process to treat water environment in an all-round way, and also a process of sound economic and social development. The policy of rehabilitation means promoting the change of economic development mode and following the path towards scientific development; promoting the development of environmental infrastructure and resolutely controlling the total amount of pollutants;

respecting for the law of nature, treating water environment and pollution with humanism, and arousing public awareness to cherish water resources and protect water environment. With such measures as strict environmental access to new projects, phasing out outdated production capacity, preventing and controlling pollution in an all-round way, intensifying the comprehensive measures, and encouraging public participation, the State will obviously improve the quality of water environment of rivers and lakes, enable the ecological system of some rivers and lakes to form a benign circle, and lay a solid foundation for a comprehensive, coordinated, and sustainable development with the efforts of the next twenty years or more.

【Work Meeting on Prevention and Control of Water Pollution of the Three Lakes】 The State Council held a work meeting on prevention and control of water pollution of the “three lakes” in Wuxi, Jiangsu Province on June 30, 2007. Premier Wen Jiabao attended the meeting and noted that efforts should be made to review experience and lessons according to newly emerged situations and problems during pollution control of the three lakes. A separate strategy was needed for each of the three lakes and a guiding principle should be implemented that required overall consideration of the situation near and afar to address problems through both temporary and permanent solutions, targeted guidance to different situations to suit local conditions, scientific planning and comprehensive treatment and strengthened leadership and effective implementation. Practical measures would be taken to prevent another burst of blue-green algae bloom on a large scale; enhance industrial restructuring and construction of pollution treatment facilities and guaranteeing their normal operation. We should conduct strict control of agricultural non-point pollution, actively promote ecological control projects, increase investment in pollution control and make science and technology play a larger role. We should further enhance coordination and cooperation among all stakeholders to intensify the supervision on environmental law enforcement and earnestly take on the responsibility for the prevention and control of pollution.

【Strengthening Protection of Drinking Water Source Areas】 Protecting drinking water sources is an important part to safeguard the life of people. The State Council reviewed and adopted *National Plan for Safeguarding Drinking Water Sources for Urban Areas (2006-2020)* to provide a guidance for the protection of drinking water sources. *National Environmental Protection Plan for Drinking Water Safety in Urban Areas* and *National Plan for Prevention and Control of Groundwater Pollution* were prepared under the leadership of MEP. MEP took the protection of drinking water source areas as an important component of the special campaign on rectifying illegal polluters and protecting human health. It has banned or closed all sewage outlets within Level I drinking water source protection areas and cracked down all illegal pollution discharges in Level II protection areas according to law. MEP has carried out special investigations to understand the protection of concentrated drinking water source areas for cities at or above county level and issued a technical specifications on the zoning of drinking water source areas.

“Five Battles”

On July 4, 2007, SEPA announced such five major tasks as exercising the policy of watershed banning in the river basins with serious environmental infringements, enhancing comprehensive control of water environment in major lakes, strengthening prevention and control of water pollution in major river basins, intensifying prevention and control of industrial pollution and accelerating environmental protection in the countryside. It called for conscientious efforts to enhance environmental law enforcement so as to win these five battles.

——Regional banning will be introduced in the following cases: areas failing to fulfill the target of phasing out outdated production capacity, areas plagued by serious environmental infringements, areas achieving the target of total discharges but failing to meet the target set for key projects as well as areas having poor municipal sewage treatment facilities, not implementing discharge fee policy, water treatment volume less than 60% of the designed capacity within the first year of operation and inactive sewage treatment facilities without rational reasons despite their establishment. Environmental infringements will be subject to heavy punishment and deterioration of water quality in key river basins will be put under control in an all-round way.

——We need to adhere to the principle that requires overall consideration of situation near and afar to address problems through both temporary and permanent solutions, targeted guidance to different situations to suit local conditions, scientific planning and comprehensive treatment and strengthened leadership and serious implementation. A separate strategy should be made for each lake according to different priority and crux of the treatment efforts and try to curb the trend of worsening eutrophication of key lakes.

——We should extend the policy of rehabilitating the Songhua River, as put forward at the meeting for prevention and control of water pollution of the Songhua River, to other important river basins. A number of measures will be taken to strengthen environmental management of river basins such as having strict control of environmental standard, eliminating outdated production capacity, comprehensive prevention and control of pollution, enhancing comprehensive measures and encouraging public participation with a view to effectively containing continued deterioration of environmental status.

——Focusing on the central task of pollution reduction, study and arrangement will be made to facilitate rational distribution of industries and businesses, development and management of industrial parks, phasing out outdated production capacity, removing hidden risk to environmental safety posed by industrial production, as well as prevention of pollution from toxic and hazardous substances and improvement of environmental supervision. More efforts are needed to enhance policies and measures concerning finance and taxation, pricing, credit, investment and trade. Industrial enterprises will face more stringent total pollution discharge and pollution discharge permit system.

——In light of the requirement of building a new socialist countryside, environmental protection in urban and rural area should be taken into overall consideration, particularly for the protection of drinking water sources of rural areas, proper treatment of domestic sewage and disposal of refuse, actively preventing and controlling pollution from livestock and poultry raising on a large scale and carrying out investigation on soil pollution across the country.

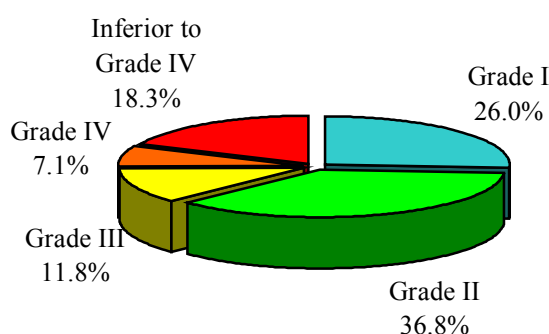
Marine Environment

General Situation

● Marine Water Quality

The overall water quality in offshore waters was under slight pollution, which recorded a small decline as compared with that of 2006. Most of the water offshore was clean and water quality in high seas remained good.

62.8% of offshore waters were at Grade I or Grade II, down by 4.9 percentage points compared with that of the previous year. 11.8% of the water was at Grade III water quality standard, up by 3.8 percentage points, while water falling into the category of Grade IV and worse than Grade IV accounted for 25.4%, up by 1.1 percentage points.



Water quality distribution of offshore waters of China

Among the four sea areas in offshore waters, the South China Sea and the Yellow Sea recorded good water quality, Bohai Sea was slightly polluted and the East China Sea suffered from heavy pollution.

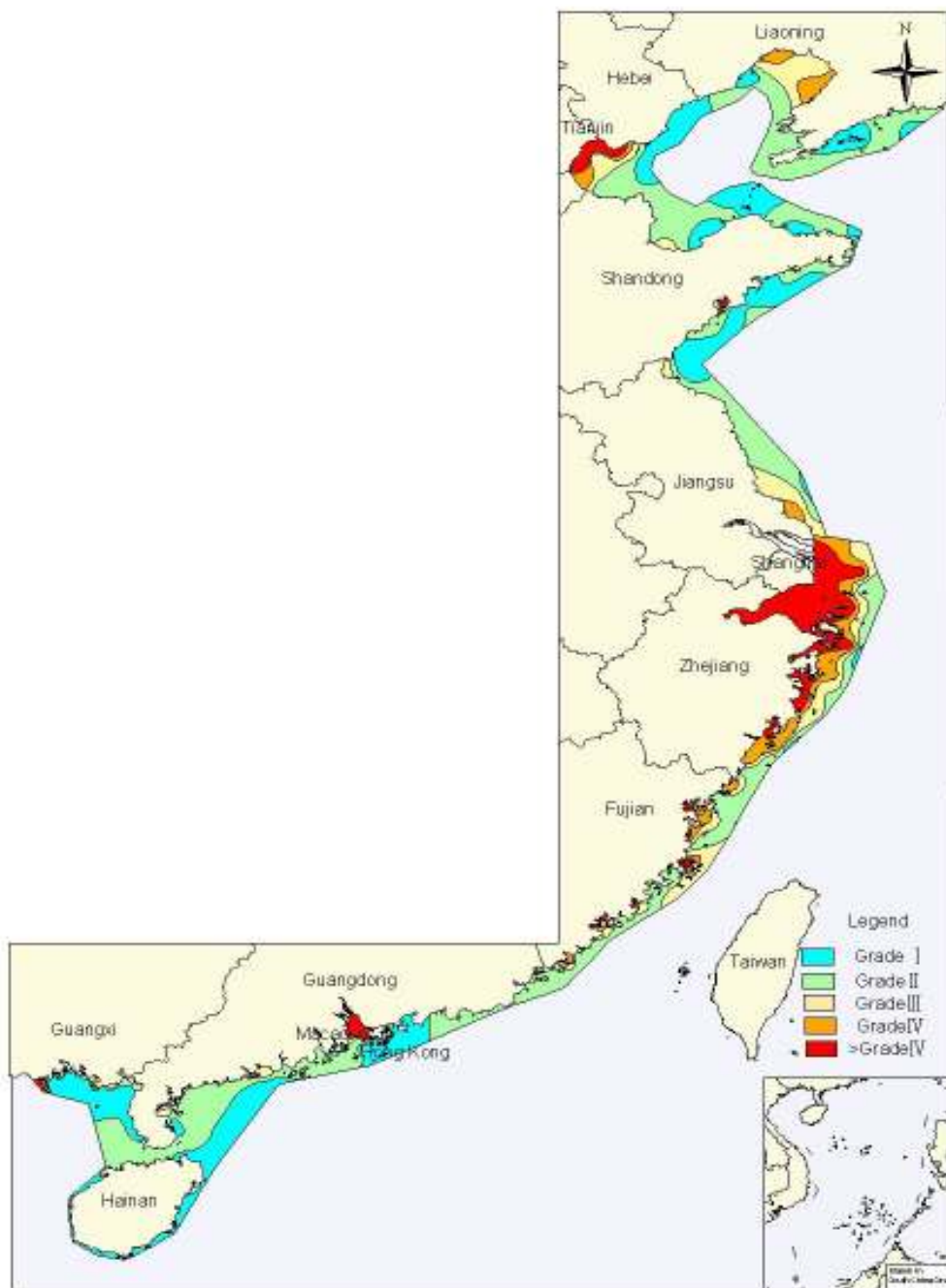
The Bohai Sea 63.3% of offshore water met Grade I or Grade II standard, down by 6.3 percentage points compared to that of 2006; 22.4% of the water met Grade IV or worse than Grade IV standard, up by 0.7 percentage point. The major pollutants included inorganic nitrogen and lead. Water quality at the Yellow River estuary was good while Liaodong Bay and Bohai Bay were seriously polluted.

The Yellow Sea 85.2% of offshore water in the Yellow Sea met Grade I or Grade II standard, up by 1.5 percentage points compared with that of 2006 whereas 5.5% of seawater met Grade IV or worse than Grade IV standard, down by 0.6 percentage point. The major pollutants were inorganic nitrogen and activated phosphate. Jiaozhou Bay suffered from heavy pollution.

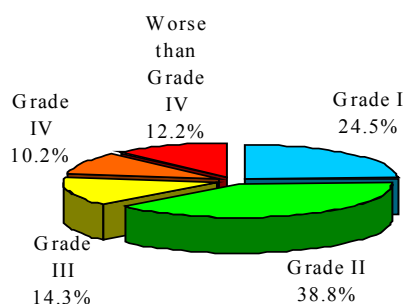
The East China Sea 28.4% of offshore water met Grade I or Grade II standard,

down by 13.1 percentage points while 55.8% of water met Grade IV or worse than Grade IV standard, up by 3.6 percentage points. Major pollutants included activated phosphate, inorganic nitrogen and lead. The Minjiang river estuary experienced moderate pollution and the Yangtze River estuary and Hangzhou Bay were under heavy pollution.

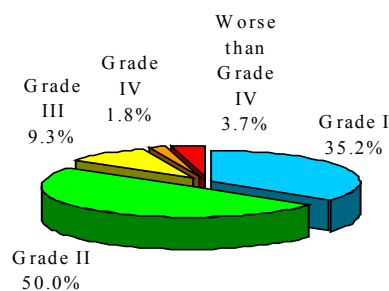
The South China Sea 83.7% of offshore water met Grade I or Grade II standard and 8.1% met Grade IV or worse than Grade IV standard, same as that of the previous year. The major pollutants were activated phosphate and inorganic nitrogen. Beibu Bay maintained good water quality but the Zhujiang River estuary was seriously polluted.



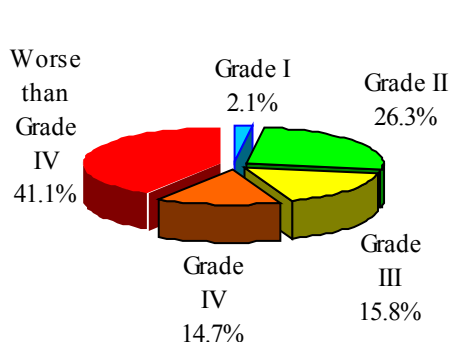
Water quality distribution of coastal sea area



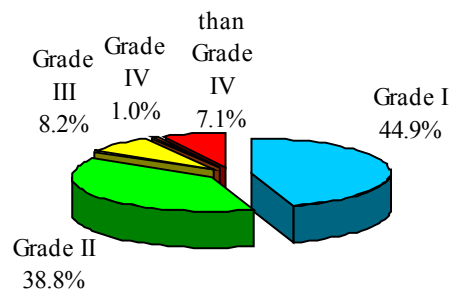
The Bohai Sea



The Yellow Sea



The East China Sea



The South China Sea

Offshore Water quality of the four seas in China

● Drainage of land-based pollutants into Sea

Rivers flowing into sea The overall water quality of the 169 sections of rivers flowing into sea was poor, leading to more drainage of pollutants from rivers than that from pollution sources directly discharged into seas. The East China Sea had much more pollutants carried by rivers flowing into sea than other sea areas.

