Socialism

Socialism is an ideology of economic sociology which advocates a state-owned economy. It is a belief that productive resources should be controlled by society or the government.

Planned economy

It is a pre-planned economic system. That is, the government plays the role of the director of economic resource allocation according to the plan set, so as to decide what to produce, how to produce and for whom to produce.

Public ownership economy

It refers to ‘public ownership’. It is opposite to a ‘non-public-ownership economy’. Under this system, there is no ownership of the means of production, and the private ownership of them is denied to all. Generally, a ‘public ownership economy’ exists in three forms: (1) state-ownership; (2) collective ownership; (3) labour ownership (shared by all who work together).

Market economy

A kind of economic system in which questions such as what to produce, how to produce and for whom to produce are decided by the interaction of supply and demand in the open market.

Socialist market economy

An idea introduced by Deng Xiaoping (邓小平) which suits China’s economic system. It is a system based on the socialist public ownership and planned economy, employing the market economy as the means of adjustment. It determines clear property rights and accrual basis, as well as separates politics from business and implements the modern business management system, so as to further develop the productivity of society and boost output.
Collective ownership

It refers to the socialist public ownership under which the means of production are commonly owned and controlled by certain labourers. Based on the principle of voluntary reciprocity, it was born from the cooperative integration of individual labourers’ private ownership of the means of production, such as the peasants, handicraftsmen and small vendors.

Various ownership systems

A kind of economic system which allows the development of different economic components. Before adopting reform and opening-up, China implemented a single public ownership economy. After that, China encouraged the trading activities of all kinds of business institutions while insisting on public ownership. Of them, ‘individual economy’ and ‘private economy’ developed at a faster rate.

Collective economy

It refers to firms or businesses with their means of production collectively owned by the masses. They operate on the principles of voluntary combination, self-bearing of profits and losses, allocation according to labourers and democratic management. All capital is raised by the members or from accumulated funds from the business, and profits from operation are collectively owned.

Individual economy

An economic system under which the means of production are owned personally by the labourer. It is based on the labour of an individual, who personally owned and controlled the yields of labour.

Private economy

The means of production are privately owned with the hired labour force as the basis. The greatest difference between private economy and individual economy is that the former involves hired labourers whereas the latter involves self-employed individual labourers.

Sino-foreign joint equity economy

It is an economic model of foreign investment in China. The investment enterprises are called ‘Sino-foreign joint equity enterprises’. Sino-foreign joint equity enterprises, Sino-foreign contractual joint ventures and wholly foreign owned enterprises are known as the ‘three types of foreign-funded enterprises’.
Agricultural collectivization

It can be roughly divided into three stages: the setting up of the ‘mutual-aid teams’, the ‘lower-stage agricultural producers’ cooperatives’ and the ‘higher-stage agricultural producers’ cooperatives’.

(1) The setting up of the ‘mutual-aid teams’ (1952): In 1952, the government encouraged peasant families to set up ‘mutual-aid teams’. Under this system, peasants kept their own land, farming tools and livestock, but production was carried out collectively on a mutual-aid basis. By late 1952, about 40% of the country’s peasants had become members of mutual aid teams.

(2) The setting up of the ‘lower-stage agricultural producers’ cooperatives’ (1953): The government called on the peasants to take a second step towards national agricultural collectivization by setting up ‘lower-stage agricultural producers’ cooperatives’. Peasants contributed their land and carried out farming as a united entity. Profits were distributed according to the amount of land, farming tools and work hours they put in. In general, the cooperatives were accepted by the peasants because they ran charities in the villages, and peasants were allowed to keep their own land.

(3) The setting up of the ‘higher-stage agricultural producers’ cooperatives’ (1955): In 1955, the government began to introduce ‘higher-stage agricultural producers’ cooperatives’. Under this system, all land was taken over by the cooperatives. A cooperative was formed by 100 to 300 households. All farmlands and equipment were owned by the cooperatives, and private ownership was abolished. Returns were distributed according to the peasants’ working hours. Despite voices of opposition, more than 90% of the peasants joined the higher-stage agricultural producers’ cooperatives by the end of 1956.

Private ownership

It is also known as the ‘ownership system’. Under this system, private ownership and distribution of the means of production are allowed.

Contracting system

It is the so-called ‘household responsibility system’, an important reform introduced in China’s villages in the early 1980s. It had a far-reaching impact on China’s land and economic systems. Today, the ‘contracting system’ is still the basic economic system in rural areas.

Leasing system

A kind of managerial responsibility system of China’s state-owned enterprises. It is a kind of operation model and business operation system under which a business asset owner leases out his business asset to a user for a specific period of time on certain conditions for a return.
Joint-stock partnership system

It is also known as the ‘shareholding economy’. It refers to an economic structure under which separate means of production owned by different people are gathered through the purchase of shares. The means of production are then combined for use in the form of joint ventures; they bear their own profits and losses and distribute dividends according to stockholdings.

State-owned enterprise

A kind of socialist public ownership with the following features: (1) means of production (including capital and other properties) are owned by the state which represents the benefits of all; (2) business activities are carried out as directed and planned by the state; (3) the employees are the enterprise’s master and receive their returns according to the labour they contribute; (4) most of the enterprise’s revenues are owned by the state or the enterprise.

Special Economic zone (SEZ)

It refers to certain zones designated in the cities of Shenzhen (深圳), Zhuhai (珠海), Shantou (汕头) and Xiamen (厦门), as well as Hainan Province (海南省) which was included later. To attract foreign investments, special policies and preferential measures were introduced while means of a market economy were adopted. They became the windows for learning foreign advanced technology and business management. The special policies implemented include: (1) Economic development of the SEZs mainly depend on foreign investments, and products are mainly produced for export. It is an integrated system of multiple economies but mainly involves Sino-foreign joint equity enterprises and wholly foreign owned enterprises; (2) Their economic activities fully function as the market regulator; (3) Foreign businessmen are given preferential treatment in terms of taxation, entry and exit; (4) A different management system which allows greater autonomy is adopted.

Coastal development region

It is one of the important open zones of China. The Pearl River Delta (珠江三角洲), Xiazhangquan Delta (厦漳泉三角洲), Changjiang Delta (长江三角洲) and regions surrounding Bohai (环渤海地区) were established as coastal development regions. Special preferential policies were implemented to make them a window opened for foreign investments, the development of an export-oriented economy, and the promotion of the development of China’s coastal and inland regions.
(A) Five-year Plan

Once the CPC came into power, it set development targets for industry, agriculture, culture, education and technology on a five-year basis, after the Soviet model of a planned economy. Construction was then carried out according to the plan as confirmed by the central government. The first five-year plan lasted from 1953 to 1957. It is known as the ‘First Five-year Plan’.

(B) Three Red Banners

The ‘Three Red Banners’ were the three core tasks of the ‘Second Five-year Plan’ implemented by the CPC in 1958. Originally called the ‘Three Magic Tools’ ('三個法寶'), it was renamed the ‘Three Red Banners’ in May 1960, which included the ‘General Line’, the ‘Great Leap Forward’ and the ‘People’s Communes’. The CPC upheld the ‘Three Red Banners’ in an attempt to turn China into a wealthy and strong country within a short period of time, and to construct socialism with Chinese characteristics.

(C) General Line

The General Line is short for the General Line for Socialist Construction. The motto is ‘going all out, aiming high and achieving greater, faster, better and more economical results in building socialism’. The bases for setting this line are: ‘to bring all positive factors into full play for proper settlement of internal contradictions among the people; to consolidate and ensure the shares of collective ownership and ownership by the people under socialism; to consolidate the dictatorship of the proletariat and international solidarity of the proletariat; to gradually reform technically and culturally while continuing with socialist reforms on the economic, political and ideological lines; to develop industry and agriculture simultaneously with heavy industries as the priority; to develop central and local industries and big and small enterprises simultaneously under centralized leadership, national planning and through division of tasks. Through these, China shall be turned into a great socialist country with modernized industries, agriculture, technology and culture in the shortest possible time.’

(D) Marxism

It is an ideology founded by German Jew Karl Heinrich Marx and his friend Friedrich Engels based on the practical foundations of the 19th century labour movement. Marxism was used as the theoretical foundation of worldwide communist parties and workers’ parties. During the course of development, however, different schools were born and gave rise to serious disputes and a number of splits.
Most Marxist schools of thought are followers of communism. They believe that capitalism was built up on the exploitation of the proletariat by capitalists and class struggle born out of the conflicts of interest between different classes. It is an important momentum in the course of history.

(E) **Class struggle**

The CPC classified the people in society as ‘bourgeoisie’, ‘petty bourgeoisie’, ‘workers’ and ‘peasants’. It believed that the different classes oppose one another due to conflicts of interest, and unsettled class clashes and imbalanced interests would give rise to struggle. This is known as ‘class struggle’.

(F) **Taking steel production as the key link**

The major goal of the ‘Great Leap Forward’ launched in 1958 was to drastically boost steel and crop production within a short period of time. Because steel was more important among the two, the campaign took on the slogan ‘taking steel production as the key link’. In the Second session of the 8th CPC Congress held in May 1958, it was decided that twofold steel production over 1957 needed to be achieved. To ensure that steel production could reach this goal, the Central Committee of the CPC demanded other departments to ‘halt and make way’ and ‘let steel takes command’. In the Zhengzhou (鄭州) meeting in November of the same year, Mao Zedong (毛澤東) officially introduced the slogan of ‘taking steel production as the key link’.

(G) **People’s Commune**

After the founding of the People’s Republic of China (PRC), mutual-aid teams, lower-stage agricultural producers’ cooperatives and higher-stage agricultural producers’ cooperatives were set up in rural areas to organize the peasants and turn the rural economy into a collective ownership economy. In the latter half of 1958, communization spread through China. People’s Communes were extensively established. The communes collectively owned all land, forests, farm cattle and farming tools. Farming, forestry, animal husbandry, sideline industries (mainly rural handicrafts) and fisheries were collectively operated by the People’s Communes. The commune members produced collectively and received their pay according to the work they contributed. A commune is a three-tier organization containing communes, brigades and teams. ‘Team’ was the unit on which the division of tasks and payment was based.

When the People’s Communes were first established, members were put under all-round management. Apart from production, the communes made arrangements for their members in all aspects of their daily lives, including food, clothing, housing, transportation, childbirth, elderly care, medical care, undertaking and matchmaking. The members led a highly communal life. Some historians said the People’s Communes somewhat resembled the ‘celestial system of agriculture’ (天朝田畝制度) during the Heavenly Kingdom of Great Peace that advocated that ‘people would cultivate the same piece of farmland, eat the same meal, wear the same clothes, spend the same money. There would exist no disparity and hunger.’
**H) Cultural Revolution**

The full name is the Great Proletarian Cultural Revolution. It was a significant political campaign which took place in China from 1966 to 1976. The Cultural Revolution had a far-reaching impact on China politically, economically, socially, culturally and on her international status. The Cultural Revolution is also known as the ‘ten-year turmoil’ (十年 动乱) or ‘ten-year disaster’ (十年浩劫).

