Chin. Geogra. Sci. 2014 Vol. 24 No. 5 pp. 607–619
doi: 10.1007/s11769-014-0711-4

Springer Science Press
www.springerlink.com/content/1002-0063

Changing Concepts of City and Urban Planning Practices in Guangzhou (1949–2010): An Approach to Sustainable Urban Development

XUE Desheng, HUANG Gengzhi, GUAN Jingwen, LIN Jiarong

(*School of Geography and Planning*, *Sun Yat-sen University*, *Guangzhou* 510275, *China*)

Abstract: By focusing on Guangzhou, this paper examines how different concepts of city in terms of urban-rural relationships are shaped in transforming China since 1949, and explores how they influence the way in which urban planning are practiced. In the pre-reform era, the city was defined as a productive space under the system of urban-rural segregation established for securing rapid industrialization. Urban planning was thus only concerned with the development of urban areas. In the 1980s and 1990s after the reform, institutional change and economic transformation mobilized the urban-rural linkages. The development of suburban areas was then considered by urban planning, but this consideration was a passive response to urban problems such as population explosion and water resources protection. Since the new millennium, the agenda for sustainable development and problems of uneven urban-rural development have called for the development of urban-rural integration. In this context, the city is conceptualized as a complex of mountain, city, river, farmland and sea, reconstructing the ideology of urban-rural division in defining urban development. Urban planning has therefore sought in an active way to develop a sustainable city embracing rural and natural elements, and to balance economic growth and environmental protection. It is argued that developing the concept of city as a complex of urban and rural elements contributes to the urban planning for sustainable urban development, while this conceptualization relies on the recognition of the integrated urban-rural relationship.

Keywords: urban-rural relationship; concept of city; urban planning; sustainable urban development; Guangzhou

Citation: Xue Desheng, Huang Gengzhi, Guan Jingwen, Lin Jiarong, 2014. Changing concepts of city and urban planning practices in Guangzhou (1949–2010): An approach to sustainable urban development. *Chinese Geographical Science*, 24(5): 607–619. doi: 10.1007/s11769-014-0711-4

1 Introduction

The past decades have witnessed increasing attention on sustainable development despite little consensus on the definition of it. Generally speaking, sustainable developpment is defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). However, different countries understand sustainability based on their specific contexts (Wheeler, 1996). In China with the consideration of its domestic threats and opportunities, social and economic development is taken as the cornerstone of sustainable development. The economic growth is the most important for the purposes of alleviation of poverty and improvement of the living standards of the people, but the attention must be also paid to the control of population growth, protection of environment and sustainable use of natural resources (The State Council, 1994).

Despite no clear-cut definition, the term sustainability has been widely used in the discussion of urban and rural development (Murdoch, 1993; Naess, 1995; Haughton, 1997; Satterthwaite, 1997; Marsden *et al*., 2001). In European and North American cities, long-term pro-

Received date: 2014-03-25; accepted date: 2014-06-06
Foundation item: Under the auspices of Program of International Cooperation and Exchanges of National Natural Science Foundation of China (No. 41320104001), Key Program of National Natural Science Foundation of China (No. 41130747)
Corresponding author: XUE Desheng. E-mail: eesxds@mail.sysu.edu.cn

grams are proposed for the protection of natural environment and improvement of habitation (Mega, 1996; UNCHS, 1996). Many cities in developing countries, such as Curitiba in Brazil, Lagos in Nigeria and Shenzhen in China, have engaged in addressing environmental problems (Rabinovitch, 1992; Aina *et al.*, 1994; Ng, 2002). Sustainable development in the urban scale has been officially discussed. The ideas of 'sustainable cities', 'sustainable human settlements' and 'sustainable urban development' emerge in the UN Conference on Human Settlement, and are echoed positively by most of countries over the world (UNEP, 2003).

Many facets of sustainable human settlement have been discussed in the literature, ranging from environment to urban population and poverty (Blowers, 1993; Drakakis-Smith, 1996). Among debates on urban sustainability, the focus tends to be on environmental, ecological and technical issues, such as carbon emissions, energy consumption and architecture design (Walter *et al.*, 1992; Engwicht, 1993). At the same time, there has been a growing recognition that urban planning contributes to sustainable development (Naess, 2001). For instance, planning of a compact city presents an approach to sustainable urban development (Burton *et al.*, 1996; Burton, 2000). A compact city encourages walking and cycling through developing a mixed land use and efficient public transport system, thereby reducing energy consumption and improving the environment. In China, the compact city is suggested to be a sustainable urban form regarding the importance of land saving in rapid urbanization (Chen *et al.*, 2008).

This paper draws attention to the relationship between urban-rural linkages and sustainable urban development. As emphasized in *UN Habitat Agenda*, urban-rural linkages are of crucial importance for the sustainability of human settlements (UNEP, 2003). Rural development policy can not be sustainable on its own as rural areas interlinked with urban regions in economic, social and environmental terms (Baldock *et al.*, 2001). Urban-rural linkages are derived from interdependencies among the elements of urban and rural areas, such as industrial production, dwelling, farming, farmland, mountain, river and vegetation. From this perspective, the key of sustainable urban development is to take these interrelated elements into the discussion of urban development. However, few cities in developing countries seriously took into account the urban-rural linkages. Most of urban planning practices have been primarily grounded on the concept that the city is a form of settlement separated from the rural areas. This conception of urban-rural dualism could be attributed to the common view that understands the city as source of economic growth while viewing the countryside as a symbol of underdevelopment. However, the view of city as irreverent to the countryside has gone against the agenda of sustainable development. By a case study of Guangzhou, this paper aims to examine how different concepts of city in terms of urban-rural relationships are shaped in the transforming context of China since 1949, and explores how they influence the way in which urban planning are practiced. The main argument is that the conceptualization of city as a complex of urban and rural elements contributes to the urban planning favorable to sustainable urban development.