Water quality of the monitored sections of rivers flowing into sea

Sea area	Water Quality						Total
	Grade I	Grade II	Grade III	Grade IV	Grade V	Worse than Grade V	
The Bohai Sea	0	0	1	6	11	28	46
The Yellow Sea	0	5	6	4	4	7	26
The East China Sea	0	3	14	14	6	13	50
The South China Sea	0	8	9	11	2	17	47
Total	0	16	30	35	23	65	169

The total drainage of major pollutants monitored at the 169 sections included 4.4321 million tons of permanganate index, 841,500 tons of NH₃-N, 60,200 tons of petroleum and 249,700 tons of total phosphorus.

Total pollutants drained into the four seas by rivers flowing into sea

Sea area	Permanganate index (10,000 tons)	NH ₃ -N (10,000 tons)	Petroleum (10,000 tons)	total phosphorus (10,000 tons)
The Bohai Sea	17.08	3.68	0.15	0.33
The Yellow Sea	28.41	4.14	0.40	0.81
The East China Sea	295.09	57.62	3.27	20.74
The South China Sea	102.63	18.71	2.20	3.09
Total	443.21	84.15	6.02	24.97

Pollution sources directly discharging into seas 607 industrial pollution sources, domestic pollution sources and general pollution discharge outlets with daily direct discharge capacity of more than 100 tons had a total discharge of 4.159 billion tons of wastewater, which included 414,900 tons COD, 2,842 tons petroleum, 50,560 tons NH₃-N, 4,812.8 tons of total phosphorus, 0.23 tons of mercury, 27.13 tons of Chromium (VI), 14.5 tons of lead and 2.24 tons of cadmium.

Pollutants discharged directly into sea from pollution sources

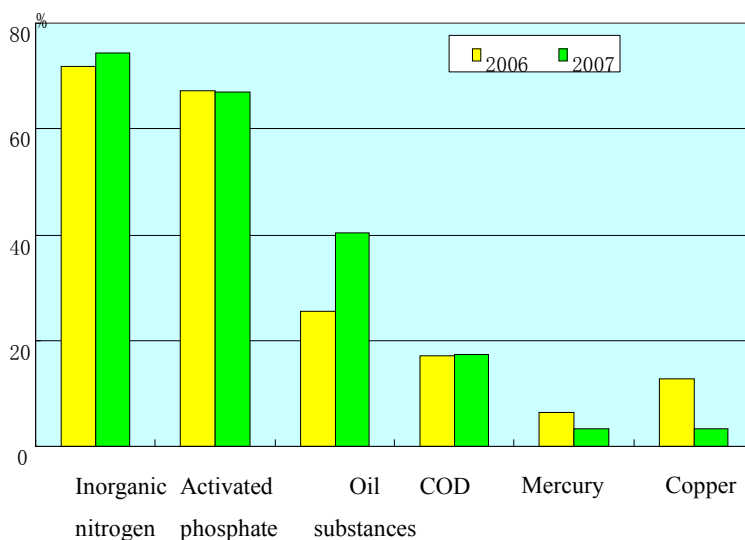
Pollution sources	Sewage (100 million tons)	COD (10,000 tons)	Petroleum (ton)	NH ₃ -N (ton)	Total phosphorus (ton)	Mercury (ton)	Chromium (VI) (ton)	Lead (ton)	Cadmium (ton)
Total	41.59	41.49	2842	50560	4812.8	0.23	27.13	14.50	2.24
Industrial	10.97	4.09	467	2375	196.3	0	2.80	0.69	0.45
Domestic	6.90	9.00	970	10179	1366.3	-	-	-	-
General	23.72	28.40	1405	38006	3250.2	0.23	24.33	13.79	1.79

Pollutant absorbed by the four seas

Sea area	Sewage (100 million tons)	COD (10,000 tons)	NH ₃ -N (10,000 tons)	Petroleum (ton)	Total phosphorus (ton)
The Bohai Sea	2.79	4.84	0.66	134.7	70.6
The Yellow Sea	7.69	8.52	0.99	501.1	1099.1
The East China Sea	20.42	17.15	1.90	1077.1	1556.3
The South China Sea	10.70	10.97	1.52	1129.2	2086.7

● Water Environment of Marine Fisheries

Among the 16.09 million ha water environment of major natural marine fishery areas across the country under monitoring program, 74.4% of them failed to meet national standard for inorganic nitrogen, 66.9% failed to meet activated phosphate standard, 40.4% failed to meet the petroleum std, 17.4% failed to meet COD standard, 3.4% failed to meet mercury standard and 3.2% failed to meet copper standard. Compared with that of 2006, area failing to meet petroleum standard has increased and there was also a slight increase in area failing to meet inorganic nitrogen standard. However, the area failing to meet mercury and copper standard had some drop. The sea area failing to meet activated phosphate and COD standard remained the same level as that of the previous year.



Proportion of area with excessive major pollutants in main natural marine fisheries

● Marine Pollution Accidents

The coastal area had 107 pollution accidents caused by vessels, among which 38 accidents led to oil spill of at least 0.1 tons for each with a total spill of 748~898 tons including 5 major such accidents each with over 50 tons of oil spill. There were 3

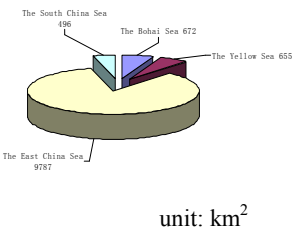
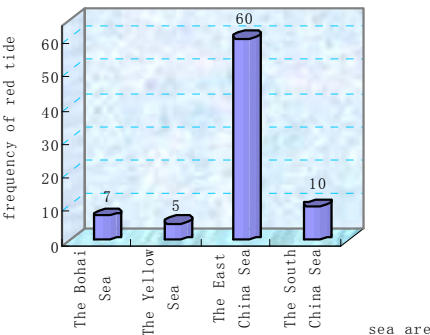
chemical spills, resulting in 42 tons of leakage. The most serious accident caused 36.89 tons of chemical leakage.

A total of 73 pollution accidents took place in marine fishery waters, contaminating a total water area of 23,500 hectares and leading to direct economic losses of 131 million yuan. 4 extraordinarily serious fishery pollution accidents (with economic losses over 10 million yuan) occurred. Pollution accidents were most frequent in Zhejiang Province while Shandong Province suffered from the biggest economic losses.

● **Red Tides**

The sea areas saw 82 events of red tides, registering a decrease of 12% compared to that of 2006. Of all the cases, 25 were toxic red tides. Red tides occurred 7 times in the Bohai Sea, 5 in the Yellow Sea, 60 in the East China Sea and 10 in the South China Sea. The total affected area was 11,610 km₂, down by 41% over that of 2006. And toxic red tides involved 1,906 km₂. Red tide disaster led to 6 million yuan of direct economic losses in 2007.

The whole sea areas recorded 30 events of red tides which covered more than 100 km₂ each, with a total affected area of 10,253 km₂, accounting for 37% of the total incidence and 88% of the accumulated affected area. Of all the major events, there was one case of red tide involving over 1,000 km₂, six times less than that of 2006 and the affected area was only one fifth of the previous year. Red tides made concentrated appearance still in the waters of the East China Sea that saw 73% of the total events and 84% of total affected area.



Frequency of red tide in all sea areas

Area affected by red tide in all sea areas

Measures and Actions

【Blue Sea Action Plan for Major Sea Areas】 A General Plan for Environmental Protection of the Bohai Sea was developed which identified several planning tasks according to the principle of coordinating the protection of marine and land environment and giving attention to both rivers and seas. The tasks included prevention and control of marine pollution and ecological rehabilitation, control and comprehensive treatment of land-based pollution sources, integrated management and control of water resources and water environment of river basins, technical support for environmental protection of the Bohai Sea as well as marine monitoring system of the Bohai Sea. The development of the Blue Sea Action Plan of the Yangtze River Estuary and Neighboring Waters and the Blue Sea Action Plan of the Pearl River Estuary and its Waters was initiated.

【Improving Ecological and Environmental Management of Fisheries】 A total of 40 national protection zones for germplasm resources of aquaculture, the first of its kind in China, have been established and announced. These zones were distributed in the bays, islands and tidal flat of the Bohai Sea, the Yellow Sea, the East China Sea and the South China Sea as well as rivers and lakes of such water systems as the Pearl River, Yangtze River, Yellow River and Heilongjiang River basins. These protection zones have played an important role in protecting over 300 key aquatic lives and rare endemic aquatic species under state protection like *pseudosciaena crocea*, Chinese shrimp, herring, grass carp, chub and *aristichthys nobilis* and their habitats and breeding sites.

【Strengthening the Development of Special Protection Zones】 Related authority has issued some regulations and standards such as the Interim Measures for the Administration of Special Marine Protection Zones and Guidelines for Overall Plan and Function Zoning of Special Marine Protection Zones. Three special protection zones have been set up and Sea Area Use Certificates were issued for the core area of national marine nature reserves. Examination has been made to projects subject to administrative approval, and related work was further regulated. Approval procedures were worked out for various activities within the marine nature reserves. Marine Surveillance Headquarters was set up to enhance law enforcement concerning marine ecology.

Extraordinarily Serious and Major Environmental Accidents across China

SEPA received and handled 110 environmental emergencies including 1 case of extraordinarily serious accident, 8 major accidents and 35 big accidents. Sorted by the cause of accidents, 39 cases were caused by work safety, accounting for 35.5% of the total, 28 by traffic accidents, taking up 25.4%, 14 by illegal discharge of pollutants from firms, accounting for 12.7% and 29 accidents due to natural disasters and other reasons, taking up 26.4%. As for the type of pollution accidents, air pollution and water pollution took up 55.5% and 30.9% of the total respectively. Environmental emergencies concentrated in such areas as East China, South China, the Southwest and the Northwest. Most provinces (municipalities and autonomous regions) experienced environmental accidents except Tianjin, Shanghai, Ningxia Autonomous Region, Tibet, Qinghai and Hainan Province. Thanks to the concerted efforts of local governments at all levels and related environmental protection departments, these accidents have basically been handled properly.

Atmospheric Environment

General Situation

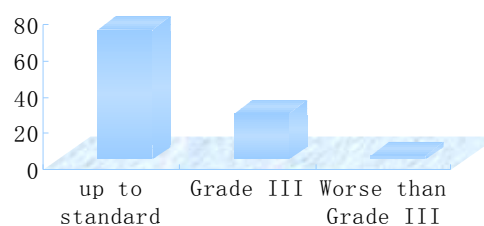
The overall air quality of Chinese cities was good with some cities still suffering from relatively heavy pollution. Acid rain remained a stable distribution but still caused relatively heavy pollution.

● Air Quality

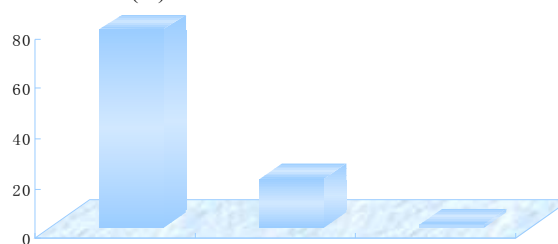
Cities at or above prefecture level (including the capital of prefecture, autonomous region and league) Cities with air quality meeting Grade I national air quality standard accounted for 2.4%; 58.1% of the cities met Grade II standard and 36.1% met Grade III standard. Cities with air quality worse than Grade III took up 3.4% of the total.

72% of cities met Grade II standard in terms of annual average level of PM and 2.2% of cities failed to meet Grade III standard. The heavily polluted cities were mostly distributed in Qinghai Province, Xinjiang Uygur Autonomous Region, Ningxia Hui Autonomous Region, Zhejiang Province, Sichuan Province, Beijing, Jiangsu Province, Hubei Province, Inner Mongolia Autonomous Region, Shaanxi Province, Gansu Province, Liaoning Province, Hunan Province, Hebei Province, Shanxi Province, Shandong Province, Henan Province and Chongqing Municipality.

Ratio of cities (%)



Ratio of cities (%)



79.1% of the cities met Grade II standard in terms of annual average SO₂ concentration and 1.2% failed to meet Grade III standard. Cities with heavy SO₂ pollution were mainly distributed in Shanxi Province, Guizhou Province, Inner Mongolia Autonomous Region, Yunnan Province, Chongqing, Hunan Province, Hebei Province, Xinjiang Uygur Autonomous Region, Guangxi Zhuang Autonomous Region, Gansu Province, Anhui Province, Henan Province, Liaoning Province, Shaanxi Province, Zhejiang Province, Jiangsu Province and Tianjin Municipality.

All cities at or above prefecture level met Grade II standard in terms of annual average NO₂ concentration with 86.9% meeting Grade I standard. A relative high

concentration of NO₂ was found in Xinjiang Uygur Autonomous Region, Beijing, Guangdong Province, Zhejiang Province, Jiangsu Province and Shanghai Municipality.

