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Evaluation of Plan Implementation

Peri-urban Development and the Shanghai Master Plan 1999-2020

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Summary

Since the 1980s China has experienced unprecedented urbanisation as a result of a series of reforms promoting rapid economic development. Shanghai, like the other big cities along China's coastline, has witnessed extraordinary growth in its economy and population with industrial development and rural-to-urban migration generating extensive urban expansion. Shanghai's GDP growth rate has been over 10 per cent for more than 15 years. Its population in 2013 was estimated at 23.47 million, which is double its size in 1979. The urban area enlarged by four times from 644 to 2,860 km2 between 1977 and 2010.

Such demanding growth and dramatic changes present big challenges for urban planning practice in Shanghai. Plans have not kept up with development and the mismatch between the proposals in plans and the actual spatial development has gradually increased, reaching a critical level since 2000. The mismatch in the peri-urban areas is more notable than that in the existing urban area, but there has not been a systematic review of the relationship between plan and implementation. Indeed, there are few studies on the evaluation of plan implementation in China generally. Although many plans at numerous spatial levels are successively prepared and revised, only few of them have been evaluated in terms of their effectiveness and implementation.

This particularly demanding context for planning where spatial development becomes increasingly unpredictable and more difficult to influence presents an opportunity to investigate the role of plans under conditions of rapid urbanisation. The research project asks to what extent have spatial plans influenced the actual spatial development in the peri-urban areas of Shanghai? The research pays particular attention to the role of the Shanghai Master Plan 1999-2020 (Plan 1999). By answering the main research question this study seeks to contribute to a better understanding of present planning practice in Shanghai from a plan implementation perspective, and to establish an analytical framework for the study of the role of plans that fits the Chinese context. The findings may also help planners, policy makers and private developers to adjust urban planning within the implementation process in order to meet planning objectives at different levels.

The evaluation of plan implementation can be divided into peformance-based and performance-based approaches Conformance approaches focus on the direct linkage (i.e. level of conformity) between the plans and spatial outputs (Laurian et al., 2004; Tian & Shen, 2011). Performance approaches are concerned more with outcomes and the role of the plan in the urban development process (Barrett & Fudge, 1981; Faludi, 2000). Both of these approaches are employed in this research to evaluate the

implementation of the Plan 1999. I firstly examine the level of conformity between the Plan 1999 and the overall peri-urban structure at the metropolitan level. I then use examples of specific areas (North Jinqiao Export Processing Zone and Xinmin Development Area) to evaluate performance of the Plan 1999.

The study also takes a diachronic approach, which looks at how relationships between variables change over time in the implementation of the Plan 1999. That is because the performance of plans is influenced by deeper-seated reasons such as the changing institutional context, particularly the levels of interaction between involved actors in the land development processes. As such, the changing planning system in Shanghai and the history of Shanghai's peri-urban development in the second half of the 20th century are reviewed before the conformance-based and performance-based evaluation.

This research leads to three major findings. First, peri-urban areas have played an increasingly important role in Shanghai's urbanisation process through accommodating the rapidly increasing population and demands for growth. Such extensive peri-urban development was not guided by the Plan 1999. It is not surprising that plans are left behind in the context of such unprecedented growth, but the pilot programmes and the key projects proposed in the Plan 1999 were implemented with a high level of conformance. However, the Plan 1999 performed differently in local urban projects, with varying degrees of project conformity, development process and development timing.

Second, there was variation in the delivery of the main objectives to the subsequent urban plans, the consistency between the Plan 1999 and the related sector plans, the ways of interaction between involved actors and their reactions to the plan, and the methods of land development. Overall, the Plan 1999 performed better in the case of North Jinqiao Export Processing Zone because the governments (at both national and municipal levels) intervened more in the development process, compared with the case of Xinmin Development Area. The performance of the plan is closely related to the level of conformity between the plan and the actual development. Therefore, although the conformance-based and performance-based approaches to implementation can be separated conceptually, they are very interconnected in practice.

Third, the urban planning system in Shanghai has experienced a structural reorganization in terms of the system of plans, the involved actors and the planning instruments since the late 1980s. But the emphasis on the rational technocratic process used in the 1960s in the western society is still predominant in the planning system in Shanghai. Aside from the demanding urban growth, the other reason of non-conformance between the actual peri-urban development and the Plan 1999 and bad performance of the Plan 1999 in local projects is a big gap between the seemingly rational operation of the urban planning system and the reality of external challenges.

The current planning system lacks proper coordination with the external challenges, such as insufficient investigation of the existing circumstance or history, and ineffective planning instruments. Cooperation between involved actors is also largely absent in planning practice. Overall, urban planning and management in Shanghai could benefit from more recognition and monitoring of plan implementation which would lead to some reconsideration of the planning tools and processes to more effectively guide future urban development.

Samenvatting

Sinds de jaren 80 heeft China een ongekende verstedelijking doorgemaakt als gevolg van een reeks hervormingen voor snelle economische ontwikkeling. Net als andere grote Chinese kuststeden kende Sjanghai een uitzonderlijke economische groei én bevolkingsgroei. De combinatie van industriële ontwikkeling en migratie van platteland naar stad zorgde voor grootschalige stadsuitbreiding. De groei van het bruto product van de stad Sjanghai is al 15 jaar niet onder de 10 procent gekomen. De bevolking werd in 1013 op bijna 23,5 miljoen geschat – een verdubbeling ten opzichte van 1979. De oppervlakte van het stedelijk gebied vervierdubbelde tussen 1977 en 2010 van 644 naar 2.860 km^2.

Een dergelijke veeleisende groei en ingrijpende verandering stellen de praktijk van stedelijke ontwikkeling in Sjanghai voor grote uitdagingen. De plannen hebben geen pas gehouden met de ontwikkeling, en het gat tussen de voorstellen in plannen en de daadwerkelijke ruimtelijke ontwikkeling is geleidelijk toegenomen, tot een kritiek niveau in 2000. De mismatch in de stedelijke periferie is zichtbaarder dan die in het bestaande stedelijk gebied. Het verband tussen plan en implementatie is echter niet systematisch onderzocht. Er zijn sowieso weinig studies die evalueren hoe plannen in China over het algemeen worden geïmplementeerd. Hoewel veel plannen op verschillende ruimtelijke niveaus achtereenvolgens worden voorbereid en herzien, worden slechts weinige hiervan geëvalueerd op hun effectiviteit en implementatie.

Deze bijzonder veeleisende planningscontext, waar ruimtelijke ontwikkeling steeds onvoorspelbaarder wordt en steeds moeilijker te sturen, biedt een mogelijkheid om de rol van ruimtelijke planning bij snelle verstedelijking te onderzoeken. De vraag die dit onderzoeksproject stelt is de volgende: In hoeverre hebben ruimtelijke plannen invloed gehad op de daadwerkelijke ruimtelijke ontwikkeling in de stedelijke periferie van Sjanghai? Met name de rol van het Shanghai Master Plan 1999-2020 (Plan 1999) wordt tegen het licht gehouden. Met het antwoord op deze onderzoeksvraag wil de studie bijdragen aan een beter begrip van de huidige planningspraktijk in Sjanghai vanuit planningsperspectief, en een analytisch kader opstellen om de rol van plannen in de Chinese context te bestuderen. De resultaten kunnen planners, beleidsmakers en private ontwikkelaars ook helpen om de ruimtelijke planning binnen het implementatieproces aan te passen om geplande doelen op verschillende niveaus te halen.

De evaluatie van planimplementatie kan worden onderverdeeld in twee benaderingen, een op basis van prestaties en een op basis van conformiteit. De benadering op basis van conformiteit richt zich op het directe verband (conformiteit) tussen de plannen en de ruimtelijke output (Laurian et al., 2004; Tian & Shen, 2011). De benaderingen

op basis van prestaties houden zich meer bezig met resultaten en de rol van het plan in het proces van stedelijke ontwikkeling (Barrett & Fudge, 1981; Faludi, 2000). Dit onderzoek gebruikt beide benaderingen om de implementatie van Plan 1999 te evalueren. Eerst onderzoek ik de conformiteit tussen Plan 1999 en de algehele structuur van de stedelijke periferie op het niveau van de metropool. Daarna gebruik ik voorbeelden van specifieke gebieden (North Jinqiao Export Processing Zone en Xinmin Development Area) om de prestaties van Plan 1999 te evalueren.

De studie volgt de relaties tussen variabelen ook door de tijd en laat zien hoe deze veranderen gedurende de implementatie van Plan 1999. Dit is van belang omdat de resultaten van plannen worden beïnvloed door dieper gelegen factoren zoals een veranderende institutionele context, met name de niveaus van interactie tussen betrokken partijen in het proces van landontwikkeling. Daarom worden het veranderende planningssysteem in Sjanghai en de geschiedenis van de ontwikkeling van de periferie van de stad in de tweede helft van de 20e eeuw eerst onderzocht. Hierna volgen de evaluaties op basis van conformiteit en prestaties.

Uit dit onderzoek komen drie belangrijke conclusies. Allereerst: de stedelijke periferie heeft een steeds grotere rol gespeeld bij de verstedelijking van Sjanghai, door de snel groeiende bevolking en de eisen voor groei op te vangen. Dergelijke uitgebreide ontwikkeling van de stedelijke periferie werd niet gestuurd door Plan 1999. Het komt niet als een verrassing dat plannen worden losgelaten bij een dergelijke ongekende groei, maar het pilotproject en de sleutelprojecten die in Plan 1999 werden voorgesteld zijn behoorlijk strak volgens plan uitgevoerd. Plan 1999 gaf echter verschillende resultaten bij lokale stedelijke projecten, met wisselende projectconformiteit, ontwikkelingsprocessen en ontwikkelingstiming.

Ten tweede was er verschil in oplevering van de hoofddoelen en de plannen die hierna kwamen, de consistentie van Plan 1999 en gerelateerde sectorplannen, de interacties tussen de betrokkenen en hun reacties op het plan, en de methoden van landontwikkeling. Over het geheel genomen presteerde Plan 1999 beter in de North Jinqiao Export Processing Zone dan in de Xinmin Development Area omdat de overheden (zowel nationaal als gemeentelijk) zich meer bemoeiden met het proces van ontwikkeling. De prestaties van het plan hangen nauw samen met de conformiteit tussen het plan en de daadwerkelijke ontwikkeling. Daarom zijn de benaderingen op basis van conformiteit en prestaties in de praktijk sterk met elkaar verbonden, ook al kunnen ze conceptueel gescheiden worden.

Ten derde is vanaf eind jaren 80 een structurele reorganisatie doorgevoerd in het systeem van stedelijke planning in Sjanghai, qua planning, betrokkenen en planningsinstrumenten. De nadruk op het rationele, technocratische proces die in de jaren 60 werd gelegd in de Westerse maatschappij overheerst echter nog steeds in het planningssysteem in Sjanghai. Behalve de veeleisende stedelijke groei is er nog een

reden voor non-conformiteit tussen Plan 1999 en de daadwerkelijke ontwikkeling van de stedelijke periferie, en voor de slechte prestaties van Plan 1999 in lokale projecten: tussen het ogenschijnlijk rationele systeem van stedelijke planning en de realiteit van externe uitdagingen gaapt een groot gat. Het huidige systeem mist een passende afstemming op deze externe uitdagingen. Bestaande omstandigheden of geschiedenis worden bijvoorbeeld niet onderzocht en er worden ineffectieve planningsinstrumenten toegepast. In de planningspraktijk wordt ook nauwelijks samengewerkt tussen de betrokkenen. Over het geheel genomen zouden stedelijke ontwikkeling en bestuur in Sjanghai profijt hebben van meer erkenning van het belang van planimplementatie en van een betere controle hierop. Dit zou leiden tot een heroverweging van de planningsinstrumenten en -processen om toekomstige stedelijke ontwikkeling effectiever te sturen.

1 Introduction

The issue of plan implementation has drawn public and academic attention for decades in Western countries. From case studies of policy implementation in the United States, Pressman and Wildavsky (1984) argued that '*plans fail everywhere if they are judged by the results; thereby no one can predict sequences of actions and reactions across the realm of public policies*'. Apparently, the mismatch between the objectives of plans and the realities of urban development is uncertain, and it raises many questions.

In China, the mismatch between plans and actual urban development is also apparent (Yeh and Wu, 1999). It has become a more important topic as urban development has accelerated under the influence of series of radical economic and institutional reforms. Chinese society has moved from a planned economy to a market-oriented economy. The completely top-down approach of urban planning using rigid zoning and resource allocation methods in the pre-reform era has given way to more diversified approaches to managing urban change, especially as municipal governments have gained more autonomy (Wu et al., 2006). Further significant transformations of rapid urbanization involving the spatial redistribution of much population and the expansion of major cities has added much complexity to the planning and action relationship (Friedmann, 2005, He et al., 2006). Under this changing context the demands on planning practice have increased dramatically, and have been reinforced by the introduction of market mechanisms and the involvement of more stakeholders (Ma, 2002b). Urban planning is now confronting more challenges than ever before in regards to guiding future urban development, with urban planning facing great difficulty in realizing its objectives.

As a result, the planning system in China has changed radically over the past few decades. Urban master plans are the only type of plans that have been consistently used as the primary tool for guiding the physical impacts of the economic revolution in China (Wu et al., 2007). Shanghai has a good tradition of using urban planning to regulate and guide its urban development. There are four editions of urban master plans in Shanghai (Zhou, 2007). The most recent one is *Shanghai Master Plan 1999-2020 (*上海市城市总体规划*)*, which was conceived under this very challenging context. This plan will be referred to as *Plan 1999* in the following sections. In the *Plan 1999*, many objectives are expressed including more sustainable development, the creation of a multi-centred urban structure, and a great expansion of public transport. Peri-urban development is emphasised as an important component in helpin to achieve the broad objectives of growth in Shanghai's future development.

The aim of this research is to evaluate the implementation of urban master plans in the Chinese context, and specifically the *Plan 1999*'s role in in guiding peri-urban development in Shanghai. Evaluating the implementation of the *Plan 1999* has two dimensions. Firstly, the study examines the 'conformity' between what the plan intended to happen and actual patterns of urban development. I explain the reasons for the complex and uncertain relationship between plans and urban development that is revealed. Beyond the evaluation of conformity of urban development to the Plan, the study examines the 'performance' of the plan, that is how it consulted and used in planning practice and what influence it had on decision making. The concepts or conformance and performance are explained fully in Chapter 2.

This study makes a contribution in both practical and theoretical terms. First, it contributes to a better understanding of the current planning system in China; the main factors that influenced plan implementation, and the potential for improvement of implementation processes. Second, there has been a lack of adequate evaluations of plan implementation in China. This study provides an analytical framework for evaluating plan implementation processes, which is suitable for the Chinese context. In the following sections, the transitional urban planning context and spatial transformations in China are introduced as a general background. I then define the problems that are addressed in the research based on the context for the study; and formulate the research objectives and questions. The two primary research objects are explained: the *Plan 1999* and the peri-urban areas of Shanghai. Finally, the structure of the whole thesis is outlined at the end of this chapter.

§ 1.1 Planning transition and spatial transformation in China, the unique context

§ 1.1.1 Urban planning in a transitional economy

A series of radical economic and institutional reforms were initiated in China from the end of the 1970s in both urban and rural areas. In urban areas, the state delegated the power of commanding important aspects of the economy (e.g. resource allocation and consumption, production planning and marketing, labour hiring, salary and bonus schemes) to local authorities, which in China means municipalities. In rural areas, the 'household contract responsibility system' was introduced in 1981. Under this system, the egalitarian distribution method whereby the state assumed all profits and losses

was terminated. Rural households were allowed to produce more agriculture products than the planned amount that was designated in the five-year plans. After handing in the planned communes to the state, they were also empowered to sell the extra products in the market for more benefit (Ma, 2002b). In other words, farmers obtained opportunities to earn additional income. However, rural land is still collectively owned.

Such reforms brought two profound transitions in the planning system. The first is the decentralisation of urban planning competencies. As many scholars describe, the focus of the political economy transformed from sectoral dominance to localisation. '*Sectoral dominance refers to production and reproduction which are mainly organized through administrative hierarchy that is dominated by the sectoral departments in central government. Thus, the territorial organisation, such as a municipality, is not the basic unit of organizing urban development... In other words, the local government is fragmented... localization means the decision making process is decentralized into localities, either municipalities or urban districts. The municipality begins to be a basic unit to control and guide urban development ... the urban districts become more influential in land development*' (Yeh and Wu, 1999: 216). The traditional pattern of urban development, which allocated resources to sectors through national government-led economic plans, is gradually giving way to locally led urban development. Urban planning led by municipal governments is thereafter has played a more a dominant role in managing urban land and the urban development process.

The second transition is the introduction of market mechanisms to the urban development process. The privatisation of housing brought about the rapid development of the real estate industry. It also introduced new actors as well as uncertainties within planning practices (Wu et al., 2006). The establishment of the land leasing system separated land use rights from land ownership. Land leasing generated significant amounts of revenue for local governments. It then became an incentive for local governments to drive their economies and to make money from urban development. So municipal enterprises or profit making in the development process has become the main driver for urban development. Plans for urban development arising from government have to work with the objectives and investment of other actors. In this context, local governments have also often changed their spatial planning priorities as a consequence of their orientation towards regional and even global markets. They have frequently competed with each other through land leasing to attract more outside investments. (Chen and Yang, 2002). Consequently, the traditional way of realising urban plans has been challenged. Such external influences and changing situations have continuously raised new issues for planning practices. Both internal and external transitions in planning thus contribute to dramatic spatial transformations in China especially in major Chinese cities.

§ 1.1.2 Dramatic urban changes

The economic and institutional reforms mentioned above brought about economic prosperity and also a fundamental restructuring of the population. Rapid urbanisation is the most significant change in China. The proportion of the country's total population living in urban areas climbed from 17.9% in 1978 to 49.68% in 2010 according to the Sixth National Population Census (Shanghai Statistical Bureau, 2011). In such a rapid urbanisation process, approximately 50% of the national population moved from inland China to the coastal cities, which made China's urbanisation a unique case in comparison to other countries. Figure 1.1 illustrates the large-scale population movement from inland China to coastal cities in different periods. The Pearl River Delta Area and the Yangtze River Delta Area became two of the most popular locations attracting migrants respectively in the 1990s and the 2000s.

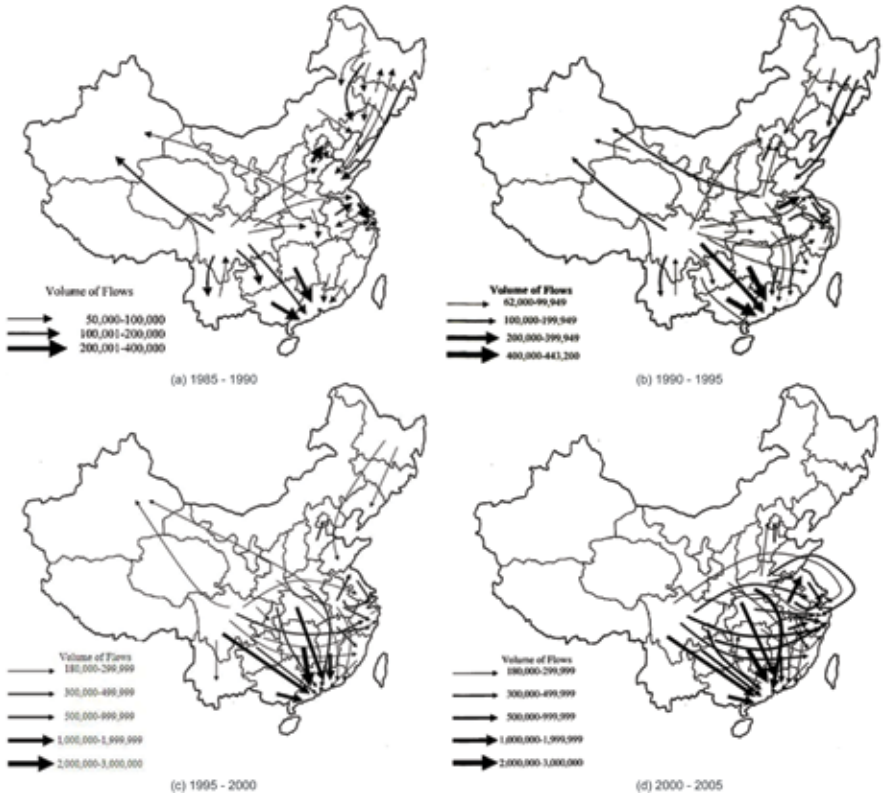
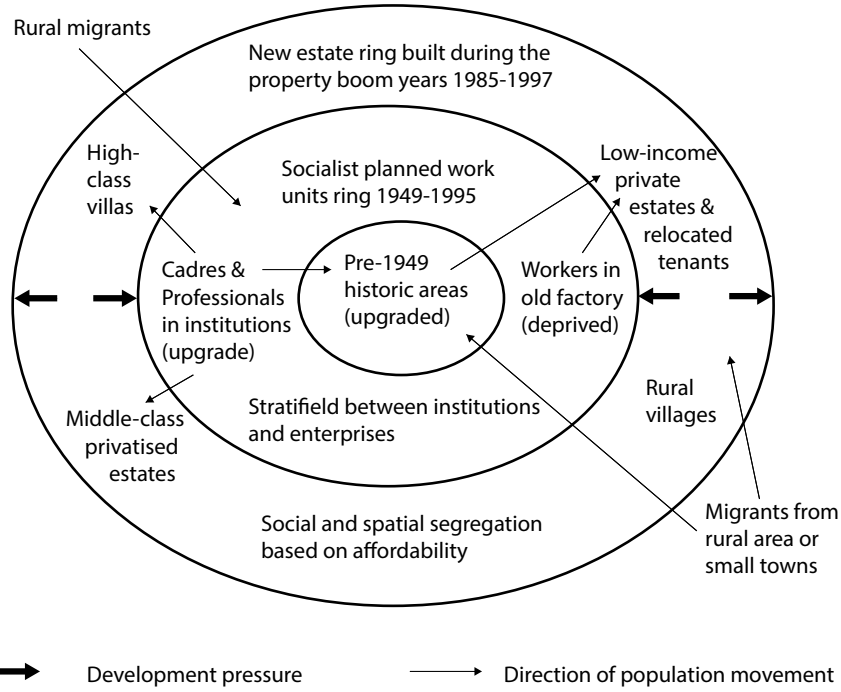


Figure 1.1
The inter-provincial flows of migrants in China (Chan, 2008: 103-105)

The large-scale migration could be attributed to three main reasons. Firstly, it was primarily a result of demand for workers in coastal cities where the greatest amounts of foreign direct investments (FDI) were concentrated. Secondly, it was encouraged by unequal regional policies/targets set by the central government which favoured certain regions over others (Liu et al., 2003). Thirdly, it was conditioned by the relaxation of the *Hukou* system. Hukou refers to a registered residency status that includes information such as births, deaths, martial status and changes in residences of all members of a family, which was used to control population movements during the pre-reform era. People without a Hukou of a specific place were not allowed to stay there for more than three months. From the 1990s and onwards, people obtained more freedom to move to other places for work (Ma and Wu, 2005).

A number of cities along the coast, notably Shanghai, Shenzhen, Guangzhou, and Beijing, experienced economic prosperity and dramatic urban development starting in the 1990s. These trends have actually recursively interacted with the increasing number of workers and investments from either the central government or foreign developers as mentioned before. However, these cities have met a number of difficulties in accommodating the rapidly increasing population and economic activities within their original administrative boundaries. The increasing demands for urban infrastructure and housing could not be fulfilled within the old boundaries. This is partly because of the limited amount of available land, and partly due to skyrocketing land prices. Gradually, both people and economic activities have shifted toward outer zones in response to the scarcity of affordable land within original city borders. This process led to the rapid development of peri-urban areas in big cities. Nevertheless, the density of most urban centres has still grown slightly. Such dramatic urban expansions (if we can call it this way) happened throughout the fast growing coastal cities (He et al., 2006).

Wang and Murie (2000a) explicitly explain the changing urban structure of major Chinese cities in relation to population movements as shown in Figure 1.2. This figure shows that a city could be generally divided into three rings: 1) historic areas, 2) socialist planned work units ring which was built mainly from 1949 to 1985, and 3) new estate rings built during the property boom years. The mainstream view of urban planners and local governments is that the second ring (usually called 'nearby suburbs' in China) attracts most of the relocated population from the historic areas, the third ring, rural areas and even other inland cities. As a result, the second ring accommodates a significant amount of institutions for Chinese Communist Party cadres and professionals, old factories, and new real estate housing. Commercial functions and offices occupy the historic areas. In the third ring (which is considered 'remote suburban' areas), there are also many housing estates. Middle class and low-income residents have gradually moved there due to lower living costs. High-income groups also preferred the remote suburbs because of a desire for better living environments. This analysis demonstrates the greater emphasis on peri-urban areas for the location of growth of residential and commercial activities in Chinese cities.



Notes:
This is only an indicative diagram. Patterns differ in each city according to geographiscal conditions, development history and performance in the current economic system.

Figure 1.2
New urban structure of Chinese big cities (Wang and Murie, 2000: 414)

§ 1.1.3 Urban expansion in Shanghai

Shanghai is one of China's fastest growing cities in terms of economic activity, population growth and urban development. It began as a fishing village named Songjiang Fu in the seventh century. The Opium War (1840) and the Nanjing Treaty (1843) changed it to a premier trading city and open port. Its city centre was semi-colonised by several European countries like the UK, France, USA and Germany. During the semi-colonial period, the population and urban construction in the concession districts (the central city area) increased significantly (Shanghai Urban Planning and Design Institute, 2007). The *Kuomintang* (Chinese Nationalist Party) took over Shanghai in 1911 and further promoted it as a Special City under direct state governance in 1927. After the Communist Party took over Shanghai in 1949, Shanghai gradually became an industrial centre and global port. In 1958, its administrative

boundaries were extended from 590km2 to 6340.5km2 (as explained in more detail in Chapter 3).

Over the last thirty years, Shanghai has experienced unprecedented urban growth associated with policies promoting rapid economic development. The city's strategic location, at the intersection of the eastern coastline and the Yangtze River, enabled Shanghai to become what is called the 'dragonhead' of Chinese economic development in the economic reform period [see Figure 1.3 (left)]. During the 1970s, Shanghai was single largest contributor of China's national industrial output, providing about 25% of it on average. After 2000, the city concentrated on the development of service industries. In 2010, Shanghai accounted for 4.2% of China's GDP (Shanghai Municipal Government, 2010).

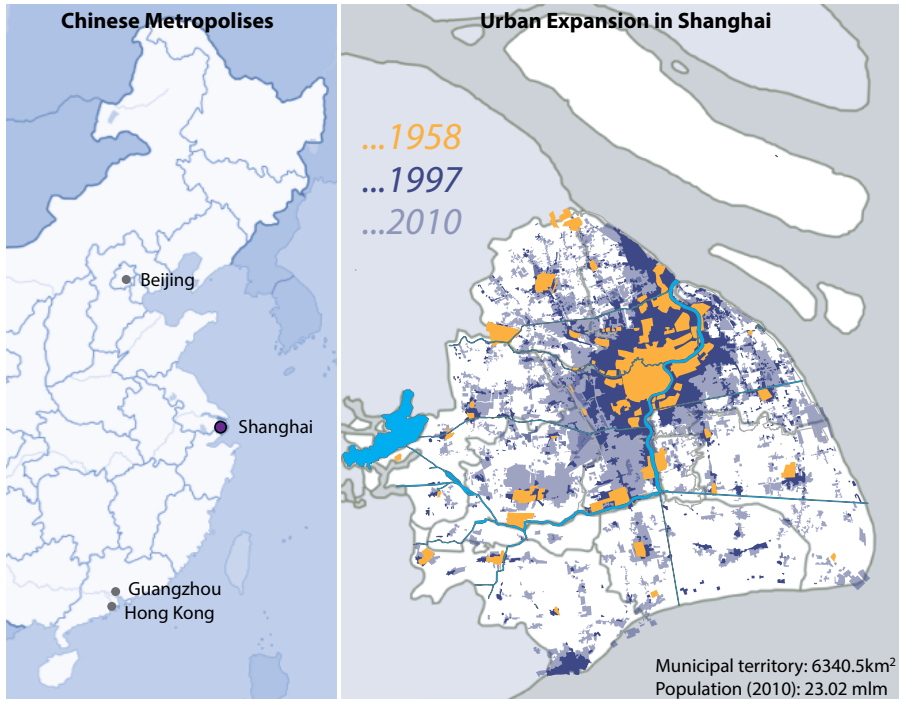


Figure 1.3
Location of Shanghai and its urban expansion (author's own)

Shanghai has also experienced dramatic population growth and rapid urbanisation in the past decade. Its population increased from 15.67 million to 23.47 million between 1999 and 2011. The built up area of the city also increased from 1073.1km2 in 1997 to 2080.3km2 in 2006 [see Figure 1.3 (right)]. Such dramatic population

growth rates and the extension of urban development in Shanghai mainly took place on the edge of the existing city - in the urban periphery. The population of peri-urban areas in Shanghai (the area beyond the old city, including Pudong District) increased by 6.74 million (from 9.71 to 16.45 million between 1999 and 2011). This number contributed 86.41% of total population growth in Shanghai (7.8 million). In parallel, the majority of urban area growth occurred in suburbs especially in areas on the urban fringe that had physically expanded. Between 1997 and 2006, the city's urban area increased by 1007.2 km2; 909.8 km2 of the new urban development occurred in the districts beyond the outer ring road [see Figure 1.3(right)]; and 86.1% of housing developments were in suburban districts (Yu, 2008d). At the same time, the population of the central city area (excluding Pudong District) only grew slightly from 5.96 to 6.17 million between 1999 and 2011. Two districts in the central city area (Huangpu District and Jing'an District) even lost 30% of their population between 1999 and 2011 (Luo and Zhou, 2007).

However, the urban area growth rate is much higher than the population growth. Regarding the urban area in Shanghai, its total area in 2009 was 1.75 times larger than the 1997 area (from 1636km2 to 2860km2). The population only increased by 1.58 times the 1997 rate between 1997 and 2011 (from 14.89 million to 23.47 million) (Shanghai Statistical Bureau, 2012). This illustrates how an extensive pattern of urban development since the economic reform era has gradually replaced the compact model of urban development under the planned economy (Hsing, 2010) (see Section 3.3. for more details). A significant amount of farmland in the periphery has been converted for urban land uses. Intense challenges and conflicts consequently appeared in the peri-urban areas of Shanghai due to the extensive pattern of urban development (Zhang, 2003). All these changes pose extremely demanding conditions for urban planning.

§ 1.2 Problem Definition

In such circumstances, Chinese government officers, planners and academic experts (we refer to them collectively as planning authorities) have devoted much of their efforts to conceiving new ideas and making plans in order to effectively organise rapid urban expansion, to manage peripheral territories, and to coordinate conflicts within the development process. The planning initiatives that intended to manage the rapid urbanisation process included 'a green belt', new planned satellite settlements and a number of new cities. The 'green belt' along the outer ring road was proposed in the *Plan 1999* in order to avoid urban sprawl. Satellite towns (卫星城) and new cities (新城) in remote suburbs were built to attract people from the old city. Central villages in

the "*One City, Nine Villages*" *Programme 2001 (一城九镇)* aimed to build a multi-level urban structure.

The planning authorities continuously revised plans and proposed new ideas for peri-urban development and growth management. But whether the planning objectives and policies have actually been achieved in practice is rarely considered. In general, there are few studies evaluating the effectiveness of plans in China (Interview Sun, 2009). Chen (Interview, 2010) also criticised how the revision of urban plans has rarely fulfilled their objectives of evaluating the quality and implementation of the plans. The reality is that actual urban developments continued breaking through the planned boundary and led to very dispersed settlement in the periphery (Wu, 2008). Investors and new inhabitants seem to prefer the urban fringes to the new cities. The majority of the proposed new cities and central villages have never been used as expected (Hartog, 2010). This phenomenon raises fundamental questions about the role of urban plans (urban master plans in particular), which are supposed to guide future urban development. However, such plans seem no longer capable of guiding urban growth management or urban development particularly in peri-urban areas of Shanghai.

Major transitions in both the planning system and urban development have changed planning practice. A popular Chinese proverb, *plan is only what is painted on paper and hung on the wall (规划规划, 图上画画, 墙上挂挂)*. It suggests the current way people regard urban planning in China. Spatial developments become difficult to predict, and are frequently different from plans or policies apparently due to the dynamic and complex planning development processes (Sun, 2001, Wu and Yeh, 1999, Wu, 2008). Meanwhile, comprehensive and strategic plans (which have been replacing urban master plans in China) have become widely used in Chinese metropolises. They declare that they allow for flexibility and uncertainty; and are more concerned about reconciling the conflicting interests that affect the development process rather than the final spatial product. Therefore, influences of such so-called strategic plans on actual urban developments become even more difficult to define, compared to more traditional blueprint plans.

Planning practice is not only a matter of proposing new notions or ambitious objectives, but also translating these notions/objectives into reality. In other words, urban plans do not make sense if the planning ideas are not able to influence actual urban development. Actual situations are more complicated than plans suggest, and this is widely understood. The relationship between plans and outcomes is normally not completely predictable and constant for various reasons: market cycles, new stakeholders, and the changing priorities of local governments. Instead, it becomes less certain. Planning processes need to keep abreast of such conditions, but in the China context have even greater difficulties in keeping up with development pressures such as rapid urbanisation, dramatic population growth, and the determinant pressure of globalisation. It is obvious that some plans have been made or revised in order to follow

developments that are already underway or decided. I describe these as trending plans, or trend planning.

Presently, the lack of research on the influence of plans and implementation practices that bring about subsequent impacts on changing urban environments is considered a significant barrier to effective planning in China. Chinese researchers started to discuss theories about evaluating plan implementation processes from the 2000s (Sun, 2001, Sun and Zhou, 2003, Song and Chen, 2012, Zhang, 2009). Tian (2011) empirically evaluates the implementation status of the land use plan in the most recent *Guangzhou Master Plan 2001-2010*. She draws the conclusion that the levels of conformity between the governmental plan and real developments in the urban periphery are low compared to other areas. She identifies some explanations for this including the weakness of monitoring and lack of governmental control in the face of market forces.

However, the implementation of land use plans that is the specific zoning is only one aspect of the master plan and the evaluation of its implementation. That is because, first, land use divisions are only one aspect of the urban master plans. High levels of conformity in terms of land use divisions are not equal to the successful implementation of urban master plans. Second, land use plans, compared to other aspects of the master plans, are relatively easy to be realised so long as there are appropriate development control tools. Furthermore, previous analyses mostly concentrated on the one-to-one relationship between plans (land use plans in particular) and actual spatial outcomes. They provided only a limited or partial view of evaluating the implementation of urban master plans, which is actually a complex process involving conflicts and uncertainties. Recently, the *Urban and Rural Planning Act of People Republic of China (*中华人民共和国城乡规划法*, Urban and Rural Planning Act 2008 in abbreviation)* made the evaluation of the effects of a plan compulsory when a plan is made or revised as explained in later chapters (The Tenth National People's Congress, 2008). Nevertheless few evaluations have been conducted (Yu, 2008a, Zhu, 2012b).

The relationship between planning policies and the implementation of plans has been discussed in Western planning theory since the 1970s especially in the US and UK. Implementation has become a major focus because of the difficulties of plan implementation within the increasingly complex urban development process (Healey, 1985, Alterman and Hill, 1978). Many studies have quantitatively examined whether and to what degree plans and policies have been translated into actual urban developments (Laurian et al., 2004, Talen, 1997). A plan was considered to have been implemented if development patterns adhered to its policies and spatial blueprints. This method was acknowledged as a conformance-based approach (Berke et al., 2006, Loh, 2011). It was applied to many empirical cases and particularly popular in the assessment of land use plans as we mentioned before. However, it overemphasised

the direct relationship between the plans and the actual outcomes; and overlooked the uses of the plans within the complex urban development process.

Mastop and Faludi (1997) considered the wider role of plans and questioned whether nonconformity between plans and the actual physical outcomes in urban development actually meant that the plans had 'failed'. They first differentiate urban plans into two types: project-oriented plans and strategic plans. '*Project-oriented plans provide blueprints of the intended end-state of the physical environment, including the measures necessary to achieve that state... Strategic plans deal with the coordination of a multitude of actors, thus timing rather than a finished product is of central importance. A strategic plan is a fleeting record of agreements reached...' (Mastop and Faludi, 1997: 821)*. It can thus be argued that each type of plans should have its own evaluation methods and mechanisms. The conformance-based approach fits project-oriented plans. Strategic plans, which concentrate on joining up actors and interests in the development process, may need another evaluative approach. In this context, the performance-based approach was developed for the evaluation of strategic plans. It focused on how the plan influenced urban development, in other words, the specific Impacts plans made on subsequent urban developments (Faludi, 2000, Mastop, 1997, Mastop and Faludi, 1997). (This will be explained in Chapter 2.)

The performance-based approach seems more appropriate for our evaluation of an urban master plan, which tends to have more strategic characteristics. However, planning implementation processes, which the performance-based approach paid great attention to, are differentiated according to particular planning systems, the mode of urban governance, relations between stakeholders, and even the political context. Thus the performance-based approach proposed by Dutch scholars is possibly unsuitable for the Chinese context. Hence this research project has adapted the performance-based approach that has been primarily proposed by Dutch, American and Portuguese scholars (e.g. Faludi, Mastop, Fudge, Wildavsky, Pinho) to the Chinese context for evaluating the policy-action relationship. Evaluating the implementation of an urban master plan with this multi-dimensional framework may help to strengthen the application of the performance-based approach in empirical studies.

§ 1.3 Research objective and questions

By engaging a situation where spatial development has become unpredictable and more difficult to be influenced by plans, this explanatory study will analyse to what extent and how have spatial plans, the Shanghai Master Plan 1999-2020 in particular, influenced the actual spatial development of peri-urban areas in Shanghai? Answers

should contribute to a better understanding of plan implementation, and point to ways in which the plan making and implementation process can be adapted in order to improve the fit of planning objectives and development. The following are some key questions, which help to answer the main question:

1 To what degree did the actual peri-urban developments in Shanghai conform to the Plan 1999? What factors affected the level of conformity?

2 How did the Plan 1999 influence local urban development and projects in the peri-urban areas of Shanghai?
- 2.1 Are other urban plans at different levels, and the related sector plans coherent with the objectives of the Plan 1999?
- 2.2 To what extent did the plan supply a frame of reference for operational decision-making and actions?

In order to investigate the two main key questions above, we need to understand more about the context by answering the following questions:

1 How is plan implementation evaluated in the previous studies; and which evaluation method is better suited for China and Shanghai?

2 How has peri-urban development in Shanghai evolved from 1949 to 1999 in relation to changing socio-economic contexts, and what are the implications for corresponding urban master plans?

3 What are the main features of the current planning system in Shanghai after a series of transformations that mix the influences of state controls, market mechanisms and local responses?

§ 1.4 Brief summary of the Plan 1999

Before establishing the analytical framework for further empirical analyses, it would be useful to explain in summary the three primary components of the research: 1) the concept/definition of implementation; 2) the peri-urban areas of Shanghai; and 3) the nature of the *Plan 1999*. The meanings of the concept of implementation will be explained in detail in Chapter 2. The peri-urban areas of Shanghai will be further defined in section 1.5. In this section, the Plan 1999 is briefly outlined with an emphasis on its status in Chinese planning system; 2and its main visions for peri-urban development. More discussion of the *Plan 1999* (e.g. the strategies for the delivery of this vision) from both conformance and performance perspectives will be given in Chapter 3 as part of the explanation of the research design and analytical framework.

§ 1.4.1 The Plan 1999 in Chinese planning system

In the Chinese planning system, an urban master plan formulated by a municipal government usually influences the urban development in cooperation with urban plans from various levels (e.g. urban system plans at provincial level, local plans or district plans at subordinate levels) and sometimes with related sector plans. We have to firstly know about the position of the Plan 1999 within this framework of plans and its relationship with other plans because 1) it helps to explain why this master plan is chosen for the evaluation; and 2) it also helps to understand the plan more thoroughly in comparison with other plans.

Since the *City Planning Act of People Republic of China (*中华人民共和国城市规划法 *City Planning Act 1989 in abbreviation)* was promulgated in 1989, a multi-tier system of plans has replaced the old two-tier system of plans (urban master plans and site plans). The objective of the change was to more effectively control urban development – that is implementation. After 1989, additional planning acts and reforms further modified the multi-tier planning system. A five-tier system of plans is used in Shanghai at present. Within this new system, urban master plans focus on macro-scale issues. They have the primary role of forecasting the city size, identifying the future position of the city the nature of the city, offering a broad framework for land use divisions, and providing policy guidelines for future development. The other four tiers of plans include 1) district plans (分区规划) (or suburban structural plans for suburban districts), 2) regulatory unit plans (控制性编制单元规划, RUPs in abbreviation), 3) regulatory detailed plans (控制性详细规划, RDPs in abbreviation), and 4) detailed construction plans (修建性详细规划, DCPs in abbreviation). They have their own functions and tools to shape the city (the hierarchical system of plans will be further discussed in Section 5.3.1).

In this five-tier system, only urban master plans and the RDPs are statutory plans. Urban master plans were defined statutory in the City Planning Act 1989. The Plan 1999 represents the fourth generation of Shanghai's master plans; and it is the second statutory Shanghai master plan (the Plan 1986 was the first statutory master plan in Shanghai). RDPs were defined statutorily in the *Urban and Rural Planning Act 2008*. Other plans (e.g. district plans, RUPs, and DCPs) within the system are theoretically only allowed to contradict or deviate from the master plans only when required procedures take place (Yeh and Wu, 1999). The evaluation of urban master plans seems vital because they are statutory plan and thus there is an expectation that they provide the primary policy for urban development. The Plan 1999 has a 20-year duration. It has been enacted for 14 years (since 1999), which is a long enough period to test its effectiveness especially under the circumstances of rapid urbanisation. Present urban development in Shanghai has already reached and even surpassed the planned capacity (Yu, 2008a).

§ 1.4.2 The visions and objectives of the Plan 1999

The Plan 1999 is the most recent urban master plan and was initiated by the Shanghai Municipal Government in 1997. The making of the plan was finished in 1999. Two years afterwards (in 2001), the state council of the central government approved the plan and its implementation started began. In this period (1997-2001), Shanghai has experienced dramatic changes. Its population increased from 14.89 to 16.68 million between 1997 and 2001. The initial land reforms established the land leasing system and further changed land development processes. The second round of housing reforms from 1998 abolished the in-kind allocation of public housing and boosted the real estate industry. In 1998, China entered the WTO and became even more open to the international economy. Shanghai as a 'dragonhead' of the Chinese economy was correspondingly reinforced by globalisation. Urban development in Shanghai is very growth oriented, which means economic growth and land development are always the first priority (Yu, 2014).

Like other strategic plans, the Plan 1999 declares its vision and main objectives at the outset. It aims a) to become a world economic centre in financial, trading and commercial terms, and a shipping centre by 2020; b) to integrate the urban development of Shanghai with the development of the whole Yangtze River Delta and even Yangtze Economic Zone (from a regional perspective); c) to rationally restructure the allocation of resources, population distribution, and infrastructure development; d) to sustainably coordinate the development of the economy, society, population, resources and environment; and e) to create a liveable environment for living, working and recreation. In order to achieve these visions, it further describes the objectives and the future of Shanghai from five different perspectives:

1. From the economic perspective, it intended to increase the scale of economic activities and comprehensive competiveness to enable Shanghai to become a global city.
2. From the spatial perspective, it transformed the focus from urban regeneration in the city centre to peripheral development in order to form an urban-rural integral, balanced and multi-centred urban structure.
3. To facilitate more infrastructural connections and a number of strategic infrastructure projects (e.g. three ports and two airports) there will be improvement of the accessibility of locations within Shanghai and links with surrounding cities.
4. The overall living conditions will be improved within residential complexes through a focus on construction layouts, facilities, convenience, and environmental clearances.
5. From the environmental perspective, it planned to conserve open spaces such as the green belt around the central city, ecological woodlands in the suburbs and small-scale green spaces in the central city area (Urban Planning Adminstration Practices in Shanghai, 2007, Zhou, 2007).

The visions and the objectives in the Plan 1999 showed a great interest in peri-urban development as an important component of the strategy to reorganise the urban structure. Objective 2 emphasised the urban-rural relationship as well as the centre-periphery relationship. Objectives 3, 4 and 5 discussed a number of other issues, but they relate to peripheral development in different ways. To be specific, the Plan 1999 proposed to restrict the population growth in the central city area to around eight million until 2020 by taking its urban capacity into consideration. The population amount was already 6.32 million in 1999 (Shanghai Statistical Bureau, 2000). Land development in the central city area was restricted as well (less than 600km2). Overall, it planned to reorganise the urban structure with much attention to the peri-urban development in order to accommodate the increasing population, to attract more investments for the future development, and to protect the environment in the city centre as we discussed in the beginning of this section.

The plan is very wide ranging and it is not possible within the scope of this study to evaluate all objectives. Instead, specific statements or issues are selected from the Plan for the evaluation, as Mastop and Faludi (1997) have recommended. Thus the main focus of this research is on the implementation of the *spatial* objectives with a particular interest on peri-urban development.

§ 1.5 Definition of Shanghai peri-urban areas

There are two main ways that are commonly used to define Shanghai's peri-urban areas. The first is from an administrative perspective. After the extension of the city's administrative boundaries in 1958, Shanghai's territory enlarged by over six hundred percent from 894 km2 to 5940 km2 (Shi, 2005). It currently consists of 10 urban districts, eight suburban districts and a county (Chongming Island) [see Figure 1.4]. The urban districts (shown with dots in Figure 1.4) originally belonged to Shanghai before the administrative reorganisation. The eight suburban districts, which used to belong to Jiangsu Province, include Baoshan, Jiading, Qingpu, Songjiang, Jinshan, Minhang, Fengxian and Pudong. They were defined as peri-urban areas of Shanghai. Chongming Island, due to its small number of extensive urban developments, is not counted as a peri-urban area.

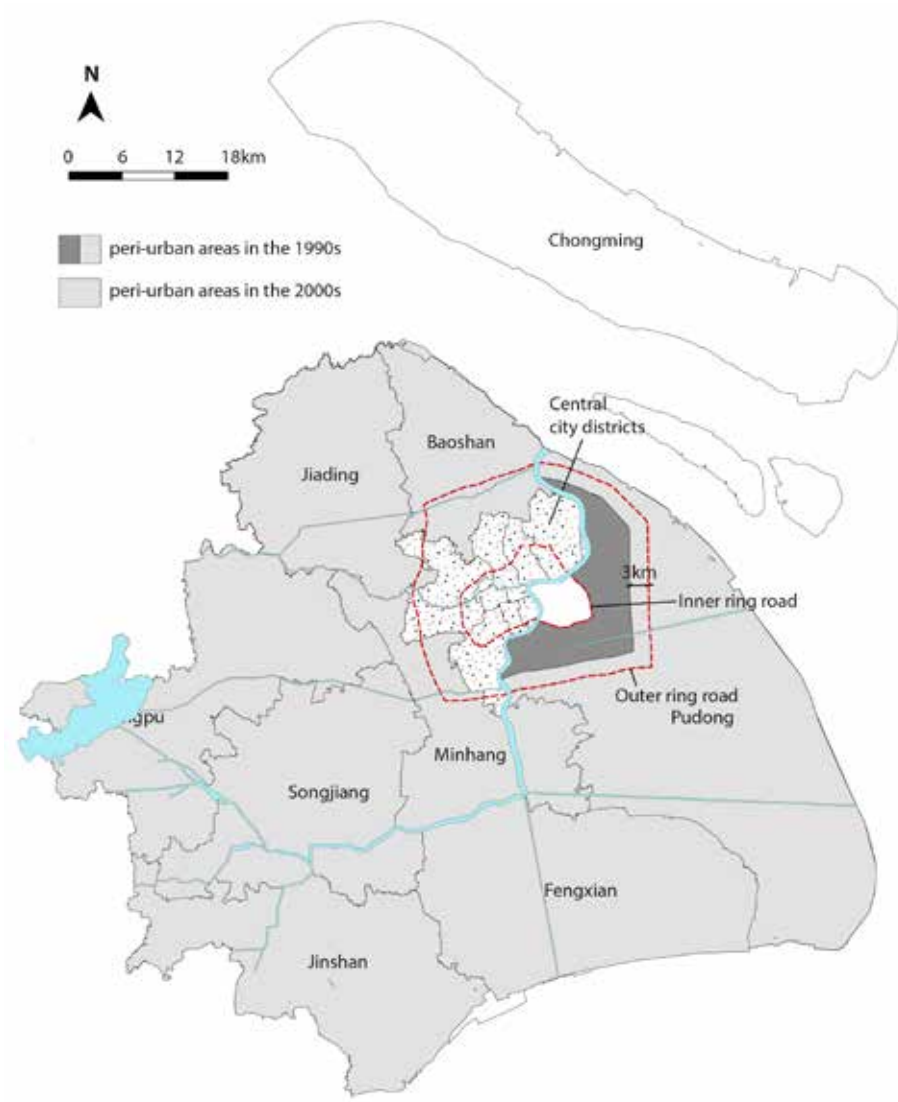


Figure 1.4
The two traditional ways of defining Shanghai's peri-urban areas (author's own)

As Shanghai has experienced the rapid urbanisation and spatial changes some previously suburban districts have gradually developed to become part of the central city area with more urbanised characteristics. For instance, Lujiazui, an area located in Pudong district that used to be a suburban port has become the city's commercial and financial centre. These places could by no means be categorised as peri-urban areas of Shanghai anymore. In contrast, some areas in other urban districts have lagged behind due to their lack of easy accessibility, Baoshan and Minghang districts for example.

Taking the simple administrative perspective of the municipality to define Shanghai's peri-urban areas is no longer appropriate.

The second way is defined by the Plan 1999 on the basis of geographical conditions. The Plan 1999 proposed several ring roads (inner ring and outer ring) to separate Shanghai into different categories: the central city area within the inner ring road, the nearby suburbs between the inner ring road and the outer ring road, and the remote suburbs beyond the outer ring road [see Figure 1.4]. Each category has its own density levels and urban development characteristics. The central city area is fully urbanised. The nearby suburbs are mostly urbanised. The remote suburbs still accommodate agriculture. The *Plan 1999* also planned a green belt along the outer ring road in order to control urban sprawl. In fact, the green belt/outer ring road was a critical boundary, which divided the central city areas and the peri-urban areas. However, this definition is too absolute. There are some locations within the outer ring road that were not fully urbanised, for instance some parts of Pudong District. There are also some intensively developed areas that are located beyond the outer ring road, which cannot be defined as peri-urban areas at present (e.g. Hongqiao Airport Area).

Shanghai's peri-urban areas are redefined by combining the two perspectives above according to the research aim. In contrast with the previous two definitions, the proposed definition is not static. The rapid urbanization processes and dynamic urban transformations are taken into account. In general, the ten original city districts are always considered Shanghai's central city area, so to speak, urban areas. The seven suburban districts (except for the Pudong District) are defined as peri-urban areas. The situation of Pudong District is a bit complicated. The definition is closely related to the period of land development. Looking at the 1990s, the whole district beyond the inner ring road, which was rural, should be defined as a peri-urban area. In the 2000s, Pudong developed rapidly. Even some areas along the outer ring road accommodated intensive urban development, which could be defined as part of the central city area. In this sense, the territory beyond and along the outer ring road (3Km) that was developed in the 2000s was defined as peri-urban areas. The areas that developed during the 1990s, even within the outer ring road, could also be defined as peri-urban areas [see Figure 1.4].

§ 1.6 Structure of the thesis

This thesis consists of a theoretical understanding of evaluation methodologies and an empirical analysis of the plan implementation processes of the Plan 1999 regarding peri-urban development [see Figure 1.5].

