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**URBAN SYSTEM PLANNING IN CHINA:
THE CASE OF THE PEARL RIVER DELTA***

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*The views expressed in the paper do not imply the expression of any opinion on the part of the United Nations Secretariat.

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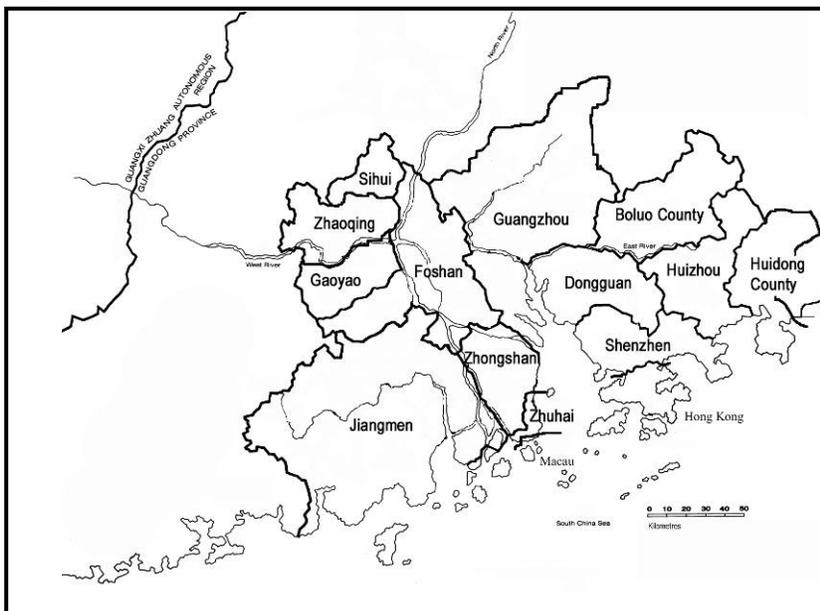
A. ABSTRACT

As a result of China's open door policy adopted in the late 1970s, the Pearl River Delta (PRD) in the Guangdong Province in southern China has become, a "world factory," a growth pole in the transitional economy. Population in the PRD has grown from 16 million in 1980 to 44.5 million in 2006. Rapid urbanization and industrialisation have brought about geographically uneven development, social polarisation and environmental degradation. In 1991, 1995 and 2005, three urban system plans were formulated respectively to give directions for development in the region. This paper first outlines the rapid growth of the PRD, followed by a discussion of these urban system plans, highlighting China's evolving and maturing approaches to urban system planning for the transitional socialist market economy.

B. THE PRD REGION – GENESIS OF THE WORLD FACTORY

The PRD is situated within the Guangdong Province (Figure I). Guangdong has always been the southern gate of China since time immemorial. Even before the Opium War around 1840, Guangzhou (Canton) had been a port of external trade for one hundred years (Yeung, 1994, p.6). However, when the People's Republic of China (PRC) was set up in 1949, a closed-door policy had been adopted for almost three decades. When they realized that the closed-door policy and the centrally-planned economy had led the nation to nowhere, vigorous economic reforms and open door policies were adopted in late 1978. China moved rapidly from a centrally-planned economy to a decentralised one with different levels of the party-led governments struggling to separate political and economic functions in the course of introducing market mechanisms. Today, after two decades of open door policy, the PRC has eagerly joined the "family" of international trade and has determined to play a more active role in the international division of labor.

Figure I The Pearl River Delta

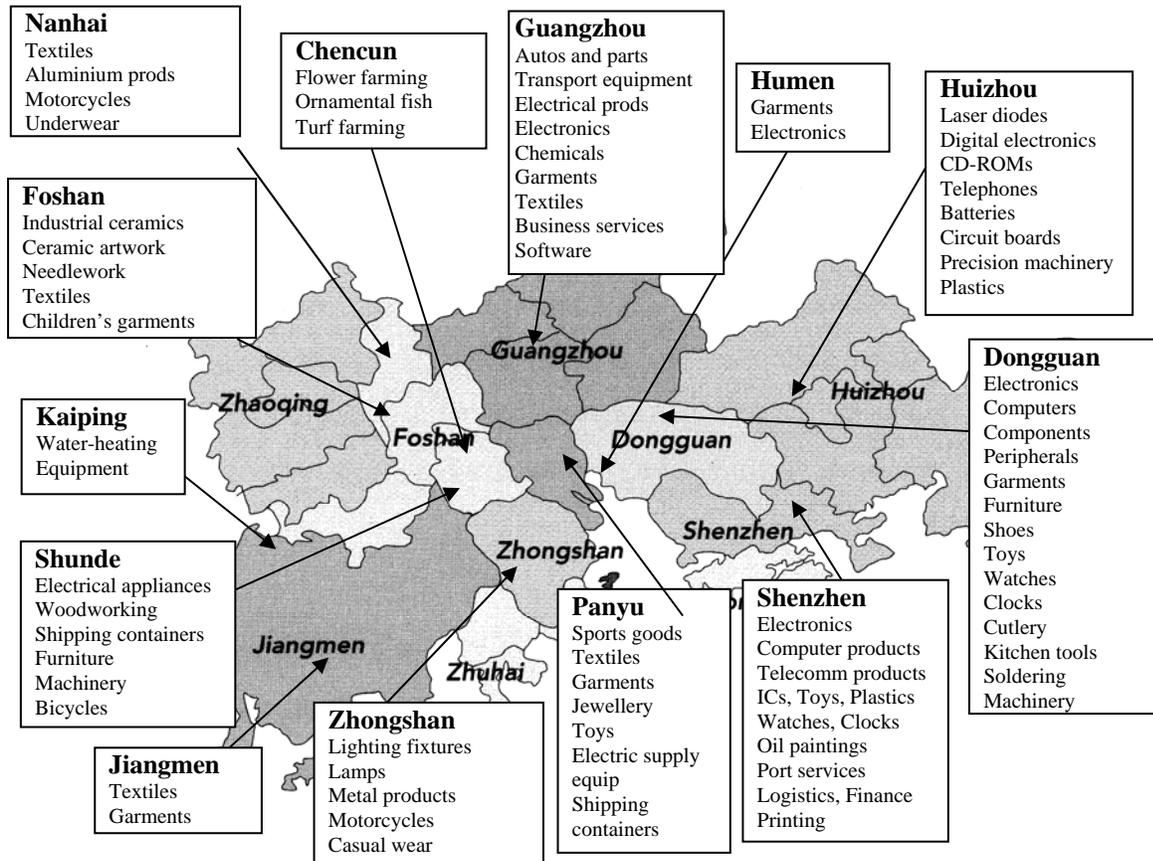


Source: Modified from <http://www.c-c-c.org/images/roots/PearlRiverDeltaGuangdongChina1600x1304.jpg>, accessed on 17 December 2007.

In order to understand this sea change, Hong Kong has to be brought into the picture. Hong Kong was ceded and leased to Britain in three stages. The Opium War turned Hong Kong into a British colony and had since changed the fate of the small fishing village. When the PRC adopted a closed-door policy, the economy of Hong Kong flourished and became one of Asia's miracles. In many aspects, Hong Kong was the model of development when the PRC started to carry out economic reforms and the open door policy. Together with the 1997 question, Hong Kong was brought back to the broader picture of development in the PRD. Since the 1970s, Hong Kong's economy has become territories. Rising production costs, escalating land and property prices and the attractions of speculative investment opportunities in the stock market had left little space for the survival of the manufacturing industries. Hence, the opening up of socialist China had provided "a breathing space" for the then weakening manufacturing industries in Hong Kong. Today, about 90 per cent of Hong Kong manufacturers have production facilities in the PRD. In some 65,000 factories, Hong Kong investors have employed about six million workers in the Delta (HKTDC., 2002). Over 80 per cent of Hong Kong traders source from the PRD and Hong Kong handles about 80 per cent of the PRD's imports and exports (Op cit., 2002) even though administratively speaking, Hong Kong is separated from the rest of the PRD under the arrangement of the "One Country, Two Systems" concept.

