CONSULTANCY STUDY ON SOCIO-ECONOMIC-POLITICAL TRENDS IN PAN-PEARL RIVER DELTA REGION

TWELFTH MONTHLY REPORT PART II

COVERING GUANGXI, YUNNAN, GUIZHOU, AND SICHUAN

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CENTRAL POLICY UNIT
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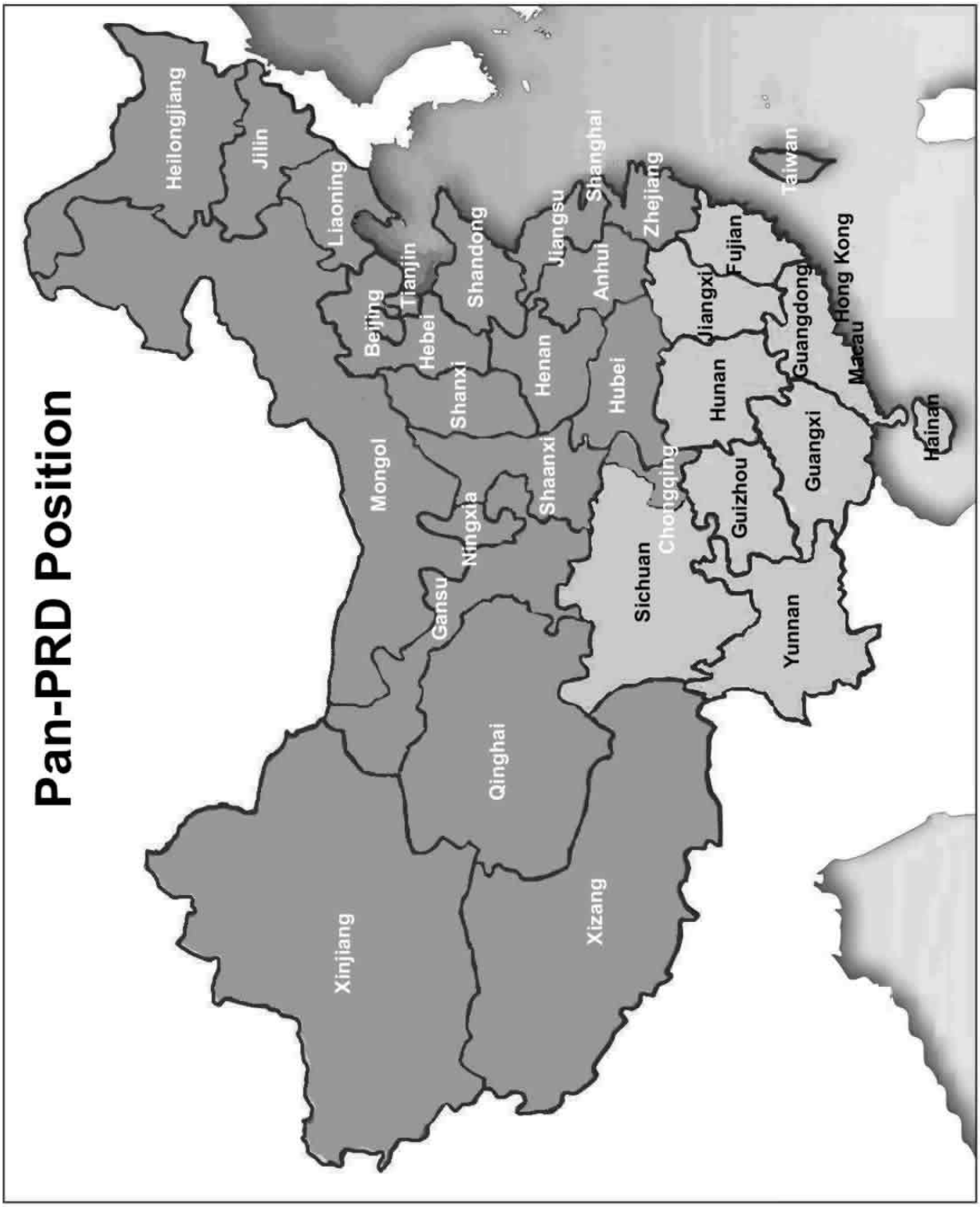
Pan-PRD Position
Heilongjiang
Jilin
Liaoning
Beijing
Tianjin
Hebei
Shandong
Shanghai
Jiangsu
Anhui
Zhejiang
Taiwan
Fujian
Jiangxi
Hong Kong
Guangdong
Macau
Hainan
Shanxi
Henan
Hubei
Hunan
Guangxi
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Xinjiang

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I. EXECUTIVE SUMMARY

1. Guangxi is situated at the mid-stream of the Pearl River basin. Most of the rivers in the region flow into the Pearl River. In recent years, the region has stepped up investment in environmental protection. However, as Guangxi is backward in development and has just entered the stage of rapid development, it is under much pressure in preventing pollution and protecting the ecology. To substantially improve the ecological environment while the region continues to industrialise, Guangxi sticks to scientific courses of development. Specifically, the region plans to have in place a diversified mechanism for environmental protection endeavours, promote construction and operation of environmental infrastructure by the commercial sector, and strive to attract capital and technology from external sources. These efforts would help improve Guangxi's capacity in preventing pollution in the Pearl River basin. Hong Kong investors may consider cooperation with Guangxi partners.

2. Yunnan is situated in the less-developed western Mainland region. Although environmental conditions remain basically stable, Yunnan increasingly needs to deal with the pressures of economic growth on its natural resources, land and other non-renewable mineral resources, as well as on the ever-increasing volume of waste discharged. There are currently about 1,000 Hong Kong invested enterprises in Yunnan. Apart from the conventional investment in infrastructure and manufacturing industries, there are also enterprises engaged in agriculture and bio-medical businesses. Moreover, Hong Kong is also a major trading partner of Yunnan, trading naturally Yunnan's major green industrial products of tobacco, medicines and flowers. Currently, 50% of Yunnan's flower exports are shipped through Hong Kong to the markets of Japan and the EU. The ecological environment of Yunnan is thus worth the attention of Hong Kong entrepreneurs.

3. Guizhou's energy industry, comprising mainly electricity and coal, generates more than Rmb10 billion in value added each year, and is the most important pillar industry of the province. As this economic pillar is heavily reliant on the consumption of resources, Guizhou's development has bred a dilemma between resource constraints and economic growth. The pollution arising from the release of excessive sulphur dioxide by its thermal power plants is of particular concern. In order to improve the situation, Guizhou not only needs to regulate pollutants discharged by its thermal power plants, it also needs to step up investment in exploring clean energy as substitutes. As these undertakings entail huge sums of investment and rely on import of advanced technologies, Hong Kong businesses can leverage on their extensive experience and provide financial services to Guizhou, helping them to tap the international market to meet their funding requirements.

4. Sichuan's complicated natural environment in terrain, geological structure and hydrometeor, together with man-made damages to its ecological environment, have rendered it one of the provinces that are most prone to natural disasters. Apart from

economic damages, these disasters are liable to epidemics. Although they rarely happen in recent years, Hong Kong's close interrelation with the Mainland implies that such threats should not be overlooked. The outbreak of bird flu and SARS in the past few years epitomises the serious damage that can be inflicted on Hong Kong should any epidemic break out. As such, the Pan-PRD region should seriously implement the mechanism of cooperation in health surveillance, and in prevention and control of diseases. These are necessary for the region to be able to safeguard the health of its residents.

5. According to the managing director of a local environmental engineering company, the most pressing environmental problem for the Mainland and Hong Kong is air pollution. Although Hong Kong is aggressively seeking solutions to alleviate the problem, if the neighbouring Mainland regions do not take any action, Hong Kong's efforts would be futile. The two sides thus need to coordinate and cooperate. He indicated there were already various channels for academic exchanges on environmental issues between the Mainland and Hong Kong. However, an official channel of communication at the industry level has yet to be in place. Without the channel, industrialists from the two sides are not able to address cross-border pollution cases together and join efforts to find remedies.

6. According to a professor from the Biology Department of a local university, as China develops rapidly, it has invested a lot of money on imported technologies for waste treatment, but not all of them are suitable for the Mainland. Hence, he suggested Hong Kong to concentrate on research and development of waste treatment and resource recycling technologies that are applicable to Hong Kong and Mainland. He pointed out that although Hong Kong would need to invest substantial funding in developing these technologies, given that the results will be applicable to the large Mainland market and yield substantial returns, it is worth pursuing. In this way, the Mainland and Hong Kong will be able to share resources and complement each other.

7. The chairman of a Hong Kong manufacturers association indicated that the European countries, the United States and Japan were imposing stricter requirements of environment-friendly production. The green-manufacturing measures recently introduced by the EU have been causing pain among Hong Kong manufacturers. He had learned that China would also introduce many regulations for environmental protection. He hence advised Hong Kong manufacturers to act ahead in meeting the requirements of green manufacturing. He agreed that the demand of different countries for green manufacturing would increase the cost burden of Hong Kong manufacturers. However, it would at the same time be beneficial in increasing the competitiveness of Hong Kong companies that take initiatives in gearing up to meet these requirements, and driving the low-value added manufacturers out of the market.

8. A project manager of a local technology company thought that the biggest challenge in promoting green manufacturing is to ensure that every partner of the supply chain complies with the requirements of environmental protection. He hoped that the major trade associations of Hong Kong and the Hong Kong Trade Development Council could bring manufacturers together and exchange information, so that every company along the supply chain could speed up in adapting to green manufacturing. He thought that Hong Kong and Mainland manufacturers could strengthen cooperation in green manufacturing, as Hong Kong is short of talents in research and the Mainland can help Hong Kong manufacturers in this aspect.

II. TOPICAL ANALYSIS

"Pan-PRD Cooperation in Environmental Protection: Opportunities and Challenges for Hong Kong"

Part Two: South-western Region

Guangxi Helps Prevent and Control Pollution in the Pearl River Basin

Guangxi has numerous rivers and is relatively abundant in water resources; it ranks fourth in terms of water resources in China. Most of the rivers in Guangxi are part of the four river systems of Xijiang River (西江), Yangtse River system (長江), coastal river systems and Baidu River (百都河), which belongs to Honghe River (紅河).

Xijiang River, Yangtse River, coastal rivers and Baidu River

Xijiang River is the major river system of Guangxi, covering 85.7% of Guangxi's territories. Its main streams include rivers such as Hongshui (紅水), Qinjiang (黔江), Xunjiang (潯江), Liujiang (柳江), Youjiang (右江), Zuojiang River (左江), Guijiang River (桂江), etc. The Yangtse River system spans an area of 8,283 square kilometres (sq. km.) or 3.5% of Guangxi's territories. Its main streams include Xiangjiang River (湘江) and Zishui River (資水). The coastal river system is composed of more than 20 mainstreams that flow into the Beibu Bay (北部灣), with a drainage area of 24,000 sq. km. or 10% of Guangxi's territories, and main rivers such as Nanliujiang (南流), Qinjiang (欽江), Maoling River (茅嶺), Dafeng River (大風), etc. The Baidu River system is situated in the south of Napo County (那坡), Baise region, linking Honghe River in Vietnam after flowing from Yunnan via Guangxi. It spans only 0.6% of Guangxi's territories.

Guangxi participates in environmental protection of the Pearl River basin

Situated at the junction of the economic zones of southern and eastern Mainland as well as the ASEAN, Guangxi positively participates in the Pan-PRD regional cooperation in accordance with the strategic planning of "exerting its advantages, leveraging on the east and uniting with the West, and developing towards the south". Guangxi is situated at the mid-stream of the Pearl River basin. Most of the river systems in the Guangxi territories are part of the Pearl River basin. The main river system in Guangxi is Xijiang, which is an important water resource of Guangxi. Guangxi rivers that form part of the Pearl River basin cover 11 administrative cites and 79 counties of the autonomous region, spanning an area of 202,800 sq. km., accounting for 44.6% of the total Pearl River basin area and 85.7% of the Guangxi territories. Covering 77% of its population, these river systems play a significant role in Guangxi's economic and social development. Ecological protection in these areas thus not only affects the social stability and economic development of Guangxi, but also exerts significant impact on the development of the PRD, and even affects the prosperity of Hong Kong and Macao.

Under the Pan-PRD Regional Cooperation Framework Agreement, Guangxi's Party Committee and Government attach high importance to environmental protection in the Pearl River basin. In recent years, Guangxi has stepped up investment into environmental

protection in the area and the following measures were undertaken:

1. An integrated water treatment plan to improve the water quality of the main streams of Yujiang River (郁江), Yongjiang River (邕江), Zuojiang River (左江) and Youjiang River (右江) has been implemented. These four rivers are the main sources of drinking water for the cities of Guiguang (貴港), Qinzhou (欽州), Nanning, Fangchenggang (防城港), Baise (百色) and the greater Nanning region. Over the years, the four rivers have suffered various degrees of pollution, severely threatening the quality of drinking water and health of millions of people along the rivers, especially the residents in the Nanning area.

2. The pace of constructing environmental infrastructure such as sewage treatment plants has accelerated, although the progress is slow. With the rapid economic development of Guangxi in recent years, the existing sewage treatment facilities are unable to meet the demand of the urban cities. At present, only three out of the 14 prefecture-level cities in Guangxi are equipped with sewage treatment facilities, only five such plants have been constructed and put to use, eight other plants are under construction in five prefecture-level cities, and there are six prefecture level cities that have no sewage treatment facilities at all.

3. Efforts have been stepped up to phase out industries, equipment and enterprises that employ backward technologies, waste resources and cause serious pollution. From April 2004 to the end of last year, Guangxi launched a special campaign on environmental protection, focusing on the examination of urban sewage treatment, garbage treatment, livestock and poultry breeding, local policies that are potentially harmful to the environment, as well as assessment of the impact of construction projects on the environment. During the process, a number of enterprises engaged in the manufacturing of sugar, alcohol and starch, which were highly polluting and had been strongly opposed by local residents, were prosecuted. Examples of these were Mashan Ocean Industry & Trade Co. Ltd. (馬山遠洋工貿有限責任公司), Long'an Langwan Alcohol Plant (隆安浪灣酒精廠) and Luzhai Jinglong Wine Industry Co. Ltd. (鹿寨京龍酒業有限責任公司), as well as Lingshan Chemical Fertilizer Plant (靈川化肥廠) which polluted the drinking water of Guilin. These companies were alleged for illegal construction of alcohol manufacturing facilities and failing to meet the requirements of controlling water pollution.

4. A number of key projects on prevention and control of pollution as well as ecological construction have been implemented. Examples of these include the Guangxi Pearl River Shelter Belt Project which is composed of six pillar environmental protection schemes: water resources conservation, shelter belt of large and medium reservoirs, water and soil conservation, bank protection of main rivers, ecological protection in Karst areas, and protection of major arid agricultural areas.

In order to continue strengthening the prevention and control of pollution in the Pearl River drainage area, Guangxi has set up a mechanism for initiating cooperation with the neighbouring regions. As the Pan-PRD economic region integrates and develops, it has become imperative for its constituents to establish new systems by which regional cooperation, coordination, and practical and effective environmental protection measures suitable to the region's development can be jointly undertaken. The signing of the Pan-PRD Regional Environmental Protection Cooperation Agreement and advancement of environmental protection cooperation will provide opportunities for Guangxi to achieve leapfrog development in environmental protection.

