



Chapter 1 National Circumstances

1.1 Natural conditions and resources

1.1.1 Location, territory and administrative division

The People's Republic of China (hereinafter referred to as China) is located in the eastern hemisphere and the west coast of the Pacific, and in East Asia (Figure 1.1). It has a land territory of 9.6 million square kilometers and an adjacent sea area of some 4.73 million square kilometers. The whole country is divided into 23 provinces (including Taiwan), 5 autonomous regions, 4 municipalities directly under the central government and 2 special administrative regions of Hong Kong and Macao (Figure 1.2).

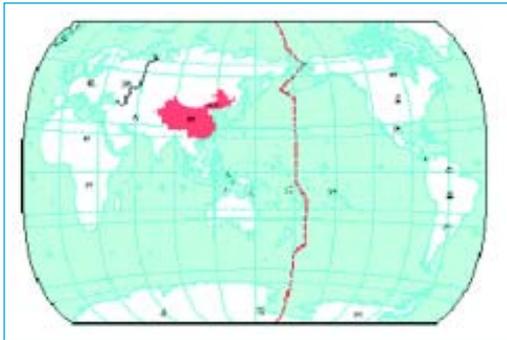


Figure 1.1 China's location in the world



Figure 1.2 The administrative divisions of the People's Republic of China

1.1.2 Climate and climate disasters

China's climate is characterized by the distinct continental monsoon climate and the complex climate types, which provides complex and multiple natural background and different environments for various human activities. In the meantime, it also frequently gives rise to natural disasters, threatening social and economic activities. East China is one of the regions in the world with typical monsoon climate. The warm and humid airflow, which the summer monsoon brings from the sea, carries abundant rainfalls and provides a desirable natural environment. However, a concentrated rainfall also tends to cause disasters such as floods, storms and storm tides. Located deep in the hinterland, Northwest China lacks surface water owing to its inactive water circulation, and has a typical continental dry climate, which results in a fairly fragile natural and ecological environment. Because of its high elevation, the Qinghai-Tibet Plateau has a special plateau climate with annual average temperature below 0°C in most part.

The seasonal change of temperature in China is quite prominent. In most regions, there are 4 distinct seasons, with cold winter and hot summer. According to the temperature indicator, the country is divided into 5 zones from south to north, i.e. tropical, subtropical, warm temperate, temperate and frigid zones. The seasonal changes of temperature in most regions of China are fiercer than that of other regions in the world with the same latitude.

The temporal and spatial distribution of rainfall in China is of disequilibrium. Most rainfall occurs in summer. The rain and heat in the same season provides favorable conditions for agriculture. Nevertheless, the concentration of rainfall in a particular season and its imbalanced coverage always cause floods or droughts. The volume of rainfall in various regions differs vastly. The annual volume of rainfall in Southeast coastal regions may reach up to 1,500 mm, gradually decreasing towards the inland. In the Northwest regions inflicted by extreme drought, the annual volume of rainfall is less than 50 mm. In line with water conditions, regions to the south of the Qinling Mountains and Huaihe River are humid regions, accounting for 32% of China's total area. Most regions of Northeast and North China are semi-humid, accounting for 15% of the total area. The Inner-Mongolian Plateau and the Loess Plateau belong to semi-arid regions, accounting for about 22% of the total area. And the northwestern inland belongs to arid regions, accounting for about 31% of the total area.

China is seriously affected by climate disasters, which, with high frequency and intensity, involve large areas and cause great



direct losses. Such climate disasters as floods and droughts cause the greatest direct losses, which account for over 76% of the total losses.

1.1.3 Physical features and topography

China's surface slopes down from west to east, and forms an obvious three-step staircase. The top of the staircase is the Qinghai-Tibet Plateau, with an average elevation of 4,000 to 5,000 meters and accounting for a quarter of China's total area. To the north and east of the Qinghai-Tibet Plateau, the average elevation drops to 2,000 ~1,000 meters, which forms the second step, composed of the Inner Mongolia, Loess and Yunnan-Guizhou plateaus, and the Tarim, Junggar and Sichuan basins. The third step, generally below 500 meters in elevation, begins from the linear region of Greater Xing'an, Taihang, W ushan mountain ranges and the Yunnan-Guizhou Plateau eastward to the seacoast, composed of the undulating hills in the province of Liaoning, Shandong, Zhejiang, Fujian, Guangdong and Guangxi autonomous region, and the northeastern plain, the North China plain, the plains in the middle and lower reaches of the Yangtze River , and the Zhujiang River Delta (Figure 1.3). The east terrene of China are dotted with its inner sea, the Bohai Sea, and the adjacent seas—the Yellow Sea, the East China Sea and the South China Sea—with their depths gradually increasing from north to south. Beyond the long coastline are broad expanses of continental shelves.

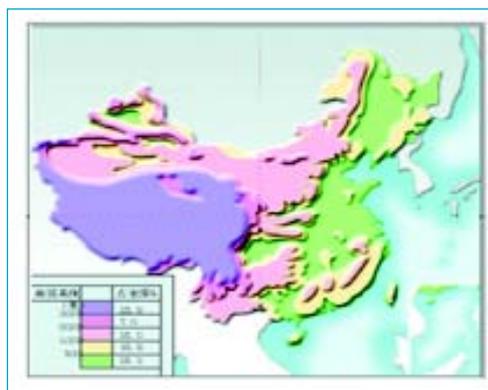


Figure 1.3 General situation of China's topography

Mountainous regions, undulating hills, and plateaus make up 66% of China's total area. The Everest mountain with an elevation of 8848 meters, located in the boundary of China and Nepal, is the highest mountain in the world. Meanwhile Takla Makan Desert, one of the largest deserts in the world, is located in the northwest of China.

1.1.4 Land resources

The composition and distribution of China's land resources have 3 major characteristics. First, there are various types of lands, with large area of cultivated land, forest grassland and desert. Second, mountainous areas and plateaus outnumber plains and basins. Third, the lands are not distributed in balance. Cultivated lands are chiefly located in the east and grasslands largely in the north and west, with forests mainly in the northeast southwest and the south.