The PRD has transformed from a rural region into an industrial powerhouse. Figure II shows the clusters of localized industries in the PRD region. From 1978 to 2000, the region's economy grew at a rate of 16.9 per cent a year, compared with 13.8 per cent for Guangdong Province and 9.6 per cent for the Mainland (Enright and Scott, 2002). Hong Kong's productive investment in the PRD has changed Guangdong's economic structure. In 1978, 73.7 per cent of the total labor force in Guangdong was engaged in the agricultural sector. However, in 1997, the traditional agricultural sector employed only 41 per cent of the labour force, whilst the remaining 59 per cent were employed in the secondary and tertiary sectors (Ng, 2000, p.73). Table 1 displays various indicators showing the rapid growth of the PRD. Population in the PRD had grown from 16.93 million in 1978 to 44.47 million in 2006¹. During the period of 1978 to 2006, GDP in the PRD had increased 180 times; total investment in fixed assets investment was up 150 times; export expanded 507 times and the amount of foreign capital actually utilised augmented 41 folds. The amount of savings by urban and rural residents had increased from 1.2 billion RMB in 1978 to 1,818.7 billion RMB in 2006 (an increase of 1,528 times) (GSB, 2007).

Figure II Localized Industries in the Pearl River Delta



Source: Enright, M.J., Chang, K.M., Scott, E.E. and Zhu, W.H. (2003). *Hong Kong and the Pearl River Delta: the Economic Interaction*. Sponsored and published by the 2022 Foundation, p.46.

Table 1 Key Economic Indicators of the Pearl River Delta (at current prices)

Indicator	1978	1991	2001	2005	2006
Total year-end population (million)	16.93	19.64	42.88	43.15	44.47
Agricultural population with residence registration	12.64	11.89	11.98	n.a.	n.a.
GDP (Rmb billion)	11.92 ¹	112.28	840.07	1,805.94	2,142.43
Primary industry (Rmb billion)	3.07 ²	19.03	44.80	49.88	51.4
Secondary industry (Rmb billion)	5.40 ³	58.63	415.47	919.6	1,107.29
Tertiary industry (Rmb billion)	3.45 ⁴	42.20	379.80	836.45	983.74
Total fixed assets investment (Rmb billion)	3.92	19.21	310.22	526.33	588.91
Total retail sales of consumer goods (Rmb billion)	4.81	30.69	312.01	579.61	668.19
Total amount of export (USD billion)	0.57	9.62	52.02	227.32	288.75
Foreign capital actually used (USD billion)	0.32	1.01	14.19	11.33	13.09
Government revenue (Rmb billion)	3.20	12.37	74.57	118.91	142.43
Government expenditure (Rmb billion)	n.a.	9.53	82.27	151.78	165.31
Savings deposits by urban & rural residents at year-end (Rmb billion)	1.19	76.24	767.06	1,628.75	1,818.73

Sources:

¹⁻⁴: 1980 figures from Enright, M.J., Chang, K.M., Scott, E.E. and Zhu, W.H. (2003). *Hong Kong and the Pearl River Delta: the Economic Interaction*. Sponsored and published by the 2022 Foundation, p.25.

Others: Guangdong Statistics Bureau, *Guangdong Statistical Yearbook 1992* (p.541), *2002* (p.556) and *2007* (p.557).

Although the PRD occupies only one quarter of Guangdong's areas and 48 per cent of its population, the Delta accounts for 81.76 per cent of the Province's GDP, about 95.63 per cent of its exports (Table 2) (GSB, 2007). Growth is the order of the day in the Delta. The PRD is one of the Mainland's principal growth areas and one of the world's largest manufacturing base, with a GDP of Rmb2,142.43 billion (about US\$291 billion at 2007 exchange rate) in 2006 (Op cit, 2007, p.557). Housing 44.5 million population, the Delta is not only a production centre but also a huge consumption market. Table 2 illustrates the importance of the PRD in the Guangdong economy.

Table 2 Key Statistics of the Pearl River Delta, 2006

Profile	% of China	% of Guangdong
Area	0.4%	23.00%
Population	3.38%	47.79%
GDP	10.23%	81.76%
Export value	29.79%	95.63%
Import value	27.56%	96.86%
Foreign Direct Investment	18.84%	90.18%

Source: Guangdong Statistics Bureau. *Guangdong Statistical Yearbook 2007*, p.27 (for national and Guangdong figures), p.557 (for PRD figures).

C. SERIOUS DEVELOPMENT PROBLEMS IN AN ADMINISTRATIVELY DISJOINTED REGION

1. Development problems

a. Geographically uneven growth in the HK-PRD region

Upon closer inspection, one can find that the growth of the PRD region is rather uneven. In fact, geographically speaking, the eastern part of the PRD has grown much faster than the western part, probably a result of its proximity to Hong Kong. It was only in the late 1990s that cities in the western part of the PRD have started to participate actively in attracting foreign investment and pursuing economic growth. Home to indigenous companies serving China's domestic markets, the potential for the western PRD to play a larger role in international trade is high especially with China's WTO accession. Besides disparities between eastern and western PRD, there is also rural-urban disparities. Assuming the factor of 1 for per capita consumption level of rural households, the rural and urban gap has widened from 1:2.7 in 1978 to 1:3.2 in 2006ⁱⁱ. In 2006, disposable income per capita of urban residents was RMB12,432 (US\$1,688 at 2007 exchange rate) and per capita net income of rural residents was RMB3,886 (US\$528 at 2007 exchange rate)ⁱⁱⁱ.

b. "Uncoordinated" economic integration reaching its limits

Different parts of the Delta have undergone various degrees of economic restructuring leading to all sorts of "destructive construction" (Ng, 2002, p.287). Intensive and cutthroat competition for external investments has led to local protectionism, duplication of efforts and wasting of resources in the provision of infrastructure in the race to attract foreign investment (Ng, 2002, p.287). Rapid industrialisation processes have also led to many social and environmental problems. Many of the joint ventures and outward processing industries have been developed at the expense of the natural environmental and ecological system. These problems further challenge the sustainability of regional development.

c. Environmental degradations

The PRD was once the "land of fish and rice." However, rapid industrialisation has degraded the environment. Not only has rich agricultural land been taken up by industrial uses, the natural environment has been contaminated by air, water, noise pollution and wastes produced in the industrialisation and urbanization process (Ng, 2002, p.286). In 1980, cultivated land in the PRD dropped 56 per cent from 966,667 hectare in 1978 (Wang and Sun, 1998, p.22) to 542,114 hectare in 2005 (GSB, 2007). The whole PRD lies within Guangdong's "acid rain control zone." There are over 10 mega-power plants along the coast of Shenzhen and Zhuhai, emitting pollutants without proper treatment (Wang, 2000, p.78). In other parts of the Delta, pollution in rural areas had led to death of poultry and in some places, water becomes undrinkable. All these have threatened agricultural modernisation in the Delta (op cit., 2000, p.78).