2 Changing Concepts of City in Terms of Urban-rural Relationships in China

There had been interaction between urban and rural areas in the history of city development. China has a recorded history of urban civilization originated in the North China Plain during the Shang Dynasty (1766–1122 B.C.) (Lin, 2007). In contrast to the medieval towns in Europe where agrarian society was stood against by the middle class, ancient Chinese city was characterized by its vital linkage with the rural hinterland (Chang, 1961). This is because the state officials and the gentry group in the city were dependent on the lands, properties, and tributes in the countryside, and the city could not fulfill its administrative and economic functions without immediate supports of its rural hinterlands (Lin, 2007). Therefore, the walls of the city were built primarily for security and defense functions rather than separating the city from the countryside (Chang, 1977). In the semi-feudal and semi-colonial times, the urban-rural linkages persisted and intensified because of the development of modern industry driven by the colonialist capital. Both population mobility and commodity exchange between the urban and rural areas grew fast. But the relationship was exploitative and unequal as the capital development in the city led to decline of the countryside (Gong, 1994). Since the founding of the People's Republic China in 1949, the traditional urbanism has fundamentally reshaped with processes of modernization, industrialization and urbanization.

2.1 Urban bias and urban-rural segregation from 1949 to 1978

In early new China, the primary task confronting the state was the recovery and development of domestic economy in the context of lack of capital and international assistance. The state adopted the former Soviet model of industry-oriented economic development to build a strong socialist country. In order to guarantee rapid industrialization at the minimum cost, the state thus adopted an uneven strategy that privileged the urban development, confined population mobility, restrained free urban-rural interaction and extracted surplus value from agricultural sectors to sustain industrial development in cities. The household registration system (*hukou*) was thus established in 1958 to divide population into rural/agricultural and urban/non-agricultural ones, each of which was treated accordingly. Rural-to-urban migration was extremely prohibited for the sake of the big-push industrialization and urban manageability. Illegal migrants could hardly survive as they were unable to receive the food, job and housing which were under control of the state (Chan, 1992; 2009; Cheng and Selden, 1994).

Developmental priorities were given to heavy industry in the cities, while rural sectors were strategically used as an accumulation tool in the way that the agricultural gain was transferred to industrial sectors (Chan, 1994). Free trade between urban and rural areas was strictly limited. The state monopolized the purchase and distribution of such agricultural products as food grain and cotton to accumulate industrial capital. The uneven strategy not only led to labor force division between agricultural and industrial sectors, but also produced an extremely geographical segregation between urban and rural areas, and thus created a dualistic society. As Lin (2007) has pointed out, traditional Chinese cities with visible walls had ′soft edges′ to allow free urban-rural interaction, but socialist cities had their visible walls removed and replaced by many ′invisible walls′ and ′hard edges′ that separated them from the rural society. Although the system of urban-rural segregation was necessary for the goal of rapid industrialization, it resulted in unsustainable development characterized with serious unbalance between urban and rural sectors, under-urbanization and rural poverty.

2.2 Limited urban-rural linkages and city-leading-county system in 1980s

Since the reform and opening, a series of institutional and economic factors have deconstructed the system of urban-rural segregation. First, the household contract responsibility system was established to motivate the peasants to invest in production while the dismantling of the market control of agricultural products freed the commodity exchange between the rural and urban areas. Second, with the deregulation of population mobility and rapid industrialization driven by foreign capital, a mass of rural surplus labor flew into the cities. Third, the rising of the township and village enterprises drove urbanization of the rural areas, resulting in fast development of small towns which played an important role in linking the cities and countryside.

The reemergence of urban-rural linkages gave rise to a policy question on how to balance the urban and rural development. In order to improve the mobility of productive factors, coordinate industrial and agricultural development and integrate urban-rural economies, the state established the system of city-leading-county in 1982. Contrasting to previous urban bias policies generating the urban-rural segregation, the system was aimed at regulating and promoting urban-rural development by stimulating the central city to support its rural hinterlands (Li, 1989; Zhou and Hu, 1992). The enterprises in the cities were encouraged to set up branch factories and workshops in the countryside and the urban-rural joint ventures were founded. Urban-rural economic cooperation operated in the way that the countryside provided land and labor while the cities provided raw material, technology and machinery (Wu and Li, 1991). In the end of 1986, 90.5% of 169 prefecture-level cities implemented this system (Zhang, 1988). The establishment of the system indeed contributed to the intensification of urban-rural linkages, but the linkages were limited by the system itself.

First, this system is an administrative framework for encouraging economic cooperation, but unable to guarantee the success of the cooperation. In fact, many cities were too weak in economic strength to drive the development of counties (Zhou and Hu, 1992). Second, the city government did not responded the developmental needs of the counties, but often used the administrative power to compete with the counties and concentrate the investment and fiscal expenditure in the city areas (Lyu, 1990), resulting in increased urban-rural disparities. Last but not least, there was no regional planning for regulating urban and rural development. In particular, the urban-rural interaction was greatly limited by the shortage of transportation infrastructure due to the absence of the institution of coordinating the urban-rural construction.

