

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

**TWELFTH MONTHLY REPORT  
PART I**

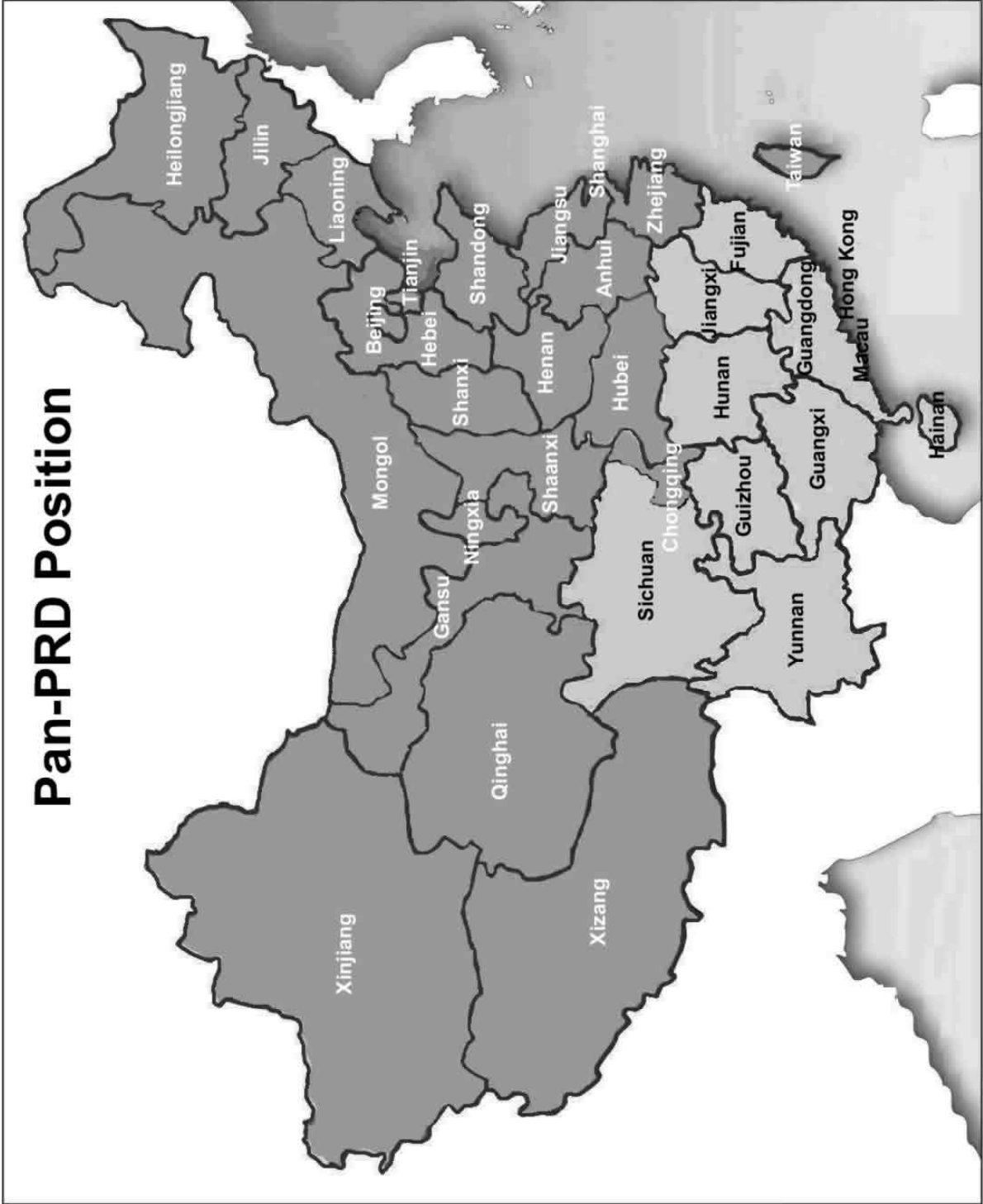
**COVERING FUJIAN, JIANGXI, HUNAN, AND HAINAN**



**OCTOBER 2005**

**CENTRAL POLICY UNIT  
HONG KONG SPECIAL ADMINISTRATIVE REGION**

# Pan-PRD Position



## Table of Contents

I.	Executive Summary -----	5
II.	Topical Analysis -----	9
	“Pan-PRD Cooperation in Environmental Protection: Opportunities and Challenges for Hong Kong” Part One: South-eastern Region	
	➤ Strengthening Pan-PRD Regional Cooperation in Environmental Protection -----	10
	➤ New EU Directives Prompt Fujian to Implement a Series of Environmental Protection Measures -----	16
	➤ Healthcare and Environmental Protection Promote Sustainable Development of Jiangxi’s Green Food Industry -----	21
	➤ Hunan Implements Three-Year Environmental Protection Plan -----	26
	➤ Hainan Constructs Itself into an Ecological Province -----	31
III.	Trends and Updates on the Four South-eastern Provinces -----	37
	➤ Cross-Strait Tourism Platform Helps Fujian Develop into a Tourism-Strong Province -----	38
	➤ Ports in Fuzhou Seek Expansion -----	40
	➤ Jiangxi Accelerates the Development of Chinese Herbal Medicines Industry -----	43
	➤ Nanchang Introduces New Measures to Encourage Taiwanese Investments -----	46
	➤ Hunan Promotes Agricultural Industrialisation in its Industrialisation ----	49
	➤ Three Competitive Industrial Clusters of Changsha to Take Initial Shape by 2007 -----	51
	➤ Hainan Invests Rmb9 Billion into Power Grids -----	54
	➤ Hainan Constructs a Rubber Production Base -----	56
	➤ Memorabilia of Pan-PRD Regional Cooperation -----	58

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**Table of Contents (continued)**

---

IV.	Data and Trends -----	61
➤	Fujian -----	62
➤	Jiangxi -----	63
➤	Hunan -----	64
➤	Hainan -----	65
➤	Major Economic Indicators of Nine Pan-PRD Provinces/Region (Jan-Jun 2005) -----	66
➤	Nine Pan-PRD Provinces/Region: 10-Year Economic Trend (1995-2004) -----	67
➤	Nine Pan-PRD Provinces/Region: Statistics at a Glance (2004) -----	68
V.	English-Chinese Glossary of Terms -----	71

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## EXECUTIVE SUMMARY

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1. Rapid economic development has added pressure to the ecological environment of the Pearl River basin, which would affect Pan-PRD's sustainable development. A major problem with the ecological environment of the Pan-PRD is the deteriorating quality of the water environment, with severe urban and industrial pollution and insufficient facilities for sewage treatment. The exacerbating water pollution has led to eutrophication of some lakes and rivers. The problem with air pollution is also heightening, as more and more pollutants are being discharged into the air. The occurrence of acid rain is becoming particularly serious. The ecological outlook is not optimistic, as ecological lands in some regions have been occupied, and primeval forests have been destroyed. Some areas are facing serious soil erosion, and the problems of water shortage and pollution are grave.
2. The "9+2" region has a tightly knitted ecological chain, and the constituents are highly reliant on each other. Damage in any one constituent's ecology would ultimately have an impact on its neighbours. To consolidate the environmental resources of the region, and promote positive interaction and coordination in the social, economic and ecological developments of the region, officials representing the environmental departments of different Pan-PRD governments have endorsed the "Agreement on Pan-PRD Regional Environmental Protection Cooperation", marking the official commencement of environmental cooperation in the region. The Agreement focuses on protection of water environment, prevention and control of air pollution, protection and surveillance of environmental conditions, development of recycling economies, technological and industrial cooperation in environmental protection, as well as promotion and public education on environmental issues.
3. A safe water environment in the Pearl River basin is not only essential for ensuring the sustainable development of the well-developed regions at the down-stream, but is equally indispensable for economic development at the middle and upper streams. Cooperation in the protection of water environment is thus the most important in Pan-PRD's regional environmental cooperation. To address the severe conditions of the Pearl River, the Pan-PRD constituents need to cooperate in establishing a joint system for monitoring the water environment throughout the upper and lower streams of the Pearl River basin, for coordinating and resolving those major environmental issues that affect more than one province/region as well as those that affect more than one river basin. Cooperation should start with the objectives of improving the quality of water resources and ensuring residents' access to safe drinking water. It should improve the management of the water basins, supervise the flow of pollutants into the rivers, draft plans to control the overall volume of pollutants discharged into the major river sections, and eventually establish a mechanism to provide early warning on the safety of the water environment.

4. Effective cooperation in regional environmental protection entails not only pursuance of regular environmental protection undertakings or simply summing up the environmental protection efforts of individual Pan-PRD provinces/region. It requires all parties to address together the key regional issues. Leveraging on the Pan-PRD cooperative framework, the “9+2” constituents should exert their strengths in protecting the region’s ecology, controlling and preventing pollution, administering the environment, fostering industrial cooperation, as well as joining efforts in promoting and educating the public about the series of environmental issues. These would have significant implications to the upgrading of the standard of environmental protection in the region, to the coordinated development of Pan-PRD’s population, environment and economy, and to the restructuring and consolidation of industries in the region.
5. Fujian has adopted a wide range of measures such as conducting studies and setting up training programs to help its enterprises adapt to the two new environmental regulations recently imposed by the European Union (EU), namely, the “Directive on Waste Electrical and Electronic Equipment (WEEE)” and “Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)”. These initiatives are good references for the other provinces/regions. Meanwhile, the Mainland is also about to announce its own version of the WEEE.
6. Jiangxi targets at developing its green and organic food manufacturing into pillar industries that are capable of going global and penetrating the markets of YRD, PRD and Fujian. To achieve sustainable developments in these industries, Jiangxi needs to protect its ecological environment, and improve its food quality and sanitation. In the longer term, the province would need to improve the systems of setting standards for agricultural products, monitoring the environment and product quality, and certifying quality products. These systems need to be endorsed by the international market in order to strengthen global consumers’ confidence in Jiangxi products. Hong Kong enterprises have extensive experience in quality-assurance work, and are in the best position to cooperate with Jiangxi’s green and organic products manufacturers in exploring the international market.
7. As industrialisation accelerates in Hunan, economic and urban developments have created serious pressure on the province’s environment and natural resources. To ease these burdens, Hunan has set a target for its environmental protection industry to grow at an annual average pace of 15%. To achieve this, Hunan will need the participation of external enterprises with capital, technology, and advanced management skills. The provincial government has indicated that it will speed up restructuring and consolidating its environmental protection industry. It would provide policy as well as financial support to pillar enterprises. At the same time, it would improve the market order, and create an investment environment for fair competition and a system for quality surveillance and supervision. Market opportunities arising herewith are worth the

attention of Hong Kong businesses.

8. Hainan's marine, agriculture, forestry and tourism industries all hinge on the favourable ecological environment of the province. Hence, in as early as 1998, the province was among the first in the country to propose the construction of an ecological Hainan. It committed to pursue industrialisation "without polluting the environment, without destroying resources, and refraining from low-level redundant construction." This year, Hainan further proposed the construction of four ecological systems. Different industries will be established in the systems in accordance with their unique geographical conditions, natural resources and ecological features. Hainan's tourism industry has been enjoying rapid development in recent years, and has attracted more than Rmb10 billion of investment from Hong Kong. The conditions of the province's ecological environment would have significant bearing to investors from Hong Kong.



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## II. TOPICAL ANALYSIS

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### “Pan-PRD Cooperation in Environmental Protection: Opportunities and Challenges for Hong Kong”

#### Part One: South-Eastern Region

➤ Strengthening Pan-PRD Regional Cooperation in Environmental Protection -----	10
➤ New EU Directives Prompt Fujian to Implement a Series of Environmental Protection Measures -----	16
➤ Healthcare and Environmental Protection Promote Sustainable Development of Jiangxi’s Green Food Industry -----	21
➤ Hunan Implements Three-Year Environmental Protection Plan -----	26
➤ Hainan Constructs Itself into an Ecological Province -----	31

## **Strengthening Pan-PRD Regional Cooperation in Environmental Protection**

Situated in the Pearl River drainage area, the Pan-PRD region accounts for a-third of China's total economic output and is an important economic region of the Mainland. Rapid economic development in recent years has added pressure to the ecological environment of the Pearl River basin, which would affect the Pan-PRD's sustainable development. A major problem with the ecological environment of the Pan-PRD is the deteriorating quality of the water environment, with severe urban and industrial pollution and insufficient facilities for sewage treatment. The exacerbating water pollution has led to eutrophication of some lakes and rivers. The problem with air pollution is also heightening, as more and more pollutants are being discharged into the air. The occurrence of acid rain is becoming particularly serious. The ecological outlook is not optimistic as ecological lands in some regions have been occupied, and primeval forests have been destroyed. Some areas are facing serious soil erosion, and the problems of water shortage and pollution are grave.

### Eutrophication, Acid Rain and Soil Erosion

Eutrophication leads to massive deaths of fishes and other creatures and is caused by human activities. Human activities induce excessive amounts of nutrients, such as nitrogen and phosphorus, into rivers, lakes and bays. These nutrients, in turn, facilitate abnormally fast growth of algae and reduce the oxygen content of the water bodies. When the algae wither and decay, even more oxygen will be consumed. By the time oxygen is reduced to a certain level, the organic matter in water will be decomposed by the micro-organisms and decay. They will deplete oxygen supply, produce toxic pollutants such as methane, sulphureted hydrogen and mercaptan, and cause massive deaths of fishes.

When the sulphur oxide and nitrogen oxide emitted into the sky as waste gas meet the rain, they will transform into acid rain. Acid rain causes severe damages to animals, plants, human health, as well as buildings and structures. Acidic water not only reduces and even destroys biological forms in the water; it releases toxic metals from the soil, which will then be absorbed by fishes and shellfishes. Going up the food chain, this will become hazardous to people's health. Acid rain also corrodes construction materials such as limestone and marbles, as it dissolves the calcium carbonate content of these materials, forming crystals in the inner stone when the dissolved content vaporises.

Soil erosion refers to the wearing away of soil. It happens when soil structures fragment or loosen due to prolonged period of flooding or erosion of river. Human activities that may cause soil erosion include deforestation, weeding and cultivation on steep hills. Soil erosion destroys ground surface, reduces fertility and hardens soil, causing desertification. All these are detrimental to agricultural production and make the environment more vulnerable to natural disasters such as drought, indirectly threatening urban security.

## Protection of water resources in the Pearl River basin face five major problems

The Pearl River is a major river in southern China. It is also one of the seven biggest rivers in the Mainland. Stretching a total length of around 2,300 kilometres with an annual current flow of 341.2 billion cubic metres, the river comprises four river systems including Xijiang River (西江), Beijiang River (北江), Dongjiang River (東江) and the river branches in the Pearl River Delta. The Pearl River flows through the Pan-PRD provinces/region of Yunnan, Guizhou, Guangxi, Guangdong, Hunan, and Jiangxi, as well as north-eastern Vietnam, covering a drainage area of 453,700 square kilometres (sq. km.). Of this area, 442,100 sq. km. are in the Mainland territories and the remainder 11,600 sq. km. fall in other countries. At present, the protection of the Pearl River basin faces five major problems:

1. Water pollution is becoming an increasingly grave problem. In 2004, the total volume<sup>1</sup> of wastewater discharged into the Pearl River basin was 18.27 billion tons. Deducting the loss during the process of transmission, about 13.95 billion tons of wastewater actually flowed into the surface waters<sup>2</sup> such as rivers, reservoirs and lakes. In the Pearl River basin area, the wastewater discharged in the Pearl River Delta alone reached 9.5 billion tons or 52% of the total.
2. The ecological system in the Pearl River estuary is in an extremely unhealthy state. The approximately 6,000-sq. km. area around the Pearl River estuary falls short of standard in almost all indices in the content of heavy metals, inorganic nitrogen and petroleum products. The general index of water pollution in most areas of the Pearl River estuary's Lingdingyang section (伶仃洋) shows heavy pollution, with its inorganic nitrogen content near the shore area exceeding Level IV according to the standard of marine water quality<sup>3</sup> and plagued by a highly imbalanced ratio of nutrient salt.
3. The environmental condition at the source of drinking water is a great concern. Investigations show that the quality of water in the Pearl River basin that supplies drinking water to the urban areas is below standard<sup>4</sup>. Among the 79 sources of water in the Pearl River basin surveyed, only 69.5% were found to live up to the standards. In 2004, only 67.8% of Guangdong's sources of urban drinking water met the required standards.
4. Severe wastage of water resources and weak consciousness of water conservation. As the Pearl River basin enjoys a relatively abundant amount of water resources, water

<sup>1</sup> Volume of wastewater discharged refers to total discharges from residents, secondary and tertiary industries.

<sup>2</sup> Surface water refers to the natural or man-made bodies of water that exist in rivers, reservoirs and lakes.