Water pollution is also another serious problem in the PRD. The problem can be reflected in the costs of controlling water quality in the eastern part of Shenzhen where Hong Kong relies on for its water consumption. It was reported that at least a capital cost of 4.6 billion RMB and an annual operational cost of 0.5 billion RMB were required to maintain a grade III water quality (Xu, 2002, p.6.4-4). The costs would be much higher if a grade II quality were to be attained, all due to rapid industrialisation and urbanization in the catchments areas. It was reported that waste water discharged increased at an annual rate of 11.1 percent in the early 1990s (Wang and Sun, 1998, p.20). And in 2006, 42.7 percent of the waste water generated by urban residential areas was treated

(GSB, 2007). Most of the cities in Guangdong had no sewage treatment plants. In 2006, household sewage discharge of the province amounted to 5.3 billion tons (GSB, 2007). Pollution problems in the PRD cannot be contained within the Delta itself and urgent environmental problems need to be tackled by concerted efforts of various constituencies of the HK-PRD region. However, institutional capital is probably the weakest aspect in the region.

d. *Population explosion and social problems*

Besides environmental degradation, rapid urbanization and industrialisation have also led to many social problems. In 1980, population in the PRD was 16.28 million. However, according to China's 2000 National Census, population in the PRD had reached 42.88 million, a 2.63-fold increase within two decades and by 2006, another 1.59 million was added to the population. According to the 2007 Guangdong Statistical Yearbook, there were more than 12.55 million migrant laborers working in Guangdong. Social advancement has, however, lagged behind economic growth. In fact, the existence of floating population has led to all sorts of social problems: unemployment, crime, prostitution, drugs and poor quality of human resources as education levels of the migrant workers tend to be low. Furthermore, because of the discrepancy of economic developments in Hong Kong and the PRD, many social problems such as second wives, trading of parallel goods and various crime-related activities also take place.

In recent years, as a result of the reforms of the state-owned enterprises, many workers were sacked, adding to employment problems. Further economic reforms will challenge the social security system in the PRD. With intensified economic restructuring and further opening up of new development areas in other parts of the nation, the PRD has suffered from a shortage of quality human resources. In 2006, only 1.4 million professional and technical personnel were found in the PRD (3 percent of the total population) and the gross enrolment rate of higher education was 24 percent (GSB, 2007).

2. *Fragmented administration*

Although the PRD region is situated within "one environment," there are "multiple administrative systems." Figure III highlights the complexities of the institutional set up. In the PRD region, there are two Special Administrative Regions, Hong Kong and Macao, which report directly to Beijing; and within the PRD: the provincial capital of Guangzhou; the two Special Economic Zones of Shenzhen and Zhuhai; eight cities: Huizhou city district, Dongguan, Zhongshan, Jiangmen, Foshan, Zhaoqing city district, Sihui and Gaoyao and two counties: Huidong and Boluo.

Figure III "One Environment, Multiple Systems" in the Hong Kong-PRD Region



Source: Guangdong Statistics Bureau, *Guangdong Statistical Yearbook 2007*, http://www.gdstats.gov.cn/tjnj/table/20/e20_3.htm, accessed on 1 December 2007.

As argued by Sit and Yang (1997, p.659), foreign investments tended to locate in small cities and counties in the Delta, probably a result of the small- and medium-sized labour intensive nature of manufacturing enterprises. A more important reason is probably due to cheaper labour and land costs and looser, if not total absence of, regimes of environmental and planning control. In order to attract foreign investments, administrative units have engaged in fierce competition in terms of providing better and more infrastructure within their own jurisdiction. Luo (2002) describes local economies as “feudal economies” with government officials guarding local or self-interests, affecting genuine economic and spatial integration. The existence of numerous “feudalistic” administrative units in the PRD has led to serious problems in coordinating road and railway networks, flooding controls and general planning. For instance, within a radius of 58 km, there are five airports of international standards. The Chinese ports of Chiwan, Shekou, Yantian, Ma Wan, Zhuhai and Dongjiaotou and Hong Kong are all within a 35-nautical mile circle (Ng, 2000, p.74).

D. URBAN SYSTEM PLANNING IN THE PRD

According to Article 7 of China’s City Planning Law^{iv} enacted in 1990, “[t]he comprehensive plan for a city shall be coordinated with territorial planning, *regional planning*, water space planning and comprehensive planning for the use of land” (my emphasis). And urban system planning (USP) is an important component of regional planning. As early as 1988, the Construction Commission of Guangdong Province had realised the problems of developments in the PRD and had commissioned a study on the PRD Urban System Plan (PRDUSP). A plan was made in 1989 by the Geography Research Institute of the Guangdong Academy of Social Sciences, and the provincial government suggested towns and cities refer to the plan for implementation (CCGP, 1996, p.105). However, like many other plans in China, it had no teeth and towns and cities only implemented those measures beneficial to their development (op cit, 1996, p.105). With accelerated development problems in the PRD, the provincial government at the end of 1994 initiated the PRD Regional Plan which was completed in 1995. Five themes^v were researched in the regional plan and the urban system plan was one of them. Ten years later, frenetic development in the PRD promoted the Ministry of Construction and the Provincial Government to formulate a new USP in 2005. These two USPs represent novel planning practices that try to transform intercity competition to fostering regional competitiveness in China’s transitional economy. Let us first review the 1994 USP.

1. PRDUSP: The planning for urban agglomeration of PRD economic region—coordination and sustainable development (1994)^{vi}

a. Process, goals and principles

The 1994 PRDUSP was formulated by a team of 12 dedicated young planners after six months of intensive survey, research and deliberations. Planning expert groups, leaders and technical staff of various cities in the PRD had contributed to the finalisation of the plan which had undergone six rounds of revisions. The objectives of the 1994 PRDUSP were to enhance economic growth and ensure environmental sustainability through forward coordinated planning and development among local authorities (Ng and Tang, 1999, p.602). Four planning goals and four planning principles were put forward:

- To analyze the urbanization path of the PRD and to formulate a development strategy for the urban system;

- To control development of various land uses and to coordinate planning and construction;
- To use standards and guidelines to regulate planning and construction so that the level of urban development can be improved;
- To employ feasible administrative and legal measures to implement the plan; and
- The planning principles are:
 - Overall efficiency;
 - Complementarities of comparative advantages;
 - Sustainable development; and
 - Care for the people.

b. *Development goals and strategy*

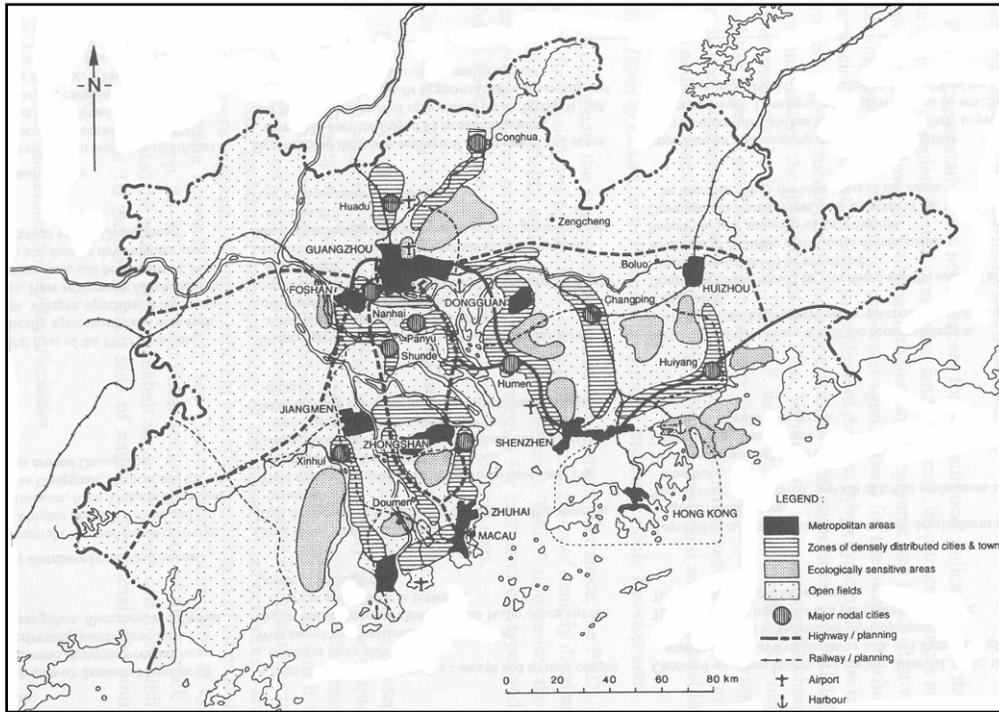
Similar to other regional plans, strategic visions were developed. Three major strategic goals were identified in the PRDUSP (CCGP, 1996, pp.25-27):