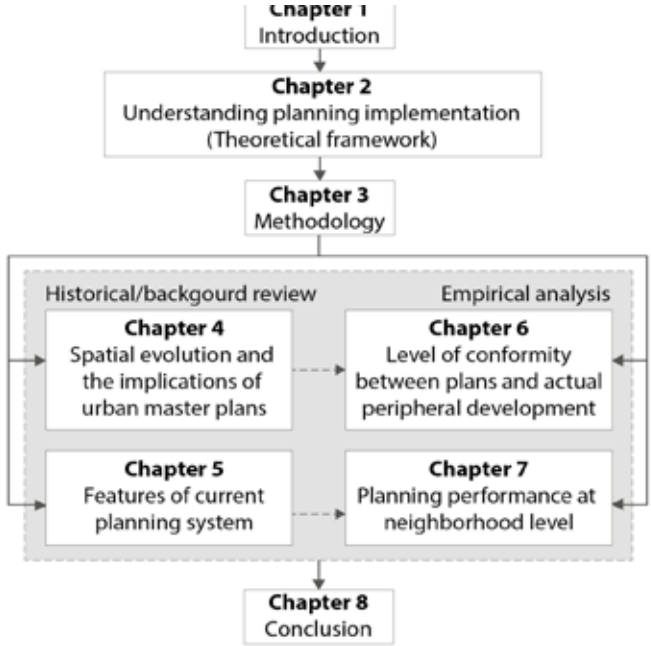


Figure 1.5
Schematic overview of the thesis structure (author's own)

In Chapter 2, a theoretical understanding of the evaluation of planning policy implementation is illustrated through a literature review. It starts with reviewing the evaluation of urban planning and particularly its changing role within the urban development process (2.1). In Section 2.2, the conformance-based approach and performance-based approach are further reviewed for establishing a framework for the evaluation of planning implementation. Different perspectives relating to the understanding of urban development processes are reviewed in Section 2.3. Finally, Chinese studies on evaluating plan implementation are reviewed in Section 2.4.

In Chapter 3, a research design that is based on the theoretical definition of implementation is presented that addresses the research questions. The chapter begins with an understanding of the nature/type of Shanghai Master Plan 1999-2020 (Plan 1999) regarding the issue of peri-urban development (3.1). In Section 3.2, a multi-perspective analytical framework integrating the conformance and performance approaches is illustrated. It is complemented by a diachronic approach of the evolution of Shanghai's peri-urban development. Section 3.3 introduces the research methods selected for the conformance and performance-based analyses: literature research, spatial mapping and case studies. The two case study areas are then briefly reviewed. This section further describes the data collection for the validity and reliability of this research. The chapter finishes mentioning the methodological limitations in Section 3.4.

In Chapter 4, an overview of peri-urban development of Shanghai in the latter half of the 20th century is given; and relates the spatial development trends to corresponding urban master plans. This chapter is organised into three parts. Section 4.1 briefly introduces the development of Shanghai before 1949, when the peripheral areas were still rural. Section 4.2 presents an overview of peri-urban development goals by reviewing three previous editions of Shanghai's master plans: *Urban Plan in Great Shanghai 1946 (*大上海市都市计划*), Shanghai Master Plan 1959 (1959*年上海城市总体规划*) and Shanghai Master Plan 1986 (1986*年上海城市总体规划*)*. Section 4.3 analyses Shanghai's actual peri-urban development in the latter half of the 20th century in close relation to corresponding urban master plans. This analysis is reviewed in terms of industrially oriented urban development, the development of Pudong district, housing development and development of urban infrastructure, which were all emphasised in the aforementioned three urban master plans.

In Chapter 5, the planning system in Shanghai, its transformation and its current features, are discussed in order to better understand the current situation of the city's planning policy implementation process. The dramatic changes in Shanghai's planning environment (the urban governance system in China and administrative organisation of Shanghai at the city scale) are introduced first (5.1). Two important reforms that brought in market forces into China's urban development process are further discussed (5.2). In Section 5.3, Shanghai's current urban planning system is analysed according to three different aspects: 1) the multi-tier system of urban plans; 2) the actors involved in the urban development process; and 3) the development control and planning instruments that were more frequently used in land development.

Chapter 6 presents a quantitative evaluation of the degree of conformity between the *Plan 1999* and subsequent spatial outcomes. This chapter consists of four parts. It starts with introducing the spatial strategies of the *Plan 1999* regarding Shanghai's peri-urban development (in Section 6.1). Based on these spatial strategies, nine indicators are identified in Section 6.2 for the implementation evaluation. In Sections 6.3 and 6.4, the analytical results are shown respectively according to each indicator through spatial mapping and the overlay findings. The potential factors that have influenced planning implementation processes in Shanghai are finally discussed in Section 6.5.

In Chapter 7 planning implementation processes are evaluated from a performance-based perspective. More specifically, this section analyses how plans have influenced spatial development in the peri-urban areas of Shanghai through two case studies (North Jinqiao EPZ and Xinmin Area). First, the selection of the three criteria for performance-based evaluation is explained (Section 7.1). In Sections 7.2 and 7.3, the utilisation of the Plan 1999 in these two cases are then analysed according to the three evaluative criteria. Based on the case analyses, the similarities and differences of the planning implementation processes between these two cases are discussed;

and the implementation performance of the Plan 1999 is explained further. Likewise, the transformative mechanisms of planning policy implementation measures in the Shanghai context, and factors associated with implementation performances are also discussed in Section 7.4.

In the conclusion chapter, the research is concluded by summarising the main empirical findings (Section 8.1), drawing the implications for future planning policy implementation approaches and the corresponding evaluative research (Section 8.2), and indicating directions for future research (Section 8.3).

2 Understanding Planning Implementation

The previous chapter explained that there have been difficulties in converting the objectives of plans into actual spatial development since market forces began to intervene in land development processes in China. Chinese officials and planners generally have paid little attention to this issue, and the planning process continues with little consideration given to the actual implementation of plans (Sun and Zhou, 2003). In some cases, planning authorities formally anticipate rapid plan implementation as soon as plans are made, while also recognising that there are likely to be political and other changes that may prevent implementation and require a plan review. In other cases, the plan tends to be more of a response to actions already taken, simply recording actual developments or producing a plan knowing that its influence may be limited.

Difficulties in policy and implementation have are also widely recognized in Western countries, including those where urban planning is considered to be more effective. For example, in relation to England, Nadin (2007:44) says, '*at the end of the 1990s there was wide agreement that the system was falling far short of meeting its objectives and that it had failed to adapt in the face of social and economic change in Europe*'. Nadin points out that there was a gap between the objectives of plans and the real outcomes, which raised questions about the performance of the planning process in England. Similar questions had been raised much earlier by Barratt and Fudge (1981) who first brought attention to the gap between 'policy and action' in the UK. In the United States, Pressman and Wildavsky (1984) had already made the important argument (initially in 1973) that we should expect plans to usually 'fail' if the criterion for evaluation is the extent to which the original policies are implemented exactly as intended. They said that no one can predict the pattern and direction of real actions in relation to stated public policies, whether in land use planning or other sectors. Against this background, since the 1980s many researchers have examined the mismatch between the objectives of plans and actual urban development in Western countries. Academics have developed and renewed various theories that may assist with understanding the idea of implementation and the evaluation of plan implementation. Many of the ideas make reference to important texts by (Pressman and Wildavsky, 1984, Cullingworth and Nadin, 2006, Barrett and Fudge, 1981) Laurian *et al.* (2010) and Loh (2011).

However, subsequent research exploring the real influence that spatial plans have on planning practice and corresponding urban environments is still generally lacking in China. This is considered a significant barrier to more effective planning in China (Tian

and Ma, 2009). In this chapter, I review theories about plan implementation, which are commonly used in Western countries especially in northwest Europe and the US. I use the review to establish a framework for evaluation of planning implementation in Shanghai and particularly to identify to the appropriate measurement methods for evaluation. A literature review is used to understand planning theories and theories of evaluating plan implementation. The review begins by introducing the evolution of ideas of urban planning and current types of urban planning in Section 2.1. Then, ideas about how to evaluate plan implementation follow in Section 2.2. The discussion continues by reviewing different perspectives of understanding the land development process in Section 2.3. In Section 2.4, recent research on plan implementation in the Chinese context is reviewed. The above four issues (the evolution of theories about urban planning, different methods of evaluating implementation, perspectives on the land development process, and planning implementation in Chinese planning practice) are closely related. They all contribute to a better understanding of plan implementation. In the first place, the evolution of ideas in urban planning helps us to understand different types of plans and their objectives. Different types of plans have specific approaches to realizing their objectives, thus evaluation of plan implementation varies according to the particular characteristics of plans (Faludi, 2000). Secondly, this review explains that the evaluation of plan implementation is not only about measuring the level of conformity between plans and reality, but also evaluation of how plans have been applied or used in the overall land development process (Hall, 2002). A better understanding of land development processes is thereafter important, and is therefore provided. Thirdly, plan evaluation should be appropriate to the specific context. There is no universal approach but we need to know more about the specific conditions and current research on plan evaluation in China to understand how theories from other countries could be applied in the Chinese context.

§ 2.1 Evolution of urban planning ideas in relation to plan implementation

The main ideas about urban planning have evolved over the past century in terms of the product (contents of plans), the approach of making plans, and the role of urban planning within land development processes. Much of this discussion in the literature refers to experience in northwest Europe and the US. In general, there have been three significant stages. In the first stage (during the first half of the twentieth century including the immediate post-war period), urban planning was originally considered to be about physical urban designs, which depict an ideal urban form or morphology. Architects and engineers were mostly responsible for these types of plans and the thinking behind them. In the second stage from the 1960s onwards, the focus of urban planning was transformed from designing an ideal urban form to proposing a

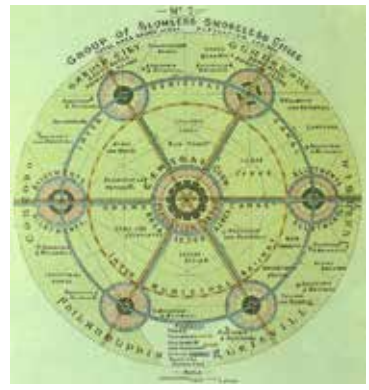
rational process for plan making. This was a shift from physical to procedural planning theory. Planners were said to play the roles of technical experts managing a decision-making process. In the third stage (the end of the 1980s), more attention was paid to the mediation of conflicting interests and coordination among various stakeholders, namely the quality of actions (Taylor, 1998). This approach made planners the facilitators or communicators within the planning process. I will discuss more fully urban planning in the three stages (2.1.1-3) and conclude with two types of urban planning that are widely used in the present-day (Section 2.1.4).

§ 2.1.1 Urban planning as defining an ideal urban form

In the first half of the twentieth century and even during the post-war period, urban planning was mainly an exercise of designing the physical form of cities and towns. According to Taylor (1998), there were three main components of urban planning during that period. First, it dealt primarily with physical issues (e.g. land or spatiality) rather than economic, social or political issues. Second, design was central to urban planning. Third, blueprint plans, as end-state products, showed a strong degree of precision both in the spatial configuration of land uses and in the nature of the urban form to be created. Urban planners during that period were influenced by architectural thinking and architects and engineers participated actively in making urban plans together with designing buildings and other man-made structures. Such an approach to urban planning is still the dominant form of planning in many countries.

There were many classical urban plans, which paid attention to the physical layout, aesthetic character and spatial quality of places. They are more or less exercises in large-scale 'town design', such as Mata's concept of the Linear City, Corbusier's Radiant City, and Wright's vision for Broadacre City [see Figure 2.1(A)]. These plans are end-state products, which depicted an ideal future city model with visionary maps or designs. At the same time there were also planning theories that not only proposed visionary maps or designs, but also explained the ways and procedures of organising a city. Howard's proposals for a garden city, for instance, are often seen as a theory about an ideal urban form, but the garden city idea is equally about the operation of a city (e.g. land management and municipal finance and governance) [see Figure 2.1(B)]. However, the examples given share the common characteristic of depicting an ideal future city model (physical and social). From this' urban form and design perspective' of planning, plans are considered to be realised when the actual urban spatiality and land use configuration is in compliance with the vision set out in the plan.

A) Broadacre city (Frank Lloyd Wright)



B) Garden city (Ebenezer Howard)

Figure 2.1
Planning concepts in the pre-war period
(http://en.wikipedia.org/wiki/Broadacre_City., and http://en.wikipedia.org/wiki/Garden_City._New_York)

Jacobs (1961) and Alexander (1965) criticise these types of plans, that depict an ideal future city model (especially the blueprint urban form plans) in two ways. First, blueprint plans demonstrate a physical bias towards urban environments. They are rarely concerned about the social and economic issues of cities. Howard's garden city in its original form may be excused from this criticism but the subsequent application of the garden city idea has been dominated by the physical design model. Secondly, blueprint urban designs plans ignore the complexity and diversity of the urban system. They were mostly very detailed and prescriptive and therefore in implementation proved inflexible when circumstances changed. Such plans require extensive 'control' over the details of implementation to be realised. Many writers have since argued that plans should be more flexible, responsive and holistic rather than static blueprints because they are dealing with dynamic situations. This is an important point in relation to implementation, which reflects the argument by Pressman and Wildavsky above. If plans are bound to fail because of the complex chain of actions that are needed to implement them, then blueprint plans are likely to not meet their intentions where there is not complete control.

§ 2.1.2 Urban planning as a technical process of plan making

Criticisms of the physical urban design approach to planning during the mid to late 1960s, the weakness of much plans in implementation, and changing attitudes in society which gave priority to 'science', shifted the focus of urban planning in theory from designing places to rational decision making and spatial management. In

other words, to make more scientifically rational decisions in the process of urban development became the core issue in urban planning. In some countries, these ideas were influential also in practice. The primary goal of urban planning was no longer to create blueprint plans, but to provide new perspectives for understanding the complexity of cities as well as to propose new methods for plan making which brought more evidence and rationality into decision-making. Theory promoted urban planning as a scientific rather than a design profession and this led in some places to new roles for urban planners with less attention to urban design and more attention to technical analysis of urban systems and other evidence to support policy making. Two important variants of these planning theories were the systems view of cities and planning and the a rational process view of decision-making in planning.

The systems view of planning echoes the criticisms of the traditional 'physical design' view of town planning, and provides a new perspective of understanding built environments (towns, cities, regions and so on). It treats the city or region as a complex system composed of interconnected parts and activities. The structure of a system is determined by the structure of its distinct parts and their relationships. Change of any part of the city will cause changes to other parts. The interconnections between the parts of a system are central to the city's functioning. Taylor (1998) explains the implications for the nature of 'the plan' that has obvious implications for thinking about implementation of the plan.

'Urban planning should be an adaptable and flexible on-going process of monitoring, analysing and intervening in fluid situations, rather than an exercise in producing "once-and-for-all" blueprints for the ideal future form of a town or city' (Taylor, 1998: 63).

Based on the understanding of how cities worked as activity systems, the systems view of planning further advocates an understanding of the urban system not only from physical and aesthetic perspectives, but also from economic and social perspectives (McLoughlin, 1969)</pub-location><publisher>Faber</publisher><isbn>0571090052</isbn><accession-num>3372819</accession-num><call-num>MUDD-click "Place Requests" for delivery to any Yale library Jav35; 969Mm</call-num><urls></urls></record></Cite></EndNote>. It provides a new perspective for understanding urban systems; however, it does not provide any direct recommendations about how to conceive of plans for such complex systems, or how they can be used or applied in managing urban development.

The rational process view of planning marked another big shift by drawing a distinction between the substance or content of planning, and the way that decisions are made about that content. Faludi (1973)Art & Arch Collection (1 Day Circ distinguishes 'substantive' planning theories and 'procedural' planning theories, '*...the former concerns the object (i.e. planning deals with the environment); ...the latter discusses the process or procedures of going about planning (64)*'. The rational process view of

planning, which belongs to the category of "procedural planning theories", focuses more on the process and methods of plan making or decision-making rather than on defining specific goals to be pursued. Webber, who is thought to be the founder of the rational process view of planning, argues:

'I understand planning to be a method for reaching decisions, not a body of specific substantive goals... planning is a rather special way of deciding which specific goals are to be pursued and which specific actions are to be taken... the method is largely independent of the phenomena to be planned' (Webber, 1963, cited in Taylor, 1998: 75).

Long before in the 1910s Geddes had proposed the 'survey-analysis-plan' method (SAP) for decision-making in regional planning, when little attention was paid to this view. It was brought forward in the context of procedural planning theory in the 1960s when it became an influential model in putting the rational process view of planning into practice. The SAP consists of three main steps. The first step reflects the attention to analysis in the process view of planning – a survey is conducted prior to the preparation of plans in order to identify where action is needed and to prompt policymaking and action. The second step also concerns analysis in the requirement to understand how cities function, and to formulate and evaluate alternative options and plans. The third step is to choose between the options and produce a plan based on the previous survey and analysis. In the original formulation little attention is given to 'implementation'. Barratt and Fudge (1981) and others explained that the process does not end when a decision has been made, but two further steps need to be added – attention should be given to the implementation of plans and then the effectiveness of implementation needs to be monitored to check firstly, if the plan is being implemented and secondly if the effects of implementation are achieving the desired ends. The importance of taking plan implementation into account in the planning process and practice is not 'taken for granted' but is highlighted for the first time [see Figure 2.2].

Figure 2.2
The SAP model refined by Taylor (Taylor, 1998:68)

We should note here that the systems theory and the rational process view of planning do not suggest the complete replacement of traditional blueprint plans. A procedural approach to planning based on ideas about the complexity of urban systems and the need for more rational decision making is complementary to more detailed urban design plans. In reality, the former group supplements what the latter lacks. In the following decades, they have all been used simultaneously in planning practice. In an early study on implementation Alterman and Hill found that much content of detailed regulation plans are implemented (especially where the urban systems are less complex) but that important aspects are not. They argued that in regard to less certain long term objectives, the urban plan 'should attempt to identify those specifications whose determination at present is crucial for regulating future development. These should be worded in general terms without being location specific' (p. 283). Alterman and Hill were calling for a two dimensional construction of plans that separated those items where there was some certainty for implementation and other matters that were more uncertain where the plan would be more 'flexible'. These ideas followed practice in England where the planning system had already been changed in 1968 to allow for both a 'blueprint' and a more 'strategic' content (Cullingworth and Nadin, 2006).

The systems view and rational process views of planning still draw some criticism. The systems view of planning is criticised because it still starts from a top-down perspective to understand urban planning. Whilst it acknowledges the complexity of urban systems, it continues to assume a linear process from plan to implementation. The rational process view of planning only offers *'an extended definition of planning and not saying anything about how planning in practice operated or what its effects were'* (Taylor, 1998:96). In other words, it is too abstract and generic without any content that looks into the substance of a city and which could be the focus of evaluation of implementation.

Overall, both theories still focus on the early policy-formation stage and neglect the effects or the action-end of planning, namely implementation. According to Friedmann (1967, cited in Taylor, 1998: 113), '*society has been planning too much and experiencing far too little application of plans*'. Furthermore, '*the idea of describing urban planning as a ''science'' is considered misleading and utopian because no planners can use their technical competence or wisdom to dictate values for the citizens*' (Davis, 1972: 274). For many procedural and systems theorists, the urban planning process ends with the production of the plan, because they assume (sometimes implicitly) that the planner was expert with the knowledge and control mechanisms needed to implement the plan. A discussion on the implementation of plans was absent at a time when there was radical change in ideas about planning (Friedman and Hudson, 1974).

§ 2.1.3 Urban planning as an comprehensive intervention within land development process

Criticism of rational planning / technical process of planning together with new theoretical perspective of planning gave rise to a number of alternative explanations of the role of the planning society. New theories came forward which amended and developed the two main streams of thought - either planning as creating a final product to direct future urban developments, or planning as a normative process for more rational plan making (Friedmann, 1973).The principal reforms in planning thought that were formulated as a result were 1) the incorporation of political judgments into the rational plan making process (e.g. advocacy planning); 2) a communicative perspective for planning (e.g. collaborative planning); 3) incorporating market influences on urban planning; and 4) (most importantly for this discussion) much more attention to understanding of plan implementation as well as production.

During the late twentieth century, the political content of planning became very obvious as many societal groups began to challenge decisions made by 'professional experts'.

'Plans and planning decisions rest upon value judgments about what kind of environment it is desirable to create ... such judgments were often not just 'common sense'. They were matters of intense, sometimes passionate, contention and disagreement. In other words, town-planning judgments were not so much technical or scientific as political... Urban planning would be better described as a form of political action directed at realising certain values...' (Taylor, 1998: 76-77).

Political judgments have to be made in the plan making process and are the most crucial element of defining what the planning goals should be. The former dominant ideas whether from design, systems thinking or procedural planning theory tended not to recognise the significance of politics and value judgements in planning and the role of planning in managing the competition between different objectives that come from value positions. So a political perspective was brought to planning, but Long (1959) had argued that the right question is '*not whether planning will reflect politics but whose politics it will reflect*'. Davidoff (1965) in promoting his advocacy planning ideas makes a similar argument by defining defining urban planning as a form of political action directing attention to the distribution of scarce environmental resources and conflicted claims on land in attempting to realize certain values. These ideas have been discussed extensively in planning theory in such fields as interactive practice (Sager, 1994)Stacks, LC Classification P306.2; S24X 1994 (LC, planning as collaboration (Innes, 1995) and public participation (Arnstein, 1969, Julian et al., 1997).

Questions about the equitable distribution of resources among social groups (who wins and who loses), draw the most attention when the outcomes or effects of plans are evaluated (Forester, 1993). However, plans do now often explain how they distribute outcomes and may advocate for equality between social groups, they rarely explain how social equality would be achieved in practice (Faludi and Valk, 1994) so making evaluation of implementation of these goals difficult.

Second, the communicative perspective of urban planning emerged in the early 1990s. From this viewpoint, more attention was given to the importance of interpersonal skills of urban planners in communication and negotiation for the effective implementation of policies and plans (Ferguson, 1999). Innes (1998: 52) explains that '*Planners are deeply engaged in a web of communicative and interactive activities that influence public and private actions in direct and indirect ways*'. Urban planning in practice the US and northwest Europe has developed in parallel with these ideas where planners become more facilitators and communicators involved in collaborative processes of debating and learning with a range of stakeholders, rather than expert designers or decision making. These are roles quite different from those anticipated by the scientific model of planning. Evaluation of implementation therefore becomes less about evaluating design and delivery of outputs and more about evaluating the communication with various interests and the effects of the planning process on those people and agencies. Furthermore, the various components of planning practice, both plan making and implementation, involve communication (Healey, 1997).

Third, the liberal view of spatial planning was emerged or re-emerged from the end of the 1980s. The argument was made that in liberal market economies, market forces are a fundamental factor that influences urban development. In the UK Pickvance (1977) argued that town planning practice could not be separated from the political and economic context as well as the market within which planning operates. This raises more questions about theories, which see the planner as 'expert in control'. Urban planning and government agencies do not influence urban development as presumed in systems and rational process theories of urban planning. Their powers are heavily constrained by the market including investors and consumers, and the values they hold. Public authorities do not themselves provide development according to some grand blueprint, but rather regulate and control market forces and the activities of others in urban development. In the West, planning agencies have become increasingly dependent on nongovernmental agents to realise their goals. In this context, it has been argued that urban planning gradually becomes an activity of networking, bargaining and negotiation - of 'doing deals'. In some countries, the relationship between planning and the market was shifted as the style of planning and urban governance shifted from a managerial to a more entrepreneurial approach (Harvey, 1989). These changes were a reflection of changes in political ideologies and politics, but the idea that urban planners should take a 'positive' view of market-led development has been recommended (Healey, 2007). This involves more uncertainty

and planning needs other tools to influence market actors which allow more flexibility and pay greater attention to the coordination with the market, but also continue to shape the direction of urban development (Dühr et al., 2010). These ideas and practices of planning raise questions for implementation. How will the success of plans be measured if the plan is more 'flexible'?

Fourth, more attention has been given directly to the action-end of planning: plan implementation. The classical linear model which treated policy and plan making as a series of simple steps - the first to survey the context, the second to prepare the plan and the third to implement it - has been widely challenged. Numerous studies have shown that the implementation stage has been assumed and not examined fully, and have instead taken a view of planning questioning the implementation part of the process and starting analysis with implementation. Friedmann (1974) explains the relationship between plan making and implementation from an action-centric perspective. He does not separate planning or policymaking from action in a sequential fashion. Instead, he would rather see planning as part of a set of actions that interweave plan making and implementation together. Successful implementation processes require effectiveness in both policy-making and action process. In other words, '*implementation needs to be considered at the same time and not after the stage at which plans and policies are formulated* (Taylor, 1998: 116). Understanding urban planning from this perspective is acknowledged as 'action-oriented' planning, in contrast to 'policy-centred planning', and focuses more on how to improve the quality of actions to achieve objectives.

The action centred approach recognizes that the implementation of urban plans and policies depends in large part on the willingness of private sector developers and other actors outside the planning system who can come forward to either promote and undertake the desired urban development or challenge and block development. Understanding the process and the effectiveness of plan implementation thereafter should be assisted by an understanding of the market and agencies working within it and the levels of integration among them (Nadin and Stead, 2008). Such approaches also take into account that there will be unexpected effects of planning policies and actions. For example, Hall (1973) in his research of evaluating urban containment in England, argues that the post-war planning system had three main effects: urban containment, suburbanisation, and an inflationary effect on land and property prices. Only the first of these effects was planned, 'the other two are unintended spillovers. Evaluation of the implementation of plans needs to address these unintended consequences.

Overall, urban planning theories in this period no longer depicted a closed future of urban development, but became open to the negotiation between varied actors and flexible to the dynamic circumstances. The debate about plan implementation shifts into a new paradigm (Oliverira and Pinho, 2010) which is less about evaluating the way

a plan helps to transform proposals into physical reality and more about how the plan assists in the interaction of actors and influencing actions of others. Plan making and implementation become interweaved instead of being separated as sequential stages. The significance of this for the evaluation of implementation is taken forward in a discussion of different types or components of plans in the next section.

§ 2.1.4 Two types of urban plans

In general, the common purpose of urban plans is to guide future urban development and transformation through decisions, evidence and actions. But urban plans vary in terms of their intentions and end products, the process by which they are prepared and adopted, and the mechanisms, which are used to realize their objectives. I noted above that in the evolution of urban planning thought it is possible to identify different ideal types of planning: broadly these are the urban design blueprint planning, procedural planning concerning process rather than content, and communicative planning influencing the actions of others. Alexander and Faludi (1989) argue that there are two main ideal types of urban plans that broadly reflect the first and last of these notions of planning: project-oriented plans and strategic plans.

Project-oriented plans have elements derived from blueprint plans, which are more focused on the material/physical objectives and the substance of urban developments. They contain more detailed guidance and suggestions for local development in order to ensure higher quality urban design; and thus depict a predetermined future for urban development [see Table 2.1]. They are expected to have a determinate effect on the reality of urban development. Project planning results in blueprint style site-specific plans. In this sense, evaluation of the implementation process has a very simple logic, which is measuring conformance between what the plan states and the physical/spatial outcomes (Mastop and Faludi, 1997).

	Project-oriented planning	Strategic planning
Object	Material	Decisions
Interaction	Until adoption	Continuous
Future	Closed	Open
Time-element	Limited to phasing	Central to problem
Form	Blueprint	Minutes of last meeting
Effect	Determinate	Frame of reference

Table 2.1
Two types of spatial planning (Faludi, 2000: 819)

Strategic plans are very different from their counterpart project-oriented plans. Varied interests, market influences and other factors within complex urban systems are taken into account. As such, they are intended to be more flexible and adaptive to the dynamic circumstances of urban development. They will encompass a wider remit of 'social and economic' objectives as well as 'physical' issues. 'Joining up' a multitude of actors becomes the core idea of strategic plans (Nadin, 2007). This strategic approach may be communicated in visualisations, a series of policy statements or the minutes of a meeting. The common feature is that they only show development proposals in very general and fundamental terms. The future state of spatial development in strategic plans is usually left 'open' to some degree [see Table 2.1]. Thereafter, for strategic plans, the notion of 'implementation' in terms of development strictly conforming to a plan is much less relevant; rather we should talk about the *application* of strategic plans in decision-making and the land development process (Mastop and Faludi, 1997).

Whilst the ideal types of plans described here are distinct, plans in reality are unlikely to be so clearly one or the other but rather to give more or less emphasis on a particular type. Most likely plans will contain aspects of both types and the issues raised under each should complement each other. Therefore, we do not regard them as being mutually exclusive, but rather complementary approaches to planning urban development. Project-oriented 'plans' and strategic 'plans' coexist, sometimes in the same document.

§ 2.2 Conformance and performance: evaluation of plan implementation

The purpose of evaluating plan implementation in general is to understand '*what actually happens at [the] policy recipient level*' (Barrett, 2004). Evaluation should contain analyses on the relation between plans and spatial outcomes, relevant funding,

policies, the planning system tools that support plan implementation, the mode of urban governance, and cooperation between involved stakeholders (Song and Chen, 2012). Evaluation is about the 'success' of plans but the criteria for success will vary, and so the evaluation process will need to vary for the two different types of urban 'plans' defined above: project-oriented plans and strategic plans. They vary in terms of their end products, their objectives, the interaction between involved actors during plan making, and the effect on future developments. They have different mechanisms for realising their objectives and the implementation processes of these types of plan are different. The approaches for the evaluation of plan implementation are consequently different (Alexander, 2009). Note however that the 'strategic plan' and the 'project plan' may be evident in one document so evaluation of one plan is likely to need two approaches.

In general, a conformance-based approach is considered proper for evaluating the implementation of project-oriented plans, which are centred on the delivery of specific outputs. In the implementation processes of project-oriented plans, policy emerges as the first priority and is successively refined and translated into operating instructions as it moves down the hierarchy to the 'operatives' at the bottom. "The conformance-based approach to plan implementation assumes that plan formulation and implementation is following a rational process model where the plans are directly intended to guide future urban development (Wildavsky, 1987). This approach '*focuses on the linkage between plans and actual urban development (spatial outcomes)*' (Laurian et al., 2004). The core of this approach is 'compliance' and 'level of conformity'. Nonconformity means failure of implementation, in other words, the original policy goals have been distorted in the process [see Table 2.2].

Conformance-based approach	Performance-based approach
Project-oriented plans	Strategic plans
Linkage between plans and the actual development	The process from the plan to the actual development
If development patterns adhere to its policies and meet its objectives	Implemented if used or consulted in decision making process, no need to be strictly adhering to the actual outcome
Rational planning process	Issues of uncertainty and lack of flexibility
Qualitatively and quantitatively	Qualitatively

Table 2.2
Two approaches of evaluating planning implementation (author's own work)

The performance-based approach is suitable for evaluating the implementation of strategic plans, which is more 'action-centred'. From the viewpoint of strategic plans, it is misleading to separate policy and implementation (actions) (Cullingworth and Nadin, 2006). Implementation for a strategic plan is the actual process of interaction and communication between actors in the way that goals and actions are agreed between them (Pressman and Wildavsky, 1984). Similarly, from the perspective of the performance-based approach, the purpose of the implementation process is not only to put policy into effect, but also to analyse what actually happens within the process (Barrett & Fudge, 1981:10). The 'process' is just as important as the 'outcome'. Also, implementation or application of strategic plans involves the refining of planning goals which should be evaluated as well (Healey, 1985). The core idea of the strategic planning approach is to reach consensus among the involved actors, rather than ensuring that the reality of urban development complies or conforms with the fixed designs. In this sense, urban developments that do not match the plan (they may be tailored to local circumstances or completely outside the anticipated outcomes) (we can also call it nonconformity) are not necessarily equated with failure of implementation [see Table 2.2]. The plan may have played a part in the making of the decision, even though the decision may seem to counter the plan.

In the following sections, the two approaches towards understanding implementation processes will be explained further; They will illustrate which situations the two approaches are suitable for use; and discuss the methods that may be used to evaluate plans either from a conformance or performance perspective.

§ 2.2.1 Conformance-based approach

The conformance-based approach to implementation is used mostly to evaluate the implementation of project-oriented plans. It is intended to assess what happens in actual urban development after the plan has been adopted. Its focus is on compliance, the level of conformity in other words, between plans and the physical spatial outcomes. 'Outputs' are the main focus of the evaluation process, for instance, number of houses, length of roads and the density of urban developments (Seasons, 2003). The conformance-based approach may say the plan has been successfully implemented if the development matches the plan - its policies and 'blueprint'.

In practice, the conformance-based approach is usually used to evaluate land use plans with a 'grid overlay model' (Tian and Shen, 2011, Loh, 2011). The degree tgo which actual land uses adhere to or depart from what is specified in land use plans is usually measured quantitatively (Talen, 1997). This model usually does not end its analysis at the degree of conformity. It continues with identifying the potential factors that

influence the level of conformity. However, the grid overlay model seems to be only physical focused. Laurian et al. (2004) widens out the analysis to policies with her plan implementation evaluation model (PIE). This model shows that the measurement of conformance is not as simple as it seems, i.e. just comparing a blueprint with actual development. It qualitatively links plans and planning practice through the idea of 'permitting decisions' and the improvement of planning instruments (Qiu, 2002). In the following paragraphs, I introduce the two popular methods of assessing the degree of conformance: the grid overlay model and the PIE model.

A Grid overlay model

The grid overlay model focuses on the relationship between plans and physical outcomes. It has been widely applied in the evaluation of land use plans. Brody et al. (2006) examines the level of conformity between the plans and the actual urban development on the fringe of southern Florida. They further analyse the influential factors. Tian and Shen (2011) evaluate the implementation of the Guangzhou Urban Master Plan 2001-2010 (actually the land use plan in Guangzhou) [see Figure 2.4]. Loh (2011) analyses the implementation of the local land use plans in Southeast Michigan. These empirical studies share some common features in their evaluation methodologies. First, they adopt mapping as their main evaluation methods and GIS (geographic information system) as the main tool for quantitative analysis. Secondly, they use similar steps to apply the grid overlay model in the evaluation of plan implementation. In general, the model requires a five-step procedure:

- identifying a classification for the degree of conformity;
- selecting indicators for the evaluation process (e.g. the total amount of residential land use, the ratio of green space). The indicators related to land use were most frequently chosen;
- comparing the plan with spatial outcomes in terms of selected indicators through overlay mapping;
- matching the findings into previously defined categories;
- exploring factors that influenced the plan implementation process.

The evaluation of the implementation of the Guangzhou Urban Master Plan 2001-2010 shows how the grid overlay model was used in the evaluation of plan implementation. First of all, three categories of implementation indicators are identified according to their degree of conformity: type of accordance, type of unfulfillment and type of deviation. Then the whole area of Guangzhou Province was divided into 729 pieces according to its planning management units. For each piece of land, the planned land uses are compared to the actual land developments, respectively in terms of residential land, commercial and office land, public facilities, industrial land and open space. Figure 2.3 shows land use divisions and road

development on a piece of land through two statuses: the planned situation and the actual development. Apparently, several main roads in this area were built as planned. But the actual land uses and divisions are very different from what was in the plan and from what was pre-existing. Overall, the two maps are overlayed in order to calculate the percentage of land in which the actual uses are in compliance with the plan. Finally, the factors affecting implementation processes are analysed (Tian and Shen, 2011).

1 land use plans

2 actual urban development

Figure 2.3
Comparison between land use plans and actual urban development in Guangzhou Master Plan (Tian, 2009)

The grid overlay model makes a significant contribution to the evaluation of plan implementation. However, it overemphasises the physical aspects of the plan. Furthermore, it overlooks the issues of uncertainty in the land development process and the lack of flexibility in the plans (Laurian et al., 2004). Brody et al. (2006) argue that differences between plans and outcomes were sometimes inevitable in the land development processes. Temporary mismatches between the plan and the actual urban development raises another issue: how much time should we allow for the plan to be realized?

B Plan implementation evaluation model (PIE)

Laurian et al. (2004) widen the scope of the conformance-based analysis from a focus on physical issues to policies with their PIE model. This model, which links plans and practice through 'permitting decisions', measures two vital aspects of plan implementation: breadth and depth.

'Implementation breadth is defined as the variety of policies that are implemented through the permitting process. It is measured as the proportion of plan policies that are implemented at least once, as opposed to policies that are never implemented. Policies that are never implemented may be too vague or too ambitious, may not be relevant to an area, or the planning staff may not have the expertise or means to implement them. It allows planners to reconsider their applicability, refine them, or devise methods to ensure their implementation... Implementation depth is defined as the proportion of policies that are implemented by each permit by using the techniques specified in the plan. It is measured as the average proportion of policies in the plan that is implemented (using at least one technique), as a proportion of all policies that address the issue of interest. Permits can implement many policies simultaneously—for instance, managing storm water runoff by increasing infiltration and protecting riparian margins while protecting water quality by reducing erosion. If this is often the case, it would indicate that planning staff and developers are committed to translating plan policies into development practices. On the other hand, permits may each implement only a few policies—for instance, focusing mainly on parking requirements to the detriment of landscaping. This would suggest that planning staff and developers tend to focus on selected policies without obtaining the best development practices from each project' (p. 473).

This model consists of five steps. First, issue(s) of interest or the relevant sections of the plan are identified. A plan could have many aspects of different interests or targets in terms of guiding future urban development. An evaluation is usually only able to focus on a particular issue or several at most. Secondly, policies and techniques that are relevant to the selected issue(s) are taken as the main objects for the evaluation. Thirdly, permits that deal with the issues are selected. And for each permit, the techniques used and the policies implemented are identified. Fourthly, the linkages between those plans, techniques and permits are evaluated. Finally, the implementation breadth (proportion of policies ever implemented) and implementation depth (proportion of policies that were implemented by each permit) are calculated (Laurian et al., 2010).

Berke et al. (2006) apply the PIE model to evaluate the implementation of six plans in New Zealand through a review of almost four hundred land development permits. These plans mainly concerned storm water and urban amenity management. The result shows that implementation in breadth was better achieved compared to implementation measures in depth. They also identified several influential variables, such as plan quality, enforcement style, awareness building, staff capacity, applicant capacity and the context, as crucial reasons of affecting implementation success.

The PIE model presents several key strengths. It is applicable to a variety of planning contexts, issues and geographical locations. It gives equal weight to all policies. The linkage between plans, ordinances, and permits has rarely been analysed before. As such, planners can easily apply this model because they are familiar with their plan and the permitting

process. However, it has many limitations. It requires access to permit files. In some cases, China for instance, accessing permit files is extremely difficult. Further, it relies too much on permit documents rather than on-site monitoring on development activities. In other words, the effects of plans on actual spatial outcomes are not central to the approach.

Overall, a strict compliance or the direct correlation between plans and spatial outcomes/permits are the necessary condition for successful plan implementation from the conformance-based perspective. The grid overlay model and the PIE model show that the measurement of conformance involves more than overlaying actual developments onto urban plans. Some common steps for the conformance-based evaluation include 1) classifying the degrees of conformity; 2) identifying the analytical subjects (e.g. spatial outcomes, planning permits); 3) comparisons or overlay mapping between the plans and the analytical subject; and 4) explaining main reasons for non-conformity. However, the '*Conformance-based approach was seen by critics as failing to provide adequate description or understanding of the complexity of interaction and uncertainties taking place in implementation processes*' (Barrett, 2004: 255).

§ 2.2.2 Performance-based approach

From the conformance-based perspective, the plan is considered as successfully implemented if the development matches the plan - its policies and 'blueprint'. However, a high level of conformity does not necessarily mean that the objectives of the plan will have been achieved - indeed it may have caused more problems. Cullingworth and Nadin (2006) give some examples,

'A policy of improving a low-income area by environmental improvements may be explicitly intended to benefit the existing inhabitants, but the added attraction of the area may become reflected in higher rents and prices which could lead to gentrification, thus benefiting a very different group... Similarly, a policy of providing grants to industrialists to move to an area of unemployment may result in the substitution of capital for labour, or the influx of workers with skills not possessed by the local people. Thus clearly focused efforts are sometimes not enough... (pp. 8-9)' .

Apparently, plan implementation is not only about conformity but also about achieving realistic objectives that look beyond conforming to a narrow set of criteria. For strategic plans, which usually incorporate uncertainties and do not specifically define future urban developments, conformity is even less important for the evaluation of plan implementation. In general, the main concept of implementing strategic plans is 'to get something done', rather than 'to put policy into effect' (action in conformance with policies). According to Barrett and Fudge (1981:25),

'Idea(s) about negotiation and bargaining between actors and agencies involved in the policy process leads to a redefinition of 'implementation'. Policy cannot be regarded as a 'fix', but more as a series of intentions around which bargaining takes place and which may be modified as each set of actors attempts to negotiate to maximize its own interests and priorities. Interests and pressures may alter over time in relation to changing circumstances and in response to the way that continuing activities of the organizational environment impinge on the 'outside world'. Thus it becomes difficult to identify a distinct and sequential 'implementation process' which starts with the formulation of policy and ends with action. Rather, it is appropriate to consider implementation as a policy/action continuum in which an interactive and negotiated process is taking place over time, between those seeking to put policy into effect and those upon whom action depends... at any point in time it may not be clear whether policy is influencing action or whether action is influencing policy'.

In this sense, the performance-based approach seems more appropriate in evaluating the *application*, rather than *implementation*, of strategic plans. This approach focuses on how the plan has been consulted in the land development process: the interaction between policy-makers and implementers emphasize through negotiations, bargaining and forming compromises in the process (Margerum, 2007). Compromising some of the original intentions is sometimes necessary. Reaching a consensus instead of compliance becomes the central issue (Neuman, 1998). Unlike the conformance-based approach which emphasises 'outputs'; the performance-based approach is more concerned about 'outcomes', for instance, access to affordable housing, reduction of congestion and so on. It does not necessarily require that actual spatial outcomes must strictly adhere to plans. Departures from a plan can also be considered implemented if they are inevitable and the application process is rational (Faludi, 2000). The performance-based evaluation is usually conducted through qualitative analysis. In the following sections, the two most frequently used models from the performance-based perspective are introduced.

A Dutch School principles

The Dutch School was the pioneer of conducting research on evaluating the application of strategic plan implementation. Alexander and Faludi (1989) propose the policy-plan/program-implementation-process model (PPIP Model) to evaluate the application of strategic plans. In this model, the issue of how the plan has been used and consulted within the land development process, instead of merely emphasising the direct linkage between plans and spatial outcomes, is highlighted for the first time. A series of policies, plans, programmes, operational decisions, and the spatial outcomes are investigated within a sequence. The suggested evaluation procedure is shown in Figure 2.4. In summary it comprises a number of steps.

- To evaluate the level of conformity, which is still of considerable importance and provides a starting point for performance-based evaluation.
- To examine utilisation for operational decisions, using a policy or plan as a frame of reference.
- To analyse rationality within the implementation process. It is focused on the consistency of plans, the conveyance of information, and the participation of varied actors. If the process is rational, non-conformance between plans and outcomes is also not a big issue.
- To check optimality ex *ante*, and ex *post*, which is about the extent to which the strategy or the course of actions prescribed in a policy or plan under assessment is thought to be 'optimal' in anticipation before its application (ex *ante)* and after the strategy has been applied (ex *post)*.
- Finally, plan implementation is classified into three groups (positive, neutral or negative) depending on the evaluation results.

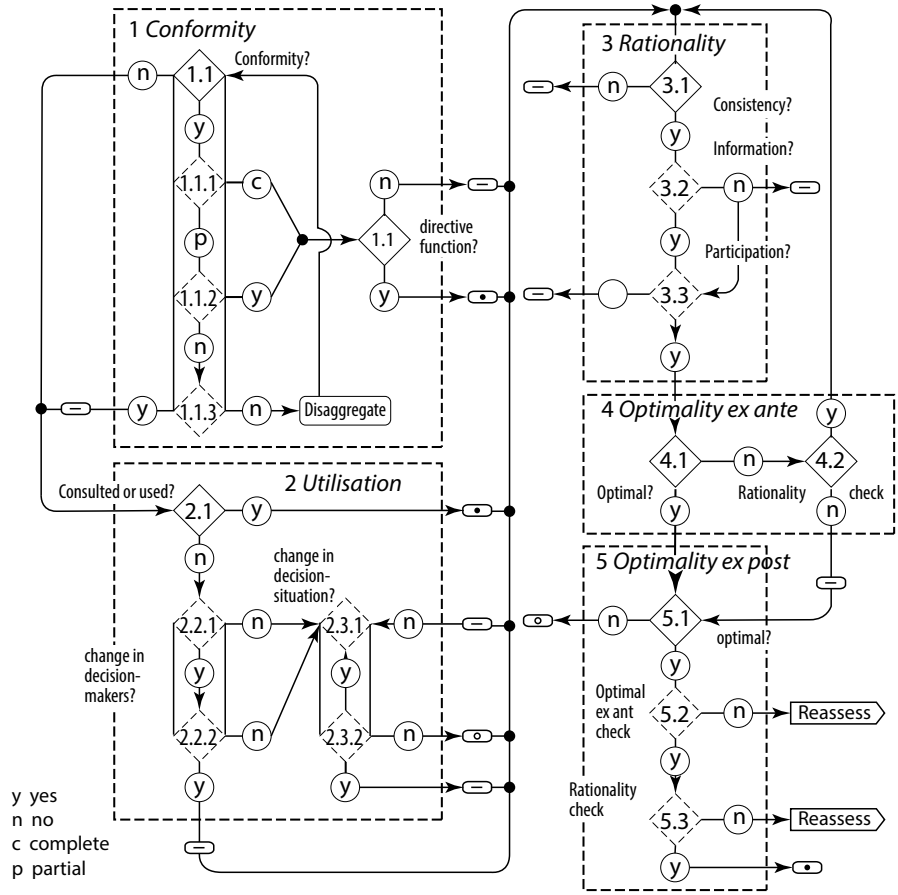


Figure 2.4
The PPIP evaluation sequence (Faludi, 2000)

Faludi (2000) added two additional considerations to the PPIP Model. First, the analytical unit should not be an entire strategic plan, but a component or policy statement within a plan. Such a component part or policy statement must refer to intentional and operational statements, rather than declaratory and anticipatory statements. For instance, a plan may anticipate sustainable development. But it cannot be an analytical unit for evaluation as it is still declaratory. It could only be evaluated when the idea of sustainable development is converted to operational statements, for example, policies to promote change in transport modes. Second, more attention should be paid to whether recipients have received the messages, and if the messages are a relevant input into their deliberations. In other words, the evaluation should take into account whether, and to what extent, a strategic plan has performed its role as a frame of reference in the making of decision by other actors. In general, the PPIP model proposes that evaluation

- should identify plan departures and to find out whether decision makers have allowed themselves to be influenced by the plan;
- should check whether an operational decision conforms to the plan, and to demonstrate that conformance is not accidental;
- should identify whether departures are deliberate;
- should examine whether the involved actors take the plan as their point of departure if non-conformities become too frequent.

The PPIP model contributes to plan implementation studies from several viewpoints. First, it reminds us that we are able to judge policies, plans and their effects even when the 'plan' takes uncertainty into account and does not specify the objectives in detail. A consequential procedure with a set of detailed criteria to evaluate plan implementation is further outlined. Furthermore, this model addresses the linkage between plan and outcomes, and highlights the importance of the land development process, that is, the role of the plan within the development process (Mastop and Faludi, 1997). However, the PPIP model as a method of measuring performance of the strategic element of planning remains primarily based on the concept of conformity. Faludi (2000) argues that there is no necessary direct relationship between conformance and performance. A lack of conformance between a plan and final outcomes is not necessarily equated with poor performance because urban planning is considered to be a set of instruments, things to use/to work with but not as a finalised product.

B Plans, processes and results model (PPR model)

Oliveira and Pinho (2009) proposed a more comprehensive approach, the PPR model, to evaluate plan implementation. This model comprises ten criteria, which focus on three dimensions of evaluation. The first four criteria are used to examine the plan making process and the qualities of plans. The last criterion concerns the impacts of the plan on demography, transport, mobility, housing and economy. Within this evaluation method there are five criteria directly dealing with the performance of a plan in its application.

- External coherence, which refers to the relationship between the plan with other related sector plans and the external circumstances, for instance, the objectives of the plan and objectives in related sector plans.
- Plan utilisation, which is about the power relations between local politicians involved in planning activities as well as generating planning products, planning processes and structures. This is similar to the 'utilization' in the PPIP model. They both focus on the interaction between involved actors in using the plan in their decisions.
- Commitment of resources, which concerns the availability of resources throughout a particular period, the type of available resources, and relationships between planning performance and the allocation of resources.
- Public participation in the plan application process in terms of its quality and quantity. This could be measured through reviewing subordinate level plans, particularly their participation reports.
- Planning effectiveness in close relation to the use of planning instruments. Effectiveness is usually measured through 1) intervention of the local authority through urban development plans and detailed plans, 2) urban design projects; and 3) development control tools.

Specific criteria	Sub-criteria	Evaluation subject	Evaluation techniques/ data resources
1. Internal coherence	The objectives VS land uses of the plan; urban system of the plan; plan implementation mechanisms	/	Reading of the plan; Impact matrices (different plan proposals)
2. Planning system	Interpretation in terms of form (checklist) and substance	Planning system	Reading of the plan and of the framing legal decrees
3. Relevance	Needs of the city VS objectives of the plan; land uses and urban systems; plan implementation mechanism	City	Reconstruction of the baseline situation SWOT analysis, impact matrices (plan proposals – city needs)
4. Participation in plan making	Quality of citizens' written comments; Promotion of public participation by the local authority	City users	Reading of the plan (particularly its participation reports)
5. External coherence	Relationships in terms of objectives; territorial model; and implementation	Sector plans	Reading of the plan and of other plans for that territory
6. Plan utilization	Influence of political power on the plan, as well as in other planning products, processes and structures; influence of the plan and of planning practice in relation to political power (discourses, programmes)	Political power	Reading of the different versions of the plan (during the period of its preparation); Interviews, reading of newspapers
7. Commitment of resources	Evolution of the availability of resources; type of available resources; relationships between planning performance and utilization of resources	(Human, financial) resources	Reading of other official documents prepared by the local authority (municipal budgets, activity plans); interviews
8. Participation in the plan implementation process	Quality of citizens' written comments; Promotion of public participation by the local authority	City users	Reading of lower level plans (Particularly their participation reports)
9. Effectiveness	Development of the plan through urban development plans, detailed plans, and urban design projects; plan guidance in the process of development control	Development controls	Reading of the plan and of lower level plans; cartographic analysis; field work; analysis of planning permits
10. Direction	Plan impacts on demography, transports and mobility, housing and economy	Development controls	Reading of the plan, statistical analysis; cartographic analysis; interviews

Table 2.3
Synthesis of the PPR methodology (Oliveira and Pinho, 2009)

Eleven crucial indicators are further proposed in the PPR model for better development control. They include effective plan utilisation, timing of the process, number of refusals within permitting procedures, controls on plot area, the building coverage percentages, the built-up area, the number of stories, the number of dwellings, the predominant land uses, the building ratios, and coverage ratio. These control tools mainly focus on the physical development in terms of the 'project plan' component. Besides this, site-selection notes, land use plan notes, enforcement and penalty, appeal, design guidance and building permits are other referential indicators (Cullingworth et al., 2002, Larsson, 2006).

There are a number of common visions, methods and criteria between the PPR model, the PIE Model, the Grid Overlay Model, and the PPIP Model. The PPR model also provides its own unique contributions. First, it has been applied to empirical analysis in the Portuguese context (implementation of land use plans in Lisbon and O'porto). This is claimed to be the first time that a performance-based approach was used for empirical cases. Secondly, it focuses on the city district level, which is the most dynamic level compared to the metropolitan level or the local level. Plans at the district level on the one hand contain the strategic plan objectives that metropolitan level plans have; and on the other hand, they address many dynamic local interventions that project plans deal with. Finally, the PPR model proposes a comprehensive set of criteria, which requires an extensive number of data sources, to ensure a more precise evaluation.

In general, the performance-based approach is very distinctive compared to the conformance-based approach due to two reasons. First, uncertainties are fully taken into account when evaluating the application of strategic plans. Thus a strict compliance is not necessary for success in plan implementation. Secondly, the importance of the broader role of a plan emphasises the 'process' and its dynamics rather than evaluating the plan as a static blueprint product. As such, the dynamic process becomes the core concept of evaluating the application of strategic plans. Decisions and actions that a number of actors who are supposed to make according to the plan are usually the most crucial analytical subjects (Mastop, 1997). Moreover, these two models bring forward many evaluative criteria (e.g. plan utilisation, external coherence, commitment of resources), which could be applied to the evaluation of the performance of strategic plans in China.