<sup>3</sup> At Level IV, marine water should show no visible oil film, foam or other matters floating on its surface; no unpleasant colour, odour or taste. For details on the various grades of the quality of water, please refer to "Guangxi Helps Prevent and Control Pollution in the Pearl River Basin" in Part II of this consultancy study covering the south-western Pan-PRD region.

<sup>4</sup> The quality standards of urban drinking water at source depict whether the quality of the surface water at sources from which urban drinking water is mainly taken exceeds the minimum required. At present, a national-level model city of environmental protection should have at least 96% of its sources of urban drinking water meeting the minimum required standards.

conservation has not received much attention from the government and public. There is still no water conservation policy in place in the basin area, and a progressive pricing scheme<sup>1</sup> has not been established, causing serious wastage of water.

5. Damage to the ecological environment is escalating. Most of the lakes on altiplano in the upper reaches of the Pearl River are situated in well-developed areas. Reclamations around the lake area and unregulated water drainage and pumping have caused these lakes to shrink in area. The most seriously affected are Qilu Lake (杞麓湖) and Yilong Lake (異龍湖). The latter, in particular, has shrunk by 22.1 sq. km., reducing its storage of water by 118 million cubic meters, hence hampering local economic development.

### **Environmental protection hinges on cross-regional cooperation**

The Pearl River basin area has a tightly knitted ecological chain, and the constituents are highly reliant on each other. Damage in any one constituent's ecology would ultimately have an impact on its neighbours. To consolidate the environmental resources of the region, and promote positive interaction and coordination in the social, economic and ecological developments of the region, officials representing the environmental departments of different Pan-PRD governments have endorsed the "Agreement on Pan-PRD Regional Environmental Protection Cooperation" on July 13, 2004, marking the official commencement of environmental protection in the region. The agreement covers five major areas as mentioned below:

#### **1. Protection of water environment**

A safe water environment in the Pearl River basin is not only essential for ensuring the sustainable development of the well-developed regions at the down-stream, but is equally indispensable for economic development at the middle and upper streams. Cooperation in the protection of water environment is thus the most important in Pan-PRD's regional environmental cooperation. To address the severe conditions of the Pearl River, the Pan-PRD constituents need to cooperate in establishing a joint system for monitoring the water environment throughout the upper and lower streams of the Pearl River basin, for coordinating and resolving those major environmental issues that affect more than one province/region, as well as those that affect more than one river basin. Cooperation should start with the objectives of improving the quality of water resources and ensuring residents' access to safe drinking water. It should improve the management of the functional water basins<sup>2</sup>, supervise the flow of pollutants into the rivers<sup>1</sup>, draft plans to control the overall

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<sup>1</sup> When a progressive pricing scheme is adopted, the supplier of water sets a particularly low price on the basic volume of water consumed by residents and enterprises. When consumption exceeds that basic level, then the supplier levies a higher charge on the excess volume of usage.

<sup>2</sup> By improving the management of water basins, water resources will be reasonably developed and effectively protected. Water basins are classified according to their natural conditions, functional requirements, development conditions and overall planning in meeting the socio-economic development needs of the society. The appropriate standards of water quality will then be applied in monitoring each of these types of water basins respectively. There are two classifications of water basin: water basins classified as first grade include protected areas, buffer areas, areas for development and

volume of pollutants discharged into the major river sections, explore and establish a joint system of controlling pollution between the constituent provinces/region and water basins affected. Ultimately, a mechanism to provide early warning on the safety of the water environment should be established.

## 2. Air pollution control

Methods of preventing and controlling pollution-induced acid rains need to be explored in order to reduce its frequency and level of acidity. Coordinated efforts should be undertaken to reduce the discharge of sulphur dioxide into the air. The possibility of implementing a quota system for emitting pollutants such as sulphur dioxide<sup>2</sup> should be discussed and studied. Views on ways to control and manage the exhaust emitted by motor vehicles should be exchanged, and joint R&D efforts can be undertaken to develop technologies to resolve the pollution caused by motor vehicles. All parties can also cooperate in establishing mechanisms to monitor the situation across different provinces/region, consider regulating the emissions of exhaust by non-local vehicles, and develop technologies and equipment for testing exhaust levels. A plan to implement simultaneously a standard for fuels used by vehicles within the region should also be drafted.

## 3. Monitoring of environmental protection

Networks for monitoring the environmental conditions in the Pan-PRD will be established. In this way, the region's environmental quality and any changes that may occur will be scientifically monitored and promptly identified. The relevant authorities would then be able to adopt corresponding measures and policies in a timely manner to effectively control pollution in the region. According to the plan, these networks will initially focus on monitoring the water environment, gradually extending to address the issues related to air pollution and the overall ecological environment. With the monitoring networks in place, weekly reports on the conditions and quality of surface water in the region will be generated from the data collected by the automatic monitoring apparatuses. Once the networks are completed, those areas in the lower reaches of the rivers will be forewarned of the water conditions in the upper streams. In case of serious pollution in the upper streams, preventive measures can be undertaken in the lower streams ahead of time. The networks would also allow timely transmission of information related to the environmental conditions and seriousness of pollution at the sources of drinking water to the media and Internet websites. These information platforms will be established to facilitate public disclosure of

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retention; while water basins classified as second grade include sources of drinking water and water used for industrial, agricultural, fishery, scenic and recreational purposes, as well as transitional sources of water and areas controlled for dumping of pollutants.

<sup>1</sup> In supervising the flow of pollutants into the rivers, the flow of pollutants directly or indirectly into the rivers, streams and lakes via channels such as canals, ditches or pipe facilities are all covered.

<sup>2</sup> With a quota system for emitting pollutants in a designated area, the total volume of pollutants discharged is regulated. Under the precondition that the total volume of pollutants discharged is within a certain limit, generators of pollution can financially trade among themselves their quota or right to emit pollutants. Pollution is minimised this way and the objective of environmental protection is achieved.

information related to the region's environmental conditions.

#### 4. Development of recycling economy<sup>1</sup>

The successful experiences gained by Guangxi's Guigang National Ecological Industrial Park (廣西貴港國家級生態工業園區) will be used as reference to aggressively promote adoption of recycling economies in industrial parks and zones. Initiatives will be strengthened to expand the pilot test grounds of clean production<sup>2</sup>, and to establish demonstration bases of clean production in industries where pollution is a serious concern, such as paper-making, chemicals, electric power, and iron and steel industries. Enterprises that produce or use toxic and hazardous materials, as well as those that seriously pollute the environment, will be increasingly required to adopt clean production processes and facilities. Ecological innovation in industrial parks will be promoted in order to construct one or more ecological industrial parks in each province/region to serve as role models for the rest of the country. Exchange of views and cooperation in constructing ecological provinces will be initiated, while pilot efforts in ecological protection, ecological agriculture, ecological culture, ecological settlement, etc. will be strengthened.

##### Ecological industrial park (生態工業園區)

An ecological industrial park integrates nature, industry and society into a region. It is a modern mode of industrial organisation formed on the basis of the theories of recycling economy and industrial ecology. An ecological industrial park extends the processing chain of raw materials by facilitating the flow and exchange of manufacturing by-products and wastes among the members of the park, inducing level-by-level utilisation of energy and wastewater, allowing wastes discharged by enterprises in the upstream to be transformed into raw materials for use by enterprises in the downstream. In this way, the industrial park can optimise the use of energy and minimise discharge of wastes. In order to promote the development of ecological industries and ecological industrial parks in the Mainland, the State Environmental Protection Administration initiated the construction of an ecological industry demonstration park in 1999, and recognised the Guangxi's Guigang Ecological (Sugar Refining) Industrial Park and Guangdong Nanhai Ecological Industry Demonstration Park (廣東南海生態工業園區) as the first batch of national demonstration parks of ecological industry. These parks invited enterprises to set up operations in them by public tender.

#### 5. Cooperation in technologies and industries for protecting the environment

A mechanism fostering cooperation among environmental protection enterprises in the Pan-PRD will be established. Cooperation at different levels will be undertaken in investment, financing, market expansion, technical support, mutual recognition of standards

<sup>1</sup> For the definition of recycling economy, please refer to "Hainan Constructs an Ecological Province" in this report.

<sup>2</sup> As to the definition of clean production, please refer to "New EU Directives Prompt Fujian to Implement a Series of Environmental Protection Measures" in this report.

and qualifications, technological applications, etc. In the next five years, one to two key scientific R&D projects addressing the environmental protection issues in the Pan-PRD will be selected for implementation. In ensuring the availability of funding for these projects, the region is considering the establishment of a major research fund to be jointly financed by the constituents of the Pan-PRD. Each year, the “9+2” region will also jointly recommend enterprises that achieve outstanding developments in technologies, products and model projects for enhancing environmental protection.

#### Environmental protection industries

Environmental protection industries are those engaged in activities such as product and technological development, commercial distribution, resource utilisation, information services, and project subcontracting that cater to the control of pollution, improvement of ecological environment and protection of natural resources. These industries can be sub-divided into various types: sewage treatment, waste treatment, air quality control and others such as noise control, soil improvement, clean production technologies, energy conserving technologies, and green manufacturing processing and green designs of packaging. The last type refers to designing of packaging that promotes recycle and reuse of materials.

#### 6. Publicising and teaching the concepts of environmental protection

Networks for publicising and teaching residents about the environmental protection in the Pan-PRD will be established in order to enhance joint publicity efforts and raise people’s awareness in environmental protection. Units in charge of publicity in each province/region will participate in simultaneously implemented programs and campaigns, under a unified time schedule, theme, and promotion exercise. In this way, the publicity efforts can generate wider impact and will become more effective. Investigative activities to look into environmental protection in the Pearl River, upstream of the Yangtse River, Minjiang (閩江) and Hainan, as well as the environmental impact of the west-to-east electricity transmission, acid rain pollution and cross-border pollution will also be promoted.

Effective cooperation in regional environmental protection entails not only pursuance of regular environmental protection undertakings or simply summing up the environmental protection efforts of individual Pan-PRD provinces/region. It requires all parties to address together the key regional issues. Leveraging on the Pan-PRD cooperative framework, the “9+2” constituents should exert their strengths in protecting the region’s ecology, controlling and preventing pollution, administering the environment, fostering industrial cooperation, as well as joining efforts in promoting and educating the public about the series of environmental issues. These would have significant implications to the upgrading of the standard of environmental protection in the region, to the coordinated development of Pan-PRD’s population, environment and economy, and to the restructuring and consolidation of industries in the region.

## **New EU Directives Prompt Fujian to Implement a Series of Environmental Protection Measures**

Fujian is dealing with an increasing number of risks arising from technical trade barriers implemented by foreign countries. Enterprises have been driven to take initiatives in the control of quality, management of raw materials, and product testing to ensure that the standards of their products meet international requirements. The two environmental protection directives that Fujian most urgently needs to deal with are the “Directive on Waste Electrical and Electronic Equipment (WEEE)” and the “Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)” adopted by the EU, as the mechanical and electrical industries is one of Fujian’s three pillar industries.

### WEEE and RoHS

Both directives were passed by the EU on January 27, 2003. Implemented on August 13, 2005, the WEEE holds manufacturers and distributors responsible for the expenses to be incurred in collecting and processing electrical and electronic appliances and equipment when they are worn out and disposed of by users.

The RoHS, meanwhile, will come into effect on July 1, 2006. This directive requires the content indices of six hazardous materials including lead, mercury, cadmium, chromium, polybromo biphenyl and polybromo diphenyl in electrical appliances and electronic equipment to comply with EU standards. Should violations be detected in sampling tests, the whole product lot would be destroyed and would not be allowed to enter the EU market in the future.

### **All sides came to help enterprises cope with the new directives**

Since Fujian designated the electronics and machinery industries as one of its three pillar industries in 2000, these industries have enjoyed key government support and have exerted significant influence on the economic development of the provinces. Exports of these products accounted for 45% of Fujian’s total exports, and 1/3 of them are sold to the EU. Fujian will suffer substantial losses if its manufacturers fail to comply with the EU directives. The government thus took the initiative and launched a series of measures to help its enterprises meet the EU requirements.

Prior to the implementation of the directives, Fujian’s Economic Development Bureau has strived to meet enterprises’ needs and arranged a series of activities to help enterprises meet the EU requirements. These activities included: broad publicity of the directives to enterprises via public briefings and the internet; hosting of seminars and discussions where

environmental protection units, quality inspection departments, as well as enterprises affected could gather together to exchange views on measures to cope with the two EU directives and other related issues. The Xiamen Entry-Exit Inspection and Quarantine Bureau, Customs Department, Bureau of Quality and Technical Supervision, and Bureau of Environmental Protection have jointly established a task force to deal with the “Impact of the Two EU Directives on Xiamen’s Electrical and Electronic Exports into the EU and Counter Measures to be Undertaken” and conducted a thorough investigation on the 20 key exporters of electric and electronic appliances of the city. A training program was also arranged, and professionals and experts from the Ministry of Commerce and a British inspection company, Intertek, were invited to give lectures. Finally, a month prior to the implementation of the WEEE, the government sponsored another seminar, “International Regulations concerning Electronic and Electric Products”, in cooperation with SGS, an international leader in product certification. The purpose of the seminar was to enable enterprises to gain further understanding in the methods of inspecting and detecting hazardous materials in products, electromagnetic compatibility of information technology products and audio and video products, and safety requirements of audio and video products and electronic apparatuses.

Recently, the Fujian Inspection and Quarantine Technology Centre (FIQTC) successfully launched a comprehensive system of inspection and certification that complies with the international rules. The Bureau has also fully grasped the methods of inspecting products for content of the six hazardous materials listed in RoHS. The FIQTC has become one of the first laboratories recognised by the National Bureau of Quality Inspection as capable of “inspecting electric and electronic equipment with content of the six hazardous materials”. Hereafter, Fujian’s Bureau of Quality and Technical Supervision will set up a database platform of relevant information to help enterprises grasp the trend and status of various technical regulations formulated and implemented by the EU and other countries, and establish a “Database of Qualified Suppliers for Addressing the EU’s Environmental Protection Directives” as early as possible to guide enterprises in purchasing raw materials, parts and accessories that are of good quality and meet the requirements set out in the directives. It will also prepare a list of export enterprises that strictly observe the control of hazardous materials in their products. By clearly identifying these enterprises, the authorities will be able to implement measures such as “green channels” to make exports more convenient for qualified enterprises. Exporting enterprises unable to comply with the directives will be strictly monitored to ensure that the environmental protection measures are observed. The above activities and counter-measures have been effective in promoting the initiatives of enterprises and guiding them to cope with the EU’s environmental protection directives. Other provinces/regions may consider following the suit of Fujian in implementing these thorough and comprehensive measures.

At enterprise level, concrete counter-measures have also been adopted one after another, particularly to address issues related to the choice of alternative raw materials and in improving the production process. In early 2004, for example, AOC (Fujian) Co. Ltd. (冠捷

(福建)有限公司), sought to cooperate with a EU company in setting up a recycling centre. So far, the two companies have basically finalised the details of their cooperation contract. At the same time, the company has also started a thorough inspection and evaluation of all its suppliers, instructing those that fail to meet the standards to reform their techniques, and indicating its intention to terminate the contracts should the supplier fail to comply. Meanwhile, Xiamen EUPA Co. Ltd. (廈門燦坤電器股份有限公司) has contracted some leading global organisations to formulate a set of management systems useful for the company in addressing the issue of hazardous materials. The EU standards and systems were incorporated into the company's manufacturing processes to ensure that the raw materials and parts used by the company meet environmental protection requirements, while an assessment of its raw materials suppliers was also carried out. The measures adopted by Fujian enterprises serve as useful references for Hong Kong and other Mainland enterprises that are preparing to adapt to the numerous environmental protection measures being imposed by developed countries.

### **Promoting environment-friendly production processes can enhance enterprise competitiveness in the long run**

Directives similar to those set out by the EU are expected to become a worldwide trend. More industries are also likely to be regulated by similar environmental protection regulations in the future. Introducing environment-protective measures into a company's operating processes is thus an inevitable direction for manufacturing enterprises. To promote environmental production, Fujian established the Task Force for Promoting Conservation of Resources in August 2004, with the objective of building a society that is conscious about minimising resource consumption. In November, 2004, the Fujian Party Committee issued the Essential Notes for the Construction of the Economic Zone on the West of the Taiwan Strait, which requires enterprises to adopt clean production<sup>1</sup> modes. In 2004, the Fujian Science and Technology Office disclosed plans to invest Rmb77.53 million into a campaign to promote "Clean Production Technologies in Industries that are Major Sources of Water Pollution" (重要水污染行業的清潔生產技術). This is a special provincial-level project which addresses the serious pollution generated by industries such as zymolysis, paper-making, printing and dyeing. The campaign aims to reduce the level of energy consumption and discharge of pollutants by these industries. The campaign was officially launched in April 2005, with an initial investment of Rmb6 million. It has united the efforts of enterprises, universities and colleges, and scientific institutions to develop clean production technologies that would reduce energy consumption and significantly cut down

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<sup>1</sup> Clean production refers to incorporating environment-friendly and adopting precautionary measures in daily operation. The objective is to reduce risks exposed to human beings and environment. A clean production process conserves raw materials and energy, eliminates toxic and hazardous raw materials, and reduces the volume of wastes and toxic discharges. Products of clean production have minimal impact on human beings and environment throughout their product life cycles – from inception to final disposal. In the past, minimising threats on the environment conventionally called for methods in treating pollutants discharged during the process of production. By promulgating clean production, the threats of pollutants are minimised in as early as the production stage.

the discharge content of chemical oxygen demand (COD)<sup>1</sup> in the major sources of pollution. These efforts not only help to improve the competitiveness of Fujian industries, but also serve as a good example of efforts undertaken by the province to safeguard the sustainable development of its economy.