- To develop the PRD as a major mega-urban region in Pacific Asia and to be the dragon head for socio-economic development in southern China;
- To develop a modern urban system with an improved rank size distribution of different types of cities, a clear division of labor with complementary functions, and a rational and balanced distribution of transportation and communication networks; and
- To enhance rural-urban integration.

The whole strategy was plan-led rather than policy-led. The plan also exhibited a strong tradition of a centrally planned economy: population forecasts were used for allocating urban and rural lands. It was forecasted that by the year 2010, total population of the PRD would be about 34 million, 5 million of which would be temporary population. And within these 34 million, 75 per cent would be urban and 25 per cent would be rural population. And based on these population figures and assumptions on land requirements of urban, rural and temporary population, land requirements were predicted. Based on the forecasts and allowing for 25 per cent flexibility, a total of about 3,400 km² was planned for urban uses and about 1,000 km² were planned for rural settlements. This type of allocative planning was made redundant quickly because developments in the PRD have been unprecedented. In the 2000 Census, over 42 million people were found in the PRD, about 20 million were floating population.

Figure IV captures the development strategy proposed in the PRDUSP. To boost the role of the PRD as the “dragon head” of southern China, the Plan suggests that the cities of Guangzhou (provincial capital), Shenzhen and Zhuhai (special economic zones) should play a dominant role in the hierarchies of cities in the central, east and western metropolitan subregions. Guangzhou would be a core cities, supported by Shenzhen and Zhuhai as sub-cores. These cities were given the role to stimulate growth of other cities within their sub-region to achieve “group championship.”

Figure IV Development Strategy of the PRDUSP



Source: Ng, M.K. and Tang, W-S. (1999). “Urban system planning in China: a case study of the Pearl River Delta”. *Urban Geography*. Vol.20, Issue 7, p.610, modified and synthesised from Construction Commission of Guangdong Province and the Planning Group of the Pearl River Delta Economic Region Urban System Plan (CCGP) (1996). *The Planning for Urban Agglomeration of the Pearl River Delta Economic Region: Coordination and Sustainable Development*. Beijing: China Construction Industry Press, pp.56, 63 (in Chinese).

The core and sub-core cities in the PRD will serve as radiation foci being linked up by infrastructure such as highways, railways or information superhighway corridors. Through coordination of large-scale infrastructure development, rural and urban spaces within the region would be integrated economically and spatially. As a result, two development axis and seven growth axes were proposed to integrate the PRD. According the Plan, the central metropolitan area should serve as a transportation hub, a comprehensive industrial base, a centre of trade, technological development and scientific research. Population should be controlled within 10 million and population density 1,000/km². The eastern metropolitan area should serve as the export processing centre for industries in Hong Kong and develop international finance, trade and high-tech industries. However, there is a need to control population growth and to conserve the Dongjiang water. Comparatively speaking, the western metropolitan area has underdeveloped external links. Hence it would focus on utilizing its rich cultural and natural resources for the development of tourist industries.

c. *Implementation proposals*

To achieve this Plan, the PRD was divided into various land use zones and standards and guidelines were set for urban facilities and residential and industrial land uses. The Plan also attempts to enhance coordinated development between land use and transport planning. Cities and towns in the PRD were divided into three types, with differing standards for the provision of urban facilities:

- Type “A”: Guangzhou, Shenzhen and Zhuhai;
- Type “B”: Foshan, Jiangmen, Zhongshan, Zhaoqing, Dongguan and Huizhou; and
- Type “C”: local centre cities and satellite towns.

Various legal, management, fiscal, land supply, and transport policies and mechanisms had also been proposed to coordinate planning and implementation of the PRDUSP.

d. *Comments*

The PRDUSP represents the Provincial Government’s efforts in coordinating unfettered and uncoordinated developments by various local authorities in an era of administrative decentralisation and intense economic competition. However, for a variety of reasons, the Plan has remained a goodwill Plan which was not effectively implemented nor enforced. As the Plan was made within six months, one can imagine that local authorities, not to mention other groups, had limited time to contribute, respond or modify the Plan. If regional planning requires the participation of individuals “who know in detail where they live,” the PRDUSP which was made without them was “a barren externalism” (Mumford, 1938).

In fact, little was said about sectoral policies or roles of the emerging “private” sector, implicitly suggesting that the local authorities then still had considerable control over developments within their territories. Instead of starting with a wider vision of China as a whole and explaining how developments in the PRD could help achieve the national vision, the Plan started with a discussion of population size and land use requirements. The legacy of a centrally-planned economy prevailed then and governments at every level, up to this date, are used to responding to social and economic targets set by the higher level governments through various five year plans. The notions of sustainable and coordinated development were discussed but no strategy was put forward to realise this principle.

The strategic vision of developing the PRD into a major mega-urban region was only mentioned in passing. Indeed, there was inadequate diagnosis of the global and local nexus. What roles should China play in the international and regional contexts. The treatment of the then British colony was also not satisfactory. Hong Kong was not in the picture of the Plan. However, at that time, Hong Kong’s GDP was six times that of the whole PRD. Putting Hong Kong in the picture then would dramatically change the Plan’s strategy, that is, having Guangzhou as the core and Zhuhai and Shenzhen as the sub-cores. One could imagine that this USP had little teeth when it comes to implementation.

2. PRD Urban System Co-ordinated Development Plan 2004-2020 (Plan 2005)

The new regional plan aims to boost the competitiveness of the PRD and is made according to the nation’s City Planning Act, Methods of Plan Making, The Tenth Five Year Plan of the Guangdong Province, Urbanization Framework of the Guangdong Province and Opinions on Promoting Urbanization, etc and an understanding of real developments in the PRD (Guangdong Government, 2005, Article 1). To a very large extent, the Plan 2005 is still a “plan-led” rather than “policy-led” document. The spatial development strategy has continued to be premised upon the specifications of population size and the consequent land development areas. However, the process of plan formulation, the guiding thoughts and principles, development goals, proposals and

implementation measures are more elaborate and operational. Nevertheless, the Plan 2005 continues to be basically a top-down document which is not formulated upon consensus.

a. *Process, thoughts, goals and principles*^{vii}

After two decades of rapid industrialisation and urbanization, the PRD has become a world factory. Unlike 10 years ago when localities were fiercely competing for growth and investments, the region as a whole has begun to realize that coordination after all maybe necessary in face of keen competition from mega urban regions within and outside China. In July 2003, under the guidance of the Guangdong Provincial Government and the Ministry of Construction, the Construction Bureau of the Guangdong Province, a planning team comprising the China Academy of Urban Planning and Design, the Shenzhen Municipal Academy of Urban Planning and Design and the Guangdong Province Development Research Institute, was formed. The team started with a thorough survey of the region through over 30 interviews, forums, expert dialogue and consultations, an advancement over the previous PRDUSP. In January 2004, the Plan was thoroughly discussed in a conference on urbanization in Guangdong. The Plan was then revised and improved by May 2004. An expert meeting was called in July 2004 to deliberate and assess the Plan which was further revised for approval by the Provincial Government in December 2004. The Plan 2005 was even mounted on the internet from September to November 2004 for public comments before it was sent for approval by the Guangdong Provincial Government and Guangdong People's Congress. The Plan was eventually enacted in April 2005.