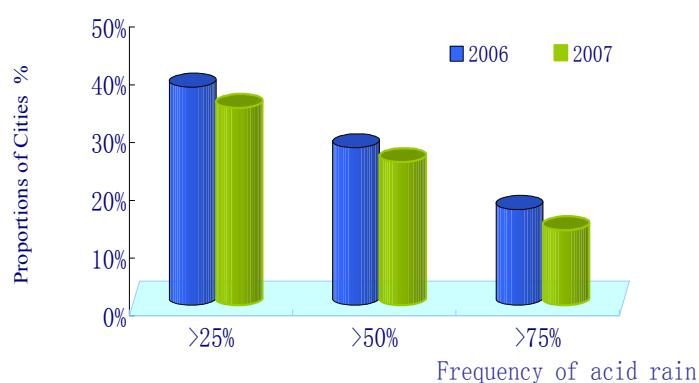
Key Cities Air quality in 113 key cities of environmental protection maintained stable with 44.2% meeting Grade II national air quality standard, 54.9% meeting Grade III standard and 0.9% inferior to Grade III standard. The proportion of cities with air quality worse than Grade III dropped by 6.2 percentage points compared with that of 2006.

● Acid Rain

Acid Rain Incidence Out of the 500 cities (counties) under monitoring program, acid rain appeared in 281 cities, accounting for 56.2% of the total; 171 cities, or 34.2% of the total, had acid rain incidence higher than 25% and 65 cities (13%) had acid rain as frequent as 75% plus.

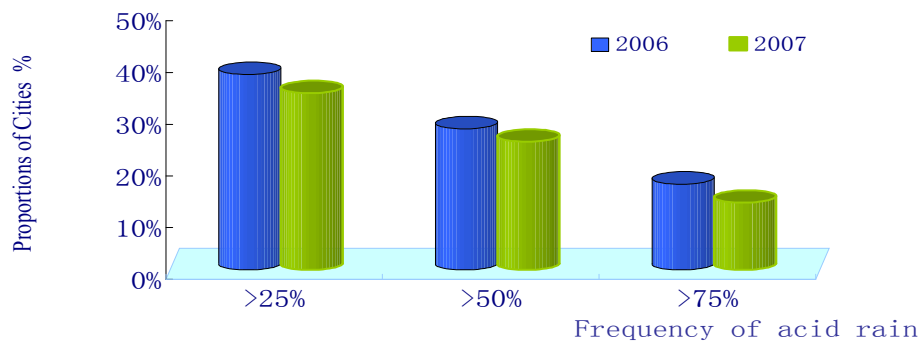
Statistics of Acid Rain Incidence across China

Acid rain incidence (%)	0	0~25%	25%~50%	50%~75%	≥75%
Number of cities	219	110	47	59	65
Proportion (%)	43.8	22.0	9.4	11.8	13.0



Comparison of cities with varied incidence of acid rain between 2006 and 2007

Precipitation acidity Compared with 2006, the proportion of cities with relatively heavy acid rain (precipitation pH value <5.0) declined by 3.2 percentage points and the ratio of cities suffering from heavy acid rain (precipitation pH value <4.5) dropped by 1.3 percentage points.

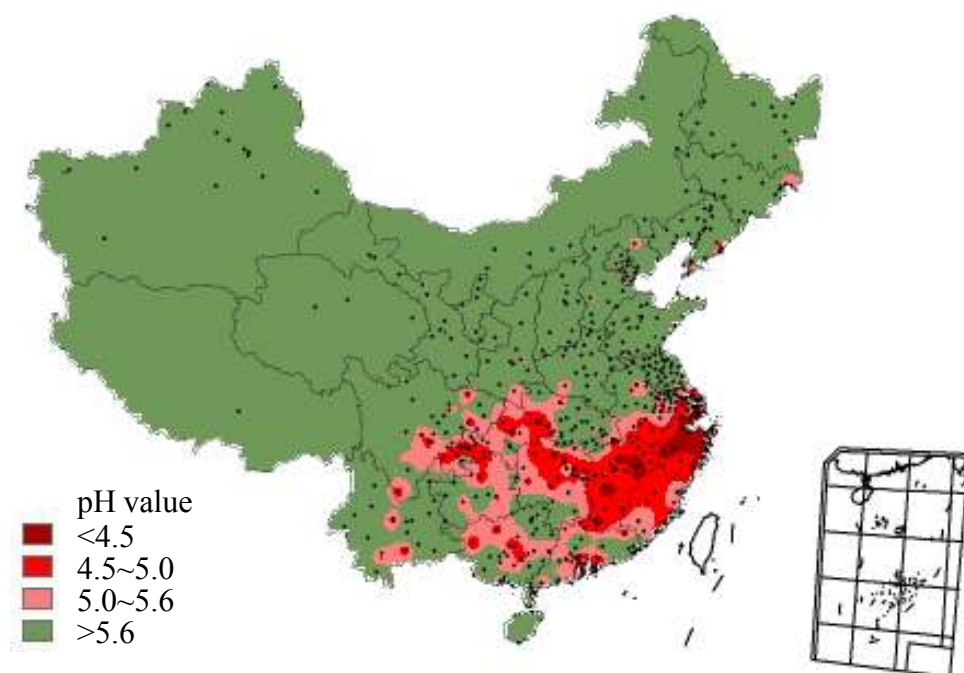


Comparison of cities with different average of pH value between 2006 and 2007

Statistics of annual average pH value of precipitation across China

Range of annual average pH value	<4.5	4.5~5.0	5.0~5.6	5.6~7.0	≥7.0
Number of cities	47	79	70	219	85
Ratio (%)	9.4	15.8	14.0	43.8	17.0

Distribution of Acid Rain Acid rain mainly concentrated in areas to the south of the Yangtze River, and to the east of Sichuan Province and Yunnan Province, including Zhejiang, Jiangxi, Hunan, Fujian, and Chongqing as well as the Yangtze River Delta and the Pearl River Delta.



Isoline of annual average pH value of precipitation in China

Compared with 2006, the acid rain distribution area in China remained stable. The southern part of Hunan Province, central Guizhou, northeast of Sichuan and northwest of Guangxi Zhuang Autonomous Region had alleviation in acid rain pollution.

● Emissions of major pollutants from waste gas

In 2007 the total SO₂ emissions was 24.681 million tons, down by 4.7% compared with that of 2006. Emissions of soot and dust registered 9.863 million tons and that of industrial dust amounted to 6.99 million tons, down by 9.4% and 13.5% respectively compared with that of 2006.

Emissions of Major Pollutants from Waste Gas in Recent

Years (Unit: 10,000 tons)

Item Year	SO ₂ Emissions			Soot and Dust Emissions			Industrial Dust Emissions
	Total	Industrial	Domestic	Total	Industrial	Domestic	
2005	2549.3	2168.4	380.9	1182.5	948.9	233.6	911.2
2006	2588.8	2237.6	351.2	1088.8	864.5	224.3	808.4
2007	2468.1			986.3	770.8	215.5	699.0

Measures and Actions

【Release of the Eleventh National Five-Year National Plan for the Prevention and Control of Acid Rain and SO₂ Pollution】 *The development of the Eleventh National Five-Year National Plan for the Prevention and Control of Acid Rain and SO₂ Pollution* was completed. The Plan set out the general target of significant reduction of total SO₂ emissions and control of the growing trend of NO_x emission. By 2010 sulfur deposition intensity will be effectively reduced, and areas subject to serious acid deposition will be reduced. Regional particulate pollution will be mitigated and SO₂ level in urban atmosphere lowered. Major tasks defined in the Plan included the followings: allocating targets for total emission control of SO₂, implementing industrial SO₂ control program focusing on desulphurization of coal-fired power plants, intensifying industrial restructuring, controlling sulfur content of fuels and NO_x emissions and building up the capacity in environmental supervision.

【Active Response to Climate Change】 China has actively taken part in international affairs concerning climate change. It has participated in a number of meetings such as G8 (USA, United Kingdom, France, Germany, Italy, Canada, Japan and Russia) +5 (China, India, Brazil, South Africa and Mexico) Dialogue and successive ministerial meetings, 15th APEC Economic Leaders' Meeting, Major

Economies Meeting on Energy Security and Climate Change and the Asia-Pacific Partnership on Clean Development and Climate. At these meetings, the Chinese government has set forth its position, measures and achievements on climate change and showcased China's image as a big and responsible country. A national leading group on climate change has been set up with Premier Wen Jiabao as the group leader. *China's National Climate Change Program* was also unveiled. Altogether 885 CDM projects were approved with the contracted amount of 1.5 billion tons of CO₂ equivalent.

【Protection of Ozone Layer】 Since July 1, 2007 China has stopped the production and consumption of CFCs (except some necessary use) and halon, accomplishing the target of *Montreal Protocol on Substances that Deplete the Ozone Layer* two and a half years ahead of schedule. The delivery of China's commitment to international communities has drawn world recognition. At COP19 of Montreal Protocol, SEPA and China General Administration for Customs were awarded for their excellent implementation and the Beijing Organizing Committee for the 2008 Olympic Games won an award for public awareness.

【Coordination and Supervision of Air Quality Guarantee Work for the 29th Olympics】 Approved by the State Council, Beijing and its neighboring six provinces (autonomous region and municipality) and SEPA jointly established a coordination team to guarantee Beijing's air quality during the Olympic Games. They have developed the *Measures to Guarantee Beijing's Air Quality for the 29th Olympics* to ensure a Green Olympic Games through concerted efforts. SEPA and Beijing Municipal Government, together with the governments of Tianjin, Hebei, Shanxi, Inner Mongolia and Shandong Province as well as Beijing Organizing Committee for the 2008 Olympic Games and Infrastructure Barracks Division of PLA General Logistics discussed and arranged the work to guarantee good air quality. Beijing was spoken highly by the United Nations for its environmental protection measures and remarkable improvement in air quality.

International Environmental Cooperation and Exchanges

President Hu Jintao, Premier Wen Jiabao and other CPC and state leaders have successively taken part in 8 international environmental cooperation and exchange activities. Top leaders of SEPA went abroad 9 times for visit or international conferences. SEPA received 37 foreign delegations at or above ministerial level and participated in 227 activities for high-level meetings at home and abroad. Throughout the year, 524 delegations (1,659 person-times) were dispatched to 59 countries and regions and 255 foreign delegations (622 person-times) were invited to visit China. 150 person-times of the environmental protection system received training abroad.

China-Russia Joint Monitoring Trans-boundary Waters was carried out smoothly. Environmental protection was an important topic for the discussions of the second and third China-U.S Strategic Economic Dialogue as well as the first China-Japan High-level Economic Dialogue. China has signed or renewed 14 bilateral agreements on environmental cooperation and nuclear safety cooperation with 10 countries such as USA, Japan, France, Australia, Uzbekistan, Cyprus and Chile. China has actively taken part in the negotiation of international legal instruments and inter-governmental mechanism such as the Stockholm Convention, Basel Convention, Montreal Protocol, Convention on Biological Diversity, UNFCCC, the Coordinating Body on the Seas of East Asia (COBSEA) and NOWPAP. SEPA and UNEP signed an emergency cooperation agreement on chemical safety and also jointly hosted a news briefing on Global Environment Outlook (IV) and International Forum on Innovation and Sustainable Development in China. In cooperation with the World Bank, ADB, UNDP and other international organizations, SEPA has promoted the disclosure of environmental information and the development of circular economy. Premier Wen Jiabao pledged to set up a China-ASEAN Cooperation Center for Environmental Protection at the 11th China-ASEAN Summit and proposed to establish a mechanism of ASEAN-China environment ministerial meeting as appropriate. The 9th Environmental Ministerial Meeting among China, Japan and Korea was held smoothly, which helped to address dust and sand storm and other environmental issues in Northeast Asia. The fourth phase of China Council for International Cooperation on Environment and Development (CCICED) was established with a great success in its first annual general meeting. Environmental cooperation was developed with Italy, Germany, Australia, EU and other regional organizations for the protection of drinking water source areas, prevention and control of water pollution of river basins, hazardous waste disposal, management of chemicals, strategic environmental impact assessment and early-warning of and emergency response to environmental accidents. Foreign funds worth USD100 million were put in place or utilized throughout the year.

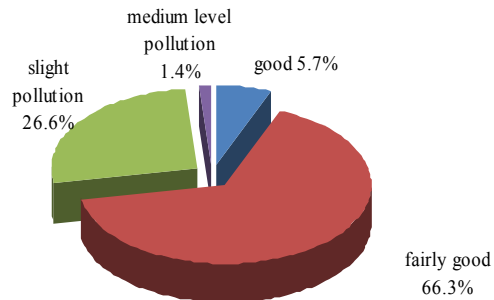
Acoustic Environment

General Situation

72% of the cities in China enjoyed good or fairly good urban regional acoustic environment. Among the key cities of environmental protection 75.2% had good or fairly good regional acoustic environment. 58.6% of cities had good road traffic acoustic environment. Among the key cities of environmental protection, 92.9% recorded good or fairly good road traffic acoustic environment. Among all the function zones of cities, the up-to-standard rate in daytime was 84.7% and 64.1% at night.

Regional Environmental Noise

Among the 350 cities monitored, 5.7% registered good regional acoustic environment, 66.3% recorded fairly good level, 26.6% had slight noise pollution and 1.4% suffered from intermediate pollution.