Apart from the various projects that promote environmental protection, relevant government units of Fujian have also strived to ensure strict compliance with the environmental protection policies. Recently, Fujian has particularly strengthened its control over those enterprises that illegally discharge wastes and required them to comply with the requirements of clean production as early as possible. The government has tightened its enforcement of clean production policies because there are signs of rebound in the level of pollutants discharged by some enterprises. Some local governments also narrow-mindedly focus on economic development. They tend to stand in the way of supervision and inspection units in enforcing environment-protective measures, and protect those enterprises that fail to comply with clean production requirements from being punished.

### **Promoting the industrialisation of a new type of environmental protection industry – recycling of disposed appliances**

Following EU's implementation of the WEEE, China's own version of the "Regulations on the Management of Old and Disposed Household Appliances" (國家廢舊家電管理條例) has already passed examination and will soon be released by the National Development and Reform Commission. Apart from ensuring that environmental protection measures are observed bilaterally in international trade, the regulation also aims to strengthen control of the polluting impacts of old appliances and equipment to the environment. Disposal of old and unused household appliances in the Mainland has reached a peak period. Moreover, as the life cycles of new electronic and electrical appliances have become shorter and shorter, there is a need to take precautionary measures.

As a coastal province with an economy that developed earlier than the other Mainland provinces/regions, Fujian disposes of a large amount of household appliances each year. As no effective plan is in place to manage the disposed appliances, these electronic garbage, which may contain hazardous heavy metal content such as lead, mercury, stannum, cadmium and chromium, are causing serious threat to the environment. To minimise the risks arising from these disposed appliances, the government units in charge of overseeing the information technology industry announced in August 2005 that a provincial-level system for managing and recycling old and disposed household appliances would be set up. Concretely, Fujian's Information Industry Department will select 1-2 capable enterprises via public tender to be responsible for collecting and processing the unused household appliances professionally. Although the selected enterprises will enjoy policy and financial supports, they will operate

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<sup>1</sup> Chemical oxygen demand (COD) refers to the organic content in natural water that may be oxidised by potassium permanganate or potassium dichromate.

in a market environment, forming a new type of environment-protective industry. It is Fujian's objective that by 2010, 50% of its disposed household appliances would be efficiently recycled.

The provincial Information Industry Department has already designated Fuzhou as the pilot test ground for the new recycling system. Efforts will initially aim at recycling five appliance types that have high household penetration rates, and are relatively bulky, costly and difficult to recycle. They include televisions, refrigerators, washing machines, air conditioners and computers. Gradually, the scope of the new recycling system will expand to cover more product types. A catalogue of products to be recycled will be released from time to time. Meanwhile, Fujian will also approve and certify enterprises qualified to engage in handling and processing of disposed appliances. Strict measures would be imposed on market entry, to ensure that testing, disassembling and recycling of parts and components of disposed appliances are done in accordance with the environmental protection standards set down by the international community, and to promote the transformation of this type of trade into a professional industry. As recycling of appliances will involve participation of residents, efforts undertaken are likely to help promote public awareness of environmental issues.

## **Healthcare and Environmental Protection Promote the Sustainable Development of Jiangxi's Green Food Industry**

To maximise the use of its natural ecological resources, promote agricultural industrialisation, facilitate strategic adjustment of rural economic structure and accelerate the pace of the food industry in meeting international standards, Jiangxi has formulated the “Plan for Developing the Green Food Industry” in as early as 2002. Key development areas include grain and oil, oil-bearing materials, fruit and vegetables, edible mushroom and bamboo shoot, livestock, poultry and aquatic products, beverages and alcohol, and raw materials for production (such as fertilizers and feedstuff). After three years of development, by June 2005, Jiangxi has developed 343 varieties of green food, ranking eighth in China. Of these, the total number of organic food exceeded 124 – the highest in the country. The number of green food enterprises has increased to 62, while the number attaining national level has increased to five. Green food manufacturing is now being undertaken in 90 counties in Jiangxi. Together, they generate an annual sales turnover of Rmb6.2 billion in green organic food, and generate foreign exchange earnings worth US\$54.11 million a year through exports. It can thus be seen that green food manufacturing has become one of Jiangxi's predominant industries. Its sustainable development will hinge on the balance of the province's ecological environment.

### Green Food, Organic Food

Green and organic food are both non-polluted, safe and high-grade food. Since 1990, green food has been certificated by the National Green Food Development Centre, which would rate them Grade A or Grade AA. Those rated Grade A use limited amount of synthetic chemical products such as chemical fertilizers, while Grade AA products are basically similar to organic food. Organic food prohibits the use of synthetic materials such as pesticides, chemical fertilizers and hormones. Genetically engineered products and crops grown with such products are prohibited as well. Organic food is environment-friendly, grown naturally, safe to eat, and is good to the health of people. Its development would encourage stronger protection of the ecological environment in rural areas and would help the agricultural industry achieve sustainable development.

### **Maintaining the balance between industrial development and ecological environment**

Jiangxi aims to develop its green and organic food industries into pillar industries that are capable of going global and penetrating the markets of YRD, PRD and Fujian. This will help Jiangxi's agricultural sector develop a new competitive advantage. To achieve sustainable development in the green and organic food industries, Jiangxi needs to enhance the value-added of its green food products and ensure protection of its ecological environment. Jiangxi's “Report on Sustainable Development” has stated that it needs to strengthen the protection of its ecological environment. Going forward, Jiangxi needs to

step up its efforts to change its current extensive form of development<sup>1</sup>. The production patterns of a recycling economy will be explored and established in industries such as metallurgy, coal, non-ferrous metals, electric power, chemical products and building materials. They should comply with the principles of “reduce, reuse and recycle” and strengthen the comprehensive utilisation of resources. In this way, the utility of resources would be maximised as follows: “resources-products-waste-recycled resources”. At present, Jiangxi has undertaken a series of measures to promote the development of a recycling economy, such as setting energy-consumption indices in relevant industries and picking pilot enterprises in each industry. The measures undertaken also include speeding up the convergence of industrial groups, which will help establish the recycling networks among enterprises and industries.

Moreover, Jiangxi will continue implementing the “Mountain-River-Lake Project” (山江湖工程)<sup>2</sup>, which was designed to improve the province’s ecological environment. According to statistics, since the implementation of the project in the early 1980s, the area affected by soil erosion in Jiangxi has decreased from 3.3 million hectares to 1.3 million hectares, while new forestation area has reached 2.3 million hectares, increasing the forest coverage rate from 31.5% to the present 60.5%. Jiangxi has also established 128 natural protection zones of all varieties, covering 808,000 hectares. The recovered lake area of Poyang Lake (鄱陽湖) has increased to 5,100 sq. km. from 3,600 sq. km. when the People’s Republic was established. The population of ecological migrants<sup>3</sup> in Jiangxi has reached 1 million in 2004. It has realised the virtuous cycle of ecological recovery in areas of original settlement and peaceful and contented living in new areas of settlement. The number of rural households that use methane has reached 1.02 million and this significantly improves the rural ecological environment. Jiangxi also actively promotes clean production in rural areas and the ecological production pattern of “pig-methane-fruit”<sup>4</sup> has already made remarkable achievements.

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<sup>1</sup> This form of economic development emphasises on heavy industries and the construction of infrastructure.

<sup>2</sup> The project is initiated to resolve problems at their source. Jiangxi is full of mountainous and hilly areas where people have long lived in poverty. Their inhabitanancies have causing severe soil erosion, severe sediments in the five river systems including Ganjiang River (贛江) and Poyang Lake, and frequent floods and droughts. In 1994, the project was listed as a priority in China’s Agenda for the 21<sup>st</sup> Century. The meaning of the project not only lies in the ecological, economic and social benefits brought by the project itself, it is also the scientific fulfilment for implementing a regional strategy of sustainable development and provides valuable samples and experiences for the sustainable development of other similar regions.

<sup>3</sup> “Ecological migration” refers to the mass movement of people caused by the deterioration of natural environment conditions necessary for supporting human living, essentially including conditions such as desertification and soil erosion. Meanwhile, there are also “environmental disaster migration”, which refers to the migration caused by environmental factors such as natural disasters, deterioration of ecological environment and environmental pollution; and “environmental pollution migration” which refers to migration from one’s original residence to another because of worsening of pollution problems.

<sup>4</sup> “Pig-methane-fruit” refers to an ecological agricultural pattern, which promotes the construction of methane pools in the breeding industry and spurs the development of planting industry. This mode of production also promotes positive development of the rural economy. Concretely, it treats each household as a basic unit and builds an ecological agricultural pattern by making use of the mountainous land or water area or yards around the houses. On its overall layout, the sty should be built inside or just beside the fruit garden; the methane pool should combine with livestock and poultry houses, and toilets, so that together they serve as a complete ecological system.

## **Numerous measures are adopted to guarantee food safety**

Besides ecological environmental protection, an urgent task for Jiangxi is to improve the quality of products. In recent years, there have been cases that the major food and agricultural export items produced by Jiangxi (such as roasted eel, honey, etc.) were forced to withdraw from the international market because they failed to meet the quality standards of developed countries. In 2005, there were incidents such as high contents of iodine in milk powder and nitrite in rice flour, etc. All these have not only significantly affected Jiangxi's food brands, but have also brought negative impact on its plan to sell green and organic products in the international market. In order to re-introduce these products into the international market, it is necessary for Jiangxi's food and agricultural products to improve its brand names and win over the confidence of international consumers. As such, the Entry & Exit Inspection and Quarantine Departments of Jiangxi have established a system of managing registrations and filings at the export bases of major food and agricultural products. They carry out effective supervision and management on pesticides and pests, and assist enterprises to re-enter the international market by improving aspects such as information, technology and services.

On rectifying market order, the administrative departments for industry and commerce in the provincial capital city of Nanchang took the lead in announcing the use of innovative regulatory means in July 2005. They will closely follow three main lines, namely, "control, monitor and regulate", and take "market access, daily regulation and market exit" as three major tasks. They will strengthen the regulation on food distribution and try to gradually formulate a three-in-one mechanism of regulating quality with "self-discipline by the market, regulation by the departments of industry and commerce, and supervision by the people". This new regulatory method will firstly unite the application of business licences, hygiene licence and health certificate for the market. The various licences will allow the Nanchang Administrative Bureau for Industry and Commerce to get a good grasp of the background and distribution channels of these enterprises so that it can better perform the duties of supervising these food enterprises. Secondly, the Nanchang Administrative Bureau for Industry and Commerce will strengthen the control and supervision of food quality, focusing its inspection on ten categories of food products including grains, meats, vegetables, bean products, and seasonal foods. All the markets will be equipped with facilities to test pesticides in vegetables, and Rmb1 million will be invested in the installation of food testing vehicles and rapid test kits for food items. Sub-bureaux at all levels should carry out random inspection on key food items being traded in the market at least once a week. Thirdly, a series of systems for managing food quality will also be implemented, such as market exit systems for substandard food and classification of food operations for control by credibility. At the same time, pilot units are required to sign "Letters of Commitment to Ensure the Quality of Food" with administrative departments for industry and commerce, pledging not to trade any counterfeit or poor quality food, as well as providing guarantee to the quality of food and ensuring that the operations of enterprises are conducted legally.

## **Constructing an international passageway for green food products**

Apart from the above regulatory measures and random tests, all provincial administrative departments for industry and commerce carried out a comprehensive inspection in the food markets in July this year. Food items found to be inferior in quality were black-listed and banned from the market. During the period of inspection, administrative departments for industry and commerce ordered those food products without specific labels and description of nutritious value be banned from the market. Moreover, food products that employed radioactive methods of disinfection and sterilisation, those that were genetically modified but were not clearly labelled on the package, those not bearing the product's name, list of ingredients, quantitative composition of ingredients, net content and solid content, and food products that were not identified with address, production date, quality guarantee period, expiration date, storage instructions, and product execution standards, were all prohibited from selling. The administrative departments for industry and commerce at all levels encourage consumers to report any such food products to local administrative departments for industry and commerce.

The objectives of implementing the above measures are to strengthen the enforcement of the law by relevant departments and seriously control the quality of products so as to raise the confidence of both domestic and international consumers. In the longer term, the province would need to continuously improve the systems of standards to be applied on agricultural products, the environment, and product quality. There is also a need to set up systems of certifying products to ensure their quality and standard. These systems need to be recognized in the international market in order to strengthen global consumers' confidence on Jiangxi products. At the same time, Jiangxi needs to speed up standardising agricultural production, further expanding its investment in the agricultural industry, and strengthening the control of product quality. It needs to carefully study the system of market entry for enabling large volume of green and organic food products of Jiangxi to gain access to the international market. Regarding the international systems of certifying products, as well as quality control and standardised management systems, Hong Kong enterprises have extensive experience in quality-assurance work, and are in the best position to cooperate with Jiangxi's green and organic products manufacturers in exploring the international market.

One final note worth mentioning is that Hong Kong is one of the first export markets of Jiangxi. The province has been supplying Hong Kong with fresh and living commodities since as early as 1957. However, the reports concerning hazardous food from Jiangxi in recent years have inevitably made Hong Kong and foreign merchants hesitant to explore further cooperation with Jiangxi's food enterprises. It is necessary for Jiangxi to explain and promote the numerous measures that it has recently adopted to improve food health and safety, so as to restore the confidence of its partners. In doing so, Hong Kong businessmen can require their suppliers to provide them with assurances within appropriate scopes, such as "Letters of Commitment to Ensure the Quality of Food" or other forms of quality certification.

The green and organic food manufacturers in Jiangxi have voluntarily proposed that Hong Kong businessmen could carry out more frequent inspections if required, so as to strengthen cooperation among each other. According to the estimates of Jiangxi's Economic and Trade Committee, over sixty percent of Jiangxi's foreign trading firms have set up offices in Hong Kong. This means that gaining the confidence of Hong Kong businessmen not only help to explore Hong Kong market, it will also positively help Jiangxi enterprises in developing foreign markets. Hong Kong businessmen can also seek new business opportunities herewith.

## **Hunan Implements Three-Year Environmental Protection Plan**

As industrialisation accelerates, Hunan's economic and urban development has created serious pressure on the province's environment and natural resources. The "2004 Report on the Environmental Conditions in Hunan" shows that the volume of pollutants discharged has been relatively high; pollution in the urban area has been increasingly severe and air pollution has become so worse that it requires urgent attention. Government at all levels should take positive measures in preventing persistent deterioration in the quality of environment.

### **Environmental pollution is severe**

In 2004, among the 14 prefecture level cities of Hunan, only Yongzhou (永州) and Hengyang's (衡陽) ambient air quality reached the Level II standard<sup>1</sup>. Although many cities reported that the number of days with fine air quality was slightly higher than the previous year, the number of cities facing pollution of fine particles exceeding the standard had increased and the occurrence of acid rain was also slightly more frequent. Except for Chenzhou (郴州), the other 13 prefecture level cities were polluted by acid rains at different degrees. The quality of air in Zhuzhou (株洲) and Xiangtan (湘潭) even surpassed Level III standards. According to the comprehensive pollution index in descending order, the 14 prefecture level cities ranked as follows: Zhuzhou, Changsha, Xiangtan, Yueyang (岳陽), Huaihua (懷化), Jishou (吉首), Zhangjiajie (張家界), Changde (常德), Shaoyang (邵陽), Yiyang (益陽), Hengyang, Loudi (婁底), Binzhou and Yongzhou.