In a word, although the system of urban-rural segregation was deconstructed by the forces of institutional change and economic transformation, the urban-rural linkages in the 1980s remained limited. This limitedness was part of production of the residual impacts of the long-term ideology of urban-rural dualism. Nevertheless, the development concept that the city outweighs the countryside and the countryside is subject to the city is dissolving in a rising call for the urban-rural integration.

2.3 Sustainable human settlement and urban-rural integration since 1990s

As a response to the Agenda 21 formulated in the United Nations Conference on Environment and Development in 1992, the Chinese government put forward 'China's Agenda 21' in 1994 (The State Council, 1994). It is from then on that sustainable development has been established as the strategic principle of human settlements development. As proposed by China's Agenda 21 (Chap.10.2), government agencies, legislative bodies and all social communities should take an active part in the construction of sustainable human settlements which must be suitable to both working and living and have a clean, quiet and comfortable environment. On the approaches to sustainable human settlements, among others, integrated development of urban and rural areas has been placed in a crucial position. As highlighted by China's Agenda 21 (Chap.10.9), the land for urban and rural housing and for improvements to the infrastructure must be secured, and the development of urban and rural areas must be coordinated.

In addition to the international context, integrating the urban and rural areas is a requirement of historical development of China. It arises from the current national development circumstance characterized by increasing socio-economic disparities between urban and rural areas. In the 4th Plenary Session of the 16th CPC (Communist Party of China) Central Committee in 2004, General Secretary Hu Jingtao pointed out that China has entered the developmental stage in which the city should support the countryside and the industry should feed the agriculture. This view of urban-rural relationship was stressed again in 2008 in the 3th Plenary Session of the 17th CPC Central Committee which established the urban-rural integration as one of important development goals in the near future. A serious of policies relating to finance, industry, land, employment and household registration were thus made to promote the development of urban-rural integration (Han, 2009).

The call for sustainable human settlement and urban-rural integrated development has been reconstructing the understanding of urban development. Not simply defined as a space for production and consumption, the city has been considered above all as a human habitat with a harmonious and an equal relation with its rural hinterlands. It has been acknowledged that sustainable urban development must be the urban-rural integrated development. These views opened a broad discussion on the development of the cities of the 21st century in the late 1990s. As an important tool of governing land use and spatial development, urban planning serves as an important approach to the objective of sustainable urban development. As stated by China's Agenda 21 (Chap.10.10), a system for city and town planning should be worked out and a planning system for land use in urban and rural areas should be established. This in essence opens an important question of how an urban planning contributes to sustainable urban development. Urban planning does not necessarily lead to sustainable urban development. It might rather encourage unsustainable development of cities, for instance, if it simply regards the cities as spaces for economic growth without consideration of intrinsic interaction between urban and rural areas and natural environment. In what as follows, this paper uses the Guangzhou case to examine how different urban planning practices are shaped under the effects of different urban-rural relationships as have been analyzed above, and to what extent they affect urban sustainability.

3 Urban Planning Practices under Different Concepts of City in Guangzhou

Guangzhou is one of the pioneer cities in post-reform China. It is the capital of Guangdong Province and the central city in the Pearl (Zhujiang) River Delta region in South China. It has a population of about 1.28×10^7, of which 4.6×10^6 are the migrants without local household registration. Its urbanization level in terms of the percentage of the non-agricultural population in the total is 58.0%. As the third largest city in the mainland of China, Guangzhou has a gross domestic product (GDP) of about 1.355×10^{12} yuan (RMB) in 2012, with per capital GDP of 1.06×10^5 yuan. Guangzhou has kept initiative and innovation in the urban planning practices. These plans could be understood by examining the nature of urban-rural relationships in different contexts. They are summarized in Table 1. The change of urban-rural relationships in modern China is characterized by three historical stages (Fig. 1). The urban planning practices in Guangzhou are different in these stages.

3.1 Urban planning under concept of city as segregation from rural areas

3.1.1 Development of industrial projects and control of urban scale (1949–1957)

Thirteen urban master plans were enacted in the pre-reform era with the common purpose of realizing rapid industrialization (Table 1). According to the guideline that Guangzhou must transform from a consumptive city to a productive one, Guangzhou Urban Construction Committee (GUCC) formulated four master plans in 1954. They were all devoted to answering two fundamental questions: first, where the city center should be located, and second, in which direction the land for urban construction should extend to. For the latter, the key point was simply to determine which area was optimum for the development of industrial projects. In light of the development conception at that time, there was no need to consider new residential zones because they were automatically supposed to locate next to industrial areas.

Under the guidance of planners from former Soviet Union, GUCC established another three master plans in 1955. These plans were characterized by the idea of controlling urban scale by reducing urban population and planning area. Although it was proposed to assist agricultural development through sending urban population to the rural area, the objective was to maintain urban manageability rather than to promote urban-rural integration. This explanation was also applied to the 8th and 9th master plans made in 1956 and 1957. While the importance of farmland in suburban areas was acknowledged, the attention was only paid to the high-yield farmland for supplying food to urban industrial workers. Therefore, a number of factories were established in the urban and suburban area, such as Guangzhou Smelting Plant, Guangzhou Fishing Ship Plant, Guangdong Can Manufacturing Plant and Oversea Chinese Sugar-refinery, and were followed by the construction of housing for industrial workers. These housing areas were called Workers′ New Villages, such as Wuyi New Village of Guangzhou Dockyard and Shayuan New Village of Guangzhou Heavy Machine Plant.