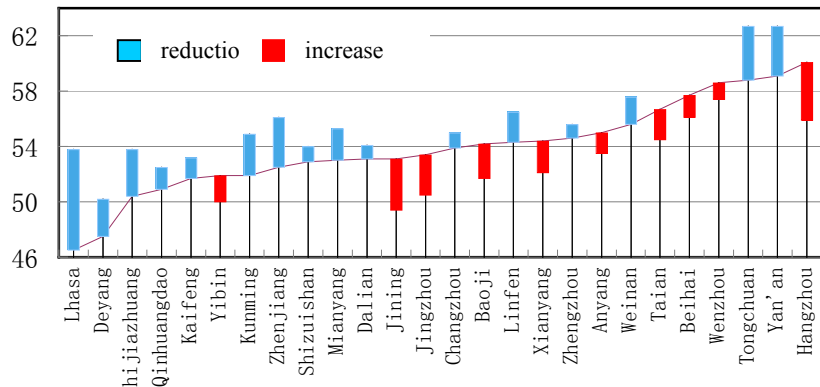


The range of equivalent sound level of regional environment noise for key cities under environmental protection was within 46.2~60.1dB(A).

75.2% of cities enjoyed good or fairly good regional acoustic environment, 23.9% had slight noise pollution and 0.9% was subject to medium-level pollution.

Compared with 2006, among these key cities 5 had a reduction of average equivalent sound level by 3dB (A) and 2 cities had 3dB (A) rise.

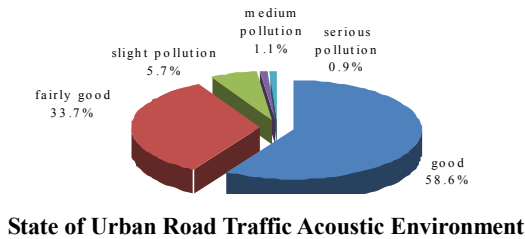
Quality of Regional Acoustic Environment



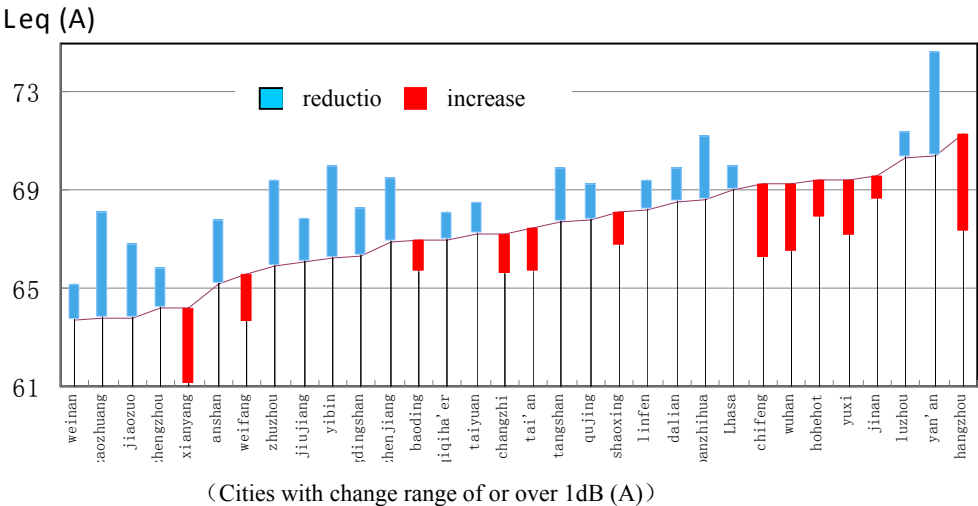
(Cities with change range of or over 1dB (A))

Year-on-year Comparison of Equivalent Sound Level of Urban Regional Noise

Road Traffic Noise Among the 353 cities monitored, 58.6% had good urban road traffic acoustic environment, 33.7% recorded fairly good level, 5.7% were slighted polluted, 1.1% under intermediate pollution and 0.9% had heavy pollution.



Among the key cities of environmental protection, 56.6% recorded good urban road traffic acoustic environment, 36.3% of fairly good quality and 7.1% under slight noise pollution. Compared with 2006, 4 cities had 3dB (A) reduction of average equivalent sound level and 3 cities had 3dB (A) rise.



Urban Function Zone Noise In the 175 cities monitored, 3,863 site-times monitoring data met noise standard in various function zones during daytime throughout the year with up-to-standard rate at 84.7%. 2,925 site-times monitoring data met noise standard during night, accounting for 64.1% of total. The up-to-standard rate of all function zones in the daytime was higher than that during night, and type III function zone had higher up-to-the-standard rate than other types of function zones.

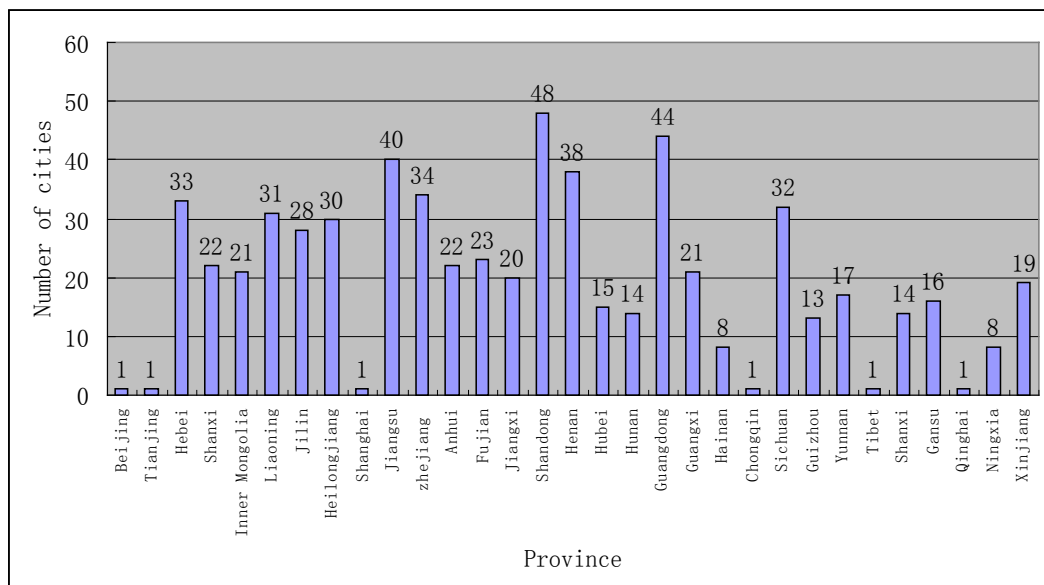
Up-to-the-standard Situation of the Monitoring Sites in Urban Function Zones

Function zone type	Type 0		Type 1		Type 2		Type 3		Type 4	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Up-to-the-standard site/time	76	42	849	630	1078	885	831	691	1029	677
Site/time monitored	128	128	1045	1045	1276	1276	871	871	1240	1240
Up-to-the-standard Rate (%)	59.4	32.8	81.2	60.3	84.5	69.4	95.4	79.3	83.0	54.6

Quantitative Examination of Integrated Improvement of Urban Environment

The targets of quantitative examination of integrated improvement of urban environment were the municipal governments at all levels. The quantitative examination has played an active role in improving environment, strengthening pollution prevention and control, speeding up environmental development, intensified environmental management and promoting pollution reduction since the 1980s when it was introduced.

In 2007 cities taking part in the examination totaled 617, taking up 94% of the total. A special website was devoted to the quantitative examination to provide online reporting service. Over 900 people have attended related training program.



Number of Cities Taking Part in the Examination

For the first time, the 2006 examination results were distributed to provincial (autonomous regions and municipalities) governments, provincial EPBs and government of key cities of environmental protection and major indicators were also published on urban water environment, air quality, acoustic environment and infrastructure construction so as to facilitate pollution control and achieve the target of pollution reduction.

Solid Waste

General Situation

In 2007 a total of 1,757.67 million tons of industrial solid wastes were generated across the country, up by 16% compared with that of 2006, among which 11.97 million tons were discharged, down by 8.1% compared to the previous year. 1104.07 million tons of wastes (including stockpile of previous years) were comprehensively utilized, 241.53 million tons were stored and 413.55 tons were disposed, accounting for 62.8%, 13.7% and 23.5% respectively of the total. The generated amount of hazardous wastes was 10.79 million tons, 736 tons of them were discharged; 6.5 million tons were utilized comprehensively, 1.54 million tons were stored; and 3.46 million tons were disposed.

Generation and Disposal of Industrial Solid Waste in China								Unit: 10,000 tons	
Generation Volume		Discharge		Comprehensive use		Storage		Disposal	
Total	Hazardous waste	Total	Hazardous waste	Total	Hazardous waste	Total	Hazardous waste	Total	Hazardous waste
175767	1079	1197	0.074	110407	650	24153	154	41355	346

Measures and Actions

【 Strengthening Environmental Management of Hazardous Wastes and Imported Wastes 】 The environmental authority has issued such regulations as the Regulations on the Prevention and Control of Environmental Pollution by Electronic Waste, Regulations on the Approval of Exporting Hazardous Waste and Guidelines for the Development of Contingency Plans by Hazardous Waste Operators. Over 800 operation permits for hazardous waste were issued, 2000 plus on-the-spot inspections were launched, and more than 20 illegal operators were sanctioned. In specific, many illicit hideouts labeling indigenous mercury smelting in Tongren, Guizhou were banned. The authority carried out special inspections on the generation of waste mercury chloride catalyst and units that incinerate hazardous waste. It printed out and distributed a Technical Guideline on the Control of Pollution by Chromium Slag and supervised the progress of such pollution control. Efforts were made to promote pilot work on notification and registration of medical waste. It has strengthened environmental supervision on imported waste and issued the Notice on the Adjustment of Relevant Application Items for Imported Solid Waste and Notice on the Approval and Management of Imported Waste Paper. The authority has signed a cooperation arrangement on regulating waste movement between the Mainland and HK SAR with Hong Kong Environmental Protection Department. It has carried out a special campaign named “Sky Hole Patching” to crack down on illegal movement of waste to China. In 2007, SEPA issued 10,038 permits on the import of solid waste,

allowed the import of 102.56 million tons of waste including waste of automatic import and that under import restriction. The actual import volume totaled 42.24 million tons.

【 Implementation of the Stockholm Convention on Persistent Organic Pollutants and Other International Conventions 】 The State Council approved the National Action Plan for the Implementation of the Stockholm Convention on Persistent Organic Pollutants and issued Terms of Reference on National Coordination Team for Convention Implementation as well as the Measures for the Management of Expert Committee of National Coordination Team for Convention Implementation. Over 90 policies, standards and guidelines related were improved. A national investigation on persistent organic pollutants was launched. Cooperation with Norway and Sweden has opened new areas such as the implementation of POPs Convention and emission reduction of dioxin for papermaking industry. The prior informed consent procedure stipulated in the Basel Convention and Rotterdam Convention were strictly carried out. Applications of 15 batches of export hazardous waste were handled with a total volume of 6814.93 tons. In accordance with relevant laws and regulations, the authority has issued 153 registration certificates for the import and export of toxic chemicals with approved amount of 1.5 million tons. A total of 9031 clearance forms for the environmental management of import and export of toxic chemicals were issued involving 1.26 million tons of chemicals. Environmental management registration certificates were issued including 2,187 for new chemical substances exempted from notification and 91 copies for new chemical substances.

【 Supervision of Ecological Environment of Mines 】 Rules on Supervision of Mine Ecological Environment was printed and issued to enhance environmental law enforcement in mines. State Administration of Work Safety, National Development and Reform Commission, Ministry of Land and Resources and SEPA jointly launched a campaign on tailing pond. Environmental protection departments at all levels have conducted investigation to find out hidden environmental risks of tailing ponds in drinking water source areas, nature reserves and river courses to ensure environmental safety. They also checked the compliance of tailing pond facilities in terms of EIA regulations and the “three synchronizations” system and the implementation of the measures for the prevention and control of pollution. As a result, about 1000 tailing ponds were banned or shut down for being located in prohibited areas or failing to meet rectification requirements. Approximately 1500 ponds had finished their correction. Some provinces and autonomous regions have established an early warning and emergency response mechanism for environmental accidents at tailing pond.

National Action Plan for Environment and Health

To safeguard people's environmental rights and interests, the Ministry of Health, SEPA and other 16 state departments under the State Council jointly printed out and issued the National Action Plan for Environment and Health (2007-2015) on Nov. 6, 2007. This is the first guiding document of China in the area of environment and health. It aims to improve related laws, management and science and technologies on environment and health, control adverse environmental factors and their impact on health, reduce environment-related diseases, protect public health and promote the achievement of MDGs.

According to the plan, China will improve its laws, regulations and standard on environment and health; set up national environmental health monitoring network; build up capacity in assessment and early warning of environmental health risks and emergency response; establish an information sharing and service system on environment and health; carry out investigation on current status of environmental health; and strengthen technical support to environmental health activities. In addition, China will make more efforts to strengthen publicity and education, actively conduct domestic & international exchanges, improve legal basis for claims against damage by environmental pollution and develop regulations for the identification of environmental damages, compensation procedures & scope and aid measures.

Radiation Environment

General Situation

In 2007 the overall situation of radiation environment was good. The ionizing radiation level was stable and the radiation level surrounding nuclear facilities and nuclear technology application activities was in normal condition. Environmental electromagnetic radiation level was generally sound except that some area around high power transmission facilities with slightly stronger comprehensive field intensity than the national standard. Electromagnetic radiation level around most of electromagnetic facilities and equipment met national standard.