#### Pollution of Fine Particles

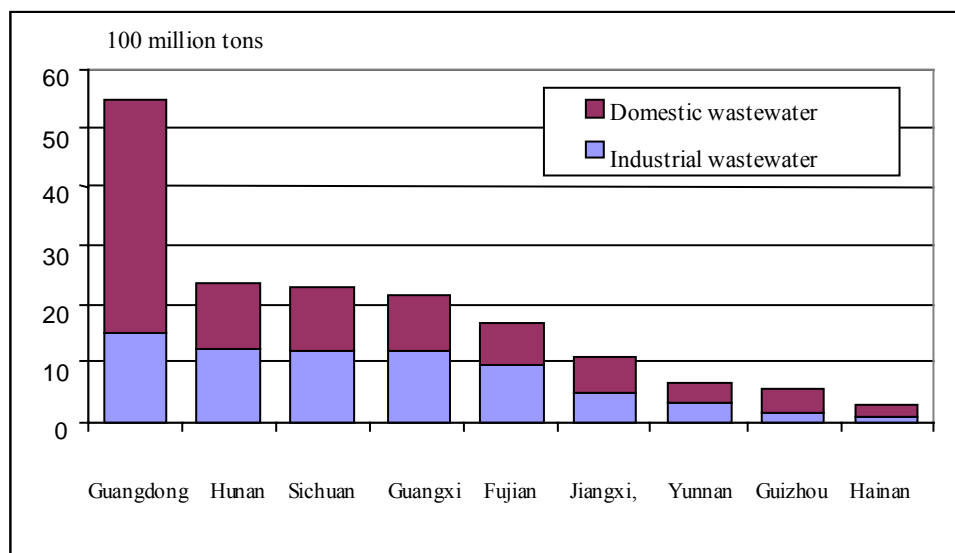
Also known as dust, this type of pollution refers to particles that are less than 10 $\mu$ m in diameter. They can linger for a long period of time in ambient air and have significant impact on human health and atmospheric visibility. Some particles come from direct discharge of pollution sources such as chimneys and vehicles and some are tiny particles transformed from the interaction among sulphur oxides, nitrogen oxides, evaporative organic compounds, and other compounds in the air. They can cause various diseases in human beings after being absorbed and accumulated in the respiratory system.

Water resources in Hunan are also widely polluted. The volume of wastewater discharge in the province reached 2.5 billion tons in 2004, up 6.1% from the previous year. Among which industrial wastewater was 1.231 billion tons, down 0.8% year-on-year and accounted for 49.2% of the total volume of wastewater discharge. Domestic wastewater

<sup>1</sup> The standard of ambient air quality are divided into 3 levels. To be classified as Level I, the quality of air should cause no hazardous effect on natural ecology and human health when under long-term exposure. To qualify for Level II standard, the quality of air should not be harmful to human health, animals and plants in the urban and rural areas when under long or short-term exposure. To qualify for Level III standard, the quality of air must shield people from acute and chronic poisoning and be conducive to the normal growth of animals and plants in the urban areas.

reached 1.269 billion tons, up 13.7% year-on-year and accounted for 50.8% of the total volume of wastewater discharge. The total volume of chemical oxygen demand (COD) discharge in wastewater reached 849,900 tons, up 13.9%. The production of industrial solid waste rose 18.7% from 2003 to 32.68 million tons, among which the volume of hazardous waste declined by 31.7% to 303,400 tons.

2003 Wastewater Discharged by the Nine Pan-PRD Provinces/Region



Source: China Statistical Yearbook

Pollution in Hunan is most severe in Zhuzhou, which is dominated by heavy industries and faces relatively severe problems of structural pollution from industries. In terms of environmental air quality, which is assessed by the State Environmental Protection Administration, Zhuzhou ranked among the top ten most polluted cities in China. The problem of air pollution in Zhuzhou is mainly due to the large volume of discharge of pollutants such as sulphur dioxide, dust and mercury; they were way above the environment's level of toleration. This left Hunan with only 209 days of fine air quality in 2003 and the frequency ratio of sulphur dioxide and acid rain reaching 79%. The air quality of Qingshuitang Industrial Zone in Shifeng District (石峰區清水塘工業區) of Zhuzhou fell short of Level III standard. Out of the 210 enterprises that discharge waste in this industrial zone, 189 enterprises are on the list of polluting enterprises, involving industries such as metallurgy, chemical products, building materials and machinery. Among them, the metallurgy industry is particularly noted to be a three-highs industry, i.e., "high capital investment, high level of energy consumption and high level of waste discharge", causing grave damages to the environment. Organic pollution co-exists with heavy metal pollution along the Zhuzhou section of the Xiangjiang River (湘江). As it is both the source of drinking water and the dumpsite of wastes discharged from Changsha, Zhuzhou and Xiangtan, the quality of drinking water is under serious threat.

## Fully promote environmental protection

It is necessary to avoid heavy pollution in order to maintain sustainable economic development. Hence, Hunan should decisively shut down enterprises that are causing heavy pollution and are unable to contain the problem within a pre-set period of time. In order to ensure that environmental protection measures are actively undertaken by departments at all levels, the Hunan Provincial Environmental Protection Bureau launched “Hunan’s Three-Year Action Plan for Environmental Protection from 2005-2007” and issued the “Decisions of the Hunan Provincial Government Regarding the Implementation of the Three-Year Action Plan for Environmental Protection 2005-2007” in 2004. According to the requirements, from 2005 onward, all environmental protection offices in Hunan should further strengthen law enforcement, intensify environmental protection supervision and management, establish and perfect the system of accountability, strengthen methods of monitoring the environment, improve regulatory capacity, strengthen regulations on environmental protection of key projects and key regions, and strictly inspect activities of waste discharge that fail to meet pre-set standards. In this way, all departments in environmental protection will be adequately performing their functions, while ensuring smooth implementation of projects for controlling the source of industrial pollution, establishment of infrastructure for urban environmental protection, and governance of ecological environment. The overall objectives of the action plans include:

1. The total volume of major pollutants discharged should be controlled and decreased by 6% or more than in 2000. The focal point is the improvement of air quality in cities. In order to control the total volume of pollutants, Hunan will implement a system of declaration and registration of waste discharge, establish a licensing system<sup>1</sup>, and encourage technological innovations in major polluting enterprises.
2. Concretely strengthen environmental protection at the source of drinking water. Water quality at the major sources of drinking water should be stable. Control of pollution in major drainage regions should be strictly implemented. Substantial progress should be made in controlling acid rains and sulphur dioxide in key cities of Changsha, Zhuzhou and Xiangtan. Projects to enhance the province’s environmental conditions and improve the system of surveying and tracking key environmental projects launched during the Tenth Five-Year Plan Period should be continued and improved.
3. Further safeguard the special ecological protection zones, key resource development zones and good-quality ecological areas. According to the plans laid down by the provincial government, it will ensure the implementation of the Dongting Lake ecological protection zone, and strengthen cooperation with Norway in the protection of

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<sup>1</sup> The licensing system requires all units discharging wastes to obtain a licence giving them the right to do so. These licences are issued in accordance with the laws. The local and Central Governments stipulate a ceiling on the volume of pollutants that can be discharged by each licensed unit.

- wetlands. Environmental management of the so-called “Two Zones and One Park” construction (referring to the natural protection zone, wild animal and plant protection zone, and forest park) should be appropriately carried out, while the environmental conditions in key tourism ecological areas of Zhangjiajie and Nanyue (南岳) should be properly protected. Hunan will exert greater efforts in safeguarding ecological security and protecting the heritage of resources in the province.
4. Tighten enforcement of the environmental law. The various environmental protection departments at working levels should strengthen investigation and prosecution of environmental violations. It should properly carry out promotion, training and execution of the “Regulations for Collection, Utilisation and Management of Sewage Charges”. It should also reinforce the collection of sewage charges and continue to regulate the drainage of those enterprises that are the major sources of pollution. Automatic surveillance systems for monitoring pollution should be initiated. Local environmental protection departments should also promote on-the-spot enforcement of environmental laws, impose penalties on illegal discharge of waste, and prosecute those enterprises that discharge waste beyond the standards allowed.
  5. The governance of environmental administration should be strengthened and Hunan will continue with its pilot project of constructing a “Green Community”. Facilities for monitoring environmental quality should also be strengthened and improved. Chenzhou, Yongzhou, Shaoyang and Loudi will each install an automatic station for monitoring the quality of air. Majiahe (馬家河) and Baishigang (白石港) will each install an automatic station for monitoring the quality of water. The ISO14000 certification<sup>1</sup> and tagging of products with environment-friendly labels should be strongly encouraged. Selection and promotion of key technological applications for environmental protection should commence, while education and training of senior officials should be carried out effectively.
  6. The methods for assessing the environment should be improved and upgraded, so as to strengthen the leadership of the party committees and governments at all local levels in environmental protection. A system of accountability should be strictly implemented and achievement of environmental protection objectives laid down during the term of service of the former government should be checked and examined. Undertakings to meet the objective of environmental protection should be signed when there are changes in authorities. Protecting the environment should be listed among the major tasks of party committees and local governments at all levels.

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<sup>1</sup> ISO14000 is a system of certifying the standard of environmental management. Certification is made in consideration of a number of key issues in international practices in environmental protection, such as the system of environmental management, assessment, labelling, analysis of product life cycles. The system aims at providing guidelines to all organisations (enterprises and companies) so that practical achievements can be made in protecting the environment.

### **Speed up the development of its environmental protection industry**

Following the implementation of the three-year plan for environmental protection, Hunan's construction of large-scale environmental protection projects such as sanitary landfill site and sewage treatment plants has been accelerated. An industrial structure with the production of environment-friendly products and comprehensive utilisation of waste at the core, and environmental protection technologies and services, manufacturing of green products and protection of ecology to support them, will be gradually formed. In order to set up an industrial park that suits advanced enterprises in environmental protection that develop on the basis of high and new technologies, conservation of energy, and regeneration of resources, Hunan's environmental technologies and industrial park will endeavour to attract enterprises with good potential. Moreover, in order to achieve the target of raising the annual average growth of the environmental protection industry to 15% as stipulated in the three-year plan, Hunan will have to attract large competitive enterprises from outside with capital, technology and advanced management skills to participate and invest in its environmental protection industry. The provincial government has indicated that it will speed up restructuring and consolidating its environmental protection industry. It would provide policy as well as financial support to key enterprises. At the same time, it would improve the market order, and create an investment environment for fair competition and a system for quality surveillance and supervision. Market opportunities arising herewith are worth the attention of Hong Kong businesses.

## **Hainan Constructs Itself into an Ecological Province**

In as early as 1998, the province was among the first in the country to propose the construction of an ecological Hainan. It committed to pursue industrialisation “without polluting the environment, without destroying resources, and refraining from low-level redundant construction”. The purpose of constructing an ecological province is to make Hainan the first environment-friendly special economic zone (SEZ) in the Mainland. Concretely, in the environment-friendly SEZ of Hainan, strict environmental protection measures are adopted, the most advanced technology and mechanism for environmental governance are employed, and strict environmental protection standards are implemented to regulate agricultural and industrial production, economic operation and urban management. The move will exert significant impact on Hainan. Although Hainan enjoys relatively better environmental conditions compared with other Mainland provinces/regions, it is not totally absolved from environmental problems. Like the rest of China, it needs to deal with industrial and domestic wastewater, deterioration of the quality of water systems due to farmers’ usage of pesticides and chemical fertilizers, piling up and treatment of domestic waste, water and energy conservation, etc. that arise from the continuous progress of industrialisation and consumers’ rising demand for material goods.

### **Constructing China’s first environment-friendly SEZ**

To achieve this goal, Hainan has formulated the “2005 Plan for Building Ecological Province” this year and stepped up efforts to ensure its actual implementation. According to the requirements of Hainan’s Party Committee and Provincial Government in developing new industries, demonstration units of recycling economy<sup>1</sup> for the three industries of sugar refinery, cement, and large-scale livestock and poultry farms will be established in the form of projects. Hainan will strengthen control on pollution and exercise on-the-spot supervision so as to prevent pollution of enterprises and ensure that polluting enterprises of key provincial industries do not exceed the standards. These measures help Hainan to establish a number of national-level “Environment-Friendly Companies”. Besides, the system of target accountability will be examined annually, while the licensing system to govern enterprises in discharging waste will be strengthened, to better control the total volume of pollutants discharged. Pollution control and supervision in the planned breeding farms would also be strengthened in order to minimise their discharge of pollutants.

The plan requires Hainan to strictly implement the “Assessment of Environmental

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<sup>1</sup> Recycling economy is an advanced economic pattern that pursues higher economic benefit, less energy consumption, lower environmental pollution and more employment opportunities. It promotes a harmonious relationship between economic development and the environment. It aims at reducing energy consumption, recycling use of products and turning waste into energy, and realising the ecological pattern of “resources-product-waste- recyclable resources”. The objective of a recycling economy is to restructure economic operation processes, and ultimately achieve the optimal scale of production, most appropriate level of consumption and least amount of wastage.

Impact<sup>1</sup>”, and reform and standardise the process of approving investment projects based on their ability to meet environmental requirements. Hainan will specifically standardise the approval procedures of the government and the relevant departments on project planning and impose serious penalties on those involved in illegal activities that damage the environment. Research and drafting of Hainan’s “Regulations on Assessing the Environmental Impact of Projects” will be done. Supervision of environmental protection departments on provincial planning and environmental assessment will be exercised. All these will help to promote the implementation of provincial planning and environmental assessment. Meanwhile, environmental supervision in the process of project construction will be strengthened; inspection during the term of construction will be carried out, and the ideal arrangement of synchronously implementing environmental protection in the design, construction and implementation of new projects will be practised.

Besides, Hainan will continue to strengthen environmental supervision and management on the place of origin of agricultural products and optimise the ecological environment of agriculture. Plans to construct villages and towns with good environmental conditions will be further developed. Research on the system of managing protected zones and channels for investment will be arranged and implemented, opinions from relevant sectors will be solicited, and a system for evaluating work completed in these protected zones will also be established.

### **Building four ecosystems**

Hainan has made amendments to the “Planning Outline for the Construction of the Ecological Province of Hainan” formulated in 1999. It is an action outline related to areas such as prevention of environmental pollution, ecological construction, industrial development, construction of an environment suitable for human settlement, and construction of ecological culture, and is also a planning outline for the province’s strategy of sustainable development. The new amendments include comprehensive combination of the objectives of building the ecological province along with the construction of a well-off society, strengthening the foundation for constructing the ecological province by more detailed planning in its regional layout, quality of life, etc. Given the interrelation between industries and the environment, partial adjustments have been made to the industrial structure. Measures to safeguard the construction of the ecological province have also been strengthened. Besides, Hainan has proposed the construction of four ecosystems to form an industrial pattern with different emphases, in accordance with the local conditions, natural environment, resources and ecological functions in each geographic location. The four ecosystems are as follows:

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<sup>1</sup> Assessment of Environmental Impact was put into effect on September 1, 2003. It extends the process of assessing environmental impact from simple construction projects to all areas of development planning and provides legal assurance for prevention of environmental pollution and ecological deterioration at the sources.

## 1. Marine ecosystem: focuses on the development of the marine industry

The scope of the marine ecosystem spans all sea areas and islands beyond the 5-metre isobath of the Hainan Island that is under the governance of the Hainan province. This area has rich natural resources, including the fishing grounds of Beibu Bay (北部灣), Sanya, Qinglan (清瀾) and South-western Zhongsha (西南中沙), and abundant gas and oil resources. It is also an important passage linking the western Pacific Ocean and the Indian Ocean, as well as an important area for Hainan to utilise the marine resources and actively develop marine industries. The specific plan for this ecosystem includes strengthening the management of fishery industry in this area, strict controlling the near-sea exploitation methods, promoting scientific fishing technologies and encouraging open-sea fishing; strengthening the protection of ecological environment in South China Sea and establishing a number of coral reef and fishery resources protection zones; accelerating the construction of infrastructure on the islands in South China Sea such as Xisha Islands (or Paracel Islands, 西沙群島) and developing marine ecological tourism in Xisha Islands; accelerating exploration and utilisation of marine oil and gas resources, developing marine transportation industry, promoting the development of marine industry and creating new engines of growth.

## 2. Coastal ecosystem: focuses on the development of sea bordering industries

The scope of coastal ecosystem is the sea area within the 5-metre isobath of Hainan Island, extending to the land area of 10 kilometres from the coastline. This area covers estuaries, deltas, coastal plains, wetlands, sand beaches, lagoons and shallow sea, with an area accounting for 20% of Hainan's total area. It is the most densely populated area in Hainan and is most active in terms of economic development activities. It is also an important area for urban development, port construction, sea-bordering industrial development and tourism. The area is now carrying out the plan of "Green Sea Action" (碧海行動), which aims at strengthening the construction of environmental infrastructure in the sea-bordering cities and towns, as well as controlling the pollution of the sea-bordering industries. According to the requirement stipulated in Hainan's strategy of "development with driving forces from the south and the north, and pushing forward with both wings"<sup>1</sup> (南北帶動、兩翼推進), the port industry will be actively developed. Leveraging on its quality ecological environment, Hainan will focus on the development of clean-production types of industries. In its industrial development zones in the west of Hainan, the province will strive to develop resources processing industries that are intensive in nature, with high technological content, and good economic benefits.

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<sup>1</sup> "Driving Forces from the South and the North" refers to further development and expansion in Haikou and Sanya, the impact of which shall be driven to the whole province. "Pushing Forward with Both Wings" refers to acceleration in fostering several backbone cities of medium-scale along the eastern and western lines (for example, Wenchang and Qionghai along the eastern line, and Dongfang and Danzhou along the western line), so as to promote the development of both eastern and western lines.