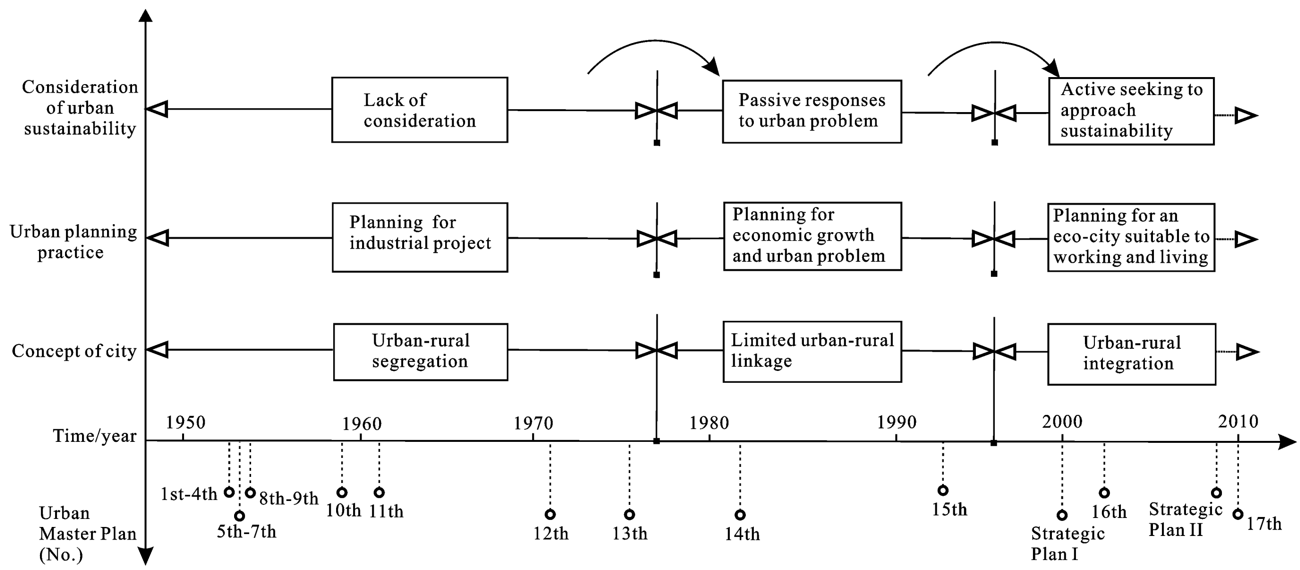


Fig. 1 Changing urban-rural relationships and urban planning practices in Guangzhou (1949–2010)

Table 1 Outline of 17 city master plans in Guangzhou (1954–2010)

Plan No.	Year	Total population (10^6)	Percentage of non-agricultural population (%)	Land for construction (km^2)	City land area (km^2)	Planning context	Key points in plans
1–3	1954	3.0414	47.9	177	382	Socialist Transformation Movement, transforming consumptive city to productive city	Extend land for construction in southeastern part, increasing industrial sites within city.
4	1954	3.0414	47.9	210	382	Ibid	Ibid
5	1955	3.1731	49.1	121	382	Ibid	Control city by reducing scale of land and population; send population to rural areas for urban manageability and industrial development.
6	1955	3.1731	49.1	99	382	Ibid	Ibid
7	1955	3.1731	49.1	131	382	Ibid	Ibid
8	1956	3.1803	48.3	99	382	Great Leaps Forward, enlarging industrial development for building Guangzhou as industrial base of South China	Promote land development in southeastern part; develop industries all over the city; construct satellite towns to meet demands of industrial expansion and population growth; recognize roles of farmland in suburban areas while focusing on high-yield one
9	1957	3.3775	50.0	180	1234	Ibid	Ibid
10	1959	3.6035	53.2	201	1261	Ibid	Ibid
11	1961	3.6797	52.7	117	5270	National Economy Adjustment	Continue land development towards southeastern part, but reduce scale of land development and population
12	1972	4.3576	44.2	150	3968	Cultural Revolution	Continue to develop southeastern part; redevelop old inner city; develop industry sites; start to develop economy of commerce, external-trade and port
13	1977	4.7263	41.9	185	11756	Ibid	Ibid
14	1982	5.1882	45.8	251	16657	Reform and opening- up policies	Economic growth as prominent goal; continue industrial development
15	1993	6.2367	48.7	385	7434	Pursue economic growth and rapid urbanization; solve urban problems	Develop three industrial clusters, construct industrial parks, develop satellite towns and protect waterhead in suburban areas
16	2004	9.4968	68.6	785	7434	China′s Agenda 21, rising discourse of sustainable urban development and environment protection; Socialist Harmonious Society, balancing economic and social development	Conceptualize city as a continuum of mountain, city, farmland and sea, and build an eco-city suitable to both working and living; develop by ′expand south, upgrade north, advance east, link west′; establish basic ecology line to protect urban ecological system; form urban system composed of city center, sub-center, satellite towns and small towns; define small town as node of urban-rural linkages
17	2010	12.7096	56.8	1651	7434	Ibid	Ibid

Source: Planning information is cited from ECGUPDR (2006); data about population and city land area is from Guangzhou Statistic Yearbook (Guangzhou Statistic Bureau, 1999; 2011)

3.1.2 Robust industrialization and construction of satellite town (1958–1965)

The ideology that the cities function as industrial production sites had been strengthened during the period of Great Leaps Forward. In the 10th master plan formulated in 1959, Guangzhou was defined as the industrial base of South China. For expanding industrial development, the plan proposed to enlarge the number of urban population and the scale of land for construction. In particular, the land for industry development was enlarged by 55% compared with the 9th plan. For this expansion, a new idea was the construction of satellite towns which were supposed to meet demands of prospective growth of both industrial and population. Xinhua, Tanbu and Chencun were then defined as the satellite towns. However, this plan was so unpractical that it was replaced by the 11th plan in 1961. In the new plan the scales of population and land for construction were reduced again.