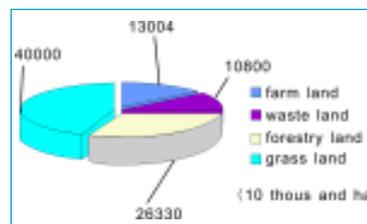


Figure 1.4 China's land resources in 2000

In 2000, China had 130.04 million hectares of cultivated land; 108 million hectares of wasteland, of which 35.35 million hectares can be reclaimed for agriculture; 263.3 million hectares of lands for forestry, of which 63.03 million hectares can be afforested; 400 million hectares of grassland, of which 313.33 million hectares can be utilized (Figure 1.4).

In 2000, China's average cultivated land area per person was 0.10 hectares, about 43% of the world average. The northeastern plain, the north China plain, the plains in the middle and lower reaches of the Yangtze River , the Zhujiang River delta and the Sichuan basin are the regions where cultivated lands, population and economic activities are mostly concentrated. Though large in area, China's grasslands have a relatively high percentage of high frigid and vast grasslands. Given the negative impacts of drought, deterioration of ecological environment, excessive grazing and land reclamation, the temperate-zone grasslands in the north are facing a crisis of degeneration and desertification.

1.1.5 Water resources

China is a country with a shortage of water resources and an uneven temporal and spatial distribution of it. The average gross volume of surface water resources over the last few years is 2,810 billion cubic meters and the per capita water resources is about one-fourth of the world average level. The average annual gross volume of rainfall over the last few years is 6,200 billion cubic meters, equivalent to 648mm-depth rainfall and about 20% less than the average annual rainfall in the land mass globally. As a result of climatic and topographic effects, rainfall is quite unevenly distributed regionally, showing a tendency of progressive



decrease from the southeastern coastal areas to the northwestern islands. While the average annual rainfall of China's Taiwan province over the last several years is 2,535 mm, which of the Tarim and Qaidam Basins are less than 50 mm.

The volume of runoff of China's rivers and creeks is 2,710 billion cubic meters, accounting for 5.8% of the world's total volume. Of this, the replenishment volume of melting water from iced creeks is 56 billion cubic meters. The average volume of China's national underground water resources over many years is about 828.7 billion cubic meters. Of all the rivers within the Chinese territory, there are over 1,500 with drainage area more than 1,000 sq kilometers. Most rivers, including the Yangtze River, the Yellow River, the Heilongjiang River, the Zhujiang River, the Liao River, the Hai River, the Huai River, the Qiantang River, the Lancang River, etc run into the Pacific Ocean. The Nu River and the Yalu Tsangpo River flow into the Indian Ocean and the Ergos River, northwest of Xinjiang into the Arctic Ocean (Figure 1.5). China has a deposit of 676 million kilowatts of water resources, of which 379 million kilowatts are available for exploitation. With a mainstream length of 6,300 kilometers, the Yangtze River is China's longest and the world's third longest river. The Yellow River, with a mainstream length of 5,464 kilometers, is China's second longest river. The Beijing-Hangzhou Grand Canal is a gigantic water-conservancy project of ancient China. Starting from Beijing in the north and terminating in Hangzhou in the south, it has an overall length of 1,801 kilometers and is the longest canal in the world.

1.1.6 Forest resources

In 1994, China's forest area was 128.63 million hectares, the standing volume was 10.868 billion cubic meters, of which the stock volume of forests accounted for 86%, with a volume of 9.31 billion cubic meters, and the forest coverage rate was 13.4%. In 2000, forest area increased to 158.94 million hectares, the stock volume of stumpage rose to 12.49 billion cubic meters, of which the stock volume of forests accounted for 90%, with a volume of 11.27 billion cubic meters, and the forest coverage rate reached 16.6% (Figure 1.6).

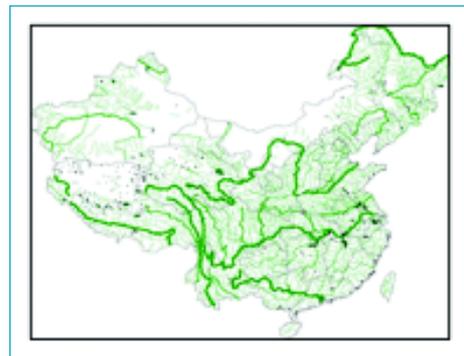


Figure 1.5 China's river basin system

1.1.7 Energy and other mineral resources

In terms of China's proven conventional energy resources through exploration (including coal, oil, gas and hydro-energy, the latter being renewable energy, calculated on the assumption of 100 years usage), the aggregate volume of these resources that is available for development technologically exceeds 823 billion tons of coal equivalent, representing 2.5% of those in the world. The reserve volume that remains to be developed economically is 139.2 billion tons of coal equivalent, about 10.1% of the world's total. The energy resources per person are less than half of the world average. The total proven reserves of energy resources are composed of the following resources: crude coal 87.4%, crude oil 2.8%, natural gas 0.3%, and hydro-energy 9.5%. The remaining exploitable energy is shown as follows: crude coal 58.8%, crude oil 3.4%, natural gas 1.3% and hydro-energy 36.5% (Figure 1.7).

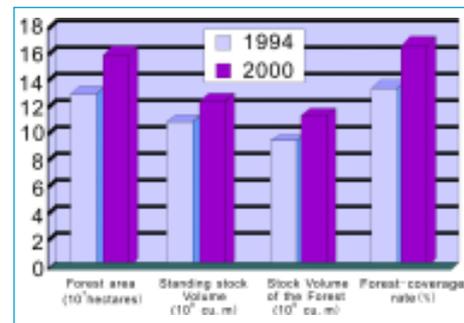


Figure 1.6 China's forest resources from year 1994 -2000

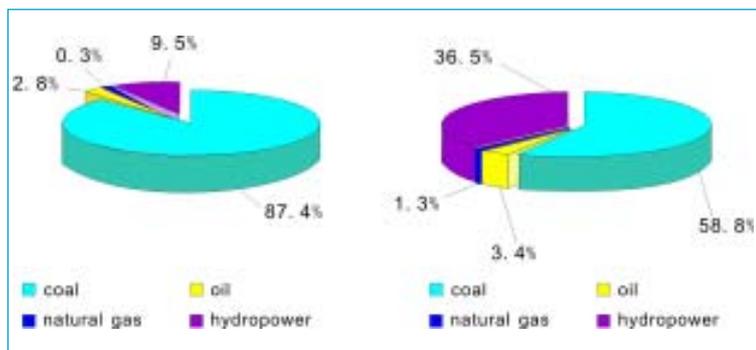


Figure 1.7 Composition of aggregate volume of China's proven energy resources and remaining exploitable energy resources

China has discovered 168 varieties of minerals, and 153 of them with proved reserves. There are 8 energy-related minerals, 54 metallic minerals, 88 non-metallic minerals and 3 liquid minerals.