**I) Capitalist roader**

It is the abbreviation of ‘the capitalist roaders in authority within the party’, a term used in the mainland during the period of the Cultural Revolution.

**J) Gang of Four**

It is a gang formed by Jiang Qing (江青), Zhang Chunqiao (张春桥), Yao Wenyuan (姚文元) and Wang Hongwen (王洪文). The Gang of Four was a term first mentioned by Mao Zedong. In the meeting of the Political Bureau of the CPC Central Committee in July 1974, Mao openly reprimanded Jiang Qing for forming a faction of four. In December of the same year, he warned Wang Hongwen against the activities of the Gang of Four, but it was not until Jiang Qing and the others were arrested in October 1976 that the term was disclosed to the public.

**K) Socialism with Chinese characteristics**

Deng Xiaoping had elaborated this thought from different perspectives on different occasions. For example, productivity development as the most basic mission during the stage of socialism, opening-up externally and economic invigoration internally; the idea of one country two systems and unification of the mother country; respect for knowledge and talent; insisting on the four basic principles (i.e., sticking to the path of socialism, and upholding the dictatorship of the proletariat, communist leadership, Marxism and Maoism) and anti-bourgeoisie liberalization. All these are considered concepts of ‘socialism with Chinese characteristics’.

When Mao Zedong died in 1976, Hua Guofeng (华国锋) assumed the chairmanship of the CPC and the Central Military Commission. In 1977, Deng Xiaoping was rehabilitated and gradually rose as a core leader of the CPC and the country. Deng Xiaoping was a pragmatist who advocated accelerating economic development and implementing an opening-up policy. That was why was people considered him the architect of socialist reform.

Deng Xiaoping believed that China’s socialism should have Chinese characteristics. To this end, the integration of Marxism-Leninism with China’s actual situation was needed. His view was shared by Mao, who believed that the success of China’s communist revolution was determined by successful integration.
However, the approach of construction of socialism adopted at the founding of the country in 1949 had once deviated under the challenge of the class struggle theory, especially during the ten-year Cultural Revolution. Attempting to rectify the errors, Deng Xiaoping concentrated efforts on productivity. In socialist modernization, he followed Zhou Enlai’s (周恩来) idea of the Four Modernizations (agriculture, industry, science and technology and national defence) in order to revise Mao Zedong’s approach.

(L) Historical background of the reform and opening-up policies

From 1966 to 1976, China experienced a ten-year turmoil — the Cultural Revolution, which caused damage to the country’s political mechanism and brought socio-economic development to a standstill. Mao Zedong’s death and the arrest of the Gang of Four (Jiang Qing, Zhang Chunqiao, Yao Wenyuan and Wang Hongwen) in 1976 brought an end to the Cultural Revolution. At the end of the ten-year turmoil, the CPC leadership faced a knotty problem — how to set things right and steer the rule in the right direction? In 1977, Deng Xiaoping, who was twice attacked during the Cultural Revolution, was rehabilitated. As a pragmatist, he urged for a shift from the long standing cult of personality created for Mao Zedong.

Under the guidance of Deng’s pragmatic approach, the Third Plenum of the 11th CPC Congress was held in Beijing in December 1978. It was decided in the meeting that the approach of ‘taking class struggle as the key link’ should be abandoned, with efforts concentrated on the construction of socialist modernization. To promote modernization, the Third Plenum of the 11th CPC Congress also made the important decision of internal reforms and opening the country to the outside world. This marked the beginning of China’s ‘reform and opening-up’. Later, Deng further brought up the theory of socialism with Chinese characteristics. He stressed a pragmatic start, and that China should build its own path in the light of the country’s situation. He said economic construction should be the core of China’s current socialism, and productivity development should be the foundation for the gradual improvement of people’s incomes and living standards. Internal reforms and opening-up measures are the key drivers of the construction of socialist modernization.

(M) The goals of reform and opening-up

Deng Xiaoping’s first goal was to remedy the damage caused by the Cultural Revolution and speed up economic development. He said in order to reach this goal, reform and opening-up policies were necessary. This would mean simultaneous economic reforms and opening-up of the country to the outside world. Because 80% of the Chinese were working in the villages then, the improvement of peasants’ incomes and living standards through the development of the rural economy became the government’s prime task, with urban industrial reform as another task to be implemented right after the rural reform.
At the same time, the government implemented the opening-up policy in order to boost foreign investment, promote tourism and absorb foreign investments, technology and management skills. Deng Xiaoping stressed that the opening-up policy was necessary for the promotion of China’s development.

Deng also insisted that socialism was still the major foundation of China’s economy, and that China would maintain the socialist principle of distribution according to labour, with public ownership remaining as the foremost economic framework. Deng believed that the proletariat would not rise again as long as the people and the country grow in wealth.

(N) Urbanization in China

Prior to the establishment of the People’s Republic of China, China was primarily an agricultural country with few cities and a small urban population. After fifty years of development, the number of cities in China rose from 132 in 1979 to 656 in 2007.

For a long time after the PRC was set up, urbanization was considered capitalist and suppressed thanks to a dominant ideology led by class struggle. It was not until reform and opening-up was implemented than China’s cities began to develop rapidly. The rate of urbanization of China was two times than that of the world at that time, but was low compared to the rate of developed countries. According to the World Bank, China’s rate of urbanization was 12% lower than the world’s average and 40% lower than the rate of developed countries.

In addition, in the past few decades, development was unparallel and priority was given to better-developed cities. Naturally, rural areas remained backward, widening the income disparity between urban and rural residents. Public services are also uneven distributed. All these have created social crises and contradictions such as disparity between urban and rural areas and between the rich and the poor.

(O) The meaning and prospect of China’s modernization

There is an obvious disparity between China’s urban and rural areas. 60% of the country’s labour force concentrates in rural areas, the GDP of which makes up less than 15% of the country’s GDP. The ability of rural areas to accumulate capital is little, and a vicious circular economy has been formed. The fundamental reason is that the production methods and productivity of peasants and rural industries remain backward.

In view of this situation, the Chinese government has been emphasizing the improvement of the livelihoods of peasants in recent years. In addition, in the course of building a moderately prosperous society in the new millennium and continuous modernization, urbanization should be accelerated to realize the goals of modernization and capital accumulation. This is also the important means to relax the dual urban-rural structure and achieve social justice.
(A) Reciprocity between Hong Kong and the mainland under reform and opening-up

China’s economy developed rapidly ever since reform and opening-up. For example, areas around the Pearl River Delta were mostly farmland and small villages, but reform and opening-up policies has turned many regions into modern cities. As one of the SEZs, Shenzhen benefited from its adjacency to Hong Kong and drew in a huge amount of capital and technology for the active development of its industry, business and tourism. The resultant rapid economic growth turned it into a window to the outside world. ‘A City in One Night’ (一夜城) is a faithful description of the city that has undergone rapid changes in its cityscape.

Shenzhen in the past

Shenzhen at present

Source 1 A comparison of Shenzhen in the past and at present

Since the 1970s, Hong Kong’s manufacturing industry had been facing difficulties in development due to limited land supply, increasing production costs and other limitations. With ample land supply and low wages, the Pearl River Delta attracted investments from many Hong Kong businessmen who set up factories there after reform and opening-up was implemented. To lower the costs, the firms extensively relocated their production lines to the Pearl River Delta while keeping design, publicity, marketing, export and other tasks in Hong Kong. The cooperation model of ‘frontyard shops and backyard factories’ was formed. The Pearl River Delta has become more advanced and developed rapidly in comparison with other mainland provinces and cities. In recent years, it gradually developed tertiary production and hi-tech industry, and Hong Kong continues to play a role as a supporter in fundraising, logistics and trading.

The relationship between the mainland and Hong Kong is closer since the implementation of reform and opening-up. In June 2003, they concluded the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) which duly took effect on 1 January 2004. It is a free trade agreement concluded by the mainland and Hong Kong in compliance with the regulations
of the World Trade Organization (WTO). Hong Kong is given preferential treatment in its access to China’s domestic markets. This promotes common prosperity and development in Hong Kong and the mainland and strengthens their economic ties. The agreement further integrates the economies of Hong Kong and the Pearl River Delta, which has gradually become an entity in itself. Its implementation also strengthens Hong Kong’s communication with other mainland regions, such as the Changjiang Delta that centres upon Shanghai. More opportunities are available for their cooperation, which are conducive to development on both sides.

(B) Agreement between Hong Kong and Shanghai

In 2004, Hong Kong and Shanghai (上海) reached an agreement for joint development in eight economic areas. They include the opening-up of airports, port development, organization of world expos, incentives, conventions and exhibitions, trade investment, education, hygiene, sports and culture, finance, and cooperation and exchange in professional talent.

(C) China’s accession to the WTO accelerates global economic development

The WTO Deputy Director-General Alejandro Jara said in an international forum on China’s trade and sustainability that China had a ‘very good’ record in commitments during the six years since her accession to the WTO. China’s rapid economic growth and expanding foreign trade were important contributions to the world economy, especially the important opportunities for developing countries to export their products to the Chinese market. In addition, China’s absorption of huge foreign investments also meant opportunities to developed countries. All these have promoted the healthy growth of the world economy.

A WTO report analyzed that the percentage of China’s exports in the world’s aggregate exports in 2007 was three times that in 1990, and China might become the world’s largest commodity exporter by 2008. The report showed that in 2007, China replaced Canada as the largest source of imported commodities for the US. In Asia, China’s total foreign trade volume exceeded the total of Japan and Korea, which ranked second and third respectively for the first time in 2007.
The impact of reform and opening-up on people’s living standards and ways of life

To be used with Theme 1 of Modern China (Book 1)

Topic 2: The impact of reform and opening-up on people’s living standards and ways of life (pp.23 – 52)

Related Concepts/Glossary

Gross Domestic Product (GDP)
It refers to the total market value of all final goods and services produced by all the resident producing units of a country or region within a given period of time (without discounting the consumption of fixed capital).

China’s economic conditions in 2007

| GDP (purchasing power parity) | $7.099 trillion |
| GDP (official exchange rate)  | $3.251 trillion |
| GDP – real growth rate        | 11.9%          |
| Per capita GDP (purchasing power parity) | $5,400 |
| GDP (composition by sector)  | Primary production: 11.3%  
Secondary production: 48.6%  
Tertiary production: 40.1% |
| Labour force                  | 800.7 million (2007) |
| Labour force (composition by sector) | Primary production: 43%  
Secondary production: 25%  
Tertiary production: 32% (2006) |
| Unemployment rate             | Urban area: 4% (unemployment); Rural area: Substantial (unemployment and underemployment) |


The issue of sannong

‘Sannong’ (三農) refers to ‘agriculture’ (農業), ‘rural areas’ (農村) and ‘farmers’ (農民). The issue of sannong especially refers to the social problems in China related to these three aspects, such as the disparity between the rich and the poor, uneven development in villages, towns and cities, as the well as population migration.
Laid-off workers
They refer to employees of state-owned enterprises who were forced to leave their posts and became unemployed before reaching the age of retirement. Many laid-off workers did not have the skills and knowledge to adjust to the changes in society. It is difficult for them to get re-employed and they have become a great burden to society.