§ 2.3 Understanding the land development process

As discussed before, the performance-based approach (both the PPIP model and the PPR model) closely relate the evaluation of plan application to the dynamic land development 'process', in which the plan was applied. A better understanding of the land development process is quite important and helpful for the evaluation of plan implementation and application. Land development processes vary dramatically in different cultures, planning systems, socio-economic structures as well as political backgrounds. In other words, these factors (cultures, planning systems, external circumstances and the interaction of involved actors within the process) fundamentally shape dynamic plan implementation processes. Correspondingly, there are different perspectives, such as the equilibrium model, event-sequence model, agency model, structural model and institutional model to analyse land development processes due to the varied emphases mentioned before. The former three are briefly reviewed with explanations of the structural model and the institutional model in the following paragraphs.

§ 2.3.1 Equilibrium model, event-sequence model, agency model

In this section, three classical economic models (equilibrium model, event-sequence model and agency model) are introduced, which were proposed in the 1970s and the 1980s. They are based on neo-classical economic assumptions, in which the market is ideal and unproblematic. The first model is the equilibrium model, which was initiated early in the 1970s. In this model, the relation between demand and supply becomes the central issue for understanding the land development processes, which is driven by the demand for new urban properties. This model assumes that the market is rational and unproblematic, thus the supply of land is always usually sufficient to satisfy the demand. Furthermore, the market is operated by many actors sharing relatively equal powers, rather than being dominated by a few large actors (Healey, 1991).

However, this model was criticised in the 1980s for its simplistic premises. According to Gore and Nicholson (1991), the market was not without significant problems. The appearance of vacant stock/properties indicated a mismatch between supply and demand. In reality, land development consists of sets of events, a group of interests and also uncertainties, which always deviate from the ideal demand-supply relationship. Moreover, unlike the assumption that many actors are involved on an equal footing in land development, large developers have had increasing dominance in urban development activities in most countries (Golland, 1998).

The second approach is the event-sequence model, which was established at the end of 1970s. According to this model, the development process consists of several constituent events and stages. Barrett (1978) proposes a triangular pipeline to understand the land development process in a sequence: 1) development pressure and prospects; 2) development feasibility; and 3) implementation. Gore and Nicholson (1991) modifies the pipeline into a rectangular structure by adding 'vacancy' as the fourth step. Vacancy here means a property transaction in the market. Furthermore, social and economic policies, in the rectangular pipeline, become important external influences on the land development process. They sometimes generate activities within the pipeline.

This model analyses the inner workings of development processes. It not only analyses development activities individually but also takes the interwoven relationships between these activities into account. From this viewpoint, the land development process is a spiral procedure rather than a linear procedure because it connects "vacancy" to "policy". This model recalls Friedmann's (1973) understanding about urban development, '*land development was not a linear process like the plan making as the first step, and then implementation. Planning implementation should be taken into consideration early in the stage of plan making… outcomes from previous plans may have an impact on expectations and the design of future plans' (289)*

However, the event-sequence model provides a limited explanation of what drives or generates development activities (Healey, 1991). It is not able to explain why the built environment is varied in form and quantity from place to place and over time. Further, there is no standard sequence of events for a land development project even under the same cultural context. For instance, land in China could be purchased either before or after the land was facilitated. Overall, the event-sequence model provides an important perspective for the understanding of land development processes, but it is still not enough to be generalised for different situations.

The third approach is the agency model, which weighs the actors and their relationships over the course of events to understand the land development process. According to this model, various actors, their interests and their power relations form the land development process (Bryant et al., 1982). Actors here refer to separate roles or functions in the development system rather than individuals or organisations. A particular individual or organisation may undertake more than one role or function. For example, planning officials in local governments could be members of the public and might invest their savings in the finance industry (Healey, 1991). Furthermore, uncertainties that are derived from the volatile relationship between involved actors are essential to influence the event activities. In general, the agency model emphasises the uneven and volatile nature of land development.

Actors are also affected by event sequences in the agency model. Bryant et al. (1999) identify involved agents in different stages; and categorise them into two groups (primary decision agents and secondary decision agents) according to their influences. Goodchild and Munton (1985) connect three particular groups of actors (developers, planners, and landowners) to two key events (identification and initiation). Different role-relationships between these three groups deduce alternative event sequences. Healey and Barrett (1990a) further argue that events also occurred in parallel with feedback from the political-institutional situations, market, and also the interest of involved actors.

The agency model contributes to the understanding of the land development process. First, it establishes the linkage between actors and event sequences. Secondly, it takes the complexity of development activities into consideration. Thirdly, it tries to explain why on-site land development followed different routes. Fourthly, it proposes to separately analyse agents and the roles they played. Fifthly, it challenges the traditional division between public and private agents. Nevertheless, the agency model has some limitations. It offers little assistance in generalising varied land development processes. It puts too much emphasis on the individual agencies as the driving forces of urban development. In reality, the dynamic relationship between agencies that drives the urban development is ignored (Healey, 1991).

§ 2.3.2 Structural Model

The above three models are usually criticised for providing a simplistic logic by understanding the land development process (Hajer and Zonneveld, 2000, Healey and Barrett, 1990b, Guy and Henneberry, 2000). Healey & Barrett (1990b) suggest that the neoclassical assumption that actors in the development process behave rationally and could negotiate on equal terms is mistaken. In this sense, the structural model, which derives primarily from Marxist theories from the political economy domain, was proposed. This model has two main features.

First, it focuses on the influences of large-scale dynamics/a broader context of capitalist economies on the development process (Sturzaker et al., 2009). According to Harvey (2005), urban development is driven not only by users' demands but also by the global search of financial capital for the highest investment returns. Then three circuits are developed to understand land development process. They are 1) *the production circuit; 2) the circuit through which capital flows into fixed assets and the formation of consumption assets; and 3) the circuit of capital flows into scientific, technical and social expenditures*' (Healey, 1991: 234). In general, the importance of financial capital and global relations that govern its flow is emphasised for understanding land development processes.

Secondly, the structural model focuses on this 'relationship' between events and actors. '*Sequential events in the event-sequential model and individual actors in the agency model are important. The power relations between these events and agencies are even more vital comparing to the single events or actors in shaping the market and the land development process*' (Healey, 1991: 232). According to Ambrose (1986), the distribution of social resources is the outcome of power struggles between capital, landowners, and labour. Neither the ideal demand-supply relationship nor individual actors determine it. Giddens (1994), who is among the first to conceive structural thinking of land development process, also argues that the status quo of power relations is determined by structures or rules or other social influences. This is because '*action cannot necessarily be directly related to, or evaluated against specific policy goals…due to the complexity of relationships and interaction in the implementation process. Implementation agencies are likely at any point in time to be responding to a wide variety of policy initiatives or environmental pressures from a range of sources*' (Barrett, 2004: 254).

The structural model offers a way of linking events and agency behaviour to the dynamics of land development processes. It seeks to map out the development process in terms of involved agencies and relationships between the agencies (e.g. the state, the construction industry and finance sector). However, what drives the relations is not discussed enough in this model (Healey, 1991). Furthermore, it only superficially looks into the details of events occurring in relation to development processes and the nexus of agency relationships. In other words, there was no empirical analysis carried out on a specific development process through a structural model (Guy and Henneberry, 2000).

§ 2.3.3 Institutional Model

Healey (1992) proposed the institutional model based on two previous models, the Agency Model and the Structural Model in particular. This model represents several improvements in the understanding of land development processes. First, it tries to distinguish levels of analysis rather than placing the analyses on typologies of actors, events or interests of the actors. Figure 2.5 shows a four-level analysis of the development process (Healey, 1992):

1. Mapping the development process in operation, focusing on events, agencies, outcomes and production processes of a development project.
2. Analysis of the involved agencies, identifying roles and power relations.
3. Assessment of the strategies/interests of actors and their significant relationships. Such an assessment is then related to the resources, rules and ideas governing the development process.

Connections between social relations expressed in the prevailing mode of production, mode of regulation and ideology of the society. This involved the theorisation of these elements and description of particular societal circumstances.

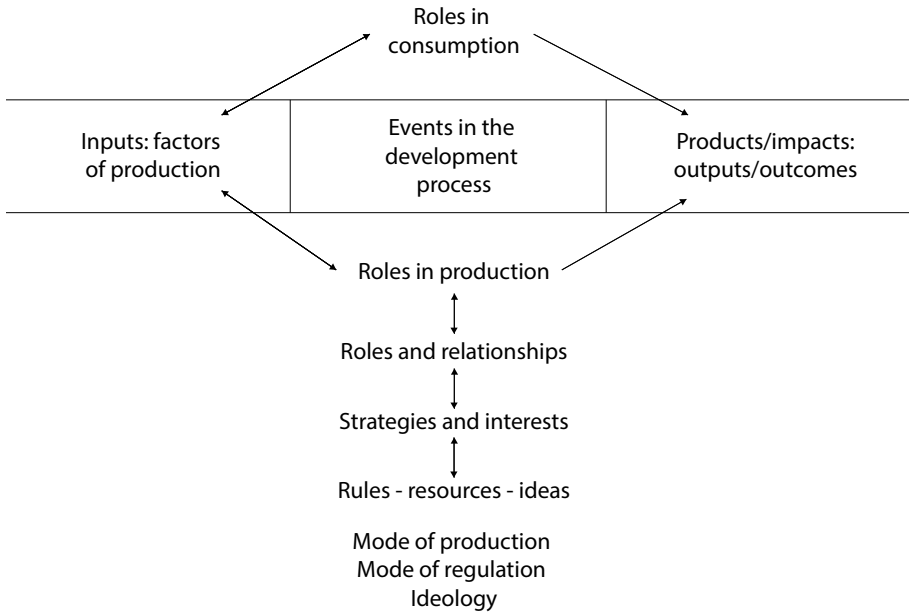


Figure 2.5
Institutional Model of development process (Healey, 1992)

Second, this model suggests some new factors for the understanding of the land development process. For instance, 'ideas' and 'mode of regulation', which fundamentally shape the strategies and power relations between agencies. It seeks to link the concepts of structure and agency by '*relating the construction of roles, and the strategies and interests of agencies, to the material resources, institutional rules and organizing ideas which agents acknowledge implicitly and explicitly in what they do*' (Healey, 1992: 35). Overall, the key words of the institutional model are resources, rules, and ideas.

Based on Healey's institutional model, Sturzaker et al. (2009) identified two main groups of variables that have interactively influenced the shaping and consumption of the built environment: actors/institutions and structures/mechanisms. Actors are classified into four groups: producers (land owners, financial institutions), users (market demand, social needs), regulators (public agencies, professional bodies) and lobbyists (pro- and anti-development). Likewise, structures and mechanisms refer to 1) resources in natural, human, financial, and technical terms; 2) rules such as laws,

regulations, norms and customs; 3) interests/values from social, economic, cultural and environmental perspectives; and 4) ideas (e.g. planning doctrines and design paradigms). In general, this model is supposed to deliver integrated policy packages to develop future development in more sustainable ways.

However, the institutional model is criticised because Healey was keen to make the model to be universally applicable. The ideologies, rules and contexts that affect the land development process actually varied (Ball, 1998). Guy and Henneberry (2000) criticise this model because it emphasises social aspects over economic ones, the local over the regional or national scales, and agencies over institutional structures. Their position is that urban change is an economically and socially interrelated process in which structure and action are linked.

In short, the previous models provide various ways of understanding land development processes; and thereafter help to evaluate plan implementation from a performance-based perspective. The structural model and the institutional model explain the dynamics and complexity of land development processes, which are also emphasised in the performance-based approach. The relationships between involved agencies that are emphasised in the structural model have a crucial influence on planning performance within the application process of strategic plans. The 'rules', 'resources' and 'ideas' as an additional level of variables highlighted in the institutional model are also closely related to the core concepts of the performance-based approach: consensus reaching and coordination. However, they still have some common gaps for the understanding of land development processes: 1) the absence of key factors in the development process, such as technologies; 2) the lack of environmental considerations; 3) no attempt to specifically relate the development process to urban forms; 4) and a lack of a global perspective (Sturzaker et al., 2009).

§ 2.4 Research on plan implementation in China

The discussion above raises many considerations about the plan implementation process in theory that help to investigate and explain real practices. In China these theories and concepts have received little attention until the 2000s when the complexity of the plan-implementation relationship became more obvious in the context of rapid urbanisation. Since then research on plan implementation in China has been mainly based on western theories (Sun, 2001, Sun and Zhou, 2003, Song and Chen, 2012, Zhang, 2009). Sun and Zhou (2003) introduce conformance and performance approaches to understanding implementation, and argue that urban planning should be operated in cooperation with market mechanisms. Zhang (2000) reinforces that understanding of the 'development process' and the relationship between planning and the market is the key issue of understanding plan implementation. From the latter half of the 2000s, researchers started to test the implementation theories, which are rooted in either European or American experience, with empirical studies in China. The following paragraphs introduce recent research on plan implementation in China and further examine how those western-rooted theories are applied in Chinese research.

The Shanghai Urban Planning Bureau (at the municipal level) initiated a programme of implementation evaluation of the Shanghai Master Plan (1999-2020) in 2006. It is considered as the first evaluation programme of plan implementation in China. The subsequent report of implementation has seven parts: 1) policy and planning environment in which the Plan 1999 operates; 2) the quantity of urban development (population and land development); 3) the urban-rural structure; 4) the pattern of industrial development; 5) infrastructure development; 6) historical and cultural conservation; and 7) environmental protection (e.g. water resources and energy) (Yu, 2008a). In this evaluation report, the physical outputs of the Plan 1999 are the main considerations. For example, the report considers how much houses and what amount of infrastructures was delivered in relation to the policies and proposals in the plan. Consideration of the performance dimension of implementation, for example in relation to the role of the plan in the process of growth and the efficiency of the development system gets very little attention.

In 2008, the evaluation of plan implementation was defined by the *Urban and Rural Planning Law of China* as a compulsory step when a new plan is made or existing plans are revised (The Tenth National People's Congress, 2008). Since then, more empirical studies on plan implementation have emerged. Tian (2011) empirically evaluates the implementation of the land use plan of *Guangzhou Master Plan 2001-2010*. She applies the grid overlay model in this research, with the main focus being the one-to-one relationship between the land use plan and actual spatial outputs, especially in physical terms. She draws the conclusion that the levels of conformity in the urban

periphery (where there is most change) are the lowest in the plan areas, compared to the city centre and mountain (rural) areas. She further identifies factors that have affected the implementation process, such as the area location, the effectiveness of plan monitoring, and the strength (or not) of governmental controls. This research provides only a limited or partial view of the implementation of an urban master plan. First, land use divisions are only one aspect of an urban master plan. High levels of conformity in terms of land use divisions are not equal to the successful implementation of the urban master plan overall. Second, land use plans, compared to other issues discussed in an urban master plan, are relatively easier to be realised, so long as there are appropriate development control tools.

Song and Chen (2012) establish an evaluation framework for plans which combines the quality of plan, the level of plan implementation and the effects of the plan on actual development. In their studies, the PIE model is used to test infrastructure construction in the *Shenzhen Master Plan* (1996-2010). This study is more performance oriented. The involvement of government departments, their responsibilities and powers in the implementation process and relationship with the plan are examined. The study concludes with recommendations on new types of plans at the regulatory unit level and new ways of making urban design in order to promote plan implementation (Luo et al., 2013, Wang, 2005).

Research on plan implementation and practice in monitoring plan implementation is growing in China, and researchers are making use of methods developed in Western countries such as the grid overlay model and PIE model to evaluate plan implementation. There seems to be agreement that the general theoretical frameworks and more specific methods and criteria are relevant in the Chinese context. Yu (2014) argues that '*... since the introduction of the open door policy in 1978, China has operated a market economy within a framework provided by a centrally controlled political system – ''a market economy with socialist Chinese characteristics'' and the social , economic and political forces driving that city and regional planning system are not significantly different to those in the West*.' In Chapter 5, the current planning system and the socio-economic context are explained in some detail.

However, although some characteristics are shared, the land development process and implementation mechanism in China are different in important ways from the operation of urban development and planning in either Europe or America. The relevance of the conformance and performance based approaches to evaluation that have been developed in the West needs to be considered carefully, making adjustments where necessary and fine-tuning to adapt to the Chinese context and the particular focus of this study.

§ 2.5 Summary

This chapter provides the conceptual base for our understanding of plan implementation. Firstly, it identifies and specifies the key concepts of two types of present-day urban plans: strategic plans and project oriented plans. This framework will be used to clarify the main characteristics of the Shanghai Master Plan 1999-2020 (Plan 1999) in the following chapter. Secondly, it further specifies the general notion of 'implementation' into the conceptual categories of conformance and performance and their relationship with different types of plans - project oriented and strategic plans. In this section, alternative models of how conformance can be understood and measured (Grid Overlay Method and PIE Model) are introduced. The concepts of planning performance and the necessary steps for its evaluation are also explained through PPIP Model and PPR Model. Thirdly, it introduces several models to understand land development processes, which are closely related to the performance-based evaluation approach. It also explains under which circumstances and under what assumptions these models should be applied. Finally, the current emerging research on evaluating plan implementation in China, which is mostly based on American and European experiences is reviewed. In general, this overview of the idea and theory of plan implementation helps us establish an operable analytical framework and identify appropriate measurements for the evaluation of the implementation of *Shanghai Urban Master Plan 1999-2020* which is followed up in subsequent chapters.

3 Methodology

The previous chapter reviewed existing plan implementation theories, and the challenging planning context of Chinese cities. This chapter presents the research strategy that this study has followed to be able to answer the research questions. It describes the research design, including the research methods and data collection for the empirical analyses. The chapter begins with briefly overviewing the spatial strategies defined in Shanghai Master Plan 1999-2020 (Plan 1999) and explaining how the plan can be defined according to the previous discussion of ideal types of plan and to justify the two-level empirical analysis (Section 3.1).

The following section (3.2) presents the core of the research design: a multi-perspective analytical framework integrating the conformance and performances approaches. It is complemented by a diachronic study of the evolution of Shanghai's peri-urban development and Shanghai's current planning system. Section 3.3 introduces the research methods selected for the conformance and performance-based analyses: literature research, spatial mapping and case studies. The two case study areas are then briefly reviewed. This section further describes the data collection for the validity and reliability of the research. The chapter ends with a note on the methodological limitations of the followed research strategy.

§ 3.1 Understanding the Plan 1999: spatial strategies for peri-urban development

Before establishing the analytical framework for the empirical analyses, I will explain the characteristics of the 'Plan 1999', and how it fits into the conceptual understanding of different ideal types of plan discussed in the last chapter.

The Plan 1999 consists of 15 sections, from which the first two define the future size of Shanghai and its spatial structure. The following 11 sections deal with urban development issues, mostly related to its peri-urban development. Section 14 consists of a short-term construction plan, with a list of urban projects for the near future, while the last section briefly explains the implementation mechanisms.

At this point I should point out that there are strong restrictions on the reproduction of the Plan 1999, it is not permitted to take a copy of the plan out of the office where it is deposited and it cannot be copied or reproduced in publications. It can only be

examined in the Shanghai Planning Bureau. Some extracts are shown on the Planning Bureau website, but these are only small extracts and illustrations, which given only a broad impression of the Plan. This in itself is an interesting observation on the specific characteristics of the plan implementation environment in China. As the plan can only be used by official agencies and there is no public attention or monitoring by non-governmental agencies, there are few people using the plan who are likely to provide a sort of informal monitoring or reflection. There is no public debate that would identify the weaknesses of the plan – although the plan is scrutinise internally by expert panels.

§ 3.1.1 Shanghai's new spatial structure of the periphery

The Plan 1999 has two central goals: on the one hand, it strictly prohibits urban sprawl and seeks to direct urban development to planned allocated locations; on the other hand it promotes peri-urban development to meet the increasing demands of a rapidly increasing population. Are these two goals in opposition? Does this suggest that the basic goals are in some way contradictory? To achieve these two objectives at the same time, the Plan proposes to restrict population growth in the central city area for the 'coming 20 years', relocating residents into the suburbs. For the development of the suburbs, it defined a multi-tier, multi-centre and multi-axis urban system. Quantitative indicators -- the extent of land development and population distribution -- are important considerations for shaping the overall urban structure. The Plan 1999 established a four-tier urban system -- similar to what the Plan 1986 proposed (see section 4.2.3) -- consisting of the central city and three categories of sub-centres in the periphery. These included:

1. new (medium-sized cities) of 200,000-300,000 inhabitants, consisting of important industrial sites (e.g. Baoshan and Jinshan), infrastructure complexes (e.g. Pudong Airport), or large counties (e.g. Songjiang and Jiading);
2. central new key towns of 50,000-100,000 inhabitants, with either good locations or economic advantages, generally located around new cities;
3. central key villages of approximately 2,000 inhabitants, consisting of rural villages with traditional culture, good environment and modern facilities.

This four-tier urban system was closely related to Shanghai's population relocations [see Figure 3.1]. The proposed new cities and central towns became the main locations to accommodate the displaced population and immigrants. The Plan 1999 also proposed to relocate the residents of small rural villages into new cities and central towns according to the '*Moving from City Centre to the Periphery and Integrating Small-scaled Suburban Development*' Programme that was proposed by the State Council in 1998.

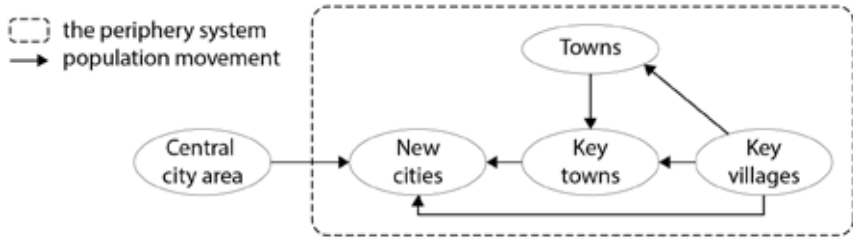


Figure 3.1
Planned population relocation between the central city area, new cities, central towns and central villages (author's own)

The Plan 1999 also proposed a 'multi-centre and multi-axis' spatial structure. There were eleven new cities and twenty-two central towns planned in the periphery to accommodate the increasing population, relocating industries and creating more job opportunities. Three development axes would guide future urban developments: the south-to-north development axis proposed by the Plan 1986; a west-to-east; and a sea bay development axis [see Figure 3.2]. The west-to-east development axis highlighted the close connection between the traditional city centre on the west bank of the Huangpu River and the Pudong District. The sea bay development axis referred to a series of new growth poles along the sea bay. Those growth poles include shipping related industries (Waigaoqiao Port, Lingang Harbour City), two original industrial complexes (Baogang Iron and Steel Corporation compounds and Jinshan petrochemical industrial compounds) and an aviation hub (Pudong Airport Complex). Such growth poles reflected the objective of promoting Shanghai as the biggest harbour city in the world. The planned new urban developments were either in the new peripheral centres or along the three development axes.

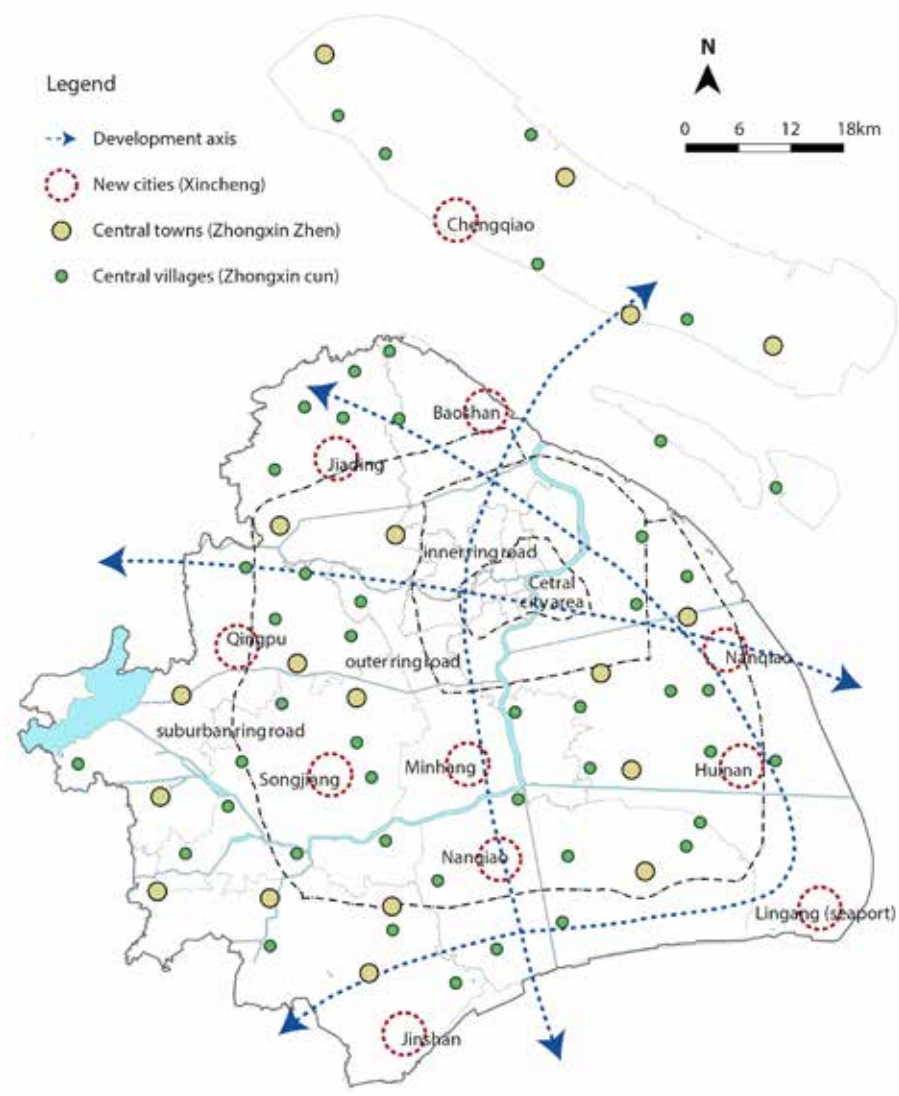


Figure 3.2
The 'multi-centre and multi-axis' spatial structure in Shanghai (author's own)

The 'multi-tier, multi-centre and multi-axis' urban structure was further modified in the following policies and programmes. In 2001, a pilot project called "*One City, Nine Towns Development Plan*" *(一城九镇)* was proposed in the document '*Advice on Pilot Projects for Shanghai Urban Development*' *(关于上海市促进城战发展试点意见-沪府发[2001]1号)*'. This project promoted the development of Songjiang New City (800,000 inhabitants) and nine central towns as the first priority (Shanghai Municipal Government, 2001). In the end of 2004, a 1-9-6-6 model -- one central city, nine new cities, 60 central towns and around 600 central villages -- was proposed in the document '*Promotion of Three Concentrations for accelerating Shanghai Peri-urban Development*' *(关于其实推进 '三个集中' 加快上海郊区发展的规划纲要[2004])*, re-emphasising the four-tier urban system. The same document removed two new cities proposed in the Plan 1999 (Nanqiao and Huinan); and upgraded Jiading and Lingang together with Songjiang as the three most important new cities (Shanghai Municipal Government, 2006) [see Figure 3.2]. Although different models were proposed after the Plan 1999, the main development priorities (peri-urban development) have remained constant throughout the different revisions of the plan.

§ 3.1.2 Related peri-urban strategies

The Plan 1999 not only established a new and well-defined spatial structure, but also stated several other goals and strategies for future urban development. Four of these are closely related to peri-urban development, 1) industrial restructuring, 2) intra/inter-transportation infrastructure development, 3) environmental protection, especially the conservation of green spaces, and 4) housing development.

1 To transform Shanghai from an industrial city into a commercial and financial centre, the Plan 1999 proposed to optimize and upgrade Shanghai's industrial structure, replacing most of its secondary industries with tertiary industries. Each type of industry had a specific location. In the central city, tertiary industries would replace the secondary industries, which would be relocated to the periphery. Between the outer ring and the suburban ring, high-tech industries and non-polluting urban industries would be located. Beyond the suburban ring, the traditional manufacturing industries, agriculture, and tourism would be the primary industries (Shanghai Municipal Government, 2004). At the micro level, the Plan 1999proposed many industrial parks and high-tech poles to accommodate large industrial corporations from the city centre and to integrate dispersed small-scale industries in the suburbs [see Figure 3.3].

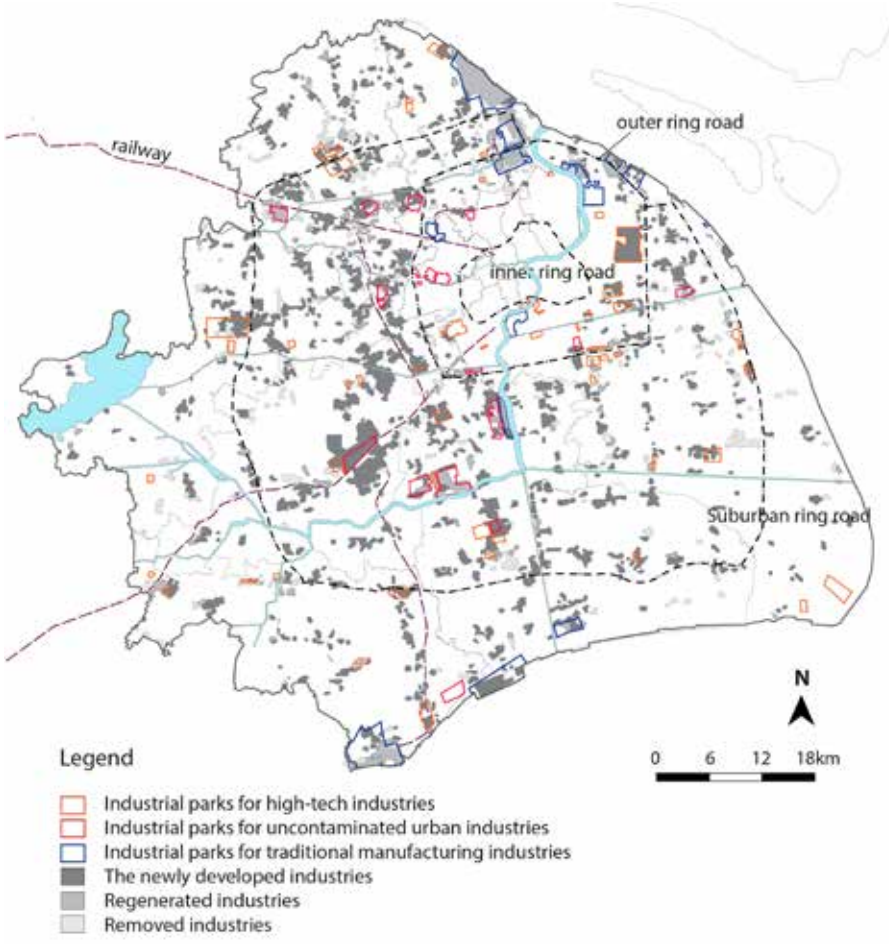


Figure 3.3
Planned industrial parks and the actual industrial land development from 1999 to 2020 (author's own).

2 To facilitate peripheral development, the Plan 1999 proposed to improve suburban transportation and infrastructures, through the development of the external network with the surrounding places and the of internal transport infrastructure. To enhance Shanghai's international connection, the Plan 1999 proposed the development of three hub ports (an international container hub port, Pudong Airport, and a modern information port). It also proposed to improve the highway road network connecting Shanghai with nearby cities and to construct a high-speed train network connecting Shanghai with other large cities outside the Yangtze River Delta [see Figure 3.3]. Furthermore, the Plan proposed to increase the capacity of public transport by building more metro lines and light rail lines that extend into the suburbs, constructing more roads in the periphery, and building more transit hubs and parking lots. Moreover, it planned to make the connections between different types of transportation systems more convenient (Shanghai Municipal Government, 1998).

3 To resist urban sprawl and in the interest of a more environmentally friendly city, the Plan 1999 paid considerable attention to the conservation of open spaces and establishment of a 'green system' a network of open areas. It planned more green space for Shanghai (more details are given in Chapter 6), and proposed to increase the variation in the form of green spaces with characteristics that better suit particular locations and to achieve specific objectives. A 'green belt' and 'green wedges' were planned along the outer ring road to resist urban development. A Forest Park was planned in remote suburbs to contribute to improving the city's air quality. Ecologically sensitive areas and construction sensitive areas were designated with the objective of balancing the relationship between urban construction and ecological environment. Small-scale green spaces were allocated along the Huangpu River and Suzhou Creek in order to reduce water pollution in the rivers [see Figure 3.4] (Shanghai Municipal Government, 1998).

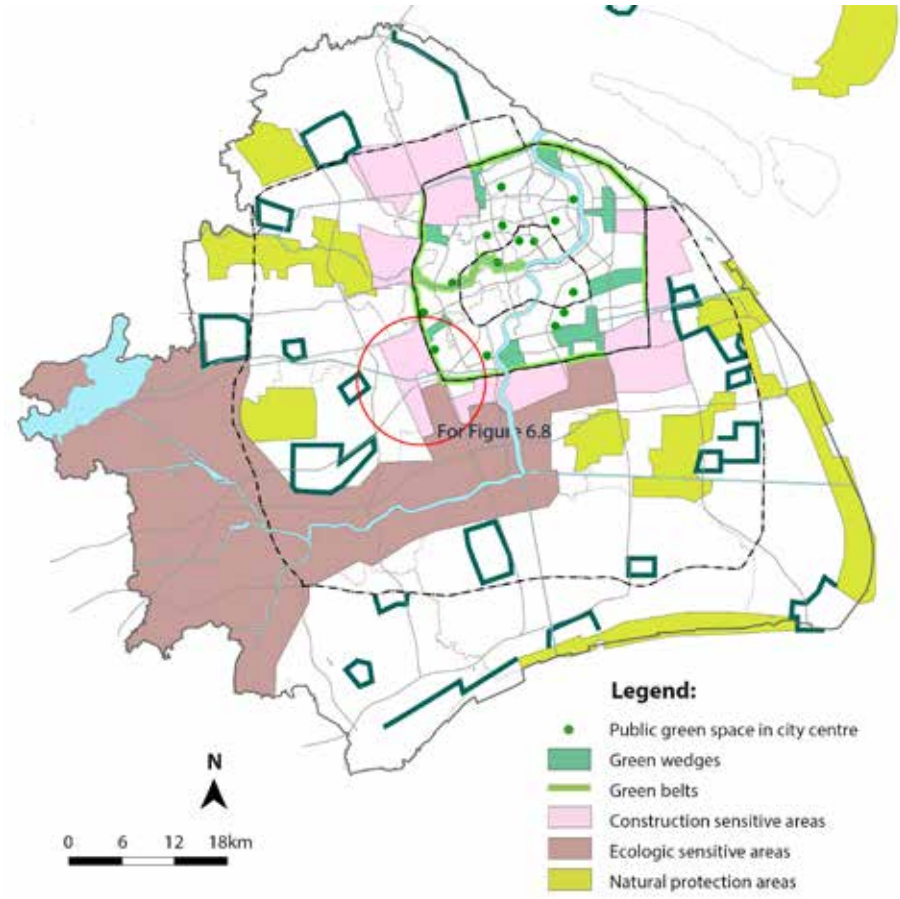


Figure 3.4
Shanghai's different types of green areas in the Plan 1999 (Yu, 2008a: 14)

4 Housing was also a crucial part of the strategy for the realisation of the Plan 1999. There was an urgent need to accommodate the rapidly increasing population in the city and this was to be accommodated in the periphery. The Plan 1999 focused on two main housing objectives producing housing with diversity, quality and affordability, and the restriction of high-rise housing projects. Otherwise, housing development policy was expressed in a quantitative way. The Plan allocated 410 km2 of territory for residential use, from which 180 km2 were in the suburbs. The average per capita living space target was 18m2 until 2020, which was much more generous that the existing housing stock. Housing was also a very important part of the short-term construction plan within the Plan 1999. More than 20 residential compounds were planned in four locations (Jiangwan New City, Wanli, Sanlin and Chunshen), located between the inner

ring road and the outer ring road. A series of housing projects were also planned in new cities and central towns. Housing development was a very significant part of the proposed land development in the Plan 1999, and the distribution of housing and land development are considered together in the following discussion.

§ 3.1.3 Plan 1999: a strategic plan or a project-oriented plan?

The discussion above in Chapter 2 has explained the conceptual differences between a strategic plan and a project plan. The Shanghai Plan 1999 described itself as a strategic urban master plan, and has some features of the ideal type of strategic plan. It defines not only the spatial aspects of Shanghai urban development, but also its economic and social aspects. The plan mentions the role of other sectors of government in implementation and talks about cooperation with other sector agencies and their plans, such as the Environmental Protection Agency and the Land Resources Bureau. Spatial concepts such as bubbles, corridors, networks, industrial hubs and polycentrism, which are very often used in strategic plans, are also used to identify 'broad' areas of importance and opportunities. However, operational statements, which might explain how these objectives are to be met are not presented. The lack of a definition of how to achieve these objectives makes them less relevant, and undermine the strategic character of the plan.

On the other hand, the Plan 1999 has many project-oriented attributes. It depicts a blueprint final status of Shanghai, anticipating its population growth (to 16 million), its spatial distribution and the extent of land development by 2020. It includes many site-specific land use maps for future urban development of the whole city through the so-called 'individual strategies' (e.g. land use divisions, transportation infrastructure development and housing construction), which are described in quantitative terms. Uncertainties and unpredicted influences on future developments are not mentioned in any depth. Furthermore, the plan has a brief 'short-term construction plan' section of four pages, which only identifies locations of the recent projects, housing projects in particular. Environmental protection policy in the short-term construction plan only identifies the locations for green areas.

In summary, the Plan 1999 has both strategic and project-oriented attributes, which directly influence our analytical framework for the evaluation of plan implementation processes. The precise nature of the strategic and project plan characteristics are explained more fully in later chapters.

§ 3.2 Research design and analytical framework

As explained in the previous section, the Plan 1999 has features of both strategic and project-oriented plans. Thus both conformance- and performance-based approaches should be employed for the evaluation of its implementation. A conformance-based approach emphasises the direct relationship between plan objectives and spatial outcomes, and usually fits the evaluation of very concrete targets, and is generally used in project-oriented plans. The performance-based approach focuses more on the use of plans as frame of reference in land development processes and urban projects.

Typically, in Western planning practice, project plans (or the project components of plans) operate at a more local level. Strategic plans (or the strategic components) tend to operate at the higher regional level. Although this may not always be the case there is a general tendency and subsequent assumption that higher level equals strategy and lower level equals project planning. The Shanghai Plan 1999 challenges this assumption. A careful examination of the content against the criteria suggested by Alexander and Faludi (1989) and others suggests that the Plan 1999 is in much of its content a project plan, despite its very wide application to the whole metropolitan area. It also reflects the strategic plan ideal type in its objectives and content to a lesser degree. Then evaluation of implementation should take into account the real nature of the Plan and use an appropriate combination of methods drawing on both the conformance and performance aspects. The description of a plan for the metropolitan area of Shanghai as a 'project plan' in a large degree may seem counter intuitive but it is based on the actual content of the plan.

Therefore in this study the evaluation of implementation combines the project oriented conformance dimension with the strategically oriented performance dimension. Both the conformance and the performance of the plan are evaluated for the whole plan. However, the conformance method can be conducted largely through mapping and quantitative analysis for the whole plan. The method of evaluating the performance of the plan requires more detailed investigation of the influence of the plan on other actors, agencies and sector plans. This requires more detailed case study approach as explained below and therefore the evaluation of performance is undertaken through more detailed analysis of smaller areas within the Plan 1999.

Figure 3.5 illustrates the differences between the usual use of conformance and performance-based approaches, and the use of these approaches in the present study.

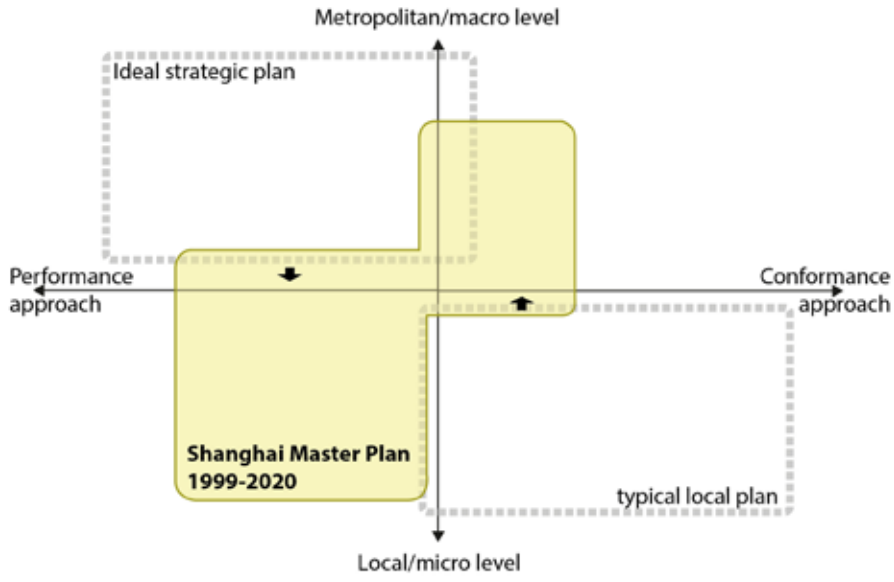


Figure 3.5
Usual use of conformance and performance-based approaches, and the use of these approaches in the present study (author's own)
Source: Shanghai Municipal Government, 1998

A conformance-based evaluation is used at metropolitan scale because the Plan 1999 has very concrete targets at that scale. Plan 1999's project-oriented features are embedded in the 'end-status' targets (regarding population, public transport, etc.) and the site-specific land use maps for the future urban development at the metropolitan level. These targets' effects on the overall urban structure of Shanghai can be directly visualised, measured and therefore analysed.

A performance-based approach, on the other hand, is used to evaluate the influence of the Plan 1999 on other agencies and their plans and planning at the local level. The strategic features of the Plan 1999 are rooted in its ability to work together with other plans (sectoral or local urban plans) to influence the development of local urban projects. Such influence is relatively indirect, it holds uncertainties brought on by external circumstances, and varies in different land development processes. A performance-based approach is more suitable to measure the effects of indirect influences, uncertainties and singular land development processes. But this requires more detailed and to some extent qualitative evaluation which can only be done by selecting parts of the plan for investigation. By choosing small areas, the performance of the Plan 1999 can be evaluated in terms of its role as a frame of reference for the decision-making and actions within the implementation process.

§ 3.2.1 Conformance-based analysis

In empirical studies, spatial mapping and overlay analysis are the main methods for conformance-based evaluations. They are based on the grid-overlay model discussed in 2.2.1. But due to the lack of GIS data (which was not available to researchers in Shanghai), the quantitative calculation or classification of the degree of conformity that is necessary in the grid-overlay model was not possible. Instead, four steps were used for the evaluation of planning conformity:

1. Evaluation variables and indicators were selected.
2. The spatial outcomes were compared to the Plan 1999 proposals in terms of the selected variables and indicators. This was done through spatial mapping, data comparison and overlay analysis.
3. Degrees of conformity were further compared between correlated indicators in order to reveal the characteristics of the implementation conformity.
4. Other factors that might have influenced the implementation conformity were further explored.

The selected variables and indicators should be closely related to specific characteristics of the urban development of Shanghai in both the Plan 1999 and the actual development. Five variables are selected for the conformance-based evaluation: 1) population (re-) distribution, 2) land development, 3) industrial restructuring, 4) infrastructure development, and 5) conservation of green spaces [see the first column of Table 3.1]. The first two, population (re-) distribution and land development, are vital variables to define the overall spatial structure of Shanghai's periphery according to the Plan 1999. The last three variables represent the related peri-urban strategies of the plan mentioned in the previous section (Section 3.1.2). Housing development, the fourth mentioned peri-urban strategy, is not used as an independent variable for the empirical analyses because of the lack of data. It is then analysed in terms of residential land development in combination with the variable land development.

	Indicators	
Variables	Quantitative objectives	Spatial distribution
Population (re-) distribution	Growth of the population size	Spatial distribution of the population
Land development	Total territory of urban land development	Spatial distribution of land development (residential land development in particular)
Industrial development	Industrial structure in terms of output and employment	Spatial distribution of secondary industries (and their relations with industrial parks)
Infrastructure	Length of roads and metro lines	Spatial distribution of road systems and metro lines
Conservation of green spaces	Amount of green spaces	Preservation of a building sensitive area

Table 3.1
Variables and indicators for the evaluation of plan implementation

Each variable is discussed in two dimensions in the Plan 1999: the quantitative targets and the spatial distribution objectives. Take Shanghai's population for instance, the Plan 1999 defined the population of the whole city for the next 10 and 20 years. It also defined how many people would live in the central city area, and how many would live in the new cities. Based on the five variables and two dimensions of each variable, ten indicators are identified for the analyses [see the right two columns of Table 3.1]. A more detailed explanation of the selection of the variables and indicators and how these were used for the conformance-based analysis is given in Chapter 6, because it requires a more refined understanding of the history of the peri-urban development and the planning system in Shanghai, given in Chapter 4 & 5 respectively.

§ 3.2.2 Performance-based analysis

A performance-based approach examines how a plan has been used and consulted in subsequent planning practices and local projects. The Plan 1999 had to be coordinated with other plans and policies because it only defined the general urban development of Shanghai, rather than having a "one-to-one" relationship with local projects. However, evaluating the influence of the Plan 1999 on every piece of land or project is practically impossible. In order to gain an in-depth understanding of the Plan 1999's role as a frame of reference within Shanghai's urban development, it was decided to use case studies as a research method. The following section describes the selection of cases and introduces the two selected cases.

As stated in Chapter 2, the most relevant and well-developed approaches for performance-based evaluation are the policy-plan/program-implementation-process model (PPIP model) (Alexander and Faludi, 1989) and the plans, processes and results model (PPR model) (Oliveira and Pinho, 2009). The PPIP model closely

connects the level of conformity to planning performance, proposing five structural criteria (conformity, rationality, optimality ex-ante and optimality ex-post and utilisation) for the performance-based evaluation. The PPR model, not only discusses plan implementation, but also the quality as well as the effectiveness of the plans. Consequently, these models' criteria are used as important references in the performance-based analytical framework.

However, the criteria used by the PPIP and the PPR models cannot be directly used in this research because performance-based evaluations are specific to the particular contexts and research aims. The PPR model was proposed within the Portuguese context, where urban morphology is still a main concern in the planning practice (Nadin, 2013). This is not the case in Shanghai. The evaluation focus of the PPR model is then different from an evaluation focus in the Chinese context, in which infrastructure and growth-oriented development are priorities in planning.

Taking the Chinese context into account, I have used two of Faludi's (2000) structural criteria, leaving aside the ex-ante and ex-post optimality criteria, which refer to issues irrelevant in this study. The utilisation criterion is discussed in chapter 7 after the rationality analyses. The analytical framework for the performance-based evaluation is illustrated in Figure 3.6.

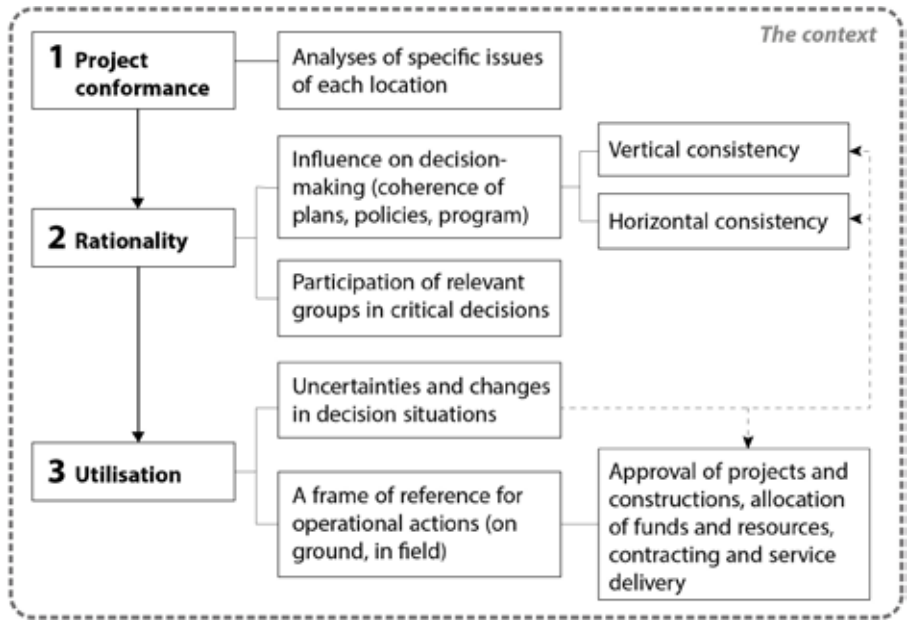


Figure 3.6
Analytical scheme for the performance-based evaluation

The first step is to examine project conformance between the plans and actual urban developments in each case. In other words, the analysis examines the influence of the plans objectives on local urban projects. Project conformance is necessary because it links the conformance-based evaluation at metropolitan level, and planning performance. The level of conformity at project level may not be the same as the level of conformity at metropolitan level. Analyses based on this criterion may vary because the plans may determine different sets of issues and priorities in different locations.

According to Faludi (2000), a strategic plan is useful only when it is a frame of reference for involved actors in their operational actions and decision-making. Consequently, the second step is to understand the influence of the plan on the decision-making and operational actions of the different actors. Decision-making refers to '*decisions committing the decision agent to action or affecting lower-level or other agencies or organisations*' (Alexander and Faludi, 1998: 132). To measure a plan's influence on decision-making it is crucial to evaluate the coherence of the plan with its related plans, policies and programmes, which represent the decisions and commitments made by actors from the public sector. 'Coherence' does not examine the level of conformance, but rather interprets whether and to what extent decision makers are aware of, accept, agree with and are affected by what the plan proposes. In this study, coherence is analysed in two dimensions: 1) vertical consistency between the Plan 1999 and subsequent urban plans, and 2) horizontal consistency of the Plan 1999 with related sectoral plans.

Operational actions refer to '*actions or operations in the field designed to achieve change on the ground*'... such as '*decisions which produce the final outputs of a programme or a project, and which impact directly upon the client, the organisational, or physical environment*' (Alexander and Faludi, 1998: 133). To evaluate the influence of a plan on operational actions requires a check on how the approval of projects and constructions, allocation of funds and resources, contracting, and service delivery, act in response to the plan. In addition, the plan should reflect the interests of all relevant groups of actors, and include the participation of all groups in the decision-making process (Faludi 2000).

There is, however, a gap between the decision-making and the operational actions. Even if the objectives of a plan have been transferred down to the local plans, there is no guarantee that they will be applied in the operational actions, due to the effects of uncertainties and changing contexts. Faludi's (2000) utilisation criteria deals with uncertainty and changing contexts issues, and can help explain their impact. It can examine whether the plan has continuity of concerns or whether it is still relevant in the changing contexts. This helps to elicit in an explanation of the reason for nonconformity, and also help understand the changing priorities of involved actors and their reaction to the plan. On the other hand, it may also analyse whether the plan gives a stable direction for future development, such as a doctrine or set of principles that determine the priorities of major groups of actors.

§ 3.2.3 Diachronic analysis

The conformance and performance-based approaches are able to evaluate the implementation of a plan at a certain period of time, a temporarily fixed situation. Such a synchronic approach -- a snapshot -- simplifies the understanding of planning implementation compared to real situations. From the performance-based perspective, planning implementation is closely related to the interaction and coordination between involved actors within the land development process, which is dynamically underpinned by the changing institutional context, the planning system, culture, rules being used and the history (Friedmann, 2006). Consequently, a diachronic approach is employed to reveal how relationships between variables have changed over time, and then to thoroughly understand the implementation process of the Plan 1999. Using such an approach, an overview of the changing planning system in Shanghai and the history of Shanghai's peri-urban development in the second half of the twentieth century is given (they will be explained in detail in Chapter 4 and 5 respectively). Current spatial developments are closely related to Shanghai's history, the legacy of the past and the existing cultural circumstances.