1.1.8 Marine resources

China borders on the Bohai Sea, the Yellow Sea and the East China Sea in the east and the South China Sea in the south. The total sea area amounts to about 4.73 million sq kilometers. The continental coastline extends over 18,000 kilometers. There are more than 6,500 oceanic islands with an area over 500 sq meters. The sea-beach area is 20,800 sq kilometers and that of the coastal zone is 280,000 sq kilometers. China has a many varieties of marine resources and is rich in marine organism, oil and natural gas, solid minerals, renewable energy and coastal tourist resources, all of which have a great potential for further development. Of the above, marine organism runs to over 20,000 varieties including more than 3,000 types of marine fish. The deep-water coastline extends over 400 kilometers with more than 60 deep-water ports. There are 124,000 sq kilometers of shallow sea areas ranging from 0 to 15 meters in depth. In addition, in the international seabed area, China is in possession of a 75,000 sq kilometers area of metal combination mining area. Until year 2000, China has set up 69 natural protective areas with the sea and the ecological systems along the coast plus rare marine fauna and flora as the main objects for protection, the total area of which is 13,000 sq kilometers.

1.1.9 Biodiversity

China's vast territory, broad sea area and the complex and diverse natural conditions breed highly abundant species of fauna and flora and microorganism. It is among the richest countries of the world in species. China has 599 types of land ecosystem, 32,800 kinds of higher plants, including 17,300 types of unique higher plants, about 6,300 kinds of vertebrates and 667 kinds of special species. China is abundant in biological species in the marine space, amounting to 20,278 types that have been evaluated. China also boasts of a number of rare animals and plants such as panda, white-flag dolphin, dawn redwood and ginkgo, which are referred to as living fossils. It has over 1,900 varieties and kinds of domestic animals, over 50,000 local strains of rice, over 20,000 strains of soybeans and more than 1,000 seedlings of cash/economic trees. The various kinds of crops, the multiple breeds of domestic animals, the wild prototype and close inbreeding etc. constitute a gigantic pool of resources with their various forms of heredity.

1.2 Population and society

1.2.1 Population

China has the largest population country in the world, which is 119.85 million and accounts for 21.3% of the world population by the end of 1994. At the end of 2000, the number rose to 126.743 million, occupying 21% of the world population.

China's population is distributed quite unevenly in location. In eastern China where the population density is high, especially in the coastal regions, there are 300 or more people per sq km, or more than 800 in some localities. In western China where the population density is low, there are 40 or so people per sq km. On the basis of 1994 statistics, the number of population in Northeast, North, East and Central South China constituting 44% of the territory, makes up 77.2% of the national total population.

China is a united multi-ethnic nation of 56 ethnic groups. The Han nationality is the most populous nationality, accounting for 91.6% of the entire population in 2000. The minority nationalities make up the remaining 8.4%.

Since the 1970s, the implementation of the family-planning policy has made it possible for China to bring the momentum of an excessively fast population growth under control (Figure 1.8). The natural growth rate of population has declined from 25.83‰ 1970 to 11.21‰ in 1994, which is noticeably lower than the world's average rate of 16‰ during the corresponding period. In 2000, China's natural growth rate of population showed a further decline to 7.58‰(Figure 1.9).

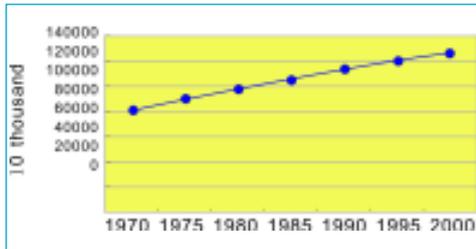


Figure 1.8 Change of China's population from 1970 to 2000

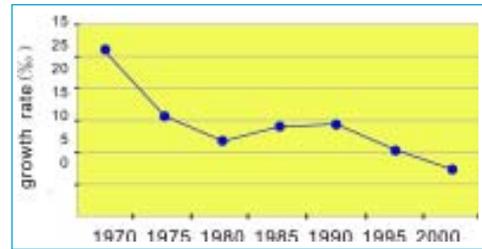


Figure 1.9 Changes of China's growth rate of population during 1970-2000

With the improvement of the living standard of the people, the average life expectancy of the Chinese people has also steadily increased. Statistics in 1994 showed 68 for men and 71 for women (Figure 1.10). These figures rose to 69.6 and 73.3 respectively in 2000, significantly higher than the world average (Table 1-1). Nevertheless, China still has a fairly long way to go before it can catch up with the developed countries in this regard.

The level of China's urbanization in 1994 was 28.5%, far lower than the world average. With the rapid economic growth, China has experienced a remarkable urbanization process. The figure of 2000 in this regard rose to 36.2% and is expected to be higher in the years to come.

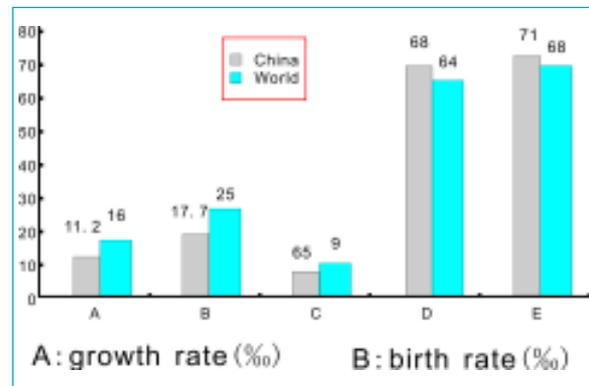


Figure 1.10 Comparison of population growth and life spans between China and the world in 1994

Table 1-1 International comparison of China's population growth in 2000

	Population growth rate %	Birth rate %	Mortality rate %	Expected average life expectancy (men, age)	Expected average life expectancy (women, age)
China	7.6	14.0	6.5	69.6	73.3
World	12.4	21.5	9.1	64.6	68.6

1.2.2 Employment

Employed people in 1994 was 674.55 million in China, and the number in the primary, secondary and tertiary industries are 366.28 million, 153.12 million and 155.15 million, accounting for 54.3%, 22.7% and 23% of the total respectively. Labor force in the primary industry takes up over half of the national total labor force. Those working in urban area are 186.53 million and those working in rural areas are 488.02 million. Therefore, the ratio of employed persons between the urban and rural areas was 27.4 : 72.6.