Pollution remains an issue to be resolved

Having gone through years of improvement, the Guangxi stretch of the Pearl River basin has progressed in its efforts to protect the environment. Although economic growth continues, the volume of pollution discharged in the region has been more effectively controlled. In general, the quality of the region's environment has been kept stable. However, as Guangxi is backward in development and has just entered the stage of rapid growth, it is under much pressure in preventing pollution and protecting the ecology. On water quality, Guangxi, which enjoys abundant mineral resources and is the "capital of non-ferrous metals", has painstakingly born the brunt of pollutions emitted from its metallurgy industry. The industry is responsible for over 2 billion tons of industrial and consumption wastewater that flows into various rivers of Guangxi annually. This, together with the agricultural sector's massive use of chemical fertilizers and pesticides, has caused waste to be accumulated over the years and led to deterioration in the quality of the water systems. According to information from the Guangxi Environmental Protection Bureau, among the 73 key monitored sections of the 35 main rivers of Guangxi in 2004, only 50 reach Level III or above standard in water quality[1], and can be regarded as a major source of drinking water; 7 or 9.6% of them are dysfunctional and are classified below Level V standard in water quality. At present, over 17 million people in Guangxi are unable to obtain safe drinking water. The more serious issues faced by the cities include: sources of water being excessively polluted by heavy metals and organic pollutants, and deterioration in water quality as illustrated by their chemical content indices and toxicological indices often falling below Level II standards[2].

Taking the 25 streams of the Xijiang river system that participate in the evaluation process, a total of 51 monitoring stations have been set up along these streams that span a total of 4,037 km. The number of sections where the quality of water was Level III or above total 37, equivalent to 72.5% of the total area evaluated. For the 7 streams of the coastal rivers in southern Guangxi, 16 monitoring stations have been set up to evaluate a total length

[1] The national standard of water quality is divided into 5 levels: those that fall within Levels I-III are safe to drink, Level IV water is considered polluted, and Level V water is considered seriously polluted.

[2] The national standards for drinking water are evaluated by 35 items. These items are grouped to form organoleptic characteristics and four indices: general chemical content, toxicological content, bacterial content and degree of radioactive contamination.

of 801 km. Only 56.2% of the evaluated streams meet satisfactory standards, among which the following have performed poorly: Nanliu River (南流江), Qinjiang River (欽江) and Majiang River (馬江). Meanwhile, the water systems along the coasts of western Guangdong also participate in the evaluation process and they prove to be of even poorer quality. The hydrologic section of Jiuzhoujiang River (九洲江) which covers 73 km of the reaches has been rated Level V. These show that Guangxi still needs to substantially improve the quality of its water resources.

Adhere to the scientific course of development and establish an environmental protection industry

To substantially improve the ecological environment while the region continues to industrialise, Guangxi sticks to scientific courses of development. Concretely, it plans to have in place a diversified mechanism for environmental protection endeavours, promote construction and operation of environmental infrastructure by the commercial sector, and strive to attract capital and technology from external sources to help upgrade the region's capacity to protect the environment. The region will also speed up research and application of ecological technologies, create ecological industries and agriculture, strive to develop recycling economies, promote strategic adjustments in the industries so that their layout and structure would become more reasonable, and strive to resolve the structural problems of pollution. As Guangxi aggressively encourages enterprises to upgrade their technologies and engage in environment-friendly manufacturing, and the pace of opening up to foreign investors to participate in the environmental protection industries has stepped up, Hong Kong investors may consider cooperation with Guangxi partners.

Results of assessment of the Quality of Xijiang River System as of June 2005

River	Segment	Target Standard of Water Quality	Standard of Water Quality	Dissatisfactory Items（Multiple of times in excess of the satisfactory level of indices）
Zuojiang (左江)	Longzhou (龍州)	II	V	Faecal coliform (2.0), Iron (0.9)
Youjiang (右江)	Baifa (百法)	III	IV	Faecal coliform (0.4)
	Baise (百色)	III	IV	Faecal coliform (1.0)
	Tiandong (田東)	III	IV	Ammonia nitrogen (0.4), Faecal coliform (0.7)
Hongshuihe (紅水河)	Tian'e (天峨)	III	IV	Permanganate index (0.03)
	Du'an (都安)	III	Below-V	Permanganate index (0.12), Zinc (2.33)

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River	Segment	Target Standard of Water Quality	Standard of Water Quality	Dissatisfactory Items（Multiple of times in excess of the satisfactory level of indices）
Diaojiang (刁江)	Hekou (河口)	III	II	
	Malong (馬隴)	III	II	
Longjiang (龍江)	Liujia (六甲)	II	III	
	Sancha III 岔	III	II	
Yujiang (郁江)	Nanning (南寧)	II	V	Faecal coliform (1.4), Iron (5.2), Manganese (1.6)
	Pumiao (蒲廟)	III	Below-V	Dissolved oxygen, Permanganate index (0.02), Faecal coliform (5.0), Iron (6.4), Manganese (2.1)
	Guigang (貴港)	III	Below-III	Dissolved oxygen (0.9), Active phenol (0.2), Faecal coliform (3.4)
Xunjiang (潯江)	Dahuangjiang (大湟江口)	III	III	
	Dongxulou (冬訓樓)	II	III	
Xijiang (西江)	Shenchong (深沖)	II	III	
Guijiang (桂江)	Damien (大面)	II	II	
	Guilin (桂林)	II 至 III	III	
	Shijiazhuang (石家渡)	II 至 III	III	
	Yiqiao (一橋)	III	III	
Liujiang (柳江)	Liuzhou (柳州)	II	III	
	窯埠	II	V	Active phenol (2.40)
	Jila (雞喇)	II	IV	Faecal coliform (0.10)
Qianjiang (黔江)	Wuxuan (武宣)	III	IV	Zinc (0.06), Active phenol (0.40)
Chengbihe (澄碧河)	Dongping (東坪)	III	II	

Source: Guangxi Water Resources Bureau

Yunnan Employs Environmental Protection Strategy of the Century

Yunnan is situated in the less-developed western Mainland region. Its extensive mode of economic growth is still unchanged. Although environmental conditions remain basically stable, Yunnan increasingly needs to deal with the pressures of economic growth on its natural resources, as well as on the ever-increasing volume of waste discharged. The air is showing signs of deterioration; water pollution problems are also becoming more and more prominent. The cities and the water resources surrounding the cities are experiencing pollution of various extent. Efforts to protect and control environmental pollution should not be relaxed in the long run; the worsening of the ecological environment should also be addressed.

Various kinds of pollution are increasingly threatening the environment

On water environment, among the 21 lakes and 28 reservoirs at which Yunnan monitors the quality of water, the water quality of 11 lakes and 23 reservoirs reaches the functional requirements of water environment, accounting for 52.4% and 82.1% respectively. That means, almost half of the lakes are unable to fulfill the functional requirements of water environment. Examples of medium- and heavily-polluted lakes are the Outer Sea of Dianchi Lake (滇池), Yilong Lake (異龍湖), the Grass Sea (草海) of Dianchi Lake, Xingyun Lake (星雲湖) and the Qilu Lake (杞麓湖). Likewise, the problems of polluted rivers should not be neglected, as the standard of water quality of 46.7% of its river streams falls below Level III.

Standard of Water Quality in Yunnan's Major Lakes, Reservoirs and River Streams

Standard of Water Quality	Lake/Reservoir (%)	River Stream (%)
I	6.1	3.3
II	22.4	27.3
III	40.8	22.7
IV	10.2	15.3
V	6.1	8.0
Below V	14.3	23.4
All Standards	100.0	100.0

Source: Yunnan Environmental Protection Bureau

On air pollution, waste gas and pollutants are emitted by primary industries like the coal-fired electricity plants, non-metallic mineral products, metal smelting and finishing, and chemical industries. These industries are mainly located in Kunming and Qujing (曲靖) City, causing heavy pollution in these areas, significant increase in pollutants emission, and deterioration in the quality of air[1].

[1] The standard of air quality is set in accordance with the highest index measurement of the five pollutants: sulphur dioxide, carbon monoxide, nitrogen oxides, ozone, and fine particles. The standard of Level I is considered excellent, II is fine and III indicates slight pollution. For more information about the standard of air quality, please refer to "Hunan Carries out Three-Year Environmental Protection Plan" in the Part I of this consultancy study covering the southeastern region.

The Quality of Air in the Environment of Yunnan's Major Cities

Grade of Air	Cities
I	Lijiang (麗江), Shangri-la County (香格里拉縣城)
II	Chuxiong (楚雄), Yuxi (玉溪), Gejiu (個舊), Dali (大理), Baoshan (保山) Wenshan County (文山縣城), Simao (思茅), Jinghong (景洪), Lincang (臨滄), Luxi (潞西) and Hekou County (河口縣城)
III	Kunming, Dongchuan District (東川區), Qujing, Kaiyuan (開遠) and Lushui County (瀘水縣城)
Below Level III	Zhaotong (昭通)

Source: Yunnan Environmental Protection Bureau.

Besides, of the 15 major cities[1] at which Yunnan monitors the acidity of rainfall, the average acidity (pH) is between 4.76 and 6.88[2]; acid rain occurs in 10 cities, accounting for 66.7% of the sample. Compared with 2003, the frequency of acid rain has increased only in Simao. Conditions remain basically stable in Kunming and Kaiyuan, and improvement of various degrees has been recorded in the other cities.

The solid waste and emission of urban pollutants are also increasing at a relatively fast speed. Industries in Yunnan that emit pollutants include mainly metals mining and processing, coal mining, non-metallic mineral product and agricultural non-staple food processing; they are mainly located in Kunming, Zhaotong and Baoshan. Yunnan discharged 40.53 million tons of industrial solid waste in 2004, up 18.6% from 2003, among which hazardous waste totalled 207,000 tons, accounting for 0.5%.

Implementation of the 21st Century Environmental Protection Strategy

In order to address the increasing threats to the environment arising from all kinds of pollution, the Yunnan Institute of Environmental Science formulated the 21st Century Environmental Protection Strategy in this year. The strategy aims to practically control pollution by 2010 and improve environmental quality in key areas. Issues concerning pollution should be basically resolved by 2020, so that the environmental conditions of Yunnan match that of a well-off society. This strategic plan includes four concepts: building five major systems, adhering to five integrations, constructing six key projects, and

[1] The 15 major cities include Kunming, Qujing, Yuxi, Baoshan, Zhaotong, Lijiang, Simao, Wenshan County, Lincang, Gejiu, Kaiyuan, Jinghong, Chuxiong, Dali and Luxi.

[2] People generally consider rain with a pH value of less than 5.6 as acid rain. For an explanation of acid rain, please refer to "Hunan Carries out Three-Year Environmental Protection Plan" in the Part I of this consultancy study covering the southeastern region.

optimising the layout of environmental protection.

1. The five big systems refer to (1) an ecological economic system that is consistent with the concept of recycling economy; (2) a sustainable system for safeguarding resources; (3) a system for protecting the ecological environment in good conditions; (4) a system of human settlement in a beautiful environment; and (5) a system of ecological culture that represents modern civilisation.

2. The five integrations refer to (1) integrating environmental protection with urbanisation, so as to construct an environment that is conducive to human settlement and investment, and to highlight the diversity of ecological environment and ethnic culture; (2) integrating environmental protection with the new roadmap of industrialisation, in order to create ecological industries, and develop recycling economies and environmental protection industries; (3) integrating environmental protection with the development of the five pillar industries, so as to guarantee sustainable utilisation of resources; (4) integrating environmental protection with the development of county economy, so as to enhance the competitiveness of counties; and (5) integrating environmental protection with key construction projects to strengthen the whole process of monitoring ecological environmental protection and to minimise the damage on the ecological environment.

3. The six big projects refer to (1) a project to ensure that the sources of industrial waste meet the required environmental protection standards and that the total volume of waste discharged is under control; (2) a project to protect the ecosphere of the lakes on the altiplano; (3) a project to construct ecological economic rims in key cities; (4) a project to protect the environment in the rural areas and treat water pollution at the source; (5) a project to construct facilities for disposal of hazardous and medical waste; and (6) a project to construct ecological industrial parks.

4. Optimising the layout for environmental protection refers to focusing on resolving the environmental issues that have significant impact on economic and social development, are strongly opposed by the people, or have significant impact on ecological environment. The objective of this is to exercise overall control and significantly improve the environmental conditions in key cities and regions.

To construct 3 cities that would practice recycling economy in 5 years

The Yunnan Party Committee and Provincial Government have formulated a five-year timetable to promote construction of recycling economy in Yunnan from the second half year of 2005 to 2010. By 2010, Yunnan will have 5 to 10 ecological industrial (tourism) zones that suit the development patterns of a recycling economy, 5 ecological agriculture demonstration parks, and 2 to 3 cities that practice recycling economy, so as to significantly improve the efficiency of resource utilisation in key provincial industries and form a number of clean production enterprises with a comparatively higher rate of resource utilisation and a lower rate of pollution discharged. At present, priority is given to the construction of three

pilot test grounds of recycling economy in Kaiyuan (開遠), Eryuan (洱源) and Puzhehei (普者黑), which represent industrial, agricultural and tourism recycling economies respectively. In order to achieve recycle use of industrial waste and by-products, the province will introduce new technologies and cascade utilisation of energy and water.

Besides the three pilot regions cited above, the Yunnan Party Committee and Provincial Government will integrate the ten pillar industries (tobacco, energy, pharmaceutical, metallurgy, electronic information, building materials, chemical, machinery, agricultural products processing and paper making), seven industrial bases (tobacco, energy, non-ferrous metals, high-analysis phosphate and compound fertilizer, coal processing, agricultural products processing and forest-paper) and 30 industrial parks, so as to build a number of enterprises that practice recycling economy and ecological industrial parks. In this light, local governments at various levels should work with related government organisations to enact the Directive Suggestions for the Development of Recycling Economy in Yunnan as soon as possible. Yunnan should explore and practise a development pattern that minimises input while maximising output, consumes fewer resources and generates less pollution. Efforts should be stepped up to promote clean production; continue to make public the identities of enterprises that are serious sources of pollution, toxic and hazardous waste; and examine by law the production processes of enterprises that claim to be adopting clean production. In areas where factories are concentrated, importance should be attached to the ecological chain of resource utilisation among these enterprises. Stronger support should be given to the development of Yunnan's abundant resources of recyclable energy such as water energy, solar energy, wind energy and bio-energy. While promoting the recycling economy, all parties involved should formulate a set of standards and indices to facilitate assessment of the progress made, so that the achievements of various parties can be concretely measured.

Although environmental conditions in Yunnan remain stable, the Party Committee and Provincial Government have strengthened environmental protection efforts. For example, they have tightened supervision and monitoring of industrial wastewater discharged by industrial enterprises. Investors intending to develop businesses in Yunnan should note the related policy and regulatory developments. Meanwhile, Yunnan is already home to about 1,000 Hong Kong invested enterprises. Apart from the conventional investment in infrastructure and manufacturing industries, there are also Hong Kong enterprises engaged in agriculture and bio-medical businesses. Moreover, Hong Kong is a major trading partner of Yunnan, trading naturally Yunnan's major green industrial products of tobacco, medicines and flowers. Currently, 50% of Yunnan's flower exports are shipped through Hong Kong to the markets of Japan and the EU. The ecological environment of Yunnan is thus worth the attention of Hong Kong entrepreneurs.