This diachronic approach provides three benefits. First, a historical overview helps better understand the present spatial structure of the peri-urban areas of Shanghai -- in terms of what has remained constant and what has changed. Second, it reveals whether previous plans had the capacity to effectively influence spatial development. Third, it shows if the Plan 1999 is consistent with the city's previous plans and the current land development conditions in order to provide the basis for the making of the subsequent urban master plans.

§ 3.3 Research design (Research methods and data collection)

Research methods and data collection strategy, which are required to support the multi-perspective analyses and to carry out this study, are explained in this section.

§ 3.3.1 Research methods

The main research methods used are described in the following subsections.

§ 3.3.1.1 Literature research

A desk-based review of existing literature and secondary data was conducted as an important method at the beginning and in several parts of the research process. All the literature and secondary data that was reviewed can be divided in three main groups. In the first place, a bunch of planning literature in relation to urban planning evolution, evaluation on plan implementation both in western countries and in China, and ways of understanding land development processes constitutes the theoretical framework (Chapter 2), which is the base of the methodology. In the second place, I investigate many historical documents including precedent urban master plans and related policies, statistics, government reports from 1937 to 1999 in order to understand Shanghai peri-urban development in the history and the implementation situations of several editions of Shanghai master plans overtime. In the third place, I overview a wide range of recent plans from various sectors/levels (e.g. Plan 1999), government websites, official documents, legislations, regulations, statistic yearbooks, reports, new programmes from newspapers/ magazines. They help to explain current urban planning system, the challenges for planning practice in China as well as planning performance.

§ 3.3.1.2 Spatial mapping and overlay analysis

The technique used for mapping change and the definition of the analytical units for the conformance-based analysis (3.2.1), must be explained. This approach was considered crucial for the quantitative analysis because it influences the degree of accuracy of the evaluation, and it makes the scale of analysis consistent. The administrative system

in Shanghai -- which will be explained in more detail in Section 5.1.2 -- consists of four tiers: 1) the municipal level, 2) the district level, 3) the neighbourhood level (the Jiedao, equivalent to town and county levels), and 4) the community (village) level. The neighbourhood level is the lowest formal tier with government offices. It is the basic unit for official data collection such as censuses and administrative territories. It is also the basic unit of regulatory detailed plans. In this sense, the neighbourhood level was considered the most appropriate scale to be used as the analytical unit in the analyses. Shanghai has 99 neighbourhoods, 109 towns, and two counties. Neighbourhoods (or towns or counties) vary in terms of their territory and population, but the average has approximately 25 km2. In a few cases the spatial mapping is based on the district level, when the data on the neighbourhood level was not available or was of poor quality.

§ 3.3.1.3 Case study research

Case study research is considered a proper method for the performance-based evaluation as discussed in Section 3.2.1.2. 'Case study method… helps to investigate a contemporary phenomenon within its real life context, …especially when the boundaries between phenomenon and context are not clearly evident' (Yin, 2009). Further, it helps explain in greater depth, implementation processes and underlying mechanisms. In addition, the case study analysis, for the very first time, intends to fill this knowledge gap by applying a performance-based approach to empirical analysis. The case selection followed three criteria:

1. The type of development. Selected cases should be defined as vital for the peri-urban development or urban restructuring of Shanghai in the Plan 1999. They should be part of the four crucial strategies proposed by the Plan 1999 for peri-urban development: industrial restructuring, improvement of transportation and infrastructure, housing development or conservation of open spaces. They should also represent different management modes and urban development processes to be able to show more examples of how the plan was consulted and used.
2. The degree of conformity, in other words, the results of the conformance-based evaluation. Cases should be preferably different in terms of the levels of conformity. Cases with different levels of conformity may help us identify the relationship between conformity and performance.
3. Development time. Although the Plan 1999 was made in 1997, we could choose local projects developed either before or after 1997. That is because the Plan 1999 was not necessarily the starting point for local urban developments. The Plan 1999 could also be a crucial factor influencing the projects or local developments. But those local developments have to be established ideally after 1989, when the planning system started to change. In addition, we would only select finished projects.

Furthermore, a relatively easy access to data about the cases was of primary importance. According to these principles, two case study areas were selected for the performance-based evaluation. The first one, Northern part of Jinqiao Export Processing Zone (North Jinqiao EPZ) [see] in Figure 3.8], is the most successful industrial park in Shanghai. It is a typical industrial project that was led by the municipal government and funded by the national government. The second one, Xinmin Development Area (Xinmin Area) [see X in Figure 3.7], was planned as a construction-sensitive area to prevent urban expansion. But the rapid urban expansion invaded the farmland and green space, which made the actual urban development disrupt the plan enormously. More introductions of these two cases will be in Section 7.2 and 7.3 respectively.

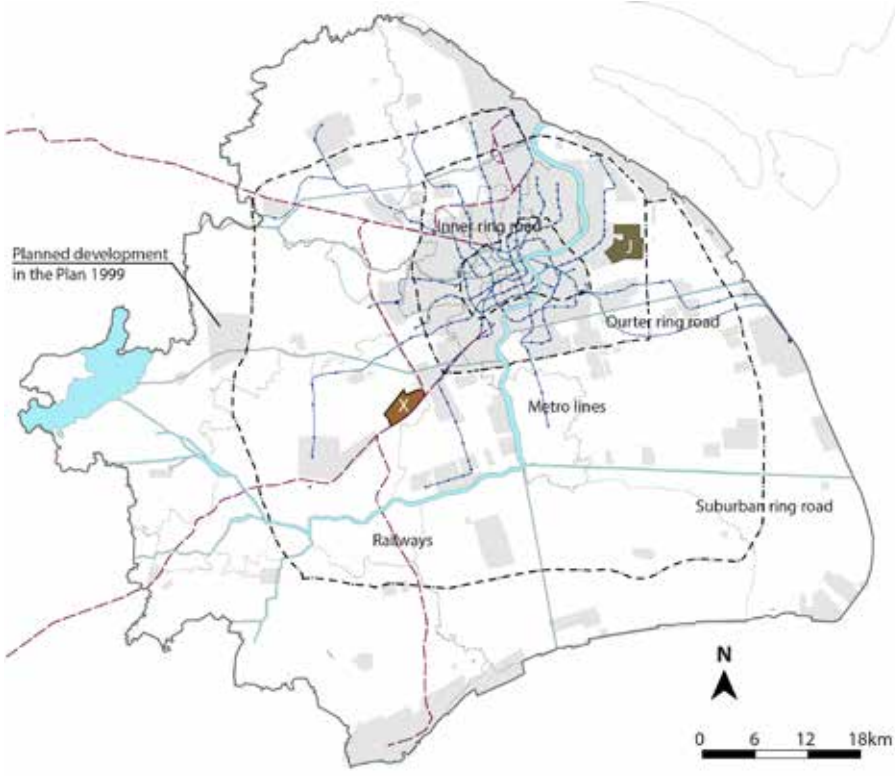


Figure 3.7
Location of two case study areas.

A summary introduction of the two case is given here [see Table 3.2] and more detail is given in later chapters. The North Jinqiao EPZ is the most economically successful industrial park in Shanghai, a centre of manufacturing and export industry of national and even global importance. It is a typical industrial project that was led by the municipal government and funded by the national government, which was initiated in 1990. In its limited area (18.48km^2), it contributed to 6.7% of Shanghai's industrial output and 23.8% of Pudong District's industrial output (20.92 billion RMB). Xinmin Area was planned as a strategic green space, construction-sensitive area, to prevent urban expansion in the Plan 1999. But until 2004, all of its territory (11.4km^2) was invaded by real estate housing projects. Different from the previous case, land in Xinmin Area is collectively owned by Xinqiao Village, rather than the central government. Its land ownership determines the way and type of land development.

Variables	North Jinqiao EPZ	Xinmin Area
Year of development	1990	2000
Planned type of development	Industrial park	Construction-sensitive area
Actual type of development	Industrial park	Housing development
Area	18.48 Km^2	11.4 Km^2
Industrial outputs	20.92 billion RMB (equals 2.01 billion Euro)	N/A
Population	28,000	22,867

Table 3.2
Variables and indicators for the evaluation of plan implementation

§ 3.3.2 Data collection strategy

This PhD thesis employs both quantitative and qualitative analyses, for which different analytical tools and data collection methods were applied. For the quantitative analysis (conformance-based evaluation at metropolitan level), a large amount of data (e.g. population, land divisions, industrial outputs) and maps (e.g. spatial distribution of industries, infrastructure and land development) was required for the spatial mapping and overlay analysis techniques. For the qualitative analysis at the local level, interviews with key actors, the related literature and policy documents reviews were required to understand the utilisation of the plan within the development process. More importantly, field trips, interviews and site observations were conducted to get to know the ideas and actions of the involved actors in the real situations of the operational process. It is important to remark that neither of the data mentioned above are easy to get in China. The following subsections explain the strategy for the data collection.

§ 3.3.2.1 Data for spatial mapping

For the quantitative, two sets of data had to be gathered: the contents of the Plan 1999 and the actual developments. Urban master plans are considered as confidential documents in China because they include important geographic information. Only a brief summary of urban master plans is open to the public. To be able to obtain the Plan 1999, I had to ask the help of colleagues working in the public sector. Two of them helped me, one working for Hua'run Real Estate Company (华润置地) and the other working for the Urban Planning and Land Resource Bureau of Huangpu District (黄浦区规划和土地管理局). This problematic circumstance also occurs for data from other government-related documents, such as reports, policy documents, sectoral plans, and statistics from public authorities -- only a small number of private firms compile statistical data in China.

On the other hand, access to data of the actual urban development was even more difficult because of the lack of databases, or the strict confidentiality regulations of these databases. Quantitative data mainly came from Shanghai statistic yearbooks. With the help of Dr. Liao who leads a national research project, GIS data for population per-neighbourhood and territory per-neighbourhood became available. Since information on current land use divisions is not available to the public or in documents of public authorities, the use of online resources was necessary for mapping current land uses in Shanghai. I spent four months redrawing the land use divisions with the help of three editions of Shanghai Master Plan (Section of status quo of land development), Google Earth and Dingding Map (a local digital map system). Site observations were also conducted (during the visits for interviews as explained in the next section) in order to verify the real land uses and to specify the exact layout of an area when the information for some sites was unavailable or unclear in Google Earth and Dingding Map. In the conformance-based evaluation, the level of conformity is compared in terms of land uses in Shanghai's peri-urban areas.

§ 3.3.2.2 Interviews and work placement

Case studies for the performance-based evaluation were undertaken including interviews with important stakeholders. Most data was collected during four field trips -- lasting at least two weeks each -- by means of the mentioned structured interviews, conversation with local users, site observations and photographs. The four field trips occurred respectively in July 2009, March 2010, February 2011 and February-May 2012. Reaching the key persons within certain project developments, especially those working for the government, was also extremely difficult for a PhD candidate

from a foreign university. This circumstance required to adopt a different data-collection strategy: at the beginning of 2012, I took a work placement position at the Development Control Planning Office of Shanghai Urban Planning and Land Resources Bureau (上海市规划和国土资源管理局详规处) for three months (from 1 March to 29 May, 2012).

The three-month work placement experience was extremely valuable. First, it helped me reach a number of key persons for interviews (see Appendix I). I interviewed three main groups of people: 1) officers from both the municipal government and district governments; 2) urban planners involved in the making (In 1997) as well as the evaluation (in 2007) of the Plan 1999, and planners who made the related urban plans for both case study areas; and 3) leaders or employees who directly engaged in the local development of those two case study areas. For the interviews, I prepared a semi-structured interview questionnaire. However, not all the questions of the questionnaire were answered accordingly because interviewees led the conversations according to their own interests. Second, I got several opportunities to attend local-expert workshops, which helped me understand the Shanghai's planning system as well as the underpinning mechanisms more thoroughly.

§ 3.3.2.3 Plans and documents

The work experience at Shanghai's Planning Office was useful to get access to the 'confidential documents' that were needed for the analyses, i.e. the government reports, the policy documents, new programmes and other related urban plans. These documents are important resources for performance-based case analysis because they tell whether the involved actors take the Plan 1999 as a frame of reference. These documents are organised into three groups (see Appendix II). The first group contains government files related to the overall urban development of Shanghai. The second group of documents is mainly related to the case of Jinqiao JEPZ (see Table 7.1 & 7.2) in Chapter 7. The third group is all related to the case of Xinmin Area (see Table 7.4 & 7.5) in Chapter 7.

§ 3.4 Methodological limitations

The methodological limitations of this research mainly arise from data availability, lack of data or the data quality, which determined the depth and scope of the research design. For instances, spatial mapping and overlay analysis for the conformance-based evaluation are based on my own drawing according to Google earth and Dingding Map (see 3.3.1.2). Although they are first-hand data, they still make the mapping analysis not so precise. The second limitation is about the case studies. Selection of the case study areas are restricted by the personal network of the researcher, although the selection of the case studies follows the principles presented above (see 3.3.1.3). It is possible to develop the empirical study of other types of development where planning performance are different. Further, due to the difficulties of availability of data, only two case studies are chosen for the performance-based evaluation, which are not enough to be generalised with certainty to the broader context. Moreover, data collection (e.g. interviews) in the case studies depends on the personal skills of the investigation including the ability to ask questions, to listen actively, to react to the situation, to understand the issues being addressed and to identify personal bias. The structured analytical framework is usually not always possible given the individual characteristics and interests of interviewees. The third limitation is that the performance-based evaluation is still too qualitative. The analyses are based on interpretations of interviews and document/policy reviews. There is not a deliberate measureable framework for the performance-based evaluation.

This chapter presented the methodological strategy of the evaluation research. In the following chapter, a diachronic analysis on the peri-urban development of Shanghai is conducted in order to set the foundation for the empirical analysis.

4 Peri-urban development in Shanghai and the implications of urban master plans

The previous chapter proposed an analytical framework to evaluate the implementation of the Shanghai Master Plan 1999-2020 regarding the peri-urban development. To better understand current planning practices, this chapter provides a diachronic review of Shanghai's peri-urban development, and its corresponding master plans. The city of Shanghai can be dated back to the 7th century, and therefore has a long history of urban development. In the past two centuries, the city extended its administrative boundaries several times in order to accommodate increasingly larger population and economic activities. The present peri-urban areas of Shanghai started to develop since the mid-20th century (Shanhai Local History Office, 1996). Their expansion and structure was closely related to corresponding master plans (Urban Planning Adminstration Practices in Shanghai, 2007).

This chapter gives an overview of the peri-urban development of Shanghai in the last half of 20th century; and analyses the spatial implications of the corresponding urban master plans. Its first objective is to describe the spatial evolution of peri-urban developments in Shanghai, to better understand its current spatial structure. Its second objective is to describe the implications of the successive urban master plans on peri-urban development, to contribute to a better understanding of the trends of planning implementation.

The chapter is organised in three sections. The first one introduces the development of Shanghai before 1949, when the peripheral areas were still rural. The second reviews the peri-urban development goals in three editions of Shanghai's master plans. These plans include the Urban Plan for Greater Shanghai 1946, the Shanghai Master Plan 1959 and the Shanghai Comprehensive Master Plan 1986. The third section analyses Shanghai's peri-urban development in the last half of 20th century in close relation to the corresponding urban master plans. Peri-urban development in Shanghai is revised in terms of industrially led urban development, the development of the Pudong district, housing developments and the development of urban infrastructures, important goals of the three above-mentioned master plans.

§ 4.1 Spatial Evolution of Shanghai until 1949

Shanghai has undergone tremendous changes in cultural, political, social and spatial terms to become the economic and financial centre of China and the biggest port city in the world (Zhang, 2003). Urban development in Shanghai can be divided into three main eras: 1) the pre-modern era (from the 7th century to 1842) when China was a feudal society; 2) the modern era (1842-1949), when foreigners colonised parts of Shanghai; and 3) the contemporary era (from 1949 onwards) under the government of the Chinese Communist Party (CCP) (中国共产党, Zhongguo gongchandang). The urban developments in each stage have differed considerably due to their specific political contexts, policy preferences and social structure. Table 4.1 lists these three eras, their political context and their corresponding administrative boundaries (AB in the table) illustrated in Figure 4.1. This section briefly introduces the development of Shanghai during its pre-modern era and the modern era, in an attempt to provide basic knowledge to inform further analyses on Shanghai's peri-urban development during the contemporary era.

Era	Years	The political context	AB	Plans
Ancient era	7th century -1842	Under the feudal society	1	/
Modern era	1842-1911	Governed by foreigners and Qing Dynasty	2	/
	1911-27	Governed by foreigners and warlords		/
	1927-49	Governed by foreigners and Kuomintang	3	Urban Plan for Great Shanghai 1946
Contemporary era	1949-78	Planned economy	4	/
			5	Shanghai Master Plan 1959
	1978-99	Reform era		Shanghai Comprehen-sive Master Plan 1986
	1999-now	Market-oriented era		Shanghai Master Plan 1999-2020

Table 4.1
Different periods of Shanghai's urban development

§ 4.1.1 Shanghai in the pre-modern era (7th century – 1842)

During the pre-modern era, Shanghai began to play an important role in China, gradually evolving from a fishing village into a commercial and export centre. Shanghai started its history as a fishing village in the 7th century, during the Tang Dynasty, located at the junction where the Suzhou Creek enters the Huangpu River. The Huangpu River is located only several kilometres away from the Yangtze River, the greatest inland water highway of China. In the year 751, Shanghai was incorporated into the Huating County and started to grow steadily to become a regional commercial centre thanks to its strategically important location. In the 12th century, during the Southern Song Dynasty, Shanghai continued growing and became a small market town due to its proximity to the capital city, Hangzhou. In 1553 (Ming Dynasty), city walls were built as a defence against the Japanese pirates, which created a concrete boundary for the city. The territory within the walls, demolished at the beginning of the 20th century, is presently known as Laochengxiang (Shanghai's old town). After the end of the Ming dynasty (1644), Shanghai became a major cotton and textile centre with a population of approximately 200,000 Inhabitants. By the 18th century (Qing dynasty), it had grown to become a regional commercial centre exporting cotton, silk, and fertilizers (Songjiang Planning Chi Compilation Committee, 2009). Figure 4.1 (1) illustrates the location and administrative boundary of pre-modern Shanghai. Generally speaking, the urban development of Shanghai during the pre-modern era was very compact and concentrated within the city's boundaries (Shi, 2005).

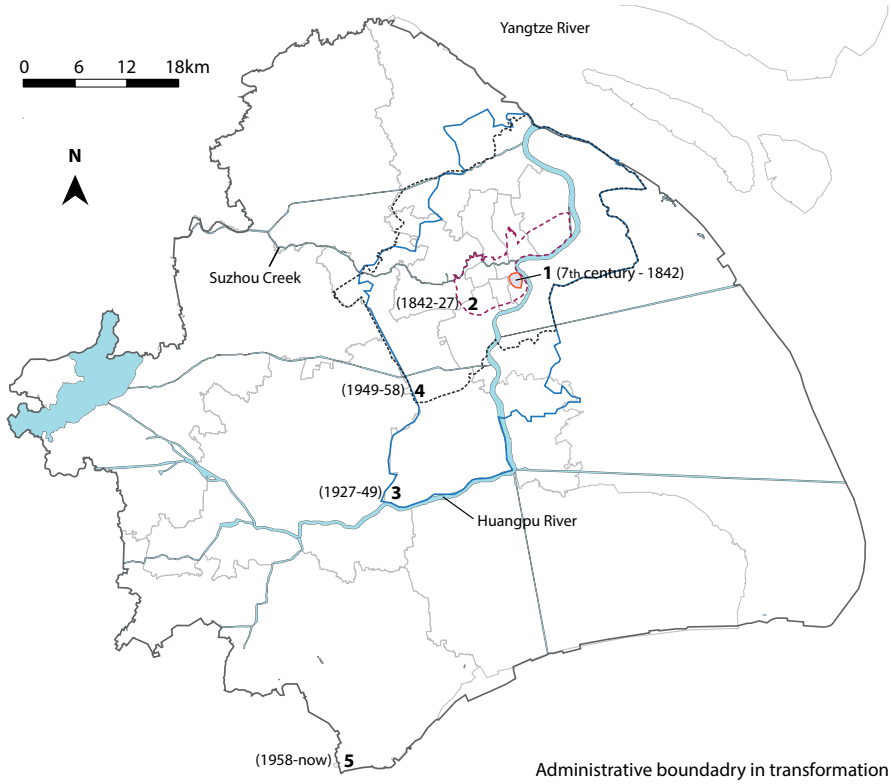


Figure 4.1
Changing administrative boundaries of
(Shanghai in the pre-modern period Urban Planning and Design Institute, 2007: 7).

§ 4.1.2 Shanghai in the modern era (1842-1949)

Shanghai entered into the modern era after the First Opium War (1839-42). The Nanjing Treaty (1842), imposed to China after the defeat In the Opium War, opened up Shanghai as a trading port to foreign countries. This treaty brought about tremendous changes in Shanghai. Among the most important were huge foreign investments, growing numbers of foreign residents, the development of modern industries, the construction of European-style buildings, and the establishment of Western concessions (Wu, 1999). Shanghai's administrative boundaries were also extended in 1842 according to the Nanjing Treaty terms, to get hold of more land for industrial development and export businesses Figure 4.1 (2) illustrates the location and administrative boundary of Shanghai during this period, in which Shanghai's economic development was driven by foreign investment.

From 1842 onwards, Shanghai's economy expanded hugely and the city became very cosmopolitan. Not long after, by 1853, it had already replaced Guangzhou as the premier trading centre of China. By the end of 1932, it had become the world's fifth largest city and the most prosperous commercial city in the Far East. Shanghai was known by many nicknames ('adventures' paradise', 'the oriental Paris', 'the sleepless city', the 'oriental pearl') due to its economic prosperity and its important position in international trade (Janklowicz-Mann and Mann, 2002). Its population increased from 540,000 in 1852 to 1.29 million in 1910; to 2.64 million in 1927; and to 5.4 million in 1949. At the beginning of the 20th century, foreign residents accounted for a sizeable proportion of its total population (around 70,000 in 1927) (Shanghai Civil Affairs Bureau（上海市民政局）, 2010).

Foreign colonists not only influenced economic development in Shanghai, but also profoundly influenced its urban development. The city was fundamentally separated into two distinctive parts, concessions and self-governed districts, which were respectively governed by foreign colonists and successive local governments. The concessions and the self-governed districts experienced uneven urban development. On the one hand, the British (1845), Americans (1848) and French (1849) established their own concessions and successively extended their concessions to the northwest part of Laochengxiang [see Figure 4.2]. These concessions together with Laochengxiang form the present-day historical city centre of Shanghai. In these foreign concessions, a large number of grand public buildings (e.g. the Neoclassical HSBC building, the Art Deco Sassoon house) were built along the Huangpu River in the early 20th century. There were also many luxurious Western-style villas built in the foreign concessions. They mostly accommodated better-off groups and Individuals, such as retired politicians and Western merchants. Due to its rich collection of European-style buildings in the former concession areas, Shanghai has become renowned as a world architectural heritage site of the modern era. The concessions usually enjoyed relatively good urban amenities, were independently governed by the foreign colonies and were rarely disturbed by the general unrest in China (Shanghai Local Chronicles Office, 1996).

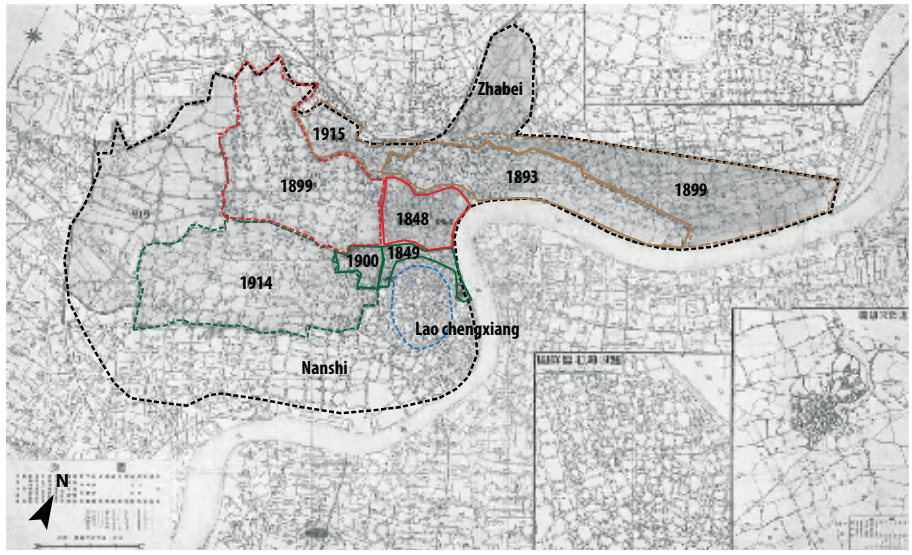


Figure 4.2
Foreign concessions and the self-governed districts in the modern era (Own elaboration based on Shanghai Urban Planning and Design Institute, 2007: 14).

On the other hand, the territory beyond the foreign concessions was still governed by the Chinese government. Its districts were usually known as self-governed districts. Due to the political instability during this period, urban development in the self-governed districts was chaotic. Between 1843 and 1911, the Qing Government maintained the management of self-governed districts. But insurgent groups (e.g. Small Swords Society and Taiping Rebels) disrupted the self-governed districts from time to time. Between 1911 and 1927, a series of warlords occupied the self-governed districts. None of them paid any attention to urban development. As a result, the self-governed districts were usually full of slums and informal factories until 1927 (Wu, 1999).

The Kuomintang (the Nationalist Party) took over Shanghai in 1927. It made great efforts to develop the self-governed districts. Many public facilities were constructed in the two old districts, Nanshi and Zhabei. However, they were too small to accommodate more economic activities and new developments. Consequently, the Kuomintang extended Shanghai's administrative boundaries beyond the concessional districts and Zhabei and Nanshi into a larger area (494km2) in order to get hold of more territory for new developments Figure 4.1 (3) illustrates the location and administrative boundary of Shanghai during this period.

The Kuomintang prepared the first generation of Shanghai master plans with the purpose of guiding future urban development. These plans, including the Greater Shanghai Plan 1931, the New Urban Development Plan 1937, and the Urban Plan for Greater Shanghai 1946, proposed the development of new urban areas in the new territories of Shanghai. However, this was not realised due to war conflicts from 1937 onwards, as World War II (1940-1945) and the Chinese Civil War (1945-1949). The first decade of the Kuomintang's government (1927-1937) is usually described as the 'golden decade' of the self-governed districts (Shanhai Local History Office, 1996). In short, the urban development of Shanghai in the modern era took place within limited boundaries, although the development of new urban areas had been proposed In the plans by the Kuomintang.

§ 4.2 Peri-urban development in Shanghai master plans

There were three generations of urban master plans in Shanghai before the Shanghai Master Plan 1999-2020: the Urban Plan for Greater Shanghai 1946, the Shanghai Master Plan 1959 and the Shanghai Comprehensive Master Plan 1986. These plans were made by different governments and under different circumstances. However, they shared a common idea for the city's future development, which was spatial restructuring by means of peri-urban developments. This section introduces these three urban master plans focusing on the peri-urban development of Shanghai.

§ 4.2.1 Urban Plan for Great Shanghai 1946

As was mentioned before, the Kuomintang conceived the first generation of Shanghai's urban plans: the Greater Shanghai Plan 1931, the New Urban Development Plan 1937 and the Urban Plan for Greater Shanghai 1946. All of them paid particular attention to the development of new urban areas. The former two plans were not implemented but the third one made a significant contribution to the peri-urban development of Shanghai.

After WWII, the Kuomintang prepared the Urban Plan for Greater Shanghai 1946 based on the Greater Shanghai Plan 1931 and the New Urban Development Plan 1937. In terms of its functional organisation, this plan was strongly influenced by Eliel Saarinen's 'theory of organic decentralization', while the road network design was inspired by the Greater London Plan 1944 (Shanghai Urban Planning and Design Institute, 2007). The plan focused on three main issues:

1 A regional perspective for urban development. The Urban Plan for Greater Shanghai 1946 proposed the cooperation between Shanghai (within the new boundaries established in 1927) and its surrounding areas (a territory of 6583 km2) [see Figure 4.3(A)]. The population in this region (Shanghai and the surrounding areas) was expected to reach 7.5 - 9 million by the end of the 1970s, and 15 million by 1996.

2 Development of new urban areas on the urban fringe. Many industrial sites and residential compounds were planned beyond the historic centre in order to accommodate more factories and residents coming from the old Zhabei and Nanshi districts [see Figure 4.3(B)]. The new urban areas were supposed to be able to balance the urban structure between foreign concessions and self-governed districts during that period.

3 Construction of urban infrastructure. In order to facilitate the development of the new urban areas, this plan also proposed to construct more roads and a railway in order to connect the new urban areas with the historic centre [see Figure 4.3(B)].

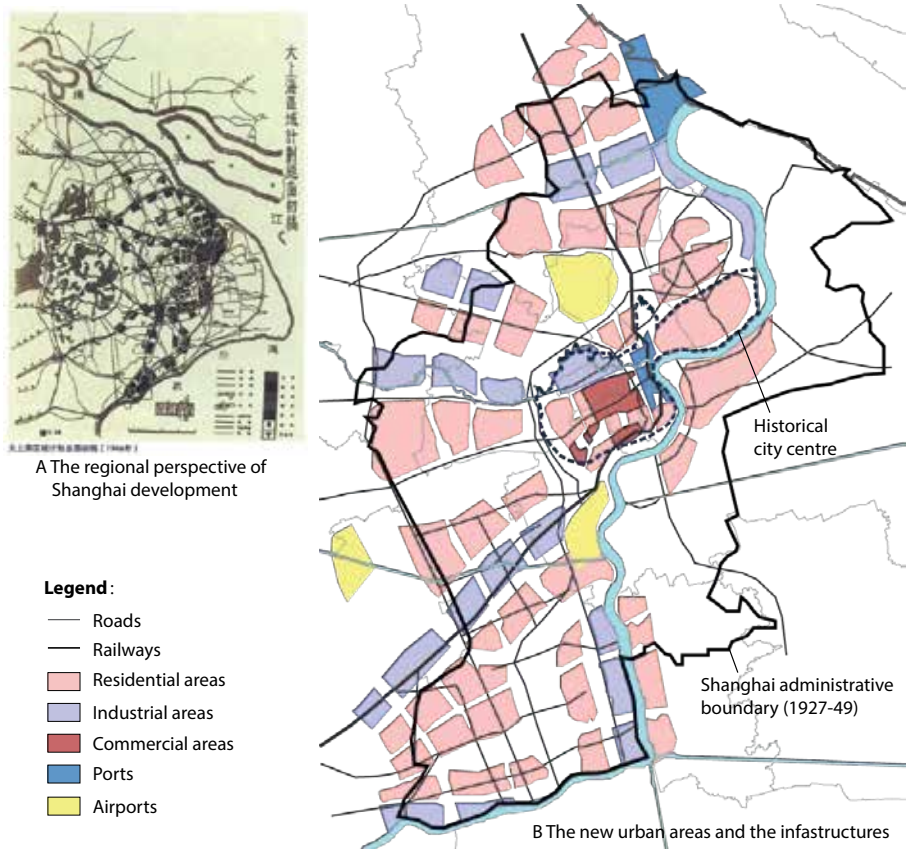


Figure 4.3
The regional perspective and the planned new urban areas in Urban Plan for Great Shanghai 1946 (own elaboration based on Shanghai Urban Planning and Design Institute, 2007: P. 40)

The Urban Plan for Greater Shanghai 1946 was not implemented immediately due to the Chinese Civil War between the Kuomintang and the Chines Communist Party (CCP) from 1945-1949. In 1949, the CCP took over Mainland China and established the People's Republic of China (PRC). During the first years of its government, the CCP had no time, financial or human resources to prepare a new urban master plan for Shanghai. In the following years, the Urban Plan for Greater Shanghai 1946 was consulted to guide the urban development of Shanghai (see Section 4.3 for an analysis of its implications for Shanghai's peri-urban development). This plan also substantially influenced the making of the subsequent urban plans in guiding and promoting peri-urban development in Shanghai (this will be explained at greater length in Section 4.2.2).

§ 4.2.2 Shanghai Master Plan 1959

The Shanghai Master Plan 1959, the second generation of Shanghai master plans, was made under the supervision of the CCP. This plan covered a broader territory than its previous editions because Shanghai's administrative boundaries were extended again from 590 km2 to 6340.5 km2 in 1958 [see Table 3.1 (5)]. The new territory, which used to be the countryside of the Jiangsu Province, was redefined as Shanghai's suburban districts. This plan was made under the Chinese socialist ideology which dominated the country for a decade, which aimed at preventing the city-driven deprivation of the countryside and avoiding a capitalist city-country relationship prioritising cities over the countryside (Zhou and Logan, 2004). Consequently, the Plan 1959 paid more attention to the development of the suburban districts, which used to be the countryside of Jiangsu Province.

More importantly, the whole country concentrated on industrial production during this period, in order to stimulate China's economy and to strengthen its military defence capability (State Council, 1952). Mao's speech, '*readjustment of the relationship between the mainland and coastal cities*' (1956), called for transforming Shanghai from a consumption city into a production city. Industrial development definitely became a main issue in the plan. The Plan 1959 focused on four main issues:

1 The development of peri-urban areas, re-emphasizing the development of the areas on the urban fringe previously proposed in the Urban Plan for Greater Shanghai 1946. On the other hand, it proposed to develop the first generation of satellite towns in remote suburbs. The new urban areas and satellite towns were planned to accommodate 2.8 - 3 million extra inhabitants, mainly coming from the city centre (Zhou and Logan, 2004).

2 Industrial development as a driving force to stimulate the development of the new urban areas and the first generation of satellite towns. Six industrial sites on the urban fringe and many state-owned enterprises (SOEs) in the five satellite towns were planned [see Figure 4.4].

3 Improvement of the living (housing) conditions. The renovation of old houses and shacks in the central city area and the construction of new housing projects close to the industrial sites either on the urban fringe or in the satellite towns were the two main strategies to improve living conditions. The famous '20,000 Households Programme' was proposed during this period.

4 Improvement of urban infrastructure, as a way to facilitate the development of suburban districts. The plan planned three ring roads surrounding the old city and twelve radial roads connecting suburban centres and the city centre [see Figure 4.4] (Shanghai Urban Planning and Design Institute, 2007).

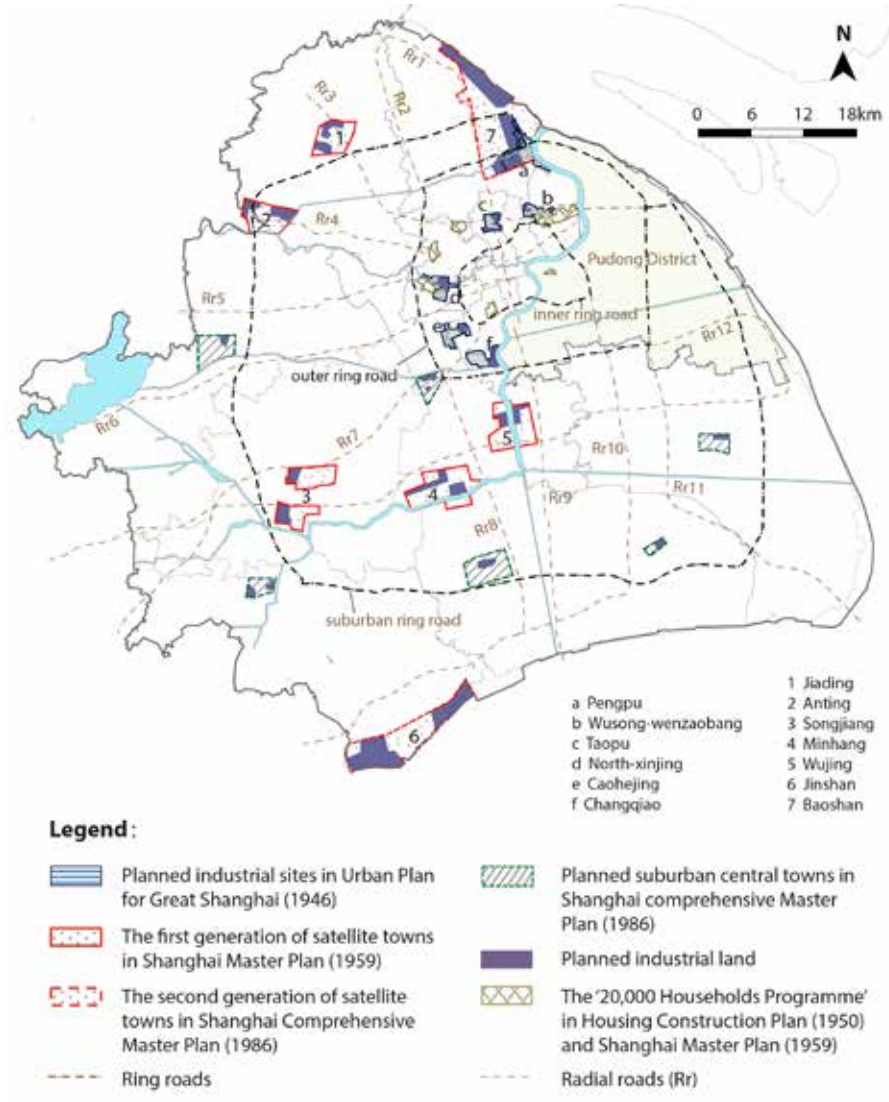


Figure 4.4
Planned industrial oriented development and housing development in the Shanghai Master Plan 1959 and the Shanghai Comprehensive Master Plan 1986.

Under the dominant socialist ideology and the planned economy, the Shanghai Master Plan 1959 played a substantial role in regulating peri-urban developments in Shanghai between 1959 and 1967. However, it was not used for long due to the Cultural Revolution (1967-76), which stopped China's urban development in various ways. After the Cultural Revolution, the Shanghai Master Plan 1959 was still in use. However, the Open Door Policy (1978) and a series of reforms significantly changed Chinese society. In such new circumstances, the Shanghai Master Plan 1959 played a limited role influencing urban development.

§ 4.2.3 Shanghai Comprehensive Master Plan 1986

The Shanghai Comprehensive Master Plan 1986, the third generation of Shanghai master plans, was prepared during China's reform era (1978-99). A series of economic and institutional reforms changed Chinese society significantly during this period. The Open Door Policy (1978) introduced market mechanisms. The Household Contract Responsibility System (1979) liberated farmers from the old people's communes. Farmers became able to freely sell their agricultural products rather than handing them over all to the state. The establishment of the land leasing system (1979) differentiated land values and profoundly influenced urban development. For instance, urban regeneration became easier because of the higher land prices in the central city area. The reform of the Hukou system (1982) resulted in rapid urbanisation and nationwide population transfers. However, the country was still under the influence of the socialist ideology. National policies during this period still tried to develop the country in a balanced manner. Policies aiming to restrict the development of big cities, to rationally limit the development of medium-sized cities, and to encourage the development of small cities dominated the economic and urban development of China during the 1980s. Shanghai, as one of the largest coastal cities in China, undoubtedly lost its important position during this period (Zhang, 2007).

Under these changing circumstances, the Shanghai Municipal Government made the Shanghai Comprehensive Master Plan 1986. This plan was quite different from the previous two editions: the Urban Plan for Greater Shanghai 1946 and the Shanghai Master Plan 1959. It was, however, approved by the central government and used as a statutory plan. It was also China's first comprehensive master plan, which considered not only intensive uses of urban land and spatial deployment but also social and economic goals (Zhou and Logan, 2004). The Plan 1986 played a dominant role in guiding the peri-urban development of Shanghai, increasingly influenced by market forces. Unlike the previous two editions that focused on peri-urban development, this plan shifted its focus into the urban regeneration of the city centre. Nevertheless, it still addressed peri-urban development from three perspectives:

1 To redevelop the existing satellite towns and to build a second generation of satellite towns, Jinshan and Baoshan [see Figure 4.4]. Together, they played a role as main 'containers' for further industrial restructuring (relocation of factories to suburban industrial sites).
2 To establish a four-level urban structure: the central city area – satellite towns – suburban central towns – farms [see Figure 4.4]. The suburban central towns were mostly based in the former industrial sites in remote suburbs.
3 To promote the development of Pudong District in order to stimulate Shanghai's economic development and re-centre urban development from the west side to the east side of Huangpu River [see Figure 4.4].

Summarizing, the three master plans paid attention to peri-urban developments in Shanghai although they had different strategies and priorities. The Urban Plan for Greater Shanghai 1946 was the first plan proposing the development of new urban areas at the urban fringe. However, its ideas and strategies were still very abstract. Due to its singular political background, the Shanghai Master Plan 1959 concentrated on peri-urban development. It not only promoted peri-urban development, but also considered its spatial qualities and the overall spatial structure of peripheral Shanghai. The Shanghai Comprehensive Master Plan 1986 initiated some innovative projects for the peri-urban development although its main focus was urban regeneration of the central city area. The three editions of Shanghai master plans proposed several spatial strategies for peri-urban development:

1 Development of new urban areas on the urban fringe and satellite towns in the remote suburbs (1946, 1959, 1986);
2 Infrastructure development, including the construction of roads and railways (1946, 1959);
3 Industrial-led development, closely related to the development of new urban areas and satellite towns (1959);
4 Improvement of housing conditions (1959);
5 Development of the Pudong District (1986);
6 Establishment of a four-level urban structure (1986).

§ 4.3 Actual peri-urban development in Shanghai (1949-99)

This section elaborates on the actual peri-urban development in Shanghai between 1949 and 1999 according to the main spatial strategies proposed by the plans described in the previous section. Peri-urban development was proposed in the Urban Plan for Greater Shanghai 1946, but actual peri-urban development started only in 1949 due to the 1945 - 1949 civil war. During the following half-century, peri-urban development was strongly shaped by urban plans because the Chinese society lived under a centrally planned economy.

Shanghai's population and urban development increased steadily between 1949 and 1999. The development pace was even quicker during the 2000s [see Figure 4.5]. Shanghai's population in 2000 (16.08 million inhabitants) increased more than threefold the 1949 population (5.02 million). Within the context of steady population growth, the extension of Shanghai's administrative boundaries in 1958 contributed the most to this increase: from 7.5 million to 10.28 million Inhabitants. During the Cultural Revolution period (1967-1976), the population growth rate stood still. In the post-war period (1949-1958) and the reform period (1978-1999), the population growth rates became stable (Shanghai Statistical Bureau, 2011).

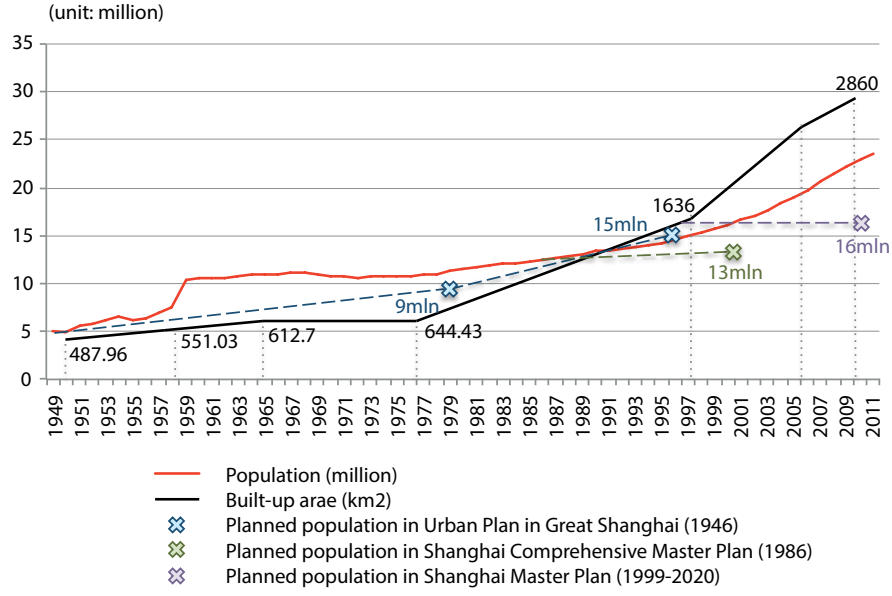


Figure 4.5
The changes in terms of population and built-up environment in Shanghai
(Shanghai Statistical Bureau, 2000).

Between 1949 and 1999, Shanghai's population grew in accordance with the predictions of the corresponding plans. The projections of the Urban Plan for Greater Shanghai 1946, which expected 9 million and 15 million residents respectively at the end of the 1970s and in 1996, were met. The city's population in 2000 reached 16.08 million inhabitants, only 3.08 million more than what was proposed in the Shanghai Comprehensive Master Plan 1986 [see Figure 4.5]. In contrast, the rapid population growth rate during the 2000s significantly exceeded the amount anticipated in the Shanghai Master Plan 1999-2020, which projected a stable population and no growth at all (Shanghai Municipal Government, 1999, Shanghai Municipal Government, 1986).

Urban land development in Shanghai also increased steadily between 1949 and 1999. The built-up area of the city increased by almost 400% from 1950 (487.96 km2) to 1998 (1681.35 km2). Under the planned economy (1949-76), the built-up area increased slightly. The extension of Shanghai's administrative boundaries in 1958 was not translated in a significant extension of the built-up area, which meant most of the newly annexed territory, was agricultural land. During the Cultural Revolution (1967-76), only 31 km2 of land was developed for urban uses (Walcott and Pannell, 2006). Population grew slightly faster than new urban land developments, and the city maintained a compact urban structure as in the pre-modern and modern eras [see Figure 4.5]. On the other hand, the slow rates of population growth and urban land developments between 1949 and 1999 contributed to a high level of conformity between actual urban developments and corresponding plans. Figure 4.6(1) shows that land development until 1984 conformed to what was proposed in the Shanghai Master Plan 1959. Several planned developments in remote suburbs were not even realised due to the slow pace of population growth.

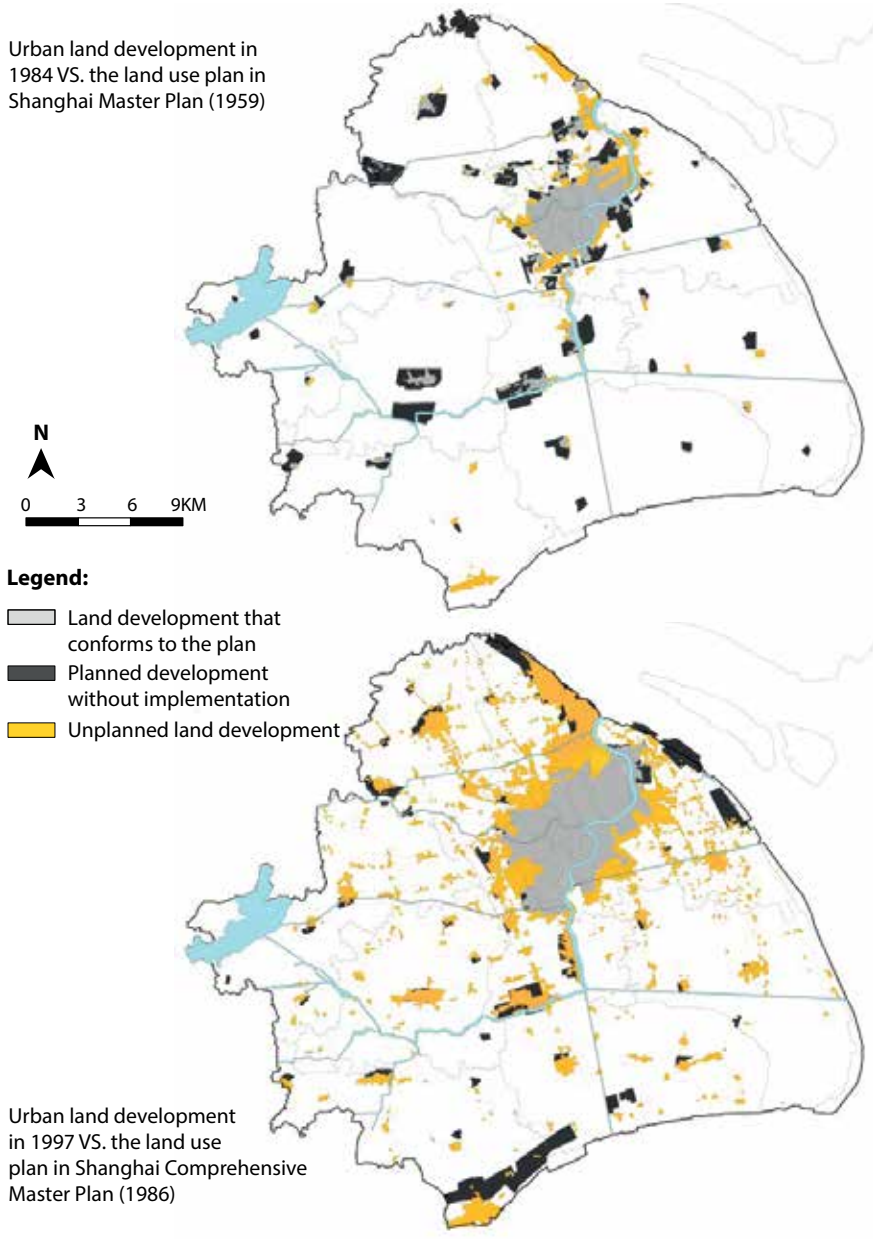


Figure 4.6

Changing relationships between plans and actual urban development from the post-war era to the reform era (based on Shanghai Master Plan 1959, Shanghai Comprehensive Master Plan 1986, and Shanghai Master Plan 1999-2020).

In the reform period (1977-2000), urban land was developed much faster than before [see Figure 4.5]. Around 1000 km2 of land was developed during this 23-year period. The city expanded to a certain extent [see Figure 4.6 (2)]. A large amount of farmland in the periphery was converted to urban uses. Unlike the previous period, urban land developments grew much faster than population during this period. Consequently, an extensive way of urban development gradually replaced the traditional compact way (Hsing, 2010). The rapid urban land development in the reform period basically followed what the Shanghai Comprehensive Master Plan 1986 had proposed. More unplanned built-up areas appeared on the fringe of the central urban area, but few comparing to what the situation would be in the 2000s [see Figure 4.6 (2)]. In general, the level of conformance between plans and actual urban development decreased slightly from the era of the planned economy to the reform era. However, greater conformance does not necessarily mean a better implementation of urban master plans during the planned economy era. The implications of such phenomenon on planning practices will be explained in Section 5.3.2.

§ 4.3.1 Industrial-led development of new urban areas and satellite towns

Shanghai changed its role from an international commercial centre into an industrial centre in China within only two decades following 1949. It became China's biggest industrial city in the 1970s, and the single largest contributor of the country's revenues, providing about 25% of it on average. It delivered more than one third of the national industrial output. Such speedy transformation was closely related to the industrially driven development of Shanghai's peri-urban areas. In the 1950s, six industrial sites (e.g. Pengpu, Changqiao, etc.) were built on the urban fringe [see Figure 4.5], which gradually evolved from mono-functional plants into independent multi-functional areas like the work-unit compounds in the central city area. The accessibility of these industrial compounds, as well as their spatial organization, was also significantly improved. Such industrially driven developments in the periphery met the spatial strategy proposed in the Urban Plan in Greater Shanghai (1946) to develop new urban areas to facilitate the industrialisation of Shanghai.

In 1958, Shanghai extended its administrative boundaries by integrating ten surrounding counties from Jiangsu province [see Figure 4.1 (AB-5)] (Shi, 2005). These newly annexed counties, five times larger than Shanghai's original territory, were classified as suburban counties. Five satellite towns in such suburban counties, including Songjiang, Anting, Minghang, Nanhui and Wujing, were established soon as the first generation of satellite towns. All these satellite towns had their own pillar industries. Songjiang and Jiading had a long history as local centres. Afterwards, Jinshan with its petrochemical industries and Baoshan with China's biggest steel

producer, the Baogang Iron and Steel Corporation, were established as the second generation of satellite towns respectively in 1972 and 1983. Their strategic locations (Jinshan at the southern end of Shanghai, Baoshan at the northern end) shaped the south-to-north development axis according to the proposals of the Shanghai Comprehensive Master Plan 1986. In general, the development of satellite towns was in line with what was proposed in the Shanghai Master Plan 1959 [see Figure 4.5].