In the 1990's, about 20 million persons were borne annually. Net growth of population annually is about 14 million. In other words, more than 20 million people in China reach the age of employment every year.

In 1994, the number of staff and workers in the whole country is 148.49 million. The number of the increased employed persons in urban areas is 7.15 million. The number of unemployed persons in urban areas is 4.764 million. Unemployment rate in urban areas is 2.8%.

The number of employed persons in 2000 was 720.85 million, of which the number of employed persons in the primary, secondary and tertiary industry was 360.43 million, 162.19 million and 198.23 million respectively, accounting for 50%, 22.5% and 27.5% of the total (Table 1-2).



Table 1-2 Change of employment structure of China's labor force from 1994 to 2000

Year	Primary industry (%)	Secondary industry (%)	Tertiary industry (%)
1994	54.3	22.7	23.0
2000	50.0	22.5	27.5

1.2.3 Education

In 1994, China had 128.226 million students enrolled in primary schools, 57.071 million in regular secondary schools and 2.799 million in regular institutions of higher education. On the average, there are 23.4 college students, 476 secondary school students and 1,070 primary school students for every 10,000 people. In 2000, the number of China's enrolled students was 130.133 million in primary schools, 85.185 million in regular secondary schools and 5.561 million in regular institutions of higher education. On the average, there are 43.9 college students, 660 secondary school students and 1,028 primary school students for every 10,000 people.

China has an elementary education system of the largest scale in the world, but does not have sufficient funds for education. In 1994, education expenditures for the whole society amounted to 148.88 billion Yuan, of which 117.47 billion Yuan were from fiscal budget for education. According to the data from the 2000 population census, China had 85.07 million illiterate people, the illiterate rate being 6.72%. Therefore, China has an arduous task in developing science, technology, culture and education.

1.2.4 Medical care and public health

In 1994, China had 192,000 institutions of public health, 4.199 million health workers. Health-care institutions had 3.13 million beds. There were 15.7 doctors and 23.6 beds in hospitals and clinics for every 10,000 people.

In 2000, China had 325,000 institutions of public health, 4.491 million health workers. Health-care institutions had 3.18 million beds. There were 16.8 doctors and 23.8 beds in hospitals and clinics for every 10,000 people. Apparently, China still has a long way to go before its standard of medicare and medical facilities can match that of the world average, especially that of the developed countries (Table 1-3).

Table 1-3 Comparison of medical infrastructure facilities between China and high-income countries in 2000

	Number of doctors for every 10,000 people	Number of hospital beds for every 10,000 people
China	16.8	23.8
World	30 ⁽¹⁾	74

Note: ⁽¹⁾ figure of 1999

1.2.5 Poverty

With its low-level economic development, China has a large number of poverty-stricken people over many years in rural areas. Since 1986, the Chinese Government has taken a series of major steps to strengthen poverty-relief work. Thanks to persistent efforts, in keeping with the poverty standard set by China, the number of poverty-stricken people in the rural areas was reduced from 125 million in 1986 to 70 million in 1994, with an annual reduction of 6.88 million people on the average. In 2000, the number was further reduced to 30 million (Figure 1.11). A considerable number of the poverty-stricken people, whose food and clothing are yet to be provided steadily, inhabit in "zones of natural barriers" that are unfit for human survival or in places where environment and ecosystem are seriously overloaded. For them, poverty reduction is a fairly difficult task.

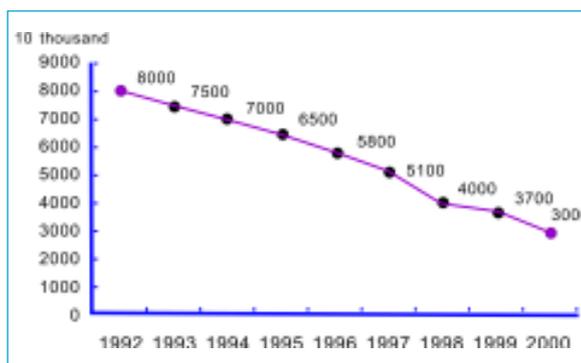


Figure 1.11 Trend of change on China's poverty-stricken population



1.3 Economic development

1.3.1 Level of economic development

China is a low-income developing country. The GDP in 1994 was 4675.9 billion Yuan and the per capita income was 3,901 Yuan (equivalent to \$453). The GDP in 2000 was 8946.8 billion Yuan with the per capita income rising to 7,086 Yuan (equivalent to \$856), which was 1/6 of the world's average level and 1/30 of the high-income countries. In 1994, China leads the world in the production of grain, meat, cotton, peanuts and rapeseed. Of the industrial products the output of coal, cement, cotton cloth and TV sets rank first in the world. That of steel, electricity, chemical fertilizer and chemical fiber ranked second, and that of crude oil ranks third of the world.

In 2000, the China's per capita level of major products was higher than that in 1994. The per capita level of iron and steel, crude oil, electricity was still lower than that of the world average, while that of cement output was higher than that of the world (Table 1-4).

Table 1-4 Comparison of China's per capita output of major products with world average level

Item	Unit	1994		2000	
		China	World average	China	World average
Steel	Kg	77	128	101	119
Crude oil	Kg	121	440	129	587
Cement	Kg	351	226	472	248
Coal	Kg	1035	794	790	813
Electricity	KWh	774	2128	1073	2248
Grain	Kg	329	334	323	338

1.3.2 Economic structure

In 1994, the proportions of added value of primary, second and tertiary industries to GDP in China was 20.2 : 47.9 : 31.9 while the proportions in 2000 was 16.4 : 50.2 : 33.4 (Figure 1.12). The proportion of the primary industry in GDP fell by 3.8 percentage points and that of the tertiary industry rose by 1.5 percentage points from 1994 to 2000.

