China's Peaceful Development Series

Natural Resources: Present and Future

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Foreign Languages Press

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作　　者　邱　天
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英文翻译　闫　威　郭　辉
英文审定　Paul White　贺　军
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资源的现状与对策

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Foreword

"Beautiful Taihu Lake. Beautiful Taihu Lake. Its limpid waters are the fairest on earth." These are the opening lines of a well-known Chinese folk song from south of the Yangtze River. The song lauds the picturesque views of the vast and productive Taihu Lake, the third-largest freshwater lake in China, before the 1990s.

In 2007, however, the inland lake stretching over Jiangsu and Zhejiang provinces was thrust into the spotlight for a different reason. Algae suddenly appeared in the lake at the end of May, and, spreading out of control, contaminated the source of drinking water for

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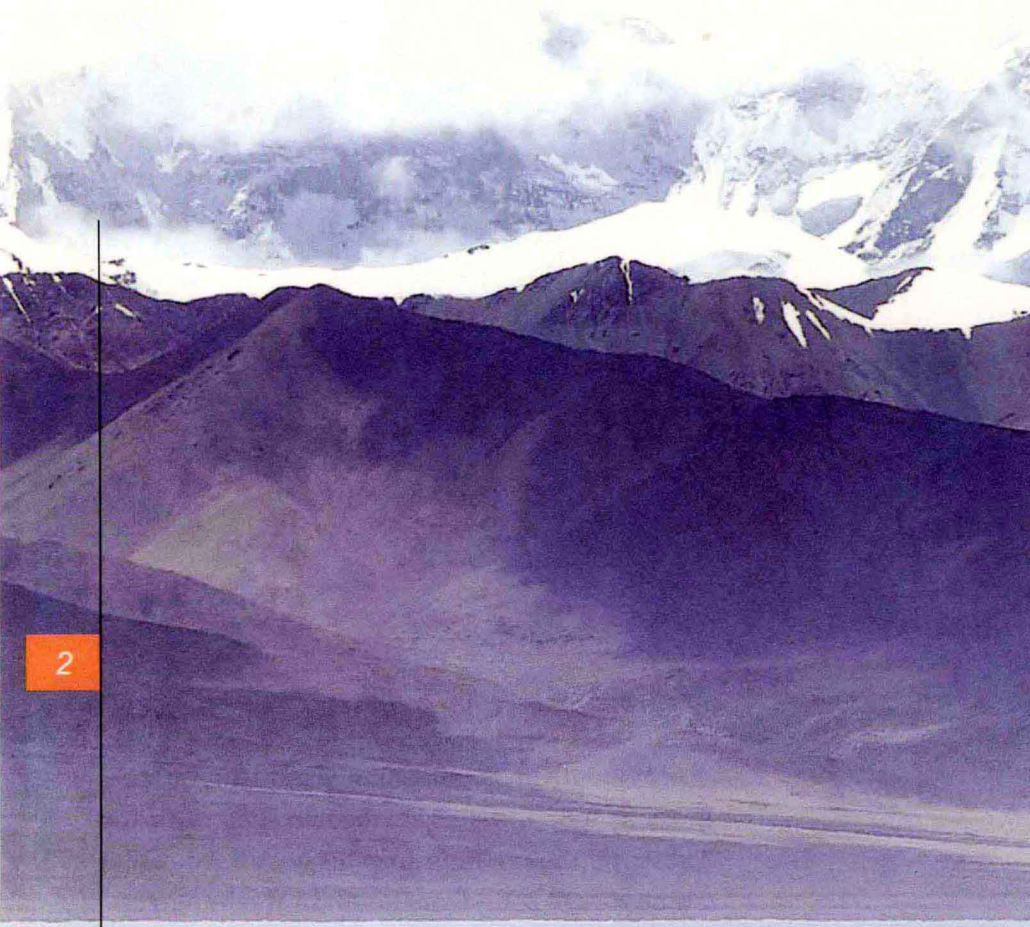
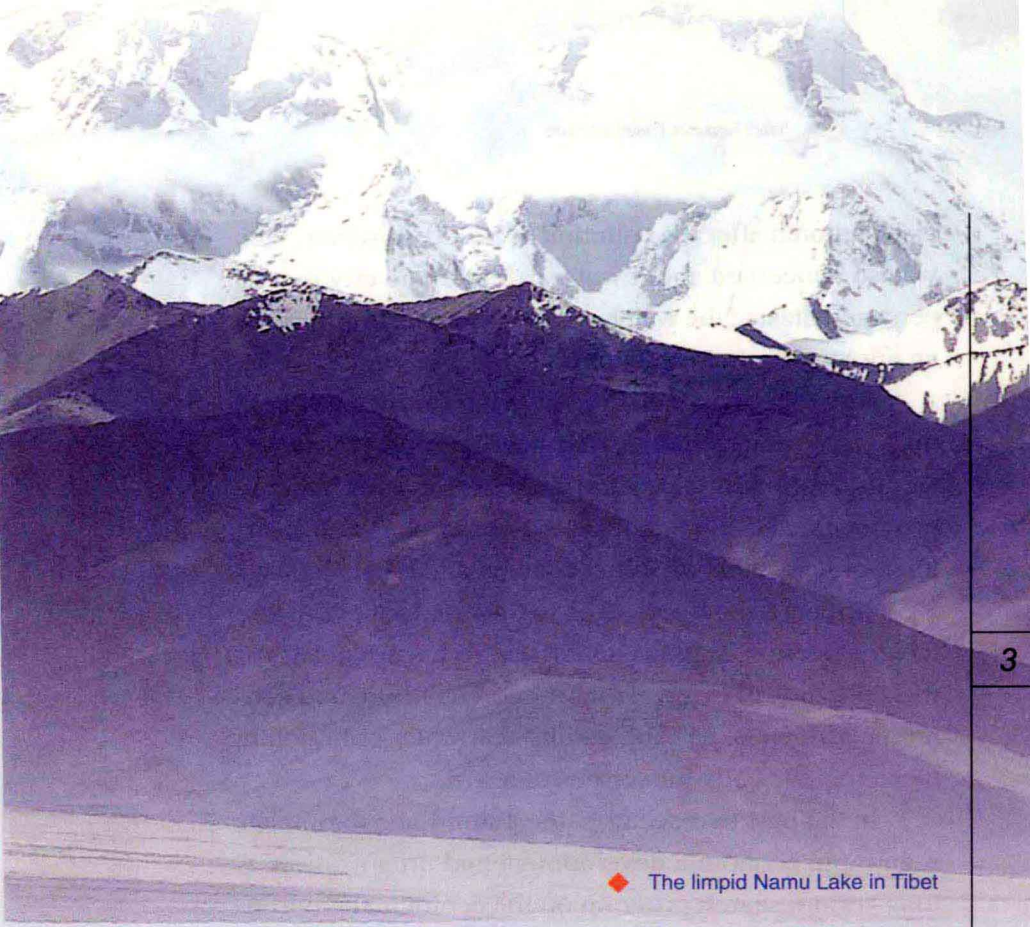


Wuxi City. As a result, tap water became unsuitable for drinking or washing.

The pollution of Taihu Lake drew attention from China's top leadership. Premier Wen Jiabao flew to Wuxi from Beijing on June 29. He headed for the wharf in Binhu District immediately after his plane touched down. By boat, he inspected the spot where the lake



The limpid Namu Lake in Tibet

water was pumped into the Wuxi Running-Water Plant, and analyzed the reasons for the algae outbreaks with experts from the local water resources, environmental protection and construction departments. The premier also visited companies responsible for the pollution to learn how their wastewater was treated. Tap water in Wuxi was once more safe to drink at the time of Wen's

visit, a month after the pollution occurred; however, Wen was so concerned about water safety in the city that he personally tasted the water in a local home. He also made an apology to the residents.