Environmental ionizing radiation The rate of atmospheric absorption dose of γ radiation, overall radioactivity of aerosol and air precipitum and the concentration of HTO in the air met normal environmental standard. No change was found in terms of various radioactive nuclide levels in the water system of seven major rivers, Beijing-Hangzhou Canal, major trans-boundary rivers, lakes and reservoirs. The level of natural radioactive nuclide maintained at the same level as the national natural radioactive level between 1983 and 1990. Radioactivity of total α and total β in drinking water under the monitoring system was both lower than the limit in *Hygienic Standard of Domestic Drinking Water (GB5749-2006)*. In coastal waters, the level of Sr-90 and Cs-137 stood within the limit defined in the *Sea Water Quality Standard (GB3097-1997)*. Radioactive nuclide content in soil has not changed and the specific activity of natural radionuclides was in the same order of magnitude as the national natural radioactive level from 1983 to 1990.

Environmental ionizing radiation surrounding nuclear power plants In 2007 the Qinshan Nuclear Power Facilities in Zhejiang Province, Dayawan/Ling'ao Nuclear Power Plant in Guangdong Province and Tianwan Nuclear Power Plant in Jiangsu Province were in safe and normal operation. Among them the rate of annual average atmospheric absorption dose of γ radiation was 102nGy/h (not deducting the cosmic rays response value) surrounding Qinshan Nuclear Power Facilities, 119nGy/h around Dayawan/Ling'ao Nuclear Power Plant and 98nGy/h (not deducting the cosmic rays response value) surrounding Tianwan Nuclear Power Plant. The air-absorbed dose rates of γ radiation surrounding the above three nuclear plants were within the natural background fluctuations of the local area. Some environmental media at key residential sites around Qinshan Nuclear Power Facilities of Zhejiang Province saw a slight increase in the content of tritium and the concentration of tritium in the waters near the discharge outlets of Dayawan/Ling'ao Nuclear Power Plant was higher than that of the control site. However, they had little contribution to the additional dose posed on the public and were lower than national standard. The content of radionuclides in all the media around Tianwan Nuclear Power Plant remained the

same level as before the plant was put into operation.

Environmental ionizing radiation level in the vicinity of other nuclear fuel cycle facilities The rate of air-absorbed dose of γ radiation, accumulated dose and content of radionuclides in groundwater of nuclear research facilities such as China Atomic Energy Scientific Research Academy, Institute of Nuclear and New Energy Technology, Tsinghua University, Shandong Institute and Laboratory of Geological Sciences and Nuclear Power Institute of China were in line with local environmental standard. The rate of air-absorbed dose of γ radiation surrounding nuclear fuel production and processing plants such as Baotou Nuclear Fuel Plant, China Jiangzhong Nuclear Fuel Co., Ltd., Shaanxi Uranium Enrichment Co., Ltd., Lanzhou Uranium Enrichment Co., Ltd., China Nuclear Corp. 404, Northwest Disposal Site for Low and Intermediate Level Radioactive Solid Waste and Beilong Disposal Site for Low and Intermediate Level Radioactive Solid Waste also remained consistent with local environmental background level and abnormal increase in the content of radionuclides in other environmental media was not detected either.

Environmental ionizing radiation surrounding uranium mines and smelters and associated radioactive mines The rate of air-absorbed dose of γ radiation and radon content in the atmosphere remained normal around Xinjiang Tianshan Uranium Co., Ltd. of China Nuclear Corporation, Hengyang Xinhua Chemical Metallurgy Co., Ltd. and the radioactive landfills of the former state-owned Qinghai Factory 221. Natural radionuclides U and Ra-226 in surface water, groundwater, soil and sediment were all within local environmental background level. Sporadic monitoring sites surrounding several uranium mines and their hydrometallurgical facilities witnessed slightly higher level of radionuclides. Some development and utilization activities of associated radioactive minerals have brought about some impact on local environment.

Environmental radiation surrounding electromagnetic radiation facilities With rapid increase of pollution sources of electromagnetic radiation some areas experienced excessive pollution level, but the overall environmental quality of electromagnetic radiation remained relatively good. Some sensitive points at the buildings around a few television towers and medium wave broadcasting launchers had higher comprehensive field intensity than the derived limit of public exposure, or 40V/m. Electromagnetic radiation level around the antenna of base station of mobile communications was lower than the limit specified in the *Regulations for Electromagnetic Radiation Protection (GB8702-88)*. All the values measured at power-frequency electric field and magnetic field of the sensitive points around transformer substations were within the derived limit of public exposure.

Measures and Actions

【Intensifying supervision of nuclear and radiation safety】 The State Council issued the Regulations on Supervision and Management of Nuclear Safety Equipment for Civil Use and approved the Plan for Nuclear Safety and Prevention and Control of Radioactive Pollution (2006-2010). All the operators of nuclear facilities and nuclear technology application organizations have paid much attention to the management of nuclear and radiation safety. Environmental protection departments at all levels also strengthened routine supervision on nuclear facilities and related technology applications. Safe operations have been maintained in nuclear plants, research reactors, nuclear fuel cycle facilities and facilities for storage and disposal of radioactive wastes. No safety accidents above level I occurred in the above places and the quality of nuclear facilities under construction was brought under effective control. There were 24 radiation accidents in 2007, a dramatic reduction compared with that of the previous years. No serious or extremely serious accidents happened. No casualty was reported. Among these accidents one was relatively big and the other 23 were general accidents.

【Strengthening monitoring of radiation environment】 The first group of state-controlled monitoring sites in national radiation environment monitoring network were put into operation. They mainly included 36 automatic monitoring stations on radiation environment in key cities; 108 water body monitoring sites in major river basins, boundary rivers, drinking water sources, groundwater and coastal waters; 332 land monitoring sites; 175 soil monitoring sites; 84 monitoring sites for electromagnetic radiation and early warning sites set up around 28 key nuclear and radiation facilities.

【Proper disposal of radioactive waste】 The country invested RMB 413 million yuan to build storehouses for urban radioactive waste. Radioactive sources and radioactive waste collected and stored across the country were finally disposed of. Efforts were made in the building of 23 new radioactive waste storehouses, expansion of 5 and rebuilding of 4 storehouses. 24 laboratories were built as supporting facilities and 3 old ones were rebuilt.

The First National Census of Pollution Sources

The First National Census of Pollution Sources represented a major investigation of China's national situation and also an important means to fully understand the country's state of environment. It aimed to learn about environment-related information of companies and institutions of different kinds, improve records on various key pollution sources and database at all levels so as to provide basis for the development of socioeconomic policies.

Efforts were made to vigorously build up capacity in legal and institutional system, human resources and technical strength to ensure smooth progress of the Census. The authority issued *Regulations on National Census of Pollution Sources*, set up a leading group office for the first national Census and an office for national census of pollution sources. The Work Plan for the First National Census of Pollution Sources was printed out and distributed, which identified the target, scope, major tasks, technical approach, implementation, financial guarantee, information reporting and management of the Census. Nine technical provisions were developed concerning industrial pollution sources, concentrated pollution treatment facilities, agricultural pollution sources, general investigation of domestic pollution sources, quality assurance, data input and transmission. On-site monitoring was conducted on nearly 30,000 key industrial pollution sources and concentrated pollution treatment facilities. A large scale estimation of pollutant generation and discharge coefficient was launched for industrial, agricultural, domestic and concentrated pollution treatment facilities and nearly 30,000 coefficients were worked out. Pilot work was carried out in three prefecture-level cities and 11 counties (cities and districts) to verify the feasibility of technical provisions and work specifications of the Census and applicability of relevant forms and computer software. CCTV and other media also gave much publicity to the Census to create an atmosphere that all social circles care for and support to the investigation of pollution sources, which laid a foundation for the implementation of the Census in 2008.

Study on Macro Strategy for China's Environment

The State Council approved the launching of the study on macro strategy for China's environment in order to develop major strategies of coordinated development of economy, society and environment fitting into China's national conditions in the new phase and provide support to decision-making on environment and development. The research was headed by President of the Chinese Academy of Engineering Xu Kuangdi and jointly implemented by SEPA, Chinese Academy of Engineering and Chinese Academy of Sciences.

On May 11, 2007, the first leading group meeting of the study on macro strategy for China's environment was held. Former Vice Premier Zeng Peiyan attended the meeting and made important remarks, identifying the direction and focus of the study.

The strategic study represents great significance which reviews the past experience, provides guidance for present and looks ahead into the future. Led by the Scientific Outlook on Development and centering on the *Decision of the State Council on the Implementation of the Outlook on Scientific Development and Strengthening Environmental Protection* and the spirit of the 6th National Congress on Environmental Protection, the research will propose macro strategy, guidelines, targets, tasks and focus of China's environment. The research covers 29 special topics in four sections, including introduction, protection strategy of environmental elements, protection strategies of major environmental fields and strategy assurance. The introduction part will analyze the environmental situation and trend of future development, putting forward strategic targets and major tasks of the two phases by 2020 and 2050. Protection strategy of environmental elements will consist of such elements as water, air, soil, ecosystem and species resources. Protection strategies of major environmental fields will include the strategy for industrial pollution control, strategy for urban and rural environmental protection, strategy on environment and health and strategy for global and regional environmental protection. Strategy assurance will include such measures as legal system, institutional development, economic policies, investment, science and technology and public participation.

Natural Ecology

General Situation

In recent years, China has established a fairly complete national nature reserve network boasting comprehensive varieties, rational distribution and sound functions. Rare and endangered wildlife and their habitats under state protection were well protected and recovered in various protected areas including 85% of terrestrial natural ecological systems, most natural relics, 85% of wildlife populations, over 65% of higher plant communities and particularly the giant panda, crested ibis, Asian elephant, Chinese alligator, dovetree and cycads.

Species The diverse ecological environment of China gave birth to rich wildlife resources. In addition to fish, there were 2,619 species of vertebrates including 581 species of mammals, 1,331 species of birds, 412 species of reptiles and 295 species of amphibians. Higher plants amounted to over 30,000 species. Hundreds of rare and endangered wild animals and more than 17,000 plants were unique in China, such as the giant panda, crested ibis, snub-nosed monkey, south China tiger, przewalski's gazelle, yellow-bellied tragopan, Chinese alligator, Chinese crocodile lizard, dawn redwood, *Cathaya argyrophylla*, Beshanzu fir and *Henry emmenopterys*. 31 panda puppies were born through artificial breeding of which 25 survived. The number of penned giant panda across the country reached 239 and crested ibis exceeded 1,000. Northeast tigers had more presence in outdoor activity and expanded their habitat. Reintroduction of crested ibis, David's deer, wild horse, Chinese alligator and other endangered species into nature was progressing steadily.

Rapid economic development and population growth led to excessive consumption of plant resources at a fast speed and soaring number of endangered species. Around 4,000~5,000 higher plants were on the verge of extinction or being threatened, accounting for 15~20% of the total in China, higher than the world average level.

Biodiversity of Wetland China has a complete variety and large number of wetlands. All types of wetland are distributed in the country except tundra wetland. The area of 28 types of wetlands larger than 100 ha was 38.48 million ha. (excluding those in Hong Kong, Macao and Taiwan), or 4% of the total land territory. Of these wetlands, natural wetland accounted for 36.2 million ha including 5.94 million ha coastal wetlands, 8.2 million ha river wetlands, 8.35 million ha lake wetlands and 13.7 million ha marsh wetlands.

Species in the wetlands are rich in variety. For instance, there are 31 species of mammals belonging to 12 families under 7 orders, 271 species of birds under 32 families of 12 orders, 122 species of reptiles under 13 families of 3 orders and 300

species of amphibians falling into 11 families of 3 orders. The amount of fish species was over 1000. In addition, there are abundant species of vertebrate and invertebrate, such as crustacean, shrimps and seashells. Higher plants growing in wetlands include 2,276 species under 815 genus and 225 families. Specifically, there are 267 species of bryophytes under 139 genus and 64 families, 70 species of fern belonging to 42 genus and 27 families, 20 species of gymnosperm under 9 genus and 4 families, 1,919 species of angiosperm under 625 genus and 130 families. Density of plant species in the wetlands is 0.0056 species/ km², overtaking Brazil which boasts the richest flora.

Nature Reserves There were 19 newly built nature reserves at national level, bringing the total number of nature reserves in the country to 2,531 with a total area of 151.88 million ha. Among them, 303 were national nature reserves, covering 93.65 million ha, accounting for 12% of the total amount and 61.7% of the total area of national nature reserves. A total of 28 nature reserves have joined UNESCO's World Man and Biosphere Protected Area Network, and 33 were put on the name list of wetlands of international importance. A dozen of nature reserves were recognized as world natural heritages.