3. Coastal platform ecosystem: focuses on the development of planting, forestry and clean-production types of industries

This ecosystem is situated between the coastal ecosystem and the central mountain-land ecosystem, with an area that spans to account for 50% of the Hainan Island. It is an important area of industrial development in Hainan. The guidelines of the Plan require this area to upgrade its traditional industries to effectively control industrial pollution; to reduce agricultural pollution by setting standards, industrialising and improving the ecology of the source areas of pollution; to reasonably divide the functions among regions so that the development of planting, forestry, services and other clean-production types of industries can be spurred; and to promote urban construction to accelerate the process of urbanisation and industrialisation.

1. Central mountain-land ecosystem: focuses on the development of green agriculture and ecological forestry industries

This ecosystem mainly includes mountain-land and part of the hills of central Hainan, which is situated at more than 300 metres above the sea level. It spans an area of approximately 100,000 sq. km., accounting for 30% of the Hainan Island. It covers the entire Wuzhishan City (五指山市) and Qiongzong County, most areas of the regions of Baisha (白沙), Baoting (保亭), Ledong (樂東) and Changjiang (昌江), and some of the villages and towns in the cities and counties of Sanya, Lingshui, and Dongfang. This is the populated area of Hunan's ethnic minorities and poor people. Hence, the Plan stresses on adjusting the industrial structure in this area by leveraging on its ecological advantages, developing industries with unique features such as green agriculture and ecological forestry in the mountain areas. It will also actively promote the transfer of surplus rural labour force from the ecologically vulnerable areas, to alleviate poverty by facilitating ecological migration.

### **Optimising and consolidating the development of Hainan's tourism industry with its ecological environment**

Apart from the industries already planned in accordance with the above ecosystems, the construction of an ecological Hainan will also benefit the long-term development of Hainan's tourism industry. Tourism is Hainan's most unique and competitive industry. Regarded as a pillar industry of the province since 1993, Hainan tourism has experienced substantial development in the past years. Such rapid development of Hainan's tourism industry was mainly supported by its favourable resources, as well as the government's continuous support to ecological environmental protection in the past decade. Extending 1,528 kilometres along Hainan's coastline, sand coasts account for approximately 50-60% and the width of sand beaches varies from hundreds of metres to thousands of metres. Along the coastal area, there are a lot of green trees and fresh air. The temperature of sea water generally ranges 18-30°C, and boasts of bright and beautiful sunshine all-year-round. At present, Hainan's

coastal areas possess all the five elements considered most attractive to international tourists: sunshine, sea, beaches, green environment, and fresh air. The island possesses 81 mountains of 1,000 metres or more above the sea level, and they form a panorama of gentle slopes, peculiar shapes and magnificent scenery. There are also many historic spots in Hainan, such as Wugong Temple (五公祠), Sugong Temple (蘇公祠), Qiongtai Academy of Ancient Times (瓊台書院), Hairui Tomb (海瑞墓), Mafubo Well of the Han Dynasty (漢馬伏波井), etc. These resources provide Hainan with the most favourable conditions for furthering tourism development. The natural environment has hence become the foundation of Hainan's tourism industry.

Since Hainan gained its provincial status in 1987, the number of hotels on the island has increased from just several inns and state-owned tourism agencies to 317 tourism hotels in 2004 (the number excludes 2,000 hostels), representing 9.2 times increase over 1987. Among these are 10 five-star international tourism hotels, 35 four-star hotels and 96 three-star hotels. In the first ten months of this year, Hainan received 11.38 million visitors and the total tourism receipts reached Rmb9.01 billion, representing an increase of 18.5% and 24.4% respectively from last year. Tourism receipts accounted for around 15% of Hainan's GDP. In order to further develop its tourism industry, Hainan must combine the advantages of the tourism resources of its tropical island with the ecological environment. Hence, Hainan will stick to the principle that its tourism industry will develop within bounds of ecological and environmental protection. The province will step up in tree planting, protecting grass lawns and beautifying the tourism areas. It needs to establish a classification system for managing waste, promote utilisation of decomposable tourism fast food utensils and packaging materials, maintain good environmental health, and prohibit production and sale of tourist souvenirs that are made of wild animals and plants under national protection. All these measures are undertaken by Hainan's tourism industry in order to achieve mutual coordination and promotion between the natural and cultural scenes. Hainan's tourism industry has been enjoying rapid development in recent years, and has successfully attracted more than Rmb10 billion investment from Hong Kong. The conditions of the province's ecological environment would have significant bearing on investors from Hong Kong.



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

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➤ Cross-Strait Tourism Platform Helps Fujian Develop into a Tourism-Strong Province -----	38
➤ Ports in Fuzhou Seek Expansion -----	40
➤ Jiangxi Accelerates the Development of Chinese Herbal Medicines Industry -----	43
➤ Nanchang Introduces New Measures to Encourage Taiwanese Investments -----	46
➤ Hunan Promotes Agricultural Industrialisation in its Industrialisation ----	49
➤ Three Competitive Industrial Clusters of Changsha to Take Initial Shape by 2007 -----	51
➤ Hainan Invests Rmb9 Billion into Power Grids -----	54
➤ Hainan Constructs a Rubber Production Base -----	56
➤ Memorabilia of Pan-PRD Regional Cooperation -----	58

## **Cross-Straits Tourism Platform Helps Fujian Develop into a Tourism-Strong Province**

For the ten-years up to 2004, Fujian ranked among the top-6 provinces/regions in China both in total tourism receipts and number of visitors. According to the statistics of Fujian's Tourism Bureau, the province recorded Rmb55 billion in total tourism receipts in 2004, an increase of 42.2% year-on-year. The sum is equivalent to 9.17% of Fujian's GDP and 8.1% of China's total tourism receipts. To develop into a tourism-strong province, Fujian will strive to raise the share of its tourism receipts to account for at least 10% of China's total tourism receipts. The provincial Tourism Bureau estimated that the province would receive Rmb62.8 billion of tourism receipts this year, constituting 9.5% of its GDP. Furthermore, tourism will provide strong support to the construction of the Economic Zone on the West of the Taiwan Strait.

### **Constructing three key tourism economic hubs**

Fujian is currently planning to construct "5 districts and 2 zones" (五區兩帶) to allow the different Fujian cities to strengthen cooperation with each other, giving emphasis to developing the province into a major tourism centre. Specifically, Fujian will construct three key tourism economic hubs which would complement each other in terms of resources, tourism products and markets. These three hubs include: Central Fujian Tourism Economic Hub, Southern Fujian Tourism Economic Hub, and North-western Fujian Tourism Economic Hub. Fuzhou is situated at the core of the central hub, which covers Putian (莆田), Ningde (寧德), etc. Its main features include Chuanzheng Culture (船政文化), Tanshishan Culture (曇石山文化), Mazu Culture (馬祖文化), Local Customs of She People (畚族風情) and the landscapes of famous mountains and oceans. Xiamen is at the centre of the southern hub which covers Quanzhou (泉州), Zhangzhou (漳州), Longyan (龍岩), etc. Its main tourism features include Ocean Silk Road Culture (海絲文化), Local Customs of Huian Women (惠女風情), Binhai Volcano (濱海火山), Hakka Culture (客家文化), Red Culture (紅色文化), etc. Mount Wuyi (武夷山) is at the heart of the northwestern hub. It further integrates tourism resources of Nanping (南平) and Sanming (三明) into the "Green Delta" of northern Fujian. The development of tourism resources in this hub mainly focuses on world heritage, geological wonders and green ecology. A green ecology tourism region will be constructed, with the world cultural and natural heritage of Mount Wuyi, Taining World Geological Park (泰寧世界地質公園), and other green ecological tourism areas.

Besides, Fujian's tourism also extends from the cores of Fuzhou and Xiamen towards the southern and northern parts. Linked up by expressways along the coastal region, Fujian is connected to Yangtze River Delta in the north and the popular route of PRD blue coastal ecotourism in the south. Fujian is proactive in cooperating with these two large economic regions and the Pan-PRD ("9+2") region in developing a prosperous tourism economic zone

along the coastal region of Southeast China.

### **Prospects of tourism development hinge on Fujian's distinctive strait features**

The greatest charm and prospects of Fujian's tourism development hinge on its distinctive strait features. This year, the Central Government has decided to gradually allow Mainland residents to travel to Taiwan. Fujian, which is situated just opposite Taiwan, is set to benefit, as it entails the shortest travelling time and cost to travel from Fujian to Taiwan. In order to combine the tourism resources of Fujian and Taiwan, the two mountains (Mount Wuyi and Mount Alishan (阿里山)) and the two lakes (Lake Jinhu (金湖) and Sun-Moon Lake (日月潭)) from both sides have agreed to share their tourism resources. Jointly, they will build a prominent tourism brand, cross-promote their products, expand their tourism markets, and exchange visits to achieve win-win results. They would also share tourism information by facilitating exchange of information between both sides.

On the basis of their successful sharing of resources, Fujian and Taiwan also successfully launched "golden tours" in the two places to enhance the brand name of Fujian-Taiwan travels and increase their competitiveness. During the "Cross-Strait Tourism Cooperation Conference" convened by the Fujian Tourism Association in Xiamen on July 6, 2005, two-way golden Fujian-Taiwan tours between Kinmen (金門) and Xiamen and between Mawei (馬尾) and Matsu (馬祖) were formed. They include 5-10 day tours of Xiamen-Kinmen-Taiwan and Fuzhou-Matsu-Taiwan. Fujian authorities hope to promote its experience in cooperating with Taiwan to the rest of the Mainland so that Mainland-Taiwan travels could become popular soon, and Fujian can act as the forerunner in this development.

Meanwhile, to popularise the tourism products available in both sides of the strait and to develop more variety of tours, Fujian's tourism authority is cooperating with relevant departments in Taiwan to construct a multi-lingual, online information and sales platform to promote cross-strait tourism. The two sides also jointly publish a magazine, called Cross-Straits Tourism, host exhibitions, and set up a mechanism for jointly promoting tourism products. Fujian will further leverage on its proximity to Taiwan, Hong Kong and Macao to foster stronger tourism cooperation with these regions, promote the healthy development of cross-strait tourism and find a new mode of growth for its tourism industry.

## **Ports in Fuzhou Seek Expansion**

Fuzhou's port is century-old. In 2004, its cargo handling capacity hit 60 million tons, with container throughput reaching 707,900 TEUs, ranking the 10<sup>th</sup> largest among China's coastal ports.

### **Minjiang River Port suffers from insufficient capacity**

At present, Fuzhou loads and unloads over 85% of cargos and 90% of containers within the inner harbour area of Minjiang estuary. This area is divided into three operating zones of Changan (長安), Langqi (琅岐) and Yangyu (洋嶼). The planned coastline of the Changan zone starts from the Fuzhou Salvation Dock (福州救助站碼頭) and ends at Yingyu (英嶼). General-purpose and container berths will be constructed one after another along the Changan coastline from the upstream to the downstream. Spanning a total length of 1,510 metres, the coastline designated for the construction of general-purpose berths can accommodate six 10,000-ton capacity berths. The gross land area is 691,000 square metres (sqm.), with a width of 350-600 metres. Meanwhile, the container berths are situated between Changbing Wharf (長柄碼頭) and Yingyu. With a coastline extending 1,140 metres in length, the area can provide for the construction of 4 berths to serve the second-generation container vessels, plus another berth to serve roro vessels<sup>1</sup>. This zone has a total land area of 872,000 sqm., with a width of 520 metres. As for the Langqi operating zone, the planned coastline stretches 1,500 metres long. With a total land area of 1.086 million sqm. and of 724 metres wide, the area can host 1-3 10,000-ton berths for serving vessels with dangerous goods aboard. Finally, the Yangyu operating site runs on a planned coastline of 1,510 metres in length. Spanning a total area of 1.2 million sqm. and of 1,000 metres wide, this zone is capable of hosting eight 10,000-20,000-ton berths.

The inner harbour area of the Minjiang River estuary is still the principal part of Fuzhou's Port. However, as this is a river port, the maximum capacity of the river terminals can only accommodate vessels of up to 20,000-tons in size. As such, even though the number of terminals has already reached close to 100, the total throughput remains low. Only 22 of the berths are capable of handling vessels bigger than 10,000-tons in size and the rest cater mainly to 10,000-20,000-ton vessels, and can thus only be regarded as small terminals when compared to other well-developed coastal harbours in the region. Fuzhou is still short of sizeable deepwater port terminals that could cater to container vessels, to specialised vessels shipping coal, petroleum and minerals. These are examples of bottlenecks that Fuzhou needs to overcome. It is estimated that each year, Fuzhou and its neighbouring areas redirect about 200,000 TEUs of containers to ports in the neighbouring Xiamen for shipment.

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<sup>1</sup> Roll on/roll off type of cargo ships that carry wheeled cargo such as automobiles, trailers or railway carriages.

## Expansion of deepwater harbour areas

To resolve the above bottlenecks, Fuzhou has decided to develop its ports. It will expand the capacity of the three deepwater harbour areas and endeavour to raise the throughput of Fuzhou Port from last year's 60 million tons to 100 million tons by 2010; the capacity of its container throughput will rise from 700,000 to 2 million TEUs. These three deepwater harbour areas are Jiangyin Port (江陰港), Luoyuanwan Port (羅源灣港) and Songxia Port (松下港).

The three harbour areas cited above enjoy favourable conditions for port development. At present, Jiangyin is the core of the deepwater harbour area in the south. It boasts of the biggest berthing capacity for container vessels among the ports of Fuzhou. A 50,000-ton container berth has been built in this area, and shipping routes to North America, East Africa and Japan have been opened. According to the plan, 15 deepwater berths with over 10,000-ton-capacity will be constructed at the Jiangyin harbour area, of which two are under construction. Besides, a 70,000-ton coal berth will be dedicated to the Guodian Jiangyin Thermal Power Plant (國電江陰火電廠). Apart from being a deepwater harbour area, it will also develop into a bonded logistics centre.

As for the Luoyuanwan harbour area, it currently serves as the centre of northern deepwater harbour area. It is directly connected to the core cities of Fuzhou, Nanping, Ningde and Sanming. According to the plan approved by Ministry of Communications, the length of the northern coastline of Luoyuanwan is 25 kilometres. Its excellent geographical location allows it to construct 66 deepwater berths. With an annual throughput of 800,000 tons, the construction of the 30,000-ton Shiqi Terminal (獅岐) has been completed in mid-2005 and has started operating. It will become the most convenient sea route for trade flows between Fujian and Taiwan. With a gross investment of Rmb198 million, it is a multipurpose port terminal with a full-range of equipment and facilities and boast of the strongest loading and unloading capacity in Fuzhou. Furthermore, a 50,000-ton capacity berth (which can also accommodate 100,000-ton vessels) to serve coal-shipping vessels has also been set up for the special use of Huadian Kemen Thermal Power Plant (華電可門火電廠).

Finally, the Songxia harbour area is situated in Changle City (長樂). It mainly provides services for imports and exports of raw materials for the local industrial areas. The harbour area extends to the planned highway of the port in the north, the eastern end of Yuanhong Investment Zone (元洪投資區) in the west, and Beikoumen of Fuqing Bay (福清灣北口門) in the east. Its coastline runs 4,290 metres in length, with a planned width of 710-860 metres and spans a total land area of 2.55 million sqm. It is capable of accommodating 18 deepwater berths. Two bulk cargo berths of 50,000-ton and 70,000-ton respectively at Songxia Port will soon become operational, and the throughput capacity will be increased by 7.39 million tons.

The construction of deepwater ports will not only improve the throughput capacities of Fuzhou's cargo and containers, but will also drive the development of the industrial areas of Fuqing and Changle which are close to these ports. Business opportunities herewith are worth the consideration of Hong Kong investors.

## **Jiangxi Accelerates the Development of Chinese Herbal Medicines Industry**

Having 13 national-level advanced rural counties/cities engaged in Chinese medicines, Jiangxi is a leading province in the production and trade of Chinese herbal medicines, with high value-added refined-processing industries in place. The Chinese herbal medicines industry has been officially included in the longer-term Eleventh Five-Year Plan of Jiangxi. It is expected to make positive contributions to the continuing development of Jiangxi's economy.

### **One of the five modern technological industry bases for Chinese herbal medicines**

In 2005, Jiangxi was granted approval to construct a national-level modern technological industry base for developing Chinese herbal medicines. The base will be constructed in accordance with the unique features of Jiangxi and would help Jiangxi transform its advantages in geographical location, resources and preferential policies enjoyed by its Chinese herbal medicines industry into economic and enterprise advantages, helping to turn Chinese herbal medicines into a pillar of Jiangxi's economy. Upon completion of construction, the area for cultivating Chinese herbal medicines in Jiangxi will span 1 million mu (Chinese unit of measurement equivalent to 1/15 hectare), and the area which would serve as the base for sowing high-quality seeds will reach 3,000 mu. The output values of both the extracts of Chinese herbal medicines and patented Chinese medicines will achieve an annual average growth rate of 33%, with the latter to exceed Rmb15 billion.