While the PRDUSP was a path-breaking effort by planners in China to formulate a plan based on an understanding of developments on the ground, the Plan 2005 has further developed this new planning approach. After all, over 20 years of rapid growth has brought many problems to the PRD. Without a thorough understanding and assessment of these issues, no meaningful regional plan can be formulated. Unlike the previous plan, Plan 2005 also emphasises on understanding the relationships between the PRD, the wider pan-PRD region^{viii}, national development strategy and international developments. The Plan 2005 has a total of 106 articles in 10 chapters: overview; development goals and scale; spatial development strategy; overall spatial development planning; spatial support systems planning; sectoral polices and spatial governance; coordinated spatial planning of cities; important action plans; guarantee measures and supplementary clauses.

Regional polarisation has worsened as the PRD develops and it is reflected in imbalanced development between the eastern and the western sides of the Delta, the inner and outer rings of the Delta and rural urban disparities. Nonstop fervent development in the PRD has posed serious sustainability issues for the region and serious contradictions can be seen: economic growth vs. shortage of resources; rising social demand vs. delayed public infrastructure; rapid growth of cities vs. worsening environmental stress. The overall goal of the Plan 2005 is therefore "to capture the opportunity to spearhead and accelerate coordinated development to boost regional competitiveness and to build a dynamic urban system" (Article 1, Guangdong Government, 2005). Five development goals are listed from Articles 6 to 10 in the Plan 2005:

1. To be a champion of China's drive towards globalisation through cooperation with Hong Kong and Macau.
2. To be a growth engine of the "Pan-PRD Region" and a hub between the global and domestic economies.

3. To be a showcase of civilised development: protecting heritage, stressing on cultural and educational enterprises, nurturing local character to promote the PRD spirit: focusing on competition and efficiency; promoting social justice; advocating mutual understanding and acceptance; building a “harmonious PRD” through policies, laws and institutions; and emphasizing on environmental management to build a “green” production system and a “green PRD.”
4. Experimental ground for deepening reforms and institutional innovations at different scales in social management, government administrative and rural-urban and regional coordination.
5. Champion of regional, urban and rural cooperation—improving regional coordinative mechanisms, strengthening internal cooperation between towns and cities, between the eastern and western sides of the PRD and the mountainous areas, and between the PRD and the Pan-PRD region in terms of capital, technological development, human resources and market mechanisms to realise regional integration and common wealth. At the same time, should strengthen agricultural modernisation, promoting agricultural ecology and efficient agriculture to end “dualism” between urban and rural areas.

Sustainable development is the overarching principle in guiding the formulation of the Plan 2005: “to base in Guangdong with an eye of the nation and to face the world; to develop a path of economically sustainable development, with all round social progress, sustainable utilization of resources, environmental improvement and benign ecological cycles that will build the PRD into a champion of socialist modernisation” (Guangdong Government, 2005, p.3). Based on this guiding thought, four important planning principles are outlined:

- Rightly coordinate the relationships between the “whole” and “parts,” “long-term” and “short-term” so that the long-term and macro benefits of the urban system will be complementary to the needs of different business and government players in various parts of the region at different stages of development.
- Rightly handle the relationships between “market and government,” “bottom-up and top-down” forces—using market forces as the basis for resources allocation while enhancing the control of the government over public and strategic resources. Sustaining persistent regional economic growth while facilitating the government’s ability to allocate important resources and core elements to enhance regional competition.
- Rightly handle the relationships between “advanced and lagging regions,” “sensitive and normal regions”—guiding and facilitating economic restructuring in advanced regions; providing infrastructure and policy support for lagging areas; coordinating via higher level government authorities the conservation of ecologically sensitive regions or resource areas of strategic importance; and practice limited governance, reasonable guidance to allow local initiatives to take place.
- Rightly handle the relationships between “strictness and flexibility” and “higher level and lower level” authorities—specifying the respective roles of various government departments at different levels of the government. For strategic resources of regional importance, practice strict planning control via the higher level governments. Specific guidelines and coordination mechanisms are put forward for regional infrastructure development crossing administrative boundaries. Flexibilities should be allowed with reference to the scale and nature of development of various cities and towns (Guangdong Government, 2005, p.3).

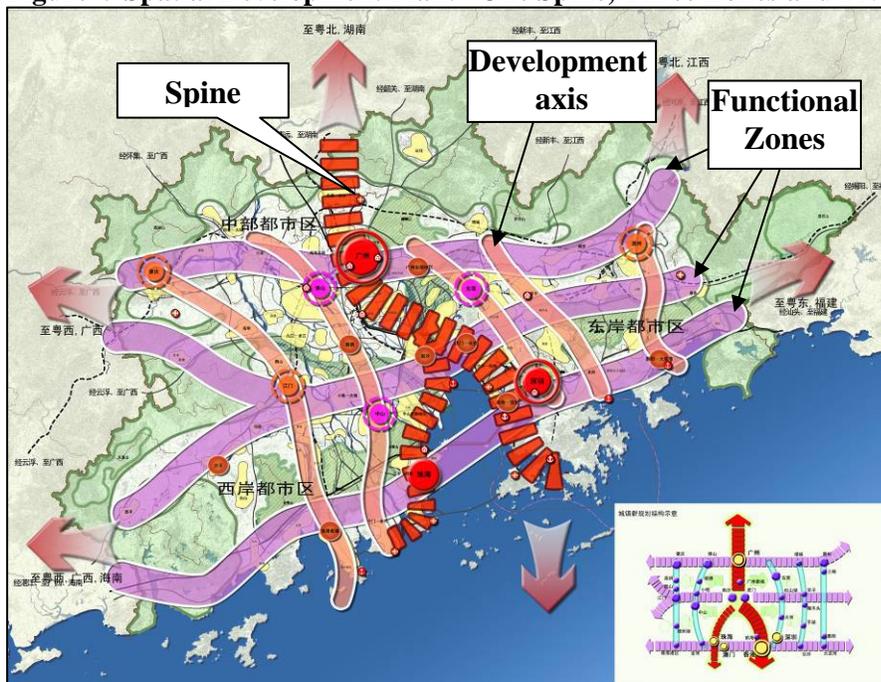
b. *The Development Strategy*

The strategy is premised upon the control of population at 65 million by the year 2020 though infrastructure planning will be based on a population figure of 80 million (Article 11). The annual rate of increase of land use requirement will be cut from 5 per cent to 3 per cent and per capita land use will be cut from 160m² to 140m². By year 2020, total land requirement will be capped at 93 million km², 22.3 percent of the total land area. New development area will amount to 26.6 km² (Article 12). At the same time, 83 million km² will be conserved, which is about 20 per cent of the total land area (Article 13).

Five spatial development strategies are outlined: (1) strengthening the core, building the spines and boosting competitiveness in the regional core; (2) opening up the inner provinces, nurturing coastal regions to increase development spaces; (3) upgrading the west wing, enhancing the east wing to promote overall level of development in the PRD; (4) supporting the outer ring, integrating the inner ring to propel even development in the region; and (5) conserving nature, improving environment to realize harmonious development between man and nature (Articles 15 to 19).