The first and the second generation of satellite towns developed successfully according to the Shanghai Master Plan 1959 during the 1950s and the 1960s. However, they were in a decayed state by the 1980s. Their total population decreased from 5.54 million to 5.13 million between 1982 and 1990 (Shanghai Statistical Bureau, 2011). The population in the central urban area, on the contrary, increased by 1.9 million during the 1980s (from 6.31 million in 1982 to 8.21 million in 1990) (Shanghai Local Chronicles Office, 2008). Population losses in these satellite towns in the 1980s represented a long-term failure in the development of satellite towns, which slowed down peripheral development during the 1980s. This failure pointed out major limitations in the implementation of urban master plans during the planned economy era. Huang (2010) has advanced two main reasons for this failure. First, satellite towns were built within a very short period and consumed too many state funds. Little else was left for maintenance. Second, these satellite towns relied too much on industrial development; while living conditions and infrastructure were neglected.

In the 1990s, peri-urban development in Shanghai regained the public's attention. After the introduction of radical land policy reforms at the end of the 1980s (see Chapter 5), peri-urban areas became very popular due to their relatively cheap land prices. Township and village enterprises (TVEs) started to play a key role in shaping peri-urban development. They transformed significant extensions of rural land into small-scale development zones in order to attract more investment and to increase local revenue. Peri-urban development led by the TVEs accelerated the process of rural industrialisation, but it also resulted in a decentralised pattern of spatial development in the suburbs (Hsing, 2010). Such a spontaneous mode of peri-urban development did not conform to the objectives of the Shanghai Comprehensive Master Plan 1986. It further indicated contradictory objectives between different levels of government. For instance, local governments at district and township levels were more concerned with economic prosperity and local development, while the municipal government had a vision for the whole city.

There were also many so-called hi-tech clusters established in the early 1990s on the fringe of the central city area (e.g. Caohejing and Zhangjiang). They were originally planned as mono-functional compounds. But many unplanned housing projects and infrastructures gradually developed in surrounding areas due to increasing population demand. Such changes in urban functions, although they showed nonconformity, contributed to the long-term development of those hi-tech clusters (Interview Chen, 2014).

Summarizing, peri-urban development in the second half of the 20th century (either new urban areas, satellite towns or rural development zones) was mainly driven by industrial development. The industrially driven developments proposed in the Shanghai Master Plan 1959 and the Urban Plan for Greater Shanghai 1946 were usually accomplished within a short period. However, such rapid successes did not necessarily reflect a better implementation of master plans, as the long-term failure of the first generation of satellite towns suggests; it only revealed the strong role of the state in allocating resources and commanding every aspect of urban development.

§ 4.3.2 The dragon head: Pudong District

In the first few decades (1950s-1970s) under the government of the CCP, Shanghai lost its role as an international commercial centre because its connections to the outside world were cut off. However, it continued having a dominant role in China, as the biggest industrial centre. In the 1980s, Shanghai's economic development stagnated and its privileged status in the national economy declined rapidly (the percentage of GDP declined from 7.48% in 1978 to 4.19% in 1990). The Open Door Policy (1979) and a series of economic reforms implemented during the 1980s introduced market mechanisms and fundamentally changed China's economy. However, Shanghai did not benefit from the initial economic reforms. Instead, the creation of four new special economic zones (SEZs) (three in Guangdong Province and one in Fujian Province) threatened its role as the national industrial centre. These SEZs enjoyed highly preferential policies, which attracted a tremendous amount of foreign development investments (FDI), and catalysed an economic boom.

After a decade of stagnation, Shanghai regained its national dominant role in the 1990s, due to its links to political power at national level, traditionally a crucial factor influencing urban development in China. The 'Shanghai clique' came into power within the PRC central government in 1989. In the next year, the government announced the goal of restoring Shanghai's leading role in China, to reboot its economic prosperity and to restructure its urban development (Walcott and Pannell, 2006). A series of strategies were adopted (e.g. reducing the tax burden, encouraging both foreign and domestic investments), from which the establishment of another SEZ in Shanghai became the most important one.

Due to its vast amounts of unused land and proximity to the central city area, the Pudong District was appointed as the new SEZ in 1992. The state positioned the Pudong District as a 'dragon head' that would enable China to open up further, and to stimulate a regional economic boom along the Yangtze River Delta (State Council, 1992). The state invested 22 billion RMB (around 2.5 billion Euro) to develop infrastructures and industries in the Pudong District between 1990 and 1995. A

large number of plans and preferential policies were drafted to support the future development of Pudong (Marton and Wu, 2006).

The Planning Outline of Pudong New Area 1989, prepared by the Shanghai Urban Planning Bureau (上海市规划局 Shanaghaishi guihuajü), made different proposals for the future urban structure of the Pudong District. Figure 4.7 shows four of them and the final vision. The first one [Figure 4.7 (1)] emphasises the connection of Pudong International Airport in the east edge of Pudong District and Hongqiao Airport. The second proposal (2) proposes three development poles of similar importance: Wai Gaoqiao, Zhoupu and Chuansha. The third one (3) focuses on a development axis: Guoning Tunnel, where all future development would be concentrated. The fourth (4) does not promote vast development, but only a small piece of land (Huamu) in Pudong District. In the end, the proposals 1 and 4 were integrated into a comprehensive one (5). The connection between Pudong International Airport and Hongqiao Airport, which also includes Huamu local centre, was kept. The outer ring road was defined as an interface to control the future development.

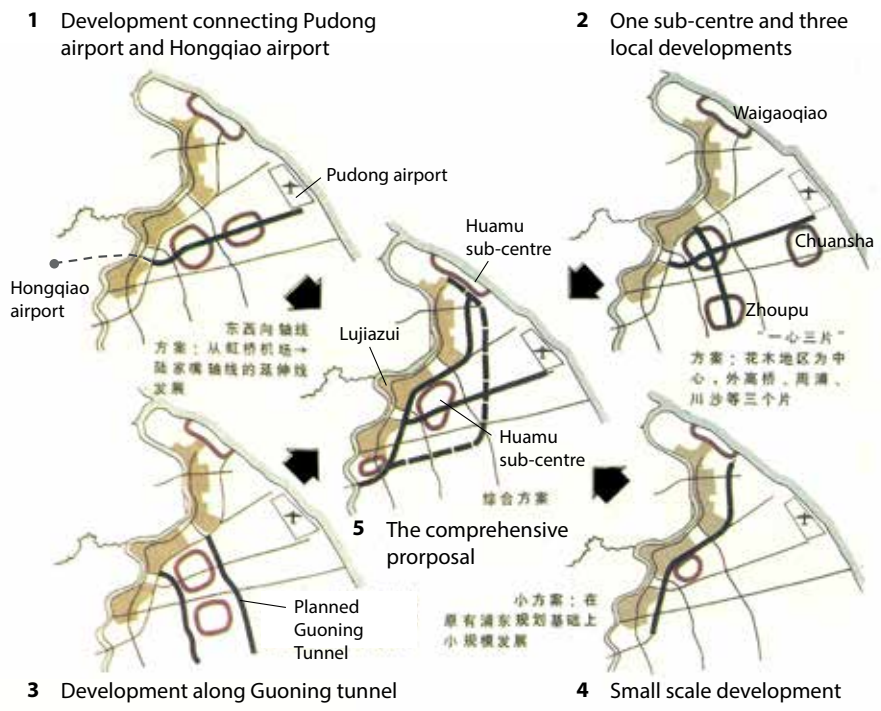


Figure 4.7
Comparison of the potential urban structure in Pudong District (Shanghai Urban Planning and Design Institute, 2007: 102)

Pudong District, which literally means the 'east bank of the Huangpu River', used to be an unpopular area. The old saying "prefer a bed in Puxi to a house in Pudong" vividly describes its undesirable status in Shanghai. Harbour activities and warehouses were the main industries before 1949. Low-tech and heavily polluting industries such as textiles, steel, chemicals and building materials were added after the establishment of PRC. By the year of 1990, the Pudong District contributed only 8% of Shanghai's GDP with 30% of Shanghai's territory (Chen, 2007). Furthermore, the Pudong District was only linked to the central city area through ferries. The weak accessibility between Pudong and the central city area also deterred its development.

In the 1990s, the Pudong District experienced a swift and huge transformation in terms of its economic development and urban development [see Figure 4.8]. In 1999, its GDP reached 80 billion RMB (10 billion Euro), which was 1/5 of Shanghai's GDP (403.5 billion RMB). Its population increased from 0.93 million to 1.68 million, which contributed to 1/4 of the total population growth in Shanghai (from 13.34 million to 16.41 million). Those new inhabitants were mainly from other provinces and the central city area (Shanghai Local Chronicles Office, 2008). Urban development in the Pudong District expanded from 44 km2 (1990) to 100 km2 (2001) (Shanghai Statistical Bureau, 2012).

Figure 4.8
Lujiazui CBD in 1990 and 2010
(source: http://www.123rf.com/photo_8725147_pudong-district-of-shanghai-china-august-5-2010--skyline-of-shanghai-with-oriental-pearl-tv-tower.html, and http://www.skyscrapercity.com/showthread.php?t=1097151).

New and advanced functions moved into the Pudong District (financial institutions, high-tech parks and large housing projects), while Lujiazui, which used to be an undeveloped territory, became the new commercial and financial centre of Shanghai. Many sub-centres with leading industries and specific spatial features were also formed, such as the Jinqiao export-processing zone, the Waigaoqiao free trade zone, Zhangjiang high-tech park (with bio-technology, pharmaceuticals and other high-tech industries), the Huamu sub-centre (with ecological and administrative functions), and the Sanlin affordable housing basin. Furthermore, infrastructures were significantly improved. Pudong International Airport opened in 1999. A denser road network was built. Four main bridges and two tunnels connecting Pudong and Puxi were constructed (Wu, 2002b).

With such extraordinary transformation, Pudong lost its peripheral condition and became the most valuable land area in Shanghai. Until 2000, the urban structure of the Pudong District corresponded to previous plans with a high level of conformity. Its development was still driven by central government policies and investments. The development of the Pudong District was also a catalyst for a revival of Shanghai's prosperity. Its GDP in 1999 was 15.5 times of that in 1978. It handled almost a quarter of total Chinese trade within an area that was only 0.1% of the country's total land area.

§ 4.3.3 Housing development

Housing developments also played an essential role in the process of peri-urban development in Shanghai. Figure 4.9 shows that the living conditions in Shanghai improved significantly. Massive housing projects were built in the second half of the 20th century. The per capita living space climbed from 3.4 m^2 in 1952 to 10.2 m^2 in 2000 and finally reached 16.9 m2 in 2010. Meanwhile, Shanghai's population increased dramatically from 5.73 million inhabitants in 1952 to 16.08 million in 2000 and to 23.02 million in 2010. The total average of a living space in 2000 was 12 times greater of that in 1952. Most of the new housing construction during this period occurred in the peri-urban areas in Shanghai (Chiu, 2008).

Figure 4.9
Per capita living space in Shanghai (unit: m2) (Source: Shanghai Statistical Bureau, 2012).

According to the availability of construction funds and distribution mechanisms, housing developments in Shanghai and peri-urban areas could be divided into three stages. The first stage was from the 1950s to the 1970s, when the state directly subsidised housing construction. The second was between the 1980s and the 1990s, when housing construction was taken over by SOEs. The third stage was after the 2000s when private developers dominated housing development. This section mainly introduces housing development in the periphery of Shanghai in the former two stages, which were part of the national welfare system.

From the 1950s to the 1970s, housing construction was subsidised directly by the central state. Municipal governments only took charge of managing, distributing, planning, and designing these housing projects (Lü, 2001). Quantity was the main concern during this period due to a severe housing shortage in the 1950s. Consequently, a great amount of new residences (20.08 million m2) were built between 1953 and 1979, and most of them located in peri-urban areas (Lü, 2000).

Housing development in peripheral Shanghai was concentrated in the period between 1953 and 1963, the first and the second five-year plan periods. Between 1953 and 1958 (the first five-year plan period), nine workers' villages were built near the existing industries on the edge of the city centre. They accommodated 21,830 households accounting for 127.83 ha. of territory and 600,400 m2 of floor area. Each living unit was quite small, around 30m2, but due to the favourable village locations, residents were able to make full use of existing urban infrastructures.

Between 1958 and 1963, the second five-year plan period, a huge number of workers' villages were built close to the suburban industries. Some were built-in satellite towns. From 1963 to 1967, the focus of housing development shifted from the peri-urban areas to the central city area. The regeneration of shacks in the city centre became the main task of housing development. Between 1967 and 1976 (the Cultural Revolution period), Shanghai experienced a ten-year period of stagnation in terms of urban development and housing development. New housing construction only accounted for 5.89 million m2, which was quite small compared to the city's total area at that time (Shanghai Local Chronicles Office, 1996).

The objectives of housing construction near suburban industries in the Urban Plan for Greater Shanghai 1946 and Shanghai Master Plan 1959 were translated respectively into two housing plans: Housing Construction Plan 1950 and Programme of New Housing Projects in the Industrial Areas and Satellite Towns 1958. The massive housing developments in peri-urban areas during the first and second five-year plan periods followed these two plans. The new residences, which were able to accommodate 21,830 households in the first five-year plan period, were in line with the Housing Construction Plan 1950. This plan proposed a pilot programme, the '20,000 Households Programme', which intended to build the welfare houses for

20,000 households during the first five-year plan period [see Figure 4.4]. The new housing projects in satellite towns during the second five-year plan period were built according to the Programme of New Housing Projects in the Industrial Areas and Satellite Towns 1958. This plan intended to facilitate suburban industrial development through new housing construction. These two housing plans contributed to a significant improvement of living conditions in the peri-urban areas and the whole city.

In the late 1970s, the central government felt overburdened by directly managing and funding housing construction because of severe fiscal deficits and a limited budget. The Open Door Policy and the institutional reforms of the 1980s started a new era for the urban development of Shanghai. The central government delegated its authority over housing construction to state-owned enterprises (SOEs). Subsidies for housing construction were distributed to SOEs together with overall investments for industrial development. SOEs took over the responsibility of building houses for their employees as well as infrastructure, public facilities and services in combination with the construction of factories (Zhou and Logan, 1996).

Between 1980 and 1995, a total of 83.54 million m2 of new residences were built. Housing construction during this period was located adjacent to the industries. The new residential compounds together with industrial sites, internal infrastructure and public facilities gradually evolved into self-supporting compounds. These self-supporting compounds, known as Danwei compounds (work-unit compounds), became the primary spatial organisation model and the basic unit of spatial structure for suburban industrial sites and satellite towns in the 1980s and the 1990s. Danwei-based spatial structures were considered a cellular work-unit structure that was inherited from the Soviet Union. By the end of the 1990s, 157 Danwei compounds had been built according to what was planned in the 1980s (Lü, 2001).

§ 4.3.4 Development of urban infrastructure

The development of urban infrastructure, especially public transportation systems, has attracted greater attention from Shanghai master plans in the past few decades. The Urban Plan in Great Shanghai (1946) proposed public transportation improvements to facilitate the development of new urban areas, but its proposals were very abstract. The Shanghai Master Plan 1959 made clearer proposals for the development of urban infrastructure. It proposed three ring roads surrounding the old city and twelve radial roads connecting the suburban centres with the city centre so as to accelerate peripheral development. The Shanghai Comprehensive Master Plan 1986 paid more attention to urban regeneration in the central city area. The major urban regeneration strategies included the development of public transportation networks (e.g. the construction of railways, road networks, and metro

lines), which was also able to improve the accessibility of the peri-urban areas (Shanghai Municipal Government, 1986).

During the planned economy era, urban infrastructures were only minimally improved. Industrial development and housing construction attracted most attention. Little attention and limited investments were left over for the maintenance and improvement of urban infrastructure and other urban amenities (Wu, 1999). For example, the first tunnel linking the city centre and Pudong district that was proposed by Shanghai Master Plan 1959 was not constructed until 1970. The radial roads connecting the city centre and the suburbs proposed in 1959 were not constructed until 1990 (Shanghai Municipal Government, 1999). Infrastructural development evidently influenced industrial restructuring, housing development, the efficiency of some strategic projects, and the overall urban structure. For instance, the decay of the first generation of satellite towns in the 1980s was partly because of difficult transport connections to the city centre. Further, the Baogang iron and steel factory did not have sufficient infrastructures to send iron ore and coals to outside locations, which deterred its development for a long period.

In the period when the work-unit structure was formed, the necessary amenities and infrastructure were put up within the Danwei compounds. These formed a small society with a full range of facilities, such as own electricity sources, hospitals, buses, schools, gyms, etc. On the contrary, infrastructure development outside the work-units lagged behind.

From the late 1980s onwards, Shanghai gradually changed its role from a heavy industrial city to a regional/national centre accommodating various social and economic activities (Zhou, 2007). The municipal government, now possessing greater powers over urban development and more revenue generated through land leasing, paid more attention to the development of large infrastructure projects in order to improve the city's competitiveness. The investments in infrastructure grew from 3.6 billion in 1990 to 37.8 billion in 1996. In the same period, the ratio of infrastructure investments to GDP increased from 5.2% to 13.0% (Wu, 2002b). In consequence, the urban infrastructure improved significantly during this period in both the central city area and the peri-urban areas. Expressways including the nine radial roads and two ring roads, which were proposed in Shanghai Master Plan 1959, were finally built at the end of the 1980s. Pudong airport, a major Asian aviation hub and Shanghai's gateway, was constructed since 1997 and started operations in 1999. The metro system became operational in 1995. Overall, the development of urban infrastructure in Shanghai, especially in the locations between the Danwei compounds, was significantly improved. All these infrastructure developments fulfilled the previous plans with high levels of conformity.

§ 4.4 Summary

In this chapter, the spatial evolution of peripheral Shanghai in the second half of the 20th century was reviewed in relation to various editions of urban master plans until 1999. Peri-urban areas in Shanghai have been playing an increasingly important role in Shanghai's urban development, and transformed from deprived rural territories into a vanguard location that attracted major investments and urban activities. Their population and built-up area have increased dramatically. Satellite towns, a new CBD and local development poles have shaped their urban structure. At the same time, the urban master plans have helped to improve the spatial conditions of the periphery in terms of urban infrastructure and per-capita living space.

The three urban master plans described in the previous sections strongly guided the peri-urban development of Shanghai under their specific socio-political contexts. Gradually, the level of conformity between the plans and the actual peri-urban development has decreased. Under the centrally planned economy, industrial development, population transfers and the development of facilities within the Danwei compound complied very well to the plans. But despite the high level of conformity, the plan implementation process during this era had limitations in terms of attention to living conditions. The first generation of satellite towns that were rapidly built was decaying by the 1980s. The development of infrastructure beyond the Danwei compounds was not a priority in the implementation of the plans. The strong capacity of public authorities in allocating resources and commanding every aspect of urban development under the centrally-planned economy, led to a high level of conformity between plans and the actual development of peri-urban areas.

In the late 1990s, urban development in Shanghai gradually moved beyond the Danwei compound model. Increasing importance of economic globalisation, rapid urbanisation, and market orientation, has led to a more frequent mismatch between the plans and the spatial outcomes (Wu, 2006, Wu, 2007). Infrastructure developments between the Danwei compounds, on the contrary, improved significantly according to the corresponding plans. Having 'control' over spatial developments in the peri-urban areas became increasingly difficult during these first years of the open market economic context.

The evolution of Shanghai's plans and corresponding implementation becomes useful to pose some questions about plan implementation. Does the decreasing level of conformity represent a total 'failure' of plan implementation, namely the ineffectiveness of development controls? Does it reveal other roles of planning that have not been met in urban development processes, such as consensus building or adapting to external challenges? How important is the level of conformity? How can we fulfil the role of planning in guiding future developments, and adapting to changes?

These are important questions that have been previously raised but not yet answered. The following chapter will link the change in levels of conformance to the transitional planning system as well as the changing urban development processes in China.

5 Understanding the planning system in Shanghai

As mentioned in Chapter 2, the evaluation of planning implementation is not only about measuring the mismatch between plans and reality, but also exploring how the plans have been applied in land development processes (Ma, 2002a, Wu et al., 2006). Land development processes are closely related to planning systems; especially the way the planning system is operated in response to external factors (e.g. market mechanisms, economic globalisation, rapid urbanisation) as discussed in Chapter 4. This chapter discusses the planning system in Shanghai, its transformation and current features, in order to better understand the present situation of the planning implementation process. The overview of Shanghai's planning system's transformation also helps explain the decreasing level of conformance between the urban master plans and actual peri-urban developments in Shanghai during the second half of the 20th century. Chapter 2 presented the evolution of planning ideas in the West, in which the emphasis on rational technocratic processes was evident from the 1960s onwards. This emphasis is still predominant in China.

The planning environment in Shanghai has experienced dramatic changes in the past few decades. These include changes in the urban governance system in China and the administrative organisation in Shanghai (explained in Section 5.1). The second change is the introduction of market forces through two important reforms of China's urban development process (explained in Section 5.2). These changes from external and internal origin have shaped the features of Shanghai's present urban planning system, described in Section 5.3 from three perspectives: 1) the multi-tier system of urban plans, 2) the actors involved in the urban development process and 3) the development control and the most frequently planning instruments used in land development processes.

§ 5.1 Urban governance in transition

The political-economic context in which the Chinese urban planning system operates has been transformed from a centrally planned economy to a market economy. In these transitional circumstances, the continuing decentralisation of urban governance is particularly relevant to urban planning (Zhang, 2007). This section examines the decentralisation of urban governance from two perspectives: the changes of power relations at the national level and the changes in Shanghai's administrative organisation structure.

§ 5.1.1 Changes of power relations at the national level

Urban governance in China has experienced a big transition from a focus on sectoral dominance to localisation in the past three decades. During the planned economy era (1949-1978), the state overwhelmingly controlled the whole process of industrial and economic development, including production, distribution, exchange and consumption. Urban development, also a top-down affair, was considered a by-product of industrial and economic development, necessary to support both sectors. As illustrated in the vertical lines of Figure 5.1, the state council granted urban land and funds to the different ministries and commissions in the central government. Each ministry distributed the funds and urban land to the provincial and municipal commissions, sectoral departments and local bureaus within local governments; and sometimes directly to large state owned enterprises (SOEs) (Ma, 2002b). This type of urban management was a typical model of sectoral dominance.

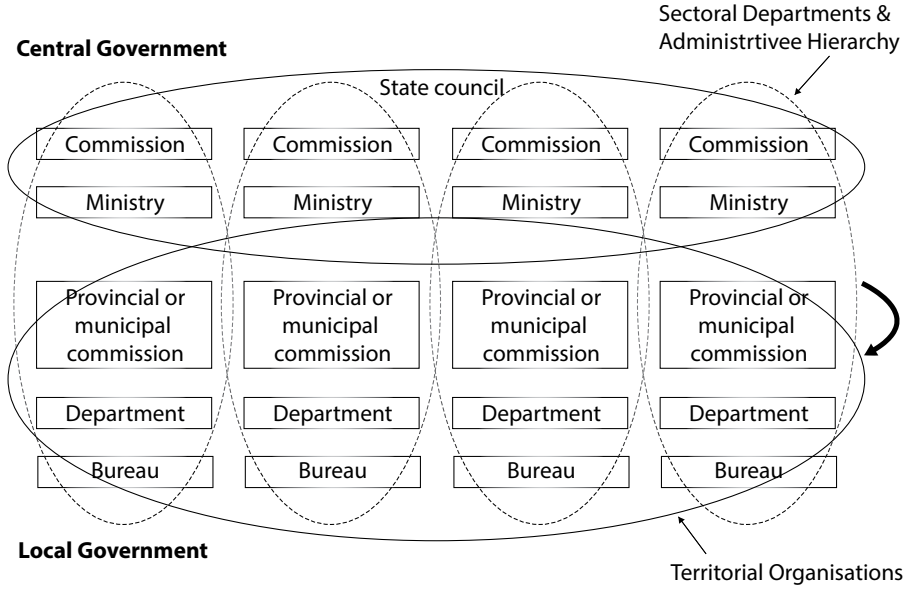


Figure 5.1
The changing urban development approach from sector dominance to localisation (Yeh and Wu, 1999: 216)

Under the sectoral administrative system, local bureaus and SOEs usually had a dominant role in urban development and management. Factories constructed by the SOEs and gated communities built by local bureaus gradually formed self-contained Danwei compounds and became the basic units of the city. These were usually well provided for with infrastructures and housing, while local governments played a marginal role in their urban development (Wang et al., 2005). Their main tasks were to support the industrial projects and to prepare comprehensive urban plans, which in reality were not going to be used.

Such sectoral dominance over urban management showed some clear deficiencies. First, resources were not always equally distributed. Powerful SOEs and local bureaus obtained much more land and funds than they actually needed, which eventually resulted in underutilised land. On the other hand, disadvantaged SOEs and local bureaus were not able to get enough land and funds to build houses for their employees. As a result, resource management (urban land and funds) performed ineffectively under the centrally planned system. Second, urban infrastructure and amenities between different Danwei compounds were not always built in accordance with urban plans, as suggested in the previous chapter. Local governments were responsible for urban infrastructure, but they were not granted enough funds by the state. As the central government stated in its report to the central Chinese Communist Party, '*...factories are constructed according to our plans, but cities are not; factories are managed well but cities are not*' (Yeh and Wu, 1999). In addition, fiscal deficits hindered the national government's ability to take care of every aspect of urban development at the end of the 1970s.

In this context, urban management shifted from sectoral dominance towards localisation from the 1980s onwards. This changed the roles of the central government, sectoral departments, SOEs and municipal governments in economic and urban development processes, while fostering a new central-local relationship [see Figure 5.1]. The central government decentralised authority over urban government, cooperating more closely with localities on large scale development projects (Zhang, 2007). The sectoral departments and the SOEs gradually gave way to local governments in daily planning practice. The former pattern of self-contained development and territorial organisation based on work units was broken.

On the other hand, the municipal governments played more important roles in urban development, reflected in the way master plans were made. The Shanghai Comprehensive Master Plan 1986, which was made by the Shanghai Municipal Government, was approved for the first time as a statutory plan. Thereafter, it became much stronger in regulating urban development than ever before. Further, local governments found a new way of generating revenue through land leasing (explained in Section 5.2.1). They paid more attention to the improvement of urban infrastructure

(e.g. public transport and service facilities) in order to promote urban competitiveness and to attract more investment (Xu and Yeh, 2009).

The transformation of urban management from sectoral dominance to localisation also changed planning implementation approaches. In the period when urban management was sectorally dominated, five-year plans and policies focusing on industrialisation were well implemented since the state had overwhelming control over urban land development. However, urban planning was in a very disadvantaged position due to the government's reliance on the five-year plans (Yeh and Wu, 1999). It was not an independent process of resource bargaining, spatial allocation or balancing conflicting interests. As by-products of five-year plans urban plans were usually physically realised as discussed in Chapter 4. After the decentralisation of urban government, urban planners began to present their own visions on spatial development. Urban planning evolved from simply supporting state industrial development objectives towards a more realistic and active practice of regulating land development. In other words, the planning sector began to play a more active role in the urban development process than what it had done in the past. Nonetheless, it had neither the resources nor proper instruments to guarantee the implementation of the urban plans they made (Zhang, 2006).

§ 5.1.2 Changes in the administrative organisation in Shanghai

When urban management in China was sectorally dominated, the urban development of Shanghai was split into small complexes. Each one was separately managed by local bureaus, departments or SOEs. In other word, the city was horizontally divided. Shanghai's administrative organisation was very vague and flat. From the end of the 1970s onwards, the decentralisation of urban government at the national level brought about many changes in urban government at the city level. First, the Shanghai Municipal Government gained more power and autonomy over urban planning as we already mentioned. Secondly, the administrative organisation of Shanghai, which underpinned its urban planning system, was significantly changed (Shi, 2005). The biggest change was that a four-tier administrative organisation was strengthened. Figure 5.2 (2) shows the four-tier administrative structure with a particular focus on its application in the suburban districts:

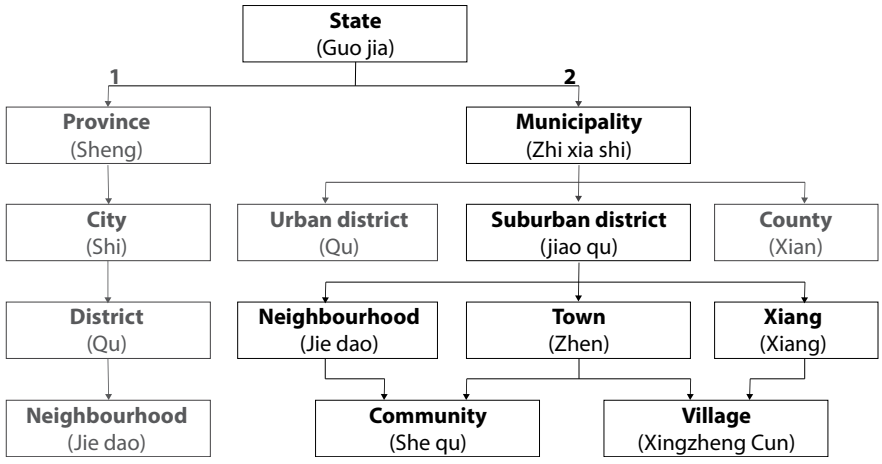


Figure 5.2
Four-tier administrative organization in suburban Shanghai

1 At the first level, Shanghai has a municipal government, which governs the whole metropolitan region. It is responsible for creating the urban master plans and approving the urban district plans.

2 At the second level, the municipality consists of 16 districts (nine urban districts in the central city area and seven suburban districts) and one rural county. Each district has its own district government, which is responsible for conceiving district plans, approving local plans at the neighbourhood level, and leasing land use rights.

3 At the third level, each suburban district consists of several neighbourhoods, towns or sometimes counties, which are at the same administrative level. The difference between them is the degree of urbanisation: a neighbourhood is usually fully urbanised; a town has majority of its land designated for urban uses; while an area designated as a county means it is primarily rural (Shanghai Civil Affairs Bureau 上海市民政局, 2010). Shanghai has 99 neighbourhoods, 109 towns and two counties with own local governments, which are the lowest formal tier of the government. Town and county governments are authorised to produce detailed plans and to supervise land development; while neighbourhood committees are not (街道居委会 Jiedao juweihui). This level is also the basic unit for official data collection for census and territorial administration. Some suburban districts have neighbourhoods that have been promoted as new city districts, in which the district government directly proposes their master plans.

4 At the fourth level, a neighbourhood (or town, county) always consists of several communities (社区 Shequ) or rural villages, which respectively have their own community committees and village committees. These committees are not formal administrative governments, thus they are not authorised to make their own plans. However, they still take responsible for managing some civil affairs. In particular, the village committees, which collectively obtained rural land use rights, are allowed to manage their land (including leasing land use rights) independently.

This four-tier administrative organisation has specifically defined competences and responsibilities in the planning process. They are related to the multi-tier system of urban plans because Shanghai's administrative organisation underpins its urban planning system (see Section 5.3.1). Shanghai is one of the four Chinese municipalities that directly answers to the central government (Zhixiashi in Chinese)
. A Zhixiashi, which is at the same administrative level as a province, is one level higher than a normal city in terms of its administrative authority. This determines that in Shanghai, the district government is at the same administrative level as a municipal government of a normal capital city [see Figure 5.2 (1)]. In this sense, Shanghai's district plans could be also strategic, like the urban master plans of standard cities.

§ 5.2 Two important urban reforms

Aside from the internal changes (the decentralisation of urban government at the national level and the changes in administrative organisation at the city level), the introduction of market forces is considered as a very important element bringing about successive changes in Chinese urban development and urban planning system (Wu et al., 2007, McGee et al., 2007, Wu et al., 2006). This section discusses two important reforms, the land reform and the housing reform, which introduced market forces into China's urban development process.

§ 5.2.1 Land reform: the establishment of the land leasing market

China has experienced several land reforms since 1949. This section only briefly discusses the second land reform (1979), which introduced market mechanisms into the urban development process. Before this land reform, land in China was generally divided into two categories: urban land and rural land. The state had ownership and managerial authority over urban land. The village communities collectively owned rural land and the state was still in charge of managing it. During this period, land values were not acknowledged either in urban areas or rural areas. Urban land was allocated by the state, without any influence from market mechanisms (Xu and Yeh, 2009).
In such circumstances, land was often used ineffectively as we already discussed in Section 4.1.1.

In order to encourage more efficient uses of urban land, a new land reform was initiated at the 7th Communist Party Conference in 1979 (Wang and Murie, 1999). This reform initiative had three main issues:

1. Establishment of a land-leasing system separating land ownership from land-use rights. Ownership of urban land still belonged to the state, but land-use rights could be exchanged in the market. The periods for land-use rights were limited: 70 years for residential uses; 50 years for industrial, educational, science and technology, cultural, public health, or mixed uses, and 40 years for commercial, tourism and entertainment uses.
2. State monopoly of land supply. Urban land in the primary land market could be leased to users through three major methods: negotiations, tender offers and auctions.
3. Establishment of a dual system of land leasing. Land for residential, commercial, and industrial development was leased according to market mechanisms. Land for infrastructure, public facilities and energy projects were still administratively allocated. Leased land and allocated land differed not only in the dual-track of obtaining land-use rights, but also in their property rights.

This land reform produced many positive effects. It attracted a large amount of foreign development investments (FDI) and created significant amounts of municipal revenue through land leasing. The revenue for Shanghai's municipal government derived from land leasing in 2011 (152.5 billion RMB) accounted for 44.5% of its total revenue (342.3 billion RMB) (Shanghai Statistical Bureau, 2012). In 2010 it increased to 53% (Shanghai Statistical Bureau, 2011, Shanghai Statistical Bureau, 2012). Land leasing also helped local governments generate a huge amount of revenues, which could be used for the development of urban infrastructure. The significant improvement of urban infrastructure in the 1990s could be attributed to the increasing revenues of local governments through land leasing.

Moreover, land became a powerful tool in accelerating urban development and urban regeneration. The higher land values in the central urban areas made urban redevelopment profitable for private developers (Xu and Yeh, 2009). The rapid peri-urban development that was discussed in the previous chapter was also closely related to the introduction of a land leasing market, due to the skyrocketing land prices in the city centre.

In general, the intervention of market mechanisms in the land development process helped to rationalise the allocation of investments, resources and funds. However, there were still some downsides when the land leasing market was not yet well regulated. First, the loss of arable land happened frequently through illegal land transactions in the 1980s and even in the 1990s. Secondly, a significant number of unexpected urban developments and unregulated conversions of land use happened. The former work-units sold their land use rights to private local or foreign developers without following the planning regulations and relevant policies.

Thirdly, the major differences in land prices between administrative allocation and land leasing led to speculation practices (Wu, 2001a). In the 1990s and even the first half of the 2000s, some real estate companies acquired land, which was originally zoned through administrative allocation for industrial or infrastructure use. They first engaged in this transaction of land without introducing any new development. When land prices rose, they changed the land use from industrial/infrastructure to more profitable functions; or sold the land-use rights to generate large profits (Interview Sun, 2011).

§ 5.2.2 Housing reforms: housing commercialisation and the prosperity of real estate industry

Urban housing used to play an important role in the welfare system in China. Under the centrally planned economy, housing investments, construction, and distribution were funded by the state and operated by the SOEs. In the late 1970s, severe fiscal deficits and a limited central government budget led to housing shortages and the collapse of the old in-kind subsidies of the housing system. In this situation, housing policy reforms started in 1982 as a solution to ease the central government's fiscal burdens (Wu, 2001b). This reform had two stages: 1) a trial stage in the 1980s and the 1990s, and 2) a radical stage after 1998.

In the first stage, the state tried to establish a housing market separate from the work-unit housing distribution system in order to 1) separate housing from production activities, and 2) to make significant changes in housing provision mechanisms by increasing the supply of commercially available housing (State Council, 1991). As a result, housing has been spatially separated from industrial sites. Some SOEs, including large work units without housing and small work units that could not afford building their own sites, bought commercially available housing for their employees. These commercial housing projects, usually built on a block-by-block basis, became mixed communities with tenants working in different work units.

This housing reform together with several other factors (e.g. increasing FDI) generated a construction boom in Shanghai after 1993. Housing investments increased from 6.67 billion RMB (833.75 million Euro) in 1993 to 28.90 billion RMB (3.61 billion Euro) in 1994, with an annual growth of 333% (Shanghai Statistical Bureau, 2009). During this period, the work-unit system of housing distribution still existed. State-subsidised housing projects comprised 72% of the total housing supply; commercial housing projects accounted for 28% of the whole stock.

However, private-sector housing developments raised two problems in the 1980s and the 1990s. First, major market-oriented real estate developments failed to meet the local demand because the housing price was far more expensive than residents' income. This led to a large amount of vacant housing (Wang and Murie, 2000b). In 1996, the vacant floor space of housing reached 74.56 million m2 nationwide (Zhou and Logan, 1996). In 1998, the national average annual income was 5425.05 RMB. The average annual income in Shanghai, as the second highest (Guangdong Province is the highest), was 8873.1 RMB. The average commercial housing price was 2063 RMB in 1998 (Shanghai Statistical Bureau, 2011). Secondly, a lack of regulations within the housing market created large amounts of uncompleted housing projects, which had very negative effects on the urban landscape (State Council, 1994).

The radical stage of housing policy reform started in 1998, due to two main reasons. First, the Asian Fiscal Crisis (1997) decreased economic development in most Asian countries. The adoption of a radical housing reform was an attempt to minimise the negative influences of the Asian Fiscal Crisis. Second, it was considered necessary to amend the deficiencies that the previous housing reform had brought about. This stage included:

1. The complete elimination of the in-kind allocation of public housing in order to boost domestic demand and to stimulate economic growth. The work-unit housing distribution system was abolished. The state further promoted housing development as a pillar industry in China (State Council, 1998b).
2. The replacement of the old system by a multiple housing supply system. The new system consists of state-supported affordable housing (70-80%), commercially developed housing (10-15%), and subsidised rental housing supported by state-funded/private companies or the city government (10-15%) (State Council, 2001).
3. The set-up of a new housing financial system to provide monetary support for both developers and individual households with loans and mortgages (State Council, 1998a).

As a result, the old welfare housing in Danwei compounds was privatised. Local communities became independent from the workplace. Commercial housing developers became the main suppliers of new housing since the late 1990s. The real estate industry became the second largest independent industry in China until 2005 (State Council, 2005). However, the multiple housing supply system has not been realised. The real estate industry and land leasing, for instance, contributed to 53% of Shanghai's annual revenue in 2010 (Shanghai Statistical Bureau, 2011). The limited social housing stock (4.6% in 2004) and housing subsidies could not balance the unequal housing distribution (Li, 2000, Wang and Murie, 2000b). Furthermore, the housing prices in Shanghai have skyrocketed by 600% within the past ten years (averaging from 500 Euro/m2 in the late 1990s to 3300 Euro/m2 at the end of the 2000s). Current housing prices, comparable to those in London, have become unaffordable for middle-income households.

Summarizing, the housing reform brought more changes to urban development and planning practices in China (and Shanghai) than the land reform. Living conditions in Shanghai have significantly improved. The per capita living space rose from 6.6 m2 in 1990 to 16.9 m2 in 2008. The general living environment has also been improved with good design and better-quality housing (Wang et al., 2005). The newly built real estate projects transformed the work-unit urban structure. The reform initiative introduced not only market mechanisms but also new actors into the urban development process. Local and foreign private developers were more involved with real estate development (Wang and Murie, 2000a). Their involvement changed the interaction between actors in the urban development process, and furthermore changed the planning implementation mode (see Section 4.3.2). Local and foreign private investments engaged in real estate ventures and frequently chose the peri-urban areas as their 'battlefield' due to the cheaper land prices.

§ 5.3 Present urban planning system in Shanghai

Urban planning under the centrally planned economy (1949-78) played a rather limited role because it was subservient to economic planning and sectorally dominant decision-making processes, as mentioned previously. ' *...Urban planning was not a policy making process, but rather a site selection practice which allocated projects proposed by economic planning into the urban space*' (Yeh and Wu, 1999: 176). The features of urban planning during this period were singular. First, it was very physically oriented, and focused on the coordination of industrial projects, in other words, project-specific development. Second, the two-tier urban planning system was implemented top-down, with a master plan and a site plan. Third, urban planning involved only public authorities and governments from different levels. Other actors (e.g. non-government organisations, civil society) were excluded from the system. Fourth, plan implementation and development control were neglected because urban development was centrally controlled and no other factors intervened.

Urban planning was, however, totally abandoned during the Cultural Revolution period (1967-1976). Planning bureaus were dismissed; and planning institutions/ organisations ceased to exist. Buildings were allowed to be constructed on any parcel of vacant land (Urban Planning Adminstration Practices in Shanghai, 2007). During the early stage of the economic reform initiated at the end of the 1970s, urban planning regained its role and became more open to learning from foreign experiences.

The internal and external factors mentioned in Section 5.1 and 5.2 have brought further changes to the urban planning system. The decentralisation of urban governance has changed power relations among stakeholders; and on the other hand it has empowered urban planning in the urban development process. The land and housing reforms have introduced market mechanisms and many new actors within planning practices. Urban planning has dramatically changed to become a tool of regulating undesirable land development and guiding future urban developments. This section reviews the intense changes and main features of Shanghai's current planning system from three aspects: 1) the multi-tier system of urban plans, 2) the involved actors, and 3) the planning instruments for development control.

§ 5.3.1 A multi-tier system of urban plans

Before 1989, China used a two-tier planning system, which only involved urban master plans and site plans. The City Planning Act 1989 proposed a five-tier system of urban plans, replacing the previous two-tier one. In the new system, only the urban master plans were not changed. Two new levels of plans were introduced between the original two levels. These two new levels have different names in central urban areas and suburbs. In central urban areas, they are called district plans and regulatory unit plans. In suburbs, they are suburban structural plans at the district level and master plans for national industrial parks (or new cities or central towns) which are equivalent to regulatory unit plans (Urban Planning Adminstration Practices in Shanghai, 2007). The new system further divided the original site plans into two levels: regulatory detailed plans and detailed construction plans (Yao, 2007) [see Figure 5.3].

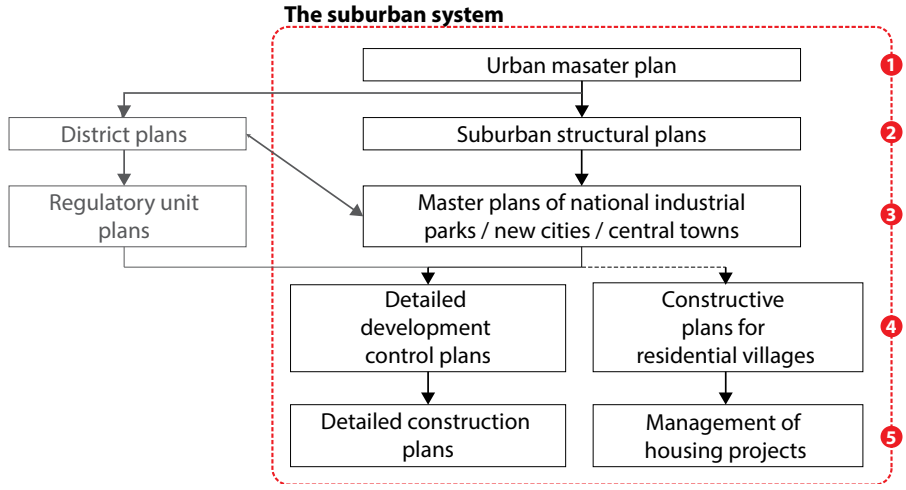


Figure 5.3
The five-tier system of urban plans for urban and suburban districts.

Aside from the structural changes in the planning system, each level of plans in the new system has also fine-tuned their functions and features.

- Urban master plans continue to offer a broad framework including a general land-use structure and a range of policy guidelines for the future urban development. The *Shanghai Master Plan 1999-2020* is even more comprehensive and strategic than previous editions.
- Suburban structural plans, as we mentioned before, are similar to the master plans of normal capital cities. Thus they are still strategic plans, which do not directly guide local urban development.
- Plans at the regulatory unit level play a role in linking the master plans and detailed plans. Their main function is to define the general development of an area or a large urban project. They were initiated in the *City Planning Act 1989*, and used until 2003. Since 2003, they are no longer commonly used. Only some strategic programmes (e.g. new cities, national industrial parks or central towns) used plans at the regulatory unit level.

Detailed plans continue to play the role of outlining the city's spatial structure, defining land uses and development intensities, and providing more specific guidelines for day-to-day development control (Hao, 2010):

- Regulatory detailed plans (RDPs) are prepared when future developments are uncertain. They mainly define the boundaries of project plots and control indices such as building density and height. A RDP usually covers a territory of around 10 hectares. However, RDPs were not used for every parcel of land in the peripheral of

Shanghai. In 2003, regulatory unit plans became compulsory for strategic locations (national industrial parks, national ecological parks, regeneration areas). In other words, regulatory unit plans would be used more commonly for area development. Until 2008, the T*own and Country Planning Act 2008 (2008*年城乡规划法 *chengxiang guihuafa) d*efined them as statutory plans and compulsory in the urban development process (Huang et al., 2009), which meant every parcel of land must have a RDP. Full coverage of RDPs in Shanghai thereafter became the primary task of the Shanghai Urban Planning and Land Resources Bureau.

- Detailed construction plans (DCPs) are made for construction projects starting immediately. They are used for regulating the daily management of urban projects. The main forms of DCPs are general layout plans, utility engineering plans and three-dimensional site plans. (Standing Committee of the Shanghai Municipal People's Congress, 2003).

The five-tier system is more rigorous than the two-tier system. Every level of plans in the five-tier system has their own specific functions, which together make the role of urban planning clearer and tasks for each type of plans more specific in relation to planning practice. The five-tier system of urban plans is also in accordance with the current four-tier administrative organisation in Shanghai (see Section 4.1.2). The competences and responsibilities of each level of governments concerning planning practices are clearly reflected in this system. Municipal governments are responsible for producing urban master plans, while district governments are in charge of making district plans. Governments at the level of counties and towns are authorised to produce plans for national industrial parks (or new cities or central towns).

The five-tier system further indicates that urban planning still operates in a top-down way because subordinate level plans have to strictly follow what has been stated in the plans from higher levels (Urban Planning Adminstration Practices in Shanghai, 2007). Take the district plan for example, the creation of a suburban structural plan is organised by the district government. The plan can only be enacted on the condition that it adheres to the dictates of the urban master plan. Likewise, the municipal government uses its approval right to guarantee consistency between plans from district and municipal levels (Han, 2003). The new system has been an urban dominated system for a long period. Before 2008, only urban land was considered and defined in the plans.

§ 5.3.2 Involved actors

The decentralisation of urban governance has changed the power relations between the central government and local governments. Local governments have gained more

authority over the urban development process. Land and housing reforms have brought market mechanisms into the urban development and introduced the private sector as an important group of actors in the urban development process. Presently, the urban development process in Shanghai involves several types of actors, including public actors (bureaus within the municipal government and local governments from district and township levels), semi-public actors and private actors [see Table 5.1]. This section focuses on discussing the interest and resources of the four main groups of actors, and very briefly of their complicated interaction, in order to further define the features of present planning system and its implementation mechanisms. Bureaus within the municipal government instead of the municipal government as a whole are discussed because they have their own interests, tools and resources.

Stakeholders			Tasks
Public actors	Bureaus within the municipal government	Development and Reform Committee (DRC)	Make the Five-Year Plan for National Economy and Society Development
		Urban Planning and Land Resource Bureau (UP&LR Bureau)	Make urban master plans, action plans and general plans for land uses Supervise planning implementation Approve plans at local levels Approve the urban projects
		Urban construction and Transportation Commission (C&T Committee)	Issue building permits
		Environmental protection Agency (EPA)	Veto power over urban projects with environmental considerations
	Local governments from district and township levels		Lease land use rights Take charge of local developments (e.g. choose private developers and implement the plans)
Semi-public actors			Manage and conduct urban projects as well as urban infrastructure
Private actors			Invest in local projects and manage the development process

Table 5.1
Types of actors involved in urban development in Shanghai and their main tasks

A Bureaus within the municipal government

Many important bureaus within the municipal government are involved in the urban development process. The most important ways in which they intervene in the urban

development process are making plans and issuing permits. The most important bureau is the Shanghai Urban Planning and Land Resource Bureau (上海市国土资源和房屋管理局 Shanghaishi guotuziyuanhefangwu guanlijü), which directly guides and influences urban development in Shanghai. It is a new agency established in October 2008 as a result of the institutional integration of the Land Resource Bureau and the Urban Planning Bureau, which worked separately before 2008.

- The Land Resource Bureau was the most powerful bureau intervening in the urban development because it issued land use rights. It received revenues through land leasing and prepared the general land use plans (土地利用总体规划 tudiliyong zongtiguihua), which guided the long-term land development. However, the general land use plans only identified the overall direction (e.g. the quantity of areas to be developed), but not the spatial structure and priorities of land development.
- The Urban Planning Bureau was a relatively powerless bureau in the past 30 years. It was responsible for making urban master plans and other action plans, which were usually overlooked in the urban development process. The plan-making process required to strictly follow the correlated five-year plans.

Before their institutional integration, the conflicts between Land Resource Bureau and Urban Planning Bureau were severe. They mainly concerned inconsistencies between their own plans: the urban master plans made by the Urban Planning Bureau and the general plans for land uses made by Land Resource Bureau. These arose because these plans were prepared separately and represented different interests. For instance, when the Urban Planning Bureau tried to prevent urban developments on farmland on the urban fringe, the Land Resource Bureau had already designated this piece of land as urban land and leased the land to developers.

After the merger, this new bureau combined the powers, responsibilities and resources of the former two bureaus. The new bureau is in charge of preparing urban plans and general land use plans, leasing land use rights, approving development plans and supervising plan implementation. The merger also confirms the need of coordination in plan making, which concerns not only planning contents, but also the duration of plans and the implementation procedures (Wang et al., 2009). The integration of the two types of plans has significantly changed planning practice and the efficiency of plan implementation.

The Shanghai Development and Reform Committee (上海市发展和改革委员会 fazhanhegaige weiyuanhui, DRC in abbreviation) is another important bureau. It was established in 1998 as a successor to the State Planning Commission of the planned economy era. The main responsibility of the DRC is to study and formulate policies for economic and social development at the macro level and to guide the restructuring of Shanghai's economic system. The most important tools used by DRC include five-year plans for the national economy and societal development, crucial references for other plans, including urban master plans; and the feasibility report for urban projects, which

will be discussed together with planning regulation tools in Section 4.3.3 (A). Recently, there is a trend to integrate the five-year plans with general plans for land use and urban master plans (Wang, 2009).

Other two Important bureaus involved with urban development and plan implementation processes are the Shanghai Urban Construction and Transportation Commission (C&T Committee) (上海市城乡建设和交通委员会 Shanghaishi chengxiangjianshehejiaotong weiyuanhui) and the Environmental Protection Agency (EPA) (上海环保局 Shanghai huanbaojü). Both of them interfere in urban development at the project level. The C&T Committee is in charge of issuing building permits to urban projects. The EPA has been playing an increasingly important role in urban development because the success of a project is increasingly judged by its environmental performance. After the Environmental Impact Assessment Law (2002) established a system of 'veto by one vote' for environmental evaluations, the EPA has been able to determine whether a project could continue after the site designation memorandum (Urban Planning Adminstration Practices in Shanghai, 2007).

B Local governments from district and township levels

Local governments in both the district and township levels are more directly involved in the urban development process. In the planning practice, they directly lease land use rights to private developers for land development, benefitting financially from this process. Pursuing more profits generally becomes then the first priority when they intervene in the urban development process. Consequently, their intentions are usually different from the ones of municipal bureaus. Since urban projects led by local governments are usually growth-oriented, some have resulted in redundant construction and chaotic urban expansion at regional scale. Almost all suburban towns propose high-tech parks or development zones in order to promote local competiveness and to attract more investments. As a result, too much agricultural land has been converted into industrial land. Likewise, too many industrial parks have been built and most of them have not been properly used. Such growth-oriented developments waste money and land, and in many cases contradict the initial land-uses proposed by the municipal government (Luo and Shen, 2008).