Guizhou's Energy Industry Reduces Pollution to the Air

Guizhou has long been touted the "Coal Capital of Southern China", its coal reserves ranks the fifth largest in China and the largest in southern China. In 2004, Guizhou's energy industry, comprising mainly electricity and coal, generated more than Rmb10 billion in value-added, and is the most important pillar industry of the province. Leveraging on its abundant resources, Guizhou is constructing itself into an energy base of the Pan-PRD region. As a main supplier in the "west-to-east electricity transmission" (西電東送) , Guizhou plays an important role in providing the region with steady supply of electricity. However, as this economic pillar is heavily reliant on the consumption of resources, Guizhou's development has bred a dilemma between resource constraints and economic growth. The pollution arising from the release of excessive sulphur dioxide by its thermal power plants is of particular concern.

In the structure of Guizhou's energy industry, 95% is coal, and 70% of the province's consumption of energy is coal-based. Coal-fired production processes are the biggest source of pollution that is damaging the Mainland's ecological environment. The sulphur dioxide emitted in the process of burning coal is the main cause of the typical coal-smoke pollution. In 2003, the volume of electricity generated from coal-fired electricity plants reached 43.274 billion kilowatt-hours (kwh), more than two times the 20.828 billion kwh generated by hydropower plants, and accounted for 68.6% of the total electricity generated in Guizhou. In the same year, a total of 1.3229 million tons of sulphur dioxide was emitted in Guizhou. On average, the concentration of sulphur dioxide in the seven cities of Guiyang (貴陽), Zunyi (遵義), Dujun (都匀), Kaili (凱里), Tongren (銅仁), Xingyi (興義) and Qingzhen (清鎮) exceeded Level II under the national standard of air quality. Of these cities, Zunyi, Dunjun and Kaili exceeded Level III.

Sulphur Dioxide

Sulphur dioxide may cause serious damages to human health. Sulphur dioxide gas can cause strong agitation in the respiratory tract, causing various respiratory diseases such as chronic nasal pharyngitis, chronic bronchitis, bronchial asthma, pulmonary heart disease, etc. Aside from damaging human health, sulphur dioxide also destroys crops, corrodes building and metal equipment, as well as induces degeneration and brittleness of textiles, leather and paper-made materials. Sulphur dioxide emitted into the air cannot be transformed into harmless form. On the contrary, it may be oxidised by factors like ultra-violet lights and turn into sulphur trioxide, which may further combine with water vapour into the more toxic sulphuric acid smog. According to the 2004 Report on China's Environmental Status released by the State Environmental Protection Administration, acid rain pollution formed by sulphur dioxide causes over Rmb110 billion of economic loss per year, accounting for 2-3% of China's GDP.

Strengthening prevention and control of pollution arising from coal-fired power plants

The most fundamental measure that needs to be taken in preventing and controlling pollution due to sulphur dioxide emission is to tackle its source. That would entail improved methods of burning fuel, installation of dust-removing devices for air purification, integrated utilisation of recycled sulphur dioxide, etc. To avoid worsening of pollution problems normally associated with faster economic development, while Guizhou implements the "west-to-east electricity transmission" program, it promotes prevention and control of pollution arising from coal-fired power plants. The objective is to develop the energy industry and carry out environmental protection at the same time. As to the layout of its development, Guizhou will prioritise projects involving mining of low-sulphur coals. It will also strive to build large-scale power plants beyond areas being monitored for acid rain and in areas where the coal has low sulphur content of less that 1%. By leveraging on the low-sulphur coal resources, the newly built power plants would meet the national standards set on sulphur emission. As to coal-fired power plants that use coal with high sulphur content, measures will be taken to boost their investment in better technologies and help them enhance their capabilities to protect the environment. Moreover, programs should be planned for the construction and upgrading of existing clean coal-fired power generators. At present, a total of Rmb1 billion has already been invested in such projects. All newly built thermal plants in the cities of Guiyang, Anshun (安順), Kaili, Dujun and Xingyi (興義) are equipped with desulphurisation devices to control the emission of pollutants. Guizhou is requiring other power plants to follow suit. The Qingzhen Power Plant and Kaili Power Plant should realize desulphurization before 2007, and Phase 1 of Anshun Power Plant, Jinsha Power Plant (金沙電廠), Panxian Power Plant (盤縣電廠), Xishui Power Plant (習水電廠) and Shuicheng Power Plant (水城電廠) should be able to do so before 2010. Of these power plants, the two 200-megawatt generators in Qingzhen, which serve as the State Council's pilot projects on desulphurisation of coal-fired power plants, has started construction in mid-2005. It will achieve over 95% desulphurisation upon completion.

Furthermore, by April this year, Guizhou has already closed 19 small coal-fired generators of less than 500,000-kilowatt (kw) capacity, shutting down a total of 345,000 kilowatts of installed capacity and effectively reducing the emission of sulphur dioxide by 110,000 tons, freeing up some quota of sulphur dioxide emission for new projects. Guizhou will continue carry out environmental protection in other coal-fired power plants. An Rmb150 million investment has already been made in facilities for controlling smoke and gas emission of two 200,000-kw generator sets in the Guiyang Power Plant. Upon the project's completion, its emission of sulphur dioxide will be reduced by around 90%. Except for the newly built projects, the existing coal-fired power plants that use coal with sulphur content of over 1% should be equipped with desulphurisation devices.

In the areas under planning and construction in the central cities, the Guizhou Party Committee and Provincial Government have promulgated policies prohibiting the construction or extension of coal-fired power plants. In principle, all cities will refrain from

constructing heat-electricity integrated projects. All local governments and related government organisations should accelerate the implementation of clean energy plans such as urban gas projects and rural methane projects, so as to significantly reduce the growth in sulphur dioxide emissions caused by households' coal-burning activities.

According to Mr. Fu Jing (付京), Deputy Director of the Guizhou Office for Development of China's Western Region, the installed capacity of Guizhou power grid will exceed 30 million kw by 2010, transmitting 14 million kwh annually to neighbourhood provinces or regions such as Guangdong, Chongqing, Sichuan, Guangxi, Hunan and etc. If the above-cited measures are strictly implemented, the annual emission of sulphur dioxide by coal-fired power plants in Guizhou will be reduced by another 200,000 tons.

Promoting clean production

Apart from increasing the investment in technologies and measures that would help to reduce sulphur dioxide emitted by coal-fired power plants, all industries in Guizhou should aim at consuming less energy in the long run. Among the pillar industries of Guizhou, energy and raw material industries make up a substantial proportion. The technology and equipment used by these industries are relatively backward, and the management of its production process remains at low-level, resulting in inefficient utilisation of energy. Guizhou has initiated the Voluntary Action Plan for Clean Production in order to address these bottlenecks. In key cities and towns, pilot units have been established in industrial areas, sectors and enterprises. Priority is given to those industries that have significant bearings on the environment; examples of these are metallurgy, non-ferrous metal, chemical, building materials, electric power and coal. Efforts in inspecting the production processes of enterprises in the industrial zones should also be stepped up, while two to three major cities or towns would be designated as pilot test grounds for adopting clean production technologies. Blindly engaging in low-level and redundant development of industries that consume a lot of energy and cause serious pollution should be prevented; while transfer of out-dated equipment into Guizhou should also be avoided. Out-dated technologies and equipment as well as production lines that waste a lot of energy and other resources or cause serious pollution should be terminated and shut down by law.

Related government organisations also should intensify their efforts in perfecting the legal system, particularly in formulating auxiliary rules and regulations that promote clean production. This would ensure that the management of clean production is founded on legal basis. Guizhou will draft its manual and technical guidelines for clean production in accordance with the national system of evaluating clean production processes in key industries and manuals on clean production and evaluation. These manuals and guidelines would encourage and support enterprise to voluntarily start assessing their own production processes and provide guidance to enterprises that apply for certifications to mark their products as energy conserving, water conserving or manufacturing with recycled materials.

Guizhou would help the managers of enterprises to better understand, identify and incorporate clean production targets into their overall corporate development plans; as well as encourage them to take initiatives in implementing clean production. Other measures to be undertaken include: establishment of an accountability system, implementation of a compliance system to ensure the operation of the equipment are up to standard; establishment of a reward-penalty system so that efforts to adopt clean production techniques are directly linked with economic benefits. Qualified enterprises should be encouraged to voluntarily adopt the ISO14000 certification system[1] in order to improve the clean production level. The scope of the clean production campaign should also be expanded to more economic segments such as agriculture, construction, mining and quarrying, as well as the services sector.

Developing technologies to generate electricity from wind energy

As coal is an irreplenishable form of resources, Guizhou needs to ensure the sustainability of its energy industry by exploring alternative forms of clean energy. Among these alternatives, wind energy can be considered. According to the arrangement of National Development and Reform Commission, the Guizhou Meteorological Bureau and Guiyang Institute for Reconnaissance & Design initiated a census in 2004 on Guizhou's resources of wind energy. So far, Guizhou has identified four venues suitable for the development of wind power generation. These venues are located around the elevated areas of Weining (威寧) and Bijie (畢節) in western Guizhou, and can generate around 2 million kw of electricity, making wind the next most important source of energy after coal and water. As wind is clean and recyclable, wind power should be developed as soon as possible. Guizhou is accelerating works on constructing the pilot and demonstration base for wind power generation, so as to gain more experience before promoting it throughout the country. Wind power generation is a breakthrough in China and has changed Guizhou's traditional concept about energy sources. It has helped to lay a solid foundation for Guizhou utilisation of recyclable energy resources.

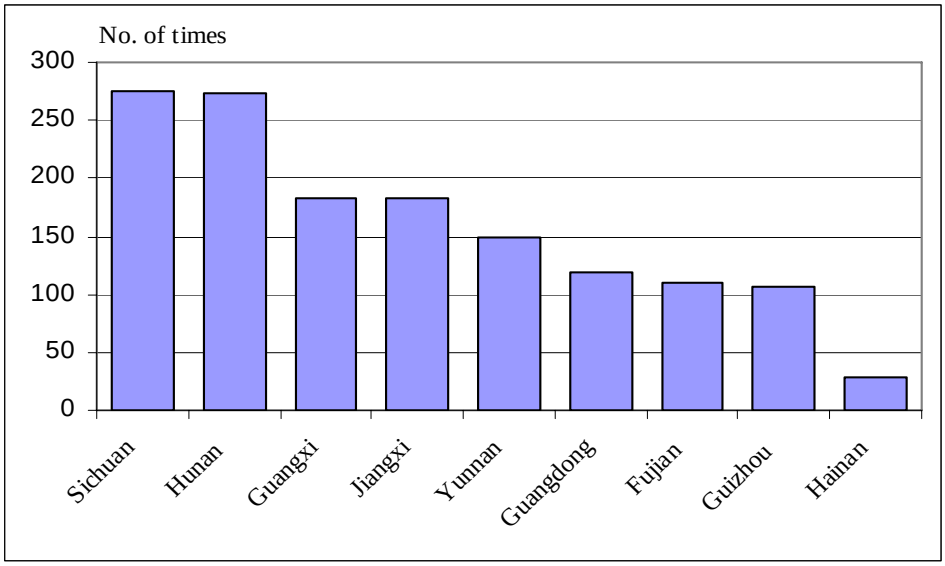
Wind power generation facilities are not locally manufactured; imported technologies are required. As such, the power generated from wind power plants would be much more expensive than the power produced by coal-fired or hydropower plants. According to estimates, developing wind power projects would require an investment of Rmb16-20 billion. For the time being, improving the investment environment and establishing smooth channels for financing are most important to Guizhou. The Mainland government has started opening up and encouraging development of alternative energy sources that are less polluting and recyclable such as wind energy. Hong Kong investors can leverage on its extensive experience in project financing to provide Guizhou with the much-needed financial services and assist it to obtain the necessary funds in the capital market.

[1] The ISO14000 Certification System is discussed in "Hunan Implements Three-Year Environmental Protection Plan" in Part I of this consultancy study covering the south-eastern region.

Deterioration of the Ecological Environment Makes Sichuan More Prone to Natural Disasters

China is among the countries most prone to natural disasters, with two-thirds of the country's territories threatened by floods of various degrees and nearly half its cities situated on the seismic zones, which raises its risks of being hit by natural calamities. Among the typical natural disasters, floods, water-loggings, droughts and earthquakes cause 80-90% of the losses. Among the nine Pan-PRD provinces/region, Sichuan is most frequently hit by natural disasters.

2003 Statistics of Natural Disasters in the Nine Pan-PRD Provinces/Region[a]



[a] Statistics compiled include the following: droughts, floods, water-loggings, wind-hails, cold storms and typhoons

Source: China's Yearbook of Civil Administration

Sichuan is situated at the upper reaches of the Yangtse River. Its complicated natural environment in terrain (where the altitude spread is up to 7,000 meters), geological structure and hydrometeor, together with man-made damages to its ecological environment, have rendered it one of the provinces that are most prone to natural disasters such as floods, mud-flow, landslide and soil erosion in mountain areas. Floods and water-loggings are the most common disasters in Sichuan, accounting for half of the disasters that hit Sichuan. The province ranks the sixth highest in terms of frequency of floods and water logging incidences nationwide.

Floods refer mainly to disasters arising from the excessive rainfall within a short period of time and cause overflowing of rivers, flooding townships, villages or fields. Water-loggings refer to situations where persistent heavy rainfalls or rainstorm cause accumulation of water at a pace faster than drainage, and leads to floods particularly in areas where the topography is low. Most of the time, floods and water-loggings occur simultaneously.

Ecological protection helps prevention and control of disasters

In Sichuan, floods and water-loggings occur in varying degrees from April to October, with situations most serious in July and August. The situation is characterised by intensive and concentrated rainfall; they occur suddenly and are unusually heavy, causing severe damages and losses. The rainfalls occur frequently and the distribution is uneven in terms of geographical concentration; they are also persistent and fade only gradually. Generally speaking, the areas more frequently hit by floods and water-loggings are those along the middle reaches of the Yalong River (雅礱江), central area of Aba Tibetan Autonomous Prefecture (阿壩藏族自治州中部), as well as the north-western and south-western parts of the Sichuan Basin, with the north-western area most frequented by floods and water-loggings.

Although severe floods and water-loggings are similar to common floods and water-loggings in many ways, they have their own special characteristics. They are caused by a number of factors such as the volume of rainfall, intensity of rainfall, duration of rainfall, topography, land features, width of a river and its silting and curving degree, natural vegetation, and season and growth period of the crops. Human factors also cause severe floods and water-loggings. For example, sowing of fields around the lake areas expands the land area for cultivation, but also causes silting of earth and sand at the bottom of the lake and riverbed; deforestation at the mountain areas of the mid- and upper reaches of rivers also exacerbate floods and water-loggings. That is to say, the deterioration of ecological environment in recent years has actually raised the risks of natural disasters and threatened the social and economic development as well as the life of the herding population. Therefore, the construction of ecological environment should include prohibition of de-forestation, encouraging conversion of farmlands back to forest and pastures, promoting prevention and control of desertification, recovering natural grassland, etc. All these efforts would be helpful to the prevention and control of floods and water-loggings.

To discuss and explore effective long-term plans for controlling the ecological environment, Sichuan's Bureau of Geology and Minerals Exploration has recently completed a Research on the Overall Planning of Sichuan's Zones for Protection of Ecological Functions. The Report disclosed that the deterioration of ecological environment in Sichuan has not been fundamentally reined in. Sichuan still has a tough ecological environment, and signs of deteriorating quality of the ecology are seen in some local areas. Moreover, existing natural protection zones, scenic spots, forest parks, geology parks, etc. are unable to meet the minimum requirements on protection and recovery of major ecological functions in Sichuan. Therefore, the Report proposed to construct 16 zones for the protection of Sichuan's ecological functions, so as to effectively control the cut-off of rivers, soil erosion, and spreading of grits. These zones would serve as special areas that need to be protected for their significant functions in maintaining the drainage area, keeping the region's ecological balance, reducing natural disasters and ensuring ecological security. The Research has provided Sichuan's classification of ecological function areas with solid

scientific basis.