In 1994, the ratio of China's agriculture, forestry, animal husbandry and fishery was 58.2 : 3.9 : 29.7 : 8.2 while in 2000 it was 55.7 : 3.8 : 29.6 : 10.9.

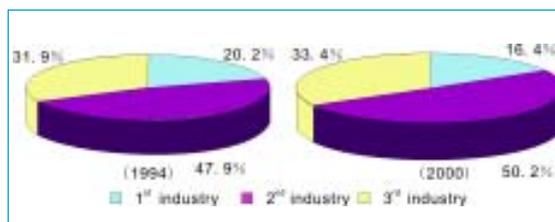


Figure 1.12 China's economic structure

In 1994 the total output value of industrial enterprises with independent accounting was 5135.3 billion Yuan, of which the output from light and heavy industries made up 42.2% and 57.8% respectively. In 2000, the total output value of all state-owned and non state-owned and large-scale enterprises reached 8567.4 billion Yuan, of which the output from light and heavy industries made up 39.8% and 60.2% respectively.

The value added of the tertiary industry rose from 1493 billion Yuan in 1994 to 2990.5 billion Yuan in 2000 (Table 1-5), with changes taking place in its structure.

Table 1-5 Sectors contributing to the added value of China's tertiary industry

Industrial sectors	1994	2000
Communication and transport, storage and post and telecommunications	18.0	18.1
Wholesale, retail and catering	27.1	24.5
Finance and insurance	18.5	17.4
Real Estate	5.8	5.7
Social services	8.0	10.9
Other sectors	22.6	23.4

(Unit %)



1.3.3 Income and consumption level

In 1994, the per capita net income of rural residents was 1,221 Yuan. The per capita annual disposable income of urban households was 3,496 Yuan. The per capita dwelling area of rural residents was 20.2 square meters and the per capita building area of urban residents was 15.7 square meters. In 1994, the average level of consumption of Chinese residents was 1,737 Yuan, of which that of the farmers was 1,087 Yuan and that of non-agricultural residents was 3,956 Yuan.

In terms of material consumption, China's per capita consumption of major products remained fairly low. With the growth of the economy, the level of consumption will have increase steadily. This newly-increased amount of consumption needs to be addressed through the expansion of the production output. In 1994, there was 0.8 automobile for every hundred Chinese persons, representing approximately 1.3% of the average level of the developed countries. On the average, every hundred households of the urban areas had 62.1 refrigerators, 87.3 washing machines, 86.2 color TV sets. The per capita energy consumption throughout the country was 721 kilograms of oil equivalent. The per capita consumption of electricity for daily life was 72.7kWh.

In 2000, the per capita net income of rural households was 2,253 Yuan. The per capita disposable income of urban households was 6,280 Yuan. The average level of consumption of residents was 3,397 Yuan, representing 12.4% of the world average level, 2.3% of high-income countries' level, and 32.3% of medium-income countries' level. Every hundred people had 1.3 automobiles, representing about 2% of that of the developed countries. On the average, every hundred households of rural residents had 80.1 refrigerators, 90.5 washing machines, 116.6 color TV sets. The per capita energy consumption throughout the country was 905 kilograms of oil equivalent, representing 53% of the world average level (Figure 1.13). The per capita consumption of electricity for daily life was 132.4 kWh.

1.3.4 Regional development

There is a sharp imbalance in regional economic development that characterises China's economy as a whole. The development level in the eastern coastal regions is much higher than that of the west and middle regions; and the gap of regional economic development has a tendency toward further widening. The GDP of the eastern coastal regions in 1994 accounted for 57.1% of the total national GDP while that in 2000 rose to 59.4% (see table 1-6).

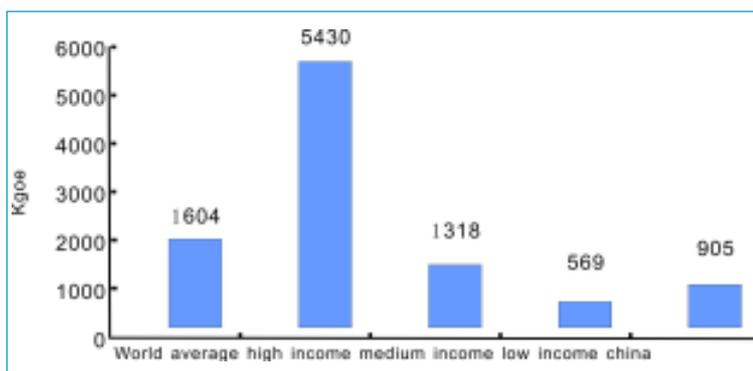


Figure 1.13 Comparison of per capita energy consumption between China and the world

Table 1-6 Changes of development gaps between the east, the middle and the west region of China

Area	1994			2000		
	GDP (Billion Yuan)	Percentage (%)	Per Capital (Yuan)	GDP (Billion Yuan)	Percentage (%)	Per Capital (Yuan)
The East	2660.8	57.1	5438	5774	59.4	10.768
The Middle	134.15	28.8	3147	2626.6	27.0	5978
The West	656.2	14.1	2402	1320.3	13.6	4606

1.3.5 External economy and trade

In 1994, the China's total value of imports and exports reached 236.62 billion USD, of which exports reached 121.1 billion USD, while imports were 115.61 billion USD. The China's total volume of imports and exports accounted for 2.8% of the global total. In 2000, the China's total volume of imports and exports rose to 474.29 billion USD, with exports of 249.20 billion USD and imports of 225.09 billion USD, and the total volume of imports and exports accounting for 4.0% of the global total. In terms of product structure, ever since 1980 the ratio of primary products in the total export volume has been greatly decreased, whereas that of industrial finished products has been continuously increasing (Table 1-7).