Statistics of Nature Reserves in China

Province	Amount					Area (ha)					% of land territory
	NL	PL	GL	CL	Total	NL	PL	GL	CL	Total	
Beijing	2	12	6	0	20	26403	71413	36150	0	133966	7.96
Tianjin	3	5	0	0	8	100949	61821	0	0	162770	14.36
Hebei	11	18	2	3	34	216507	330226	8806	10326	565865	3.02
Shanxi	5	41	0	0	46	82936	1056626	0	0	1139562	7.29
Inner Mongolia	23	52	33	84	192	3843784	7162614	436311	2128068	13570777	11.47
Liaoning	12	27	35	22	96	936404	825984	794093	102204	2658685	10.41
Jilin	11	14	3	6	34	783705	1431067	20564	22981	2258317	12.50
Heilongjiang	20	59	35	72	186	2058352	2601895	419367	853692	5933306	13.06
Shanghai	2	2	0	0	4	66175	27646	0	0	93821	14.79
Jiangsu	3	10	10	8	31	336211	85448	167937	21937	611533	5.96
Zhejiang	9	10	0	34	53	96724	127783	0	37573	262080	2.57
Anhui	6	27	6	64	103	164282	281796	5622	80706	532406	4.09
Fujian	12	25	9	46	92	205821	138542	75147	92839	512349	3.09
Jiangxi	8	22	2	106	138	140204	288081	3609	554618	986512	5.92
Shandong	7	23	24	21	75	256766	454603	252850	133122	1097341	6.63
Henan	11	21	1	2	35	442968	324191	163	1400	768722	4.61
Hubei	9	15	21	18	63	217577	319728	312260	143764	993329	5.34
Hunan	14	28	0	53	95	451932	402458	0	256439	1110829	5.24
Guangdong	11	52	119	165	347	236437	549290	375227	2309633	3470587	4.68

Guangxi	15	44	3	11	73	286193	846062	118947	147910	1399112	5.78
Hainan	9	24	22	13	68	102026	2617122	52257	40067	2811472	5.28
Chongqing	3	20	0	27	50	195512	373445	0	328522	897479	10.91
Sichuan	22	62	31	48	163	2100476	3461751	1453108	2047896	9063231	18.56
Guizhou	8	4	22	95	129	243539	58362	219794	434501	956196	5.44
Yunnan	16	52	71	59	198	1431715	1888471	557307	349846	4227339	10.73
Tibet	9	6	3	22	40	37153065	3816144	4870	1504	40975583	34.15
Shaanxi	9	34	4	3	50	320040	629768	61534	34602	1045944	5.08
Gansu	13	40	0	4	57	6861230	2900630	0	114900	9876760	21.67
Qinghai	5	6	0	0	11	20252490	1569711	0	0	21822201	30.28
Ningxia	6	7	0	0	13	439208	67575	0	0	506783	9.78
Xinjiang	9	18	0	0	27	13606151	7830814	0	0	21436965	13.39
Total	303	780	462	986	2531	93655782	42601067	5375923	10249050	151881822	15.19

Note: PL refers to national level, CiL city level and CL county level.

1. Statistics of Hong Kong, Macao and Taiwan were not included.
 2. Of the total area covered by nature reserves land area accounted for 145.88 million ha and sea area 6 million ha.
- Percentage of land territory refers to the proportion between land nature reserves and land territory.

Types of Nature Reserves (GB Classification)

Type	Amount		Area	
	Total	Percent	Total area (10,000 ha.)	Percent
Natural ecosystem	1717	67.84	10529.18	69.32
Forest ecosystem	1314	51.92	3372.76	22.21
Grassland and meadow ecosystem	45	1.78	316.05	2.08
Desert ecosystem	29	1.15	4027.45	26.52
Inland wetland and water area ecosystem	261	10.31	2713.02	17.86
Marine and coastal ecosystem	68	2.69	99.91	0.66
Wild biological species	683	26.99	4483.38	29.52
Wild animals reserves	523	20.66	4220.86	27.79
Wild plants reserves	160	6.32	262.52	1.73
Natural relics	131	5.18	175.62	1.16
Geological relics	99	3.91	123.04	0.81
Ancient creature relics	32	1.26	52.58	0.35
Total	2531	100	15188.18	100

Measures and Actions

【Development and distribution of the Guidelines for the Plan on Key Ecological Function Protection Zones and Guidelines for the Plan on Protection and Utilization of Biological Resources】 *The Guidelines for National Plan on Key Ecological Function Protection Zones* was printed out and released. The Guidelines proposed to have rational distribution of national key ecological function protection zones, establish a group of protection zones able to conserve water and soil, break wind and fix sand, adjust and store flood and maintain biodiversity so as to form a full-fledged system of eco-function protection zones, put in place sound policies, laws and regulations, standards and technical specifications on eco-function protection zones and contain the deteriorating trend of China's eco-function protection zones. *The Guidelines for National Plan on the Protection and Utilization of Biological Resources* was also printed out and distributed, which sets forth short-term and med-to-long term plans in twelve key areas including animals, plants and microorganism according to the scope and requirement of biological resource conservation.

【Earnestly promoting pilot work on eco-compensation】 Opinions on Piloting Eco-compensation was printed out and distributed which aims to establish and improve eco-compensation mechanism on the four major fields, namely nature reserves, key eco-function zones, development of mineral resources and protection of water environment of river basins. The authority guided some provinces including Shanxi Province on the trial work of eco-compensation for mineral resource development and carried out research on eco-compensation for the Xin'an River to promote eco-compensation trial work in river basins.

【Energetically implementing the Convention on Biological Diversity and Cartagena Protocol on Biosafety】 China has presented 12 topic reports and the First National Report on *China's Implementation of Cartagena Protocol on Biosafety* to the Secretariat of the Convention on Biological Diversity, which covers such areas as the funds for biodiversity protection, biofuels, carbon sink and climate regulation. China also dispatched delegations to take part in the 5th meeting on genetic resource access and benefit sharing, the 12th meeting of SBSTTA to have an in-depth discussion on such topics as the application of ecosystem approach, application of global strategy for plant conservation, biodiversity in arid and semi-arid areas, biodiversity and climate change. China also took part in the 4th meeting of the working group on liability and redress of *Cartagena Protocol on Biosafety*. It launched 18 local demonstration projects featuring China-EU biodiversity.

【Assessment of the management of National Nature Reserves】 To strengthen the management of nature reserves, SEPA has assessed the management of 12 national nature reserves from 10 aspects ranging from the organization structure and personnel,

day-to-day management to the change of major subjects under protection. Among the 12 state-level nature reserves, 4 obtained the score of excellent, 6 good and 2 mediocre.

【Investigation, protection, development and utilization of agricultural wild plant resources】 Investigations were made in 12 provinces (districts and cities) including Gansu Province and Anhui Province on the geographical distribution, ecological environment and state of endangerment of over 1,300 key species under state protection such as wild rice, wild soybean, wild fruit tree and wild tea camellia. Over 2000 plant specimens were identified and produced with new discovery of over 20 wild plants species under major national protection program. 17 sites were newly set up to protect agricultural wild plant habitats involving 10 species and their habitats, namely Chinese lawngrass, wild rice, wild soybean, wild tea plant, wild kiwifruit, wild lotus, wild Trapa, wild water shield, wild Fagopyrum dibotrys and aweto. Rescue collection of wild plant resources aggregated 1,043 sample-times. Researchers selected 2 genes from wild rice which may resist *Nilaparvata lugens* and white backed rice planthoppers and 2 genes from wild soybean with anti-drought and salt tolerance capacity. These genes were applied to the selection and breeding of new cultivars.

【Investigation, monitoring and elimination of invasive alien species】 Investigation was made on 10 invasive plants dangerous to agriculture with the establishment of a database recording the information of 120 invasive alien species. Monitoring work was intensified in 8 sensitive ecological areas including Hainan Province and on 10 major dangerous agricultural invasive species. Some invasive species such as Eupatorium adenophorum Spreng, Alternanthera philoxeroides, Solidago Canadensis, Flaveria bidentis Kuntze and Golden Apple Snail were eliminated in over 12 million *mu* (15 *mu* = 1 ha) area. The elimination rate in some important areas hit 70%. Demonstration areas covering more than 300,000 *mu* were established to showcase comprehensive control of 10 major dangerous agricultural invasive species with an elimination rate of over 65%.

Special Environmental Campaigns to Harshly Crack Down on Environmental Infringements

From April to December 2007, the seven departments including SEPA, NDRC, Ministry of Supervision, State Administration for Industry and Commerce, Ministry of Justice, State Administration of Work Safety and State Electricity Regulatory Commission (SERC) continued to carry out special environmental campaign against illegal polluting enterprise to protect public health. Law enforcement was strengthened focusing on pollution reduction, protection of drinking water sources and environmental supervision of industrial parks. Altogether over 2.3 million person-times were dispatched for law enforcement, inspecting more than 1 million enterprises-times. 31,000 cases were put on record and dealt with, and 5,530 cases were blacklisted for rectification. The inspectors examined over 8,000 papermaking enterprises and ordered 2,194 to phase out or shut down outdated facilities. 280 companies involving lead production were shut down or suspended production. The campaign led to the inspection of 15,000 centralized drinking water source areas, banning 942 pollutant discharge outlets in Grade I protected areas, stopping 1,294 projects constructed in Grade II protected areas, and 931 projects were subject to mandatory pollution control within a given period of time. A total of 2,250 industrial parks were inspected and 649 local policies against national environmental protection regulations were rectified. In cooperation with Ministry of Supervision, SEPA blacklisted 22 environmental cases for rectification and proposed suggestions for a claim for legal liability against 22 organizations and 122 people. A band of illegal polluters causing serious pollution were severely punished and some notorious environmental problems affecting public health were basically solved.

Land and Rural Environment

General Situation

● Lands

There was little change in the total area of major types of land in 2007. The area was 1.826 billion *mu* for farmland, 177 million *mu* for orchard, 3.542 billion *mu* for forest, 3.928 billion *mu* for pasture and 382 million *mu* for other agricultural land. Residential area and independent industrial and mining land occupied 400 million *mu*, transportation 37 million *mu*, water conservancy facilities 54 million *mu* and the rest was unused land. Compared with in 2006, there was a 0.03%, 0.04%, 0.002% and 0.03% reduction of farmland, orchard, forest and pastureland respectively. However, the land area went up by 1.11% for residential area and independent industrial and mining; 2.05% for transportation and 0.37% for water conservancy. Net loss of farmland across China amounted to 610,000 *mu*.

A total of 3.56 million km² of land suffered from water and soil erosion, accounting for 37.08% of the total land area. Among them, 1.65 million km² was eroded by water and 1.91 million km² by wind, taking up 17.18% and 19.9% respectively of the total. 1.62 million km² was subject to slight water & soil erosion; 800,000 km² to moderate water & soil erosion; 430,000 km² to heavy water & soil erosion; 330,000 km² to very heavy water & soil erosion and 380,000 km² extremely erosion.

The deteriorating trend of farmland was aggravated with degraded area accounting for more than 40% of the total. The soil was beset with unbalanced nutrition. 51% of farmland lacked enough phosphorus and 60% was short of potassium. Of all the fertilizer applied organic fertilizer only took up 25%. Pollution of farmland from waste gas, waste water and waste residues caused by industrial and mining companies should not be ignored. The practice of occupying prime farmland and compensating poor one still went on. In general, the quality of farmland occupied by non-agricultural construction was 2~3 grade better than that of newly reclaimed land.

● Rural Environment

The situation of environmental protection in rural areas remained grim. Point pollution and non-point pollution coexisted, domestic pollution was coupled with industrial pollution and newly emerged pollution and old pollution were interwoven. Industrial and urban pollution have gradually shifted to rural area, threatening the safety of drinking water and farm produce. The rural areas faced the dual menaces of environmental pollution and ecological damage. This was represented by exacerbated

domestic pollution and non-point pollution, striking pollution from industrial and mining sources, hidden risk of drinking water and ineffective control of ecological degradation.

The aggregate rural population benefiting from access to water sanitation improvement accounted for 92.05%. 62.71% of the population had access to tap water supply and 56.97% had access to sanitary toilet facilities. Environment-friendly toilet facilities covered 34.81% of the rural population. 63.28% of domestic refuse was collected to the dumping sites while 36.72% was dumped at random. Of the collected refuse 57.03% was under landfill, 14.26% burnt, 13.88% composted in high temperature and 14.83% directly reused.

Measures and Actions

【 Steadily promoting the investigation of soil pollution 】 The national investigation of soil pollution was launched in an all-round way. 35,000 samples have been collected and analyzed and the design and test of the collection system of soil pollution investigation database was also completed. Smooth progress has been made in 7 pilot projects on remediation and comprehensive control of typical contaminated sites. A special investigation titled “health risk assessment of the population subject to pollution from cadmium, lead, mercury and arsenic in the soil of typical areas” was carried out.

【 Carrying out key projects on the control of water & soil erosion 】 Comprehensive water & soil erosion control has been finished in 6,236 small river basins covering a total area of 78,000 km². 170,000 small water conservation facilities were constructed and 900 check dams were newly built. The water and soil conservation program was implemented in the upper and mid reaches of the Yangtze River and Yellow River, wind & sand source area of Beijing and Tianjin, black soil area in Northeast China and the south and north Panjiang River in the upper reaches of the Pearl River. A key project for water and soil conservation was initiated in Danjiangkou Reservoir area and its upper reaches. Water and soil erosion control project was carried out in China’s northeast black soil area for national comprehensive agricultural development. The central government input 1.439 billion yuan to control soil erosion of 9,600 km². A total of 33,000 km² of land was harnessed by closing hillsides to facilitate afforestation. 22,100 water and soil conservation programs of development and construction projects were approved.

【 Initiative of 100 Day National Land Law Enforcement 】 Efforts were made to crack down on violations of land laws and regulations since 2005 on a large scale such as land-renting instead of land acquisition, expanding land use scale in breach of land use plan and using land ahead of approval. Over 31,000 cases of the above three kinds of infringements were handled involving over 3.3 million mu of land, and over

150,000 mu such land was returned.

【Strengthening environmental protection in rural areas】 The General Office of the State Council relayed the Opinions on Strengthening Environmental Protection in Rural Areas, which defined the guidelines, basic principle and objectives of environmental protection in rural areas. It called for efforts to address seven major environmental problems in rural areas. It is a guiding document directing the coordinated development of rural economy, society and environment. SEPA printed out and issued the Guidelines of National Plan for the Prevention and Control of Environmental Pollution in Rural Areas, which identifies the following six fields as the focus and priority of pollution control in rural China, namely pollution control of rural drinking water source areas, control of domestic pollution in densely inhabited areas, control of pollution from industries and mines, control of pollution from livestock, poultry and aquaculture farms, control of soil pollution and control of non-point pollution.