3.1.3 Deconstruction of one-dimensional industrial development (1966–1977)

The 12th master plan was formulated in 1972 based on a review of previous plans and a new understanding of urban development. The new thing was that industrialization was still emphasized, but other aspects of urban development were recognized. The development of the function of external trade and port was put on the agenda for the first time, indicating the deconstruction of the notion that production is the only function of the city. The acknowledgement of diverse functions of the city was reflected in the 13th plan enacted in 1977, consisting of six themes ranging from industry, road, port, storehouse, living infrastructure to the greening and farmland protection. In sum, the city in the pre-reform era was generally conceptualized as a functional space that exclusively served the construction of industrial projects and workers′ accommodation (Fig. 2). This concept was in essence associated with the separation between urban and rural areas. Urban planning was therefore characterized by the focus on the arrangement of industrial projects and workers′ housing within the city without consideration of rural development. The planning bias on the urban and industrial development caused many problems that were unfavorable for urban sustainability, including the inefficiency of land use led by dispersive distribution of factories, environmental pollution resulting from overdevelopment of heavy industry and downgrading of living environment due to lack of greening.

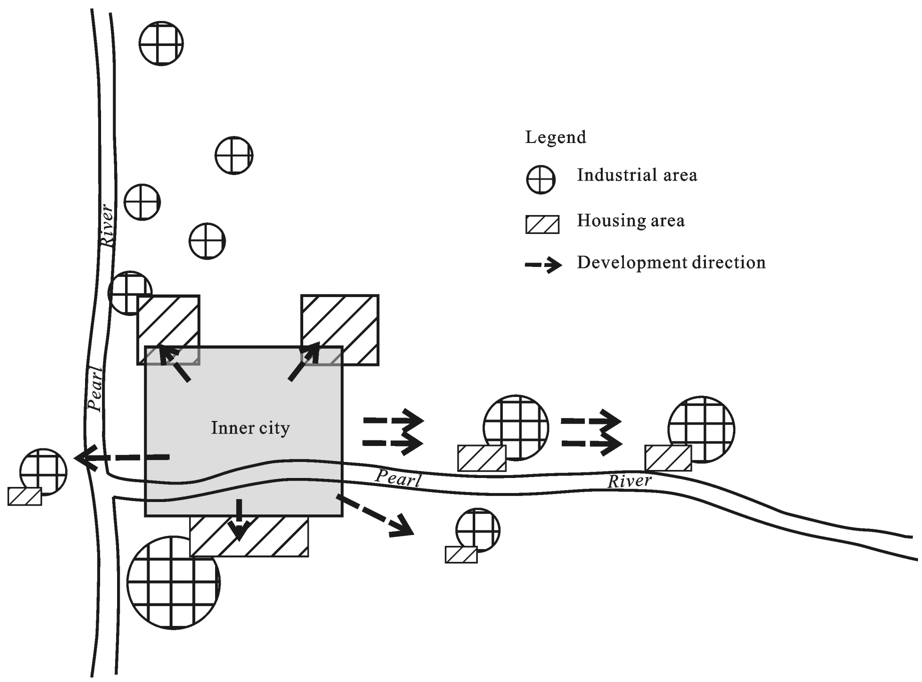


Fig. 2 Industrial projects oriented urban planning in Guangzhou in pre-reform era (1949–1978). Source: redrawn by the authors according to Li (2008)

3.2 Urban planning under concept of city with consideration of suburbs

3.2.1 Economic development and population decentralization in 1980s

Since the adoption of the reform and opening policies, economic growth has become the overriding goal of urban politics. At the same time, the linkages between urban and rural areas has emerged and increased. The urban planning formulated in 1982 was focused on two questions: 1) the further development of industry; and 2) the population decentralization from the inner city which could no longer accommodate more population. The solution to them was conditioned by two macro factors in the 1980s. First, the central state proposed the policy that made a strict control of big cities and encouraged the development of small-medium cities. Second, the city-leading-county policy was put into practice. Therefore, six key issues were highlighted in the 14th master plans: 1) to designate the city as the strategic center for economic growth and foreign investment; 2) to expand the urban area to the suburban area to reduce population density of the inner city; 3) to develop three clusters with different functions, including the inner city cluster which served as the center of economic, cultural and international fair activities, the Tianhe district cluster which served as the center of the sport, education and research functions and the cluster of Huangpu and Guangzhou Economic and Technological Development Zone which served as a node to attract foreign capital; 4) to upgrade both external and internal transportation infrastructures; 5) to improve the living environment of the inner city; 6) to develop three satellite towns to promote development of the suburbs and counties. The sixth point represented the emerging attention on the suburban areas, reflecting the conception of limited urban-rural linkages supported by the system of city-leading-county at that time. Moreover, this attention presented the continuity to the 13th plan in which the farmland in rural areas was taken into consideration.