16 Zones for Protecting Sichuan's Ecological Functions

Early in 2001, Sichuan started constructing areas for protecting its ecological functions. Among these areas, the Ruo'ergai Rigid Wetland (若爾蓋濕地) was listed as one of the first pilot grounds for the construction of national ecological function protection areas. In 2004, protection areas for the andrias davidianus (大鯢) and its living environment were established in Xingwen (興文). In addition, the ecological protection areas of dry and hot valleys located in the upper reaches of Minjiang River (岷江) and Jinsha River (金沙江) also came under construction. The 16 zones for protecting Sichuan's ecological functions proposed in the Research on the Overall Planning of Sichuan's Zones for Protection of Ecological Functions include eight national-level zones such as Gongga Mountain (貢嘎山), source area of Bailong River (白龍江), Qionglai Mountain (邛崍山), Yading-Lugu Lake (亞丁－瀘沽湖), etc., and eight provincial-level zones such as the upper and middle reaches of Anning River (安寧河), Gulin-Xuyong Karst (古藺－敘永喀斯特) area, etc. Different emphases are attached to each of the protection zones in accordance with its actual situation, for example, the upper reaches of Yangtse River focus on the protection of soil erosion and the Gongga Mountain area specialises in the protection of biological diversity.

Natural disasters may breed epidemics

According to information from the Department of Civil Affairs of Sichuan Province, by September 19, 2.62 million hectares of crops have been affected by natural disasters this year. 174,000 hectares of sown land were not able to produce anything, 156,100 tons of grains ready for harvesting were lost, grain production reduced by 3.1603 million tons, 319,600 livestock died, 105,000 houses collapsed, and 789,400 houses were damaged. All these resulted in direct losses of Rmb12.272 billion, of which Rmb6.825 billion were in the agricultural sector.

In addition to loss in agricultural produce, large-scale infection and severe epidemic may occur in areas hit by natural disasters if these areas are in poor conditions and things are not put under control in time. A flood-stricken area is particularly prone to epidemics, as the carriers of bacteria and sources of pollution spread more quickly after being soaked in the flood, infecting people that come into contact with or drink the contaminated water. This, in turn, causes infectious diseases to spread rapidly. The results are more threatening than the physical damages made by the flooding. The main diseases which should be prevented and contained after floods and water-loggings in Sichuan include infectious gastro-intestinal diseases (such as cholera, typhoid fever, diarrhoea, Hepatitis A, etc.), zoonosis and natural

focus-based disease (for example, leptospirosis, epidemic hemorrhagic fever, schistosomiasis, epidemic encephaslitis B, etc.). Therefore, preventing the spreading of epidemics after the occurrence of a natural disaster is equally important to fighting floods and providing disaster relief. The major measures that the Sichuan government undertakes to control epidemic diseases include: organisation of medical service team to control spreading of epidemic diseases in the disaster areas, publicising and educating the local people so that they gain the basic knowledge about controlling epidemics, increasing the monitoring of disaster situations, improving environmental sanitation, treating and disinfecting settlements, segregating human from livestock, eradicating insects and rats, protecting water sources, strengthening protective disinfections, and ensuring safety of food. Areas where serious epidemic diseases occur should be isolated and controlled, in order to avoid spreading the disease to a wider region.

Although epidemics rarely happen in recent years, Hong Kong's close interrelation with the Mainland implies that such threats should not be overlooked. The outbreak of bird flu and SARS in the past few years epitomises the serious damage that can be inflicted on Hong Kong should any epidemic break out. As such, the Pan-PRD region should seriously implement the mechanism of cooperation in health surveillance and in prevention and control of diseases. These are necessary for the region to be able to safeguard the health of its residents.

Industry Views on Strengthening Cooperation in Environmental Protection Between Hong Kong and the Mainland

In managing environmental protection under the Pan-PRD regional cooperative framework, Hong Kong is most concerned about the quality of air and water. Situated at the south of the Pan-PRD, the Pearl River system which spans across the Pan-PRD region is Hong Kong's main source of drinking water. It is inevitable that the polluted gas discharged from chimneys in the Pan-PRD region to the north of Hong Kong would affect Hong Kong's atmosphere in the south; and the pollution in the upstream of the Pearl River also naturally flows downstream towards Hong Kong. To some extent, these two sources of pollution are indirectly inflicted on Hong Kong by neighbouring regions. However, to resolve the problem of environmental pollution in Hong Kong, accusations should not be plainly pointed at neighbouring regions alone. After all, Hong Kong also runs coal-fired power plants; its vehicles also produce dirty smoke and cause air pollution. Besides, most of Hong Kong's production lines have moved northwards, these factories also produce wastewater in the PRD region, causing deterioration of water quality. It is, therefore, imperative that while Hong Kong strengthens cooperation in environmental protection with neighbouring provinces/region, it at the same time strives to eliminate its sources of pollution. Apart from resolving the regional problems of air and water pollution, Hong Kong still needs to deal with a lot of other problems such as waste treatment, noise pollution, etc. In cooperating with the Mainland on environmental protection, some representatives from the industry have expressed their views as in the following sections.

The most pressing environmental problem of the Mainland and Hong Kong is air pollution

The managing director of a local environmental engineering company said that although the Mainland is greatly concerned with environmental protection issues and sincerely wants to improve the situation, its capability still falls short of its will. As he explained, since China's reform and opening up to the outside world, the per capita GDP of the country has persistently increased. However, the depletion of energy and damages made to the environment have also exacerbated at a pace that even exceeds the growth of the economy. He indicated that restrained by insufficient resources, the Mainland has found it difficult to simultaneously sustain economic growth and protect the environment. When the two ends cannot be balanced, the one that would generate material economic benefits usually prevails[1]. It is thus not surprising for people to feel that the Mainland's efforts in protecting the environment is actually moving backward. He suggested two ways to improve the current situation. First is to step up educating the Mainland people to raise their consciousness on the issues of energy conservation and environmental protection, and strive to initiate changes in the people's daily habits. Second is to transform the Mainland economy from the so-called extensive mode towards that of a high value-added one so as to cause less damage

[1] On the local government's criteria on assessing how to allocate resources, please refer to the interview conducted with a professor of a local university below.

on the environment. He admitted that these could not be achieved overnight.

On Hong Kong's side, he pointed out that the city's experience with environmental protection was different from the Mainland. The Mainland has undergone rapid growth in all aspects in recent years. It has formulated clear direction for environmental protection, but does not have sufficient resources to proceed with it. Hong Kong, meanwhile, enjoys sufficient resources but the process of implementation is too slow and has made very little achievement so far. To him, Hong Kong lacks determination and perseverance, hence hampering its progress in environmental protection work. Due to different political views and interests of the Legislative Council members, enactments of relevant environmental protection legislations are often delayed. He said that the Hong Kong SAR Government had formulated a "Waste Reduction Framework Plan" in as early as 1998. He described this to be a plan with good vision and foresight, but up to now, it has not yet been put into implementation. In other instances, the handling of solid waste has been a subject in discussion for years, and the only action that has been taken is the imposition of charges on disposal of construction waste. Other issues such as how to treat domestic waste (e.g. batteries) have yet to be taken up. In contrast, Macao, which started relatively late in environmental protection work, has already executed quite a number of plans.

Waste Reduction Framework Plan

On November 5, 1998, the Planning, Environment & Land Bureau announced the "Waste Reduction Framework Plan". The plan aims to reduce the amount of waste, and increase the rate of recycling or reproduction by 100%, in order to minimise the volume of waste that needs to be disposed of, thereby easing the demand for new landfills. The plan covers two major areas. First is preventing generation of waste and reducing the volume of waste generated by tackling the problem at its source. Measures will be adopted to increase the rates of recycling and reuse of waste. Examples of the measures include: education, promotion, recovery of materials, making use of the market mechanism, adopting a system of accountability for manufacturers, and employing automatic waste separation systems at the source of pollution. Second is to reduce the immense amount of waste discharged. The Bureau will develop waste-to-energy incinerators and composting[1] plants to minimise the bulk of waste that needs to be disposed of because they cannot be recycled. According to the Bureau, when the Plan is fully implemented, the annual cost of waste management could be reduced by about HK$750 million.

The managing director thought the most pressing environmental problem for the Mainland and Hong Kong is air pollution. The problem has exacerbated since China became the world's factory, and is also caused by motor vehicles in the Mainland which still use polluting types of fuel. Although Hong Kong is aggressively seeking solutions to alleviate the problem and has encouraged taxies and other means of public transport to shift

[1] Composting refers to artificially creating an environment that facilitates the decomposition of organic matters by micro-organisms so that stable humus is created.

to using environment-friendly fuel, if the neighbouring Mainland regions do not take any action, Hong Kong's efforts would be futile. The two sides thus need to coordinate and cooperate. He indicated that there were already various channels for academic exchanges on environmental issues between the Mainland and Hong Kong. However, an official channel of communication at the industry-level has yet to be in place, without which industrialists from the two sides are not able to address cross-border pollution cases together and join efforts to find remedies.

The development of technologies for waste treatment in Hong Kong will be applicable to the wider Mainland market

Regarding cooperation between the Mainland and Hong Kong on environmental protection, a professor from the Biology Department of a local university shared his recent findings on the introduction of the source separation systems of solid waste at a county in Guangxi's Nanning city. Touted as "China's Green City", Nanning has endeavoured to promote environmental protection. The solid waste separation project at the county started five years ago with the initial support funds from the U.S. The university spearheaded the project and sought the local government's cooperation in implementation. The project is 60% complete and has achieved initial success. However, as the remaining 40% requires funding by the local government, its progress has stalled. According to the original plan, the project would have been completed in 2 years' time and it was earlier hoped that the achievements made in the county would be used as a role model for promoting similar efforts in other towns and counties. However, the project has to be suspended until the local government finds means to proceed. The university is striving to seek solutions for the project's completion.

The professor learned from the above project that the Mainland is taking the right direction in introducing environmental protection and efforts are being supported by policies drafted at the Central Government level. However, the Mainland spans such a wide area and in view of limited resources, the local governments are financially incapacitated to undertake all these projects. In practice, resources are allocated among various sectors and some environmental protection projects were inevitably ignored. Most local governments would pay attention to projects that promote prosperity to keep the economic growth engines running. The problems he faced in the county are commonly encountered by Hong Kong companies trying to introduce environmental protection technologies into the Mainland.

The professor thought that in recent years, the joint efforts undertaken by the Mainland and Hong Kong SAR governments in promoting environmental protection have enhanced public awareness. In educating the public, he saw that the Mainland government had achieved better results since they adopted parental approach in ensuring people's participation. While conducting the project of solid waste separation at the county, he found the government issued serious warnings to those who did not follow instructions. The government was thus able to require the residents' strict adherence to its policies and the project recorded rather high participation rates of 80-90%. In contrast, although Hong Kong has introduced and carried out waste separation a long time ago, it has not yet taken any

initiatives to set clear direction in turning waste into energy. The Hong Kong SAR Government has just approved and set out the details for levying charges on the disposal of construction waste. Research into the feasibility of selling the waste to the Mainland for recycling and reuse has just started, and nothing has yet been discussed regarding the disposal of organic waste.

Lastly, the professor indicated that as China develops rapidly, it has invested a lot of money on imported technologies for waste treatment and resource recycling technologies that may not be applicable to Hong Kong and Mainland. He pointed out that although Hong Kong would need to invest substantial funding in developing these technologies, given that the results will be applicable to the large Mainland market and yield substantial returns, it is worth pursuing. In this way, the Mainland and Hong Kong will be able to share resources and complement each other.

Hong Kong companies tapping the Mainland market should adopt green manufacturing as soon as possible

As for Hong Kong-Mainland cooperation on clean production, the chairman of a Hong Kong manufacturers association explained that green manufacturing requires consideration be given to the three components of manufacturing: design, production and application. The objective is to allow materials to be recycled, and to embed the concept of environmental protection in the entire supply chain. Hong Kong manufacturers, particularly electronic products manufactures, are currently rushing to cope with the new environment-friendly directives issued by the EU, namely, WEEE (Directive on Waste Electrical and Electronic Equipment) which took effect on August 13, and RoHS (Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment)[1] which will be implemented on July 1, 2006.

The EU directives apply to a wide range of industries including light bulbs, washing machines, toy trains, industrial and medical equipment, etc. The directives require manufacturers of all these electrical appliances and electronic facilities to fully shoulder the costs of collecting, processing and recycling products discarded in the 25 EU member nations. As the EU directives shifts all responsibilities onto the manufacturers, the latter need to ensure that every partner involved in the supply chain should meet the environmental requirements. This would inevitably raise the cost of production of Hong Kong manufacturers, who will need to spend time on adjusting their manufacturing processes and management to be able to cope with the new rules. During the process, investment will have to be made in changing equipment and facilities, renovating factories, reorganising management structures and possibly in dealing with legal responsibilities. These burdens would be particularly heavy for small- and medium-sized enterprises.

[1] On WEEE and RoHS, please refer to "EU's New Directives Trigger New Environmental Protection Measures in Fujian" in Part One of this report covering the south-eastern region.

Although the two directives cited above were issued by European countries, the chairman thought it would eventually be a global trend. Countries such as Japan, the United States and even the Mainland, are gradually imposing more stringent requirements of environment-friendly production (for example, in requiring the use of non-lead welding in electronic parts and products), it is just that these requirements have not yet been systematised. He also learned that China would introduce many regulations for environmental protection. He hence advised Hong Kong manufacturers tapping the Mainland market to act ahead in meeting the requirements on green manufacturing. He pointed out that to some people, green manufacturing is a social responsibility that enterprises need to undertake as part of its duty to the market and consumers. However, some people think that these regulations merely claim to be "protecting consumers" but are actually "trade barriers". Still a third group of people regard this as an opportunity to consolidate the electronics industry, as the weak companies will be forced out of market. Whatever the case may be, it can be certain that the global trend of imposing more stringent requirements of green manufacturing will benefit Hong Kong's manufacturers in terms of forcing them to gear up their production to meet these requirements. This would, in turn, enhance their competitiveness and drive the low value-added manufacturers out of the market. He thought that those that are not able to adapt to the global trend of environmental protection would naturally be phased out.

A project manager of a local technology company thought that since environmental protection can force manufacturers to take more initiatives in strengthening themselves, and help them in developing export and domestic markets, market forces would eventually prompt manufacturers to pursue green manufacturing means, lest risking being phased out. He thought that the biggest challenge in promoting green manufacturing is to ensure that every partner of the supply chain complies with the requirements of environmental protection. Taking his company as an example, the company has always adopted the stringent environmental protection requirements imposed by a Japanese customer. However, as the supply chain involves numerous production partners, its manufacturing process in general is probably only able to meet the most basic requirements of that customer. He hoped that the major trade associations and the Hong Kong Trade Development Council could bring manufacturers together and exchange information, so that every company along the supply chain could speed up in adapting to green manufacturing.

The project manager also thought that in promoting green manufacturing, Hong Kong and Mainland manufacturers could strengthen cooperation. As Hong Kong manufacturers are more familiar with the demands of the international market, they started to learn the concept of environmental protection many years ahead of their Mainland counterparts. Hong Kong has thus developed a pool of consultants in this area. However, Hong Kong lacks talents in environmental research, the supply of which is unable to satisfy market demand. The Mainland, on the other hand, has abundant supply of environmental engineers

and can assist Hong Kong manufacturers in strengthening their technologies and research in environmental protection.