In aggressively undertaking the construction of a modern manufacturing base of Chinese herbal medicines, Jiangxi has successfully completed its transition from the simplistic mode of growth in volume towards synchronous development in both quantity and quality, so as to ensure the industry's sustainable development. In order to take full advantage of its rich natural resources of Chinese herbal medicines, and to transform them into economic advantages, Jiangxi has fostered a number of leading enterprises producing Chinese herbal medicines, including Jiangzhong Group (江中集團), Herbi-sky Co Ltd. (天施康中藥股份), and Huiren Group (滙仁集團), to help extend the industry chain and form industry clusters. All these would lead to mass production and market-oriented operation, hence strengthening the competitiveness of Jiangxi's Chinese herbal medicines industry. The province plans to develop 5-10 Chinese herbal medical products during the Eleventh Five-year Plan period and will leverage on local resources with proven efficacy to develop them into Chinese medical products with intellectual property rights and market competitiveness. This will help bolster the Chinese herbal medicines industry to become another major growth engine of Jiangxi's economy.

### **Development plan of the pharmaceutical industry**

According to Jiangxi's recently released investment guide for the pharmaceutical

industry, priority will be given to patented Chinese medicines. Jiangxi will fully leverage on its unique resources and geographical advantage to accelerate the development of the Chinese herbal medicines industry. It will also strengthen its reform efforts, develop new products such as mini-pills, and speed up the modernisation of the industry. Priority is given to the development of new patented Chinese medicines that provide remedies to viruses, tumours, cardiovascular and cerebrovascular diseases, geriatric diseases, gynecopathy, hepatitis, etc. Moreover, through the application of new and high-technologies, and suitable advanced techniques, Jiangxi has already transformed the two major Chinese herbal medicine segments<sup>1</sup> of Jiangxi Jianchang (建昌幫) and Zhangshu (樟樹幫), helping to accelerate the growth and development of Jiangxi's Chinese herbal medicines industry.

To ensure the sustainable development of the Chinese herbal medicines industry, Jiangxi stepped up its efforts in rectifying the Chinese herbal medicines and healthcare products, getting rid of poor quality products in the market. According to the regulations released by the State Food and Drug Administration, Jiangxi has been continuously regulating and reforming the market of healthcare products since 2003. Only qualified products under the National Standards of Drugs are allowed in the market. Since January 1, 2004, Jiangxi has revoked all approved documents for "healthcare" products. That means, Jiangxi no longer allows Chinese herbal medicines to be disguised as "healthcare" products for selling in the market.

### **Upgrading the standards and developing the international market**

Tightening supervision and control over the quality of Jiangxi's Chinese herbal medicines not only paves the way for development of Jiangxi's pharmaceutical industry, but also enhances the popularity of Chinese herbal medicines in the international market. Recently, Chinese herbal medicines, which are made of natural materials, are receiving greater attention in the international market. The annual growth rate of Chinese herbal medicine sales in the international market has exceeded 15%. However, in the international market which has a total turnover of about US\$30 billion, China accounts for only 3-5% of the market share. About 90% of the market share goes to Korean and Japanese manufacturers, which also take up about 30% share of the domestic Mainland market of Chinese herbal medicines. These figures reflect the need for Chinese manufacturers to exert efforts in raising the confidence of international consumers in Mainland products. Any achievements in this field will assist Jiangxi's Chinese herbal medicines enterprises to take

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<sup>1</sup> Jianchang and Zhangshu are jointly known as Jiangxi's medicinal sects, which is one of 13 major medical segments in the country. Jianchang originated from Nancheng County (南城縣) and is well-known for the processing of traditional medicated drinks and distribution of Chinese herbal medicines. It enjoys a good reputation in 40 cities and counties of Jiangxi and Fujian, and even in Guangdong, Hong Kong, Taiwan and Southeast Asia. Zhangshu originated from Qingjiang County (清江縣) of Jiangxi, which was a famous distribution centre of Chinese herbal medicines during the period of Three Kingdoms of China. Numerous trees were piled up along the two sides of Yuan River and those who are engaged in the processing of Chinese herbal medicines naturally adopted the Zhangshu reputation. The technological development of patented medicines of Zhangshu has picked up in recent years, attracting businessmen of Chinese herbal medicines from other places to deliver Chinese herbal medicine materials to Zhangshu for processing and exchange.

lead in entering the international market. Hong Kong enterprises can also seek new business opportunities while helping Jiangxi's Chinese herbal medicines industry achieve internationalisation. Being one of the six pillar industries of Jiangxi, a goal has been set for Jiangxi's Chinese herbal medicine industry, that the annual sales revenue of its patented Chinese medicines and biopharmaceutical enterprises will exceed Rmb20 billion by 2007.

## **Nanchang Introduces New Measures to Encourage Taiwanese Investments**

Jiangxi has grown to become a popular destination of Taiwanese investments in recent years. As the provincial capital city of Jiangxi, Nanchang is situated at the central pivot linking three major economic regions of Shanghai, Fujian and Guangdong. With such strong regional advantages, Nanchang is one of the preferred investment spots of Taiwanese investors. According to a survey conducted by the Taiwan Electrical and Electronic Manufacturers' Association on the "Investment Environment and Risks in Mainland China", Nanchang ranked 10<sup>th</sup> among the surveyed cities, topped the list among cities in the central provinces. Results of the survey showed Nanchang was rated in the same rank as Minhang (閔行) of Shanghai, Xiaoshan (蕭山) of Hangzhou, Kunshan (昆山) of Suzhou and Chengdu.

### **Taiwanese investments diversifying**

Taiwanese enterprises which pioneered in investing in Jiangxi are now in the harvesting period. As most of these enterprises enjoy favourable profitability, Taiwan investors have grown more confident about investing in the province, and are increasingly willing to undertake long-term investment plans and strategies. In the first half of this year alone, more than 10 Taiwanese enterprises have increased their capital investment in the province. For instance, after building a cement plant in Jiangxi, Taiwan Far Eastern Group (台灣亞東集團) further invested US\$220 million into Jiangxi, adding their third and fourth production lines. Having raised its investment several times in the past, Federal Tire (泰豐輪胎) has now accumulated more than US\$100 million investment in Jiangxi. As of June this year, Jiangxi has approved a cumulative total of 1,759 direct and indirect Taiwanese investment projects. The actual inflow of Taiwanese investments amounted to US\$1.715 billion and is the second largest source of foreign investment for the province. Among the registered Taiwanese enterprises, a number of them involve large-scale investments. There are 39 enterprises with investment contracts exceeding US\$10 million worth, and 4 enterprises exceeding US\$100 million. Besides, ten of the top-100 private enterprises of Taiwan already have made investment in Jiangxi.

Apart from expanding the scale of investment, the scope of Taiwanese investments is also increasingly diversifying. In recent years, investments made by Taiwanese investors in Jiangxi's manufacturing sector have picked up rapidly. A number of capital/technology-intensive manufacturing projects have been launched in Jiangxi, such as Teco Motor (東元電機) which invested US\$88 million to build the Teco Household Appliances Industrial Park (東元家電工業園); Jaya Holdings (成功控股) which invested US\$50 million to manufacture laptop computers; Yue Yuen Group (裕元集團) together with Hong Kong's Huajian Co. Ltd (華堅公司合資) jointly invested US\$100 million to build a shoes manufacturing industrial town; Huihua Group (惠華集團) which invested US\$50 million to establish the Huaxia Metal Wire Products Corporation (華夏金屬線製品公司); and Jingzhan

(Nanchang) Technologies Corporation(晶滢(南昌)科技公司)which invested US\$30 million for the development of semiconductor chips. Besides the manufacturing industry, Taiwanese investors are also extending the investment interest towards infrastructure construction and services industries. There has been an increasing number of investments committed in sectors such as education, sanitation, commerce, retail, networking & technology, finance, tourism, entertainment, etc.

### **New policies are launched to encourage Taiwanese investments**

Having been acquainted with Jiangxi's investment environment, Taiwanese investors have shown interest in investing in the province. Nanchang has thus introduced four measures to increase the attractiveness of the city to Taiwanese investors so that more Taiwanese investment will be ushered in to accelerate the economic development of Nanchang. The measures are as follows:

1. Nanchang will encourage and support Taiwanese investors setting up their enterprises in its industrial parks. Without infringing the policies on land-use and other relevant principles of the State, these investors will be allowed to seek business opportunities independently. The local government (board of management of industrial parks) will arrange a task force to provide a full range of high-quality services to investors free of charge. Apart from the existing preferential policies and tax measures offered to enterprises in the industrial parks, the relevant finance bureaux will also reward Taiwanese investors who established the industrial parks by refunding 2% of the incremental investments into the industrial parks. In support of enterprises that are engaged in the manufacturing of key products in the industrial parks, their applications for project loans will be treated with priority when loan subsidies financed by the special manufacturing industry development fund are considered.
2. Taiwanese investors establishing software or IT enterprises are entitled to use office facilities or factory premises free of charge for a period of two years. For those Taiwanese software enterprises which rank among the top-100 national software enterprises, they will be rewarded by the municipal government with a one-off cash reward of Rmb600,000, while those that develop state-level software products will be given a one-off cash reward of Rmb200,000. Enterprises with products newly-rated as state-level, provincial/municipal-level, or considered intelligent and new products will receive one-off cash rewards of Rmb200,000, Rmb60,000 and Rmb40,000 respectively for each of the new products developed.
3. For Taiwanese enterprises investing over US\$50 million, the local government will arrange a project service team to provide them with a full range of supporting services at no charge. The service team will handle all application procedures related to land, planning and registration for the enterprises. Newly established industrial enterprises

may be exempted from incorporation fees charged by local municipal/county governments. A 50% subsidy on inland freight will be offered to Taiwanese enterprises whose paid-up capital have been fully invested and who generate more than US\$5 million in foreign exchange earnings through exports.

4. Nanchang will provide quality services relating to accommodation, medical treatment, education of children, etc. For instance, a Taiwanese Businessmen's Medical Card System has been set up and there are designated hospitals to carry out regular physical examinations for Taiwanese businessmen at no charge. Taiwanese businessmen whose children are still within the age covered by compulsory education are also entitled to exemptions from extra fees charged on foreigners attending schools in Nanchang.

## **Hunan Promotes Agricultural Industrialisation in its Industrialisation**

As a leading agricultural province, agricultural industrialisation is regarded an important segment of industrialisation. To modernise its agriculture, Hunan must consider agricultural industrialisation in parallel with industrialisation. This will enhance the linkage between the two economic segments and enable them to mutually promote each other.

### **Mutual promotion between industrialisation and agricultural industrialisation**

Hunan's agricultural sector is far from being industrialised. There are only a handful of competitive enterprises in this area; most of the others are small in scale, not competitive enough, and are not generating reasonable returns. Hence, farmers have not been eager in participating in agricultural industrialisation. Apart from the weak line-up of enterprises, the products also need improvement. At present, the processing and conversion capacity of agricultural products are weak and good-quality products are hard to find.

Up to mid-2005, only 7 or 11% of Hunan's provincial-level agricultural enterprises have reached a scale where total assets exceed Rmb500 million, and only 12 or 20% of the enterprises generate annual sales of more than Rmb200 million. Together, they are in business with less than 30% of the farmers. In some developed countries, the proportion of primary products output to processed products output is around 1:3, but in China, the proportion is only 1:1 and in Hunan only 1:0.92. This indicates that Hunan still needs to step up its development of processed agricultural products. In order to achieve agricultural industrialisation, Hunan needs to improve its processing rate before it can enhance its chain of value-added. Then, it needs to boost the returns of the agricultural product processing enterprises so that the incomes of farmers can be raised. Hence, Hunan must first strengthen the foundation of its key enterprises, then develop rural economic cooperatives, and improve the system of controlling the quality of agricultural products. Through industrialisation and urbanisation, Hunan can promote industrialisation in its agricultural sector, making it in the long-term a path for achieving sustainable growth in the incomes of farmers.

Advanced technologies are essential to the improvement of agricultural efficiency and to raising the incomes of farmers. Methane applications, for example, address not only the fundamental problems of shortage in firewood, but also help to improve the living environment and quality of living for rural people. In order to promote the application of technologies in rural areas, governments at all levels and relevant authorities will encourage the applications of technology on agricultural production by examination, demonstration, training, providing guidance and consultation services, etc. Task forces will be formed to promote agricultural technologies and funding will be ensured.

## **Perfecting the mechanism for market entry**

To widen the scale of operation of agricultural enterprises, Hunan needs to have sufficient capital, a sound investment environment and favourable investment policies. At present, the investment mechanism of the agricultural sector is yet to be improved. Investment funding of the state or banks is difficult to obtain, while private and foreign investments are also insufficient. It is evident that investment conditions need further improvement to be able to spur the industrialisation of agriculture. Of utmost importance is to allow banks' credit departments to perform their functions when considering and assessing projects that require funding. Their objective assessment will be helpful to these projects when they eventually seek the support of foreign investors. It is also necessary to exert more effort into the management of funds for the development of the agricultural industry. The improved mechanism for market entry will lift the incomes of farmers. This year, Hunan has accelerated the opening-up of its agricultural industry; more investment promotion activities were hosted. These efforts not only ushered in more foreign investments, but also cultivated a wider channel for exporting Hunan's agricultural products.

Hunan hopes to introduce more new technologies by attracting more foreign investments. It can then spur the process of agricultural industrialisation to keep up with the pace of industrialisation in the other economic segments. By increasing the incomes of the rural population, the longstanding imbalance between urban and rural development can also be addressed. The Provincial Party Committee and Government have indicated that in 2004, 19% of Hunan's rural households achieved well-off standard of living and Hunan ranked second among the six central provinces in terms of incomes of rural residents. The proportion of rural households reaching well-off standard of living was 3.8 percentage points higher than in 2003 and 11.4 percentage points higher than in 2001, reflecting improving incomes of farmers. According to a sample survey of rural households, farmers' incomes growth in 2004 was the highest since 1998 and had reached an overall well-off level.

Last year, Hunan closed 356 deals in agricultural cooperation with the nine provinces/region of the Pan-PRD, equivalent to 40% of external investment projects. The actual amount of paid-up capital on agricultural projects reached Rmb576 million, constituting 48.5% of total external-invested paid up capital, reflecting the effectiveness of the efforts undertaken this year. During the Hunan (Hong Kong) Trade Conference held in July, Hunan again closed 70 other agricultural deals with Pan-PRD partners, involving a total investment of US\$691 million. To date, Hunan already has five key agricultural industrial chains in place: cereal, oil, linen and cotton; meat, milk and aquatic products; fruit, vegetable and tea; bamboo, wood, forestry and paper; and tobacco. The province has also launched 100 projects for attracting foreign investments involving a total investment sum of Rmb23 billion. As the platform for the Pan-PRD region to implement the strategy of "Bringing in Foreign Investment and Going Global", Hong Kong will be able to find new business opportunities from the recent development of Hunan's agricultural industrialisation.

## **Three Competitive Industrial Clusters of Changsha to Take Initial Shape by 2007**

In recent years, Hunan's provincial capital, Changsha (長沙), has focused on the development of advanced manufacturing industries. The city has attracted investors for strategic purposes and is relying on its industrial parks to "revitalise industries and strengthen the city" (興工強市). These factors are expected to spur the rapid growth of Changsha's manufacturing industries, which will come to make up an important part of the city's economic growth. In 2001-2004, the gross output value of its manufacturing industries has grown at an annual average rate of 25.3% annually, contributing to 34.6% of its GDP growth.

The competitiveness of Changsha's manufacturing industries is founded on its robust resources of land and labour, as well as its strength in technology. Changsha has formed three pillar industries: engineering & machinery, tobacco & foodstuff, and electronics & information technology. Together, they constitute 45% of the gross industrial output value of the city and the total value of their investment exceeds Rmb30 billion. Although the production scale is sizeable, Changsha's industrial sector still lacks advanced technologies. Furthermore, its clustering effect and innovativeness are inadequate to serve as a breakthrough for the sustainable development of its economy. Hence, Changsha needs to take a step further in enhancing the competitiveness of its industrial sector.

### **Accelerate the construction of competitive industrial clusters**

To highlight the unique advantages of its manufacturing industry, the Municipal Party Committee and Municipal Government of Changsha have jointly promulgated "Several Opinions on Accelerating the Construction and Development of Competitive Industrial Clusters and Industrial Parks" (Opinions) in September 2005. According to the Opinions, the city would strive to develop three key industries, namely, engineering & machinery, automobile, and home appliances, and turn them into the most competitive industrial clusters in the central and southern Mainland regions. By 2007, these industries would have taken initial shape and would generate an output value of Rmb50 billion, rising to exceed Rmb100 billion by 2010. Of this sum, output generated by the engineering & machinery industry, automobile industry and home appliances industry would reach Rmb35 billion, Rmb35 billion and Rmb30 billion respectively. The development of these three industrial clusters would be led by Sanyi Heavy Industry (三一重工) -- a leader in the engineering & machinery industry, Changfeng Auto Group (長豐集團) and Beiqi Foton Motor (北汽福田), which are the leading enterprises of the automobile industry, as well as Electrolux (伊萊克斯), which will spearhead the home appliance industry.