3.2.2 Solving problems of urban development in 1990s

The urban planning in the 1990s was driven by the needs to accelerate economic growth and solve urban problems. First and foremost, the urban competiveness of Guangzhou in the region of the Pearl River Delta had relatively declined due to the rising of such cities as Shenzhen, Dongguan and Foshan (Wang *et al.*, 1993). Economic development thus remained to be the most important. Second, solving the problems caused by economic development had become urgent. To name a few, the urban expansion gave rise to rapid erosion of farmland and serious traffic jam, robust industrialization caused environmental pollution, and the downgrading of dwelling environment impelled citizens to call for the improvement of public facilities. Therefore, the 15th plan finished in 1993 proposed six key issues to respond to the above problems (Fig. 3).

First, three clusters were to be re-arranged around Baiyun Mountain as the green heart, including the central cluster for economic and cultural development, the eastern cluster for manufacturing and port industry, and the northern cluster locating along the Liuxi River as a water head of the city. Second, a new city-town hierarchy system consisting of one central city, three satellite towns (Shiqiao, Xinhua and Nansha) and three industrial towns (Conghua, Zengcheng and Xintang) was to be established. While the satellite towns were to be developed for decentralization of population from the inner city, most of the strategies were focused on industrial development. Third, upgradation of industry would be promoted by the ways of developing the technology-intensive industry and relocating the factories from the inner city to satellite towns in the suburbs in order to enhance urban competiveness. Fourth, the traffic system was to be improved with a focus on public transportation. Fifth, the system of water supply and sewage disposal was to be established by strictly protecting the source of water in the suburbs, including Liuxi River, Yuantan Lake and Chencun Canal, for meeting the demands of dramatically increasing population. Last, the distribution of public facilities for education, health and sport was to be balanced.

To sum up, urban planning practices between the 1980s and 1990s had attached importance to the rural areas by the ways of developing the suburbs and satellite towns. This reflected the concept of city characterized by limited linkages between urban and rural areas in this period. Under impacts of this conceptualization, urban planning paid attention to environmental problems such as protection of the waterhead. Nevertheless, such attention on rural elements was limited because its aim was to secure the city development rather than to seek integrated development of urban and rural areas. Urban planning remained influenced by the ideology that the rural feeds the urban. Moreover, urban planning

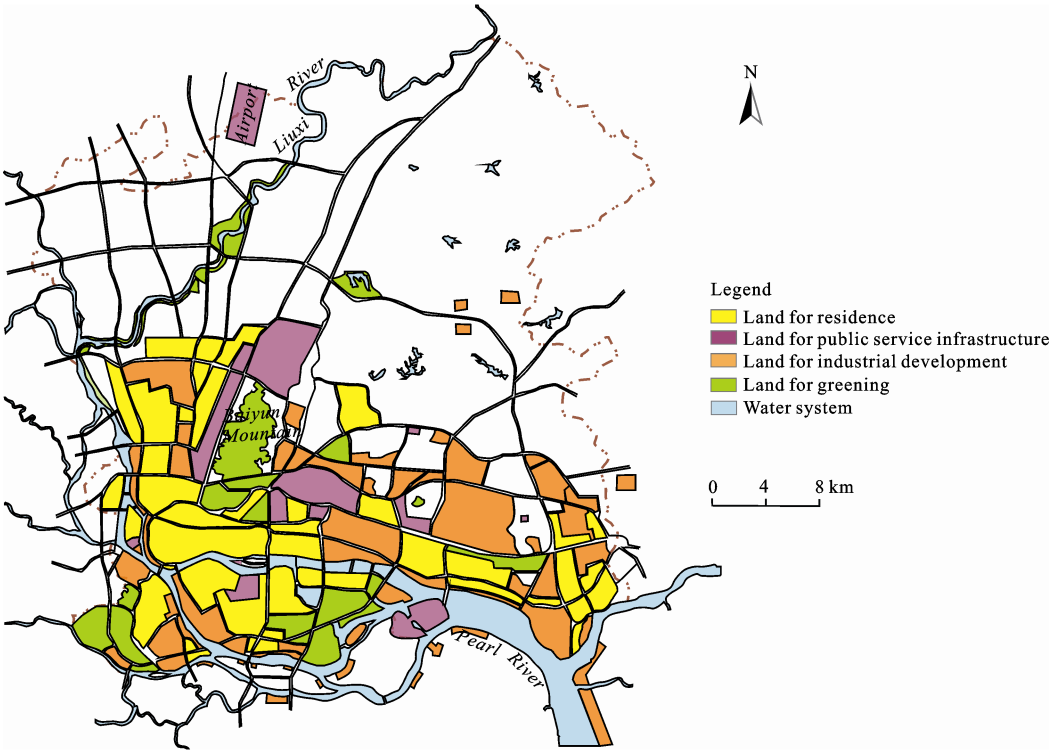


Fig. 3 Outline of Guangzhou City Master Plan No.15 in 1993. Source: drawn by the authors according to Lin *et al*. (2006)

was concentrated on economic, industrial and city development. It was to guarantee this growth-first goal that protection of water environment was put on the agenda. In other words, the action to promote sustainable development was passively triggered rather than an active response. It is such problems as insufficiency of water supply and pollution of river that propelled the planning to take the rural area into account. Urban planning under this ideology were unable to prevent other problems breaking urban sustainability, such as shrinking of farmland, decline of air quality and degradation of living environment.