III. TRENDS AND UPDATES ON THE FOUR SOUTH-WESTERN PROVINCES/REGION

Nanning Builds its First Bonded Warehouse

During the Second Annual China-ASEAN Expo, Nanning will introduce an added attraction for businesses and investors -- its first public bonded warehouse in the China-ASEAN Economic Zone. The objective of constructing a bonded warehouse is to offer companies from ASEAN and other countries with storage space for their imports.

Supports the construction of the China-ASEAN Economic Zone

The China-ASEAN Economic Zone, located in the northern suburb of Nanning, 36 km. away from the city centre and spanning 180 sq. km. in area, is one of the largest and most concentrated areas of returning overseas Chinese. With the establishment of the China-ASEAN Free Trade Area and Nanning's designation in 2003 as the permanent venue of the China-ASEAN Expo, Guangxi has decided to construct the national-level China-ASEAN Economic Zone inside the Nanning Overseas Chinese Investment Zone (南寧華僑投資區) in order to attract investment from ASEAN enterprises and lure domestic enterprises exporting their products to the ASEAN markets to set up their businesses in Guangxi.

In accordance with the Policy Regulations on Enhancing the Construction and Development of the China-ASEAN Economic Zone published by the Municipal Government of Nanning, enterprises inside the China-ASEAN Economic Zone enjoy exemptions from all fees and charges other than those compulsorily levied by the Guangxi and Central Government. In addition, new domestic enterprises established in the China-ASEAN Economic Zone are exempted from business income tax in the first three years.

Nanning also strives to support the construction of China-ASEAN Economic Zone. In 2005-2008, Nanning will allocate Rmb15 million annually to enhance the infrastructure construction inside the economic zone. People from the private sector who are able to make substantial progress in inviting business and investment into the zone (for example, attracting Global Top 500 enterprises and basic construction projects) will be awarded Rmb20,000-100,000 by the government. To date, the China-ASEAN Economic Development Zone has extended as planned from the original core area of 10 sq. km. to 30 sq. km. In 5-10 years' time, the China-ASEAN Economic Zone will extend further to 80 sq. km.

In recent years, many overseas Chinese and businessmen from the USA, Canada, Germany, Indonesia, Thailand and other ASEAN countries have visited the China-ASEAN Economic Zone and engaged in business negotiations. Many enterprises of overseas Chinese have set up their operations in the economic zone, among which are the Canadian-Chinese Guangxi Wonder Pharmacy Stock Co., Ltd. (廣西萬德藥業股份有限公司), which entailed an investment of Rmb370 million, Guangxi Guangyi Pharmaceutical Co., Ltd.

(廣西廣益醫藥有限公司), a Sino-US joint venture company which involved an investment of Rmb35.1 million committed by an American-Chinese, and Jinfeng Group (金鋒集團) which is invested by Indonesian-Chinese. Currently among the 90 various enterprises in the China-ASEAN Economic Zone, 50 are industrial in nature, 19 are agricultural enterprises and 15 are engaged in commercial and other businesses.

An added attraction to the China-ASEAN Economic Zone

The first bonded warehouse of Nanning is located in the Youth Industrial Zone (青年工業園) of the China-ASEAN Economic Zone, covering an area of 2,000 square meters. The bonded warehouse has obtained the approval of the Nanning Customs to commence operation. It is currently setting up equipment and training up its staff.

A bonded warehouse refers to a storage area set up with the approval of the customs department. It is used to store bonded goods as well as other goods that have not gone through the customs clearance formalities. Bonded warehouses are classified into public and private bonded warehouses. A public bonded warehouse provides storage and logistics services for the public. It also provides some simple distribution-related processing and value-added services such as packaging, labelling, bar code printing, de-consolidation, sorting, consolidation, etc. In addition, a bonded warehouse can also be used to store imported goods for processing trade, re-export goods, oils and materials for the sailing of international vessels and aircrafts, and parts and components for their repair and maintenance. It can also used for the temporary storage of goods of overseas enterprises as well as other general products that have not gone through the customs clearance formalities.

Those in the industry assimilate the bonded warehouses to supermarkets. With a public bonded warehouse set up inside the China-ASEAN Economic Zone, imported goods without import licenses or other certifications of permission to import, as well as those that have not yet settled their import duties, can be stored in the public bonded warehouses. This would reduce the operating costs of enterprises, shorten the tied-up period of the funds of importing enterprises, and shorten the lead-time of exporting enterprises in ordering imported materials. Internationally, the establishment of public bonded warehouses is considered an important sign of localisation of overseas market. Public bonded warehouses can bring a lot of convenience to enterprises set up inside the China-ASEAN Economic Zone and even in Nanning, increasing the attractiveness of Nanning to foreign-funded enterprises, and enhances the efforts of Guangxi in inviting foreign investment. All these, in turn, speed up the development of an export-oriented economy. Hong Kong businesses can leverage on the China-ASEAN Economic Zone to tap the ASEAN market by investing in Nanning.

Guangxi Constructs a Southern Herbal Medicine Base

Since 1993, Guangxi's traditional Chinese medicines industry has taken the lead in the region. Chinese traditional medicines account for 60-70% of the total output value of the entire medicines industry. In 2003, Guangxi had 77 traditional Chinese medicine enterprises of above designated size and 137 Chinese traditional pharmaceutical enterprises that produced 2,254 varieties of prepared Chinese medicines. Their potential for development should not be overlooked.

Leveraging on abundant resources

The unique geographical environment, geologic configuration and favourable natural conditions of Guangxi have nourished rich resources of fauna and flora of herbal medicinal nature. The autonomous region's herbal medicine resources rank the second largest in China. As an old adage says, "original herbal medicines are from Chuan (Sichuan Province), Guang (Guangxi Province), Yun (Yunnan Province) and Gui (Guizhou Province)". There are more than 400 common traditional Chinese medicinal materials in China and more than 70 varieties of them mainly come from Guangxi, with more than 10 varieties of which Guangxi accounts for 50–80% of the total output in China. The output value of leatherleaf milletia (雞血藤) exceeds Rmb2 billion, while the production value of the root of subprostrate sophora (廣豆根) exceeds Rmb1 billion.

Leveraging on the Chinese herbal medicines in the southern parts of China and the regions of South Seas, the Party Committee and the Government of the autonomous region declared at the Conference on the Feasibility of Constructing China's Southern Herbal Medicines (Guangxi) Industry Base held in September that the bio-medical industry would be considered among the six pillar industries of the autonomous region and will be strongly supported by the government. Guangxi will strive to set up a Southern Herbal Medicine Industry Base within the next five years; this industry base will produce a total output value of more than Rmb100 billion.

Southern Herbal Medicines and Northern Herbal Medicines

China has a vast extent of land. The same variety of traditional Chinese medicinal materials grown in different places and under climates may vary in component and content. These differences have generated two medicinal streams: southern and northern herbal medicines. Generally speaking, the representative medicines of the northern regions are called northern herbal medicines while those that are prominent in the southern regions are called southern herbal medicines. The development of the southern stream of herbal medicines has lagged behind that of the northern stream. The Chinese pharmacopoeia has always collected more varieties of northern herbal medicines than southern herbal medicines.

The blueprint for constructing the Southern Herbal Medicine Base of Guangxi consists of growing medicinal herbs, research & development, production, logistics, information and many other fields. Currently it is preparing for the construction and works will commence next year, with an initial operating fund of Rmb3.8 billion. In its preliminary phase of construction, Guangxi will develop 20 new national-level medicines, emphasising on 8 types that bear the characteristics of Guangxi's herbal medicinal products. In addition to consolidating their position in the domestic market, this industry base will also facilitate the introduction of at least 8 types of southern herbal medicines for patenting overseas. In this way, Guangxi's Chinese herbal medicines would be able to tap the international medicine market.

Gradually gaining the acceptance of the international market

Because they are naturally grown, traditional Chinese medicines have gained increasing attention from European and American markets and even the larger international market. Moreover, traditional Chinese medicines have proven to be effective in the battle against the SARS in 2003, helping them to gain a better status in the international market. Currently traditional Chinese medicinal materials are not only exported to the conventional markets of Southeast Asia, Japan, and Korea, but have also entered the developed European and American markets. The demand for traditional Chinese medicines and preparations is increasing rapidly.

Guangxi's medical industry is most competitive in its traditional Chinese medicines, the value-added output of which rose to Rmb3.5 billion in 2003, ranking the eighth highest among the 30 provinces/municipalities/autonomous regions. The bio-medicines industry is regarded as one of the pillar industries of Guangxi and special funds were appropriated in 2004 to spur a new round of development in the industry, particularly the southern herbal medicines that bear the characteristics of Guangxi. Each year, departments in science and technology, agriculture, hygiene, trade and economy, etc. arrange funds to support R&D projects of southern herbal medicines and these projects lay a good foundation for the development of southern herbal medicines industry in Guangxi. So far, the development has progressed well, with over 10 large- and medium-sized industrial enterprises of prepared Chinese medicines leading a group of small and medium-sized newly established enterprises. The better known brands of traditional Chinese medicines include Sanjin (三金), Yulin (玉林), Tianhe (天和), Golden Throat (金嗓子), Huahong (花紅), Banzhou (半宙), etc. As traditional Chinese medicines are relatively new to the developed markets, products need to be promoted through various means to successfully enter the international market. For example, it needs to meet world-acknowledged quality standards, embark on campaigns to further educate the customers and promote the use of traditional Chinese medicines, provide convenient and attractive packaging, etc. In this respect, Hong Kong, which has gained excessive competence and experience in related work, can aggressively cooperate with the Guangxi enterprises to speed up the development of the region's Chinese traditional medicines industry.

Yunnan Enhances Technological Innovativeness

At the end of August 2005, Yunnan hosted the provincial Science and Technology Conference. The theme of this year's conference was to enhance the technological innovativeness of the entire province, making technological innovation a primary objective of the scientific, economic and social development of Yunnan.

Resolve bottlenecks by enhancing innovativeness

According to the national statistics on scientific and technological advancement published in 2004, the level of Yunan's overall advancement of science and technology in 2003 ranked only the 29th position among all provinces/municipalities/autonomous regions, lagging substantially behind the national average. In 2003, the average number of years of schooling for Yunnan people aged six and above was only 4.85, the lowest in China and equivalent only to the national average back in 1993. There is thus still a long way to go for Yunnan to develop its science and technology.

Although Yunnan is enjoying positive growth momentum in its economic and social development, its economic structure is still sub-optimal. The level of industrialisation remains low and it still largely runs an extensive economic mode, which consumes resources heavily. The Provincial Party Committee and the Provincial Government have thus identified the development of science and technology as Yunnan's top priority in its economic and social development. Scientific and technological development, together with enhanced technological innovativeness, would play a key role in supporting the rise of Yunnan.

Five measures to enhance innovativeness

Yunnan will adopt five measures to enhance its innovativeness: increase the competitiveness of key industries; speed up the development of high and new technology industries; increase the production capacity of its agricultural sector; carry out sustainable development of resources and environment; carry out innovation in the field of social development. The following are specific goals set out by Yunnan Province:

1. By 2010, Yunnan should have in place a hundred famous enterprises and a hundred famous brands capable of exerting strong influence within the province as well as elsewhere in China. Its agricultural technology should reach an advanced stage relative to the rest of the country and its agricultural products should substantially enhance their competitiveness.

2. The value-added of high and new technology industries must exceed 20% and by 2010 grow to account for more than 18% of the entire province's industrial value added output.

Exports of high and new technology industries should also grow to account for about 30% of the province's total exports.

3. Science and technology should play a significantly more important role in the province's social and economic development. Yunnan residents' standard of living, health, and level of education should achieve substantial improvement.

4. Yunnan's technological innovativeness should show substantial improvement. Efforts must be made to improve the basic conditions of science and technology, form a group of research and development (R&D) bases and industrial bases with enhanced innovative potentials. In cultivating talents, Yunnan shall train up 500 young and middle-aged provincial-level technicians and talents for spurring technological innovation. The province will have in place a batch of significant scientific and technological achievements with intellectual property rights; patent applications and approvals shall grow at a rate exceeding 10%.

5. Finally, the province shall see substantially higher investment in science and technology. By 2010, the proportion of investment in science and technology to GDP would reach 2% while the proportion of investment in R&D to GDP would reach 1.5%. The Provincial Government will draft policies to encourage industrial investments in scientific and technical innovation, and form a stronger impetus for growth. Enterprises' investment into R&D shall account for 50% of the provincial total.

Enhancing the protection of intellectual property and promoting innovativeness

By continuously perfecting the administration and protection of intellectual property, as well as establishing appropriate service systems, the strategy of strengthening competitiveness by enhancing intellectual properties would be promoted. This would, in turn, provide the much-needed foundation and guarantee to Yunnan's efforts in enhancing the sustainable development of its scientific and technological innovativeness. Hong Kong has always excelled in the high and new technology industry, and is more knowledgeable of the development trends in the international market. Its cooperation with Yunnan enterprises would thus be conducive in enhancing the province's technological innovativeness.

New Kunming Is Making Smooth Progress in Attracting Investment

As the traditional Kunming City is no longer able to meet the requirements of new economic development, the Municipal Government of Kunming has realigned its planning of the suburb areas. In the districts of Kunyang (昆陽), Jincheng (晉城), Chenggong (呈貢) around Dianchi Lake (滇池), a New Kunming City -- the size of which matches that of Hong Kong -- is under construction. The purpose of constructing a New Kunming is to speed up urban construction around the core of Kunming and form a new core business district (CBD), educational district and cultural tourism district in the city, turning Kunming into a modern city of Southeast Asia and South Asia.

New Kunming's industrial plan

After a year of construction, the New Kunming project has turned its attention to introducing and developing industrial projects, adjusting and optimising its industrial layout, and planning and constructing the following six industrial sections: (1) the new city of Chenggong focusing on newly-developed industries, modern logistics, zones of scientific research, culture and education; (2) a High and New Technology Development Zone focusing on high and new technology industries, especially bio-pharmaceuticals, new materials, etc; (3) an Economic and Technical Development Zone focusing on information technology industry and other modern industries; (4) the traditional industrial zone of Anning (安寧) focusing on steel and phosphorous chemicals industries; (5) the five northern counties and districts focusing on heavy and chemicals industries, energy industry, and as processing bases of agricultural and sideline products; (6) an Airport Economic Zone focusing on aviation facilities. Currently, over 300 industrial projects are being established in these six districts, with a total contract investment of over Rmb30 billion of which about Rmb3 billion have already been utilised.

Projects that have already been completed in the New Kunming City include those related to the relocation of the municipal-level administrative centres; tendered projects related to construction of CBD; projects related to the development of Kunming's logistics centre such as the Kunming railway container centre station; projects that would enjoy improved efficiency when relocated; the primary and high schools affiliated to the Normal University; the Number Three High School of Kunming; the second phase construction of the First Affiliated Hospital of Kunming Medical University (昆明醫學院第一附屬醫院); the Yunnan Medicine Port and the Kunming Information Industry Base. Of these projects, the expansion of the factory of Yunnan Baiyao Group Co., Ltd. (雲南白藥集團公司) was the first to start operations.