Recently, Shanghai's municipal government adjusted the administrative divisions in land management in an attempt to manage urban land development more efficiently. Shanghai's territory was divided into three management types as Figure 5.4 shows. The municipal government directly manages a few strategic projects (e.g. transportation hubs, environmentally protective areas). District governments and the municipal government jointly manage some environmentally sensitive areas (e.g. environmentally sensitive areas on the urban fringe and planned central towns). District governments independently manage the remaining land in Shanghai.

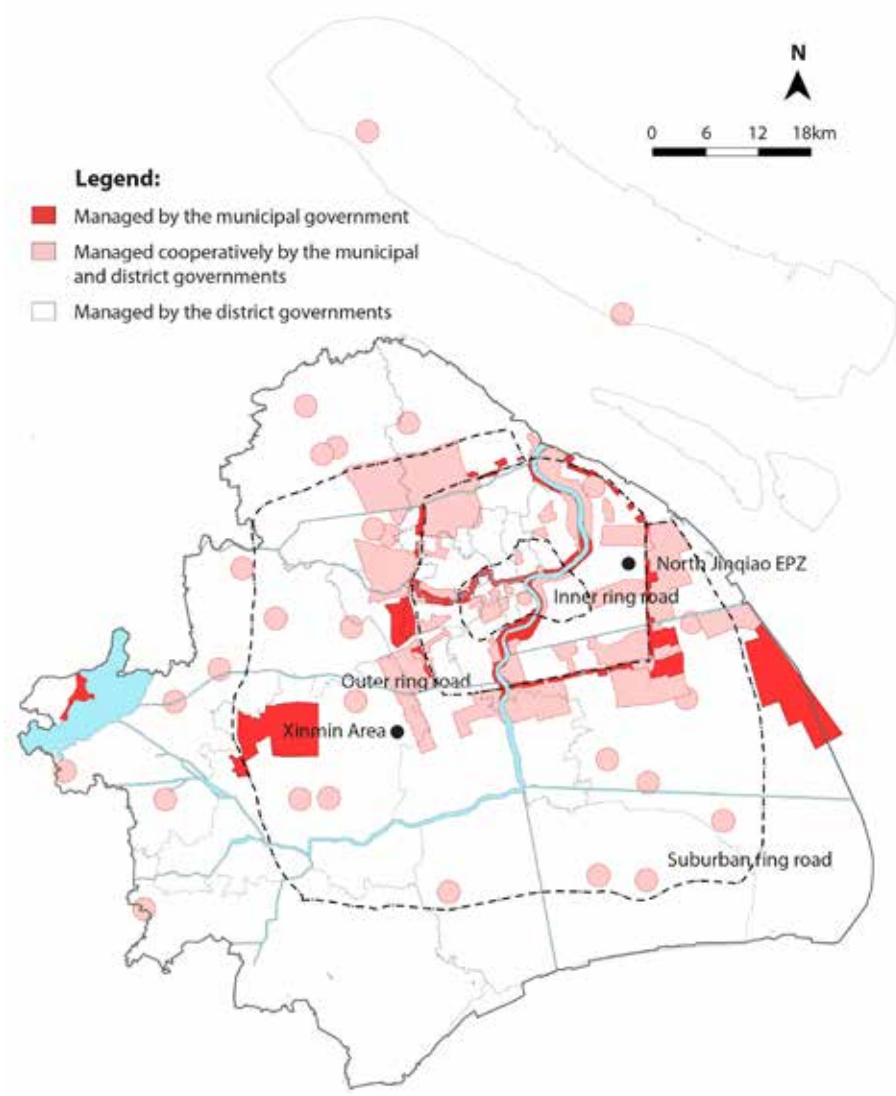


Figure 5.4
Administrative division of urban planning in Shanghai (Shanghai Urban Planning Bureau, 2006)

It is also worth mentioning that many rural villages on the urban fringe have been urbanised and merged with the central city area due to the city's rapid expansion. In such villages, designated as urban villages (Chengzhongcun in Chinese), the land still collectively belongs to the farmers, as in the actual rural villages. Hence, local village committees continue to manage land development in these areas instead of the municipal or district governments.

C Semi-public actors (Government-funded enterprises)

Government-funded enterprises, funded by the state or local governments, have been also playing more significant roles in the recent urban development of Shanghai. Unlike the SOEs under the centrally planned economy, these government-funded enterprises are operated in an entrepreneurial manner. They can be divided into two categories: project-oriented enterprises and long-term enterprises.

- Project-oriented enterprises are initiated ad-hoc for particular projects. For instance, when an industrial park or a mega event is planned, a managerial company or several companies would be established prior to its development. These companies hire many professionals with the required expertise to handle the overall planning and governance. Their mission vary from making plans, organising construction projects, facilitating infrastructure development to attracting investments.
- The second type is a long-term enterprise, which is established for a particular urban issue (e.g. water management, land banking), mainly focusing on public needs and resources. Each big city has its own long-term enterprises. The most famous one in Shanghai is the Shanghai Chengtou Corporation, established in 1992, whose main purpose is to reserve land resources for the local government and to rationally manage land. It also takes charge of the 1) construction of roads, tunnels and bridges; 2) water management, including wastewater control, drainage and sewage etc.; 3) environmental protection; and 4) real estate development.

D Private actors (private developers)

The opening-up of the Chinese market to international capital introduced the private sector into Shanghai's economy and the urban development process. Before the land and housing reforms, there were only two kinds of ownership in Shanghai: state-owned and collectively owned (run by the local government). After the reforms, the importance of the state-owned and collective-owned enterprises decreased. In 1996, although they still accounted for 72% of enterprises, their share of the total gross output value dropped drastically to 38.8% and 12.3% respectively. Foreign and local private enterprises started to intervene in the Chinese economy and urban development (Fu, 2002), usually involved at site-specific level.

Foreign enterprises are the most important group within the private sector. They started to become involved in Shanghai's economy at the end of the 1980s. In the 1990s, they became an increasingly important factor not only to alter Shanghai's economy, but also to change the course of its urban development. In 1996, foreign-funded enterprises reached 34.8% of the total gross output value (Shanghai Statistical Bureau, 2000). The success of the Lujiazui central financial district (Lujiazui CFD) in the Pudong district was mostly considered to be a result of the huge amount of foreign direct investments (FDI) from Hong Kong, Taipei and other Asian cities. (Chen, 2007). Fu (2002) claims that the project-based interaction between the Chinese national government and international capital, or their implicit pro-growth coalition, supported the development of the Lujiazui CFD. This new model of area development, exemplified by the case of Lujiazui CFD, is illustrative of a new pattern of interaction between the state and international capital. This model supported hundreds of redevelopment projects across Shanghai; and rapidly transformed Shanghai's urban form in the 1990s:

"...Nowadays, international capital has an unprecedented mobility that is completely beyond the control of the Chinese government. Shanghai has to compete with other cities in China and even with those in other countries...to create a so-called 'good business climate' for this scarce resource. Based on this perception, which is now prevalent in all Chinese cities, the municipality tried to do its best to cater for the needs of international capital...Thus, the importance of FDI from inside and the intercity competition for FDI from outside strongly drove the municipal government toward entrepreneurialism." (Fu, 2002: 115).

Local private developers were another group of private sector that strongly intervened in China's urban development since the 2000s, when the real estate industry became the second biggest industry in China (Abramson et al., 2002). Their primary roles are to act as developers, investors and builders in real estate development. Local governments gradually relied too much on local private developers to generate revenues (Chen, 2007). By leveraging powerful economic bargaining measures, private developers become stronger than local governments when collaborating on planning initiatives. Hence, they could easily disregard planning regulations in order to maximise their own profits. To tackle this power imbalance Gu (2001) suggested to make the participation of local private developers more transparent in a formal and institutionalised fashion, in order to avoid the dominance of their interests over the public interest, and to prevent governmental corruption.

The Chinese Communist Party (CCP) is worth mentioning as another important actor in Shanghai's planning system. The CCP does not have any independent bureaus directly responsible for the planning practice or institutions at the municipal or local level. However, it still intervenes extensively in planning processes. The CCP has its own representatives at all governments and organisations at different levels, who have

the most important position within those organisations: the CCP Secretariat (the real head of any organisation or bureau). Therefore, they have a major influence over plan making and planning implementation decisions. The involvement of CCP members in local organisations guarantees that the system remains under state control, explains how the planning system operates top-down, and contributes to the high levels of conformity between the higher to lower governmental levels.

By looking at all the involved actors, Shanghai's urban development as well as its economy combines state activities and capital dynamics from various private enterprises, the most rapidly growing sector. Such comprehensive set of relationships between involved actors is quite determinant for the future urban development. Aside from the four main groups of actors mentioned above, there are some other actors involved in the urban development process, such as the involved habitants, civil society and non-government/non-profit organisations (NGOs). In the past decades, the Involved habitants have had more opportunities to fight for their own rights and to bargain with either private developers or local government. But the general public and NGOs still have a disadvantageous position in terms of influencing the urban development process.

§ 5.3.3 Planning instruments

Under the centrally planned economy, urban planning had a disadvantaged position in allocating urban projects. Due to their lack of statutory status, it sometimes took no more than a single commanding official's order to unilaterally alter urban plans. This bureaucratic urban management model, which easily overrides urban plans, continued to dominate urban development:

'...The implementation of urban planning greatly relied on officials' understanding of the intention of the urban plans made by different government departments. The planning authority could not stop a project which was under the supervision of other department. The master plan was only a guideline with no legal status. It was up to individuals and work units to follow such guidelines in land development. Any development proposal not conforming to the master plan would be dealt with mainly by persuasion.' (Yeh and Wu, 1999)

The modified planning environment involved new actors within the urban development process, new responsibilities of each group of actors, and different levels of plans, which changed the plan implementation process significantly. Governments could no longer rely on direct control over projects or centrally allocating all the resources in order to monitor the development process. They have to use new instruments at

different levels in order to ensure the effectiveness of the plan implementation process and to cooperate more closely with the market. The planning instruments that are presently used by public sector can be classified into two types: 1) regulatory tools that prevent the deviation of actual urban developments from urban plans and 2) facilitation instruments that help to stimulate or to initiate urban projects.

A Regulation tools

Urban planning focused more on development control and regulatory tools in order to monitor the rapid urbanisation process and to avoid unplanned development. The City Planning Act (1999) set up a development control system, including a series of permits that urban projects have to go through. These permits empowered the planning authority to enforce urban plans directly at the land parcel level. The most frequently used permits include:

- The site-selection note (选址意见书 xuanzhi yijianshu). It mainly evaluates the feasibility of a specific urban development. Design assignments are able to seek approval only with a site-selection note issued by the planning authority.
- The land-use planning permit (建设工程规划许可证 jianshe gongcheng guihua xukezheng). It ensures that the location and layout of construction projects within the urban planning area conform to urban plans. This is a land use certificate that identifies further actions.
- The project construction permit (建设许可证 jianshe xukezheng). It supervises and qualifies any development works (e.g. new construction, extension and alternations to building, structures, roads, pipelines, and other engineering works within the urban planning area) in accordance with urban plan requirements.
- Enforcement and penalty. They are able to issue a stop notice to the construction, which do not comply with the requirements stated in the plans or have serious negative impact on urban planning. Local planning authority can conduct inspections on the building sites.

After the adoption of the development control system (approvals, permits, enforcement and penalties), the planning implementation process became more complex and time consuming. Government-led urban development and market-oriented urban development have different planning application processes [see Figure 5.5]. For the former, a developer usually needs approximately 102 permission stamps in order to change 'raw' land into a built-up environment (Interview Wu, 2012). Those stamps include permits from more than 20 related departments, including the DRC, Land Resource Bureau, Urban Planning Bureau, EPA and C&T Committee. The division of responsibilities over issuing permits between public sectors causes inefficiency and inconsistency in planning practice (Zhang, 2004). In order to improve the efficiency of urban development processes and to reduce conflicts between different sectors in

the planning application process, a recent trend is to simplify the examination and approval procedures. The Land Resource and Urban Planning Bureau, has initiated a 'one-stop' service by integrating the approval process (Chen et al., 2011).

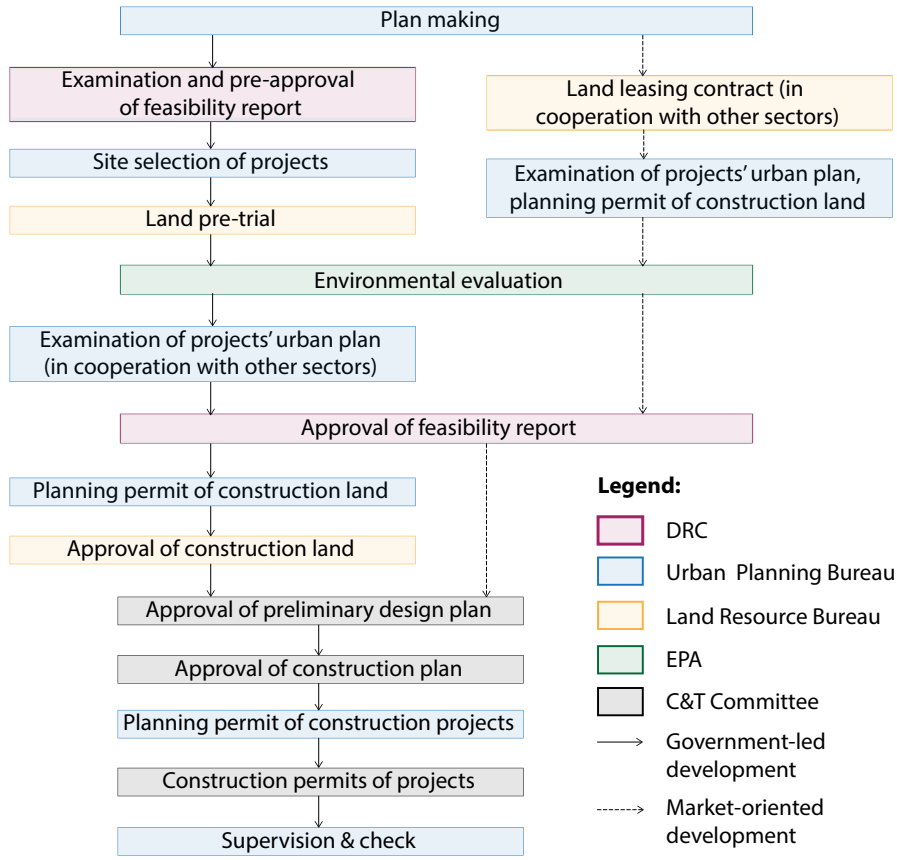


Figure 5.5
Planning application process in Shanghai
(own elaboration, adapted from Urban Planning Administration Practices in Shanghai, 2007)

Another group of regulatory tools frequently used in Shanghai are the ordinances and regulations, which usually establish common rules for urban development and the use of plans. In the 1980s, only a few ordinances were created, for instance, the Shanghai Land Use Planning and Management Regulation (1983), the Implementation Regulation of Urban Planning of Shanghai (1984), the Shanghai Land Use Plan and Zoning Ordinance (1986) and the Land Administration Act (1986).

At present, ordinances are prepared in close relation to the five-tier system of urban plans. Almost every level of plans has its corresponding ordinance. At the municipal level, the Implementation Regulation of Shanghai Urban Planning (上海市城市规划条例 Shanghaishi chengshiguihuatiaoli) aims to guarantee the implementation of the urban master plan (Shanghai Urban Planning and Land Resource Bureau, 2011b). At the local level, the Achievement & Specification of Shanghai Regulatory Detailed Plans 2011 (上海市控制性详细规划技术准则 Shanghaishi kongzhixingxiangxiguihua jishuzhunze) is used to guide the making of the RDPS and zoning plans (Shanghai Urban Planning and Land Resource Bureau, 2011a). The Shanghai Zoning Ordinance further explains the way the RDPs and zoning plans should be used. The Land Subdivision Regulation explains the DCPs and guides public authorities in issuing land-use and construction permits [see Table 5.2]. These regulations, usually focused on the physical indices (building heights, plot ratio and FAR), have played more active roles in regulating the behaviour of involved actors than the urban plans.

Plans		Ordinances
Urban master plans	Short-term construction plans	Implementation Regulation of Shanghai Urban Planning
District plans	Short-term construction plans	/
Regulatory unit plans	/	/
RDPs	Zoning plans	Achievement & Specification of Shanghai Regulatory detailed plans (2011) Shanghai Zoning Ordinance
DCPs	Land subdivision plans	Land Subdivision Regulation

Table 5.2
Ordinances and regulations used in Shanghai (Yeh & Wu, 1999)

Land-leasing contracts are a third group of frequently used tools that recently became a control tool to regulate the physical conditions and timing of urban projects (Interview Zhu, 2012). They usually clear the site, level the land, put appropriate infrastructure in support of the project, identify land conditions and so on. In recent years, such contracts have undergone two modifications. First, the development time is limited to three years in order to avoid land speculation. In this way, the contracts regulate the timing of the urban projects. Second, building forms are specified in greater detail (such as building densities and types).

B Facilitation instruments

The use of development control or regulation tools is not enough to improve the effectiveness of planning implementation processes (Han, 2000). Facilitation instruments are also necessary to initiate and to guide urban development. Frequently used facilitation instruments include the construction of infrastructure projects or public facilities, good urban design, FAR incentive mechanisms in land-leasing contracts, etc.

The construction and maintenance of public facilities and transportation networks is the most frequently used facilitation instrument. Under the centrally planned economy this used to be a burden for local governments. In the reform era, local governments tried to transfer the obligation of building public roads to private developers. As a result, infrastructure was generally neglected. In the new century, governments from different levels have gradually realised that the facilitation of public facilities and transportation is a crucial tool to initiate urban development projects. The facilitation of public facilities and transportation significantly contributes to the improvement of local conditions and raises land prices in a short time. The improvement of local conditions further helps to attract more investments. At the same time, governments are also able to discourage unplanned urban development by avoiding infrastructure facilitation.

Further, land-leasing contracts also play a role as facilitation instruments besides being regulatory tools. First, the FAR incentive mechanism has been commonly used in land-leasing contracts to encourage developers to pay more attention to the protection of urban environment and the creation of public space. Local governments will award private developers with a higher FAR if the developers are willing to create more public spaces or green roofs on site (Han, 2003). Second, land-leasing contracts are frequently prepared in combination with urban design proposals. In this way, they provide better control over strategic projects, while providing a more promising future to specific urban areas, improving their ability to attract more investments (Expert meeting in Shanghai, 2012).

Planning authorities have gradually realised that development control is not enough for a 'proper' planning implementation process in the context of market forces and managerial decentralisation. The use of several planning instruments appropriate to the current planning environment contributes to a better application of urban plans. However, development control is still the dominant instrument utilised in the urban development process in Shanghai.

§ 5.4 Summary

The urban planning systems in Shanghai, its transformation and current features, under the transitional socio-economic and institutional context are overviewed in this chapter. There are some similarities in planning ideas between China and the West. However, the stage of ideas and development in the 2010s are very different, with greater emphasis on planning as a rational process in Shanghai. The change from sectoral dominance into localisation, the modification of the administrative organisation at local level, as well as the land-use and housing reforms, have given urban planning a more important role than under the planned economy. Consequently, It is now used as an important instrument by local governments, which have acquired more power and have become more active and independent for intervening in urban development processes. Under these new circumstances, the urban planning system has also changed radically in terms of its internal structure and its relationship with the external environment.

The urban planning system has experienced a structural reorganisation in three main aspects: the levels of plans, the involved actors and the planning instruments. The five-tier system of plans, which better matches the four-tier administrative organization of Shanghai, replaced the previous two-tier levels of plans. The new system is more rigorous and integrated; however it is still hierarchical and top-down. Plan making at subordinate levels has little discretion because it has to strictly follow what is stated in higher-level plans. Furthermore, the new system has been an urban dominated system for a long period. Before 2008, only urban land was considered and planned for in the planning instruments.

Further, more actors are involved in the planning practice, and their power relations have changed in since the reform era. Conflicts between municipal government bureaus have become critical due to their different interests. Local governments and the private sector increasingly support each other for growth-oriented development. Some important groups, such as the involved residents, civil society and non-government /non-profit organisations, are still absent in the planning process. Their absence has prevented public participation in the plan making and in the implementation process.

Finally, public authorities have adapted their instruments to control the planning implementation process due to the transitional power relations and the changing resources and rights they can obtain. Regulatory tools for development control are still the main focus. An emphasis on physical conditions and an architectural way of thinking (e.g. plot density and building heights) still dominates the practice of development control. Whether this way of controlling urban development is effective in such complex circumstances (with market forces and the involvement of multiple

actors) needs further testing. In contrast, the use of facilitation instruments, which focus more on the coordination with actors from the private sector, is still limited.

The present description of the planning system in Shanghai, of its transformation and current features, provides the basic knowledge to explain the level of conformance between the Plan 1999 and the actual peri-urban development in Shanghai (in Chapter 6); and to analyse the performance of the Plan 1999 in the planning implementation process (in Chapter 7).

6 Implementation of Shanghai Master Plan 1999-2020 from conformance-based perspective

Chapter 4 overviewed the evolution of peri-urban development in Shanghai until the end of the 20th century. It found that a mismatch between the urban master plans and the actual spatial development appeared and has gradually become more critical since market mechanisms have intervened in the urban development process. This chapter continues the analysis on Shanghai's peri-urban development after 2000 and the implications for *Shanghai Master Plan 1999-2020 (Plan 1999)*, the most recent urban master plan in Shanghai. The *Plan 1999* influences peri-urban development at both the metropolitan level and local level. On one hand, this plan proposes many 'end-status' targets in the form of blueprint plans (land use divisions, population divisions and development of public transport) for the whole city. Here, it has a direct influence on the overall urban structure at the metropolitan level. On the other hand, it cooperates with other plans (sectoral plans or local urban plans) to indirectly intervene in the development of local urban projects.

This chapter focuses on the overall peri-urban development and the influence of the *Plan 1999* on the urban structure of Shanghai. The grid-overlay model (a kind of conformance-based approach), which fits the project-oriented plans and is more concerned with the output as we discussed in 3.2.1, is therefore employed to evaluate the implementation of the *Plan 1999* at the metropolitan level. To be specific, this chapter evaluates the implementation of the *Plan 1999* through 1) the degree of conformity between Shanghai's peri-urban development after 2000 and the *Plan 1999*; 2) characteristics of implementation conformity between correlated indicators; and 3) the factors that affected the level of conformity. Evaluation variables and indicators have been selected in Chapter 3, thus only more explanation of the ten indicators and how to use them will be further verified in the beginning of this chapter (Section 6.1). Section 6.2 and 6.3 respectively show the analytical results according to each indicator through spatial mapping and the overlay findings. Section 6.4 finally discusses the potential factors that influenced the implementation conformity.

§ 6.1 Use of the evaluation variables and indicators

Based on the selection of the evaluative variables and indicators (see Section 3.2.1), this section continues with further explaining the significance and the changing situations regarding these five variables, and how have those ten indicators been used for the conformance-based analysis.

Variable 1: population (re)-distribution

Chinese urban master plans usually start with the premise of population (re-) distribution. Population size, as the first indicator, demonstrates a city's size and further reflects future demands for housing, infrastructure and so on (Sue Warn, 2005). The spatial distribution of a population implies the socio-spatial structure of a city, the actual land-uses of a specific area and also the trends for future urban developments (Laquian, 2005). Traditionally, local governments had a powerful tool, the Hukou system, to restrict population movements and to control a city's size. After the reform of the Hukou system in the end of the 1970s, people were allowed to move freely. Many migrant workers left their hometowns and went to large cities for labour-intensive jobs (Friedmann, 2005, Ma, 2002b). Population size and distribution become new uncertain factors influencing urban development, especially those of large cities. In this context, urban master plans paid much attention to predicting a city's future population for the 20 years. The *Plan 1999* planned the future population for the years 2010 and 2020. It also planned to relocate both the population from the central city area to the planned new cities; and to attract majority of the migrants/ newcomers into the suburban centres.

This chapter will evaluate the population growth in both its quantitative objective and spatial distribution, which is the overall population growth (indicator 1) and spatial distribution of population (indicator 2). For the first indicator, population will be divided into two categories: registered population (with Hukou) and resident population..The actual resident population includes registered population and part of the 'floating population'. Floating population who have *Temporary Resident Permit (*暂住证*)* more than half year are calculated as resident population. The rest, who do not have *Temporary Resident Permit*, is not included. They are difficult to be measured. For each category, the planned amount and the actual amount in the years of 2000, 2010, and 2020 will be compared. For instance, the planned registered population for 2010 and 2020 will be respectively compared to the actual registered population in the years of 2010 and 2020, the resident population as well. For the second indicator, four types of strategic locations that were proposed as the main growth poles in the *Plan 1999* will be respectively discussed in their population growth. These four types of strategic locations include new cities, key towns, industrial parks and key periphery projects.

Variable 2: land development

Land development has been traditionally the core issue of Chinese urban master plans, and is still the most significant concern in urban planning. Under the planned economy, territorial management and land development used to be organised in Danwei units (see Chapter 4 for more details). It was oriented towards economic plans and industrial development. After the establishment of a land market in late 1980s, land has become a valuable resource for governments (at both national and local levels) to stimulate urban regeneration and to generate revenues. Land development has thus become the main concern in urban master plans. Land use plans have gradually become a main tool of regulating the urban development. Furthermore, previous Chinese studies on evaluating plan implementation mainly focused on land use plans. The *Plan 1999*, under these new circumstances, also made great efforts on making land use plans with particular attention to the amount of urban land and its spatial distribution. It proposed considerable but rational land development in order to accelerate urbanisation and meanwhile to prevent urban sprawl. The planned new land development is mainly located in the suburban centres, remote new cities for instance.

Land development will also be evaluated in two terms: the total territory of urban land development (Indicator 3) and spatial distribution of land development (Indicator 4). For the third indicator, the planned amount of land development will be compared to the actual amount in Shanghai, the territory within the outer ring road and that beyond the outer ring road. For the fourth indicator, the new land development will be calculated according to districts, and the unplanned land development will be mapped. Additionally, residential land development will be calculated between the planned amount and the actual amount in relation to its the quantitative objective and be mapped in comparison to the planned spatial distribution.

Variable 3: industrial development

Industrial development has been the most important driving force of Shanghai's peri-urban development since the city was designated as an industrial centre in China in the mid-20th century. Presently, industrial developments still occupy a majority of the land developments in peripheral Shanghai. Industrial development and restructuring consequently reflect the overall urban structure. The *Plan 1999* continued focusing on industrial restructuring in the periphery as we discussed in 3.1.2.

In this chapter, industrial development will also be evaluated in its quantitative objective (Indicator 5) and its spatial distribution (Indicator 6). For the fifth indicator, the proportion of agriculture, secondary industries and tertiary industries in terms of land occupation, employment structures and outputs was examined in comparison to the planned status in order to test the industrial restructuring. For the sixth indicator, the spatial distribution of secondary industries in the periphery and its relation to the planned industrial parks/compounds is discussed.

Variable 4: infrastructure

Infrastructure development provides the basis for peri-urban development. However, it was always not well developed under the planned economy era and during the reform era. Since the beginning of the 1990s, local governments have paid more attention to the improvement of urban infrastructures. The *Plan 1999* was correspondingly more concerned about infrastructure development in the periphery: development of highways, metro lines, new train stations, and regeneration of old airports. In the latter half of the 2000s, the central government invested much more on infrastructure developments (especially metro lines and high-speed train stations) than ever before. Urban infrastructure includes road systems, airports, large ports, metro lines and train stations.

This Chapter only discusses the development of the road system and metro lines in terms of the total length and the spatial distribution because 1) metro lines and road system are the most important transport systems for the periphery; and 2) data for these two is available. Moreover, the other transport infrastructures such as airports, large ports and train stations are planned and sponsored by the state, thus they comply with urban plans more easily (Yu, 2008f).

Variable 5: conservation of green spaces

The conservation of green spaces has become a significant strategy in the Plan 1999 to protect the urban environment and to prevent urban sprawl. According to the analytical results from Chapter 4, planned green spaces were easily occupied by urban developments in the end of the 1980s and the 1990s due to the growth-oriented development. Conservation of green spaces is thereafter a big challenge for the implementation of the *Plan 1999*, which proposed to conserve more green spaces and to establish a green system including various types of green spaces (e.g. a green belt, building sensitive areas, ecologic-sensitive areas, forests, vegetable protected areas and green wedges). This chapter only discusses two issues regarding the conservation of green spaces due to the availability of data: the total amount of green space regarding the quantitative objective and preservation of a construction sensitive area on the urban fringe regarding the spatial distribution.

§ 6.2 Results of the conformance-based evaluation

This section shows the levels of conformity between the *Plan 1999* and actual peri-urban developments respectively in terms of the nine indicators mentioned in the previous section.

§ 6.2.1 Growth of the population size

The *Plan 1999*, like most urban master plans, works on the premise of predicting future population sizes. It expected steady population growth in the subsequent 20 years both in terms of the resident population and registered population. Resident population refers to people who live in Shanghai more than one year either with Hukou or not. In the Plan 1999, the resident population was planned to reach 15 million and 16 million respectively in the year of 2010 and 2020. The registered population refers to people who have a Hukou and live in Shanghai for more than half a year. The registered population was expected to reach 13.8 million and 14 million respectively by 2010 and 2020.

In reality, Shanghai's population has been increasing enormously in the 21st century. The actual resident population in 2000 (16.09 million) already exceeded the projected population for 2020. It increased further to 23.03 million in 2010, which was 7.03 million more than the projected population size, 15 million. It was also 6.03 million more than the projected population size for the year 2020 (National Bureau of Statistics of China, 2011). Compared to the rapid growth of the resident population, the registered population in Shanghai remained relatively stable. It grew slightly from 13.2 million to 14.1 million between 2000 and 2010. These numbers are more or less the same as planned. In general, the actual resident population did not really reflect what was anticipated by the Plan 1999. But the change in the registered population basically complied with what the *Plan 1999* expected [see Table 6.1].

(Unit: million)		2000	2010	2020
Resident population	In plan	14.57	15	16
	Reality	16.09	23.03	N/A
Registered population	In plan	13.07	13.8	14
	Reality	13.2	14.1	N/A

Table 6.1
Population growth in the Plan 1999 and in reality (Shanghai Statistical Bureau, 2012, Shanghai Municipal Government, 1998)

§ 6.2.2 Spatial distribution of the population

The *Plan 1999* also had an overall idea of the population distribution for the subsequent 10 and 20 years alongside predicting the population size. It planned to de-concentrate the population, economic activities and urban functions from the central city to the periphery in order to build a multi-centred urban structure. The planned new cities and key towns in the periphery became the new hubs to accommodate immigrants from other provinces and the relocated population from the central city area. In general, peri-urban areas in Shanghai were planned to accommodate the same amount of residents as that in the city centre, which is around eight million.

In reality, the total resident population in Shanghai increased by 6.94 million in the past eleven years (2000-2011). The central city area only accounted for a small proportion of the population growth, which were 380,000. The population in the central city area remained at 9.99 million until 2010. The resident population in the periphery increased from 6.48 million to 13.04 million during this period, which shows a growth of 6.56 million (Shanghai Statistical Bureau, 2002, Shanghai Statistical Bureau, 2011). The data above shows that the periphery contributed to more than 95% of the city's population growth.

Figure 6.1 elaborates on the population change in four different types of peripheries between 2000 and 2006. These four types of peripheries include new cities, key towns, industrial parks, and some strategic areas that were planned as strategic growth poles in the Plan 1999. The planned new cities on average witnessed a population growth rate of 20.8%. Such growth was concentrated in the new cities, which are close to the city centre. The population in the remote new cities usually remained in place [see Figure 6.1(A)]. Key towns generally lost their population during this period. Only a few areas along the outer ring road experienced population growth [see Figure 6.1(B)]. Figure 6.1(C) shows the rapid development of industrial parks, where population increased by 31.2% on average. The industrial parks along the outer ring road, in particular, experienced population growth rates of at least 50%. Furthermore, some strategic places/projects (e.g. Hongqiao Airport) generally experienced dramatic population growth [see Figure 6.1(D)] (Yu, 2008e).

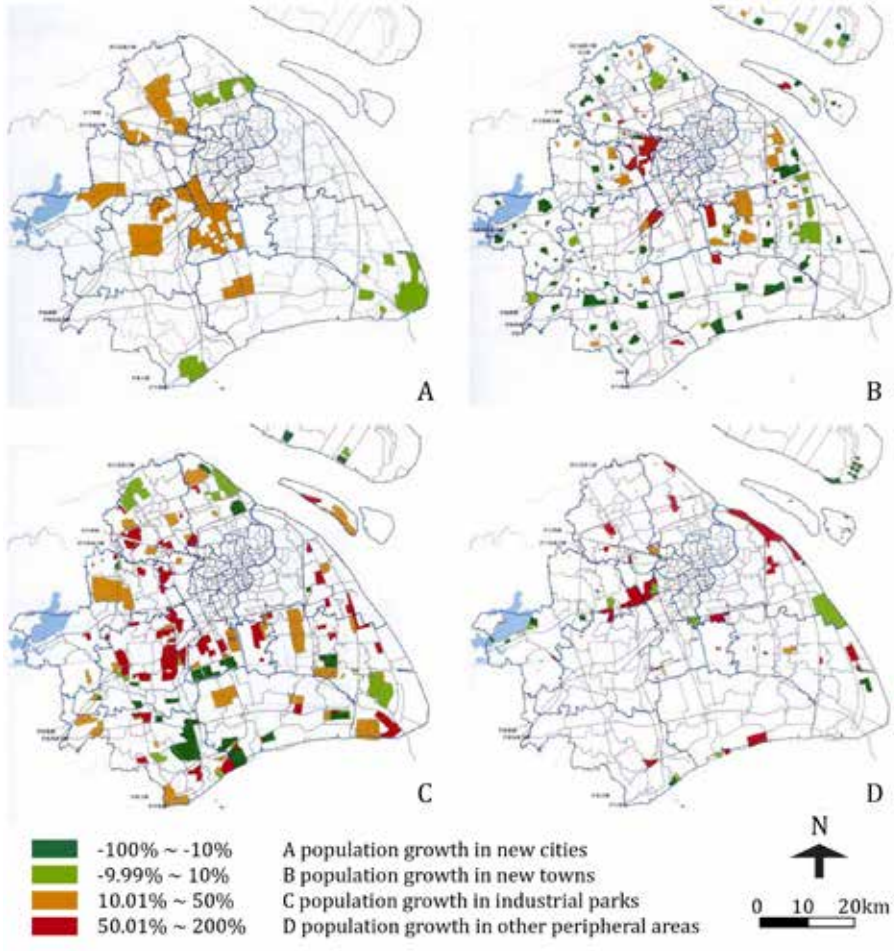


Figure 6.1
Population change in different types of periphery from 2000 to 2006 (Yu, 2008d: 32-35)

These four types of peripheries performed differently in terms of accommodating the increasing population between 2000 and 2006. Industrial parks and some strategic places become the most popular locations to accommodate migrants. The new cities, which were planned to be the main locations to accommodate the new population, did not attract as many people as planned. From the geographic perspective, population growth was concentrated on the fringe of the central city area regardless of which types of peripheries were there.

§ 6.2.3 Urban land development

As mentioned in the previous sections, the *Plan 1999* proposed extensive but rational land development in Shanghai. It proposed 2299.5km2 for urban development all over Shanghai by 2020. This amount doubled the existing urban land in 1997 (1073.1km2); and occupies 33.2% of the whole territory of Shanghai. Most of the planned new land development is located in the urban periphery beyond the outer ring road. Only 129.3km2 was planned in the central city area within the outer ring road [see Table 6.2].

	Land development		
(Unit: km2)	Reality 1997	Plan 1999 for 2020	Reality 2009
Central city within the outer ring road (663.7)	446.2	575.5	543.6 (2006)
Suburbs beyond the outer ring road	626.9	1723.9	1536.7 (2006)
			> 2196.3 (2009)
Total amount	1073.1 (1997)	2299.5	2080.3 (2006)
	1529.43 (2000)		2860 (2009)
Proportion of urban land in Shanghai	15.5% (1997)	33.2%	40.68% (2009)
	22.69% (2000)		
Total territory	6740.44 (2000)	6926.2 (2020)	7030.43 (2009)

Table 6.2
Land development in the Plan 1999 and in reality from 1997 to 2009
(Shanghai Statistical Bureau, 2012, Shanghai Municipal Government, 1998)

In reality, land development, similar to the situation of population growth, has occurred much more rapidly than what the *Plan 1999* expected. Urban land in 2009 (2860km2), which occupied 40.68% of the entire territory of Shanghai, was almost three times of the amount in 1997 (1073.1km2) (Yu, 2010). It already surpassed the planned amount for 2020. Such extensive land developments mainly occurred in the periphery. Between 1997 and 2009, urban land in the periphery (beyond the outer ring road) increased from 626.9 km2 to at least 2196.3 km2, which represented a growth by 350.3% (Yu, 2008d). It is then obvious that land development was even faster than population growth in the periphery, which showed an extensive pattern of peri-urban development.

§ 6.2.4 Spatial distribution of land development

The previous section showed that there was a significant amount of unplanned land development in peripheral Shanghai. This section continues analysing the spatial distribution of the new land development in the periphery in particular relation to the *Plan 1999*. Figure 6.2 shows that land development in different peripheral districts was uneven. Suburban districts, which are located close to the city centre (e.g. Pudong, Minhang, Baoshan, Jiading and Songjiang), witnessed more new land development than remote suburban districts. Between 1997 and 2006, the actual extent of land development in these five nearby suburban districts was significant, and exceeded the planned amount proposed in the Plan 1999. On the contrary, although actual land development in remote suburban districts was also extensive, it did not reach what the Plan 1999 expected.

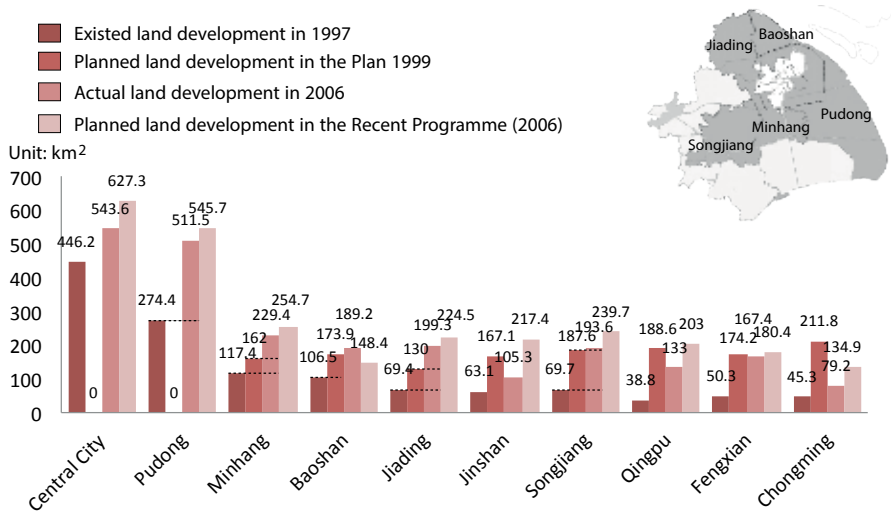


Figure 6.2
Land development in different peri-urban districts (the existed amount in 1997, planned amount, and the actual amount in 2006) (unit: km2)
Source: Shanghai Statistical Yearbook (1998-2007)

Figure 6.3 further illustrates the spatial distribution of the actual land development. The actual land development in the new cities, key towns and along the development axes basically occurred according to the *Plan 1999*. However, the multi-centre urban structure did not form because land developments expanded far beyond the planned boundary. The proposed compact city centre also never appeared. The new cities and the key towns were linked up with the central city area into a single structure by those

unplanned land developments. The green belt along the outer ring road, which was planned to prevent urban sprawl, was mostly occupied by urban development. The three proposed development axes were not all implemented. New land developments along the transit lines mainly extended into the south, north and the west. Only a few sporadic developments occurred in the Pudong district, but they were not enough to form the sea-bay development axis. Generally speaking, current land development did not comply with what the *Plan 1999* proposed mainly due to the massive urban sprawl. The main conflicts occurred on the fringe of the central city area (Yu, 2008a).

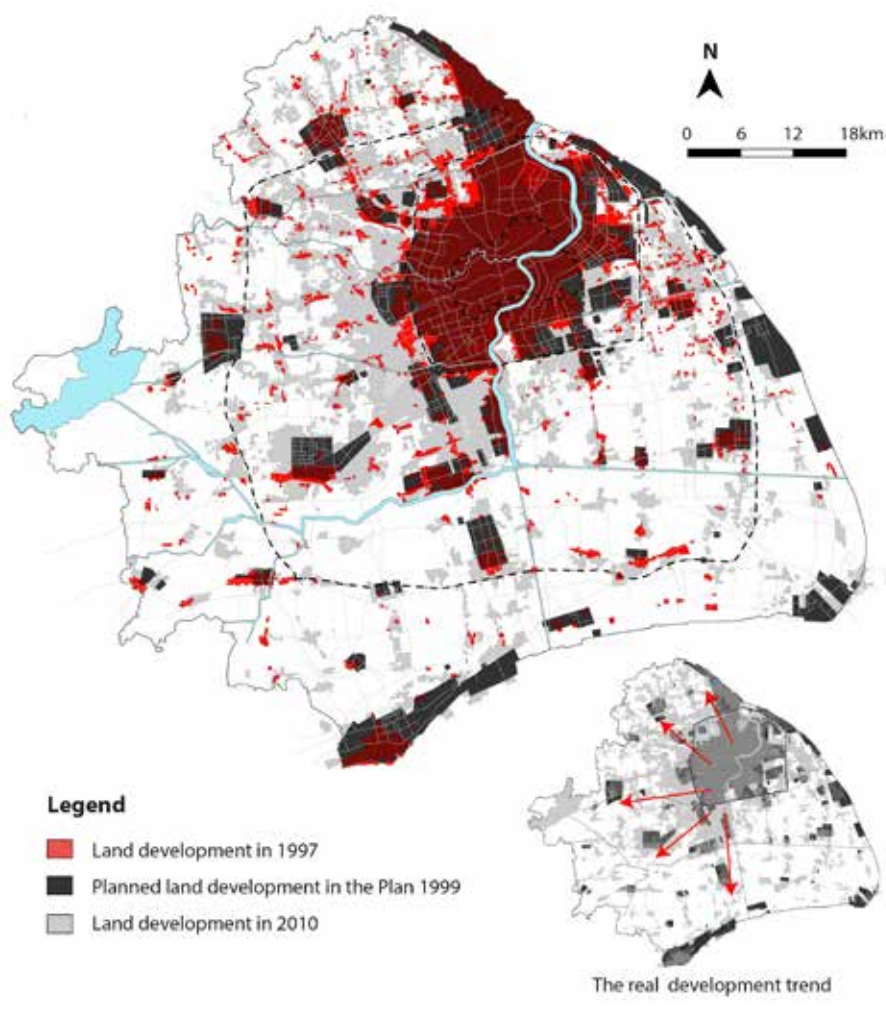


Figure 6.3
Spatial distribution of land development in the Plan 1999 and in the reality (1997 and 2010) (Author's own elaboration based on the Plan 1999, google maps and Dingding map)

Residential land development in the periphery is a major form of the land development because 1) the increasing population in Shanghai created significant demands for housing and 2) the privatisation of housing made housing construction a profitable industry and then spread widely. Between 1997 and 2006, the residential land development in Shanghai increased from 250.6 km2 to 448.6km^2 (a growth of 198km^2). In the periphery, it increased from 107km2 to 262.7km^2. In short, 80% of the new residential land development occurred in the urban periphery (155.7 km^2). Pudong, Songjiang and Minhang, the three most important suburban districts, accounted for 82.9 km^2. Until 2006, 58.6% of the total residential land was in peripheral Shanghai (Yu, 2008d). The overall residential land development in Shanghai basically complied with the amount (410km^2) proposed in the *Plan 1999*, if we take the unplanned residential developments into account. The proportion of residential land development in the peri-urban areas (20%) is also in accordance with the *Plan 1999*. However, the actual residential land development in the periphery (262.7km^2) significantly exceeded the planned amount (180km^2) [see Table 6.3].

	Residential land development		
(Unit: km2)	Reality 1997	Plan 1999 for 2020	Reality 2006
Central city within the outer ring road	143.6	230	185.9
Suburbs beyond the outer ring road	107	180	262.7
Total amount	250.6	410	448.6

Table 6.3
Residential land development in the Plan 1999 and in reality (1997 and 2006) (Shanghai Statistical Bureau, 2012, Shanghai Municipal Government, 1998)

The rapidly constructed residential land developments in the periphery did not conform to the planned housing developments in terms of spatial distribution. The planned new residential developments are mostly located in the new cities, key towns, along the metro lines, and in the places between the inner ring road and the outer ring road. In reality, significant amounts of unplanned housing developments appeared before the planned residential developments were accomplished. Such unplanned residential developments happened frequently along the highways and on the fringe of the central city area, particularly in the southern-west corner of the central city area [see Figure 6.4].

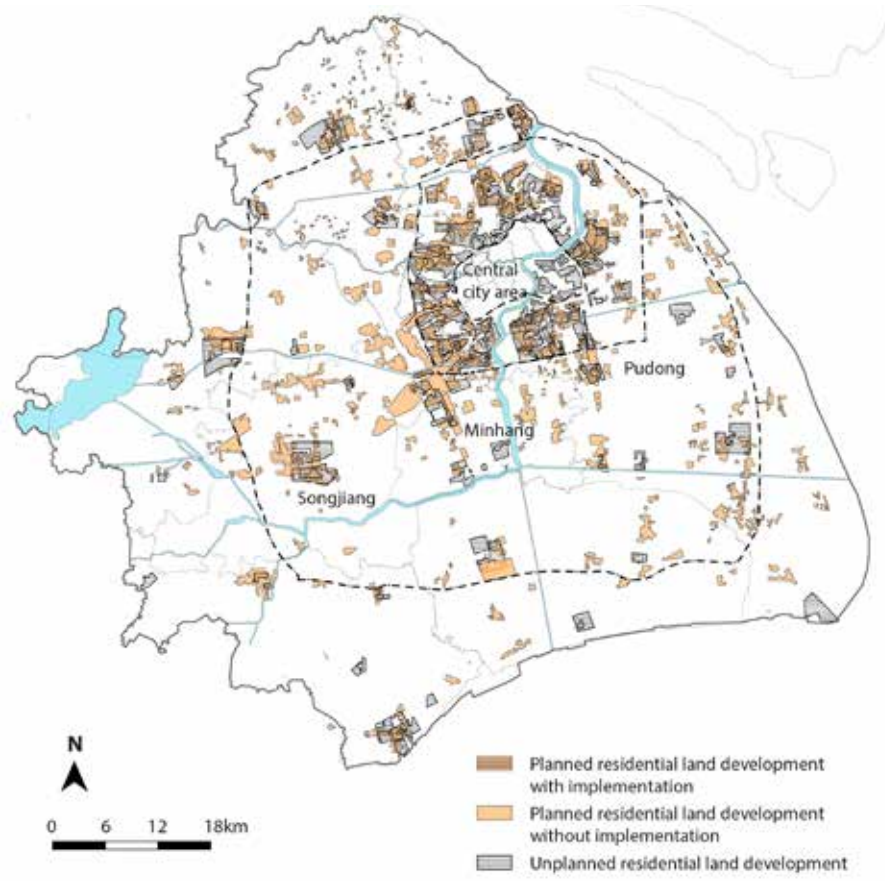


Figure 6.4
Residential land development in plans and reality
(Author's own elaboration based on the Plan 1999, google maps and Dingding map

§ 6.2.5 Industrial structure in terms of employment and output

As we mentioned before, industrial development has always been the driving force of the economic and urban development in Shanghai, especially in its peri-urban areas. The *Plan 1999*, in order to adjust to the new circumstances, proposed to upgrade Shanghai's industrial structure by replacing most of its secondary industries with tertiary industries (e.g. modern services and advanced manufacturing). More specifically, the Plan 1999 intended to increase the employed population to 8.62 million by 2010 and 9.1 million by 2020. It further proposed that the future employment structure would be 5%, 45% and 50% respectively in the agricultural, secondary and tertiary industries by 2010; and 2%, 38% and 60% by 2020 (Yu, 2008e).

In reality, Shanghai's working-age population reached 8.86 million by 2006, which was more than the amount planned for the year 2010. Shanghai's industrial structure has also been fundamentally changed in terms of its employment structure. In 1997, 49.1% of the 8.47 million people in the city's working-age population were employed in secondary industries; 38.2% were employed in tertiary industries. In 2000, the number of workers employed in the service sector exceeded their counterparts in the secondary industrial sector; and kept rising steadily in the following years. In 2010, the number of workers employed in the service sector accounted for 55.92% of the entire working-age population [see Figure 6.5]. Overall, the present employment structure follows what was proposed in the *Plan 1999*.

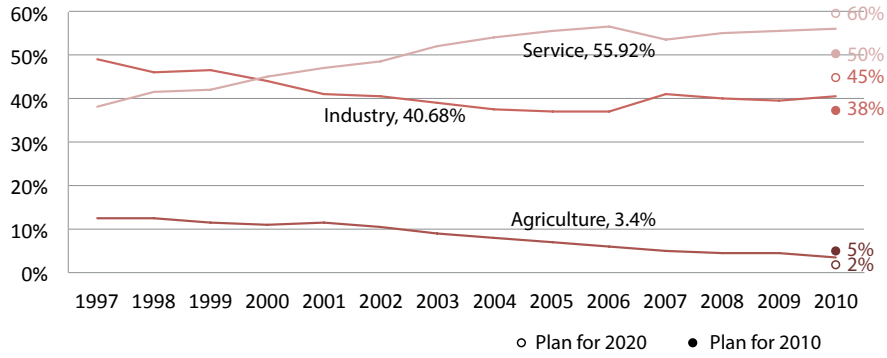


Figure 6.5
Change in employment structure (Shanghai Statistical Bureau, 2009-2011)

The proportion of the industrial output changed in proportion to the change in the employment structure. In 2000, the output from the tertiary sector for the first time exceeded the output from the secondary industrial sector, and contributed to more than half of the GDP. In the following six years, the secondary sector and tertiary sector developed in parallel [see Figure 6.6]. From 2006, the tertiary sector began to play a dominant role in the city's total industrial output. The aforementioned transformation basically adhered to the idea of industrial restructuring that was proposed in the *Plan 1999*. The change in Shanghai's industrial structure, both in terms of its employment structure and the proportion of industrial outputs from different sectors, conformed to the objective of industrial restructuring stated in the *Plan 1999*.

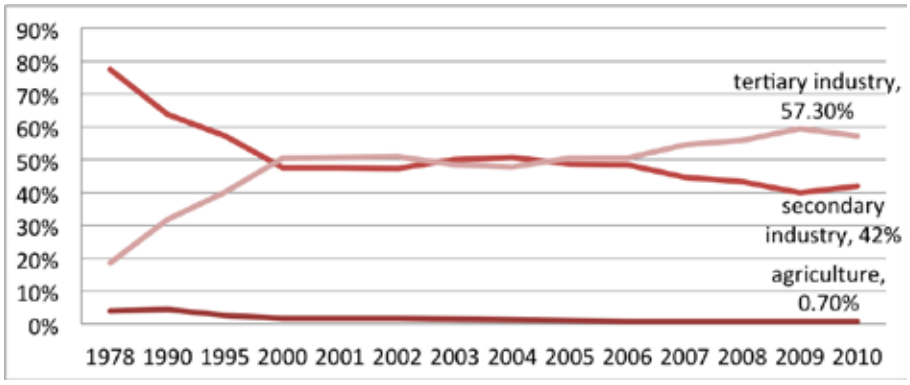


Figure 6.6
Changing proportions of industrial outputs from different sectors between 1978 and 2010 (Shanghai Statistical yearbook, 2011)

§ 6.2.6 Spatial distribution of secondary industries

The *Plan 1999* also proposed to relocate the secondary industries to the periphery. The actual industrial developments indeed expanded extensively into the periphery. Most of the industrial land in the central city area was replaced by infrastructure, commercial facilities and modern industries (e.g. ICT). The amount of industrial land in the city centre decreased from 18.6 km^2 to 5.4 km^2 between 1997 and 2006. The demolished factories moved to the periphery as the *Plan 1999* suggested. In the periphery, the actual extent of industrial land reached 534.2 km^2 in 2008, which accounted for 84.2% of Shanghai's industrial land (Yu, 2008c). In 2010, the amount of peripheral industrial land reached 716km^2, which was almost three times of the amount (283

km2) planned for in the *Plan 1999* (Shanghai Statistical Bureau, 2011). Overall, Shanghai's periphery accommodated a majority of the secondary industries that were either newly built or relocated from the central city area. The relocation of secondary industries from the central city area into the periphery also mostly complied with the idea of industrial relocation that was proposed in the *Plan 1999*.