At a meeting he chaired in Wuxi on June 30, Wen made important remarks after hearing reports from officials from Jiangsu, Zhejiang, Anhui and Yunnan provinces, and Shanghai on the comprehensive treatment of the waters of Taihu, Chaohu and Dianchi lakes. He compared the three lakes to "pearls in the Yangtze River system." Regions near these rivers are noted for their picturesque views, time-honored culture and economic affluence, he said, adding that water pollution in these regions calls for serious concern.

In the past two decades, the Taihu Lake region has seen rapid economic development and urbanization. A long-term research program on the ecological environment of the lake carried out by the Nanjing Institute of Geography and Limnology of the Chinese Academy of Sciences has shown that the increase in industrial pollution and agricultural pollution, the discharge of untreated urban sewage and the rapid expansion of the fisheries industry are mainly responsible for the water quality deterioration in Taihu Lake.

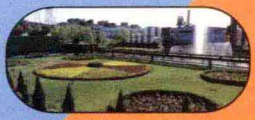
Environmental scientists believe that the discharge of wastewater, which contaminates freshwater resources, is one of the causes of China's water short-

ages today.

For nearly 30 years since the adoption of the reform and opening-up policies, China's economy has been growing rapidly and steadily at an average annual growth rate of more than nine percent. At the same time, the extensive economic growth pattern and low energy efficiency have led to excessive consumption of water, energy, land and other natural resources, and environmental degradation. Along with the new round of rapid economic growth powered by the heavy and chemicals industries since the beginning of the 21st century, the pressure on China's natural resources and environment keeps mounting.

Premier Wen stressed at a national video conference on building a resource-saving society on June 30, 2005 that the commitment to build a resource-saving society has a great bearing on China's modernization and national security, the Chinese people's fundamental interests and the survival and long-term development of the Chinese nation. Wen said a large population, inadequate resources and a vulnerable environment comprise China's basic national conditions. As it seeks to build a well-off society in an all-round way, China will further pursue economic growth, continued industrialization, gradual upgrading of the residents' consumption structure and rapid urbanization. Consequently, the demand for resources will increase,

resulting in a wider gap between resource supply and demand and heightened pressure on the environment, he said. The fundamental solution to these problems lies in resource protection and conservation. Intensified efforts to foster a conservation-minded society are not only crucial for sustaining the present steady and rapid economic development, but also guarantee the realization of the lofty goal of building a well-off society in an all-round way.



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China's Natural Resources: Present Situation

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The Chinese have long taken pride in their country's "vast territory and abundant resources." In fact, while her resources rank third worldwide in amount, China is not a resource-rich country on a per capita basis, because it is home to a quarter of the world's population. China's per capita resources, representing less than half the world's average, take 53rd place among the 144 countries surveyed. Of these, freshwater resources rank below 55th, whereas land resources, including cultivated land, forests and grasslands, rank far below 100th. Its per capita reserves of major mineral resources such as oil, natural gas, copper and aluminum are far less than the world's average.

Water

Along with economic growth and population boom, water shortages are now affecting two-thirds of the countries in the world. China is one of the countries suffering most severely. Statistics from the Ministry of Land and Resources show that more than 400 out of China's over 600 cities have less water than they need, and 110 of them suffer severe shortages. Another six billion cu m are needed to make up for the water shortages in the cities. Worse still, the problem is exacerbated by water pollution, the plundering of groundwater reserves and low efficiency in water use. Experts believe that China's water problem mainly lies in its comprehensive water

shortages resulting from water resource scarcity, waste of water resources and water pollution.

Scarce water resources

China's per capita water resources represent only one quarter of the world's average. According to the Statistical Communiqué on the 2006 National Economic and Social Development issued by the National Bureau of Statistics, China's water resources totaled 2.55 trillion cu m in 2006, or 1,945 cu m in per capita terms, marking year-on-year decreases of 9.1 percent and 9.6 percent respectively.