Table 1-7 Ratio changes in primary and medium products and industrial finished products in China's import and export products

Date	Amount of Imports & Exports (Billion USD)		Ratio of Primary Products (%)		Ratio of Industrial Finished Products (%)	
	Imports	Exports	Imports	Exports	Imports	Exports
1980	20.2	18.12	34.8	50.3	65.2	49.7
1990	42.25	27.35	12.4	50.6	87.7	49.5
1994	115.61	121.1	14.2	16.3	85.8	83.7
2000	225.9	249.2	20.8	10.2	79.2	89.8

In 1994, 24.39 million tons of coal were exported, while 1.22 million tons were imported; 18.94 million tons of crude oil and 3.78 million tons of refined oil were exported, while the net import of crude oil was as high as 12.35 million tons. In 2000, 55.07 million tons of coal were exported; 10.31 million tons of crude oil and 8.27 million of refined oil were exported; the imported crude oil increased to 70.27 million tons and the imported refined oil increased to 18.05 million tons.

In 1994, total amount of foreign capital actually utilized reached 43.2 billion USD, in which 33.8 billion USD were foreign direct investments. In 2000, the foreign capital actually utilized totaled 59.4 billion USD, in which 40.7 billion USD were foreign direct investments.

1.4 Brief introduction of the major sectors

1.4.1 Energy

China's primary energy production and consumption is mainly in coal. In 1994, China's total primary energy consumption stood at 1.23 billion tons of coal equivalent, in which coal consumption was 1.29 billion tons, accounting for 75.0% of total.

In 2000, China's total primary energy consumption was as high as 1.3 billion tons of coal equivalent, in which coal was 66.1% (see table 1 - 8). Out of the aggregate consumption, the agricultural sector accounted for 4.4%, the industrial sector 68.8%, the transportation, post and telecommunication sector 7.6%, household consumption 14.4% and the others 4.8%.

Table 1-8 The structure of China's consumption of primary energy

Year	Total Energy Consumption (billion tons of coal equivalent)	Overall Energy Consumption Percentage (%)			
		Coal	Petroleum	Natural Gas	Hydro-power & Nuclear Power
1994	1.22737	75	17.4	1.9	5.7
2000	1.30297	66.1	24.6	2.5	6.8

The petroleum consumption accounted for 17.4% of the overall primary energy consumption in 1994 and increased to 24.6% in 2000, natural gas consumption rose from 1.9% in 1994 to 2.5% by 2000, while the hydraulic power and nuclear electricity consumption increased from 5.7% to 6.8%.

China's per capital energy consumption in 1994 was 1.02 tons of coal equivalent while the energy consumption per unit of GDP was 4.15 tons of coal equivalent /10,000 Yuan (constant price in year 1990). Per capita energy consumption in 2000 was 1.03 tons of coal equivalent while the energy consumption per unit of GDP was 2.68 tons of coal equivalent /10,000 Yuan (see table 1- 9).

Table 1-9 Major indicators of China's energy consumption in 1994 and 2000

Year	Per Capita Energy Consumption (kg)	Energy Consumption of GDP
		(Tons of coal equivalent /10,000 Yuan, Constant Price in 1990)
1994	1029.8	4.15
2000	1031.9	2.68

1.4.2 Electric power

China's power industry has initially been established mainly based on thermal power generation, supplemented by the hydro-power generation and then by the nuclear power generation and power generations from other new energies; the scale of the power plants is expanding and the installation capacity is constantly increasing, therefore, large power plants and large power generation



units have played a major role in the power grid.

China's overall installed capacity of power generation in 1994 was 199.90 million kilowatt while in 2000 rose to 319.32 million KW, in which the overall installed capacity of hydro-power increased from 49.06 million KW in 1994 to 79.34 million KW in 2000, and that of thermal power rised from 148.74 million KW to 237.53 million KW. Out of the overall installed capacity of power generation in 2000, the share of hydropower was about 25% and thermal power 74%. At present, there are still 30 million people with no electricity available.

China's overall power generation in 1994 stood at 927.8 billion KWh with the hydropower 166.8 KWh and thermal power 747.70 billion KWh, accounting for 18.0% and 80.5% respectively of the overall power generation. China's overall power generation in 2000 was 1,368.5 billion KWh, with the hydropower 243.1 billion KWh, thermal power 1,107.9 billion KWh, and nuclear power 16.7 billion KWh, representing 17.8%, 81.0% and 1.2% of the total power generation respectively.

In 1994, China's power transmission lines of 220 kilovolts or above spanned as long as 107,337 kilometers and its power transformation capacity was as much as 208.51 million kilovolt-ampere (KVA). The power transmission lines of 220 kilovolts or above in 2000 extended to 163,620 kilometers and its power transformation capacity was 414.89 million KVA.

1.4.3 Transport

China's transportation system is composed of 5 transport means: railways, highways, water transport, civil aviation and pipelines, all of which made a headway to a various extent between 1994 and 2000 (Table 1-10). With the continued enhancement of urbanization, the urban public transport in China as a whole has seen a rapid growth.

Table 1-10 China's major transportation means

Item	Unit	1994	2000
Length of Railways in Operation	km	59000	68700
of which: Electrified Railways	km	9000	14900
Length of Highways	km	1117800	1402700
Number of Civil Aviation Routes	Lines	727	1165
of which: International Routes	Lines	84	133
Total Length of Civil Aviation Routes	km	1045600	1502887
of which: International Routes	km	352000	508405
Length of Navigable Inland waterways	km	102700	119300
Length of Petroleum and Gas Pipelines	km	16800	24700

In 1994, the total passenger traffic (TPR) in China was 10.929 billion persons. In 2000, this number increased to 14.786 billion. The share of railway TPR decreased from 9.95% in 1994 to 7.11% in 2000, while the share of highway TPR increased from 87.29% to 91.13% (Table 1-11).

Table 1-11 Total passenger traffic (TPR) change in China

(Unit: 10,000 persons; %)

Year	TPR	Railways		Highways		Water transport		Civil aviation	
		TPR	percentage	TPR	percentage	TPR	percentage	TPR	percentage
1994	1092883	108738	9.95	953940	87.29	26165	2.39	4038	0.37
2000	1478573	105073	7.11	1347392	91.13	19386	1.31	6722	0.45

In 1994, total passenger-kilometers in China was 859.1 billion passenger-km. This number increased to 1226.1 billion passenger-km in 2000. The share of railway decreased from 42.32% to 36.96%, the share of highway increased from 49.12% to 54.30%, and the share of civil aviation increased from 6.42% to 7.91% (Figure 1.14).