Industries that have settled in

Among the many projects involved in the development of New Kunming, the

Information Industry Base is one of the most conspicuous. So far, nine projects have been finalised. They include the second phase construction of the Kunming chapter of the "863 Software" (863 軟件) program, which is a national-level project for incubating the software industry, the Kunming Sunlight Digital Technology Co., Ltd. (昆明陽光數字技術股份公司) which would move in its head office and expand production, etc. Main roads and related facilities for the optoelectronics industry base have been completed. Major projects in the first phase of the base include the Kunming Northern Infrared Optoelectronics Co., Ltd. (昆明北方紅外光電子有限公司), and the project of Yunnan Tianda Guangfu Technology Co., Ltd. (雲南天達光伏科技股份有限公司). They are now under construction. As for its second phase ofthe base, the Yundian Technology Park (雲電科技園) has completed its planning and tendering exercises; and construction is about to begin. The two production lines of Xuelan Dairy (雪蘭牛奶) are expected to become operational at the end of this year. The above three projects involve a total investment of Rmb2.5 billion, with over Rmb600 million already utilised. In addition, the Kunming Export Processing Zone (KEPZ) was approved by the State Council in September 2005. It can start construction as soon as possible, the KEPZ is simultaneously acquiring land, constructing and inviting investors, while ensuring that the project's construction is strictly up to standard. The KEPZ has entered a stage of concrete implementation.

Traditional industries have begun settling in Anning. Over 20 projects were implemented in one year, with a total investment of more than Rmb2 billion, and Rmb150 million already utilised. The five technological reform projects of Kunming Steel (昆鋼), the phosphoric acid plant of Yunnan Xiangfeng Chemical Fertilizer Co. Ltd. (雲南祥豐化肥股份有限公司), and the Anning Yongchang Steel Factory (安寧永昌鋼鐵廠) have already been completed and commenced operations. The following projects are also about to start operations: China Huadian Group (中國華電集團), the Second Power Plant of Kunming (昆明二電廠), three salt phosphorus chemical integration plants of Yuntianhua Group (雲天化集團), Taiping New Town (太平新型造鎮), etc.

Over 200 projects have already been carried out in the five northern counties and districts since the latter half of 2004, with a total investment of Rmb10 billion, and Rmb1.7 billion already utilised. Because the northern counties and districts are relatively backward in development, under the layout of the New Kunming, they are designated as the new battlefields of industrial development. There are a series of policies and measures to support their development, and the layout of industrial development for each county and district has also been made clear. Currently the second phase of Xundian Phosphorus Group (尋甸南磷集團) is ongoing as scheduled; the projects of Sichuan Longmang Phosphorous Chemicals Industrial Group ((四川龍蟒集團磷化工), Dantong Group (丹彤集團), etc. have all been completed.

New Kunming is making smooth progress in terms of construction and attracting investments. Under the strategy of developing China's western region, New Kunming is

expected to continue to gain the investment interest of foreign investors. As of this June, the proportion of large-scale projects undertaken by both local and foreign investors has increased significantly. There were 4 large-scale projects of more than US$100 million in investment size. More than half of the investment belongs to Hong Kong interests, with Wanda Commercial Development (Hong Kong) Co., Ltd. (萬達商業發展（香港）有限公司) investing US$120 million in the construction of the Dianyue Railway Topic Park (滇越鐵路主題公園), and Huameida Investment Co. Ltd. (華美達投資有限公司) investing US$100 million in the construction of a leisure, entertainment and shopping park, etc.

Companies in Guizhou Develop Enterprise Tourism

As the domestic market's demand for business-related tours is rising, the industry finds that its product range is neither wide nor diversified enough; products offered to inbound tourists lack comprehensiveness and field study trips arranged for businesses are insufficient. In China, the enterprise tourism products in demand consist mainly of three types: enterprise sightseeing tours, enterprise business tours and enterprise investment tours. An increase in visitors seeking enterprise tourism products is expected to become a new trend. Companies in Guizhou see good potential in this line of business and a number of them intend to take part in developing this market.

Enterprise tourism

Enterprise tourism is a new kind of tourism product. It integrates industrial enterprise content and tourism, leveraging on industrial enterprises and their activities as resources in attracting tourists and producing economic and social benefits. In the overseas market, this type of tourism product has been developed for years. In the US, for example, tourists visiting the automobile city of Detroit will certainly be advised to tour the production line of Ford Motor Corporation. In France, about 15% of the industrial enterprises are open to tourists, receiving a total of over 200,000 visitors per year.

Currently there are four types of enterprise tourism. The first type is related to science and technology, focusing on modern techniques and advanced production processes (e.g. US Silicon Valley). The second type is the traditional industries, which showcase old-fashioned modes of production (e.g. mines and old trains) and introduce to tourists the historical background of those industries. The third type is the specialised industries which use unique modes of production (e.g. United States Mint). The fourth type is the comprehensive type such as combining natural and cultural landscapes with enterprise tourism (e.g. US Hoover Dam).

Taking on an enterprise tour allows visitors to see closely the manufacturing process of products that are part of their daily lives. By integrating enterprises and tourism, and designing tour routes around the factory area that are safe and convenient, this kind of tours is not only educational but also helps the participating enterprises enhance their reputation. Enterprise tourism is thus consistent with Guizhou's long-term strategy of "going global".

Economic benefits of enterprise tourism

Generally speaking, the benefits of enterprise tourism are three-fold. First is the economic benefits generated by tourists' shopping. A successful example in China is Wenzhou Dahu Lighter Factory (溫州大虎打火機公司), which produces special types of lighters

as souvenirs for its visitors. According to the company, it receives 100,000 tourists each year and these tourists contribute to Rmb4.5 million of sales to the company – about the production value generated by a medium-sized enterprise. Secondly, enterprise tourism is considered as a marketing means. Explaining a company's business principles, details of production and demonstrating its product quality to tourists and visitors will yield intangible benefits such as stronger goodwill and public accreditation, which certainly strengthens a company's corporate image. Thirdly, during the course of visit, tourists usually raise questions and voice out suggestions on the design and quality of products; thus, enterprises are able to solicit the opinions of consumers through tourists. Enterprise tourism thus becomes an important channel for companies to obtain more first hand information about the trends of market demand.

Companies in Guizhou show strong interest in enterprise tourism

This September, Maotai Group (茅台集團) became the first company in Guizhou to have obtained formal approval to develop enterprise tourism. Having passed the inspection of the Industrial and Agricultural Tourism Demonstration Point of China, Maotai Group becomes the first Enterprise Tourism Demonstration Point of Zunyi City. The company would attract tourists by integrating its special enterprise culture, traditional techniques of wine production, modern management and production process, etc. In recent years, Maotai Group, which leveraged on its brand name and unique resources for developing enterprise tourism, has invested Rmb100 million in the construction of a 3,000-square-metre Cultural City of Domestic Wine. With a floor area exceeding 8,000 square metres, this is the biggest wine museum in the Mainland. Since January of 2005, it has received nearly 10,000 tourists from home and abroad. The local media have reported that an increasing number of Guizhou companies such as Hai'er (海爾) are applying for official approval to tap the enterprise tourism market. The development of enterprise tourism in Guizhou deserves further exploration under the Pan-PRD regional cooperative framework and is also worth the attention of Hong Kong's tourism sector.

Guiyang Promotes the New Materials Industry

The materials industry has always been a pillar of Guizhou's economy. Since the Guiyang (International) New Materials Industrial Zone (貴陽（國際）新材料産業園) obtained confirmation from the Department of Science and Technology as one of the state-level industrial bases of new materials, the city has made more vigorous efforts in spurring the development of the industry.

Guiyang (International) New Materials Industrial Zone, New Materials

The Guiyang (International) New Materials Industrial Zone, located in Maijia County, Baiyun District (白雲區麥架鎮), consists of six functional areas: industrial area, business supporting area, residential area, storage area, green land and landscape area. As one of the High-Tech Industrial Zones in the western region that was appointed by China's Department of Science and Technology, this Industrial Zone is oriented towards developing new technology materials. On the premise of protecting the ecological environment and maintaining market mechanism, priority is given to seven types of materials, namely, (1) new chemical materials; (2) electronic information materials; (3) high-performance metals; (4) new energy materials; (5) new materials of transportation and national defence; (6) new construction materials; (7) micro-powder and new nano materials. Inside the Baiyun Economic Development Zone, a large industrial zone will be constructed and developed for R&D and production of polymeric composite materials, ink jet materials for printer use, nano composite materials, nano powder materials, etc.

New materials refer to those that are newly developed or currently being developed; these materials possess exceptional properties and unique functions that are not found in traditional materials. At present, new materials are generally divided into the following fields according to their areas of application and research: electronic information materials, new energy materials, nano materials, advanced composite materials, advanced ceramic materials, ecologic environmental materials, new functional materials, biological materials for medicinal use, structural materials of high performance, intelligent materials, new building and chemical materials, etc.

Leveraging on abundant mineral resources

Guizhou is one of the provinces that boast of abundant mineral resources. Its mineral resources are widely distributed and it has become one of the top ten producers of non-ferrous metals in China. Among the discovered and confirmed mines of non-ferrous and precious metals in Guizhou are hydrargyrum, aluminium, antimony, lead, zinc, copper, tungsten, tungsten, molybdenum, vanadium, magnesium, gold, silver, etc. Of these, hydrargyrum, aluminium, phosphorus, coal and antimony, which are collectively known as the "Five Golden Flowers" in the industry, have conspicuous advantages in China.

In accordance with the strategy of Developing China's Western Region, fully utilising the abundant mineral resources in the region to develop new materials is a key task. Quality mineral resources such as aluminium, phosphorus, titanium, rare earth, etc. are important raw materials for new materials. Moreover, Guiyang has already set up a solid foundation in developing the new materials industry involving areas such as refined-processing and comprehensive utilisation of aluminium resources in the western region that is represented by the Guizhou Aluminium Factory (貴州鋁廠) in Baiyun, fine phosphorus chemicals industry represented by Guiyang Kaiyang Phosphorus Mine (開陽磷礦), titanium industry represented by Zunyi Titanium Factory (遵義鈦廠), and the abrasive industry represented by the Sixth Emery Wheel Factory of China (中國第六砂輪廠) and by the Seventh Emery Wheel Factory of China (中國第七砂輪廠), etc. Apart from these, promising prospects are also seen in a number of enterprises such as Guizhou Suncon Group Co. Ltd. (貴州三占釬具有限公司), Guihang Group (貴航集團), Guizhou Boss Chemical Co., Ltd. (貴州博士化工有限公司), etc., These enterprises have shown stronger technological innovativeness and enjoy greater R&D capacity in polymeric composite materials, nano materials, nonferrous metal alloy materials, etc. They are continuously developing new products and expanding their market shares, making them the major driver for increasing Guiyang's industrial competitiveness and optimising its economic structure.

The overall strategy of Guiyang's development of new materials and its industrial development is as follows: leveraging on the completed strategy of developing the New Materials Industrial Zone, Guiyang shall maximise its advantages in material resources and strive to turn the New Materials Industrial Zone into a part of the State's Torch Plan (火炬計劃) within two years. Currently, the production base for new materials has already taken initial shape, providing a good investment environment for the development of high- and new technologies, as well as new materials. Hong Kong and foreign investors engaged in the new materials industry may consider investing in the Guiyang (International) New Material Industrial Zone if they plan to expand their business by leveraging on Guizhou's abundant resources.

Sichuan Formulating Guidelines of Informatisation

Sichuan is a province which formulated guidelines of informatisation relatively earlier than others. The measures it adopted include: making clear the methods and steps of promoting informatisation among enterprises so that all departments and government units are guided by a clear set of measures; requiring the 80 key competitive enterprises endorsed by the provincial government to incorporate informatisation into its internal reform efforts, so as to promote the innovativeness of the management and strengthen the enterprise's core competitiveness; exerting earnest efforts in perfecting the basic management of enterprise informatisation; establishing a comprehensive and thorough system of management and perfecting the standards of appraisal and evaluation of enterprise as soon as possible; as well as strengthening the quantitative and standardised systems of management so as to better prepare the enterprises for a thorough implementation of informatisation and to avoid isolated and repetitive investments in informatisation.

Achievements of informatisation projects

After two years of hard work, at the beginning of 2005, Sichuan's provincial capital of Chengdu declared that its 13 key projects of informatisation were fully completed and had commenced operations. These projects include informatisation of the Government's administrative services, information centre of enterprise credit, sharing and application of basic information between enterprises, information sharing between bank and tax bureau, the urban emergency response system, a pilot project to help villages overcome poverty via application of information technology, information systems for epidemic and sanitation issues, the first phase of the Municipal Library information system, system for granting pre-registration approval and consent to enterprises, information system for social insurance applications, city card project, "Digital Chengdu" information system, and the pilot project of popularising broadband services in the residential areas. The wide array of information services brings more convenience to Chengdu people's daily lives, saving them a lot of time and trouble.

The achievements made in Chengdu will be introduced to Sichuan's villages to facilitate the informatisation of the entire province. Sichuan will continue to perfect and strengthen the construction of a backbone fibre-optic transmission network that would serve the entire province and pursue the completion of the digital network construction. The rural communication network project and general telecommunications services will be perfected, as it strives to achieve a telecommunications coverage of over 90% of the province's administrative villages. With the help of information technology applications, Sichuan will reconstruct traditional industries, promote the upgrading of its industrial structure, and enhance the economic competitiveness of its industries. Informatisation of the agricultural sector will also be sped up by providing peasants with more information services particularly those related to policies and regulations, reports on market demand and supply, cases of

calamities and weather disturbances, prevention and cure of epidemic diseases. In tourism, informatisation will be sped up with the construction of a service platform that would host comprehensive tourism information, details on the general management of the tourism sector, general public information, tourism promotion activities, as well as facilitate e-commerce. Sichuan aims to achieve full internet linkage for the province's entire tourism sector. Finally, it will also speed up the construction of Electronic Government Affairs and establish a universal platform for the e-government network. As to popularising the use of these networks, Sichuan will encourage the development of e-commerce and promote its use throughout the province.

City Card, Digital Chengdu

City card is a smart card. This IC (integrated circuit) Card can be used for deducting charges in the following: buses, gas, park entrance tickets, water bills, taxis, residential property management, parking lots, parking spaces, toll roads and bridges, and light rail system, bringing great convenience to people's daily lives. The City Card system of Chengdu is an important part of constructing Digital Chengdu. It is a project convenient for the people and reflects the actual efforts undertaken by the government to improve the livings of its residents.

Since Chengdu was designated a pilot test ground of China's digital mode of urban management, the construction of Digital Chengdu has ensured the city's leading role in this endeavour. Projects constructed in line with the development of Digital Chengdu include the Virtual City System, City Management and Planning System, City Emergency Response System, City Intelligent Transportation System, etc.

Informatisation promotes the development of software industry

As the main engine of informatisation, the software industry is at the core and soul of the information industry and is gaining an increasingly important status in the national economy. Since the designation of Chengdu as the pilot test ground of China's digital mode of urban management, the software industry of Sichuan has entered a stage of high-speed growth. In 2004, Sichuan's software industry recorded sales of over Rmb10 billion and the annual revenue of the entire information technology industry reached nearly Rmb600 billion. Sichuan's information technology industry topped the other central and western Mainland regions in terms of scale, making it the centre of information technology industry in the western Mainland region and a most attractive venue for local and overseas businesses to invest. In 2004, Sichuan received more than US$80 million in investments into the information technology sector from both local and foreign investors. One after another, enterprises such as Intel, Motorola, Microsoft, Cisco, Alcatel, Nokia, Ericsson, Lenovo (聯想), SMIC (中芯國際), IBM, Sony, Huawei (華爲), TCL, and Kingsoft (金山) have set up their offices, R&D centres or manufacturing factories in Sichuan. The software enterprises of Hong Kong can cooperate with these international enterprises in developing the Sichuan market.