Figure V summarises the idea of “one spine, three zones and five development axes” system. “The ‘spine’ is centred at the Provincial capital Guangzhou: to the south it goes to Shenzhen and Zhuhai and even to Hong Kong and Macau; to the north it goes along the Guangzhou Peking Railway to link up with other provinces. Through high-level infrastructure development and efficiency cooperation among various governments, the ‘spine’ will line up important cities and towns, together with high-tech industries, high-end services and transport hubs to complement developments in Hong Kong and Macau to enhance the competitiveness of the greater PRD” (Article 22). The three east-west running “functional zones” help link the PRD with other provinces to share resources and promote economic cooperation (Article 24). The five north-south running “development axes” are city-town-production axes which aim to nurture different types and scales of production activities (Article 26).

Figure V Spatial Development Plan: “One Spine, Three Zones and Five Development Axes”



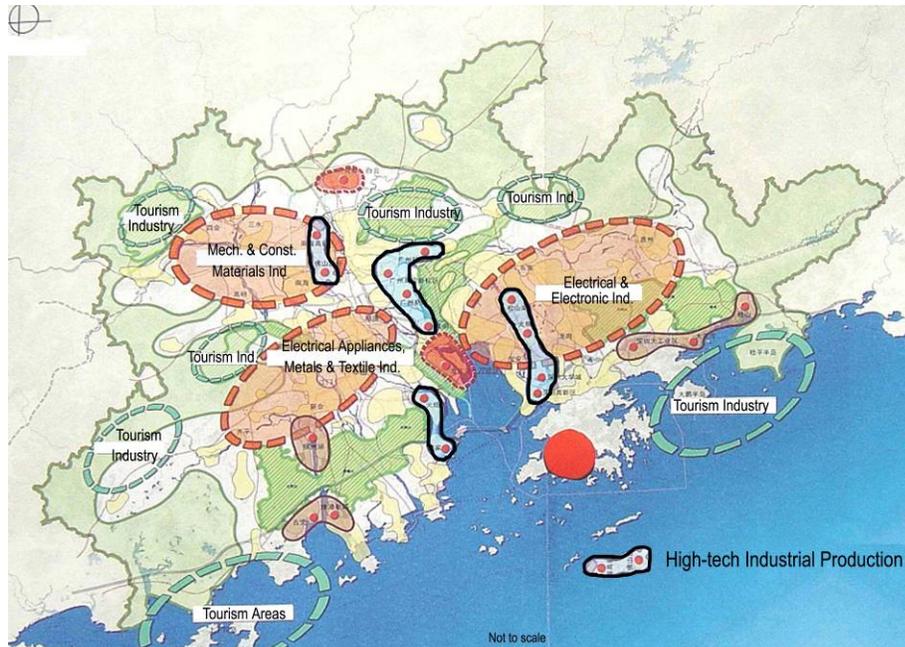
Source: Modified from Guangdong Government (2004). *Pearl River Delta Urban System Coordinated Development Plan*. Ministry of Construction, Guangdong Government (in Chinese).

According to Article 29, there will only be one major urban core (from Guangzhou to Shenzhen) and one sub-core (Zhuhai), together with local cities. The urban core stretches along the spine while the sub-core in Zhuhai will strengthen links with Hong Kong and Macau in order to trigger developments in the western part of China. Local cities are not only the social, economic and cultural centre but they should also lead county-level rural and urban developments. Figure VI shows major industrial clusters in the PRD. Seven major zones are identified (Article 35):

- Major agricultural production areas: choice agricultural production sites such as aqua-products in Foshan, horticulture in Guangzhou and Foshan and vegetable bases in Huizhou and Zhaoqing; counties near cities; mountainous areas; and demonstration sites of agricultural modernisation.
- Outward processing zones: mechanical, electrical and construction material industries in the middle of the PRD; electrical and electronic appliances industries on the eastern side of the PRD; and electrical, metals and textiles industries on the western side of the PRD. There are also stretches of outwards processing zones at the periphery of the PRD.
- Coastal basic production cluster: in Huizhou and Zhuhai.
- Heavy industry production sites: Nansha and Huangdu in Guangzhou.
- High-tech industrial zones: the areas along “the spine” will be upgraded into high-tech and high-end service areas—Science Park in Guangzhou, High-tech Districts in Foshan, Dongguan and Zhuhai.
- Logistics Centre in Guangzhou, Shenzhen and Zhuhai.

- Tourism industries around mountainous areas, coastal zones and heritage and cultural routes.

Figure VI Industrial Production Clusters in the PRD



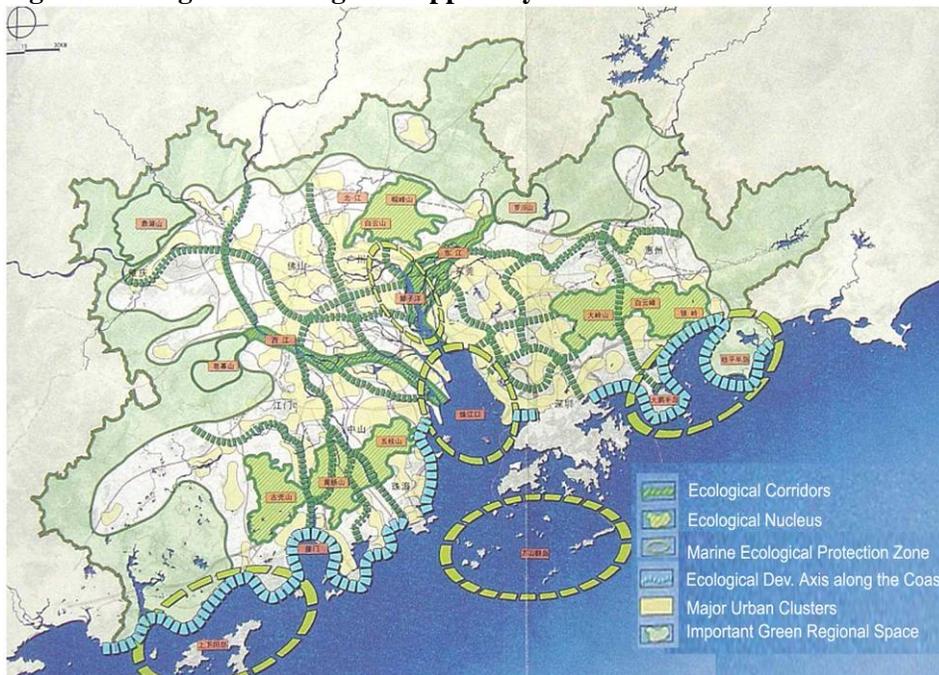
Source: Modified from Guangdong Government (2004). *Pearl River Delta Urban System Coordinated Development Plan*/ Ministry of Construction, Guangdong Government (in Chinese).

Based on the industrial production clusters, three metropolitan areas are identified (Chapter 4): the central metropolitan area surrounding Guangzhou, Foshan and Zhaoqing focusing on production services and tertiary industries to boost the competitiveness of the PRD. The eastern metropolitan cluster consists of Shenzhen, Dongguan and Huizhou focusing on value added manufacturing industries, coastal industrial development and high-tech industrial growth. There is also room for development of the tertiary industries so that the cluster can become a production and services centre. The western metropolitan areas include Zhuhai, Zhongshan and Jiangmen. It is anticipated that this area will grow considerably in manufacturing, tourism and logistics after the construction of the Hong Kong-Zhuhai-Macau Bridge.