Total freight traffic (TFR) in China rose to 13.581 billion tons in 2000 from 11.803 billion tons in 1994. About 75% of the TFR was taken by highways, while railways and water transport took respectively 13% and 9% (Table 1-12).

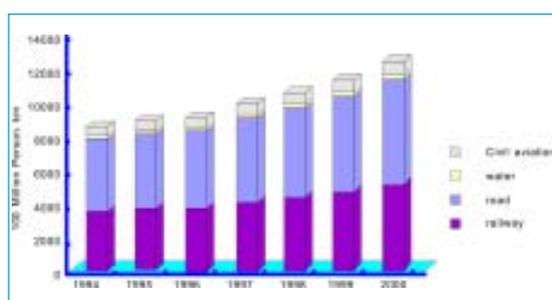


Figure 1.14 China's total passenger-kilometers from 1994 to 2000



Table 1-12 Total freight traffic change in China

(Unit: 10,000 tons; %)

Year	TPR	Railways		Highways		Water transport		Civil aviation		Pipelines	
		TPR	percentage	TPR	percentage	TPR	percentage	TPR	percentage	TPR	percentage
1994	1180273	163093	13.82	894914	75.82	107091	9.07	82.9	0.01	15092	1.28
2000	1358124	178023	13.11	1038813	76.49	122391	9.01	196.7	0.01	18700	1.38

China's total freight ton-kilometers (TFIK) increased from 3,326.1 billion ton-km in 1994 to 4,421.2 billion ton-km in 2000. The railway TFIK proportion decreased from 37.45% in 1994 to 31.27% in 2000; the water transport proportion, including by oceans, off-shores and inland rivers, increased from 47.16% to 53.39%; and highway TFIK proportion was kept at about 13%.

By the end of 1994, the total number of locomotives in the railway system in China was 15,085, of which 4,928 were steam locomotives, 7,801 diesel locomotives, and 2,356 electric locomotives; the total number of civil vehicles was 9,419,500, of which 3,497,400 were passenger vehicles and 5,922,100 various cargo-carrying trucks; the number of farming vehicles (tyre-tractors, etc.) was 5,850,000; the number of other motor vehicles was 12.09 million, of which 10,940,000 were motorcycles; and the total number of civil aircrafts was 681.

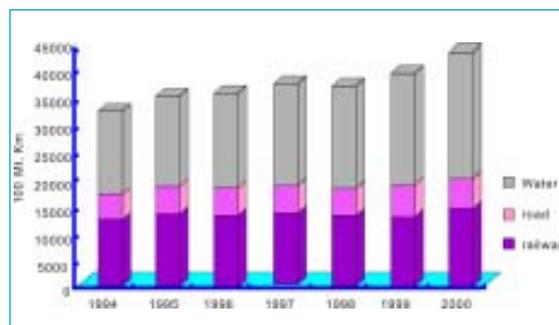


Figure 1.15 China's total freight ton-kilometers of major forms of transport from 1994 to 2000

By the end of 2000, the total number of locomotives in the railway system in China was 15253, of which 911 were steam locomotives, 10,826 diesel locomotives, and 3516 electric locomotives; the total number of civil vehicles was 16.09 million, of which 8.54 million were passenger vehicles and 7.55 million various cargo-carrying trucks; the number of farming vehicles (tyre-tractors, etc.) was 8.21 million; the number of other motor vehicles was 41.68 million, of which 37.72 million were motorcycles; and the total number of civil aircrafts was 982.

1.4.4 Agriculture

In 1994, there were 326.9 million rural laborers in farming, forestry, animal husbandry and fishery, with a gross output value of 1,575.05 billion Yuan, of which gross output value in farming was 916.92 billion Yuan, accounting for 58.2% of the total. In 2000, there were 327.975 million rural laborers in farming, forestry, animal husbandry and fishery, with a gross output value of 2,491.58 billion Yuan, among which the gross output value in farming was as much as 1,387.36 billion Yuan, accounting for 55.7% of the gross output value in farming, forestry, animal husbandry and fishery.

In 1994, total sown area of farm crops was 148.241 million hectare, of which the area of grain crops took 109.544 million hectare, including the area of cereal planting, which was 87.537 million hectare. Total output of grain reached as high as 445.101 million tons, with the output of cereal of 393.891 million tons included. Rice growing in China plays an important role in the crop plantation as a whole, in 1994, the area of rice planting was 30.17 million hectare, accounting for 27.5% of the area of grain crops. In 2000, total sown area was 156.3 million hectare, of which the area of grain crops accounted for 108.463 million hectare, including the area of cereal planting of 85.264 hectare. (Rice planting area is 29.96 million hectare, making up 27.6% of the grain crop area). The total output of grain was 462.175 million tons, with an output of 405.224 million tons of cereal included.

In 1994, total agricultural machinery power in China was 338.025 million kilowatts, with the total power of agricultural tractors being 98.632 million kilowatts. In 2000, total agricultural machinery power in China was 525.736 million kilowatts, with the overall power of agricultural tractors reaching 145.382 million kilowatts.

Total consumption of chemical fertilizers increased from 33.179 million tons in 1994 to 41.464 million tons in 2000. Total consumption of nitrogen fertilizers increased from 18.82 million tons to 21.616 million tons, while the proportion of consumed chemical fertilizers decreased from 56.7% to 52.1% (Table 1-13).



Table 1-13 Consumption of chemical fertilizers on farmlands in China

(Unit: 10000 tons)

	1994	1995	1996	1997	1998	1999	2000
Chemical fertilizers	3317.9	3593.7	3827.9	3980.7	4083.7	4124.3	4146.4
Nitrogen fertilizers	1882.0	2021.9	2145.3	2127.7	2233.3	2180.9	2161.6

There is a large number of livestock in China. Total large animals on hand were 149.187 million heads at the end of year 1994. By the end of 2000, that number has risen to 151.515 million, with an increase of cattle, pigs and sheep by 5.2%, 7.8%, and 20.7% over 1994 respectively (Table 1-14).