Peasant workers
They can be referred to as ‘migrant workers’. They are a special group of people who hold a rural household registration but do not engage in farming. They live in cities, into which they cannot fully integrate. Without an urban household registration, they suffer from discrimination, and they are not protected under the urban social security system. They earn little and live in poverty. The peasant workers is household the largest group in China’s industrial work force.

Household registration system
China implemented a population management policy using households as the unit. Having a ‘household registration’ means having the legality to live in a particular place. China has always adopted different forms of a household registration system for population management. Under China’s current household registration system, the population is classified by regions and family relationship. There are ‘rural households’ and ‘non-rural households’ for the control of population movement, but they gave rise to many social problems. On 25 October 2005, a PRC Ministry of Public Security official said the authorities intended to abolish the division, and would work out a management system for household registration. Later, the information office of the Ministry of Public Security said the public security institutions of 11 provinces across the country have commenced standard registration of urban and rural households, and that the Ministry of Public Security was drafting the Household Registration Law.

Dual urban-rural structure
It refers to the classification of urban and rural households. The Household Registration Ordinance of the People’s Republic of China was discussed and passed in the Third Session of the National People’s Congress Standing Committee in January 1958. This marked the formation of a household management system with stringent restriction of the rural population’s movement to the cities as the core.
As a matter of fact, the urban-rural household classification based on the household registration system gave urban and rural residents different social statuses. At present, China spends hundreds of billions RMB every year on all kinds of social security services for urban residents, such as elderly care, health care, and unemployment allowance, relief and subsidization. In comparison, peasants do not have much protection in terms of their livelihoods, elderly care, health care, undertaking and disability. The CPC Central Committee’s Decision on Certain Important Issues about the Promotion of Rural Reforms and Development was scrutinized and passed in the Third Plenum of the 17th CPC Congress held in October 2008. One of the tasks is the elimination of the dual urban-rural structure in 2020 as the basic framework for the establishment of an integrated socio-economic development mechanism for urban and rural areas.

Subject Knowledge

(A) Development Regions (As at 1991):

Related Topic

Topic 2: The impact of reform and opening-up on people’s living standards and ways of life, Theme 1 of Modern China (Book 1)

Teaching Suggestion

Teachers can ask students to study the economic zones, coastal development regions and development regions in the map, and explain that the open zones are a pattern made up of dots, lines and planes.

Source 3 Regions opened up to the outside world
(B) Family planning policy

The family planning policy is the Chinese government’s policy for population planning and management, which controls the citizens’ family planning through administrative means. The ‘one-child’ policy was implemented by the central government in the 1980s and was highly promoted. The related provision is as follows:

Article 18 of the *Population and Family Planning Law of the People’s Republic of China*: the State maintains its current policy for reproduction, encouraging late marriage and childbearing and advocating one child per couple. Where the requirements specified by laws and regulations are met, plans for a second child, if requested, may be made. Specific measures in this regard shall be formulated by the people’s congress or its standing committee of a province, autonomous region, or municipality directly under the Central Government. Family planning shall also be introduced to the ethnic peoples. Specific measures in this regard shall be formulated by the people’s congress or its standing committee of a province, autonomous region, or municipality directly under the Central Government.

Under this policy, rewards are given to couples who rear one child, and penalties to those who have more than one. The implementation of this policy was a serious blow to families of traditional values. Its implementation was also met with resistance in rural areas where a big family means a greater labour force.

Although this policy slowed down birth rate, it was not well-accepted. Under the traditional concept that esteem regard males over females, many people are disappointed at the birth of baby girls, and there is evidence of infanticides of newborn baby girls. Also, lacking the opportunity to get along with a sibling and pampered by his/her parents, the only child of the family is generally egoistic.

Source 4 A cartoon which shows how a child is doted on by all under the ‘one-child’ policy
(C) Census in the People’s Republic of China

Census is carried out once every ten years. The first national census was conducted on 30 June 1953, the second to fifth censuses were conducted in 1964, 1982, 1990 and 2000. The sixth will be conducted in 2010.

| Major indicators of past censuses in the mainland (10,000 people) |
|---|---|---|---|---|
| Year | 1953 | 1964 | 1982 | 1990 | 2000 |
| Population | 59,435 | 69,458 | 100,818 | 113,368 | 126,583 |
| Male | 30,799 | 35,652 | 51,944 | 58,495 | 65,355 |
| Female | 28,636 | 33,806 | 48,874 | 54,873 | 61,228 |
| Han race | 54,728 | 65,456 | 94,088 | 104,248 | 115,940 |
| Urban population | 7,726 | 12,710 | 21,082 | 29,971 | 45,844 |
| Rural population | 50,534 | 56,748 | 79,736 | 83,397 | 80,739 |

(Source: Basic Demographics of Five National Censuses from China Statistical Yearbook, 2001. Downloaded from the website of the National Bureau of Statistics of China)

(D) Population effects in 2080 as predicted by Chinese authorities

Source 5 The trend of food problems between 1980 and 2080
(E) Small peasant economy

A small peasant economy is an economic system in which a family is taken as the basic unit of agricultural production and life. Production under a small peasant economy, which advocates self-sufficiency, is for self-consumption rather than barter.

The small peasant economy of China today earns a small income because there are too many peasants but too little land, and technological level and productivity are low. Some experts suggested that to solve the problem created by this economy, the most effective method would be to develop an extensive modernized agricultural industry to improve the productivity and income of peasants through modernized production skills. The prerequisite would be extensive farmland. However, the ownership of farmland is scattered and difficult to transfer. It has become the greatest barrier to agricultural modernization.

(F) West Development

The scope of West Development covers 12 provinces, autonomous regions and municipalities directly under the central government. They include Chongqing (重庆), Sichuan (四川), Guizhou (贵州), Yunnan (云南), Tibet Autonomous Region (西藏自治区), Shaanxi (陕西), Gansu (甘肃), Qinghai (青海), Ningxia Hui Autonomous Region (宁夏回族自治区), Xinjiang Uygur Autonomous Region (新疆维吾尔自治区), Inner Mongolia Autonomous Region (内蒙古自治区) and Guangxi Zhuang Autonomous Region (广西壮族自治区). Covering an area of 6.85 million km², they represent 71.4% of China’s territory.

The resourceful western region is of great market potential, but is economically backward for natural, historical and social reasons. Its per capita GDP is only equivalent to two-thirds of the country’s average, and is below the eastern regions’ average of 40%. Under such circumstances, the acceleration of reform and opening-up and modernization is urgently needed.

In mid-March 2000, the Office of the Leading Group for Western Region Development under the State Council was duly set up and operative. Its tasks include ten major projects: the Nanjing-Xian Railway (宁西铁路), the Yuhuai Railway (渝怀铁路), highway construction in the western region, airport construction in the western region, Chongqing Monorail (重庆轻轨), the Sebei-Xining-Lanzhou gas transmission pipelines (涩北-西宁-兰州输气管线), 300,000-tonne potash fertilizer project in Qinghai, conversion of cropland to woodland and grassland in the western region, infrastructure construction for universities in the western region and the Zipingpu Water Control Project (四川紫坪铺水利枢纽).
(G) Regions under West Development

Source 6  Areas under the West Development project

(H) Gini coefficient

It is an indicator devised by Italian economist Corrado Gini based on the Lorenz Curve for evaluating income distribution in the early 20th century. It is defined as a ratio with values between 0 and 1, generally with 0.4 as the ‘warning line’. The greater the coefficient, the greater the income disparity. A value above 0.6 indicates serious disparity between the rich and the poor. According to the UN:

➢ < 0.2 indicates a perfectly equal distribution of income
➢ 0.2 – 0.3 indicates a comparatively equal distribution of income
➢ 0.3 – 0.4 indicates a relatively reasonable distribution of income
➢ 0.4 – 0.5 indicates a relatively great income disparity
➢ > 0.6 indicates a great income disparity

Nowadays, the country with the highest Gini coefficient is Namibia in Africa, and the Gini coefficients of China and Hong Kong are both over 0.4.

(I) Engel coefficient

The Engel coefficient is the proportion of total food expenditure to total personal consumption expenditure. In the 19th century, German statistician Ernst Engel developed a rule for consumption pattern changes based on statistics: the lower the household income, the greater the proportion of food expenditure to household income (or total expenditure). The proportion of food expenditure to household income (or total expenditure) falls as household
income increases. This means the lower the Engel coefficient of a household, the richer that household. Conversely, the higher the Engel coefficient of a household, the poorer that household.

The Engel coefficient is commonly used for measuring the living standard of a country or nation. According to the criteria of the Food and Agriculture Organization of the United Nations, an Engel coefficient:

- > 59% means poverty
- 50% – 59% means adequate clothing and food
- 40% – 50% means people are well-to-do
- 30% – 40% means people are well-off
- < 30% means the wealthiest

(J) **Urban-rural integration**

‘Urban-rural integration’ is one of the goals of the rural reform and development set by the Third Plenum of the 17th CPC Congress. It is mainly to be fulfilled through peasants’ assignment of land contract rights.

(K) **The movement of peasant-workers**

It refers to population migration that has taken place since reform and opening-up was launched. The so-called ‘movement of peasant-workers’ refers to large numbers of peasants going into cities for work. Every year, throngs of peasant labour travel southwards or northwards to return home for the Spring Festival. The busy railway and road traffic forms the dramatic ‘spring transportation crunch’.

(L) **Results of reform and opening-up**

Remarkable results have been achieved through economic reforms. Rural areas grew in prosperity, with peasants’ living standards greatly improved as crop output increased and rural enterprises bloomed. In cities, especially in the coastal regions, life has become more vibrant and modernized as urban development matured. Economic and technological exchanges with foreign countries also grew rapidly. China has concluded many cooperation agreements with foreign entrepreneurs, enabling Chinese enterprises to improve their operation and management by pragmatically learning from developed countries’ methods and experiences in this aspect.

All in all, China’s overall national strength grew remarkably since reform and opening-up. In the past 20 years or so, the national economy grew at an annual average rate of 9.5%, with a twentyfold rise in the country’s GDP, and the gross output value has already exceeded RMB 10 trillion. China’s rapid economic
growth brought all-round improvement to her people in food, clothing, daily necessities and housing. Most people in the 1.3 billion population of the country have their needs met in food and clothing.