Chapter 5 is a major one outlining different systems to support the spatial plan: section one focuses on the ecological system; section two is on the social environment; section three is about the communication system; and section four is about environmental and disaster management. In section one of Chapter 5, The Plan 2005 emphasizes on a sustainable regional ecological support system. A regional green plan based on “one ring, one zone, three nuclei and networked corridor” is put forward (Article 42) (Figure VII). The “ring” runs from the western side of the PRD to the mountainous areas in the north and eastern parts. The “zone” runs along the coastal areas of the PRD. The three “nuclei” are the three major ecological nuclei in the central, eastern and western parts of the PRD. They play a very important role in ameliorating the impacts of the dense urban system in the PRD. The networked ecological corridors link the rivers, water body, agricultural fields and green spaces together contributing to the stabilization and health of the ecosystem in the region. While all these green spaces will be carefully conserved and managed, agricultural land will also be strictly protected. Water resources and air quality will be monitored with an aim to improving them. In order to better manage natural resources, recycling industries will be

encouraged and local authorities will be charged for resources utilization. Environmental impact assessment will be strengthened and used to assess development projects and to avoid problems of cross-boundary pollution problems (Article 47).

Figure VII Regional Ecological Support System



Source: Modified from Guangdong Government (2004). *Pearl River Delta Urban System Coordinated Development Plan*. Ministry of Construction, Guangdong Government (in Chinese).

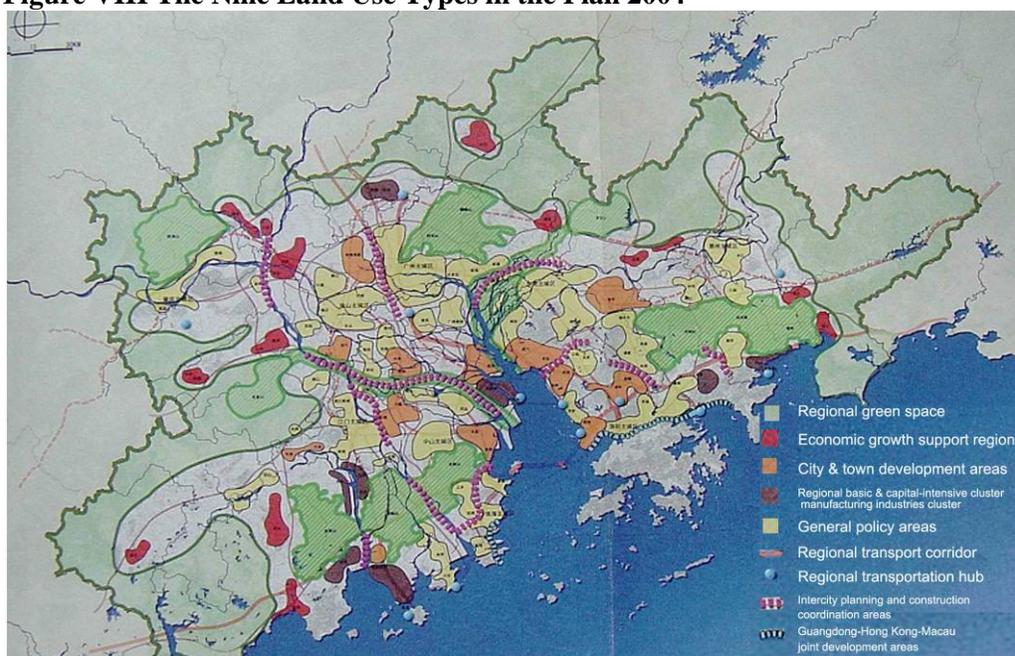
Regarding the social aspects, the Plan 2005 discusses the importance of “protecting and discovering historical heritage and cultural resources; building community places with local character; nurturing the Guangdong spirit (dare to try; pragmatically progressive; open-mindedness, dutiful and willingness to sacrifice); building the PRD into a safe, comfortable, highly civilized, harmonious development zone that is full of character and charm” (Article 48). Article 49 stipulates the importance of handling the proper balance among economic growth, social development and preservation of historical cultural heritage. Articles 50 to 54 outlines the provision of social amenities; development of the cultural industries; specific guidelines to the building of city and townscapes that reflect the rich heritage of the region, as well as other related policies such as educating the whole population towards life-long learning, perfecting the social security system, promoting social justice, democracy and the legal framework to boost general capacity towards conflict resolution.

In section three of Chapter 5, the Plan 2005 contains a very comprehensive transportation network plan which consists of a highway network of “two rings, six horizontal links and 13 vertical links”; a railway network of “three horizontal links and seven vertical links”; an intercity railway networks of “four horizontal and four vertical links”, “three horizontal and three vertical” aviation routes, together with five major airports and four deep seaports which contribute to a well-connected and multi-modal sea, land and water transportation network. The final section of Chapter 5 discusses the pressing importance in tackling environmental pollution issues and the need to undertake various environmental and anti-flooding engineering projects to ensure the safe operation of the region (Articles 61-64).

c. *Spatial Governance*

Instead of having only four land use zones as stipulated in the first PRDUSP, the Plan 2005 (Chapter 6) has a total of nine land use zones which are governed through four modes of governance. Figure VIII shows the nine types of land uses and Table 3 lists the mode of governance that should be adopted for different types of land uses. For important regional resources such as green spaces and major transportation network, a stronger mode of governance is adopted. However, for developments that require cooperation, partnership or guidance modes of governance are encouraged.

Figure VIII The Nine Land Use Types in the Plan 2004



Source: Modified from Guangdong Government (2004). *Pearl River Delta Urban System Coordinated Development Plan*. Ministry of Construction, Guangdong Government (in Chinese).

Table 3: Type of Governance for Different Types of Land Uses

Level	Scope	Measures
Top-level Governance (Monitoring governance)	Regional green space Regional transport corridor	Provincial government or headquarter departments via administrative or legal means to specify “green” and “red” lines, which will be strictly observed by the city governments.
Second-level Governance (Controlling governance)	Regional basic & capital-intensive manufacturing industries cluster Regional transportation hub	Provincial Government specify development type, scale of construction, environmental requirements and construction standards. City governments to build and construct.
Third-level Governance (Coordinative governance)	Intercity planning and construction coordination areas Guangdong-Hong Kong-Macau joint development areas	Related cities work together to produce joint development plans to ensure coordinated provision of services and functions. Plans damaging neighboring cities will be asked by the Provincial government to be changed.
Fourth-level Governance (Guidance governance)	Economic growth support region City & town development areas General policy areas	According to legal requirements, cities will formulate lower-level plans. All cities have to observe diligently the planning policies, regulations, standards and guidelines in producing their plans.

Source: Guangdong Government (2005). *Pearl River Delta Urban System Coordinated Development Plan*. Ministry of Construction, Guangdong Government, Article 70, pp.33-4 (in Chinese).

d. Implementation

Chapter 7 (Article 71-80) of the Plan 2005 outlines what individual cities has to do to coordinate planning and development whereas Chapter 8 (Articles 81-97) lists the major action plans: external connections, bay area (from Zhuhai to Shenzhen) development; control of the green zones; heavy industrial bases; integration of transport; fostering sunshine coasts; new towns development and building a regional information platform.