Meanwhile, the Municipal Party Committee and the Municipal Government also aims to boost the total gross output value of three emerging industries, namely, electronics &

information technology, new materials, and bio-pharmaceutics, to Rmb100 billion. The total gross output value of those traditional industries such as foodstuff & tobacco, construction materials, and textile & clothing, etc. would reach Rmb50 billion. In the next three years, Changsha would strive to develop a number of leading enterprises, which can achieve annual sales revenues of over Rmb10 billion. Those large-scale enterprises and groups with strong competitiveness would then come to form the core industrial clusters. They would also help the small and medium-sized enterprises strengthen their abilities to provide complementary products and services. Priority would also be given to the development of several supporting enterprises, to spur them to achieve annual sales revenue of over Rmb500 million.

### **Policy support from the government**

In achieving the above objectives, Changsha Municipal Party Committee and Municipal Government will adopt a series of supportive measures. More than Rmb20 million in funding will be allocated to subsidise the interest payment of loans extended to the construction of industrial parks and to further support the development of industrial clusters. The authorities will also encourage acquisition, merger and reorganisation of enterprises belonging to the three key industries, together with enterprises of related industries. These enterprises will be exempted from all deed taxes arising from the transfer of ownership in shares and properties after restructuring, leaving them with more funds to re-invest in the industry and arrange for staff placement. Financial institutions are also requested to support the development of the three industrial clusters. In order to further encourage innovation, enterprises which have newly established state-level or provincial-level technical centres will be awarded a one-off bonus of Rmb200,000 or Rmb100,000 respectively.

To encourage the development of advanced technologies in these industries, the Municipal Party Committee and Provincial Government have also promulgated the following guidelines:

1. Actively guide enterprises to analyse and study the market, and strengthen their ability and standard in market development. Apart from improving the quality of products, market development also entails establishing an independent brand name and adopting market-oriented selling strategies.
2. Regard enterprises as the core of development and leverage on the initiatives of enterprises and stimulate their motivation and capabilities for further development. First is to deepen the reform of state-owned enterprises; second is to attract strategic investors; and third is to expand investment.
3. Aggressively promote innovativeness and aim to establish an integrated, systematic, vigorous and market-oriented mechanism of innovation. Innovativeness is required not

only in the market systems, but also in technology and management.

4. Transfer government functions to economic adjustments, market surveillance, social administration and public services, with the objectives of perfecting the services to investors and improving the investment environment. More important, the government functions to instil the economic order and optimise the market environment.

The above measures will help improve Changsha's investment environment and provide enterprises engaged in the competitive industries with preferential policies. Hong Kong investors, who are interested to invest in Changsha should take note of these measures.

## **Hainan Invests Rmb9 Billion into Power Grids**

Hainan's Provincial Government estimated that the sustained industrial development and economic growth of the province would boost its demand for electricity to 17.5 billion kilowatt-hours (kwh) during the Eleventh Five-year Plan period. To meet such an escalated pace of growth, relevant experts reviewed and approved the "Eleventh Five-year Plan for the Power Grids of Hainan and its Long-term Targets in 2020" in September 2005. During the planned period, Hainan will mainly invest Rmb9 billion to transform the existing 200 kilovolt (kV) single-loop power grids into double-loop power grids.

### **Expansion of power grids has begun**

In recent years, Hainan has been actively implementing the strategy of "bringing in large enterprises and big projects". It is expected that the large-scale industrial investment projects will soon start production. These large- and medium-sized industrial projects include 1.6 million tons of papermaking, 8 million tons of oil refining, 600,000 tons of methanol production, 700,000 tons of float glass manufacturing, 1.1 million tons of extractive powder mine exploitation and another million-ton of methanol production. By 2007, the operation of these projects will boost the power load to a new high.

However, the power grids in Hainan are starting to show signs of aging. This year, rationing of electricity was implemented several times in Hainan because of frequent maintenance and repairs of equipment that broke down. Besides, since Hainan's power grids are isolated from the others, it has no alternative power source to turn to in these emergency cases. Hence, alongside their active promotion of investments in recent years, Hainan also work to ensure that the electricity supply will be expanded to facilitate investment growth. The total investment in power grid construction will be increased to Rmb1.299 billion this year, almost twice the level in 1997. 21 major construction projects will be launched this year, including the Rmb60 million investment in the "Oil to Gas" technological transformation project of Qinglan Power Plant (清瀾電廠). Major power grid construction projects that will be carried out in the coming two years include: Hainan's power linking project, and several 220 kV power transmission and transformation projects such as that from Haikou Power Plant to Yongzhuang (永莊), between Haikou Qiuhai (丘海) and Daying Mountain (大英山), as well as between Danzhou Sandu (儋州三都) and Sanya Tengqiao's (藤橋).

### **The Eleventh Five-year Plan of Hainan's power grids**

As Hainan is accelerating its industrialisation, its demand for electricity is expected to reach 17.5 billion kwh by 2010, with an annual growth rate of 15.5%. The figure is two times that of the 8.5 billion kwh required in 2005. The maximum generation load of the

province's power grids is 2.6 million kilowatts, with an average growth rate of 14.9% and an absolute increase of 250,000 kilowatts annually. By 2015, the province's demand for electricity is expected to reach 30 billion kwh, with the maximum generation load to reach 4.3 million kilowatts. By 2020, its demand for electricity is expected to grow to 47 billion kwh and the maximum generation load will reach 6.6 million kilowatts.

To cater to the expected rise in demand for electricity, the Plan proposed that Hainan would construct two major power plants on its eastern and western wings during the period of the Eleventh Five-year Plan. This would fill up the gap left by insufficient supply of electricity in the Western Industrial Corridor and the Eastern Single-loop Power Grids. The construction project would focus on the two power grids of Haikou and Sanya. They would also speed up the construction of the power grids for tourism regions such as Wenchang (文昌), Qionghai (瓊海), Wanning (萬寧) and Lingshui (陵水) in the east, and for industrial regions such as Laocheng (老城), Yangpu (洋浦), Changjiang (昌江) and Dongfang (東方), etc. in the west. Hence, Hainan's overall power supply situation is expected to improve in both urban and rural areas. Specific targets set for the power grid construction were: by 2010, Hainan would be backed up by the round-island 220kV double-loop main power grid, and would be linked to the main power grid of the China Southern Power Grid through a 500kV undersea cable. By 2020, they would complete construction of the round-island 550kV main power grid and through the multiple-loop power transmission, and power linkages with China's southern power grid would be strengthened.

Currently, the feasibility of Qiongzhou's (瓊州) Rmb1.6 billion undersea cable project, which has been designated as a key construction project of Hainan, has passed the stages of evaluation, preliminary designs, survey and appraisal of the routing of this undersea cable, project approval and appraisal conducted by China International Engineering Consulting Corporation (中國國際工程諮詢公司), etc. It is expected to become operational in the first half of 2007, just before the demand for electricity peaks. It will improve the economic efficiency of the power grids and pave the way for mutual power transmission between the Hainan Power Grid and China Southern Power Grid. These will help to ease the problem of power shortage of Hainan.

The Plan also suggested that Hainan would focus on the long-term development of gas power, and construct appropriate and clean coal power plants. Hainan would also actively plan and construct nuclear power plants, as well as encourage the development of hydropower and wind power. Hong Kong and foreign investors who are interested in the power market of Mainland may seek new business opportunities while Hainan is accelerating its construction of related infrastructure.

## **Hainan Constructs a Rubber Production Base**

China is currently the world's number-one consuming and importing country of natural rubber, while Hainan is the largest production area of natural rubber in China. Hainan possesses 5.6 million mu of rubber woods, and its output of natural rubber accounts for over 50% of China's total output. According to Mr. Wu Yarong (吳亞榮), the Director General of Hainan General Bureau of Agriculture and President & General Manager of the Hainan Natural Rubber Industrial Group Co., Ltd. (海南天然橡膠產業集團股份有限公司), a new strategy will be implemented to develop the rubber industry of Hainan. Domestically, the industry will introduce innovative methods of management, and externally, it will adopt the "go global" strategy. Hainan will strive to construct the No. 1 brand of China rubber.

### Hainan Natural Rubber Industrial Group Co. Ltd.

The company was established in March 2005 by Hainan General Bureau of Agriculture, when all operating assets related to the production of natural rubber were injected in the company. Hainan General Bureau of Agriculture is one of the four major agricultural districts directly under the control of central government. It has 126 large and medium-sized enterprises, 17 shareholding companies and 19 joint stock enterprises. It spans an area of 850,000 hectares, constituting 1/4 of land area of Hainan and 1/7 of the gross output value of industry and agriculture.

### **Development strategy of the rubber industry**

Natural rubber, together with steel, petroleum and coal, are called four major industrial raw materials. They are the materials of basic industries and are strategically related to national interests and people's livelihoods. In view of the Mainland's rapid economic development in recent years, the boom of manufacturing industries -- especially automobile manufacturing -- has raised the demand for natural rubber for industrial use. China's output of natural rubber was about 500,000 tons in 2004, constituting only 7% of the world's total output. However, the Mainland's consumption of natural rubber has reached 1.8 million tons, constituting over 20% of the world's total consumption. According to the forecast of the International Natural Rubber Organisation, China's natural rubber consumption will reach 3-4 million tons in the coming 10-15 years, accounting for 1/4 - 1/3 of the world consumption of 12 million tons. Considering the current scale of planting of rubber trees, the total annual output of natural rubber in China can only grow to 700,000 tons by that time. Hence, the market of natural rubber faces very good prospects. Hainan should also seize this opportunity to strongly develop its rubber industry.

Mr. Wu Yarong indicated that in order to strengthen the natural rubber industry, the company has to be transformed from its original operating mode of selling raw materials only.

Currently, downstream products are not yet developed and an industrial chain has not been established, putting a cap on its value-added. The company has laid down the policy direction for exploring both domestic and international markets. Specific development plans would include implementation of the strategies of technological advancement in rubber production and the establishment of an operating mechanism for spurring relevant technological innovation. The company will seek technological breakthroughs in such fields as rubber cultivation, enrichment of rubber woods and refined processing of rubber products. As for the selling side, the company needs to implement large-scale marketing strategies and establish logistics and distribution stations in major sales points in the big cities so as to expand their sales network. It needs to employ modern marketing techniques such as e-business centres to establish long-term strategic partnerships with domestic manufacturers, the end-users of natural rubber, in order to enhance profitability. As for the international market, "going global" will help the company establish cooperation with ASEAN countries in the fields of rubber planting, processing and marketing, etc. This would help the industry expand externally and the increased exposure would strengthen its international competitiveness.

### **Initial achievements of "going global"**

In August 2005, Hainan General Bureau of Agriculture signed a Memorandum of Understanding with Vietnam Rubber Corporation in Hanoi. The Vietnamese company has agreed to make use of an e-market established by the electronic transaction centre of a subsidiary company of Hainan Rubber Holding Group (海南橡膠集團控股). After becoming a member of the electronic transaction centre, Vietnam Rubber Corporation will authorise the centre to sell Vietnamese rubber products on its behalf. The two sides will also jointly launch an electronic transaction centre in Vietnam to ensure smooth selling of Vietnamese products in China. Both parties will also strengthen cooperation in natural rubber planting and processing techniques, and organise regular visits and exchange programs so as to regularly exchange information on the techniques of planting and processing of natural rubber as well as other information related to the overall development of the industry. As such, they can mutually enhance the competitiveness of both countries in the global rubber market.

Separately, in July 2005, Hainan General Bureau of Agriculture reached an agreement with Lanke Corporation of Malaysia. Hainan has agreed to lease a piece of land of 900,000 mu from Lanke Corporation for planting rubber and carrying out refined processing of rubber products. The leasing period of the land is 60 years and the first phase of rubber plantation will cover an area of 195,000 mu. Hainan will also seek to cooperate with other Southeast Asian countries such as Cambodia and Thailand in rubber planting and processing.

## **Memorabilia of Pan-PRD Regional Cooperation**

### **Fujian**

#### **The First Cross-Strait Tourism Expo**

(September 7, 2005) The Expo was jointly sponsored by National Tourism Administration and Fujian Provincial Government, and co-sponsored by the tourism of Fujian, Taiwan, Hong Kong and Macao. Representatives from the tourism departments of these four regions attended the round-table conference and signed the "Memorandum of Cross-Strait Tourism Cooperation". According to the Memorandum, the tourism departments of these four regions will jointly launch festivals and promotional activities. Publicity materials for Cross-Strait tourism will be produced. There will also be exchange of both the tourists and information on the scenic spots.

#### **Lu Zhangong recommended Fujian's tourism highlights to He Houhua**

(September 7, 2005) During the meeting, Mr. Lu Zhangong, the secretary-general of Fujian Provincial Party Committee, recommended Fujian's tourism highlights to Mr. Edmund Ho, Chief Executive of Macao SAR. Mr. Ho immediately suggested that the annual conference for promoting Fujian-Macao cooperation be held in Fujian next year.

#### **Agricultural cooperation between Fujian and Taiwan**

(September 10, 2005) A symposium was held between representatives of the agricultural industries of Fujian and Taiwan. During the meeting, 72 projects worth a gross investment value of more than US\$280 million were closed.

### **Jiangxi**

#### **Jiangxi-Taiwan Economic & Trade Cooperation Symposium 2005**

(September 12, 2005) The symposium was held in Lushan and attended by representatives from the business communities of Taiwan and Macao. The participants also visited Ji'an City, Jinggangshan and Nanchang City of Jiangxi, and entered into trade talks with the relevant departments of the local governments to understand the business environment in the province and seek business opportunities.

#### **Jiangxi entered into Memorandum of Understanding with Tata Group, an Indian IT enterprise**

(September 14, 2005) Mr. Sun Yuxi, China's Ambassador to India, met a delegation of Jiangxi representatives who visited India. During the meeting, Jiangxi delegates indicated that they hoped to strengthen cooperation with India. India's Tata Group, in particular, expressed strong interest in the investment environment of Jiangxi and has indicated intention to visit the province and initiate talks for setting up ventures in areas such as the software

industry, tourism and hotel services.

## **Hunan**

### **Guangdong-Hunan Chamber of Commerce was established in late September**

(September 23, 2005) The objectives of the chamber are to "establish closer links, complement each other's advantages, exchange information, promote mutual development and safeguard lawful rights and interests of its members".

### **Hunan-Taiwan Forum in Economic & Trade Exchange and Cooperation**

(October 29, 2005) Sponsored by Hunan's Provincial Government and supported by the Taiwan Affairs Office of the State Council, the forum was held in Changsha. Invitations were extended to Taiwanese businessmen engaged in the fields of high-technology industry, construction materials and cement, metals and machinery, automobile, foodstuff, development and processing of agricultural by-products, developers of scenic spots and facilities for tourism, as well as the textiles industry. They included heads of large Taiwanese enterprises, well-known Taiwan entrepreneurs who are actually overseas Hunanese and other Taiwanese businessmen who are interested to invest in Hunan.

## **Nine provinces/regions**

### **Building a platform for transacting property rights among Pan-PRD provincial capital cities**

(September 4, 2005) Hostile competition arose in the property rights market, as too many different regulations exist to monitor transaction of things that matter. Hence, Pan-PRD provincial capital cities are currently planning to strengthen cooperation and integrate the resources among their different property rights transaction markets. Over 70 property rights transaction projects were short listed for presentation during the Guangzhou Expo which was scheduled to start on October 2, 2005.