【Safeguarding drinking water safety in rural areas and preventing endemic diseases】 SEPA printed out and issued the Notice on Strengthening Hygienic Assessment of Drinking Water Safety Program and Monitoring of Water Quality Hygiene in Rural Areas. The central government earmarked 45.42 million yuan as subsidy to facilitate access to water sanitation and toilet improvement in rural areas. Monitoring network covered no less than 25% of the counties and water quality hygienic monitoring of drinking water continued to expand. 25.13% of the rural population used surface water as drinking water source and 74.87% relied on groundwater. Centralized supply of drinking water covered 55.1% of the rural population, while 44.9% depended on decentralized supply. From 2004 to 2007 the central government subsidized local areas with 590 million yuan to prevent and control endemic diseases including 370 million yuan for improving cooking conditions in areas haunted by fluorosis and arsenic poisoning due to coal burning, 80 million yuan for screening the content of fluorine and arsenic in drinking water, examination of water sanitation improvement projects and investigation of diseases in areas prone to fluorosis and arsenic poisoning, 60 million yuan for the prevention & control of iodine deficiency, 30 million yuan for the prevention & control of kashin-beck disease and Keshan disease. 60 million yuan were appropriated for other purposes.

【Scientific application of chemical fertilizers and comprehensive utilization of straw】 The assessment was conducted in 1,200 counties with a total land area of 640 million mu to determine fertilizer application dose according to soil fertility. 100 million farmers had access to this service which raised the utilization rate of fertilizers by 3 percentage points. Sales and use of five highly toxic pesticides including methamidophos were fully banned across the country, and 873 registration certificates of highly toxic pesticides were revoked. Efforts were made to promote protective cultivation and demonstration work on straw-returning-to-field by agricultural

machines. As a result, 173 demonstration counties at national level and 328 at provincial level were established with protective cultivation and mechanized application of straw returning to field covering an area of 30.62 million and 300 million mu respectively. The demonstration area of protective cultivation saved 1.2~1.8 billion m³ of irrigation water and reduced 1.24~2.59 million tons of GHG emissions. Around 220 million tons of straw were used as feeding stuff, accounting for one third of the total in the country.

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Forest

General Situation

With vast areas, complex natural climate conditions, rich plant species and abundant forest resources, China has evident geological distribution of its forest resources. From the north to south, main type of forests are the followings: coniferous forest, coniferous and broad-leaved mixed forest, deciduous broad-leaved forest, broad-leaved evergreen forest, seasonal rain forest and rain forests. According to the findings of the 6th National Investigation on Forest Resources (1999~2003), China had forest area of 174.9092 million ha, up by 15.9683 million ha compared with the findings of the 5th National Investigation on Forest Resources (1994~1998). The forest coverage was 18.21%, up by 1.66 percentage points compared with that of the findings of the 5th National Investigation on Forest Resources. The total reserve of living trees was 13.618 billion m³; and forest reserve was 12.456 billion m³. Per capita forest area was 0.132 ha, up by 0.004 ha compared with the findings of the 5th National Investigation on Forest Resources. Average annual net forest growth was 497 million m³ and average annual logging amount was 365 million m³.

Plant Diseases and Insect Pests 2007 saw 12.57 million ha forests affected by plant disease and insect pests (including 1.57 million ha forests severely affected and 300 thousand ha forests afflicted by relevant disasters), up by 14% than that of the previous year. In specific, 9 million ha suffered from insect pests, 1.04 million ha plant diseases and 2.2 million ha subject to the damage caused by rats and rabbits. In addition, 340,000 ha forests were subject to hazardous plants.

Forest Fire In 2007, a total of 9,260 forest fires occurred across China. Among them, the amount of forest fire alarm, general fire and very big forest fire was 6,051, 3,205 and 4 respectively. Total area suffering from forest fires reached 125 ,000 ha and 29,000 ha forests were affected. A total of 94 people were injured or died due to forest fire, among which 61 were dead and 33 injured. Forest fires had led to the loss of 572,000 m³ of mature forests, 144 million very young trees and other losses equivalent to 124 million yuan. A total of 1.194 million work days were spent by manpower and 109 million yuan were spent for firefighting.

Measures and Actions

【Promotion of the work on the conservation of biodiversity】 The compilation of the “China’s Strategy for Plant Conservation” was completed. Based on the framework of the 16 targets of “Global Strategy for Plant Conservation” (GSPC), the

work echoed each target of GSPC with the deliberation from three aspects of current situation overview, existing problems and action plan in line with the “China’s Strategy for Plant Conservation” and requirements of mid-and-long term planning. It is the action program for the conservation and management of plants in biodiversity conservation work of China.

【Development of major forestry projects】 The afforestation of 2.6816 million ha area was completed in 2007, accounting for 68.62% of the total afforestation areas of 3.9077 ha. Projects for the protection of natural forest resources have developed a total of 732,900 ha of various kinds of forests for public interests. Among them, 113,700 ha were planted by people, 70,000 ha were planted by plane, and 549,200 ha new mountainous areas of non-forest or less-forest land were closed to facilitate afforestation. A total of 99.3083 million ha forests were under management and protection. A total of 1.1247 million ha areas finished the “grain for green” project (including 68,700 ha covered in the project for the control of sand & dust sources of Beijing and Tianjin). Among them, 85,300 ha were from “grain for green”, 1.0025 million ha were new forest in wilderness suitable for afforestation, and 36,900 ha were new mountainous area of non-forest or less-forest land closed to facilitate afforestation. Regarding the control project on wind dust sources to Beijing and Tianjin, the treatment of 573,200 ha of land has been finished. Among them, 134,000 ha were artificial forest, 33,900 ha were afforested by airplane, 147,300 ha were new mountain area of non-forest or less-forest land closed to facilitate afforestation. The treatment of 186,600 ha of grassland was finished, and 71,500 ha land of small river basins had completed the comprehensive treatment. A total of 13,900 water conservancy supporting facilities had been constructed. 14,900 people were removed due to ecological conservation involving 3,700 households. The projects on the development of “Sanbei Shelter” forest and shelter forests in the Yangtze river basins had finished afforestation of 574,200 ha; 417,000 ha of them were planted by people, 13,300 ha of them by air sowing, and 143,900 ha additional mountain area of non-forest or less-forest land were closed to facilitate afforestation. A total of 21,100 ha low-yield and low-efficiency shelter forests had undergone improvement. Regarding the project for the conservation of wildlife and development of nature reserves, 26 new nature reserves had been established, driving the total amount of nature reserves to 1,766 with an area of 123 million ha, registering 12.8% of the total land territory of China. 67 protects over the conservation and restoration of wetland had been implemented, increasing the total amount of international key wetland sites to 30 (including 18 state-level wetland parks) in China, covering a total area of 3.58 million ha. Regarding the project on the development of fast-growing commercial forest bases in key regions, a total of 5,827 ha fast-growing commercial forest were developed, 3,393 ha of them appeared in desolate mountains and waste land and 667 ha forest in marginal land area. In addition, 23,800 ha forest were improved.

Environmental Publicity and Education

Work on the publicity of environmental news and environmental education has been carried out in an all round way. With various publicity and education activities, all social sectors have been mobilized to actively participate in environmental protection.

Enhance the publicity of environmental news. A total of 1,798 pieces of news reports on environmental protection were published or broadcasted by central media, and altogether 148 cases of application for interview by domestic media and 59 by foreign media have been handled. Major moves like emission reduction, water pollution prevention and control as well as suspension of EIA for construction projects have been vigorously initiated, and all leading media have reported major environmental protection policies and planning, major meetings and activities as well as environmental protection related hot issues, thus drawing great attention from all social sectors with positive response. On June 5 of 2007, the State Council held a special news briefing to notify reporters at home and abroad on the state of the environment of China in 2006 and answered their questions over the progress in the reduction of major pollutants.

Strengthen publicity and education. Over 30 environmental publicity and education campaigns have been coordinated, planned or organized, and over 20 groups of organizations interested in environmental protection and volunteers were received. A series of activities under the theme of “pollution reduction and environment-friendly society” on the World Environment Day were organized. The Conference on the 2007 World Environment Day & Commending the Establishment of National Green Organizations was held, honoring 10 “Green Guardians”, 217 advanced “Green Schools”, 124 “National Green Communities” as well as 468 “Green Households”. In addition, the topic exhibition with the theme of “pollution reduction and environment-friendly society” was held.

Grassland

General Situation

China has nearly 0.4 billion ha various natural grassland, taking up 41.7% of total national land area. The top 10 provinces or regions boasting the largest area of grassland were Tibet Autonomous Region, Inner Mongolia Autonomous Region, Xinjiang Uygur Autonomous Region, Qinghai, Sichuan, Gansu, Yunnan, Guangxi Zhuang Autonomous Region, Heilongjiang and Hunan, covering a total of 330 million ha of grassland, representing 82.5% of the nation's total. The six major pasturing areas of Tibet, Inner Mongolia, Xinjiang, Qinghai, Sichuan and Gansu cover a total area of 290 million ha, accounting for 75.1% of the total.

Grassland Productivity In 2007, fresh grass output across China was 952.14 million tons, equivalent to about 298.65 million tons of dry grass, which could support about 233.69 million sheep, up by 1% than that of the previous year. The top ten provinces (autonomous regions) of grassland output were Inner Mongolia, Xinjiang, Sichuan, Tibet, Qinghai, Yunnan, Gansu, Guangxi, Heilongjiang and Hubei with the total output of 663.97 million tons of fresh grass, accounting for 69.7% of total output. The livestock overgrazing rate of major natural grasslands was 33%, 1 percentage point lower than the previous year. The overgrazing rate of six major pasturing areas of Inner Mongolia, Qinghai, Gansu, Xinjiang, Sichuan and Tibet stood at 20%, 38%, 38%, 39%, 39% and 40% respectively. Among 266 pastoral areas and semi-agricultural and semi-pastoral districts or counties (banners), 178 counties (banners) saw the overgrazing rate over 20%.

Grassland Fire In 2007, 248 fires occurred on grassland in China. Among them, 200 were fire alarms, 47 were general fire disasters, 1 were big fire disaster and there was no very big fire disaster. A total of 11,419.2 ha grassland were affected by fire. The number of grassland fires was down by 29% with the areas affected 76% less than that of 2006. Grassland fires mainly occurred in Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Sichuan, Shaanxi, Gansu, Qinghai, Xinjiang and Shandong. In particular, Sichuan, Heilongjiang and Jilin were rather seriously affected with the affected areas of 3,379 ha, 2,800 ha and 2,443 ha, accounting for 29.6%, 24.5% and 21.4% of the total affected respectively.

Grassland Rat and Insect Pests In 2007, 38.94 million ha grassland suffered from damage by rats, up by 3.9% than that of 2006. Among them, 17.66 million ha were subject to serious damage, down by 14% compared with that of 2006. Relatively serious rat damage occurred in Qinghai, Inner Mongolia, Gansu, Tibet, Xinjiang and Sichuan with 33.63 million ha affected in total. Rat species causing serious damages mainly include mousehare, sand rat, zokor, field mouse and ground squirrel. In 2007,

the accumulated grassland area finishing the prevention and control of rat damages was 93.26 million *mu*. 17.58 million ha grassland suffered from insect pests, up by 4.5% compared with that of 2006. Among them, 7.95 million ha were subject to serious insect pests, up by 9.4% compared with that of 2006. Inner Mongolia, Xinjiang, Qinghai, Gansu, Ningxia and Sichuan witnessed rather serious insect pest disasters with 14.74 million ha affected and 6.6 million ha seriously affected, accounting for 83.8% and 83% of their respective affected area. Insect species causing most serious damages were grassland locust, white puncture vine moth, grassland larva, caterpillars, etc. In 2007, accumulated 4.29 million ha grassland had finished the prevention and control of insect pests, taking up 24.4% of the total areas affected. Among them, 3.42 million ha finished the prevention and control of grassland locust, accounting for 32.1% of total area affected by locusts.

Measures and Actions

【Implementation of major projects on grassland protection】 Started in 2003, 8.569 billion yuan from the central budget have been accumulatively earmarked for the implementation of the Project of Returning Grazing Land for Grassland, the fencing of 519 million *mu* of grassland and supplement sowing of 98.6 million *mu* of deteriorated grassland. Starting from 2000, the Sub-project of Grassland Construction under the Project for the Control of Sand & Dust Sources of Beijing and Tianjin had accumulatively appropriated 2.75 billion yuan fund from the central budget for the treatment of 37.149 million *mu* grassland including 5.2344 million *mu* artificial grassland, 2.1117 million *mu* pasture sowing by airplane, 26.826 million *mu* grassland fenced for cultivation, the construction of 2.6817 million *mu* of basic grassland and 294,960 *mu* of pasture seed bases. 85.267 million *mu* grassland were banned or suspended for grazing, 6.119 million m² of pens and sheds for livestock were built, 840 silage silos were set up, and 71,935 units (sets) of machines for manufacturing forage grass and feed were available. Compared with the non-project areas, the green coverage of the areas covered by the project had witnessed an average growth of 16 percentage points, forest height up by 51% and grass output up by 64%.