Table 1-14 Number of major livestock on hand in China

(Unit: 10000)

Year	Cattle	Hoses	Donkeys	Mules	Camels	Pigs	Sheep
1994	12231.8	1003.8	1092.3	555.2	35.6	41461.5	24052.8
2000	12866.3	876.6	922.7	453.0	32.6	44681.5	29031.9

1.5 Strategies and objectives of national development

In the first two decades of this century, China will devote itself to building a well-off society of higher standard in an all-round way to the benefit of more than one billion people. China will further develop the economy, improve democracy, make advancement in the science and education, enrich the culture, foster the social harmony, and upgrade the texture of life for the people. Building on what is already achieved at this stage and continuing to work for several more decades, China will have in the main accomplished the modernization program and turned into a strong, prosperous, democratic and culturally advanced socialist country by the middle of this century.

The objectives of building a well-off society in an all-round way are as follows:

- On the basis of optimized structure and better economic returns, efforts will be made to quadruple the GDP of the year 2000 by 2020, and China's overall national strength and international competitiveness will increase markedly. China will in the main achieve industrialization and establish a full-fledged socialist market economy and a more open and viable economic system. The proportion of urban population will go up considerably and the trend of widening differences between industry and agriculture, between urban and rural areas and between regions will be reversed step by step. China will have a fairly sound social security system. There will be a higher rate of employment. People will have more family property and lead a more prosperous life.

- Socialist democracy and the legal system will be further improved. The basic principle of rule of by law will be implemented completely. The political, economic and cultural rights and interests of the people will be respected and guaranteed in real earnest. Democracy at the grassroots level will be better practiced. People will enjoy a sound public order and live and work in peace and contentment.

- Ideological and ethical standards, scientific and cultural qualities, and the health of the whole people will be enhanced notably. A sound modern national educational system, scientific, technological and cultural innovation systems as well as nationwide fitness and medical and health systems will take shape. People will have access to better education. China will make senior secondary education basically universal in the country and eliminate illiteracy. A learning society in which all the people will learn or even pursue life-long education will emerge to boost their all-round development.

- The capability of sustainable development will be steadily enhanced. The ecological environment will be improved. The efficiency of using resources will be increased significantly. China will enhance harmony between man and nature to push the whole society onto a path to civilized development featuring the growth of production, an affluent life and a sound ecosystem.



According to the *Outline of the Tenth Five-Year Plan for National Economic and Social Development of the People's Republic of China*, which is now under implementation, from 2001 to 2005, China's natural population growth rate will be controlled within 9‰. The total population of the whole country in 2005 will be controlled within 1.33 billion. The annual economic growth rate on average is expected to be around 7%. By 2005 the GDP calculated at the price of 2000, will reach about 12,500 billion RMB Yuan, while the per capita GDP will be 9,400 RMB Yuan. The proportions of the added value of primary, secondary and tertiary industries to GDP will account for 13%, 51%, and 36% respectively, while the proportions of the employees in those industries will respectively occupy 44%, 23%, and 33%. The average annual growth rate of per capita disposable income of urban dwellers and per capita net income of rural residents will reach by around 5%. The forest coverage rate will rise to 18.2%. The performance of the Plan in the past few years shows that both economic and social development will be faster than expected.

1.6 Institutional arrangement for the preparation of Initial National Communication

China attaches great importance to climate change issues. As early as 1990, a Coordination Committee was established under the then Environmental Protection Committee of the State Council. Mr. Song Jian, State Councillor, chaired the Committee. Office of the Committee was in State Meteorological Administration. During the governmental restructure in 1998, the National Coordination Committee on Climate Change (NCCCC), chaired by Mr. Zeng Peiyan, Chairman of State Development and Planning Committee, was set up. The update of NCCCC, was approved by the State Council in 2003, and Mr. Ma Kai, Chairman of the National Development and Reform Commission (NDRC), was appointed as the chairman of the Committee. Under the coordination of the Committee, the Chinese Government has participated actively in the climate change negotiations and the work of the Intergovernmental Panel on Climate Change. These efforts have made contributions to the effective implementation of sustainable development strategy and mitigation of and adaptation to climate change.

In accordance with the decisions of NCCCC, NDRC is responsible for the preparation of China's Initial National Communication on Climate Change, including national greenhouse gas inventory. The major institutions involved in the development of the national greenhouse gas inventory include: the Energy Research Institute (ERI) of NDRC, Institute of Atmospheric Physics (IAP) of Chinese Academy of Sciences, Forest Ecology & Environment Institute (FEEI) of Chinese Academy of Forestry, and Center for Climate Impact Research (CCIR), Chinese Research Academy of Environmental Sciences, Agronmeteorology Institute of Chinese Academy of Agricultural Sciences. A Project Steering Committee was established by the National Coordination Committee on Climate Change, with a view to ensure overall guidance to the preparation of China's Initial National Communication on Climate Change. The members of the Project Steering Committee are officials and experts from NDRC, Ministry of Foreign Affairs, Ministry of Science and Technology, Ministry of Finance, State Environmental Protection Administration and China Meteorological Administration. Meanwhile, a Project Management Office was established by the Office of National Coordination Committee on Climate Change to strengthen the unified management and implementation of the project.



中华人民共和国气候变化初始国家信息通报

Table 1-15 Summary of China's National Circumstances in 1994

Criteria	1994
Population (10000, by the end of the year)	119850
Surface area (square kilometer)	9,600,000
GDP (Billion US\$, US\$ 1 = 8.6187 RMB Yuan)	542.534
GDP Per capita (US\$)	455
Estimate share of the informal sector in the economy in GDP (percentage)	not applicable
Share of industry in GDP (percentage) ¹	41.4
Share of service in GDP (percentage)	31.9
Share of agriculture in GDP (percentage) ²	20.2
Land area used for agriculture purposes (square kilometer) ³	949070
Urban population as percentage of total population	28.51
Number of livestocks (10000)	14918.7
In which: Cattle (10000)	12231.8
Horses (10000)	1003.8
Pigs (10000)	41461.5
Sheep (10000)	24052.8
Forest area (10000 square kilometers)	128.63
Population in absolute poverty (10000) ⁴	7000
Life expectancy at birth (year)	Male 68, female 71
Literacy rate (%)	81.9

Notes:

1. Industry includes mining and manufacturing, excludes constructing industry. The constructing industry took a share of about 6.5%.
2. Agriculture includes farming, forestry, animal husbandry, and fishery.
3. It refers to the plough area.
4. In 1994, the poverty line admitted by the Chinese Government referred to those whose annual net income per capita was under 440 Yuan.