The *Plan 1999* not only proposed to relocate industrial developments from the city centre into the periphery, but also planned the spatial restructuring of the secondary industrial development in the periphery at the micro scale. It proposed to establish many industrial parks and high-tech poles in order to integrate small-scaled suburban industries and the relocated industries from the city centre. These newly proposed industrial parks and high-tech poles also reflected the '*Three Concentration Programme*'（关于切实推进"三个集中"加快上海郊区发展的规划纲要）that was proposed by the *11th Five-Year Plan* at the national level.

In accordance with the national level plan, the secondary industries are still the most important driving force for peri-urban development in Shanghai. Most of them located in the industrial parks and high-tech poles as planned (Zhu, 2012b). However, the boundaries of the planned industrial parks have been extending continuously. The number of industrial parks has also increased dramatically. Moreover, there were still many small-scale industries spontaneously developed beyond the boundaries of the planned industrial parks [see Figure 3.3]. Such an extensive amount of industrial land development in the periphery and its spatial distribution did not strictly follow the *Plan 1999* or the pilot programme, the 'Three Concentration Programme'.

§ 6.2.7 Development of road system and metro lines in terms of the quantitative targets and spatial distribution

As we mentioned before, local governments, who gained additional revenues from land leasing, have devoted more funds and attention to the development of urban infrastructures since the beginning of the 1990s. The *Plan 1999* correspondingly focused on the improvement of urban infrastructures, especially the construction of highways and metro lines in the periphery. It planned 2500km of roads including 650km of highways. The density of the road system in the plan was 0.43km/km^2. It also planned three types of rail transport lines: four rapid rail lines, eight metro lines, and five light rail lines. The total length of the rail transport lines was planned for 810km, of which 330km was in the periphery. 451 metro stations were planned [see Table 6.4].

	1999 reality	Planned for 2020	2012 reality
Total length (km)	20.06	810	468.19
Number of metro stations	N/A	451	524
Passenger capacity (million)	102.91	N/A	2275.73

Table 6.4
Development of metro lines and metro stations in the Plan 1999 and in reality (Shanghai Statistical Bureau, 2012, Shanghai Municipal Government, 1998)
Source: Shanghai Municipal Government, 1998

The actual development of the road system and metro lines generally adhered to the *Plan 1999* with only a few mismatches. Regarding the road system, there were 18000km of roads constructed by 2007. 14750km were beyond the outer ring road. Although this number dramatically exceeded the planned amount, most of the highways and main roads were built in accordance with the *Plan 1999*. According to Figure 6.7, the mismatch (15500km of unplanned roads) was mainly due to the unplanned small lanes either on the urban fringe or around the new suburban centres, which did not influence the overall road system. If we compare the actual development of the roads with what was planned in the *Short-term Construction Plan 2001-06* and *Short-term Construction Plan 2006-11*, they are more in accordance (Shanghai Urban Planning and Design Research Institute, 2001, Shanghai Urban Planning and Design Research Institute, 2006).

Compared to the construction of the road system, the construction of the metro lines conformed to the *Plan 1999* even more. By 2012, eleven metro lines were constructed accordingly. The length of metro lines in the year 2012 (468.19km) is more than 23 times of its length in the year 1999 (20.06km). Although the metro lines were not fully implemented as the *Plan 1999* proposed (810km), they are on the right track of mostly fulfilling the plan's objectives. These metro lines were able to carry almost 8 million daily passengers, which accounted for 43% of the total carrying capacity of the public transportation system (Shanghai Shentong Metro Company, 2012). Its passengers' capacity in 2012 (2275.73 million) was also more than 22 times of its counter part in the year of 1999 (102.91 million). There were only few mismatches. For instance, one rapid rail line and two light rail lines were converted into metro lines. Another two rapid rail lines were decomposed into separated short branch lines, and only two light rail lines instead of five were constructed. Likewise, a few lines did not stretch into the remote new cities (Qingpu and Jinshan) [see Figure 6.7].

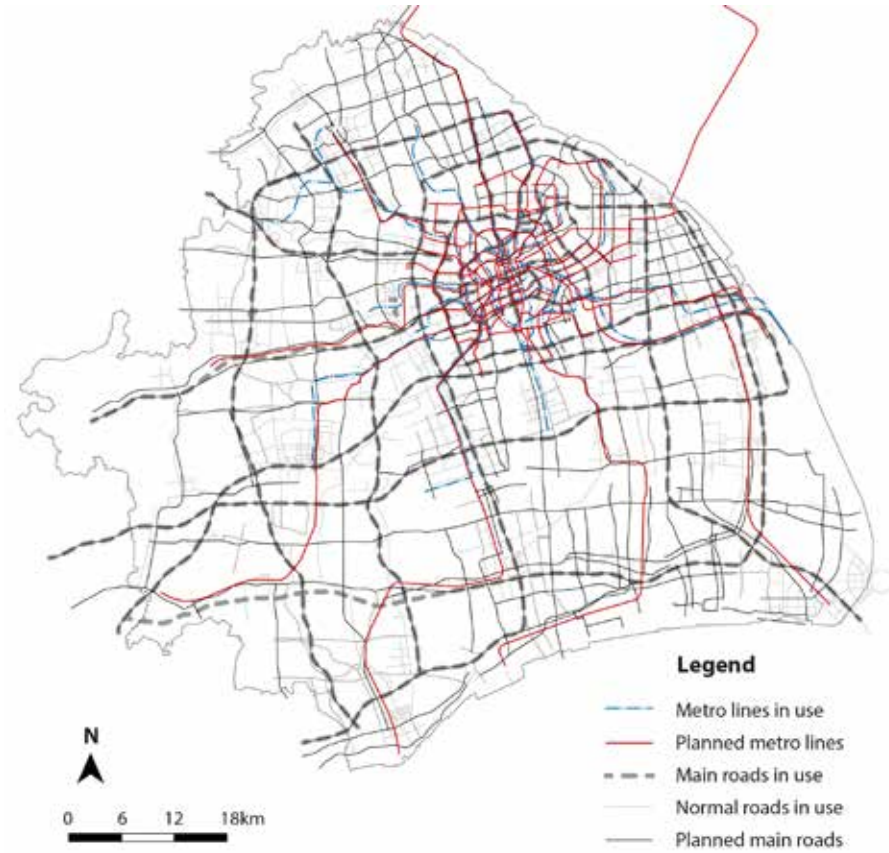


Figure 6.7
Development of roads and metro lines
(Author's elaboration based on Google maps, the Plan 1999: 14-18, and Yu, 2008f).

§ 6.2.8 Amount of green spaces

The *Plan 1999* set a series of quantitative targets for the overall conservation of green spaces. First, the per capita public green space should reach 10m2. Secondly, the per capita green space should reach 21km2. Thirdly, the ratio of green space in Shanghai should reach 35% (2219.18km2), and fourthly, the ratio of forests in Shanghai should reach 30% (Shanghai Municipal Government, 1998).

	Status quo 1999	Plan for 2020	Status quo 2012
Ratio of green space	20.3%	35%	38.3%
Overall area of Shanghai	10668.59 ha	N/A	124204 ha
Green area in the periphery	7137.09 ha	N/A	N/A
Per capita green space	3.62 m^2	10 m^2	13.29 m^2

Table 6.5
Conservation of green space (Shanghai Statistical Bureau, 2012, Shanghai Municipal Government, 1998)

Table 6.5 shows that the quantitative objectives have mostly been achieved in reality. The per capita public green space in 2012 reached 13.29 m^2, which is 3.29 m^2 more than planned and 3.7 times of that in the year of 1999. The ratio of the green space in Shanghai was 38.3% in 2012, almost two times of that in 1999 (Shanghai Statistical Bureau, 2013). Only the development of forests in the periphery is far from reaching the set targets. 30% of Shanghai territory was planned for forests. However, the actual development of forests was only 11.6% of Shanghai territory by 2006 (Yu, 2008b).

§ 6.2.9 Preservation of a construction sensitive area

Along with the quantitative objectives, the *Plan 1999* also proposed a complex green system in Shanghai for the purpose of environmental protection (see 3.1.2 for details). In reality, the planned green spaces in the central city area such as the green parks and green corridors have been realised accordingly (Yu, 2008b). The green spaces planned on the urban fringe (the green ring, eight green wedges and construction sensitive areas) met many difficulties in following what the *Plan 1999* proposed. By 2010, 46% of the territory in the green ring, rather than 35.5%, was developed for urban uses. The planned eight green wedges also decreased significantly due to intensive urban construction. Only 7.64% of the territory in those green wedges was left as open space (Shanghai Statistical Bureau, 2011).

Figure 6.8 shows the extensive unplanned urban land developments in a construction sensitive area on the southern west corner of the central city area until 2010 (see Figure 3.4 for the location of the building sensitive area). Although there were no data showing the real land use of the building sensitive area, the real urban land development definitely surpassed what planned (27%). Regarding the development of the ecologic sensitive area, in principle, the actual land development followed what was proposed in the *Plan 1999* possibly due to its remote location. Only 20% of the territory in ecologic sensitive area had been developed for urban uses by 2006 (Yu, 2008b). Moreover, the eight natural protection areas were not mentioned further either in the following plans or in the planning practice. Overall, the green spaces planned on the urban fringe had more difficulties with being protected as planned comparing to the green spaces in the city centre or in the remote suburbs.

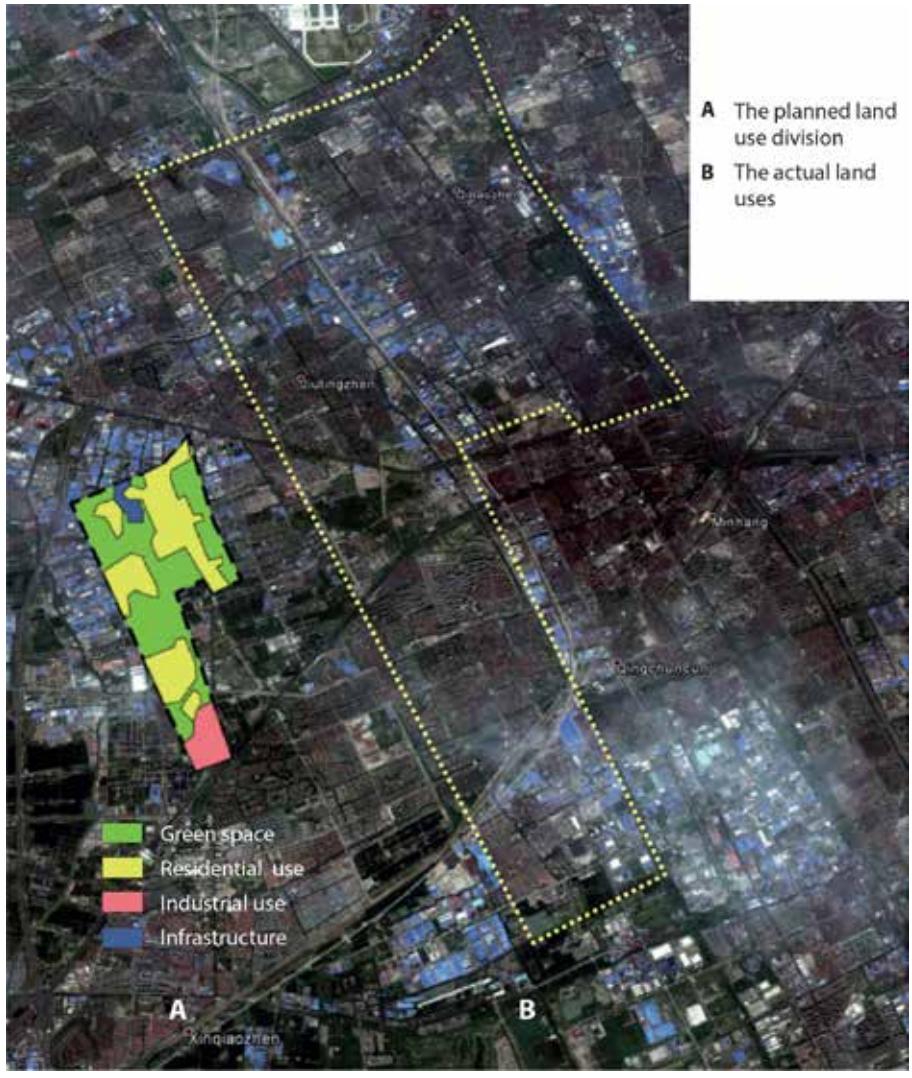


Figure 6.8
Extent of urban construction in a building sensitive area until 2010 (Source: Google maps)

The two sections above showed that the quantitative objectives of protecting green spaces were better accomplished than the spatial distribution objectives. In other words, enough green spaces have been built; but they were not preserved in the planned locations. Some strategic green spaces were eroded by urban construction. Although they were mostly compensated in other locations, the new locations were usually not able to fulfil the original planning objectives. For instance, more green spaces in the city centre were not able to play the same role as green wedges in regards to preventing urban sprawl.

§ 6.3 Discussion on the level of conformity

The previous analyses show three main characteristics of the *Plan 1999*'s implementation status. Firstly, the level of conformance varied between the quantitative objectives and the spatial distribution objectives. Take industrial development for example, industries have been restructured according to the *Plan 1999* in terms of their employment structure and the proportion of industrial outputs. However, the spatial distribution of industrial developments did not really follow the *Plan 1999*. Large proportion peripheral industries were not integrated into the planned industrial parks or high-tech poles. There were still many small-scale industries scattered in the periphery. The similar situation also happened with the infrastructure development and conservation of green spaces. In general, the quantitative objectives seem more easily achieved compared to the spatial distribution.

Secondly, the level of conformance varied between different indicators/subjects. Infrastructure development is much better implemented than that of growth in population size, land development and industrial restructuring. Likewise, infrastructure development successfully achieved the quantitative objectives. Such difference is closely related to the different ways in which urban development was managed. Infrastructure development is funded and managed by public authorities at both the national level and local level. Thus, it is more feasible to be realised as planned. In contrast, the market leads industrial restructuring and land development, which has a greater potential for deviating from the official plans due to the uncertainties brought on by the market and lack of control from public authorities (Tian and Ma, 2009). For instance, industrial land and planned new green spaces could be easily converted into residential land through certain procedures if such changes can generate more profits for local governments. Overall, the development subjects/variables, which were less influenced by the market, are implemented more effectively.

The previous sections evaluated the implementation of the *Plan 1999* through single indicators. However, how the implementation status relates to all of these indicators has not been explored so far. In fact, different types of urban development interactively influenced each other. Likewise, different types of development are highly inter-related. Some small mismatches were able to bring about big changes. Take the development of a metro line (Line 9) that connects the city centre with Songjiang New City for instance, where only four stops were planned along the metro line. This route only takes half an hour from the city centre to Songjiang City. The actual route of Line 9 mostly follows what was originally planned for. However, three new unplanned stops along the metro line were added, which made the situation dramatically different [see Figure 6.9]. There were now seven stops in between, instead of four. Consequently, these three unplanned stops significantly prolonged the travel time between the new city and the city centre. Songjiang New City possibly became less attractive due to

the longer travel time to the city centre. Moreover, unplanned urban development occurred around the newly added metro stops. These unplanned urban developments actually occupied the planned green areas, which were supposed to separate the city centre with the new city; and ultimately resulted in urban expansion. In this sense, the development of metro lines influenced land development and the development of the new cities. It made the objective of preventing urban expansion unimplementable.

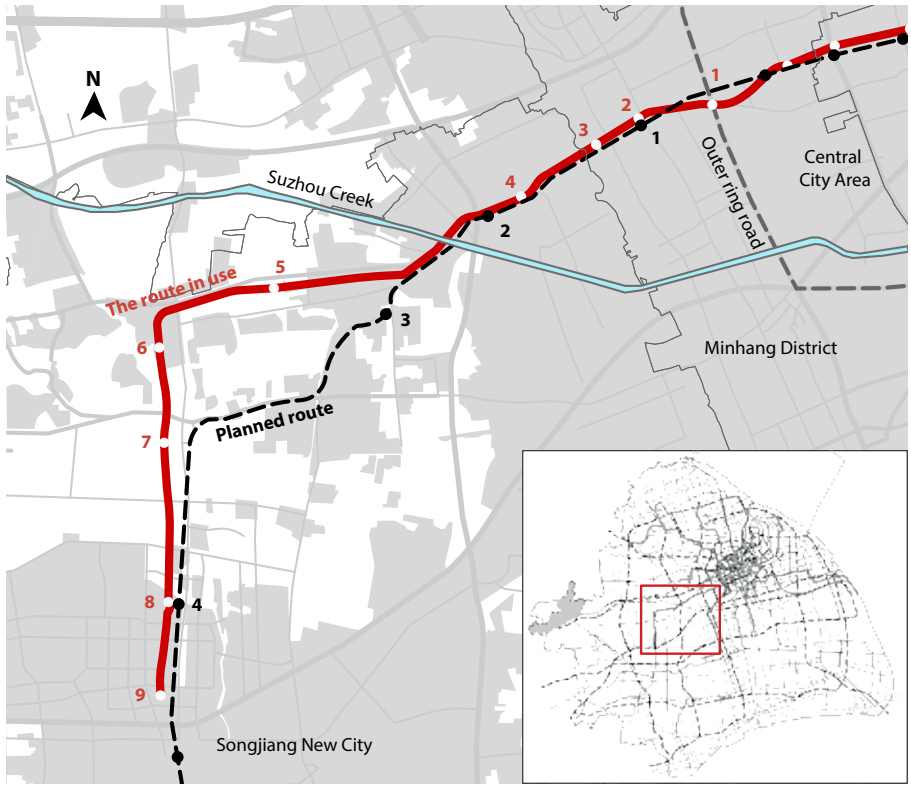


Figure 6.9
Unplanned metro stations along the Metro line 9 (Source: Google maps)

Thirdly, the level of conformance varied between locations. The analysis above shows that Shanghai's urban development expanded extensively into the periphery. Urban fringes became the main hubs to accommodate the increasing population, investment and new urban development. However, they were not deliberately planned like the new cities or key towns for such urban development. They gradually became places full of conflicts between the plans and actual urban developments. For instance, open spaces

planned on the urban fringe are now mostly replaced by urban development. Likewise, land uses in the urban fringe were changed to generate more profits. In general, unplanned developments occurred more frequently on the urban fringes and in the nearby periphery than other places due to their shorter distance from the central city area and the relatively lower land prices (Tian and Shen, 2011).

§ 6.4 Factors related to the level of conformance

The previous sections evaluated planning implementation through ten indicators; and summarised several characteristics of the levels of conformity between the *Plan 1999* and actual urban developments. This section further explores the potential factors that influenced plan implementation.

§ 6.4.1 External influences

Urban development in Shanghai used to be a closed circuit without many influences from external factors. In the 2000s, urban development has become more heavily influenced by external factors. The most influential external factor is the unique rapid urbanisation process in China, which is closely related to its economic growth, industrialisation, and the relaxation of the Hukou system. In the rapid urbanisation process, Shanghai's population reached 23.0 3 million in 2010, which significantly exceeded the projected population (16million). Dramatic population growth together with economic prosperity brought tremendous opportunities for urban development. They also brought many challenges for the master plan in terms of accurately anticipating the scale of future urbanisation, and to implement its objectives. Consequently, the demands for land development, housing construction, transportation and industrial development successively exceeded the predictions of the *Plan 1999* (Yu, 2008f).

Market forces are another important external factor that influenced the implementation of the *Plan 1999*. Section 5.4 reveals that the levels of conformity between the reality and the *Plan 1999* varied in different locations due to market forces. For instance, urban fringes usually met with more difficulties in following the *Plan 1999* because lower land prices made these locations profitable. Green wedges, which are located on the urban fringe, were usually occupied by private sector-led housing projects. Local governments prefer leasing land to developers in order to

generate more revenues and then compensating for them with other places, which are not as profitable. Market forces also made the levels of conformity varied between different urban issues. For instance, infrastructure development, which is still funded and managed by the public authorities and less influenced by the market, were always implemented in accordance with the plan (Tian and Shen, 2011). Housing developments and industrial developments, which are led by market mechanisms, were not well implemented. Above analysis indicates that the planning practice did not effectively coordinate with the market. Thus, it is necessary for plan-making processes and plan implementation practice to take the external factors (e.g. rapid urbanisation and market forces) into account as essential considerations in the future.

§ 6.4.2 Attributes of the master plan

The attributes of a plan also significantly influence the plan implementation process. The *Plan 1999* has many ambitious objectives with spatial, economic and social concerns. Making of relatively ambitious plans was never expected to be capable of being realised in the prevailing economic circumstances. Local government depicted such a nice picture just in order to get more subsidies granted from either provincial government or the central government for the future development (Interview Zhou, 2013). On the other hand, many considerations were lost when the objectives were translated into planning strategies, which were usually very physical oriented and location specific. The physical oriented strategies were inappropriate for the complex planning circumstances, and became the principal factor, which deterred successful plan implementation. According to Zhou (2007), this is because the Shanghai Planning and Design Institute, which is still dominated by architect-planners, made the *Plan 1999*.

Furthermore, the long approval procedure is also considered a major barrier for plan implementation. The *Plan 1999* was prepared from 1997. It took two years to finish the plan making process, and another two years for the approval procedure. Between those four years (1997-2001), Chinese society was experiencing significant changes such as the radical housing reform (1998) and China's accession into the WTO (1998). All of these changes made urban development drastically different than before. As a result, the objectives in the *Plan 1999* (e.g. urban scale, land development and housing construction) made before these changes, were now out of date and inadaptable to the current situation (Luo and Shen, 2008). In this sense, mismatch of plans and practical development is better not considered as a failure but a consequence of a change in priority or context in decision-making (Zhang, 2003). As a whole, planning objectives as well as spatial strategies have to be updated properly in order to adjust/adapt to the current socio-economic circumstances and planning system.

As a matter of fact, the *Plan 1999* has been updated every five years in order to modify the planning objectives, to update planning strategies, and to more effectively supervise urban development according to the changing socio-economic circumstances. These updated plans include the *Shanghai Short-term Construction Plan 2001-06*, *Shanghai Short-term Construction Plan 2006-11* and *Shanghai Short-term Construction Plan 2011-16*. From this point of view, although the gap between the *Plan 1999* and the actual urban development was significant in some ways, this did not necessarily imply unsuccessful implementation. However, most of the short-term construction plans were only trending plans, which kept revising the previous plans in order to compromise with existing developments. Take the *Shanghai Short-term Construction Plan 2006-11* for instance; it modified many targets that were defined in the *Plan 1999*. In this plan, the amount of urban land in the year of 2010 increased from 1296km2 to 2160km2. The city's population increased from 15 million to 20.32 million. These new targets were very close to the existing development/status in 2006, which already had a population of 19.64 million people and 2080.3km2 of developed land. Urban development after 2006 continuously exceeded the expectations of the *Shanghai Short-term Construction Plan 2006-11*. The population in 2010 reached 23.03 million, while the amount of urbanised land in 2009 reached 2860km2. Obviously, such a large number of small-scale modifications left limited space for future developments as the rapid growth were obvious. They filled the gap between plans and realities in a passive way, without actively providing any new perspectives or appropriate strategies for future urban development.

§ 6.4.3 Cooperation between sectoral plans

Urban development cannot be separately organised by individual sectors as was already discussed in Chapter 3. This chapter further verified that the implementation of urban master plans could not be separately evaluated with single objective. Various objectives were in fact closely interrelated. Engaging a single subject could easily influence other subjects. As discussed in the previous sections, several unplanned stops along the metro line resulted in many unplanned urban developments and ultimately influenced the success of plan implementation outcomes. Another example is the relationship between population growth and land development. Urban land development grew by 93.9% in the past ten years. It was much more rapid compared to population growth (57.9%). Such a difference demonstrated that the periphery developed in a very extensive way, which contradicted the idea of preventing urban sprawl as proposed in the *Plan 1999*.

The development of metro lines, land development and population development are respectively directed by different sectors rather than the Urban Planning and Land Resource Bureau. The construction of metro lines was managed by the Shanghai Urban Construction and Transportation Commission (C&T Committee) (see 5.3.2 for more detailed explanations). This sector proposed these three stops in *Shanghai Rail Transportation System Plan 2005 (*上海城市轨道交通系统深化规划*)* and the *Place Making Plan of Shanghai Rail Transportation 2006 (*上海城市轨道交通规划选线落地*)* in order to facilitate the development of social housing projects and Sheshan Recreational Park. Land development was predominantly driven by land use plans made by the Land Resource Bureau, which was integrated with the Planning Bureau in 2008. These sectors, which had their own priorities, frequently conflicted with the Shanghai Urban Planning Bureau. Inconsistencies between different sectors became the crucial reason that resulted in low level of conformity. Therefore, cooperation and consistency between different sectoral plans are of great importance in efficiently guiding future urban development.

§ 6.5 Summary

This chapter evaluates conformance between the *Plan 1999* regarding Shanghai's peri-urban development and the corresponding peri-urban development. The mapping results did not give 'yes' or 'no' answers nor did they precisely calculate the percentage of plan implementation outcomes. Instead, they showed the main characteristics of conformance levels and the difficulties with the plan implementation process.

1 First, quantitative objectives are more easily achieved compared to the spatial distribution targets. Planned spatial distributions usually cannot be realised if the quantitative goals are not achieved.
2 Secondly, the development subjects that were less influenced by the market were usually better implemented than the subjects that were more influenced by the market. But the development of different subjects was actually closely interrelated.
3 Thirdly, the level of conformance varied between locations. Urban fringes became the most critical places that were full of conflicts between the *Plan 1999* and actual urban developments.

Overall, the actual peri-urban development in Shanghai took place much more rapidly than what was planned for in the *Plan 1999*. This plan did not effectively guide the urban restructuring or peripheral development. At the very least, it did not accurately forecast future population growth and urban expansion rates; and then did not plan enough housing and infrastructures to meet increasing demands. Land developments also expanded far beyond the projected expectations. The 'multi-axis, multi-centre and multi-level' urban structure was replaced by urban sprawl. Nevertheless, the pilot programmes and key projects proposed in the *Plan 1999* have been implemented with a high level of conformance. Likewise, most of the planned new cities and industrial parks have been implemented as planned.

The potential factors that influenced the success of planning implementation were also explored in this chapter. First, external influences, such as rapid urbanisation processes and market forces, brought uncertainties into planning practice and then made the plan implementation process more complex and difficult. Secondly, the spatial strategies of the *Plan 1999*, which were still physical-oriented and location specific, were not able to fully and concisely convey the objectives. The plan also lacks the flexibility to deal with changing circumstances and uncertainties. Furthermore, the regularly updated editions of the *Plan 1999*, which were supposed to make the planning implementation more feasible and practical, were usually reactive, trending plans. These trending plans compromised with existing developments in a passive way; rather than taking the initiative in offering new visions or strategies for future urban development. Thirdly, peri-urban development in terms of different subjects influenced each other. Sectoral plans, which respectively guided the development of

these subjects, lack proper coordination. Lack of cooperation between the sectoral plans usually resulted in contradictions and ultimately decreased the level of conformance between the *Plan 1999* and comprehensive urban developments.

Aside from the empirical findings, this chapter also contributes to the evaluation research on plan implementation. For the very first time, it evaluates the implementation of a strategic plan, the *Plan 1999*, through a conformance-based approach. It suggests that evaluating a single aspect or separately evaluating several aspects in the master plan is an incomplete, one-sided approach. For an urban master plan, the evaluation of various subjects, especially an analysis on their interrelations, are crucially important and necessary. However, conformity between the plan and the actual spatial development is only the first step of identifying the success of plan implementation as suggested by Faludi (2000). An analysis on how the ideas and visions in the master plan have been translated into local urban developments requires further research, which will be explored in Chapter 7.

7 Performance-based evaluation of the implementation of Shanghai Master Plan (1999-2020)

The previous chapter examined the degree of conformity between the *Shanghai Master Plan (1999-2020) (Plan 1999*) and actual urban development, and further discussed the influential factors. The conformance-based evaluation is only the first step to fully explain plan implementation because it only focuses on the direct relationship between the planned status and the spatial outcomes. To evaluate the implementation of a strategic urban master plan, performance-based approach, which focuses on the application of the plan in the urban development processes, is also necessary (Mastop and Faludi, 1997). In this chapter, I then evaluate the implementation performance of the *Plan 1999*, which in my interpretation is to analyse how and in which way were its objectives regarding the peri-urban development consulted and used in local urban development and the respective projects.

The implementation process is the essential issue of the performance-based evaluation; specifically in terms of understanding to what degree plans have been consulted by individual actors and translated into programmes, decision-making and operational actions (Berke et al., 2006). As discussed in Chapter 3, a case study method is employed for the performance-based evaluation. Two cases are selected, varying in their levels of conformity between the *Plan 1999* and the actual urban developments, their development periods and management models, as well as their functions and the types of strategic roles they played in Shanghai's development. The first case, North Jinqiao Export Processing Zone (北金桥出口加工区, from now on North Jinqiao EPZ), is one of the earliest and economically successful industrial parks in Shanghai, at the national level. The second case, Xinmin Development Area (新闵经济开发区, Xinmin Area), is a typical case of extremely rapid urbanisation and a large-scale, commercially developed housing project.

This chapter starts with the two case analyses (Section 7.1 and 7.2) following the proposed analytical scheme: 1) project conformity, 2) the *Plan 1999* as a frame of reference for decision-making (i.e. rationality), and 3) utilisation of the plan in operational actions in relation to the changing decision situations [see Figure 3.6]. Aside from the three-criteria analytical scheme, there are some supplements to case analysis. First of all, the context of the case studies in terms of their socio-economic background, the original spatial conditions, and the development history also influences the application of the *Plan 1999*. Thus it will be described as background information before each case evaluation. In the second place, the project conformity deals with different issues in the two cases because the plan's attention varied. In the third place, evaluating the influence of the plan on decision-making and operational actions refers to whether involved actors respond to the plan in their decision-making or operational actions. As such, roles and the competences of the relevant actors will be firstly introduced in order to illustrate on whose decision-making and operational actions the *Plan 1999* influences. In Section 7.3, performance of the *Plan 1999* in its implementation process of the two cases is compared.

§ 7.1 Northern Jinqiao EPZ

The North Jinqiao EPZ is the most economically successful industrial park in Shanghai, a centre of manufacturing and export industry of national and even global importance. Since its establishment in 1990, it has made a significant accomplishment in terms of economic development. Its industrial output in 2010 reached 20.92 billion RMB (2.58 billion Euros), with an annual growth of 9.6% during the eleventh five-year plan period (2006-2010). This amount was ranked first among Shanghai's industrial parks, accounting for 6.7% of Shanghai's industrial output, and 23.8% of the Pudong District's industrial output. The profits that were generated by the industrial enterprises in the North Jinqiao EPZ (16.32 billion RMB, equals to 2.01 billion Euros) were also the highest among the 41 industrial parks (both at the national level and at the municipal level) in Shanghai. Moreover, it provided 116,300 jobs in 2009, which accounted for 27.3% of the job opportunities provided by all the national industrial parks in Shanghai (Shanghai Statistical Bureau, 2011).

The enormous economic achievement in the North Jinqiao EPZ is closely related to the long history of industrial-oriented urban development in Shanghai beginning in the 1950s. In the past six decades, Shanghai has experienced two stages of rapid industrial developments. In the first stage (during the 1950s), many industrial sites and several satellite towns driven by industrial development were built on the urban fringe. In the second stage (the late 1980s and the 1990s), stimulating economic development

and upgrading the industrial structure of Shanghai were the main issues. Between 1987 and1992, seven national industrial parks, considered as the first generation of Shanghai's national industrial parks, were launched successively. Between 1993 and 2010, another 34 industrial parks were established (State Council, 1990).

The Jinqiao Export Processing Zone is an example of the first generation of Shanghai's national industrial parks. It was initiated in 1990 as a strategic programme in order to promote the economic development of the Pudong District and reorganise Shanghai's industrial structure according to the 8th Five-year Plan (1991-95). It is presently one of the biggest industrial districts in Shanghai with an area of 27.38km^2. It consists of two parts: the northern part (18.48km^2) which is the original territory initiated in 1990; and the southern part (8.9km^2) which was added in 2007 in order to enlarge its industrial capacity (Zhu, 2012b) [illustrated in brown in Figure 7.1].

The northern part, which will be called the North Jinqiao EPZ, is the primary focus for the analysis presented in this chapter. It is located along the outer ring road in Pudong District, which was considered the remote periphery in the beginning of the 1990s. In the rapid urban expansion process of Shanghai, it gradually became the edge of the central city area. In its surroundings there are newly built and older residential compounds to the west [2 and 3 in Figure 7.1], a rural village to the north [1 in figure 7.1], a wedge-shaped green space to the south [4 In the same figure] and an infrastructure hub (under construction) to the east [5 In the same figure].

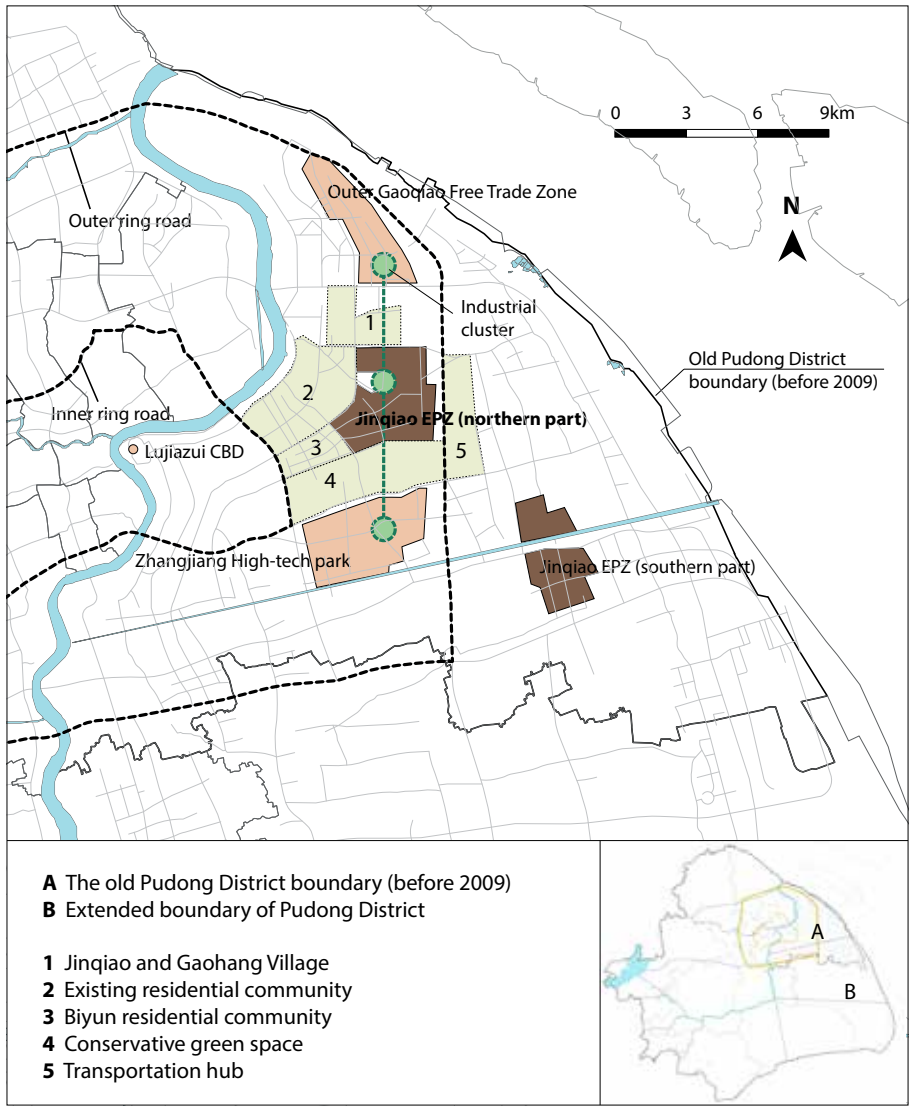


Figure 7.1
Location of North Jinqiao EPZ and its surrounding environments (author's own).

The North Jinqiao EPZ has experienced three different development stages in the past 23 years due to policy shifts and the changing social and economic circumstances. In the 1990s, it specialised in manufacturing and export industries. Together with other two national industrial parks, Outer Gaoqiao Free Trade Zone and Zhangjiang High-tech Park, it formed the biggest industrial cluster in Shanghai [green line with green circles in Figure 7.1]. The complementary character of this cluster stimulated the cooperation of different kinds of industries and facilitated the emergence of the export industry. It also encouraged economic development and attracted more investments into the Pudong District.

In the 2000s, upgrading the industrial structure became the main objective of the city's public authorities (Shanghai Municipal People's Congress, 2001). Thus the North Jinqiao EPZ extended its boundaries by adding a new southern part in order to accommodate more industries of different types (Shanghai Urban Planning Administration Bureau, 2006). Many new types of industries (e.g. high-tech industry, modern manufacturing and producer services) were then introduced. Meanwhile, the Plan 1999, which was made by the Shanghai Municipal Government and approved by the central government, started to intervene in the development of North Jinqiao EPZ.

In the 2010s, industrial oriented development was criticised for wasting land resources, deterring sustainable urban competitiveness and interrupting the realisation of urban plans (Chiu, 2008, Wu, 2008, Zhang, 2002, Zhang, 2005). The Twelfth Shanghai Five-year Plan (2011), in due course, proposed to change the North Jinqiao EPZ from a mono-functional industrial park into a multi-functional area by integrating industries to diversify urban functions. In this context, a series of planning tasks such as improving its socio-spatial qualities, strengthening the connection between the industrial park area and the central city, facilitating infrastructure developments and building residential estates for local employees became essential (Shanghai Municipal Government, 2011).

§ 7.1.1 Project conformity

This sub-section focuses on the spatial development of the North Jinqiao EPZ after 1999 and the influence of the Plan 1999. As an expression of its major economic success, the North Jinqiao EPZ experienced dramatic changes in terms of its spatial organisation. These changes were closely related to the Plan 1999, which was the first urban master plan that proposed its spatial reorganisation. However, the plan was made ten years after its establishment, when most of the land had already been developed. Thus the plan was not able to fundamentally change the spatial organisation of the North Jinqiao EPZ; but proposed three main changes regarding its development:

1. Industrial restructuring,
2. Modification of land use, and
3. Improvement of public transport.

First, North Jinqiao EPZ used to be an industrial park specialising in the export-processing industry in the 1990s. The Plan 1999 proposed many new types of industries such as automobile manufacturing, producer services, tertiary industries, and ICT in the industrial park in order to upgrade its manufacturing and export-

processing industry to the service industry. In 2009, the production scale of automobile manufacturing and ICT reached 200 billion RMB (24.69 billion Euros), and the industrial output of new energy vehicles reached 100 billion RMB (12.35 billion Euros) (Shanghai Statistical Bureau, 2011). Currently, the pillar industries of the North Jinqiao EPZ are automobile manufacturing, ICT, production of household appliances, and biomedical industry (Zhu, 2012a).

The North Jinqiao EPZ urban structure now consists of five industrial zones as Figure 7.2 shows: 1) small-scale industries in Jinqiao Village in the north western corner, 2) car related manufacturing industries (Shanghai General Motors) in the north eastern corner, 3) electronic related manufacturing factories (e.g. Huawei, a Chinese brand of the World's Top 500 Enterprises) in the central part, 4) an office park, some commercial functions (e.g. restaurants, supermarkets, local stores and hostels) and few public facilities (e.g. a technique school and a sport centre) in the southwest area of the industrial park, and 5) manufacturing facilities for bio-medical products and household appliances in the south.

Figure 7.2
Urban structure of North Jinqiao EPZ (adapted from Zhu, 2012:32)

Secondly, the Plan 1999 modified North Jinqiao EPZ's land use divisions to facilitate the industrial restructuring. The North Jinqiao EPZ was originally planned as a mono-functional industrial park with 90% of land use designated for industrial functions. Only three small pieces of land were planned for non-industrial uses in the Plan 1999: a small portion in the central area containing an office park and some public services, an area on the northwestern corner designated for residential uses, and yet another area in the east side for infrastructures.

The present land use divisions in the North Jinqiao EPZ generally conform to what was proposed in the Plan 1999. The land area that has been developed amounts to 68.6% of the land in the industrial park (12.67km2). Industrial functions still form a majority of the developed land in the North Jinqiao EPZ (8.17km2, 64.5%) (Zhu, 2012b). There are only a few nonconformities. For instance, a large plot of land in the middle of the North Jinqiao EPZ, which was planned for industrial uses, is now occupied by a huge office park [see Figure 7.3]. The original residences of local farmers in the northwestern corner, administrated by the Jinqiao Village Committee, were planned for renovations by the Plan 1999. In reality, however, they were replaced by small-scale industries [see Figure 7.2(1)].

Figure 7.3
High-rise office towers in North Jinqiao EPZ (author's own).

Thirdly, the Plan 1999 intended to improve the North Jinqiao EPZ's urban infrastructure and public transportation in order to decrease traffic congestion and to increase its accessibility. It proposed three metro lines passing across North Jinqiao EPZ: M2, M6 and R4 [see Figure 7.4]. These metro lines connected the industrial park with the central city area and other national industrial parks, respectively. Along the three metro lines, there were eleven metro stops planned within and on the edge of North Jinqiao EPZ.

The actual development of public transportation did not conform to the Plan 1999. None of the planned metro lines has been constructed. The M2 was renamed as M12, whose feasibility is still under discussion. The M6 was re-routed 2 km away from the industrial park to the west. The R4 was renamed as M9 and it is still under construction. Currently, the connection between the North Jinqiao EPZ and the metropolitan area still depends heavily on private car usage. Pendulum traffic congestion has become even more severe than before (Zhu, 2012b). In the past, big enterprises organised commuter buses for their employees. The many small-scale companies that have recently moved into the North Jinqiao EPZ are no longer able to arrange commuter buses for their employees, who lived all over the metropolitan area.

Figure 7.4
The planned metro lines in North Jinqiao EPZ (author's own).

In general terms, urban development in the North Jinqiao EPZ generally conformed to what the Plan 1999 proposed in terms of industrial restructuring and land use divisions. Many manufacturing industries in the North Jinqiao EPZ have been upgraded to producer services and tertiary industries according to the plan objectives. The land use divisions in the North Jinqiao EPZ have also been reorganised with only a few nonconformities with the Plan 1999. However, the development of public transportation infrastructures, e.g. metro lines, was not built as the Plan 1999 proposed.

§ 7.1.2 Roles and competences of involved actors

When we discuss the Plan 1999's influence on decision-making and operational actions in the implementation process, the involved actors, their resources, tools and competences are a non-avoided issue because they help better explain whose decision-making and operational actions we are discussing. Furthermore, the resource and tools that an actor obtains usually determines attitudes and the way it reacts to others; and thus forms the basis of cooperation within urban development process. The development of the North Jinqiao EPZ involves three main groups of actors coming from the public, semi-public and private sectors.

There are two entities from the public sector: 1) Pudong District Government and 2) Jinqiao Function Area Administration Committee. They are in charge of planning and monitoring tasks. The former has the administrative jurisdiction for the development of the North Jinqiao EPZ [see Figure 6.4]. It has the responsibility of making district plans (e.g. Comprehensive Development Plan of Pudong District), including the development of the North Jinqiao EPZ. However, it did not directly intervene in everyday planning practice because of the lack of experience and professionals. For that purpose, it established the Jinqiao Function Area Administration Committee as a governmental office in charge of deciding the type of companies that will settle in and supervising the land development of the North Jinqiao EPZ (Youlin, 2011) [see Table 7.1].

Competences	Sector	Names	Main tasks
Planning and monitoring	Public	Pudong District Government	Making district plans
		Jinqiao Function Area Administration Committee	Supervising land development
Management	Semi-public	Shanghai North Jinqiao EPZ (Group) CO., Ltd (1990.9)	Managing land leasing/Issuing land use right Facilitating land with infrastructures and facilities Proposing local plans Developing real estate projects
		Shanghai North Jinqiao EPZ Development CO., Ltd (1990)	
		Shanghai North Jinqiao EPZ United Development Co., Ltd (1991.11)	
Building	Mixed (semi-public/ private)	Private Industrial Enterprises	Build industrial compounds
		Foreign Companies	
		State Funded Enterprises	

Table 7.1
Actors involved in the development process of North Jinqiao EPZ

The main actors in the development process of the North Jinqiao EPZ belong to the semi-public sector, funded directly or indirectly by the central government. Through the development and management companies (D&MCs), the semi-public sector is in charge of managing strategic projects in China (e.g. national industrial parks and special economic zones). There are three D&MCs involved in the land development process in the North Jinqiao EPZ:

1. Shanghai North Jinqiao EPZ (Group) Co., Ltd (1990), which is fully funded by the state. It was registered in 1990 with assets of 0.6 billion RMB (74.1 million Euros). Presently, it has total assets of more than 70 billion RMB (8.64 billion Euros) and 27.38km2 of land (including land outside the North Jinqiao EPZ).
2. Shanghai North Jinqiao EPZ Development Co., Ltd (1990), which is also entirely funded by the central government. It was also registered in 1990 with assets of 0.84 billion RMB (0.1 billion Euros). It runs a vast array of investments ranging from real estate (the Biyun Community for instance) to the wholesale distribution of clothing.
3. Shanghai North Jinqiao EPZ United Development Co., Ltd (1991), which is a joint venture by the former two enterprises (39.6% and 60.4% respectively). Its role is constructing, managing and renting out various real estate properties. Its original assets were more than 0.54 billion RMB (66.7million Euros) in 1991. The value of its land (9km2) is now over 90 billion RMB (11.11 billion Euros) (Zhang, 2011)[see Table 7.3].

The role that these D&MCs played in the development process of the North Jinqiao EPZ is similar to what the local governments play in normal urban projects. Their main competences are: 1) managing land leasing; 2) facilitating the land development through providing amenities, infrastructures and services; 3) proposing local plans and 4) developing real estate projects if necessary. Overall, their professional staff are involved in day-to-day planning practice. However, there are several differences between D&MCs and local governments. First, D&MCs are operated entrepreneurially,

making economic profit their main priority, especially in an era when GDP growth has been paramount in government policies. Second, they have professional staff whose expertise with market demands and processes are needed to manage the development of the North Jinqiao EPZ (Interview Wei, 2012).

The construction of industrial compounds in the North Jinqiao EPZ is undertaken by private sector enterprises, such as local or foreign industrial companies, and state-owned enterprises (SOEs). These enterprises usually rent a plot of land, and then build their own factories, regional headquarters and even industrial compounds on site. The land they rent ranges between 5,000m2 and 50,000m2. There are some very large plots, (such as Shanghai General Motors, with 545,743m2), and some others around 2,700m2 (Zhu, 2012b). Currently, the North Jinqiao EPZ has many headquarters of well-known domestic enterprises, such as Shanghai General Motors, Lenovo China, Shanghai Hua Hong NEC Electronics Company Limited, and Huawei Technologies Co. Ltd. These enterprises also pay taxes to different levels of government.

In such ways, the resources are relatively evenly distributed among the involved actors. Power is also relatively evenly distributed between the involved actors. The local government has avoided directly intervening in planning practice, empowering D&MCs to issue land use rights. However, it has not empowered the D&MCs to benefit from land leasing. The income generated through land leasing directly goes to the Pudong District Government rather than to the D&MCs. The D&MCs make money through their own business (such as real estate projects in other places and wholesale clothing). The separation between the competencies of land leasing and resultant financial benefits prevents the D&MCs from becoming too powerful, what may lead to disregarding other actors' opinions. Thus, the arrangement of powers between involved actors is more balanced. Not one single actor is able to fulfil their own objectives without relying on others. The balance of power and resources between involved actors has supplied the basis of their cooperation in the plan implementation process (Interview Wei, 2012).

§ 7.1.3 Framing effects of the plan on decision-making (rationality)

This section explores how the Plan 1999 shapes the mind of the main involved actors in their decision-making within the plan implementation process. Decision-making, as discussed in Chapter 3, is mainly reflected in a series of policies, policies and documents made by decision-makers (e.g. subsequent urban plans and related sectoral plans). In this sense, consistency between the Plan 1999 and the subsequent urban plans and related sectoral plans are not about the level of conformity but rather helps illustrate the framing effects of the Plan 1999 on decision-making. The consistency issue is discussed in two dimensions in this research:

- Vertical consistency: the Plan 1999 and the subsequent urban plans from higher to subordinate levels;
- Horizontal consistency: the Plan 1999 and the influential sectoral plans, such as the five-year plans and general land use plans.

A Vertical consistency

The Plan 1999 was conceived ten years after the establishment of the North Jinqiao EPZ. Before the Plan 1999, there were two urban plans concerning the overall spatial development of the North Jinqiao EPZ. The first was the *Master Plan of North Jinqiao EPZ 1990 (*金桥出口加工区规划*1990)*, which identified the boundaries of the industrial park and specified its main functions (manufacturing and export-processing industries). The second was the *Adjustment Plan of North Jinqiao EPZ 1991 (*金桥出口加工区规划调整*1991)*, which refined the development pattern of the core district and proposed a new road network for the industrial park (Zhu, 2012b). These two plans were implemented at the regulatory unit level.

Table 7.2 lists the different urban plans involved in the development process of the North Jinqiao EPZ after the Plan 1999, such as strategic plans, framework plans, regulatory plans and implementation plans. At the municipal level, three short-term construction plans were proposed on basis of the Plan 1999:

1. Short-term *Construction Plan of Shanghai Master Plan 2001-06 (*上海市城市总体规划中、近期建设行动计划*2001-06, Short-term Construction Plan 2001-06 in abbreviation)*,

2. Short-term *Construction* Plan of Shanghai Master Plan 2006-11(上海市城市总体规划中、近期建设行动计划2006-11, *Short-term Construction* Plan 2006-11 in abbreviation),

3. *Short-term Construction Plan of Shanghai Master Plan 2011-16 (*上海市城市总体规划中、近期建设行动计划*2011-16, Short-term Construction Plan 2011-16 in abbreviation)*.

The above three plans regularly (every five years) updated strategic projects and made some alterations of land use divisions in order to adapt to changing circumstances and demands. As mentioned in Chapter 6, the *Action Plan 2006-11* significantly changed the land use divisions of the Plan 1999, dramatically extending the boundaries of the office park area in the North Jinqiao EPZ. At the district level, *Comprehensive Development Plan of Pudong District 2002 (*浦东新区综合发展规划*2002)* adapted to what was stated in the Plan 1999 about Pudong's development. It introduced the concept of the Jinqiao Functional Area, which covers a broader territory than the

North Jinqiao EPZ. However, this plan was very generic and not able to directly guide local development. At the regulatory unit level, there was *Regional Plan of Jinqiao Functional Area 2007 (金桥功能区域规划2007)*, which re-positioned North Jinqiao EPZ as an urban node in the Pudong district. This plan emphasised the non-industrial functions of the North Jinqiao EPZ and reorganised the land use divisions in the Jinqiao Functional Area.