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#### IV. DATA AND TRENDS

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➤	Fujian -----	62
➤	Jiangxi -----	63
➤	Hunan -----	64
➤	Hainan -----	65
➤	Major Economic Indicators of Nine Pan-PRD Provinces/Region (Jan-Jun 2005) -----	66
➤	Nine Pan-PRD Provinces/Region: 10-Year Economic Trend (1995-2004) -----	67
➤	Nine Pan-PRD Provinces/Region: Statistics at a Glance (2004) -----	68

## Fujian

	2003	2004	2005 Jan - Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn) <sup>3,4</sup>	5,242	6,053	2,929	-	-	-
Real Gross Domestic Product Growth (%) <sup>3,4</sup>	11.5	12.1	11.2	-	-	-
Urban Per Capita Disposable Income (Rmb) <sup>3,4</sup>	10,000	11,175	6,472	932	945	951
Rural Per Capita Net Income (Rmb) <sup>3,4,5,7</sup>	3,734	4,089	2,160	-	-	-
Consumer Price Index (%) <sup>3,4,6</sup>	0.9	4.0	3.0	3.3	2.9	2.2
Retail Sales of Consumer Goods (Rmb100 mn) <sup>3,4,6</sup>	1,740	1,996	1,142	192	188	18.5
Year-on-year growth (%) <sup>2,3,4,6</sup>	12.8	14.7	12.8	-	-	-
Value-added of Industry (Rmb100 mn) <sup>3,6,8</sup>	1,461	1,846	1,055	209	191	194
Year-on-year growth (%) <sup>2,3,6,8</sup>	23.9	23.5	18.8	24.3	20.4	19.7
City, County and Above Investment in Fixed Assets (Rmb100 mn) <sup>3,6,9</sup>	1,182	1,601	775	775	921	1,090
Year-on-year growth (%) <sup>2,3,6,9</sup>	19.4	29.0	17.9	17.9	16.2	18.9
Value of Exports (US\$100 mn) <sup>10</sup>	234.9	305.7	166.5	32.9	30.5	34.9
Value of Imports (US\$100 mn) <sup>10</sup>	151.1	193.7	100.5	18.7	16.5	19.7
Foreign Direct Investment (US\$100 mn) <sup>4,6</sup>	49.9	53.2	15.8	-	-	-

Notes:

- 1 - Values are all in nominal terms.
- 2 - Real growth rate.
- 3 - 2004 Annual data source: Fujian Provincial Bureau of Statistics External Information Website.
- 4 - 2003 Annual data source: Fujian Statistical Yearbook 2004.
- 5 - Jan - Jun data source: Fujian Provincial Bureau of Statistics External Information Website. Data for Retail Sales of Consumer Goods taken from Fuzhou Evening Post, July 21, 2005.
- 6 - Monthly data source: Fujian Provincial Bureau of Statistics External Information Website.
- 7 - Quarterly 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; source: China Custom Statistics.

## Jiangxi

	2003	2004	2005 Jan - Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn) <sup>3,6</sup>	2,830	3,496	1,563	-	-	-
Real Gross Domestic Product Growth (%) <sup>3,6</sup>	13.0	13.2	12.5	-	-	-
Urban Per Capita Disposable Income (Rmb) <sup>3,6,7</sup>	6,901	7,560	4,370	673	638	679
Rural Per Capita Net Income (Rmb) <sup>4,5,9</sup>	2,458	2,953	1,378	-	-	-
Consumer Price Index (%) <sup>3,6,7</sup>	0.8	4.0	2.3	2.2	1.9	1.1
Retail Sales of Consumer Goods (Rmb100 mn) <sup>4,6</sup>	923	1,060	564	98.6	92.2	96.1
Year-on-year growth (%) <sup>2,4,6</sup>	11.6	12.6	14.9	16.3	-	-
Value-added of Industry (Rmb100 mn) <sup>3,5,7,8,10</sup>	440	618	360	73.3	67.2	69.1
Year-on-year growth (%) <sup>2,3,5,7,8,10</sup>	21.0	26.1	23.6	30.4	22.5	24.7
City, County and Above Investment in Fixed Assets (Rmb100 mn) <sup>3,6,7,11</sup>	975	1,488	590	590	715	845.4
Year-on-year growth (%) <sup>2,3,6,7,11</sup>	46.6	36.0	27.0	27.0	27.9	28.3
Value of Exports (US\$100 mn) <sup>12</sup>	14.2	26.1	11.9	2.3	2.5	2.3
Value of Imports (US\$100 mn) <sup>12</sup>	15.4	22.1	11.5	1.6	1.8	2.2
Foreign Direct Investment (US\$100 mn) <sup>4,6</sup>	16.1	20.5	11.6	-	1.9	-

Notes: 1 - Values are all in nominal terms.

2 - Real growth rate.

3 - Annual data source: Jiangxi Statistical Information Net.

4 - Annual data source: Annual Announcement on the Economic and Social Development of Jiangxi Province.

5 - Jan - Jun data source: National Bureau of Statistics Website.

6 - Jan - Jun data source: Jiangxi Statistical Information Net.

7 - Monthly data source: Jiangxi Statistical Information Net.

8 - June data for value added of industry taken from the National Bureau of Statistics Website. Jun data for Retail Sales of Consumer Goods taken from Nanchang Daily, July 21, 2005.

9 - Jan - Jun data refer to cash income, normally announced only in March, June, September and December.

10 - Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.

11 - Monthly data are year-to-date data.

12 - Classification according to source and destination of products. Data source: China Custom Statistics

## Hunan

	2003	2004	2005 Jan – Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn) <sup>3,6</sup>	4,634	5,612	2,834	-	-	-
Real Gross Domestic Product Growth (%) <sup>3,6</sup>	9.6	12.0	11.6	-	-	-
Urban Per Capita Disposable Income (Rmb) <sup>3,6,8</sup>	7,674	8,617	5,011	731	723	722
Rural Per Capita Net Income (Rmb) <sup>4,5,9</sup>	2,533	2,838	1,695	-	-	-
Consumer Price Index (%) <sup>3,6,8</sup>	2.4	4.9	3.5	2.8	2.3	1.0
Retail Sales of Consumer Goods (Rmb100 mn) <sup>4,6,7</sup>	1,816	2,070	1,113	191	186	186
Year-on-year growth (%) <sup>2,4,7</sup>	10.8	9.7	11.0	-	-	-
Value-added of Industry (Rmb100 mn) <sup>3,6,8,10</sup>	887	1,198	708	142	128	130
Year-on-year growth (%) <sup>2,3,6,8,10</sup>	20.7	24.1	21.0	22.7	22.6	20.7
City, County and Above Investment in Fixed Assets (Rmb100 mn) <sup>3,6,8,11</sup>	1,160	1,690	870	870	1,049	1,266
Year-on-year growth (%) <sup>2,3,6,8,11</sup>	27.9	36.0	33.8	33.8	32.5	36.0
Value of Exports (US\$100 mn) <sup>12</sup>	21.6	31.4	18.4	3.7	3.1	3.2
Value of Imports (US\$100 mn) <sup>12</sup>	25.4	29.4	15.3	3.1	3.2	3.1
Foreign Direct Investment (US\$100 mn) <sup>4,7</sup>	14.9	14.2	8.5	-	-	-

Notes: 1 – Values are all in nominal terms.

2 – Real growth rate.

3 – Annual data source: Statistical Information of Hunan Website.

4 – Annual data source: Annual Announcement on the Economic Conditions of Hunan Province.

5 – Jan - Jun data source: National Bureau of Statistics Website.

6 – Jan - Jun data source: Statistical Information of Hunan Website.

7 – 2004 data source: Hunan Daily, February 18, 2005.

8 – Monthly data source: Statistical Information of Hunan Website.

9 – Jan - Jun data refer to cash income, normally announced only in March, June, September and December.

10 – Include all state-owned enterprises and non-state-owned enterprises with annual turnover of Rmb5 million and above.

11 – Monthly data are year-to-date data.

12 – Classification according to source and destination of products. Data source: China Custom Statistics.

## Hainan

	2003	2004	2005 Jan - Jun	2005 Jun	2005 Jul	2005 Aug
Nominal Gross Domestic Product (Rmb100 mn) <sup>3,6</sup>	678	790	413	-	-	-
Real Gross Domestic Product Growth (%) <sup>3,6</sup>	10.5	10.4	9.5	-	-	-
Urban Per Capita Disposable Income (Rmb) <sup>3,6,7</sup>	7,259	7,736	4,323	600	599	623
Rural Per Capita Net Income (Rmb) <sup>4,5,8</sup>	2,558	2,818	1,640	-	-	-
Consumer Price Index (%) <sup>3,6,7</sup>	0.0	3.2	1.3	1.8	1.5	2.0
Retail Sales of Consumer Goods (Rmb100 mn) <sup>4,6,7</sup>	192	219	118	19.7	19.4	-
Year-on-year growth (%) <sup>2,4,6,7</sup>	10.8	-	-	-	-	-
Value-added of Industry (Rmb100 mn) <sup>3,5,7,9</sup>	86.0	123	60.4	12.6	10.2	-
Year-on-year growth (%) <sup>2,3,5,7,9</sup>	24.9	18.4	19.1	20.2	19.5	-
City, County and Above Investment in Fixed Assets (Rmb100 mn) <sup>3,6,7,10</sup>	238	235	-	153	-	-
Year-on-year growth (%) <sup>2,3,6,7,10</sup>	24.2	16.6	-	12.8	-	-
Value of Exports (US\$100 mn) <sup>11</sup>	6.5	8.2	4.1	0.8	0.7	0.7
Value of Imports (US\$100 mn) <sup>11</sup>	12.6	20.7	4.9	1.0	0.5	1.1
Foreign Direct Investment (US\$100 mn) <sup>3,6,7</sup>	5.8	6.4	3.0	0.8	-	-

Notes: 1 - Values are all in nominal terms.

2 - Real growth rate.

3 - Annual data source: Statistical Bureau of Hainan Province.

4 - Annual data source: Annual Announcement on the Economic and Social Development of Hainan Province.

5 - Jan - Jun data source: National Bureau of Statistics Website.

6 - Jan - Jun data source: Statistical Bureau of Hainan Province.

7 - Monthly data source: Statistical Bureau of Hainan Province; Jan - Jun data for Nominal Gross Domestic Product taken from Hainan Daily, July 23, 2005.

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 Rmb 5 million and above.

10 - Monthly data are year-to-date data.

11 - Classification according to source and destination of products. 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) <sup>3,5,8</sup>	2,929	1,563	2,834	413	1,612	1,298	795	3,232	8,902
Real Gross Domestic Product Growth (%) <sup>3,5</sup>	11.2	12.5	11.6	9.5	12.3	8.6	11.4	11.6	12.6
Urban Per Capita Disposable Income (Rmb) <sup>3,5</sup>	6,472	4,370	5,011	4,323	4,877	4,620	4,177	4,333	7,829
Rural Per Capita Cash Income (Rmb) <sup>4,5</sup>	2,160	1,378	1,695	1,640	1,319	1,009	809	1,451	2,686
Consumer Price Index (%) <sup>3,5</sup>	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) <sup>3,5</sup>	1,142	564	1,113	118	585	445	289	1,320	3,526
Year-on-year growth (%) <sup>2,3,5</sup>	12.8	14.9	11.0	-	13.4	-	13.3	14.1	-
Value-added of Industry (Rmb100 mn) <sup>3,6</sup>	1,055	360	708	60.4	349	486	249	958	3,985
Year-on-year growth (%) <sup>2,3,5</sup>	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) <sup>3,5</sup>	935	360	975	60.4	634	486	249	1,448	2,682
Year-on-year growth (%) <sup>2,3,5</sup>	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) <sup>3,5</sup>	775	590	870	-	564	594	352	1,292	2,255
Year-on-year growth (%) <sup>2,3,5</sup>	17.9	27.0	33.8	-	30.4	43.6	23.6	35.1	16.6
Value of Exports(US\$100 mn) <sup>7</sup>	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) <sup>7</sup>	100.5	11.5	15.3	4.9	14.0	14.9	4.8	15.1	885
Utilised Foreign Direct Investment (US\$100 mn) <sup>3,5</sup>	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 <sup>2</sup>	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 <sup>3</sup>	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 Assets <sup>4</sup>	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 <sup>5</sup>	18.3	18.0	10.4	10.3	7.6	9.8	18.8	11.3	14.3	14.4
Value of Imports <sup>5</sup>	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) <sup>6</sup>	297	61.5	67.7	38.3	36.0	9.9	2.3	36.1	839	1,388
Urban Per Capita Disposable Income <sup>7</sup>	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 <sup>2,7</sup>	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 – Classified 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) <sup>2,8</sup>	12.1	16.7	21.2	3.5	23.7	39.4	17.6	48.5	17.9	200.6
Population (10,000 persons) <sup>8</sup>	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) <sup>2,8</sup>	5.9	8.1	5.0	9.2	7.3	9.8	9.0	3.1	8.4	7.3
Non-agricultural (%) <sup>2,5</sup>	29.7	24.9	21.4	27.3	18.3	16.3	15.6	21.0	47.7	24.7
Tertiary-educated (%) <sup>2,3,9</sup>	5.6	7.6	5.5	7.1	5.4	2.2	6.5	4.4	6.4	5.4
Illiterate and Semi-illiterate (%) <sup>2,3,9</sup>	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) <sup>1,3</sup>	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) <sup>6</sup>	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) <sup>6</sup>	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 (%) <sup>6</sup>	12.1	13.2	12.0	10.4	11.8	11.5	11.4	11.5	14.2	12.0
Industrial Structure: Primary (%) <sup>6</sup>	12.9	20.4	20.6	36.4	24.4	20.4	21.0	21.3	7.8	15.8
Secondary (%) <sup>6</sup>	48.7	45.6	39.5	25.5	38.8	44.4	44.9	41.0	55.4	47.1
Tertiary (%) <sup>6</sup>	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) <sup>6</sup>	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) <sup>6</sup>	4,089	2,953	2,838	2,818	2,305	1,864	1,722	2,580	4,054	2,803
Average Wage (Rmb) <sup>2,8</sup>	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) <sup>6</sup>	1,996	1,060	2,070	219	973	884	518	2,384	6,371	16,475
Total Value-added of Industry (Rmb100 mn) <sup>6</sup>	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) <sup>6,11</sup>	1,846	618	1,198	123	596	881	438	1,546	7,086	14,332
Total Fixed Asset Investment (Rmb100 mn) <sup>6</sup>	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) <sup>6</sup>	1,601	1,488	1,690	235	1,113	1,066	776	2,378	4,906	15,253
Real Estate Investment (Rmb100 mn) <sup>8</sup>	478	243	335	56	192	150	122	510	1,356	3,441
Total Sales of Commercial Housing (Rmb100 mn) <sup>8</sup>	354	135	180	30	171	106	77	330	1,165	2,549
Average price (Rmb / sqm) <sup>8</sup>	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) <sup>12</sup>	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) <sup>12</sup>	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) <sup>12</sup>	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) <sup>12</sup>	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) <sup>8</sup>	10.7	0.8	3.1	0.8	2.9	4.2	0.8	2.9	53.8	80.0
Foreign Visitors (visitor times) <sup>8</sup>	1,729	288	553	309	1,175	1,101	231	966	15,636	21,989
Utilised Foreign Direct Investment (Rmb100 mn) <sup>6</sup>	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 <sup>2,7</sup>	11	0	0	1	0	1	0	1	41	55
Bank Loans (Rmb100 mn) <sup>2,8</sup>	3,838	2,550	3,900	870	2,320	2,956	1,710	5,910	20,126	44,180
Per Capita Savings Deposits (Rmb) <sup>2,8</sup>	8,385	4,738	4,557	6,743	4,059	4,037	2,359	4,981	17,679	7,020
Hong Kong-listed Companies <sup>2,13</sup>	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 &amp; Cities 2003.

6 – Data source: Annual Provincial Statistical reports.

7 – Data source: China Almanac of Banking &amp; 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 &amp; GEM-listed H-share &amp; red chip companies; Source: Hong Kong Exchanges &amp; Clearing and related companies' websites



## V. ENGLISH-CHINESE GLOSSARY OF TERMS

Acid rain	酸雨
Agricultural industrialisation	農業產業化
Assessment of Environmental Impact	環境影響評價法
Chemical oxygen demand (COD)	化學耗氧量
Chinese herbal medicine	中草藥
Clean coal	潔淨煤
Clean production	清潔生產
Concentrated pills	濃縮丸
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
Ecological chain	生態鏈
Ecological environment	生態環境
Ecological industrial park	生態工業園區
Economic Zone on the West of the Taiwan Strait	海峽西岸經濟區
Environmental protection	環境保護
Environmental protection industry	環保產業
Eutrophication	水體富營養化
Exchange of waste discharge right	排污權交易
Fine particle pollution	可吸入顆粒物
Genetically modified food	基因改造食品
Go global	走出去
Green food	綠色食品
Hainan General Bureau of Agriculture	海南省農墾總局
Hydropower	水電
Kinmen, Matsu	金門、馬祖

Lead, mercury, cadmium, chromium	鉛、汞、鎘、格
Medicated drink	飲片
Methane	沼氣
National-level Environmentally Friendly Companies	國家環境友好企業
Net content	淨含量
Nuclear power	核電
Organic food	有機食品
Pearl River	珠江
Pollution	污染
Polybromo biphenyl	多溴聯苯
Polybromo diphenyl	多溴二苯醚
Radioactive source	放射源
Recycling economy	循環經濟
Sea-bordering industries	臨海工業
Soil erosion	水土流失
Solid content	固形物含量
Solid wastes	固體廢物
Sulphur dioxide	二氧化硫
Surface water	地表水體
Taiwan Electrical and Electronic Manufacturers' Association	台灣電子電機工業同業公會
Volume of waste water discharge	廢污水排放量
Volume of waste water discharged into rivers, reservoirs and lakes	入河廢污水量
Wind power	風電
World Heritage	世界遺產