3.3 Urban planning under concept of city as a complex of urban and rural elements

3.3.1 Strategic Planning in 2000 and 2009: A ground-breaking endeavor to sustainable urban development

With the rising of the discourse of sustainable development and the needs to solving developmental problems since the late 1990s, the municipal Guangzhou government initiated a comprehensive and far-reaching strategic planning in 2000. Five well-known institutes including Tsinghua University, China Academy of Urban Planning & Design, Tongji University, Sun Yat-sen University and Guangzhou Urban Planning & Design Survey Research Institute were invited to participate in the open consultation and discussion. The planning schemes offered by them were commonly characterized by the perspective of stressing the long-term and sustainable development as well as the integrated relation between urban and rural areas. This pioneering strategic plan has been regarded as a milestone in the progress of the planning field in China. It received the 2010 *ISOCARP Awards for Excellence* at the 46th ISOCARP Congress for its outstanding contribution to the exploration of 'S*ustainable City-Developing World*'. The primary effects it exerted on the approach to sustainable urban development are analyzed as follow.

First, a regional perspective is taken. In contrast to Master Plan which usually covers a limited area within the administrative boundary, the strategic planning adopted a wider spatial scale covering cities, towns and countryside in the discussion of urban development. This regional or metropolitan perspective allows it to take into account the organic relation between urban and rural areas, and pay attention to the coordinated urban-rural development which has been highlighted in China's Agenda 21. But this attention was often absent in previous master plans focusing on economic development within the city. In effect, the regional perspective presents an active response to rapid urbanization. The built-up area is expanding at such a high speed that the construction activities often break through the development area set up by the master plan. The strategic planning is able to direct long-term urban development at a larger scale and prevent the farmland encroached by urban sprawl. Moreover, the attention to urban-rural linkages presents an effort to solve urban-rural contradiction resulting from urban-rural dualism.

Second, the strategic planning contributes to the making of the sustainable city by highlighting environmental protection as part of the goal of urban development. This is contrasted to previous plans that regarded environmental protection as a tool to guarantee urban development. By the turn of the new century Guangzhou has achieved significant economic growth, but such growth with high energy consumption and heavy pollution would hamper the urban sustainability. The strategic planning gives priority to the nature and environment, and seeks for an approach that meets the needs of both economic development and the construction of a livable city. Instead of concentrating on the spatial layout of economic activities and facilities, the strategic planning draws the attention to the building of an eco-city being suitable to both working and living.

Last and foremost, associated with its regional perspective and environmental concern, the strategic planning redefines the concept of city as a continuum of mountain, city, farmland and sea, or in general, a complex of human and natural elements (Fig. 4). This new concept reflects the rising call for the integrated relation between urban and rural areas since the new millennium. It has challenged the traditional concept of city as the concentration of man-made landscapes serving industrial and economic growth. Specifically, it proposes that Guangzhou should develop into an eco-city which is a complex of mountains, water systems, urban built-up areas, farmlands and seashores. The natural environment previously viewed as rural elements has now been integrated into the concept of city. Although natural elements exist within the city, few plans really took them into consideration unless they had direct impacts on urban development as illustrated by the 1980s and 1990s master plans. For the very first time, the natural and rural elements are integrated into the urban development.

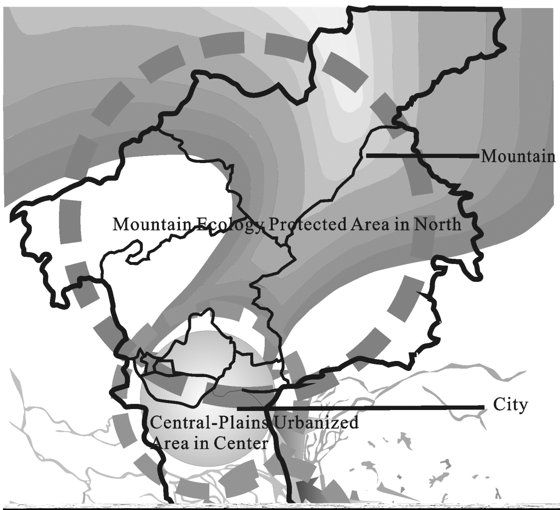
The inclusion of natural elements into urban development strategies is represented by the spatial pattern characterized by the notion of ′city surrounded by mountains and rivers, mountains and rivers within the city′ proposed by the plan. As Fig. 4 shows, in the north lies the mountain ecology protected areas where industrial development is to be reasonably controlled to protect the major pillar of the ecosystem of the city. The urban development activities are planned to be located in the central plain, into which green patches are embedded to promote the harmonious relationship between man-made and natural environment. In the southeast are the areas of water network and farmland ecology reserve, where the harbor construction and agriculture development is to be coordinated. Further southeast is the seashore ecology protected area which focused on the development of green food production and tourist industry. It can be concluded that both conceptual and physical boundary between urban and rural areas have been dissolved. Rural elements have been regarded as indispensable parts of sustainable urban development.