![Graph](image_url)

Source 7 Quantity of consumer durables of every 100 urban households in 1981 (left) and 1984 (right)

Source 8 Quantity of consumer durables of every 100 rural households in 1981 (left) and 1984 (right)

(M) Limitations of reform and opening-up

Reform and opening-up gave rise to an increasing disparity in income as well as between the rich and the poor. This is especially prominent between urban and rural areas, the coastal and inland regions and the upper-ranked and lower-ranked (the so-called ‘three great disparities’ 三大差距) The disparity between the rich and the poor further aggravates social clashes.

The disparity was widened during the course of reform because of the overheated economy, the government’s relaxed control on prices, as well as greater inflation from the substantial issue of currency to meet huge financial needs.

The course of reform also witnessed more and more corruption and other serious crimes. Of them, the cases of cadres seeking personal gain by making use of their authority and ‘government officials’ speculation for arbitrage’ (官倒) were especially common. Not only did they threaten political and economic order, but also caused serious social clashes too. For example, the ‘Chen Xitong case’ (陈希同案) in Beijing and ‘Yuan Hua smuggling case’ (遠華走私案) in Xiamen were major cases which shocked the whole nation.

Many difficulties were encountered in economic reforms. For example, many state-owned enterprises with persistent deficits needed subsidization from the government; social stability was undermined by problems such as the unemployment of laid-off workers as a result of the reform of state-owned enterprises; agricultural reforms have also faced difficulties since the mid-1980s due to inadequate land supply, increasing prices of production materials and other problems.
(A) GDP of Guangzhou, Shenzhen and Hong Kong in 2008

The 6th Plenary Session of the 9th CPC Guangzhou Municipal Committee estimated that the GDP of Guangzhou city in 2008 would grow by more than 12% to reach more than RMB 820 billion. The general budget revenue of the Guangzhou region was estimated to be RMB 247.7 billion, representing a 17.1% growth. The general budget revenue of the local finance was estimated to be RMB 62.2 billion, representing an 18.7% growth. The total foreign trade import/export was estimated to reach US$81.95 billion, representing an 11.5% growth. The per capita disposable income of urban dwellers was estimated to be RMB 25,317, representing a 12.7% growth. The per capita net income of rural residents was estimated to be RMB 9,828, representing a 14.1% growth.

In a report made in the 11th Plenary Session of the 4th CPC Shenzhen Municipal Committee, it was estimated that in 2008 Shenzhen’s GDP would reach RMB 780.7 billion, a rise of 12.1% compared to the same period of the previous year. The general budget revenue of Shenzhen’s local finance was estimated to be RMB 80.04 billion, representing a 21.6% growth. The total foreign trade import/export was estimated to reach US$299.96 billion, representing a 4.3% growth over last year. Of them, foreign trade exports would reach US$179.72, representing a rise of 6.6% over last year. The per capita GDP was estimated to be RMB 89,800, representing a rise of 10% from the same period of the previous year.

According to the figures released by the Census and Statistics Department of the Hong Kong Special Administrative Region, Hong Kong’s GDP for the third quarter reached HK$429.7 billion, a rise of 3.8% from the same period of the previous year; and the gross national product (GNP) was HK$454 billion, a rise of 8.3% from the same period of the previous year. The GNP of the third quarter was HK$24.3 billion more than the GDP; this represents a net external factor income inflow of the same amount, and is equivalent to 5.6% of GDP. After netting out the effect of price changes, Hong Kong’s GNP increased by 6% in real terms, and the GDP increased by 1.7% in real terms in the third quarter.

(B) Gini Coefficients of Hong Kong and Beijing

In the UN’s annual report State of the World’s Cities 2008/2009: Harmonious Cities, the Gini coefficient was first used as an assessment criterion for the equality of wealth distribution. It is pointed out in the report that Beijing’s Gini coefficient is 0.22. With its residents’ income disparity lower than their counterparts in developed European countries, it is a city with the most balanced wealth distribution in the world. Hong Kong’s urban Gini coefficient reaches 0.53. Not only does it exceed the warning level of 0.4, but it is also above that of Europe, the US and all major Asian cities. It is a city with the gravest disparity between the rich and the poor in the entire Asia.
Other cities whose wealth distribution is as balanced as Beijing are mostly found in Europe. They include Denmark, Finland, Holland and Slovenia, and their urban Gini coefficients are all below 0.25. Austria, Belgium, France, Germany, Luxembourg, Norway, Sweden and Switzerland have relatively low urban Gini coefficients which range between 0.25 and 0.3.

(C) Opportunities and challenges to China's agricultural development as posed by the country's accession to the WTO

Under the ever-growing trend of economic globalization, China’s accession to the WTO has posed various opportunities and challenges to China’s agricultural production:

Opportunities:
1. China can enjoy the most-favoured-nation treatment of most countries and preferential treatment of developing countries. Discriminatory treatments are reduced, conflicts can be resolved by the WTO mechanisms and China’s external environment of agricultural export is improved.
2. As a WTO member, China can participate in the multilateral trade negotiations of the WTO and set up of new policies, allowing her to fight for and secure the interests of her agricultural industry.
3. It is beneficial for China to import agricultural products that she has low comparative advantage, such as food, cotton and oil, and to export products she has high comparative advantage, such as fruit, vegetables and livestock products. This can help to regulate the structure of the country’s agricultural industry.
4. Foreign investment can enter China more easily, bringing in advanced agricultural technology to raise the level of management and productivity of the country’s agriculture and the quality of her agricultural products.
5. China can deepen the reform of her agricultural industry and economy based on WTO guidelines and international standards.

Challenges:
1. After her accession to the WTO, China is obliged to remove non-tariff measures according to the WTO agreement. It suggests that the agricultural market of China will be opened up, and agricultural industries of less competitive power, such as wheat, soya, corn, cotton, oil and sugar, are facing fierce competition from other countries.
2. The price protection systems, subsidies for peasants and subsidies in production prices are going to be restricted by the WTO regulations. In the end, production costs of peasants are increased and production incentive is lowered.
3. As China’s market of agricultural products is further opened up, cheap and quality foreign agricultural products can enter the market easily, which will increase the country’s foreign exchange expenditure for imported products.
A country heading towards sustainable development

To be used with Theme 1 of Modern China (Book 1)

Topic 3: A country heading towards sustainable development (pp.53 – 72)

Related Concepts/Glossary

Sustainable development
According to the UN World Commission on Environment and Development, sustainable development is ‘development that meets the need of the present without compromising the ability of future generations to meet their own needs.’ (Our Common Future, 1987)

Scientific outlook on development
The scientific outlook on development is a putting-people-first, comprehensive, balanced and sustainable outlook on development. It takes development as its essence, putting people first as its core, comprehensive, balanced and sustainable development as its basic requirement, and overall consideration as its fundamental approach. It is a ‘major strategic thought’ put forward by the CPC under the leadership of General Secretary Hu Jintao, and was adopted in the CPC Constitution in the 17th CPC Congress as one of the CPC’s guiding principles.

Putting people first
‘Putting people first’ is the core of the scientific outlook on development. People’s interests are the aim and the outcome of all the work of the CPC, the aim of which is to keep meeting people’s needs in all aspects and promote their all-round development. Details include: 1. To keep enhancing people’s living standards in the material, cultural and health aspects on the foundation of economic development; 2. To pay respect for and protect human rights, including political, economic and cultural rights; 3. To keep enhancing the quality of people’s ideology, morality, science and health; 4. To create a social environment where people can develop equally and bring their wits into full play.

Comprehensiveness, balance and sustainability
Comprehensiveness, balance and sustainability are the basic principle of the scientific outlook on development. The main points are:

- Insist on having economic development as the core: To seize the opportunity to accelerate economic development while maintaining stable and rapid momentum of economic development. To speed up economic development based on structural enhancement, better quality and higher efficiency;
• Insist on the ‘five balances’: balancing the development between urban and rural areas, among regions, between the economy and society between humans and nature, and between internal reforms and opening-up policies.

**Industrial structure**
It refers to the structure of various industrial sectors in the national economy as well as the internal structure of each of these industrial sectors. Generally, industrial structure can be shown in two ways: by comparing the resource allocations of different industrial sectors, or by comparing the output of the production activities of different industrial sectors.

**Resource-saving/resource-conserving society**
A resource-saving society is a complicated system. It involves concept, components, systems, institutions, mechanisms and entities related to resource-saving. The main goals are high efficiency and the saving of time, energy, water and raw materials.

**Environmentally-friendly society**
An environmentally-friendly society is a social morphology of human-nature harmony and co-existence. Its focus is balanced and sustainable development between human production/consumption and the ecosystem. It aims at developing a low-consumption, low-polluting and high-efficiency production system, promoting green and rational consumption, and speeding up the development of green technology to replace natural resources.

**Macroeconomic adjustment**
Macroeconomic adjustment is a form of government intervention. It is the management of the national economy by the government, and an economic function of the country’s governments, especially the central government. It is how the government regulates and exerts control over society and the economy as a whole during economic operation for promoting market growth and standardizing market operation.

**Inflation**
Inflation refers to the persistent increase in the general price level. Currency depreciation also brings inflationary effects. General inflation refers to a lower market value of the currency or weaker purchasing power. Currency depreciation is the relative fall in the value of a currency in an economic system with respect to another economic system. The former refers to the value of a national currency, while the latter refers to the currency’s value in the international market.

**Deflation**
Deflation refers to the reduction of money supply in the market and weaker purchasing power, resulting in a fall of the price level. Long-standing deflation inhibits investments and production, thus pushes up unemployment rates and gives rise to economic recession.
Fiscal policy

Fiscal policies are the guiding principles for fiscal tasks as laid down by the country in the light of the political, economic and social developments in a given period of time. Aggregate demand can be adjusted through fiscal expenditure and taxation policies. Greater government expenditure stimulates aggregate demand and brings a higher national income; the opposite inhibits aggregate demand and brings a lower national income. Taxation is a contractionary policy — higher taxation inhibits aggregate demand and brings a lower national income; the opposite stimulates aggregate demand and brings a higher national income.

Monetary Policy

Monetary policies refer to the use of various tools by the central bank to regulate money supply and interest rates in order to attain specific objectives such as stabilizing prices, promoting economic growth, full employment and balance of payment, and influencing the direction and measures of the macroeconomy.