As most of China's territory lies in the middle latitude arid zone in the northern hemisphere it should be a dry country. Fortunately, the Southeast Asian monsoons from the Pacific and the Indian Ocean bring moisture. However, these phenomena also result in an uneven distribution of water resources in China; water resources are plentiful in the south and east, and in the mountainous areas, and scarce in the north and west, and in the plains. The annual rainfall declines from more than 3,000 mm in the southeast to less than 50 mm in the northwest. Moreover, north China (the regions north of the Yangtze River) takes up 63.5 percent of China's total land area, 46 percent of its population and 60 percent of its cultivated land but only 19 percent of its water resources. Of these regions, those watered by the Yellow,

Huaihe and Haihe river systems, having 35 percent of the country's total land area and 35 percent of its population but only seven percent of its water resources, suffer from the most severe water shortages in China.

China is frequently hit by floods and droughts. Per capita water resources in some regions in the north are no more than in the world's most arid countries. South China, though rich in water resources, often suffers from

◆ Baotou Iron and Steel Group's water treatment plant treats 6,000 cu m of wastewater an hour.

seasonal droughts, making it difficult to irrigate rice, the principal grain crop, and some cash crops. Over the past two decades, China's surface water resources and total water resources have not changed much. However, while the river runoff and total water resources in the south have increased, water resources in the north have obviously declined, with cyclic water shortages in some river systems escalating into absolute water shortages.

Uneven seasonal distribution of freshwater resources is a primary cause of the water shortages in north China. Rainfall in this area is concentrated in summer and fall, and is insignificant in winter and spring. The less rainfall a region has, the more concentrated it is in the region. As a result, most of the country is prone to drought in spring and flood in summer. Take Beijing for example. The rainfall in June, July and August accounts for over 75 percent of the yearly total, whereas that from November to April the following year takes up less than ten percent of the yearly total. As the dry season lasts a long time, China's annual evaporation far exceeds its annual rainfall. Moreover, the country's rainfall varies greatly from year to year. It is not unusual for a region to be affected by drought for three years in a row. Moreover, only a small proportion of the rainfall turns into useful freshwater resources, most of it being evaporated back into the atmosphere. As it is highly concentrated in the rainy season, part of the rainfall of-

ten drains into the sea in the form of floods, which often cause disasters.

Inefficient water use

Despite China's water resource insufficiency and growing water demand, problems such as inefficient use and waste of water persist.

The agricultural sector is a huge water squanderer. The traditional methods of furrow irrigation and flood irrigation are still widely practiced. Water-saving irrigation techniques are used in only 35 percent of China's effectively irrigated areas. Only some 45 percent of the water for irrigation is efficiently used, compared to 70-80 percent in Israel, a water-scarce country that has adopted micro-irrigation and spray irrigation on all its farmlands. China's average grain output per cu m of irrigation water is about one kg, compared to 2.5-3 kg in countries using sophisticated irrigation techniques.

Only a small proportion of the industrial wastewater is reused or recycled. Chinese industries are highly inefficient in water use due to backward technology. To produce gross domestic product (GDP) worth 10,000 yuan, China needed to consume 399 cu m of water in 2004, about four times the world's average and eight times the amount in technologically advanced countries. Also, the industrial wastewater reuse rate in China today only equals the rate in technologically advanced

countries in the early 1980s.

In their everyday lives, urban dwellers, who set little store by water conservation, tend to waste water easily. Without wastewater recycling systems, a large amount of tap water drains away after washing cars, watering grass or being used in beauty salons. According to rough estimates, urban China loses about 20 percent of its tap water through leaky pipes. Some experts believe that the rate could be as high as over 30 percent in most cities, more than double that in the cities of developed

◆ Primary school students show off their paintings with the theme of protecting the Yellow River.

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