In 2009, the new strategic plan further highlighted the concept of city as a complex of urban and rural elements. First, it drew attention to the development of various forms of agriculture industry within the city, such as eco-agriculture①, tourist agriculture② and protected agriculture③, and stressed that the modern agricultural parks within the city serve as the garden contributing to the upgrading of urban landscapes and construction of a low-carbon city. Second, it proposed an improved spatial pattern of an eco-city characterized by ′one horizontal belt, two rings, and three vertical belts′. The Pearl River and its waterfront greenbelt make up the horizontal belt. Two rings consist of the outer ring which is made up of the mountain in the north, farmland

① Eco-agriculture means that the agricultural production is environment-friendly, low energy-consumption and self-sustainable.

② Tourist agriculture is a combination of tourism and agriculture. The agricultural space and product are exploited as tourist resource in order to gain profits from the development of tourism as well as agricultural production.

③ Protected agriculture, which can also be named as facility agriculture, is a kind of agricultural production conducted under controlled environment with the help of engineering technology to increase the output.



[redacted]

Fig. 4 Concept of city as a complex of urban and rural elements in 2000 Strategic Plan. Source: drawn by the authors based on the material from ECGUPDR (2006)

and water network in the south, Mulberry Fish Ponds④ in the west and the greenbelt along the Beijiang River, and the inner ring which is made up of the greening along the Second Ring Road, the Bajiang River, and the western branch of the Pearl River. 'Three vertical belts' are made up of the water networks, forests and countryside.

3.3.2 Carrying forward and legalizing concept of city as a urban-rural complex by subsequent plans

The development ideas from the strategic planning have been adopted by the subsequent master plans as a form of statutory plan. This therefore legalizes the concept of city as a continuum of urban, rural and natural elements, meaning that the concept plays a practical role in directing urban development. Among others, the remarkable effect has been the adoption of the principles of ecology-first and urban-rural integration in the 16th and 17th master plans in their formulation of spatial development strategies. Some key points contributing to urban sustainability are illustrated by taking the 17th plan as an example.

First, in addition to the economic goal stressed by previous master plans, the goal of constructing a city of ecological, environment-friendly, healthy and livable is substantially highlighted. It is concretized by establishing the indicator of ecology and resource development as part of the urban development indicator system. Second, coordinating urban and rural development and creating a livable urban-rural integrated habitat becomes two of the five development strategies. Specifically, on the one hand, a series of tactical measures, including the arrangement of land use for rural industrial development, upgrading of rural industrial structure, improvement of the rural living environment, and construction of infrastructure in rural areas to realize the equalization of public service, have been put forward to drive rural development. On the other, a regional ecological system composed of 12 zones of green areas and four ecological corridors is proposed in order to develop an urban-rural green network and guarantee regional ecological security, and thereby making a livable eco-city where human and nature co-exist in harmonious ways. This eco-pattern is based on natural elements containing the mountain, water, city landscape, farmland and sea. Third, in the planned urban-rural spatial system composed of major center, sub-center, satellite towns and small towns, the small town is defined as the key node that links the city and countryside, and that plays a role in driving rural development. Moreover, different strategies ranging from regeneration, development to controlling are put forward to direct the development of villages of different types in terms of specific developmental conditions they have. Last, the Basic Ecological Line is delimited to prevent unboundedly urban sprawl and extensive land development, secure the ecological system and promote sustainable urban development. The control area covers 71.6% of the total area of the city, containing the areas of nature reserve, farmland, water source, wetland, river, forest, *etc*. Development project in this area must be assessed in terms of its environmental impact. In sum, the urban planning in this period has sought more in an active way to approach the integrated urban-rural development and sustainable urban development than ever before.

④ Mulberry Fish Pond is a representative of regenerative cycle and utilization of natural resources.

4 Conclusions

There have been various approaches being explored to promote sustainable urban development in many domains. Among these, urban planning, as one of the most important policy tools in modern society, has been increasingly recognized as an available means to pursue sustainable urban development. This nevertheless does not automatically imply that urban planning would necessarily promote urban development in a sustainable way. This paper has shown that the ideology of urban-rural relationships influences urban planning practices. It argues that developing the concept of city as a continuum of urban and rural elements will contribute to the planning for sustainable urban development, while this conceptualization relies on the recognition of the integrated urban-rural relationship. It is suggested that the planning for sustainable urban development requires the deconstruction of the traditional ideology of urban-rural dualism and the construction of a new philosophy of urban-rural continuums. In a word, urban planning should attach importance to the concept of city that draws attention to the development of urban-rural integration, and the harmonious relationship of human and nature.

In pre-reform China, urban-rural segregation was established in order to promote rapid industrialization and secure urban development. The city was thus simply defined as a productive space for industrialization, while its rural hinterlands served as the subordinated spaces for feeding the city. Urban planning was thus solely aimed at meeting the demands of industrial development at the cost of deprivation of rural areas without consideration of sustainability. During the first decades after reform, urban-rural segregation was deconstructed as a result of institutional change and economic transformation which mobilized urban-rural linkages. Associated with the new urban-rural relationship, urban planning between the 1980s and 1990s paid attention to the development of suburban areas and satellite towns. However, they did not view the rural hinterlands as inherent part of the system of city development, but used them as a spatial tool to solve urban problems such as population explosion and water recourse safety. The consideration of urban sustainability by the planning was in essence part of passive responses to urban problems in order to secure economic growth. The agenda for sustainable development and problems of uneven urban-rural development generated a rising call for urban-rural integrated development. In this context, a new concept that understands the city as a continuum of mountain, river, city, farmland and sea is thus developed, reconstructing the long-term established ideology of urban-rural divi-