Chengdu Creating Modern Logistics Centre of the West

Following the issuance of the Opinions on Speeding up Development of Modern Logistics in July, Chengdu's Modern Logistics Development Plan was formally launched in October to concretise the development goals of Chengdu's modern logistics industry in the coming fifteen years. In accordance with the blueprint of development, Chengdu will construct an important modern logistics centre of the Western Mainland region, focusing on the development of three logistic zones and four logistics centres, plus a number of logistics service stations over the next 3-5 years. Currently, Chengdu's logistics industry already generates an annual Rmb17.2 billion in value-added, accounting for 17.3% of the total value added of its tertiary industries.

Three logistics hubs

Chengdu will create the following three international logistics hubs during the 11th Five-Year Plan period:

1. Chengdu Aviation Logistics Zone (成都航空物流園區)

The Chengdu Aviation Logistics Zone leverages on the Chengdu Shuangliu International Airport (成都雙流國際機場), which spans an area of 3,500 mu (Chinese unit of area equivalent to 1/15 of a hectare). It will be equipped with an annual handling capacity of 2.5 million tons. The aviation logistics zone will focus on air transport, aviation logistics, storage and delivery, etc. Hence, Chengdu will strive to achieve open-sky, launch more international air routes and commence cargo flights between Chengdu and European and American countries, as well as establish connections between international, domestic flights and provincial branch line flights. Chengdu will also operate "five-fixed"[1] trains between Chengdu and the major coastal harbours of China and economically advanced cities, as well as circular freight trains between Chengdu and the major domestic cities. It will also open up the waterways between Chengdu and Chongqing Port and Luzhou Port in order to establish connection with the Yangtse River.

2. Chengdu International Container Logistics Zone (成都國際集裝箱物流園區)

The Chengdu International Container Logistics Zone leverages on the Chengdu Railway Container Terminal, with the ability to exert its influence westwards, connecting various ports and the major domestic cities. This zone spans an area of 3,700 mu and will be equipped with a handling capacity of one million TEUs (twenty feet equivalent units). The zone will focus on containerised transportation, catering to agency services of transport alliances, logistics services of containerised cargo, storage and delivery, and attracting large vessels and logistics enterprises with good network. Logistics property developers will be attracted to develop distribution centres and storage and distribution centres herewith.

[1] Refers to fixed destination, fixed route, fixed frequency, fixed schedule and fixed transport price.

3. Chengdu Qingbaijiang Logistics Zone (成都青白江物流園區)

The Chengdu Qingbaijiang Logistics Zone leverages on Chengdu's railroad junction freight depot (Qingbaijiang Dawan Train Station 青白江大彎火車站). It will be capable of exerting influence westward and southward, connecting all major Mainland cities. The zone spans an area of 2,500 mu under the Scheme and will have an annual handling capacity of 10 million tons of freight cargo. The zone's development focuses on combined transportation of road and railway, logistics of bulk goods, storage and delivery, etc.

Four Logistics Centres

Chengdu has been the most important commercial port of the Southwest for a long time. At this point, it has laid down the new goal of raising the value-added of its logistics industry to Rmb50 billion by 2010, reducing the proportion of logistics cost to GDP to less than 15%, and raising the contribution of modern logistics industry to the economy of Chengdu to over 15%. In order to achieve these goals, it is set out in the Development Plan that Chengdu will build a freight collection and distribution centre, as well as a regional distribution centre. Four regional and comprehensive logistics centres are being developed in all four directions from the junction of the main freight road and the city's circular expressway. Three will be developed surrounding Xindu (新都), Longquanyi (龍泉驛) and Shuangliu (雙流), while a fourth, which would be a regional and professional bonded logistics centre, will be developed near Chengguan Road outside the around-city expressway. This logistics centre will particularly leverage on the Chengdu Export Processing Zone and will extend its influence towards the processing and trade enterprises in the western region. Meanwhile, a logistics service station has been approved for construction in the periphery of the Second Ring Road. This service station spans an area of 9,050 mu, with the total area and scale of construction strictly controlled. By 2020, there will be about 50 or so service stations, each spanning a size of 100-300 mu, and involving investments of no less than Rmb100 million.

According to the estimates of the Chengdu Logistics Office, developing the city into the Logistics Centre of Western China in the next 15 years will involve a total investment of more than Rmb30 billion. The city is thus in dire need for investment and foreign participation. In recent years, leading shipping companies in the world such as the United Parcel Services (UPS) of USA and Nippon Yusen Kaisha (NYK Line) of Japan have entered Chengdu's logistics market. Fedex and Cargolux are also known to be seriously considering starting their Chengdu operations. As for domestic enterprises, Chengdu has succeeded in attracting Zhejiang Delixi Group (浙江德力西集團) into Shuangliu Aviation Logistics Port, which would invest Rmb3 billion. This July, Zhongliang Group (中糧集團) was also invited to invest Rmb1.9 billion and participate in the construction of a logistics centre in southwest Chengdu. The city will continue to actively attract businesses and investment into the city; the logistics companies of Hong Kong may well take the opportunity to enter the logistics market of western Mainland.

Memorabilia of Pan-PRD Regional Cooperation

Guangxi

Baise sought investment from Dongguan

(Mid-August 2005) The Municipal Government of Youjiang, Baise held a Promotion Conference for Inviting Business in Dongguan. An aluminium processing and manufacturing project involving three enterprises including Zhongyao Aluminium Products Co. Ltd. was confirmed and signed. The project involves an investment of Rmb281 million. The Youjiang Municipal Government hopes that though these investment promotion activities, it would be able to further boost the opportunity for Red Business in Baise.

Guangxi hosted Hong Kong, Macao and Guangxi Week

(August 24–31, 2005) Recently, the largest investment promotion activity of Guangxi in Hong Kong and Macao was the Hong Kong, Macao and Guangxi Week. This time, Guangxi submitted the projects promoted to the Environmental Protection Bureau of the autonomous region, to seek their opinions on the environmental impact of these projects ahead of time. This was a pioneer investment promotion effort of Guangxi.

Display of Guangxi's socio-economic achievements and investment promotion conference

(August 26, 2005) The conference introduced the main achievements made by Guangxi in reform and opening up, and results of its modernisation in recent years. It also introduced the Second China-ASEAN Expo and the general investment environment of Guangxi. Representatives from Hong Kong's industrial and commercial sectors, trade and finance participated in the event.

Yunnan

Kunming Agriculture Expo

(September 9-13 of 2005) The Expo attracted the participation of enterprises from cities outside Yunnan such as Changsha, Hefei, and those from Hong Kong, Taiwan as well as ASEAN countries.

The first Forum on West-China Culture Industry

(October 21-31, 2005) To be jointly held by the Department of Culture and Federation of Literary and Arts of Yunnan and Sichuan, the forum aims to present the society with creative ideas and richer culture content, as well as to create a new mode academic forum that involves cross-regional, cross-industries, and cross-subjects of discussion.

Guizhou

2005 China-Guizhou Huangguoshu Waterfall Festival

(August 16-September 22, 2005) The festival was hosted by the Provincial Government and State Tourism Bureau. A series of other activities were held during the festival period. They include Trade and Economic Conference, Sichuan and Taiwan Tourism Seminar, Tunbao Culture Week, etc. It was estimated that Guizhou would receive 120,000 guests during the event.

Exchange and cooperation conference of small- and medium-sized enterprises of Sichuan and Guangdong

(September 12, 2005) The conference was held during the Second China Small and Medium-sized Enterprise Expo. 51 enterprises comprised the Guizhou delegation and participated in the conference. Some of these were able to conclude deals during the conference and memoranda of understanding were signed in the pharmaceutical and food industries.

Sichuan

Sichuan and Shandong signing Cooperation Agreement

(August 23, 2005) Representatives from Sichuan and Shandong Provincial Governments jointly signed the Agreement on Strengthening Socio-Economic Cooperation in order to foster closer cooperation between the enterprises of the two provinces. The two Parties agreed to strengthen cooperation in agricultural production, processing, export trade, talent training, etc.

Sichuan International Tourism Festival

(August 28, 2005) The theme of the festival was "Heaven's Sichuan, Ecological Ya'an". By hosting the tourism festival, Sichuan hopes to further strengthen cooperation with the Pan-PRD constituents and strengthen promotion of its tourism products in Hong Kong, Macao and Taiwan.

Sichuan enterprises conducts field study and business negotiations in Taiwan

(September 9, 2005) Sichuan's Department of Commerce indicated that it would organise a delegation of the province's enterprises this November to conduct field study and negotiate business in Taiwan. Through the activity, Sichuan hopes to increase the channels for obtaining business information about Taiwan's trading enterprises, as well as expand the economic and trade cooperation between the two sides.

IV. DATA AND TRENDS

Guangxi

	2003	2004	2005 Jan – Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn)[4,8]	2,733	3,320	1,612	-	-	-
Real Gross Domestic Product Growth (%)[4,8]	10.2	11.8	12.3	-	-	-
Urban Per Capita Disposable Income [4,8,9]	7,785	8,690	4,877	747	723	720
Rural Per Capita Net Income (Rmb)[5,7,10]	2,095	2,305	1,319	-	-	-
Consumer Price Index (%)[4,8,9]	1.1	4.4	2.7	2.5	1.8	1.0
Retail Sales of Consumer Goods (Rmb100 mn)[6,8,9]	858	973	585	102	98.1	103
Year-on-year growth(%)[3,8,9]	12.1	13.5	13.4	15.9	13.6	13.6
Value-added of Industry (Rmb100 mn)[4,8,9,11]	437	596	349	61.7	53.0	56.8
Year-on-year growth(%)[2,4,8,9,11]	17.6	22.8	23.3	29.2	17.1	19.3
City, County & Above Investment in Fixed Assets (Rmb100 mn)[4,8,9,12]	718	1,113	564	564	670	797
Year-on-year growth(%)[2,4,8,9,12]	22.8	31.3	30.4	30.4	28.7	28.9
Value of Exports (US$100 mn)[13]	17.8	23.1	13.4	2.4	2.4	2.6
Value of Imports (US$100 mn)[13]	14.5	25.2	14.0	3.1	2.6	2.1
Foreign Direct Investment (US$100 mn) [4,8,9]	4.6	3.0	1.8	-	-	-

Note: 1 – All values are nominal values.
2 – Real growth rate.
3 – Nominal growth rate.
4 – Annual data source: Guangxi Statistical Network.
5 – Annual data source: Annual Report on the Economic and Social Development Conditions of Guangxi Autonomous Region.
6 – Annual data source: China Statistical Yearbook 2004.
7 – Jan - Jun data source: National Bureau of Statistics Website.
8 – Jan - Jun data source: Guangxi Statistical Network.
9 – Monthly data source: Guangxi Statistical Network. Jun data for Value-added of Industry taken from the National Bureau of Statistics Website.
10 – Jan - Jun data refer to cash income, normally announced only in March, June, September and December.
11 – Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.
12 – Monthly data are year-to-date data.
13 – Classification according to source and destination of product.

Yunnan

	2003	2004	2005 Jan – Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn)[3,5]	2,459	2,959	1,298	-	-	-
Real Gross Domestic Product Growth (%)[3,5]	8.6	11.5	8.6	-	-	-
Urban Per Capita Disposable Income (Rmb)[3,5,6]	7,644	8,871	4,620	743	774	758
Rural Per Capita Net Income (Rmb)[4,5,7]	1,697	1,870	1,009	-	-	-
Consumer Price Index (%)[3,5,6]	1.2	6.0	0.5	0.5	1.2	1.4
Retail Sales of Consumer Goods (Rmb100 mn)[3,5,6]	782	884	445	-	46.0	-
Year-on-year growth(%)[2,3,5,6]	11.0	13.0	-	-	-	-
Value-added of Industry (Rmb100 mn)[3,5,6,8]	720	881	486	72.5	77.7	-
Year-on-year growth(%)[2,3,5,6,8]	9.1	16.6	8.5	0.6	-2.7	-
City, County & Above Investment in Fixed Assets (Rmb100 mn)[3,5,6,9]	776	1,066	594	594	713	829
Year-on-year growth(%)[2,3,5,6,9]	22.8	27.0	43.6	43.6	44.5	40.1
Value of Exports (US$100 mn)[10]	14.7	20.2	11.4	2.0	2.2	2.0
Value of Imports (US$100 mn)[10]	12.5	17.2	14.9	2.7	1.8	1.4
Foreign Direct Investment (US$100 mn)[3]	1.7	2.2	-	-	-	-

Note: 1 – All values are nominal values.
2 – Real growth rate.
3 – Annual data source: National Bureau of Statistics Website.
4 – Annual data source: Annual Report on the Economic and Social Development Conditions of Yunnan Province.
5 – Jan - Jun data source: Yunnan e-Government Website; Data for Value-added of Industry taken from the National Bureau of Statistics Website.
6 – Monthly data source: National Bureau of Statistics Website.
7 – Jan - Jun data refer to cash income, normally announced only in March, June, September and December.
8 – Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.
9 – Monthly data are year-to-date data.
10 – Classification according to source and destination of product. Data source: China Custom Statistics.

Guizhou

	2003	2004	2005 Jan – Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn)[3,6]	1,344	1,592	795	-	-	-
Real Gross Domestic Product Growth (%)[3,6]	10.1	11.4	11.4	-	-	-
Urban Per Capita Disposable Income (Rmb)[3,6]	6,569	7,332	4,177	641	656	650
Rural Per Capita Net Income (Rmb)[4,5,8]	1,565	1,722	809	-	-	-
Consumer Price Index (%)[3,6]	1.2	4.0	1.9	1.7	1.3	0.6
Retail Sales of Consumer Goods (Rmb100 mn)[4,7]	459	518	289	46.7	46.0	46.8
Year-on-year growth(%)[2,4,7]	10.2	12.8	-	-	-	-
Value-added of Industry (Rmb100 mn)[3,6,7,9]	332	438	249	46.7	45.0	47.0
Year-on-year growth(%)[2,3,6,7,9]	13.5	20.1	16.6	13.6	17.3	13.1
City, County & Above Investment in Fixed Assets (Rmb100 mn)[2,3,6,7,10]	654	776	352	352	418	491
Year-on-year growth(%)[2,3,6,7,10]	18.2	15.9	23.6	23.6	24.6	24.7
Value of Exports (US$100 mn)[11]	8.1	12.8	5.8	1.2	0.8	0.8
Value of Imports (US$100 mn)[11]	7.4	11.0	4.8	0.8	0.7	0.5
Foreign Direct Investment (US$100 mn)[3,7]	0.6	0.6	0.6	-	-	-

Note: 1 – All values are nominal values.
2 – Real growth rate.
3 – Annual data source: Guizhou Statistical Information Website.
4 – Annual data source: Annual Report on the Economic and Social Development Conditions of Guizhou Province.
5 – Jan - Jun data source: National Bureau of Statistics Website.
6 – Jan - Jun data source: Guizhou Statistical Information Website. Jan – Jun data for Value-added of Industry taken from the National Bureau of Statistics Website.
7 – Monthly data source: Guizhou Statistical Information Website. Jun and Jul data for Value Added of Industry, Jun and Jul data for Urban Per Capita Disposable Income taken from the National Bureau of Statistics Website.
8 – Jan - Jun data refer to cash income, normally announced only in March, June, September and December.
9 – Include all State-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.
10 – Monthly data are year-to-date data.
11 – Classification according to source and destination of product. Data source: China Custom Statistics.