Subject Knowledge

(A) Different interpretations of sustainable development

As for any economic or social theory, different schools of thought have appeared for sustainable development with different focuses. The following are some of the more prominent notions:

<table>
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<tr>
<th>Focus</th>
<th>Important notion</th>
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<tbody>
<tr>
<td>Definition based on natural attributes</td>
<td>The term sustainability was first initiated by ecologists and referred to ecological sustainability. In 1991, the International Association for Ecology (Intecol) and International Union of Biological Science (IUBS) gave protection and support to the production and regeneration of the environmental system, believing that sustainable development was about finding the best ecosystem to support ecological integrity and the fulfilment of human wants, so that the environment for human survival could sustain.</td>
</tr>
<tr>
<td>Definition based on social attributes</td>
<td>In 1991, the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme (UNEP) and WWF jointly published Caring For the Earth: A strategy for Sustainable Living, which states that sustainable development is ‘improving the quality of human life while living within the carrying capacity of supporting ecosystems’. It is stressed that equilibrium must be kept between human’s production models and living patterns and the earth’s carrying capacity, stressing that human society is the target of sustainable development, which aims at improving human’s quality of life and creating a decent living environment.</td>
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Definition based on economic attributes

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<tr>
<th>Focus</th>
<th>Important notion</th>
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<tbody>
<tr>
<td>Definition based on economic attributes</td>
<td>In his book <em>Economics, Natural-Resource Scarcity and Development</em> (1985), Edward B. Barbier defines sustainable development as ‘maximizing the net benefits of economic development, subject to maintaining the services and quality of natural resources’. Some scholars have defined sustainable development as ‘a certain resource utilized today has a higher value than the same resource used at some point in the future’.</td>
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| Definition based on technological attributes | Some scholars have expanded the definition of sustainable development to include the choice of technology. They suggested that sustainable development is a shift to cleaner and more efficient technology; it is the adoption of 'enclosed type' technology to achieve ‘zero emission’, with minimum depletion of energy and other natural resources. Other scholars have proposed that sustainable development is the development of technology or skills system that produces little waste and pollutant. |

The definition of sustainable development generally accepted by the international community today, i.e., ‘development that meets the need of the present without compromising the ability of future generations to meet their own needs’, was brought up by Gro Harlem Brundtland in the UN World Commission on Environment and Development meeting she presided in 1987. After many discussions, the 15th governing council of the UNEP endorsed her definition in May 1989, and released the *Declaration on Sustainable Development*. 

**(B) The background of China’s sustainable development**

Since reform and opening-up, the growth pattern of China’s extensive economy has fulfilled the first (meeting people’s basic needs for food and clothing) and second (achieving moderate prosperity) strategic objectives of the three-step development strategy proposed by Deng Xiaoping. It is, however, unable to fulfill the third objective (achieving modernization and moderate prosperity in all aspects). In China, disparity between the rich and the poor, urban and rural areas, different regions, people and the government and the economy and the environment gradually reached an unbearable stage.

In the 3rd Plenum of the 16th CPC Congress held on 14 October 2003, Hu Jintao specifically brought up the notion of ‘putting people first, keeps to the concept of overall, coordinated, sustainable development and promotes the all-round development of society and man.’ The ‘five balances’ were also introduced. The ‘scientific outlook on development’ was officially adopted in the Party Constitution in the 17th CPC Congress as one of the CPC’s guiding principles.

**(C) Theoretical foundations of the scientific outlook on development**

The scientific outlook on development is mainly based on the following: the first is the deepening of knowledge of socialist modernization; the second is better and faster socio-economic development; the third is the full development of a moderately prosperous society and reaching the basic benchmarks for modernization.
(D) Macroeconomic adjustment in China

Since reform and opening-up was introduced in late 1978, China’s economic system has gradually shifted from a planned economy to a socialist market economy. However, because of the flaws in China’s market price automatic regulatory mechanism, over-investment and low-efficiency resources utilization persists, leading to demand-supply imbalance. When this phenomenon takes place, the central government intervenes in the market in the form of macroeconomic adjustment for overall economic regulation so as to cool down the economic climate and prevent the negative impact of the unstable market.

The government has applied tight fiscal policies, a form of macroeconomic adjustment five times since 1978: 1979 to 1981, 1985 to 1986, 1989 to 1990, the second half of 1993 to 1996 and the second half of 2003 to 2005. The first four times aroused no concern from the outside world, but the fifth drew considerable attention from the international community, because with China’s accession to the WTO in 2001, her economic scale, attraction to foreign investments and rapidly expanding total import/export volume extended the impact of the fiscal policies to the international level.

(E) China’s temporary price intervention policy

Since May 2007, China’s overall consumer price level has risen considerably. Since August that year, a rise of more than 6% in the consumer price level for five consecutive months had been recorded as compared with the same period of the previous year. The prices of some important commodities rose remarkably. Some firms seized the opportunity to increase the prices of their products, and these unreasonable price hikes disturbed social stability. Under these circumstances, the Chinese government promulgated the Measures of the National Development and Reform Commission for the Practice of Temporary Price Intervention on Some Important Commodities and Services in 2008.

Cao Changqing, Director of the Department of Price, National Development and Reform Commission, said temporary price intervention did not change the nature of autonomic pricing by firms; it was not a price freeze and would not affect normal business operation. He said the government only intervened in cases of unreasonable price hikes.

(F) Controversies over the Three Gorges Project

The Three Gorges Project has aroused many controversies concerning the environment, cultural relics, population relocation and tourism:

<table>
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<tr>
<th>Environment</th>
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<td>• When the reservoir is filled up, water flow will be stopped and it will not be able to remove the pollutants which accumulate in the reservoir. This worsens water quality and helps to spread infectious diseases.</td>
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<tr>
<td>• The huge dam forms a barrier that blocks fishes’ normal passage through the Three Gorges. Mutation takes place in their behavioural patterns and heredity. When the dam is filled up completely, some 560 rare terrestrial plant species will be drowned. A great majority of them also distribute on the land above the floodline except Myricaria laxiflora (疏花水柏枝) and Adiantum reniforme var. sinenseq (荷葉鐵線蕨), which grow under the floodline. Both of the plants have already been moved elsewhere.</td>
<td></td>
</tr>
</tbody>
</table>
### Environment
- When the dam is filled up, the surface area of water will increase. This means a higher evaporation rate and smaller differences between day and night temperatures of the surrounding areas, changing the climatic environment of the reservoir area.

### Cultural relics
- The periphery of the Three Gorges is a point of cultural exchange of the ancient Ba (巴) and Chu (楚) kingdoms. The reservoir has already flooded more than 1,200 known points of cultural relics.
- Cultural relics such as the Baiheliang carved stone ridge, Zhang Fei Temple, Shibaozhai and Wuming Que (無銘闕) were relocated due to the flooding.

### Population relocation
- 129 towns including Xingshan County will be drowned when the Three Gorges dam is filled up. Among them are two medium-sized cities, Wanzhou and Fuling, as well as a dozen small ones. More than 1.2 million people had to be relocated, exceeding the number planned at the early stage of the project. This involved 20 counties and prefectures (cities) such as Hubei and Chongqing. The residents will be settled in more than 10 provinces (municipalities directly under the central government) throughout the country.

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**Source 9** Originally a scenic natural spot, the Three Gorges are now mostly submerged. The photo shows the original look of the Qutang Gorge (瞿塘峡) of the Three Gorges.

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**(G) A complete physical map of the rice genome**

The Rice Genome Research Program has three research themes: the plotting of the genetic map and physical map and the determination of full-length DNA sequence. Countries that take part in the program include Japan, the US, India, Korea, the Philippines and China. Japan first plotted the rice genetic map in 1994, and the National Center for Gene Research of Chinese Academy of Sciences first successfully plotted the complete rice physical map in 1997.

The International Rice Genome Sequencing Project (IRGSP) duly commenced in 1998 for rice genomes analysis and collation. The project was coordinated by Japan and participated by China, South Korea, Taiwan, Britain, Canada, the US, Brazil, India and France. In 2002, scientists announced that the genetic map of the rice plant was completed.
(H) Quantum Computer

The quantum computer is a computer of a brand new concept. It makes use of the quantum mechanical phenomena of atoms to process data. Quantum coherence gives it high parallel computing power. Compared to classical computers, quantum computers have much greater storage capacity and higher computing speed. If ordinary computers was a solo musical instrument, quantum computers would be an orchestra. Able to handle a number of different situations in a computation, a 40-bit quantum computer can solve problems that take a 1024-bit computer decades to solve in a short period of time.

In the mainland, ‘computer’ can mean, in Chinese, ‘計算機’ or ’電腦’. ‘計算機’ mainly refers to computing apparatus with scientific research properties. As quantum technology is still at its infancy, quantum computers are only found in laboratories, and so they are known as ‘量子計算機’ rather than ‘量子電腦’.

(I) History of China’s aerospace technology

In 1970, the successful launch of man-made earth satellite Dongfanghong I from the Jiuquan Satellite Launch Center made China the 5th country in the world to launch a satellite.

In 1975, FSW-0, a recoverable photo surveillance satellite was launched successfully and returned to the earth three days later. This made China the 3rd country in the world to equip with satellite landing technology.

In 1972, the Shenzhou manned spaceflight program was made a national program.

On 12 October 2005, Shenzhou 6 spacecraft lifted off with two Chinese astronauts: Fei Junlong and Nie Haisheng.

On 1970, the successful launch of man-made earth satellite Dongfanghong I from the Jiuquan Satellite Launch Center made China the 5th country in the world to launch a satellite.

On 15 October 2003, Shenzhou 5 spacecraft successfully lifted off with Yang Liwei, China’s first astronaut, on board. It circled the earth 14 times in space.

On 1980, China’s first unmanned test spacecraft Shenzhou 1 was successfully launched at Jiuquan.

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On 2007, Shenzhou 7 was launched with astronauts Zhai Zhigang, Liu Boming and Jing Haipeng on board. When cut in space, Zhai Zhigang carried out a spacewalk, making China the 3rd spacewalking country.

On 25 September 2008, Shenzhou 7 was launched with astronauts Zhai Zhigang, Liu Boming and Jing Haipeng on board. When cut in space, Zhai Zhigang carried out a spacewalk, making China the 3rd spacewalking country.

To arouse students’ interest, teachers can briefly introduce the history of China’s aerospace technology to inform students of the considerable achievements China has attained in this aspect.
(J) Development and features of the Qinghai–Tibet Railway

The construction and operation of the railroad on the Qinghai-Tibet Plateau started in 1958, with the Xining-Golmud section completed in 1981.

In February 2001, the State Council approved the construction of the Qinghai-Tibet Railway, dividing the project into the first phase, i.e., the Xining-Golmud section, and the second phase, i.e., the Golmud-Lhasa section. The full length of the two sections is 1,118 km. Part of the line, roughly 965 km, is situated at an altitude of 4,000 metres or above, with the highest point on the 5072-metre Tanggula Mountains. The railway began running in 2006 as the world’s longest plateau railway and one built on the highest altitude.

To protect the natural environment of the Qinghai-Tibet Plateau, a series of measures have been taken based on the principle of environmental conservation during the construction and the operation of the railway:

- The natural protection areas were protected as much as possible. The construction sites, roads and sand and stone sites were carefully chosen to avoid vegetation damage.
- Vegetation was carefully removed for soil collection, then collected and kept with care before it was put back over the soil after the construction project finished. RMB 20 million was spent on transplanting vegetation of several million m$^2$ along the railway.
- 33 pathways have been created for animals.
- Vacuum human waste collection devices and sewage and garbage treatment disposal units are provided. Central collection and disposal are arranged for all sewage and wastes;
- Numerous sanitary and environment-friendly toilets are provided with a wide range of functions to meet the needs of tourists without polluting the environment.