【Strict law enforcement】 In 2007, there were 15,677 cases of grassland law infringements with 1.62 million *mu* grassland damaged. 13,712 cases were put on record, 13,362 cases were ended, accounting for 97.4%. Judged from the amount of cases of different types of law infringement, the cases in violation of grassland grazing prohibition or suspension and those in violation of regulations purporting the balance between grassland carrying capacity and number of livestock topped the list.

Activity on the Year for Strengthening Local Environmental Protection Work

In order to earnestly resolve the prominent problem of weak capacity in environmental monitoring and failing to accommodate to the need of environmental protection causes in local areas, great efforts have been made to beef up grassroots force for environmental protection and relevant capacity building to improve their capability for the promotion of the historic transformations while making use of the “Year for Strengthening Local Environmental Protection Work”.

The central budget has established the special fund for pollution reduction to specially support the capacity building in three major systems, i.e. environmental statistics, monitoring and examination. Four projects on the development of emission reduction capacity were also initiated with the overall investment of 2.4 billion yuan. Together with the fund from other sources, the investment from the central government in local capacity building totaled 3.2 billion yuan, 4.2 times of that of the previous year.

The item of “211 environmental protection” was set up for the first time in fiscal budgeting. Throughout 2007, the central budget had used 14.6 billion yuan to support projects on energy conservation and emission reduction, environmental protection and ecological development. In addition, the central budget earmarked 23.5 billion yuan to support key projects on energy conservation and emission reduction and environmental protection.

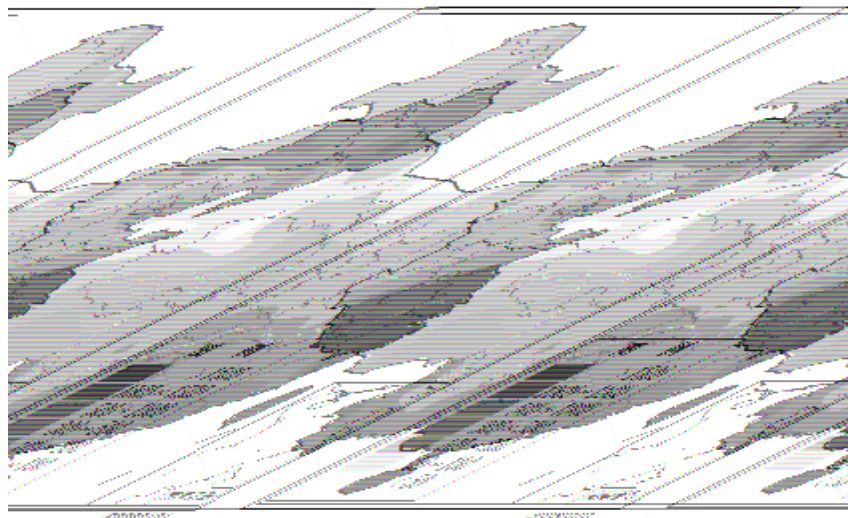
The planning index management system of documents and meetings were implemented strictly. 137 documents for the arrangement of local work were issued, and 30 national meetings were held for work deployment. Various activities for evaluation, checkup and commending were seriously examined with the cancellation and consolidation of 37 activities, accounting for 86% of the total. Consequently, only 6 such activities were remained.

Climate and Natural Disasters

General Situation of Climate

In 2007, some parts of China experienced abnormal climate with the frequent occurrence of extreme climatic events and many combined appearance of climatic disasters. The annual average temperature of the year was 1.3°C higher than that of the historical average, the highest of all years with observation records. The annual average precipitation of China was close to the historical average but with uneven distribution. In specific, the spatial distribution of precipitation appeared to be more in the west and less in the east compared with that of historical average. In particular, the central and western part of northwest China saw apparently more precipitation, and the central part saw more precipitation and northern and southern part saw less in east China.

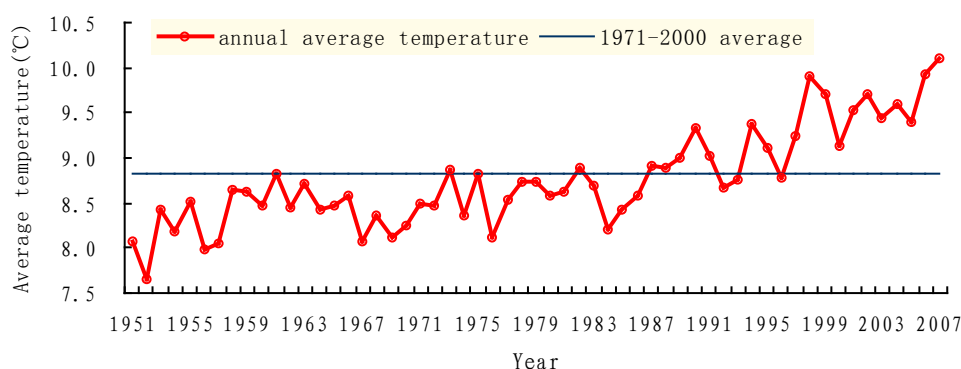
Precipitation In 2007, national annual average precipitation was 607.9 mm, close to the historical average with uneven annual spatial distribution. The western part of northeast China and eastern part of Inner Mongolia, the northern part of Jiangxi and western part of South Xinjiang witnessed 20% ~ 50% less precipitation than that of historical average, while central and western part of northwest China, Shandong peninsular and the northern part of Jiangsu-Anhui saw 20% ~ 50% more precipitation than that of historical average with central and southern part of Xinjiang, northwestern part of Gansu and northern part of Qinghai saw over 50% of increment. The precipitation of most of the rest parts of China was the same as the historical average.



National precipitation distribution in 2007 (mm)

[图例 Legend 南海诸岛 Islands of the South China Sea]

Temperature Distribution In 2007, the annual average temperature of China was 10.1°C, 1.3°C higher than the historical average. It was the warmest year for all years with observation record and also the 11th consecutive warmer year than historical average. Different parts of China all witnessed higher annual average temperature with remarkably higher temperature in north China and central and eastern part of China in particular. The temperature of northeast China, most parts of north China and the watersheds of the Yellow River and Huaihe River, the watersheds of the Yangtze River and Huaihe River, most parts of south of the lower reaches of the Yangtze River and of northwest China as well as central and western part of Tibet were 1 ~ 2°C higher than the historical average.



Yearly change of annual average temperature in China (°C)

General Situation of Natural Disasters

● Meteorological Disaster

In 2007, all kinds of meteorological disasters had incurred 234.2 billion yuan of direct economic losses, higher than the average since 1991. Drought and storms and flood were still the leading kind of meteorological disaster with the areas affected registering 82% of the total areas affected by all kinds of meteorological disasters. The areas of cropland affected by drought saw substantial increase than that of the previous year, while the proportion of hails, tropical cyclones, freezing damage and snow disaster were all less than that in 2006.

【Storms and Flood】 Some parts of south China suffered from severe storm and flood in early summer of 2007; during the flood season, the Huaihe River basins was afflicted by great floods with the level only less than the one of 1954 ever since the founding of the new China; Chongqing, Jinan and other cities experienced serious storm and flood disaster in their urban area; and Henan, Shaanxi and Shanxi witnessed special great mountain torrents in late July. Yunnan saw special great

mud-stone flow and landslide disaster from July 18 to 21.

【Drought】 In 2007, north China was afflicted by large-scale spring drought; some parts of northeast China saw severe summer drought; and the south of the lower reaches of the Yangtze River and south China was struck by severe high-temperature summer drought and special great autumn drought once in 50 years lasting till early winter. The scale and level of drought disasters were relatively serious. In early May of the peak season of drought, the affected areas nationwide mounted to 14.93 million ha, 3 million ha more than the historical average. 8.97 million people and 7.52 million livestock experienced temporary difficulty in drinking water supply caused by drought.

【Sand and dust storm】In 2007, the northern part of China witnessed 2 days of sand and dust on average, 3.6 days less than the historical average, ranking the third least year between 1961~2007 in terms of amount of sand and dust days in spring. In the spring of 2007, 15 sand and dust days occurred in north China, less than that of the same period in 2006; 1 case of strong sand and dust storm appeared, 4 times less than that of 2006. The occurrence of sand and dust days was rather concentrated within a certain period of time with 5 occurrences during the 11 days from March 24 to April 3 with the average occurrence of one case in tow days. The strong sand and dust storm weather from March 30 to 31 was the one of the largest scale and strongest level which had affected most parts of northwestern part and northern part of China.

【Tropical cyclone and lightning strike】 In 2007, 8 tropical cyclones landed in China, 1 more than the historical average. They had caused 84 deaths with 29.77 billion yuan of direct economic losses. Local strong convective weather had made frequent appearance, and lightning strikes had caused severe damage. In particular, Jiangxi, Chongqing and Zhejiang were heavily impacted, causing the death of 50 people.

【High temperature and heat wave & freezing damage/snow disasters】 In 2007, most regions across China experienced 10 ~ 15 more high temperature days than the historical average, and the longest consecutive high temperature days of some parts of Guangdong, Fujian, Zhejiang, Jiangxi and Guangxi exceeded the maximum record compared with the same period in history. 4.072 million ha cropland across China suffered from freezing damage and snow disaster.

● Earthquake Disasters

There were 17 earthquakes at Richter scale above Grade 5 across China in 2007. Among them, 7 were at Grade 6~7 by Richter scale; and 10 were at Grade 5~6. 6 of them occurred in the mainland of China and 11 of them in seas or Taiwan region. 3 earthquake disasters occurred in the mainland of China in 2007, affecting about

767,000 people and total area of 8,258 km² with 3 death, 28 serious injuries and 391 slight injuries. They also caused the following damages to buildings: 1,370,605 m² under destruction, 301,919 m² under serious damage, 5,809,546 m² under moderate damage and 2,817,720 m² under slight damage. Total direct economic loss was about 2.019 billion yuan.

Earthquake disasters and their losses in the mainland of China in 2007

No.	Time		Place	Richter Scale	Casualty			Building damage (m ²)				Direct Economic Loss (10,000 yuan)
	Month-Day	Hour			Death	SD	LD	Destructed	Serious	Moderate	Slight	
1	Mar. 13	10:22	Shunchang, Fujian	4.7	0	0	0			3462	31012	1001.73
2	Jun. 3	05:34	Ning'er, Yunnan	6.4	3	28	391	1355210	156187	5200629	2052103	189860.00
3	Jul. 20	18:06	Tekes, Xinjiang	5.7	0	0	0	15395	145732	605455	734605	11060.33
Total					3	28	391	1370605	301919	5809546	2817720	201922.06

● Geological Disaster

In 2007, there were 25,364 cases of various geological disasters across China with the casualty of 1,123 people including 598 deaths, 81 missing and 444 injured. 920 cases of geological disasters were successively avoided with the safe transfer of over 37,900 people and the saving of 554 million yuan economic losses. The number of casualty and property damage caused by such disasters were both less than that of the previous year.

● Marine Disasters

A total of 163 marine disasters such as storm surge, sea wave, sea ice, red tide and tsunami occurred in 2007 with direct economic loss at 8.837 billion yuan and 161 deaths (including missing). In specific, 30 were storm surge, leading to 18 deaths (including missing) and 8.715 billion yuan of direct economic loss; 50 were sea wave, leading to 143 deaths (including missing) and 116 million yuan of direct economic loss; and 82 were red tides resulting in 6 million yuan of direct economic loss.

Measures and Actions

【Early warning and forecasting of meteorological disasters】 Various types of forecasting such as rainfall, waterlogging and geological disasters were timely forecasted during the flood season, and work on traffic meteorological forecasting and the forecasting on high temperature prone to causing heat stroke were strengthened while taking consideration of the impact of meteorological disaster on transportation. The meteorological services covers such fields as agriculture, fishery, forestry, water

conservancy, civil affairs, land resources, transportation, tourism, aviation, radio, film and television, telecommunication, urban construction, electric power, tobacco, building, ocean and sports. In addition, technical training was organized to relevant personnel of 18 areas subject to relatively severe geological disasters.

【Earthquake disaster prevention and emergency rescue】 In 2007, over 970 seismic stations and more than 610 earthquake precursory observatory stations were established, the work on the detection of active fault of 20 key cities for monitoring and prevention and for the earthquake zoning of 22 cities were completed. A total of 12 cities (districts) under earthquake monitoring program carried out the demonstration work on the prevention and alleviation of earthquake disaster. Around 2 million rural residents moved into new aseismic houses. 68 large and medium-sized cities of 20 provinces (autonomous regions or municipalities) had set up over 400 earthquake emergency shelters. National earthquake emergency response and rescue team and 26 similar teams at provincial level were established with a total of over 3,000 professionals. The total amount of earthquake emergency response and rescue team at city or county level and the community rescue team of volunteers was more than 100,000 people. They had played a crucial role in offering 7 batches in 5 times of international humanitarian emergency relief aid, various domestic disaster relief efforts and relevant emergency and rescue activities.

Note: National data other than administrative zoning, national land area and earthquake disasters in the current report does not include that of Taiwan Province, Hong Kong Special Administrative Region and Macao Special Administrative Region.

Departments Participating in the Compilation of the 2007 Report

Leading Department

The Ministry of Environmental Protection

Contributing Ministries and Administrations

National Development and Reform Commission
The Ministry of land and Resources
The Ministry of Housing and Urban-Rural Development
The Ministry of Water Resources
The Ministry of Agriculture
The Ministry of Health
National Bureau of Statistics
State Forestry Administration
China Meteorological Administration
China Seismological Bureau
State Oceanic Administration