Sichuan

	2003	2004	2005 Jan – Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn)[3,6]	5,456	6,556	3,232	-	-	-
Real Gross Domestic Product Growth (%)[3,6]	11.8	12.7	11.6	-	-	-
Urban Per Capita Disposable Income (Rmb) [3,6,7]	7,042	7,710	4,333	659	654	642
Rural Per Capita Net Income (Rmb)[4,5,8]	2,230	2,580	1,451	-	-	-
Consumer Price Index (%)[3,6,7]	1.6	4.8	3.0	0.8	0.8	0.3
Retail Sales of Consumer Goods (Rmb100 mn)[4,6,7]	2,091	2,384	1,320	226	216	221
Year-on-year growth(%)[2,4,6,7]	10.8	-	14.1	14.3	12.4	-
Value-added of Industry (Rmb100 mn)[3,6,7,9]	1,156	1,546	958	194	167	168
Year-on-year growth(%)[2,3,6,7,9]	21.0	25.8	22.3	25.4	24.0	24.5
City, County & Above Investment in Fixed Assets (Rmb100 mn)[3,5,6,7,10]	1,789	2,378	1,292	1,292	1,539	1,780
Year-on-year growth(%)[2,3,5,6,7,10]	10.5	27.5	35.1	35.1	35.6	31.4
Value of Exports (US$100 mn)[11]	30.3	34.8	19.4	3.7	3.3	3.8
Value of Imports (US$100 mn)[11]	27.5	32.0	15.1	2.6	3.4	3.5
Foreign Direct Investment (US$100 mn)[3,6]	5.8	7.4	3.9	-	-	-

Note: 1 – All values are nominal values.
2 – Real growth rate.
3 – Annual data source: Sichuan Statistical Information Website.
4 – Annual data source: Annual Announcement on the Economic and Social Development Conditions of Sichuan Province.
5 – Jan - Jun data source: National Bureau of Statistics Website.
6 – Jan - Jun data source: Sichuan Statistical Information Website.
7 – Monthly data source: Sichuan Statistical Information Website.
8 – Jan - Jun data refer to cash income, normally announced only in March, June, September and December.
9 – Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.
10 – Monthly data are year-to-date data.
11 – Classification according to source and destination of product. Data source: China Custom Statistics.

Major Economic Indicators of Nine Pan-PRD Provinces (Region) (Jan – Jun 2005)

	Fujian	Jiangxi	Hunan	Hainan	Guangxi	Yunnan	Guizhou	Sichuan	Guangdong
Nominal Gross Domestic Product (Rmb100 mn)[3,5,8]	2,929	1,563	2,834	413	1,612	1,298	795	3,232	8,902
Real Gross Domestic Product Growth (%)[3,5]	11.2	12.5	11.6	9.5	12.3	8.6	11.4	11.6	12.6
Urban Per Capita Disposable Income (Rmb)[3,5]	6,472	4,370	5,011	4,323	4,877	4,620	4,177	4,333	7,829
Rural Per Capita Cash Income (Rmb)[4,5]	2,160	1,378	1,695	1,640	1,319	1,009	809	1,451	2,686
Consumer Price Index (%)[3,5]	3.0	2.3	3.5	1.8	2.7	0.5	1.9	3.0	2.8
Retail Sales of Consumer Goods (Rmb100 mn)[3,5]	1,142	564	1,113	118	585	445	289	1,320	3,526
Year-on-year growth (%)[2,3,5]	12.8	14.9	11.0	-	13.4	-	13.3	14.1	-
Value-added of Industry (Rmb100 mn)[3,6]	1,055	360	708	60.4	349	486	249	958	3,985
Year-on-year growth (%)[2,3,5]	18.8	23.6	21.0	19.1	23.3	8.5	16.6	22.3	17.1
Total Investment in Fixed Assets (Rmb100 mn)[3,5]	935	360	975	60.4	634	486	249	1,448	2,682
Year-on-year growth (%)[2,3,5]	17.0	23.6	30.5	19.1	28.4	8.5	16.6	29.8	12.2
City, County & Above Investment in Fixed Assets (Rmb100 mn)[3,5]	775	590	870	-	564	594	352	1,292	2,255
Year-on-year growth (%)[2,3,5]	17.9	27.0	33.8	-	30.4	43.6	23.6	35.1	16.6
Value of Exports(US$100 mn)[7]	166.5	11.9	18.4	4.1	13.4	11.4	5.8	19.4	1,0.2
Value of Imports (US$100 mn)[7]	100.5	11.5	15.3	4.9	14.0	14.9	4.8	15.1	885
Utilised Foreign Direct Investment (US$100 mn)[3,5]	15.8	11.6	8.5	3.0	1.8	-	0.6	3.9	56.0

Notes: 1 – Values are all in nominal terms.
2 – Real growth rate.
3 – Data source: Statistical Bureau Websites of respective provinces, Yunnan data source: National Bureau of Statistics Website.
4 – Data source: National Bureau of Statistics Website.
5 – Guangdong data source: Nanfang Daily News, July 21, 2005 report. Hainan data source: Hainan Daily News, July 23, 2005 report.
6 – Include all State-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above
7 – Classification according to source and destination of products. Data source: China Custom Statistics.
8 – Hainan data source: Hainan Daily, July 23, 2005.

Nine Pan-PRD Provinces (Region) 10-Year Economic Trend (1995-2004)

Nominal growth (%)	Fujian	Jiangxi	Hunan	Hainan	Guangxi	Yunnan	Guizhou	Sichuan	Guangdong	Total
Real Gross Domestic Product	11.9	10.9	10.0	8.1	9.3	8.8	9.0	9.8	11.6	9.9
Per Capita Nominal Gross Domestic Product[2]	15.9	14.2	13.5	8.7	11.2	11.1	11.2	14.0	13.6	12.3
Above Designated-sized Value-added of Industry[3]	17.8	10.5	13.5	14.7	8.3	9.2	12.7	9.2	18.7	14.4
City, County & Above Investment in Fixed Assests[4]	11.5	20.5	15.0	3.8	11.9	13.5	19.3	13.0	7.7	11.2
Retail Sales of Consumer Goods	13.0	11.2	10.6	8.2	7.2	10.2	7.5	11.3	12.0	9.3
Value of Exports[5]	18.3	18.0	10.4	10.3	7.6	9.8	18.8	11.3	14.3	14.4
Value of Imports[5]	13.1	17.6	19.6	8.2	7.7	11.9	22.0	6.4	14.1	13.3
Foreign Direct Investment (US$100 mn)[6]	297	61.5	67.7	38.3	36.0	9.9	2.3	36.1	839	1,388
Urban Per Capita Disposable Income[7]	148.9	123.9	83.4	62.2	81.4	115.4	86.5	92.6	83.2	95.3
Rural Per Capita Net Income[2, 7]	99.6	92.1	99.1	85.4	59.4	84.4	58.5	122.7	50.2	81.0

Note: 1 – 1995-2003 data taken from CEIC Data; 2004 data taken from the respective provincial statistical bureau websites.
2 – Average for 1994-2003.
3 – Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.
4 – Classified by region of investment; excludes non-classified items.
5 – Classification according to source and destination of products; data source: China Custom Statistics.
6 – Except for Guizhou FDI which is cumulative for 1998-2003, those of other provinces are cumulative 1998-2004 data.
7 – Growth between 1995 and 2004.

Nine Pan-PRD Provinces (Region) Statistics at a Glance (2004)

	Fujian	Jiangxi	Hunan	Hainan	Guangxi	Yunnan	Guizhou	Sichuan	Guangdong	Total
Land Area(10,000 sq km)[2,8]	12.1	16.7	21.2	3.5	23.7	39.4	17.6	48.5	17.9	200.6
Population (10,000 persons)[8]	3,511	4,284	6,698	818	4,889	4,415	3,904	8,724	8,304	45,547
Natural Growth Rate (per 100 persons)[2,8]	5.9	8.1	5.0	9.2	7.3	9.8	9.0	3.1	8.4	7.3
Non-agricultural (%)[2,5]	29.7	24.9	21.4	27.3	18.3	16.3	15.6	21.0	47.7	24.7
Tertiary-educated (%)[2,3,9]	5.6	7.6	5.5	7.1	5.4	2.2	6.5	4.4	6.4	5.4
Illiterate and Semi-illiterate (%)[2,3,9]	13.6	8.3	8.5	9.1	8.9	21.5	19.7	11.7	7.8	11.6
Life Expectancy (Number of years)[1,3]	72.6	69.0	70.7	72.9	71.3	65.5	66.0	71.2	73.3	70.3
Nominal Gross Domestic Product (Rmb100 mn)[6]	6,053	3,496	5,612	790	3,320	2,959	1,592	6,556	16,039	46,417
Per Capita Gross Domestic Product (Rmb)[6]	17,241	8,161	8,379	9,408	6,791	6,703	4,078	7,514	19,316	10,187
Real Gross Domestic Product Growth (%)[6]	12.1	13.2	12.0	10.4	11.8	11.5	11.4	11.5	14.2	12.0
Industrial Structure: Primary (%)[6]	12.9	20.4	20.6	36.4	24.4	20.4	21.0	21.3	7.8	15.8
Secondary (%)[6]	48.7	45.6	39.5	25.5	38.8	44.4	44.9	41.0	55.4	47.1
Tertiary (%)[6]	38.4	34.0	39.9	38.2	36.8	35.2	34.1	37.7	36.8	37.2
Urban Per Capita Annual Disposable Income(Rmb)[6]	11,175	7,560	8,617	7,736	8,690	8,871	7,332	7,710	13,628	9,035
Rural Per Capita Annual Net Income (Rmb)[6]	4,089	2,953	2,838	2,818	2,305	1,864	1,722	2,580	4,054	2,803
Average Wage (Rmb)[2,8]	14,310	10,521	12,221	10,397	11,953	12,870	11,037	12,441	19,986	12,860
Retail Sales of Consumer Goods (Rmb100 mn)[6]	1,996	1,060	2,070	219	973	884	518	2,384	6,371	16,475
Total Value-added of Industry (Rmb100 mn)[6]	2,533	1,111	1,781	140	1,045	1,053	575	2,165	8,011	18,414
Above Designated-sized Value-added of Industry (Rmb100 mn)[6,11]	1,846	618	1,198	123	596	881	438	1,546	7,086	14,332
Total Fixed Asset Investment (Rmb100 mn)[6]	1,899	1,820	1,981	322.5	1,255	1,331	867	2,649	5,983	18,108
City, County & Above Investment in Fixed Assets (Rmb100 mn)[6]	1,601	1,488	1,690	235	1,113	1,066	776	2,378	4,906	15,253
Real Estate Investment (Rmb100 mn)[8]	478	243	335	56	192	150	122	510	1,356	3,441
Total Sales of Commercial Housing (Rmb100 mn)[8]	354	135	180	30	171	106	77	330	1,165	2,549
Average price (Rmb / sqm)[8]	2,560	1,157	1,511	2,405	2,083	1,978	1,385	1,572	3,482	2,270

(continued)	Fujian	Jiangxi	Hunan	Hainan	Guangxi	Yunnan	Guizhou	Sichuan	Guangdong	Total
Total External Trade (US$ 100 mn)[12]	499.4	48.2	60.8	29.0	48.3	37.4	23.8	66.8	3,636	4,449
Value of Exports (US$ 100 mn)[12]	305.7	26.1	31.4	8.2	23.1	20.2	12.8	34.8	1,925	2,388
Value of Imports (US$ 100 mn)[12]	193.7	22.1	29.4	20.7	25.2	17.2	11.0	32.0	1,710	2,061
Trade Balance (US$ 100 mn)[12]	112.0	4.0	1.9	-12.5	-2.0	3.1	1.8	2.8	215.2	326.2
Tourism Foreign Exchange Receipts (US$ 100 mn)[8]	10.7	0.8	3.1	0.8	2.9	4.2	0.8	2.9	53.8	80.0
Foreign Visitors (visitor times)[8]	1,729	288	553	309	1,175	1,101	231	966	15,636	21,989
Utilised Foreign Direct Investment (Rmb100 mn)[6]	53.2	20.5	14.2	6.4	3.0	1.4	0.6	7.4	100.1	206.8
Number of Foreign Bank Branches[2,7]	11	0	0	1	0	1	0	1	41	55
Bank Loans (Rmb100 mn)[2,8]	3,838	2,550	3,900	870	2,320	2,956	1,710	5,910	20,126	44,180
Per Capita Savings Deposits (Rmb)[2,8]	8,385	4,738	4,557	6,743	4,059	4,037	2,359	4,981	17,679	7,020
Hong Kong-listed Companies[2,13]	2	1	1	1	0	2	0	5	30	42

Notes:
1 – 2000 data.
2 – 2002 data.
3 – Data source: China Population Statistical Yearbook 2004.
4 – Data source: China Statistical Yearbook 2004.
5 – Data source: Yearbook of China's Population by Regions & Cities 2003.
6 – Data source: Annual Provincial Statistical reports.
7 – Data source: China Almanac of Banking & Finance 2004
8 – Data source: CEIC Data.
9 – Refer to proportion of 15 years old and above population.
10 – Nominal wage
11 – Include all State-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above
12 – Classification according to source and destination of products; Data source: China Custom Statistics.
13 – Includes Hong Kong main board & GEM-listed H-share & red chip companies; Source: Hong Kong Exchanges & Clearing and related companies' websites

V. ENGLISH-CHINESE GLOSSARY OF TERMS

Acid rain	酸雨
Acidity (pH)	酸鹼值
Ammonia nitrogen	氨氮
Baidu River	百都河
Bird flu	禽流感
China-ASEAN Economic Zone	中國－東盟經濟園區
Compost	堆肥
Development of China's Western Region	西部大開發
Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)	限制在電器及電子設備上使用有害物質指令
Directive on Waste Electrical and Electronic Equipment (WEEE)	電器及電子設備廢料指令
Dissolved oxygen	溶解氧
Drought	旱災
Electricity generated from wind energy	風電
Enterprise tourism	工業旅遊
Environmental protection	環境保護
Faecal coliform	大腸桿菌
Flood and water-logging	洪澇災
Garbage treatment	垃圾處理
Green production	綠色生產
Honghe River	紅河
Hydrometeorology	水文氣象
Industrialisation	工業化
Informatisation	資訊化
Intellectual property rights	知識產權
Iron, manganese	鐵、錳
Kilowatt	千瓦
Kilowatt-hour	千瓦時

Landfill	堆填區
Landslip	滑坡
Logistics centre	物流中心
Megawatt	兆瓦
Mud-flows	泥石流
Nano materials	納米材料
Natural disasters	自然災害
New materials	新材料
Noise pollution	噪音
Northern herbal medicines	北藥
Pearl River	珠江
Permanganate index	高錳酸鹽指數
Phenol	酚
Pig-borne disease (streptococcus suis)	豬鏈球菌
Polymeric composite materials	聚合物基複合材料
Private bonded warehouse	自用型保稅倉庫
Public bonded warehouse	公用型保稅倉庫
Recycling economy	循環經濟
Reuse or recycling	循環再用或再造
Severe Acute Respiratory Syndrome (SARS)	沙士
Sewage treatment	污水處理
Smart card	智能卡
Soil erosion	水土流失
Solid waste	固體廢物
Southern herbal medicines	南藥
Sulphur dioxide, sulphur trioxide	二氧化硫、三氧化硫
Sulphuric acid	硫酸
Supply chain	供應鏈
Urban construction area	城市建成區
Urban planning area	城市規劃區

Urbanisation	城鎮化
Waste Reduction Framework Plan	減少廢物綱要計劃
West-to-east electricity transmission	西電東送
Wind hail	風雹災
Xijiang River	西江
Yangtse River	長江