Source 10 The Qinghai–Tibet Plateau contains valuable natural resources. Conserving them was a great challenge to the construction of the Qinghai-Tibet Railway.
(A) Energy problems confronting China

With continual rapid economic growth, urbanization and greater demand for ecological and environmental conservation, China is facing immense challenges in energy production and consumption. These problems are manifested in:

1. An increasing consumption demand and an undersupply of energy production;
2. Remarkable contrast in the country’s energy portfolio, with coal and charcoal representing about 70% of energy consumption. It makes the reduction of greenhouse-gas emissions more difficult;
3. Low-efficiency energy/resources use. Zhang Xiaoqiang (張曉強), Vice-Chairman of the National Development and Reform Commission, (2005) said that the efficiency rate of China’s energy use is 33%, about 10% lower than that of developed countries.

To attain sustainable development for energy production and consumption, the Chinese government specified in the 11th Five-year Guidelines that the basic themes of China’s energy strategy are ‘giving priority to thrift, relying on domestic resources, encouraging diverse patterns of development, relying on science and technology, protecting the environment, and increasing international cooperation for mutual benefit. It strives to build a stable, economical, clean and safe energy supply system’ (National Development and Reform Commission, 2007)

(B) Global financial crisis and China’s macroeconomic adjustment

Since the outbreak of the US sub-prime mortgage crisis in 2008, all kinds of problems have appeared in economies worldwide. Examples include huge losses suffered by large Western financial corporations, depreciation of the US dollar, plummeting stock markets and soaring food prices. These problems have dealt a blow to the economies of many developing countries.

If the economy of China, an important representative of developing countries, loses its stability, it would be more difficult for other developing countries to stand the crisis. For example, in early 2008 when the financial tsunami was yet to form, China was already affected by the global slump. She faced the greatest inflationary pressure in 11 years, and her economic growth slowed down after having thrived for 13 straight years. To tackle the inflationary pressure, the Chinese government applied macroeconomic adjustment: consecutive rate hikes were made; credit was limited with price hikes of certain commodities prohibited.
After the outbreak of the financial tsunami in September 2008, the State Council proposed the implementation of a RMB 4000-billion two-year government investment programme to stabilize China’s domestic economy. The huge investment was also an effective dose to boost people’s confidence and economic growth. It shows that macroeconomic adjustment plays a very important role in stabilizing domestic economic conditions under global economic crises.

(C) The relationship between the mainland and Hong Kong on the issue of sustainable development

The mainland and Hong Kong are closely associated geographically, culturally and politically, and their economies and legal systems also operate under the ‘One Country, Two Systems’ principle. Deficient in natural resources, Hong Kong needs to rely on the mainland for a continuous supply of resources and products for its continual development and maintaining its economic prosperity. For this reason, the mainland needs to do well in her sustainable development projects so that Hong Kong can be led towards its own goals of sustainable development.

On the other hand, low technological standards and imperfect systems remain barriers to sustainable development in the mainland. In this connection, Hong Kong can play the role of a technology transferor and help the mainland overcome these problems so that better results can be achieved. All in all, the mainland and Hong Kong are closely linked on the issue of sustainable development.

In recent years, the mainland and Hong Kong have been actively developing cross-regional cooperation forums to pave way for economic, social and environmental sustainable development of the two regions.
Environmental conservation refers to the use of national laws and regulations, public opinion and publicity to arouse social attention and action to tackle pollution and ecological damage caused by industrial development.

Nutrient pollutants
Nutrient pollutants mainly refer to nitrogen and phosphorous. Human activities bring a huge amount of nutrients such as the abovementioned into water bodies, including lakes, estuaries and bays. This causes the rapid reproduction of algae and other plankton species and thus a fall in dissolved oxygen content in the water. Water quality deteriorates as a result and leads to the death of fishes and other organisms. This phenomenon is known as eutrophication.

Toxic pollutants
Toxic pollutants refer to substances which cause changes in the biochemical and physiological functions of bodily fluids and tissues when accumulated to a considerable amount inside an organism, causing a temporary or persistent pathological status or even threats to life.

Petroleum pollutants
Petroleum pollutants refer to the harmful petroleum substances from industrial discharge, cabin and engine cleansing as well as oil tanker leaks and offshore oil drilling. Petroleum is a mixture of alkanes, alkene and aromatic hydrocarbon. When spilled at water, it forms a coating of oil on the water surface, preventing the reoxygenation of water bodies and killing the organisms it coats.

Particulates
Particulates, also known as ‘dusts’, are solid or liquid granulous matter found in the atmosphere. Particulates mainly come from natural pollution sources and human-made pollution sources (such as the combustion of coal and petroleum), causing pollution directly when they are released into the atmosphere.
Sulphur dioxide
Sulphur dioxide is one of the main pollutants causing atmospheric pollution. It is produced during oil and petroleum combustion. On further oxidation, sulphur dioxide generally turns into sulphuric (or sulfuric) acid with the presence of catalytic agents such as nitrogen dioxide. Sulphuric acid is one of the constituents of acid rain.

Carbon dioxide
Carbon dioxide is a type of greenhouse gas. Together with other greenhouse gases, it lets the heat from the sun pass through the troposphere for the earth to absorb, and locks part of the heat in the atmosphere so that the temperatures of the atmosphere and the ocean are maintained at a certain level. This phenomenon of natural warming is called the greenhouse effect. The greenhouse effect is intensified if heat fails to dissipate due to excessive carbon dioxide in the atmosphere, the average temperature of the earth thus rises, resulting in global warming.

Dust storm
Dust storm refers to the climatic phenomenon of dusty air formed by the removal of a huge amount of dust and sand from the ground surface caused by strong winds, leaving a visibility of only 1 km. In regions near China, dust storms mainly occur in the Gobi Desert in Mongolia and the Taklamakan Desert in northwestern China. Dust storms may also occur in arid and barren regions.

Endangered wildlife
Endangered wildlife refers to wild animals that are on the verge of extinction due to natural reasons or human-caused factors. In the broad sense, endangered animals refer to precious, jeopardized or rare animal species. From the perspective of wildlife management, endangered animals refer to those included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and wild animals put under specific protection at the national and regional levels by the Chinese government.

Cultural conservation
Cultural conservation refers to the protection and restoration of historic relics, physical objects, representative architecture and objects of art with historic, artistic, scientific or educational values.

Cultural sites
Cultural sites are a kind of cultural relics. They refer to sites containing historical and cultural remains of human activities that reflect the history and culture of a race. The passage of time leaves many of these sites of ancient cities and architectural remains dilapidated and incomplete, but ancient lifestyles can often be traced through archaeological and anthropological studies.

Historical and cultural cities
According to the Law of the People’s Republic of China on Protection of Cultural Relics, a historical and cultural city refers to ‘towns, neighbourhoods or villages with an unusual wealth of cultural relics of important historical value or high revolutionary memorial significance’. In 2008, a total of 114 cities were on the list of historical and cultural cities in China.
### World cultural heritage

World cultural heritage refers to the relics, architecture and human cultural sites of historic, artistic and scientific significance. Heritage determined by the UNESCO World Heritage Committee as ‘world cultural heritage’ is put on the World Heritage List.

### Subject Knowledge

#### (A) Other water pollutants

Apart from nutrient pollutants, toxic pollutants and petroleum pollutants, there are other sources of water pollution:

<table>
<thead>
<tr>
<th>Type</th>
<th>Source</th>
<th>Pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathogenic pollutants</td>
<td>Domestic sewage, poultry farm sewage and waste water discharged by tanning, wool washing and slaughter trades and hospitals.</td>
<td>These types of sewage usually contain all kinds of pathogens such as viruses, germs and parasites. Water bodies polluted by pathogens spread diseases such as schistosomiasis, cholera, typhoid, dysentery and viral hepatitis.</td>
</tr>
<tr>
<td>Oxygen-depleting pollutants</td>
<td>Domestic sewage and industrial waste water from food processing and papermaking industries.</td>
<td>These kinds of sewage contain organic compounds such as carbohydrates, protein, grease and lignin which decompose in water. Oxygen is depleted during the process of decomposition, affecting the growth of water organisms. When oxygen is exhausted, these organic compounds shift to anaerobic decomposition, which produces hydrogen sulphide, ammonia and mercaptan. Foul odours are produced, further lowering the water quality.</td>
</tr>
<tr>
<td>Radioactive pollutants</td>
<td>Cooling water discharged by nuclear power plants, from nuclear fallout and seepage of fuel from nuclear-powered vessels.</td>
<td>Radioactive pollutants may deposit on the surface of organisms. Some may even enter the bodies of organisms and accumulate. They also affect humans through the food chain.</td>
</tr>
<tr>
<td>Inorganic pollutants such as acid, alkali and salt</td>
<td>Domestic sewage, waste water from industrial and mining activities, industrial residue wastes, acid rain.</td>
<td>Acid, alkali, salt and all kinds of inorganic compounds cause higher salinity of fresh water resources, affecting water quality and aquatic organisms.</td>
</tr>
<tr>
<td>Thermal pollution</td>
<td>High-temperature sewage discharged into water bodies by industrial and mining enterprises and thermal power plants.</td>
<td>High-temperature sewage heats up the water, speeding up chemical and biochemical reactions, making certain toxic substances more toxic. Less dissolved oxygen content affects fishes, survival and reproduction, accelerates the reproduction of certain germs, enhances the growth of waterweeds, and causes fermentation and foul odour.</td>
</tr>
</tbody>
</table>
(B) Causes of acid rain

Combustion of fossil fuels such as coal and petroleum by power plants, motor vehicles, steel and iron plants, oil refineries and households produces huge amounts of sulphur dioxide (SO₂) and nitric oxide (NO), which convert to sulphuric acid (H₂SO₄) and nitric acid (HNO₃) when combined with water (H₂O) in the atmosphere. Acids dissolved in clouds, rain, fog or snow fall to the ground in the form of ‘wet deposition’ and causes ‘acid rain’. Acid rain has harmful effects on the ecosystem, such as acidifying soil and thus damaging plant roots, giving water bodies a pH level too high for fish to survive and etching metal and stone objects so that toxic matters of pipes dissolve in drinking water, jeopardizing human health.

(C) Noise pollution

Alongside technological advancement, accelerated industrialization and the popularization of household electrical appliances have made noise a new source of pollution to the human living environment. It is considered another type of pollution alongside the ‘three wastes’. Noise pollution is mainly caused by the operation of machineries in factories, traffic, street commercials and household electrical appliances.

Many medical studies have revealed that noises cause mood swings, vexation, irritability and even damaged hearing. It is especially harmful to pregnant women, as noises quicken the heartbeat and movement of the foetus, which is detrimental to foetal development. High decibel noises may damage the foetus’ auditory organ, besides making the mother-to-be irritable and suffer from endocrine disorder. Noise also disrupts the tranquillity of nature and affects the ecological habitat.