In Chapter 9, the Plan 2005 specifies a lot of measures to ensure that the Plan will be taken seriously (Guangdong Government, 2005, Articles 98-102):

- Under the Provincial Ministry of Construction, an Office on PRD Urban System Planning and Management (Management Office from here onwards) was established to:
 1. Review periodically (principally every five years) the PRD Urban System Coordinated Development Plan;
 2. Participate in the evaluation and approval of sectoral planning in the region and assessing sites for locating regionally important infrastructure;

3. Working together with local governments to coordinate and ensure that spaces are managed according to the specified mode of governance, and to resolve conflicts;
 4. Through information tracking and analysis, and observations by planning inspectorates, monitor the development and management of the PRD urban system and to propose policy or action changes, if necessary;
 5. Provide the general public with news of the PRDUSP and organising public participation activities, while providing technical support to local authorities; and
 6. Based on the needs of the government, undertake research work related to regional spatial development and city building.
- Enacting the “PRD Urban System Planning Regulations” to:
 1. Legitimise the statutory status of the PRD Urban System Coordinated Development Plan 2005 and specify the formulation, evaluation and approval mechanisms;
 2. Specify the legal status and composition, functions and coordination measures of Management Office;
 3. The division of power and responsibilities between the Leading Group and the Management Office and local governments in terms of planning and management; and
 4. Legal responsibilities for breaching the PRD Coordinated Development Plan and the PRD Urban System Planning Regulations.
 - Various measures to improve implementation:
 1. Policy measures: formulation of commonly executed property, land, population, environmental and fiscal policies so that macro control can be exercised over regional development projects and the mobilisation and allocation of important resources;
 2. Planning measures: plan coordination will be emphasised to boost compatibility of coordinated district planning. The Management Office should be notified when plans involving intercity areas are under negotiations;
 3. Economic measures: use market forces to facilitate joint infrastructure development to ensure economic efficiency and economy of scale;
 4. Technological measures: provide a reliable information platform for better development decision making and cooperation among cities and towns.
 - Providing both “sticks and carrot” measures to encourage partnership and win-win situations:
 1. Perfecting business cooperation mechanisms, e.g., joint activities to attract foreign investment, co-developing or coordinated relocation of business to enhance economic structures;
 2. Developing and perfecting compensation mechanisms to improve natural resources utilisation and environmental protection to enhance environmental sustainability;

3. Mercerisation of social amenities and at the same time ensuing public interest and public safety; and
 4. Construction and management of integrated transportation facilities: policies on inter-city public transportation; standardization of fees for public transport; developing a “smart card” system to facilitate regionalisation of the transportation network; multi-model operations and standardisation of fees for highways, etc.
- Monitoring mechanisms:
 1. The Management Office will work together with provincial departments and cities to formulate planning goals and indicator systems to monitor the progress of plan implementation. Local governments should guide the work of different departments based on the specified goals and indicators.
 2. The Management Office will send Planning Inspectors to different cities to monitor the implementation of the Plan 2005. Should the Planning Inspector spot irregularities or illegal actions, he/she will report to the Provincial Government for follow-up actions;
 3. The Management Office will be responsible for the establishment of a data bank and one representative should be identified for each provincial department and local government to help build this data bank;
 4. The Management Office will regularly produce “Evaluation Report on the Implementation of the PRD Urban System Coordinated Development Plan” to the Provincial Government and the Leading Group. The approved report will be published publicly. All cities and towns need to report development progress made in the previous year before May each year;
 5. Based on the monitoring work, the Management Office will adjust the period for Plan review; and
 6. The Management Office and Provincial Departments and Local Governments will collaborate and research on specific issues.

E. CONCLUDING REMARKS

Economic capital can only be sustained with the support of rich and strong social and environmental capital. Unless people in the HK-PRD region treat the Delta as their life space, a region that can enrich and nourish their lives, rather than just a resource base to be exploited for economic growth, the region cannot be sustainable. In the rush to move away from a centrally-planned economy, various local entities in the PRD have tried to capitalise on the given policies and pursue economic growth at all costs. It is the right time for the region to rethink about its future development strategy. The Plan 2005 is moving in the right direction as sustainable development is identified as the guiding planning principle. The establishment of the Management Office is also very important though its effectiveness can only be seen as time goes by. If experience elsewhere serves as any indicator, a proper regional governance structure is essential and a management office with limited resources may not be adequate to monitor and review a development plan for a region with over 44 million population.

The Plan 2005 is still “plan-led” rather than “policy-led.” Instead of developing a common vision through inclusive envisioning, dialogue and consensus building and taking stock of the region’s strengths, weaknesses, opportunities and threats, the whole planning process though packed with consultations and interviews was still rather top-down and expert-driven. The Plan 2005 is imposed from above and outside local jurisdictions and depends a lot on administrative monitoring by the resource-strapped Provincial Government over the implementation process. As a spatial plan is formulated and there are few funding incentives for local authorities to work together, local authorities probably will not be very keen to respond to broad policy directives and come up with innovative and creative solutions to problems unique to particular localities.

Despite the rhetoric, the Plan 2005 is basically a physical plan rather than a plan that is carefully guided by the concept of sustainable development. Unlike the previous urban system plan, the Plan 2005 is much stronger in ensuring and monitoring implementation. However, similar to the 1994 PRDUSP, the Plan 2005 only focuses on the government sector. It reflects that even after more than two decades of economic reforms and open door policy, the Chinese political economy is still very much plan-ideological (Oi, 1995).

However, with progressive internationalisation of China’s transitional economy, other economic forces are bound to play increasingly important roles in the region’s future development. Currently, the Plan 2005 relies on the Management Office and local authorities to review and modify the Plan. However, mechanisms should be established to review the implementation and consequent modification of the Plan by more stakeholders in the PRD region. The HK-PRD region badly needs a more inclusive and transparent regional governance mechanism to envision its future development^{ix}. The PRD is one of the three major life-supporting river deltas along the east coast of China. It is a life space for millions of people whose ecological footprints probably extend to many other parts of the world. It is important for the local authorities to realize the importance of long-term sustainability. Unless sustainable regional development is pursued to rationalize infrastructure development, coordinate development strategies and tackle social and environmental problems, the existing culture of cutthroat competition, if continued in the coming wave of economic expansion, will certainly create more harm than good. Long-term prosperity of the HK-PRD region will depend on how well different stakeholders in the Delta pick up the sustainable development mindset and hence willingly to engage collectively in nourishing the region not just as an economic space by also as their life space!

NOTES

- ⁱ According to the Fifth National Population Census in 2000, the total population of the PRD reached 42.89 million. The Fifth National Population Census adopted a de jure method (usual residents) and used midnight, November 1, 2000 as the reference time. The 2006 figure is listed in Guangdong Statistical Yearbook, http://www.gdstats.gov.cn/tjnj/table/04/e4_1.htm, accessed on 1 December 2007.
- ⁱⁱ Figure on per capita consumption expenditure of rural households: Guangdong Statistical Bureau, *Guangdong Statistics Bureau, Guangdong Statistical yearbook 2007*, http://www.gdstats.gov.cn/tjnj/table/10/e10_14.htm; Figure on per capital consumption expenditure of urban households: Guangdong Statistical Bureau, *Guangdong Statistics Bureau, Guangdong Statistical yearbook 2007*, http://www.gdstats.gov.cn/tjnj/table/10/e10_3.htm, accessed on 1 Dec 2007.
- ⁱⁱⁱ See footnote ii above.
- ^{iv} City Planning Law of the People's Republic of China, http://www.clapv.org/new/show_en.php?id=32&catename=L, accessed on 19 December 2007.
- ^v The other themes were environmental protection, infrastructure, economic development and social development.

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- vi Unless specified otherwise, the contents are extracted or synthesized from CCGP, 1996 and Ng and Tang, 1999.
- vii Unless specified otherwise, the following is extracted from Guangdong Government, 2004.
- viii The “Pan PRD Region” is made up of nine provinces and two districts: Guangdong, Fujian, Jiangxi, Guangxi, Hainan, Sichuan, Guizhou, Yunnan; and the Hong Kong and Macau Special Administrative Regions.
- ix The government of Hong Kong is currently undertaking a greater PRD study which examines the roles Hong Kong should play in the region.