(D) Light Pollution

Light pollution has aroused great concern in recent years. Its main sources include advertisement designs and electronic displays on the external walls of modern buildings, and vehicles travelling at night. Damages can be caused to the cornea and iris if one is constantly exposed to strong lights, impairing one’s vision. In serious cases, dizziness, insomnia, palpitations and poor appetite may occur. Electronic displays showing resplendent advertisements may dazzle drivers and lead to traffic accidents. Light pollution also disturbs the behavioural patterns of animals and plants, thus disrupting the ecosystem.

Source 12 One of the costs of prosperity is serious light pollution. The photo shows the Bund in Shanghai.
(E) Ecological damage caused during the ‘Great Leap Forward’

After the establishment of the PRC, the CPC government started the ‘Great Leap Forward’ campaign in order to be ahead of Britain and catch up with the US in steel production. During that period, steel was the main indicator of national strength, and so the steel refinement campaign spread through China. Millions of backyard furnaces were built. Logging was carried out for fuel. To reach the target of crop production required by the country, people expanded farmland areas with all possible means for a greater yield. They damaged forests, opened up wasteland, and enclosed tideland by the lakes for cultivation. These activities caused serious environmental problems: forest vegetation was damaged and the ecological environment further deteriorated.

At the end of the Cultural Revolution, the area of desertification in China reached 90,000 km$^2$, an area greater than the sum total of the periods before the PRC was set up. In addition, soil and water erosion occurred in an area of 3 million km$^2$. The area of reclaimed grassland was estimated to be 27 million km$^2$, representing 25% of the total farmland area at that time. At present, one-third of the land in China has turned into deserts and lost its productivity.

(F) Ways to combat desertification

Desertification is a global ecological problem that involves more than 100 countries and one-sixth of the population. In view of this, in 1995, the UN proclaimed the 17th day of June World Day to Combat Desertification and Drought, which shows that desertification is an issue of concern for all governments. Major ways to combat desertification include:

- To construct irrigation facilities in farms; to create farmland by channelling water to flatten out sand dunes; to reinstate vegetation zones by creating artificial grassland, and making use of water, soil and plant resources.
- To set up grass grid sand barriers in desertified land. This stabilizes sand lots and boosts the coarseness of land surface so that less water and soil will be lost due to wind force. After a period of time, the water content of the sand layer will increase, and it is favourable to plants’ survival. The down side is it involves high costs.
- To enclose desert areas with better water resources and considerable vegetation for natural or even artificial grass cultivation.

(G) Functions of biodiversity

Biodiversity forms a complicated ecological network in which the interdependence and interaction among various species are facilitated. It has the following functions:

To ensure food supply: Most of our food, clothing and utensils come from different species in the nature. To humans, biodiversity ensures the sustainability of food supply and living.

To maintain a balanced ecosystem: Biodiversity helps in climate moderation, maintaining soil fertility and purifying air and water. Because animals living in a specific region are part of the food chain, the disappearance of any region affects other regions.
To prevent the spread of diseases: Biodiversity can check the spread of certain diseases because viruses must adapt to a relatively great variety of species to spread and survive.

(H) Determination of world cultural heritage

The procedure for the inscription of cultural heritage on the World Heritage List is as follows:

1. Nominations can be submitted in a Tentative List once a year by government institutions of the regions where the heritage is located.

2. Evaluation is carried out by the UNESCO World Heritage Committee. This is to decide whether the cultural heritage meets the requirements.

3. On-site study is conducted by the International Council on Monuments and Sites (ICOMOS).

4. Nomination for inscription is made by the World Heritage Committee.

5. Final examination is done by the World Heritage Committee.

6. Inscription of the cultural heritage on the World Heritage List is successful.

(I) Classification of World Heritage

According to the Convention Concerning the Protection of the World Cultural and Natural Heritage, World Heritage can be classified into four types: cultural heritage, natural heritage, mixed cultural and natural heritage and cultural landscapes:

<table>
<thead>
<tr>
<th>Type</th>
<th>Scope</th>
<th>Examples in China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural heritage</td>
<td>Monuments; groups of buildings and sites.</td>
<td>The Imperial Palace in Beijing, the Temple of Heaven, the Great Wall, the Mausoleum of the First Qin Emperor and Mogao Caves</td>
</tr>
<tr>
<td>Natural heritage</td>
<td>Natural features; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; Natural sites or delineated natural areas of outstanding universal value from the point of view of science, conservation or aesthetics.</td>
<td>The Sichuan Jiuzhaigou Valley Scenic and Historic Interest Area, the Three Parallel Rivers of Yunnan Protected Areas and the Sichuan Giant Panda Sanctuaries.</td>
</tr>
</tbody>
</table>
### Distribution of World Heritage sites in China

<table>
<thead>
<tr>
<th>Type</th>
<th>Scope</th>
<th>Examples in China</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixed heritage</strong></td>
<td>Properties that satisfy a part or the whole of the definitions of both cultural and natural heritage.</td>
<td>Mount Taishan in Shandong, Mount Huangshan in Anhui, Mount Emei Scenic Area in Sichuan, including Leshan Giant Buddha Scenic Area and Mount Wuyi in Fujian</td>
</tr>
<tr>
<td><strong>Cultural landscapes</strong></td>
<td>Cultural properties that represent the 'combined works of nature and of man'. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.</td>
<td>Lushan National Park, Mount Wutai</td>
</tr>
</tbody>
</table>

(1) Imperial Palaces of the Ming and Qing Dynasties in Beijing and Shenyang
(2) Peking Man Site at Zhoukoudian
(3) Mount Taishan
(4) The Great Wall
(5) Mausoleum of the First Qin Emperor
(6) Mogao Caves
(7) Mount Huangshan
(8) Juzhaidao Valley Scenic and Historic Interest Area
(9) Huanglong Scenic and Historic Interest Area
(10) Jiuzhaigou Scenic and Historic Interest Area
(11) Jiuzhaigou Scenic and Historic Interest Area
(12) Mountain Resort and the Outlying Temples, Chengde
(13) Temple and Cemetery of Confucius and the Kong Family
(14) Shenzhou in Qufu
(15) Ancient Building Complex in the Western Mountains
(16) Historic Ensembles of the Potteries, Lhasa
(17) Lushan National Park
(18) Mount Emei Scenic Area, including Leshan Giant Buddha Scenic Area
(19) Old Town of Lijiang
(20) Ancient City of Ping Yao
(21) Classical Gardens of Suzhou
(22) Summer Palace, an Imperial Garden in Beijing
(23) Temple of Heaven, an Imperial Sacrificial Altar in Beijing
(24) Mount Wuyi
(25) Daoist Rock Carvings
(26) Mount Qipu and the Duijiangyan Irrigation System
(27) Ancient Villages in Southern Anhui - Xu and Hangzhou
(28) Longmen Grottoes
(29) Imperial Tombs of the Ming and Qing Dynasties
(30) Yangguang Grottoes
(31) Three Parallel Rivers of Yunnan Protected Areas
(32) Capital Cities and Tombs of the Ancient Koguryo Kingdom
(33) Historic Centre of Macao
(34) Sichuan Giant Panda Sanctuaries – Wolong, Mifeng and Jiaozi Mountains
(35) Yin Xu
(36) South China Karst
(37) Kaiping Diaolou and Villages
(38) Fujian Tulou
(39) Mount Sanqingshan National Park
(40) Mount Wutai

Source: The distribution of China’s World Heritage sites
(K) Conservation process concerning heritage sites in China

According to the Principles for the Conservation of Heritage Sites in China, conservation of heritage sites involves six steps, from which it is not permissible to depart in principle. The steps are undertaken in the following order:

1. **Identification and investigation:** It involves a large-scale general survey and inventory; an investigation of selected sites in greater depth; and a detailed investigation of the most significant sites. These investigations must examine all historic vestiges and traces and relevant documentation, as well as the immediate setting.

2. **Assessment:** The assessment process consists of determining the values of a site, its state of reservation, and its management context. Assessment includes analysis of historical records and on-site inspection of the existing condition.

3. **Formal proclamation of a site as an officially protected entity and determination of its classification:** Based upon the results of the assessment, the formal proclamation of a site as an officially protected entity and its classification must be made. All sites that have been proclaimed as protected entities are subject to four legal prerequisites: demarcation of the boundaries of the site; erection of a plaque declaring the site’s status as an officially protected entity; creation of an archive for records; and designation of an organization or person dedicated to the management of the site.

4. **Preparation of a conservation master plan:** Based on the results of the assessment, the master plan should set forth the conservation measures, appropriate use, exhibition and interpretation, and management. Within the framework of the master plan, specific plans for particular areas and components of the site may be drawn up.

5. **Implementation of the conservation master plan:** Specific action plans need to be developed, and they must comply with government standards for that particular intervention, must be developed in compliance with the relevant laws and regulations, and should be approved prior to implementation. Action plans for interpreting the site and educating the public should also be developed within the framework of the master plan.

6. **Periodic review of the master plan:** The aim is to evaluate its overall effectiveness and to draw lessons from the experience gained in the course of its implementation. If deficiencies are discovered or new circumstances arise, then the original master plan should be revised accordingly.
(L) Conservation and conflicts of historical and cultural cities

The conflict between the conservation of China’s historical and cultural cities and urban construction has been intensified. As urbanization speeds up, many historical and cultural cities have been damaged. Historical and cultural heritage is destroyed on a large scale from time to time. Basically, every city has its own development planning. For instance, the Comprehensive Plan of Shanghai Metro-Region (1999-2020) (上海市城市總體規劃) is devised to rebrand Shanghai into a metropolitan city with historical value, local culture and a cultural atmosphere. However, many historical buildings in Shanghai have been pulled down and replaced by modernized high-rise buildings which are incongruous with the ‘historical and cultural’ city. The hutongs in Beijing embody the cultural characteristics of the Beijing residents’ social life. However, according to statistics, 40% of the 3670 hutongs in Beijing have disappeared due to urban construction, and the rest continue to disappear.

(A) Energy use and environmental pollution in China

Environmental pollution is severe in China. One of the main reasons is the unreasonable energy production and consumption structure, in which the utility rates of coal and charcoal are relatively high. The combustion of these fossil fuels produces great amounts of greenhouse gases.

According to the 2005 statistics of China’s energy consumption structure released by the National Development and Reform Commission, raw coal represented 68.9% of the total consumption. The percentage for oil was 21%, whereas natural gas, hydroelectric power, nuclear power and other renewable energies only represented 2.9%, 6.3%, 0.8% and 0.1% respectively. But coal and charcoal only represented 27.8% in global consumption of the same year. These figures show that China consumed a much higher percentage of coal and charcoal than the international community.

China’s total greenhouse gas emission in 2004 was about 6.12 billion tonnes carbon dioxide (CO₂) equivalent, 5.07 billion tonnes among which were CO₂, representing 83% in the total emission amount. China ranked first in the world in the emission of major atmospheric pollutants, with 30% or above of her national territory affected by acid rain.
(B) Pollution and hygiene in China

In 2007, the World Bank published a report titled *Cost of Pollution in China*, which mentions the health impact of pollution on the country’s people. It is pointed out in the report that as many as 750,000 people are estimated to die prematurely because of pollution every year in China. The Beijing authority has requested the World Bank to delete the related information on the grounds that it might cause panic. The deleted information, according the English *Financial Times*, includes: approximately 350,000 to 400,000 people in the cities of China died prematurely every year due to air pollution; 300,000 people died prematurely because of indoor air pollution; 60,000 people died prematurely of severe diarrhea, stomach cancer, liver cancer and bladder cancer because of polluted water.

(C) Conflicts between cultural conservation and tourism development in China

Between China’s cultural conservation and tourism development exist problems that are difficult to solve. Firstly, cultural conservation itself is a difficult task, with inadequate funds as the biggest problem. In Hubei Province, for instance, there are as many as 12,200 cultural relics that cannot be relocated. It is estimated that at least RMB 2 billion will be needed if necessary repairs are to be done to all of them. But the fact is that the province only has an annual budget of several million RMB for cultural conservation.

The inclusion of cultural relics on all kinds of lists recognizes their values while turning the lists into tourism labels. Cultural relics bring tourists, and along come financial benefits, which can be used for repairing and maintaining the relics. However, over-development of tourism diminishes the original characteristics of cultural relics. Scholar Wang Ning once said that the internal contradiction of tourism commercialization, that is, the contradiction between people’s pursuit of genuine experiences and the homogenization, standardization and falsification of products of tourism by tourism commercialization, gives birth to a love-hate relationship between tourists and tourism. The World Heritage Committee has the power to strike jeopardized world heritage off the World Heritage List. For example, in 2007, committee members said that the Imperial Palace of the Qing Dynasty in Beijing, the Three Parallel Rivers of Yunnan Protected Areas and the Potala Palace in Tibet had gradually lost their cultural or natural scenic values, and warned to have them removed from the List. This warning is closely related to the over-development of tourism in these heritage sites.
Extended Information 1

Deng Xiaoping disagrees with the ‘Two Whatevers’

When the Cultural Revolution was over, the most critical issue was how to rectify the erroneous ‘leftist’ thoughts born from the Cultural Revolution led by Mao Zedong. Hua Guofeng, the then Chairman of the CPC introduced the approach of ‘Two Whatevers’. They refer to the notion that ‘we must resolutely uphold whatever decisions Chairman Mao made, and unswervingly follow whatever instructions Chairman Mao gave’... Such notion was an immense ideological hindrance to the rectification of the errors of the Cultural Revolution and putting things back in order. Diagreeing with it, Deng Xiaoping upheld ‘practice as the sole criterion for testing truth’, and considered the need to break away from the bondage of the cult of personality and dogmatism.

Extended Information 2

Reform of the economic system

Our greatest experiment is the reform of the economic structure. We started the reform first in the rural areas. It was only after it had produced results there that we had the courage to launch it in the cities. ... If all goes well, we shall be able to lay the foundation for sustained, coordinated development of the economy over the next 50 to 70 years.

— Deng Xiaoping: Reform and Opening to the Outside World are a Great Experiment (1985)

Extended Information 3

The necessity of opening-up

It is very important to open to the outside world. No country can develop in isolation, with its doors closed; it must increase international contacts, introduce advanced methods, science and technology from developed countries and use their capital.

We Shall Expand Political Democracy and Carry Out Economic Reform

— Deng Xiaoping: Democracy for Political Development, Reform for Economy (1985)
Extended Information 4

The objective of the ‘one-child’ policy

A couple should have only one child, because it enables the population growth of China to match with the growth rate of the country’s resources. That would help speed up the development of the national economy ...

— A translated extract of the speech of the Vice-Premier of the State Council Chen Muhua at a forum on marriage, family and family planning (1980)

Extended Information 5

Advantage of urban-rural integration

Urban-rural integration is not urban-rural assimilation. It is to gradually narrow the gap between urban and rural areas by breaking down the systems and policies that divide them, enhance the infrastructural and social construction between them, and promote the two-way movement of the factors of production. In this way, cities will be more like cities, and villages more like villages, so that harmonious economic, social and environmental developments can be achieved in both areas.

— A translated extract of the speech of the Deputy Director of the Policy Study Office of Zhejiang Provincial Committee Guo Zhan at a forum on urban-rural integration of the Changjiang Delta (2004)

Extended Information 6

The Chen Xitong case

Chen Xitong was a member of the Political Bureau of the CPC Central Committee and Secretary of the Beijing Municipal Committee. He is known for dereliction of duties, seeking personal gains and making use of his authority while in service. He was closely related to the case of Wang Baosen, the former Deputy Mayor of Beijing. Chen received bribes and led a luxurious life. Upon verification of the accusations against him, he was dismissed, expelled from the CPC and brought to trial. He was given a determinate sentence of 16 years imprisonment.

Extended Information 7

The Yuan Hua smuggling case

The principal offender of the Yuan Hua Smuggling Case is Lai Changxing, President of the Xiamen Yuan Hua Group, who has fled to Canada. Investigation into the case began in 1998 and the truth was roughly revealed in late 2001. As much as RMB80 billion was involved in the smuggling. In order to clear obstacles along the smuggling path, Lai Changxing bribed government cadres and staff. In the case, criminal prosecutions were made against nearly 300 people for corruption. These people were from the central government, Fujian Province
and the customs Xiamen City; even the former Deputy Minister of Public Security Li Jizhou was involved. The case, considered the largest smuggling case since the founding of the PRC, revealed the severity of corruption in the government.

**Extended Information 8**

**Relationship between the scientific outlook on development and social harmony**

General Secretary of the CPC Central Committee Hu Jintao explained in his report at the 17th CPC Congress 2007, ‘to thoroughly apply the scientific outlook on development, we must work energetically to build a harmonious socialist society. Social harmony is an essential attribute of socialism with Chinese characteristics. Scientific development and social harmony are integral to each other and neither is possible without the other.’ Wen Jiabao, Premier of State Council stated that the cores of scientific development are: 1. Adherence to the principle of centering on economic development; 2. Coordinated development of the economy and society; 3. Coordinated development between urban and rural areas; 4. Coordinated development among different regions; 5. Sustainable development; 6. Adherence to reform and opening drive; 7. Centering on people. These are all contents of ‘social harmony’.

**Extended Information 9**

**Basic features of sustainable development**

The basic features of sustainable development can be collated from the definitions of various commentators and schools:

1. **Mutual development**: Sustainable development pursues the overall and coordinated development of the world.

2. **Harmonious development**: It refers to harmony among the three major disciplines of economy, society and environment, and also harmony among the world, countries and regions.

3. **Equal development**: By equal, it means the current generation shall not develop by compromising the ability of future generations to develop. It also means a country or region shall not develop at the expense of the other countries’ or regions’ ability to develop.

4. **High-efficiency development**: It refers to development of great efficiency with harmony maintained in aspects of economy, society, resources, environment and population.

5. **Multi-dimensional development**: Each country or region should start in the light of her own conditions, and engage in pragmatic, pluralistic and multi-mode sustainable development that meets her own needs.
Extended Information 10

Examples of historical and cultural cities in China

The State Council has approved a total of 114 historical and cultural cities, which include:

- 24 were approved in 1982, among them are: Beijing, Nanjing, Suzhou, Hangzhou, Zhaoqing, Qufu, Luoyang, Kaifeng, Changsha, Guangzhou, Guilin, Chengdu, Kunming, Dali, Lhasa and Xian.

- 38 were approved in 1986, among them are: Shanghai, Tianjin, Wuhan, Nanchang, Chongqing, Fuzhou, Jinan and Dunhuang.

- 37 were approved in 1994, among them are: Handan, Jilin, Qingdao, Liaocheng, Zoucheng, Linzi and Zhengzhou.

- 14 were approved in 2008, among them are: Nantong, Wuxi, Shanhaiguan, Jinhua, Jixi, Taian, Puyang and Jingzhou.

Extended Information 11

Natural acid rain

Because natural phenomena such as respiration of organisms and volcanic activities release sulphur dioxide, natural rain is slightly acid and it is known as ‘natural acid rain’. The acidity of natural acid rain, however, is not strong enough to affect the pH level of soil and the self-purification of water bodies.

Extended Information 12

Historical data on the ecological damage done by the ‘Great Leap Forward’

During the ‘Great Leap Forward’, people across the country refined steel with indigenous methods. The poems below reflect the damage done to the ecology:

*High and lofty the steel refining furnace rises, sending smoke up the nine-layered sky; the Heavenly King’s order for a halt went unheeded, leaving deities looking on with tearful eyes from the smoke.*

「煉鐵爐，高又高，青煙直上九重霄，玉皇高叫收不住，眾神熏得眼淚拋。」

(Kai County, Sichuan)
Mount Yunmeng is the place for steel refinery, so there I settle. Amid the clouds I pitched a tent, with an iron furnace built on the summit. With the bellow I made a towering flame, which refines molten iron clear as water of the mountain springs. Though small in size, the furnace produces plentiful output which piles up to and even through the sky. The boiling molten iron resembles a fire dragon long enough to circle the earth thrice. The sight of it scares the British king; the exasperated American king can respond no other way than a glower.

「煉鐵要登雲夢山，雲夢山上把家安。白雲深處搭帳篷，鐵爐建在高山顛，拉起風箱火焰高，煉出鐵水象山泉。別看俺的鍋爐小，產品堆起撐破天，鐵水滾滾似火龍，能把地球纏三圈，英帝看見心發慌，美帝氣得乾瞪眼。」

(Luoyang, Henan)

**Extended Information 13**

**World Heritage fever**

With numerous cultural heritage sites and in view that the title of World Heritage brings huge economic benefits and honour to the region where the heritage is located, various districts in China submitted applications for the inscription of their cultural relics on the World Heritage List after the country’s first success in 1987 and a fever was formed. To be fair, in 2001, the World Heritage Committee set the annual quota for accepted nominations by category at 30, with each country having only one site selected as World Heritage at most annually. Commentators consider this change favourable to small countries but unfair to big countries such as China that have many cultural resources.

**Extended Information 14**

**Intangible heritage**

Intangible heritage, which is non-physical and non-material and also called ‘living heritage’, is in fact not within the scope of World Heritage. The two are put under different heritage conservation programmes of UNESCO. When it comes to intangible heritage, however, especially ‘masterpieces of the oral and intangible heritage of humanity’, they are always put on a par with World Heritage. Therefore, broadly speaking, World Heritage can be divided into ‘tangible heritage’ and ‘intangible heritage’.
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