Year	Name of the plan	Plan type	Level	Strategies
1990	Master Plan of North Jinqiao EPZ	Regulation plan	Regulatory unit level	Manufacturing and processing industries as the main industry
1991	Adjustment Plan of North Jinqiao EPZ			/
1999	Shanghai Master Plan	Strategic /Regulation plan	Municipal level	1) Upgrade industrial structure; 2) modify land use divisions, and 3) improve urban infrastructure in the industrial park.
2001	Short-term Construction Plan 2001-06	Implementation/Framework plan	Action plans at the municipal level	/
2002	Comprehensive Development Plan of Pudong District	Strategic /Regulation plan	District level	Introduce the Jinqiao Functional Area concept. Divide Jinqiao Functional Area into several zones: industrial zones, research oriented zones and residential zones.
2006	Short-term Construction Plan 2006-11	Implementation/Framework plan	Action plans at the municipal level	/
2007	Regional Plan of Jinqiao Functional Area	Strategic /Regulation plan	Regulatory unit level	Redefine it as a comprehensive urban area instead of an industrial park. Re-organise the land use divisions.
2011	Short-term Construction Plan 2011-16	Implementation/Framework plan	Action plans at municipal level	/
/	RDPs and DCPs	Regulation plan	Local level	/

Table 7.2
Different types of urban plans related to the development of North Jinqiao EPZ

At the local level, there were a series of regulatory detailed plans (RDPs) and detailed construction plans (DCPs). These plans regulated the local-scale construction projects such as the function of each plot, its building densities, the locations of public facilities and the percentage of green spaces. Compared to the other urban plans, their influence on the physical urban development was more direct and thus powerful (Hao, 2010). However, they were not commonly used in the North Jinqiao EPZ in the 1990s and the early 2000s.

These subsequent urban plans announced in their initial statements that they took the Plan 1999 as an important reference. However in reality, they were not always consistent with the Plan 1999. Take the metro lines for example, two of the three planned metro lines (M6 and M2) disappeared in the subsequent action plans, detailed plans and project lists. M2 was absent in the *Comprehensive Development Plan of Pudong District 2002*. M6 was moved about two kilometres to the west in the *Action Plan 2006-11*. Only R4 was kept in Pudong's Development Plan.

Between 1999 and 2007, two short-term construction plans and a district plan mentioned but without specifying the development of the North Jinqiao EPZ. The *Regional Plan of Jinqiao Functional Area 2007* was the first plan that was specifically concerned with the North Jinqiao EPZ's urban development. This plan diverged from the Plan 1999 in two aspects. On one hand, land use divisions were quite different in these two plans. A large piece of industrial land in the northwestern part was converted into residential land uses by the Plan 1999. Other small portions of industrial land in the middle part were changed into public facilities [see Figure 7.5]. According to Wei (Interview, 2012), the *Regional Plan of Jinqiao Functional Area 2007* revised the land uses only in order to compromise with the existing situation. Why the land use development became different from what the *Plan 1999* proposed will be further discussed in Section 7.3.1.

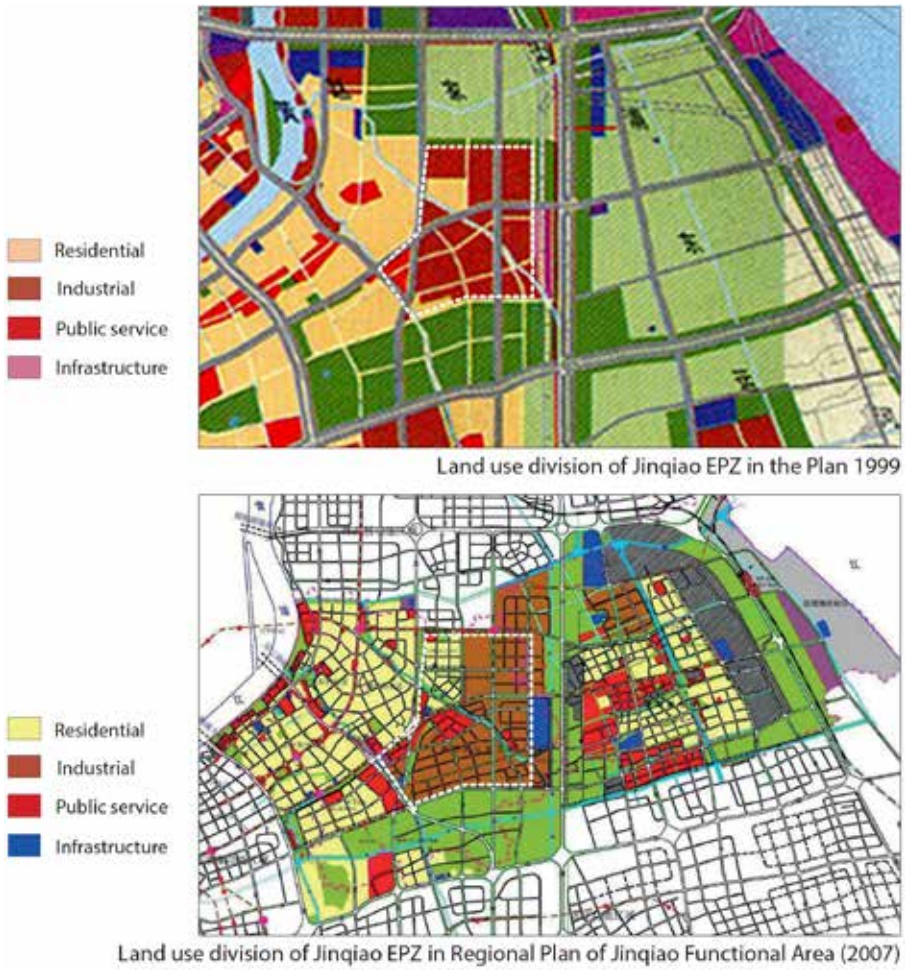


Figure 7.5
Land use divisions in Shanghai Master Plan (1999-2020) and Regional Plan of Jinqiao Functional Area (2007) (Shanghai Municipal Government, 1998: 7; Zhu, 2012: 5).

On the other hand, new considerations/concerns came into play in this plan. Many new small-scale functions were introduced. Figure 7.5 shows that two green areas were introduced due to ecological considerations. A bus transportation hub replaced a railway because the latter was considered to negatively influence the environment of the central city area. New ideas came forward about promoting mixed land uses, and new evidence came forward about the feasibility of the new metro infrastructure. The 'strategy' or policy changed without a new strategic plan.

Although the land use divisions in the Plan 1999 and in the *Regional Plan of Jinqiao Functional Area 2007* are not consistent, they may not indicate poor performance. First, the Plan 1999, as a strategic plan, did not present an endpoint to reach but rather a dynamic process. Strategic projects and land use divisions in the Plan 1999 were updated every five years in its action plans. The changes of land use divisions in the *Regional Plan of Jinqiao Functional Area 2007* were only reflections of the changes in the *Short-term Construction Plan 2006-11*. Secondly, the general objectives in the Plan 1999 were achieved even though the specific planning contents in these two plans were different. The change in land uses from industrial to residential and public facilities helped to introduce more urban functions into the industrial park and to improve the quality of life. The newly proposed bus hub was able to facilitate the development of public transit without damaging the environment of the central area or cutting off the road networks. Both the improvement of living standards and environmental protection measures are the main objectives of the *Plan 1999*. In general, changes in plan contents (e.g. land use divisions and types of infrastructure) did not prevent the delivery of planning concepts from the *Plan 1999* into subsequent urban plans.

B Horizontal consistency

Aside from the urban plans, there were also many plans and policies from different sectors concerning the development of the North Jinqiao EPZ. As shown in Table 7.3, three types of sectoral plans played significant roles:

1. Five-year plans for economic and social development (国民经济和社会发展五年规划纲要five-year plans) made by the Shanghai Development & Reform Committee (上海市国民经济与社会发展改革委员会, D&RC),
2. General land use plans (土地利用规划) made by Land Resource Bureau (上海市国土资源局);
3. A series of preferential policies (e.g. tax-exemption policies made by the customs agency and the municipal financial department).

Agencies	Plans & policies
Development and Reform Committee	8th Shanghai Five-year Plan (1991) 9th Shanghai Five-year Plan (1996) 10th Shanghai Five-year Plan (2001) 11th Shanghai Five-year Plan (2006) 12th Shanghai Five-year Plan (2011)
Land Resource Bureau	Shanghai General land use plan (2006-2010)

Table 7.3
Other sectoral plans related to the development of North Jinqiao EPZ

The five-year plans have been playing a dominant role in guiding the urban development of North Jinqiao EPZ. Firstly, they directly differentiated its development stages. The 8th Shanghai Five-year Plan (1991) initiated the North Jinqiao EPZ. The 10th Shanghai Five-year Plan (2001) played a significant role of upgrading its industrial structure. Chancheng Ronghe Campaign in the 12th Shanghai Five-year Plan (2011) started the third development stage of the industrial park (Zhu, 2012b).

Secondly, the five-year plans also guided the North Jinqiao EPZ's land development process and indirectly influenced its spatial reorganisation (Interview Wei, 2012). Due to the legacy of China's socialist planning culture, urban and sectoral plans (e.g. general land use plan) were required to comply with the five-year plans unconditionally (see Chapter 5 for more details). In the 1990s, the 8th and the 9th Shanghai Five-year Plans were the references for a large number of preferential tax policies to attract more investments. The Plan 1999 also strictly followed the 9th Shanghai Five-year Plan. In the 2000s, market forces became increasingly important in China's urban development processes. However, the North Jinqiao EPZ's development, as a national industrial park, was still driven by national funds and policies. The 10th (2001) and the 11th Shanghai Five-year Plan (2006) were still the main references of the related sectoral plans, such as the Shanghai General Land Use Plan (2006-10), a series of preferential policies and urban plans (Enterprise of Shanghai Jinqiao Export Processing Zone, 2011). In this case, urban master plans and the related sectoral plans were in compliance with the five-year plans.

§ 7.1.4 Framing effects of the plan on operational actions (Utilisation)

This section examines how the Plan 1999 influences the operational actions of involved actors through local plans. Local plans are usually more important than strategic plans in directly guiding operational actions and planning practice (Hao, 2010). From Giddens's view of social interaction (structural perspective of understanding urban development process), '*structures enable interaction much as they constrain it … during interaction structures are being re-established or changed. So the relationship between structure and interaction is not a one-way process. Rather, they are mutually dependent on each other. As such, there would indeed be something seriously wrong … if the recipients never changed the plans handed down to them*' (Faludi, 2000: 315).

In this sense, the following subsections concerns about how the recipients react to, rather than follow, what the Plan 1999 proposed. But the continuity of the Plan 1999's concerns in the changing decision situations is still an important consideration of examining its framing effects on operational actions. Two kinds of the operational actions in this case will be discussed: 1) control of timing in land use changes and 2) housing development.

A Timing control in land use changes

Planning performance is very relevant to the ways in which local actors react to local plans. Plan 1999, proposed the reorganisation of land uses in North Jinqiao EPZ, as we mentioned before. However, more than two thirds of the land had already been developed at that time [light pink areas in Figure 7.6]. Only a few plots of land in the its north-eastern corner were left for future land developments and reorganisation. In principle, such a big gap between the existing and the planned situation is a major challenge for the involved actors in converting local plans into operational actions.

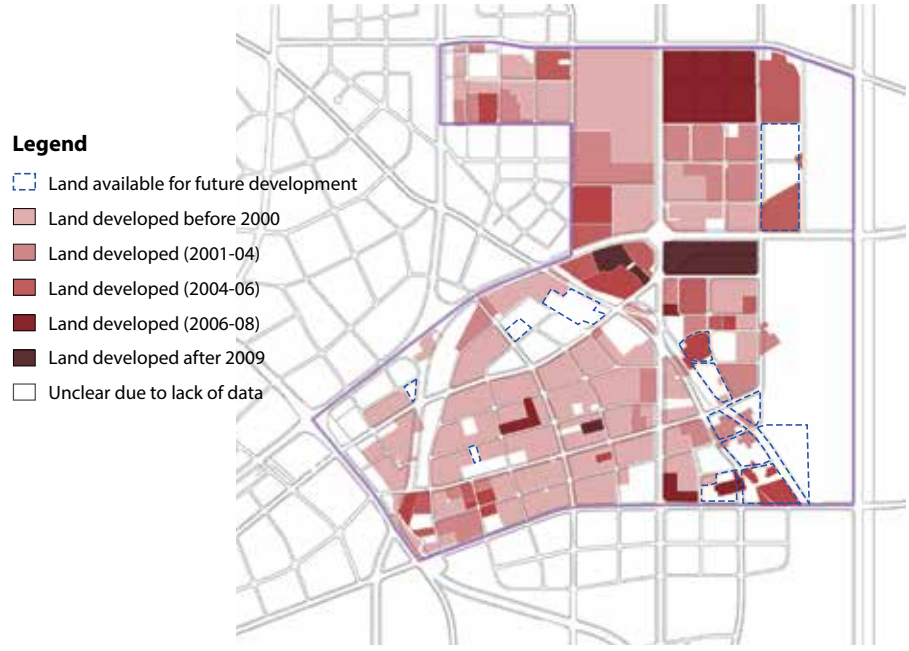


Figure 7.6
Land developments in different periods in North Jinqiao EPZ (Zhu, 2012: 32).

The D&MCs were not in a hurry to change the land uses or lease the rest of the undeveloped land. They regenerated the developed land in the northern part of Jinqiao and gradually gave permits for motor and car-related industries, and advanced manufacturing facilities according to the Comprehensive Development Plan of Pudong District (2002) (Interview Wei, 2012). At the same time, they relocated related industries in that cluster, and reorganised the medical and household appliances clusters, completing the land use reorganisation according to the Plan 1999. The private/state-owned industrial companies built industrial compounds under the supervision of the Jinqiao Function Area Administration Committee and the D&MCs (Zhu, 2012a). In general terms, the D&MCs although did not react to the plan immediately; however, the idea 'reorganisation of land uses' was bared in mind in D&MCs' actions. (Zhang, 2000)

Moreover, the involved actors worked together to convert the local plans into practical actions. In this regard, the D&MCs had an important role in catalysing the communication between actors involved in North Jinqiao EPZ development. On the one hand, following the local plans, they built cultural facilities and infrastructures and supplied concrete guides for the subsequent decision-making or actions. On the other hand, the D&MCs professional experts improved the quality of communication between public and private sectors. They invited both the local governments and private industrial companies for regular meetings about specific issues. 'When disagreements occurred, the professional staff always tried their best to bridge the gap between these two groups of actors' (Interview Wei, 2012). The land development process in the North Jinqiao EPZ was a coordinated process guided by the D&MCs, rather than a collection of projects initiated by individual private enterprises. The successful application of plans requires close interaction and cooperation between the involved actors.

B Delivery of housing

Plan performance also depends on the degree of communication, interaction and cooperation between involved actors. Thus referential influence of a plan is not only reflected on important actors in their operational actions. It should be also reflected on wider interest groups being taken into considerations in critical decisions, in other words, users' participation in critical decisions. The lack of residential spaces within the industrial park, which has been a problem for years, shows that local workers as a main group of actors in this case played limited role in the development process.

According to the new considerations of introducing more functions to North Jinqiao EPZ in the 2000s (see Section 7.1.3A), companies built dormitories attached to their factories for single workers in order to solve the living problems. However, construction of apartments for small families has been ignored (Hsing, 2010). According to interviews with 11 employees of the North Jinqiao EPZ, local employees with families

can rarely find a proper apartment within or nearby North Jinqiao EPZ. There was very little residential space planned for employees with families. Existing housing stock was gradually replaced by new industries. The few housing projects that were built around the industrial park did not fit the demand of them. For instance, Biyun Community in the southwest is the main residential area in this zone, but it was built for company managers rather than normal employees. Thus the housing price is not affordable for normal employees at all. Consequently, majority workers have to live out of or even far away from the industrial park. The separation between work and housing leads to extensive commuting, which increases traffic congestion, especially during peak hours. In the Chinese context, with a long history of co-location of housing and employment uses, this separation constitutes an extra burden for workers, who have to spend long hours travelling. Lack of housing for local employees actually reflects that interaction and cooperation between involved actors are limited. Needs of the minor interest groups (but the real users) were not taken into account in critical decisions.

Plan 1999 performed reasonably well in the North Jinqiao EPZ. A high level of conformity was achieved in terms of its industrial restructuring and reorganising land uses. Only the public transport infrastructure (i.e. three metro lines) was not built as planned. The Plan 1999 was generally consistent with the related plans. Although some new ideas were introduced and some planning contents were changed in the subsequent urban plans, there was continuity of concerns in the development process. In other words, the planning objectives were delivered. Regarding its coordination with other sectoral plans, the five-year plans played a dominant role, and ensured that the Plan 1999 and other sectoral plans in compliance with the former. Overtime, this took precedence over the consistency of urban plans. The D&MCs played a significant role in the application of the Plan 1999. They coordinated with the involved actors to apply the Plan 1999 into their operational actions.

§ 7.2 Xinmin Development Area (Xinmin Area)

The Xinmin Area was selected as the second case study due to its rapid rural-urban development, and to its exceptionality in terms of land use rights. Before 2000, it used to be a rural area with only 0.15km^2 out of 11.4km^2 of its territory used for non-farming functions: farmers' residences (Zhaijidi in Chinese). It was planned as a building sensitive area, a very strategic location of the green system, by the Plan 1999. However, all the rural land in the Xinmin Area had been transformed into urban use through the development of real estate housing projects till 2004. Xinmin Area is currently a typical Shanghai new residential area with extremely rapid urbanisation and extensive real estate housing developments.

Such rapid urban development of Xinmin Area is closely related to the remarkable urban expansion of Shanghai during the 2000s. Shanghai expanded especially toward the southwest direction along three corridors: metro line 5 (M5), G60 highway (G60) and Metro Line 9 (M9), that were built to connect the city centre with Songjiang New Town. This stimulated the realisation of both planned strategic projects and unplanned land developments [see Figure 7.7]. The former include the Sijing Supportive Housing Compound, Sheshan Landscape Protection Area, Songjiang Industrial Park, Xinzhuang Industrial Park and Minhang New City. The latter generally took the form of commercial real estate housing developments. Xinmin's urban development was mostly unplanned, at least in terms of being unplanned in the Plan 1999.

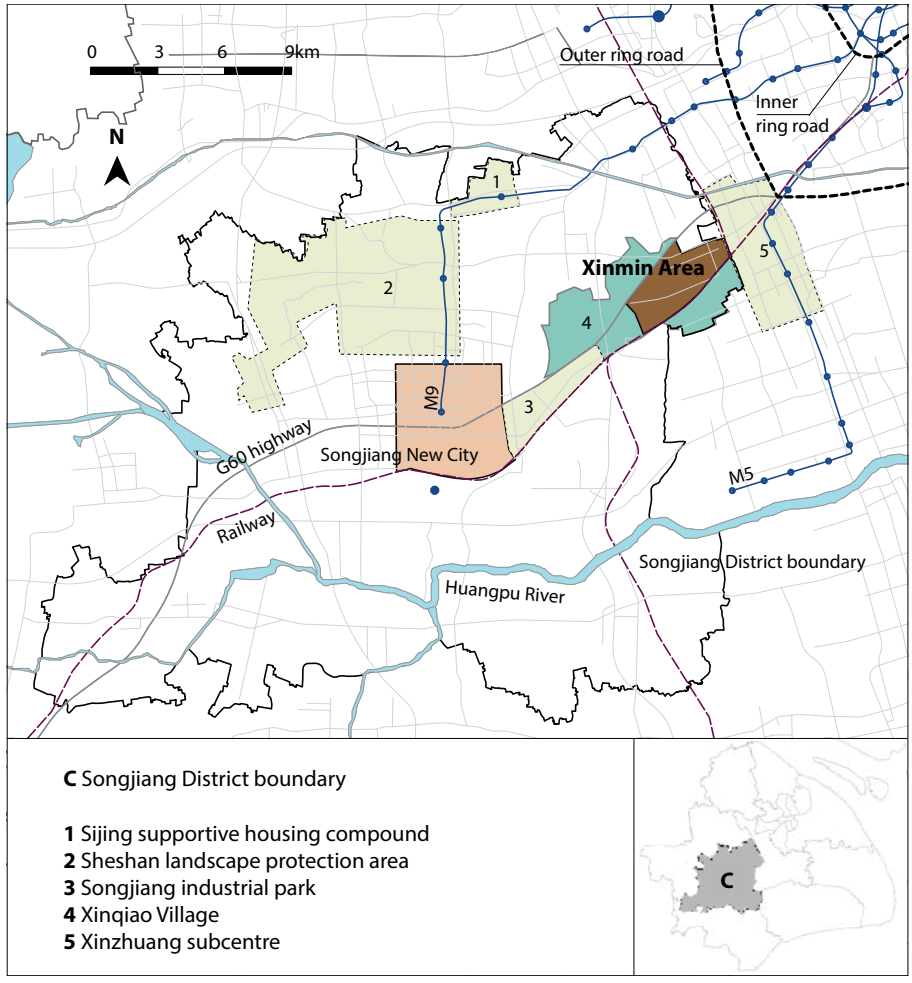


Figure 7.7
Location of Xinmin Area and its surrounding environments (author's own)

On the other hand, the Xinmin Area is part of Xinqiao Village, which used to be a rural village in the Songjiang District. This abruptly changed in 2002, all the local villagers (22,867) had to relocate their homes into compensatory apartments built in three key towns at the southwest of the old village under the command of Shanghai Municipal Government (Interview Jin, 2012). Between 2000 and 2009, the population of Xinqiao Village grew substantially from 22,867 to 83,800 inhabitants, mainly through a major influx of migrants from the central city area and other provinces (Songjiang Planning Chi Compilation Committee, 2009).

In the Xinmin Area, the local farmers collectively possess land use rights. They, rather than the local government, have the power and authority to directly manage rural land developments (see Section 5.2.1). The Xinqiao Town Government, which is the representative of local farmers in the Xinqiao Village, has autonomy in managing land development and leasing land use rights in the land development process (Lu et al., 2006).

The Xinmin Area covers an area of 11.4km^2, a bit smaller than the North Jinqiao EPZ. It is located close to the central city area but it is not easily accessible by public transit. The nearest metro station is around 2km away. There are only a few bus stops in this area. However, it is bordered by several important highways and railways: G60 highway to the north, a rail way to the south and Minhang tunnel to the east. These highways and (intercity) roads are at the same time, the main channels connecting the area with the rest of Shanghai as well as being the barriers blocking it from surrounding areas [see Figure 7.7].

§ 7.2.1 Project conformity

This sub-section explains the influences of the Plan 1999 on the spatial development of the Xinmin Area. As mentioned before, prior to 2000, the Xinmin Area was a rural place on the edge of the central city area. Plan 1999 defined it as a construction-sensitive area in order to prevent urban sprawl, to protect the environment, and to conserve green spaces (Shanghai Municipal Government, 1998). In such construction-sensitive areas, a maximum of 27% of land was allowed for urban development. In such way, Xinmin Area was also a strategic location in environmental terms.

The actual land development in the Xinmin Area did not conform to what Plan 1999 proposed, as it is now full of real estate housing developments [see Figure 7.8]. Green spaces were not safeguarded, but rather were neglected by real estate developers. In 2004, all the land (11.4 km^2) had been developed for urban uses. 10 km^2 were developed for real estate housing projects, in the form of gated communities; while

1.4km^2 was developed for compensatory settlements for the original inhabitants (Wu, 2010). These housing projects were highly cost-effective and produced considerable funds for the local government. In 2003, Xinqiao Village's GDP accounted for 813 million Yuan (around 100 million euro), which was the second highest among all the villages in the Songjiang District (Shanhai Local History Office, 1996). The Xinmin Area had contributed the most to the GDP growth of Xinqiao Village.

Even at the local scale, the Plan 1999's provision for the Xinmin Area was neglected, it was considered that at a metropolitan scale, '*the plan did not fail because the planned green spaces were compensated in remote suburbs (mostly in Sheshan National Forest). The total area of green spaces in Songjiang District kept in compliance with the planned area*', according to Jin (Interview, 2012), the Chief Planner of Songjiang Urban Planning and Design Research Institute. However, Xinmin Area had been defined as a strategic project in environmental terms not only because of the large amount of green areas it could provide, but also because of their strategic location at the edge of the city centre. The loss of green spaces could be compensated in other places, but their strategic location was irreplaceable (Interview Xu, 2013). In other words, the 'strategic location of green spaces' was much more important than the 'extension of green spaces' in the Xinmin Area. In such way, Xinmin Area could not play a significant role in ecological terms, nor did it form a barrier to prevent urban sprawl as the Plan 1999 proposed. Instead, it was used as an engine to stimulate local economic development (Zhang and Jin, 2006).

Real estate developers built gated communities with low-rise apartment buildings and town houses. Such housing types were targeted toward middle-high income segments that could afford such living environments. Xinmin's location (on the fringe of the city centre) and its limited public transport access made it only suitable for people with private vehicles. Xinmin Area functions as an island, because the street layout is completely disconnected from the surrounding local streets, making traffic less than convenient. Further, the size of urban blocks in this area - gated communities are generally larger than 1km^2 - makes it unpleasant in terms of public space [see Figure 7.8].

Figure 7.8
The gated real estate compounds and public roads in Xinmin Area (Source: Google Maps)

§ 7.2.2 Roles and competences of involved actors

The development of the Xinmin Area involved actors from the public sector and private developers. The public sector actors include Shanghai Municipal Government, Songjiang District Government and Xinqiao Town Government. Xinmin Area was co-managed by the Songjiang District Government and the Shanghai Municipal Government, which were responsible for 1) making urban plans (e.g. Songjiang Regional Development Plan), 2) facilitating the infrastructure and 3) issuing permits to the land development (Shanghai Urban Planning Administration Bureau, 2006) [see Table 6.5]. However, the municipal government did not directly manage but rather supervised land developments. The Songjiang District Government also did not involve much in the development process of the Xinmin Area because it concentrated on the development of the Songjiang New City. More importantly, it did not have authority to deal with the land in the Xinmin Area because Xinmin used to be a rural village and its land still belongs to its local residents (farmers).

Competences	Sectors	Names	Main tasks
Planning and monitoring	Public sector	Shanghai Municipal Government	Making plans Facilitating infrastructures Issuing permits
		Songjiang District Government	
Management		Xinqiao Town Government	Issuing land use rights Managing land development
Building	Private sector	Real estate developers	Housing constructions Investment

Table 7.4
Involved actors in the Xinmin Area

The Xinqiao Town Government was the crucial actor intervening in the land development of Xinmin Area. As mentioned before, the original villagers, instead of the local government, had authority over dealing with the land. The Xinqiao Town Government, the representative body for local farmers, owns the land and has the power to lease land use rights and to manage land development through issuing permits of land development (Lu et al., 2006). Therefore, it has more discretion over leasing land than local governments governing urban areas. Overall, all actors from the public sector generate revenues and increase economic profits through land leasing and urban development. Local villagers also benefit from urban development (Interview Jin, 2012).

Private real estate companies were the second important group of actors in the land development process of the Xinmin Area because commercial housing development became the main form of land development. They had funds for investments in land development and home construction. They usually bought land use rights for 70 years from the Xinqiao Town Government and built housing projects there (Wu, 2002a). Apparently, the Xinqiao Town Government and the private real estate developers as the two main actors had their own resources and tools to intervene in the development process of the Xinmin Area. Dislike the evenly distributed resources and powers between involved actors in the previous case, actors in Xinmin Area shape kind of more straightforward and bilateral relationship, which will be further explained in 7.2.4.

§ 7.2.3 Framing effects of the plan on decision-making (rationality)

In this section, I analyse how Plan 1999's objective of preserving green spaces in the Xinmin Area in order to prevent urban sprawl, and to protect the environment, has been conveyed from the Plan 1999 into subsequent plans, including urban plans (vertical consistency) and related sectoral plans (horizontal consistency).

A Vertical consistency

There were several urban plans conceived after 1999 concerning the Xinmin Area development. At the municipal level, there were two action plans of the Shanghai Master Plan made in 2001 and 2006 respectively. At the district level, there was *Songjiang Regional Development Plan 2004-2020 (*上海市松江区区域规划纲要*2004-2020)*. Based on the latter, there was the *Implementation Proposal of Songjiang Regional Development Plan2006-2020 (*松江区区域总体规划实施方案*2006-2020)*. At the local level, there were some regulation plans managing and regulating the day-to-day planning practice of Xinmin's development, for instance the RDPs and DCPs [see Table 7.5]. Until 2005, the RDPs had covered all the territory in the Xinmin Area.

Year	Name of the plan	Type	Level	Strategies
1999	Shanghai Master Plan (1999-2020)	Strategic /Regulation plan	Municipal level	Defined Xinmin Area as a construction sensitive area, where intensive urban development was prohibited.
2001	Short-term Construction Plan 2001-06	Implementation/Frame-work plan	Action plans at municipal level	/
...	DCPs	Regulation plan	Local level	/
2004	Songjiang Regional Development Plan (2004-2020)	Strategic/Regulation plan	District level	Revised the land use divisions (transformed all the planed green space into residential uses).
2006	Short-term Construction Plan 2006-11	Implementation/Frame-work plan	Action plans at municipal level	/
	Implementation Proposal of the Songjiang Regi-onal Development Plan (2006-2020)		Action plans at district level	Further identified in-dustries and real estates as the driving forces for the development of the Xinmin Area.

Table 7.5
Different types of urban plans related to the development of Xinmin Area

The development plans regarding Xinmin Area did not keep consistent with what was proposed in the Plan 1999 in terms of land use. Figure 7.9 shows the changes of land use in three different versions of urban plans. The Plan 1999 defined Xinmin Area as a construction-sensitive area where extensive urban development was prohibited. The north-eastern part of Xinmin Area was designated as protected green space, where urban development was strictly forbidden. The south-western part of Xinmin Area was defined as farmland [see Figure 7.9(1)]. Farmland in the Songjiang District was significantly reduced from 2035.8km2 to 1605.67km2 in the *Songjiang Regional Development Plan2004-2020* (Wu, 2010). Correspondingly, all the farmland in the Xinmin Area was converted into residential uses [see Figure 7.9(2)]. Until 2005, several regulatory detailed plans (RDPs) for the development of the Xinmin Area kept consistent with the *Songjiang Regional Development Plan2004-2020* [see Figure 7.9(3)]. Eventually, all of the Xinmin Area's land turned from non-urban uses into residential uses through these urban plans.

Figure 7.9
Land use divisions of the XINMIN Area in the Plan 1999, Songjiang Regional Development Plan (2004-2020) and a collection of RDPs/DCPs until 2005
(Shanghai Municipal Government, 1997, Songjiang District Government, 2002/2006)

The dramatic changes in land use divisions in these plans exemplified the inconsistencies and even contradictions between Plan 1999 and the subsequent urban plans. This occurred because Plan 1999 did not take into consideration Xinmin's existing situation. Xu1 (Interview 2013), who was involved in making of Action Plan of Shanghai Master Plan (2006 and 2011) and approving Songjiang Regional Development Plan (2004), explained that:

'When the Plan 1999 was made, more than 50% of land in the Xinmin Area had been rented to real estate developers. Most of the developers had started on-site construction. In this sense, the target (i.e. a maximum of 27% land was allowed for urban development) defined in the Plan 1999 was impossible to be fulfilled. When the Songjiang Regional Development Plan (2004) was prepared, the municipal government had to agree with the Songjiang District Government to modify the target defined in the Plan 1999 in order to adjust to the actual situation. They hence applied the target amount (27%) to the rest of the undeveloped land. This meant 27% of the remaining undeveloped land was still allowed for urban development. In other words, at most 36.5% instead of 73% of Xinmin Area was planned for green spaces.'

Furthermore, the conflicting interests of governments from different levels were the major underlying reasons for the inconsistencies. The Plan 1999 reflected the intention of the Shanghai Municipal Government to prevent urban sprawl from the central city and to improve the spatial quality of the whole urban system. The subsequent urban plans made by governments at the district and township levels, focused more on the growth-oriented development even at the expense of the loss of open space. The district government and the local government would not benefit from the protection of green spaces. Songjiang District Government generated more revenues by changing land uses. Likewise, the Xinqiao Town Government was able to earn money through both land leasing and urban developments. Xinqiao Town Government is on behalf of local villagers, who are the landowners. Local villagers thus also received bonus from land leasing and benefited from urban development (Interview Xu2, 2012).

Moreover, there was also a technical factor that resulted in the aforementioned contradictions: the Plan 1999's lack of direct control over changing circumstances. According to Wei (Interview, 2012), land development in the Xinmin Area occurred in such a short period (2000-04) that it was not enough time for making new plans. Usually, there are five-tier urban plans involved in guiding land development. However only a few plots of land had Plan 1999 and regulatory detailed plans (RDPs) intervening in their development. he link between the Plan 1999 and the RDPs was unclear. As a result, the Plan 1999 met difficulties in conveying its main objectives to local plans and day-to-day planning practice. Other plans made after 2004 (e.g. action plans and regulation plans) were mostly inconsistent with the Plan 1999. The changes in land use divisions in these plans only compromised the existing land developments. Aside from the two factors mentioned above, there are some other factors, such as loopholes that local governments can use for revision plan contents and the independence of local authorities. They will be explained further in Section 7.2.

B Horizontal consistency

The Xinmin Area also involved three main types of sectoral plans concerning its land development. The first type refers to the five-year plans made by the Development and Reform Committee, for instance, the 10th Shanghai Five-year Plan (2001) and the 11th Shanghai Fiver-year Plan (2006). The second type consists of the General Land Use Plans (2006-2010) made by the Land Resource Bureau. The third type refers to environmental plans. They include 1) Regulations on Environmental Protection of Shanghai 1997 (上海市环境保护条例) made by the Environmental Protection Agency, 2) Shanghai Green Space System Plan 2002-2020 (上海市城市绿地系统规划) made also by the Shanghai Urban Planning Bureau, and 3) Shanghai Spatial Plan for Ecological Networks 2009 (上海市基本生态网络空间规划) jointly made by the Shanghai Administrative Department of Afforestation and City Appearance (上海市绿化和市容环保局) & Shanghai Agriculture Committee (上海市农业委员会) [see Table 7.6].

Agencies	Plans & policies
Development and Reform Committee	10th Shanghai Five-year Plan (2001) 11th Shanghai Five-year Plan (2006)
Land Resource Bureau	Shanghai General Land Use Plan (2006-2010)
Shanghai Environmental Protection Agency Shanghai urban Planning Bureau Shanghai Administrative Department of Afforestation and City Appearance & Shanghai Agriculture Committee	Regulations on Environmental Protection of Shanghai (1997) Shanghai Green Space System Plan (2002-2020) Shanghai Spatial Plan for Ecological Networks (2009)

Table 7.6
Other sectoral plans related to the development of the North Jinqiao EPZ

The five-year plans played a dominant role in urban development. They were crucial references for the making of the urban plans and other sectoral plans (e.g. general land use plans). Plan 1999 was in compliance with the 10th Shanghai Five-year Plan (2001). The definition of the Xinmin Area as a construction sensitive area in the Plan 1999 reflected the idea of conserving farmland and protecting the urban environment in the 10th Five-year Plan (at the national level). The relocation of villagers from various locations to three key towns in the Implementation Proposal of Songjiang Regional Development Plan (2004-2020) reflected the 'Three Concentration Programme' in the 11th Five-year Plan (at the municipal level) (Shanghai Municipal Government, 2004).

Further, the General Land Use Plan (2006-2010) contradicted the Plan 1999 regarding the Xinmin Area's development, although both of them took the five-year plans as important reference. In the former, the Xinmin Area was not defined as non-urban land. Only the amount and percentage of different types of land (e.g. farmland, forestland and urban land) in Shanghai were defined. The spatial distribution of the land within one urban district was flexible. In Plan 1999, the Xinmin Area was defined as an environmentally sensitive area. The incoherence between Plan 1999 and the General Land Use Plan became the major hindrance for the implementation of the Plan 1999.

Such contradictions indicated that different municipal agencies became independent and thus were able to make and to implement plans according to their own objectives. The Shanghai Urban Planning Bureau, which made the Plan 1999, paid more attention to environmental protection and optimising spatial structures. The Land Resource Bureau, which made the General Land Use Plan (2006-2010), focused more on the efficiency of land development, especially the conservation of farmland.

The contradictions also occurred because the sectoral plans, due to their different time frames, took different editions of five-year plans as references, whose priorities and main concepts had changed overtime. General land use plans usually have a 15-year duration. The urban master plans have a 20-year duration (Wang et al., 2009). The Plan 1999 was made according to the 9th Shanghai Five-year Plan (1996). The General Land Use Plan (2006-2010) was made based on the 11th Shanghai Five-year Plan (2006) (Wang, 2009). The development aims regarding Xinmin's development were different in the 9th and 11th plan editions, so the Plan 1999 and the General Land Use Plan (2006-2010) followed different objectives.

Finally, the development of the Xinmin Area was not mentioned in the three environmental plans - *Regulations on Environmental Protection of Shanghai 1997*, the *Shanghai Green Space System Plan 2002-2020* and the *Shanghai Spatial Plan for Ecological Networks 2009*. In other words, the green areas proposed in the *Plan 1999* were lost in the three environmental plans. Several types of strategic green spaces were initiated in the *Plan 1999*: the outer ring road, green wedges on the inner side of the ring road, the forest in remote suburbs and green parks in the city centre. They were mentioned in the *Shanghai Green Space System Plan 2002-2020*, but the construction sensitive areas and ecologic sensitive areas were not discussed further in the environmental plans. According to Jin (Interview, 2012), environmental plans were mainly disregarded in the beginning of the 2000s. They were generally treated as symbolic plans that municipalities or districts did not have to take into consideration in the decision-making or operational actions (it will be discussed more in Section 6.4.2).

§ 7.2.4 Framing effects of the plan on operational actions (Utilisation)

This section focuses on how the involved actors took the Plan 1999 as a frame of reference for their operational actions between 2000 and 2004, when land development mainly occurred. Two types of actions will be discussed in details: 1) real estate housing development and 2) compensation of the construction sensitive area.

A Real estate housing development instead of green space conservation

The Xinmin Area became a very popular location in the land market in the beginning of 2000s due to its short distance from the central city and relatively low land price. In such circumstance, Xinqiao Town Government, who obtained the land leasing authority, prioritised profit seeking according to market demands rather than the Plan 1999 as a primary reference for their operational actions. It generated large revenues from land leasing and real estate developments. The district government and Shanghai Municipal government also benefitted financially from receiving more revenues and taxes. The environmental considerations in the Plan 1999 were ignored. As a result, land planned for green spaces was replaced by real estate housing projects. When the housing projects were constructed and residents moved in, the lack of public transportation became a critical problem because Xinmin Area was planned as a construction sensitive area where public transports were not planned. The district and municipal governments, in such changing circumstance, had to build public transportation infrastructure to meet the rapidly increasing demands (Interview Jin, 2012).

Overall, the town government gradually relied on the private developers to generate more revenues, and became less successful in influencing land development after the land was leased to private developers. The private developers also relied on the Xinqiao Town Government for land use rights and preferential policies to make more profits (Interview Sun, 2011). They interacted closely in the development process; however, this type of interaction was not really coordination, but collusion between the two main groups of actors working together to maximise profits while disregarding environmental regulations, which was the main concern of the municipal government. The delayed infrastructure development further reflected the lack of coordination between the two main actors (Xinqiao Town Government and private developers) and the others (i.e. the municipality and the district government).

The reasons that the two main actors violated the Plan 1999's concerns could be attributed from three aspects. First, the Xinqiao Town Government had too much discretion over deciding the development of the Xinmin Area because it has the land ownership as mentioned. Second, lack of RDPs, which regulate the development of

most parcels of land and have direct power in the day-to-day planning practice, made the Plan 1999 met difficulties in conveying its main objectives to planning practice. Land-leasing contracts were considered another major barrier for further coordination between involved actors because they did not properly define the development timeframes or a series of regulations of development, and the workload of each actor.

Third, direct involvement of Shanghai Land Resource Bureau enabled the town government not to take the Plan 1999 as a frame of reference. Shanghai Land Resource Bureau and Shanghai Urban Planning Bureau who made the Plan 1999 had different interests. The former did not define Xinmin Area as a non-urban area in the General Land Use Plan. The two main actors (Xinmin town government and the real estate developers) thus preferred taking the General Land Use Plan as a reference in their planning practices according to their own interests. Moreover, the Land Resource Bureau was much powerful than the Urban Planning Bureau in the early 2000s. It was able to help the two main actors to obtain site-selection notes and land-use planning permits from the Urban Planning Bureau for unplanned housing projects.

B Compensation of green space

However, the low level of project conformance and the less framing effects of the Plan 1999 on both decision making and operational actions do not mean that the Plan 1999 was completely ineffective from a performance point of view. According to the interview of Yang, vice director of Detailed Regulatory Plan Department of Shanghai Urban Planning and Land Resources Bureau, '*the Songjiang District Government did bare in mind of the Plan 1999's objective of environmental conservation. Although the planned green spaces in Xinmin Area were intruded upon by unplanned housing projects, they were compensated in other remote suburbs under the coordination with other town governments...*' In general, these compensation measures indicated that the Plan 1999 was at least taken into consideration by the district government in its operational actions.

In summary, the Plan 1999 did not performed well in the case of the Xinmin Area. The low level of conformity in terms of the protected green spaces between the Plan 1999 and reality indicates that the environmental protection objectives regarding Xinmin Area in the master plan were not implemented. Plan 1999 had difficulties in keeping coherence with the related sectoral plans; typically the general land use plans. The continuity of concerns in the Plan 1999 was not embedded in the development process of Xinmin Area. The land development process in Xinmin Area was a bargaining process between the Xinqiao Town Government, real estate developers and municipal/district governments on separate projects, without a coordinated framework. According to Zhu (Interview, 2012),

'Actually none of the involved actors obtained long-term benefits from the bargaining process. The price of the housing projects here were relatively lower than that in the surrounding places due to the lack of public transportation. The municipal government had to spend extra funds on unplanned public transportation infrastructure, and failed to prevent urban expansion. Xinqiao Town Government, although it earned a lot of revenue from land development, it lost control over spatial quality and environment quality.'

§ 7.3 Discussion and conclusion

The Plan 1999 performed differently in the implementation processes of the North Jinqiao EPZ and Xinmin Area, two areas with different development periods, management modes and degrees of conformity. Table 7.7 briefly shows the similarities and differences of the performance of Plan 1999 in urban development processes of these two areas. In the North Jinqiao EPZ, the Plan 1999 played an active role in a process of spatial restructuring through the subsequent urban plans and the related sectoral plans. The involved actors, especially the D&MCs, consulted and followed the Plan 1999 for their operational decision-making and actions. In Xinmin Area, the objectives of the Plan 1999 were not conveyed to the local urban plans or the related sectoral plans. The involved actors disregarded this master plan, and took advantage of the great demand for housing to make as much money as possible, irrespective of the strategic considerations of the Plan 1999. In the following sections, the differences and similarities of the two cases will be deliberately discussed.

Criteria			North Jinqiao EPZ	Xinmin Area
Project conformance			Two out of the three targets were accomplished	The actual development did not conform to the plan
Framing effects on decision making (rationality)	Vertical consistency	Outcomes	Consistent	Non-consistent
		Outputs	Non-consistent	Non-consistent
	Horizontal consistency	Difference	Is coherent with other sector plans.	Conflicts with the general land use plans
		Similarity	1. Five year plans; urban plans and general land use plans are the most influential types of plans. The five-year plans dominated the plan making of other sectoral plans. 2. Other sectoral plans (e.g. industrial plans, environmental plans) were disadvantaged	

Criteria			North Jinqiao EPZ	Xinmin Area
Framing effects on operational actions	Involved actors	Difference	Public sector Semi-public sector Private sector	Public sector Private sector
		Similarity	Lack of participation from civil society	
	The process		Land development was a cohesive process guided by the D&MCs	Land development was collection of individual bargaining between the local government and private developers
	Interaction between different actors in their decision making and operational actions		D&MCs eased communication between public and private sectors	The priority of the involved actors is to fulfil market demands

Table 7.7
The performance of the Plan 1999 in the case of the North Jinqiao EPZ and the case of the Xinmin Area

§ 7.3.1 Project conformity between the Plan 1999 and actual urban development

Conformity between the Plan 1999 and actual urban developments could be discussed at two levels according to the Dutch School principles of plan implementation (See Section 2.2). The first is in terms of the planning outputs, to examine, for example, how many houses, metro stops, industrial compounds, etc., have been built according to the project plans. The second is in terms of the planning outcomes. For instance, a green belt was proposed in a plan to prevent urban expansion. Since the green belt is created, the planning objective of preventing urban sprawl was considered to have been achieved, even though in reality the green belt was divided up into parcels. In other words, project conformance in terms of outcomes is defined as the successful achievement of the original aims.

Regarding the output, both case studies had difficulties in conveying the plan contents of the Plan 1999 into the actual urban development. In North Jinqiao, the three proposed metro lines were not constructed. Two of them were re-routed and the third one is still being evaluated for its feasibility. In the Xinmin Area, all the planned green areas were replaced by real estate housing projects. Regarding the outcomes, Plan 1999 performed differently in the two cases although the planning contents in both cases were not completely fulfilled. In the North Jinqiao EPZ, the main objectives in of the Plan 1999 were reflected in spatial outcomes, for instance, industrial restructuring and modification of land use divisions. In Xinmin Area, the planned green spaces were not protected. Large-scale housing developments replaced the planned green spaces and eventually contributed to Shanghai's urban expansion.

The results of these two cases show that project conformance in terms of outputs and outcomes are not necessarily correlated. The planning objectives can be realised with or without compliance of outputs (e.g. land use divisions or industrial location). More importantly, the project conformance is usually low in terms of planning outputs, which raises the issue of the need for having detailed project plans as compulsory elements within the urban master plan. In other words, it brings up the question of whether the creation of land use maps, industrial location maps and specific areas for social housing are necessary for an urban master plan.

§ 7.3.2 Rationality: framing effects of the plan for decision making

The framing effects of the Plan 1999 on decision making is evaluated through examining the consistency between the Plan 1999 and subsequent urban plans or the related sectoral plans, which is also closely related to the level of conformity between the Plan 1999 and subsequent spatial outcomes. However, evaluating the consistency between the Plan 1999 and the related plans is not about the level of conformity. Rather, those subsequent plans and policies reflected the decisions made by involved actors. Thus they help illustrate how the Plan 1999 shaped the minds of involved actors. And vertical consistency and horizontal consistency are respectively discussed in the two cases.

§ 7.3.2.1 Vertical consistency

Vertical inconsistencies could be attributed to two main reasons. First, the following urban plans that were not consistent to Plan 1999 were mostly trending plans. They modified the Plan 1999's planning objectives in order to reflect the existing situation. A piece of industrial land at the north western part of the North Jinqiao EPZ was planned for industrial development, but it had been a home for local farmers for hundred years, what made it difficult to relocate them. In the Xinmin Area, the Plan 1999 proposed a maximum of 27% land for urban development in Xinmin. However, when the plan was enacted in 2001, more than 50% of the land in this area had been rented out to real estate developers for housing developments.

The trending plans were made in order to recognise the unplanned urban development. Local governments updated the plans after the urban development occurred in order to increase the level of conformity. Usually, the planning system struggles to keep official plans up to date with the actual urban development. The *Songjiang Regional Development Plan2004-2020* is a typical trending plan made four years after the Plan 1999. In the Xinmin Area, whose main development occurred before 2005, this plan had to recognise the existing situation rather than follow the provisions of the older plan.

Catching up with the existing situation was not only reflected in the trending plans, but also in many other urban development activities. Infrastructure development, for example, was used in most situations as an instrument to stimulate area development. However, in the rapid urbanisation process in China, industrial and residential development that was able to bring economic profits usually occurred before the development of infrastructure and public facilities. In many cases, only after the

industrial and residential projects were developed and new residents had moved in, did the public authorities build public facilities and infrastructure to meet increased demands. This occurred in Xinmin Area, as it frequently happened in other areas of Shanghai.

Secondly, the absence of plans at intermediate levels also resulted in the loss of information in the conveyance from the *Plan 1999* to the local plans. The five-tier planning system that replaced the two-tier planning at the end of the 1980s introduced a series of plans between the master plan and the local plans (e.g. district plans, regulatory unit plans, and RDPs) in order to more effectively convey the ideas from a master plan into local plans as well as into everyday planning practices. Planning functions were also restructured from the two levels of plans to the five levels of plans. Each level of plans in the new system had more specific planning competences.

However, the five-tier planning system was not used as proposed. Figure 7.10(J) shows that only two plans at the regulatory unit level were involved in guiding the development of the North Jinqiao EPZ in the 1990s. Master plans and district plans were lacking in influence over urbanisation during this period. In the 2000s, plans at the district level and regulatory unit level were also lacking. In the Xinmin Area, plans at the district level, regulatory unit level and RDPs never existed [see Figure 7.10 (X)]. The absence of plans at certain levels meant that some planning competencies were lost. Furthermore, the functions of each level of plans were not operated as defined. In both cases, urban development in terms of functional localisation, population size, building density and infrastructure development were regulated in the Plan 1999. However, the Plan 1999 did not need to supply a specific land use map. Instead, it could offer a broad framework including a general structure of land uses or a range of policy guidelines. There were subordinate level regulatory plans and implementation plans to define specific land uses and development intensities so as to provide more guidance for day-to-day planning practices (Hao, 2010).

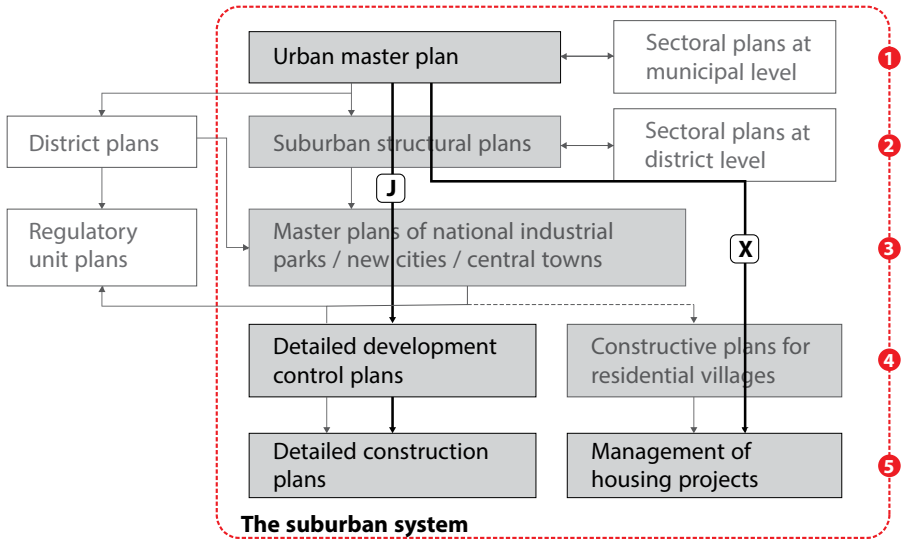


Figure 7.10
The five-tier planning system in use (author's own)

Nevertheless, Zhang (Interview, 2013) argued that the absence of plans at the intermediate levels did not lead to the inconsistencies between urban plans, '*in the socialist era, there were only two levels of plans in regulating urban development. Urban master plans, as the higher level, still succeeded in conveying their ideas to the project management. Too many levels of plans, on the contrary, made the efficiency of the conveyance of planning ideas lower*'. Although the two cases did not have a full range of plans, they have different levels of conformity between the Plan 1999 and spatial outcomes. In this sense, the application of a full range of plans was not the only factor influencing the delivery of planning objectives.

§ 7.3.2.2 Horizontal consistency

The non-conformity between the *Plan 1999* and spatial outcomes is also associated with the inconsistency between the Plan 1999 and the related sectoral plans. The five-year plans, general land use plans and urban (master) plans were the three most influential types of plans intervening in the urban development processes of these two cases [see Figure 7.11]. Other sectoral plans, such as industrial plans and environmental plans, were much less influential. The five-year plans at different levels,

in both cases, played dominant roles in deploying various resources, guiding the urban development process, and influencing the making of other plans. Urban plans and sectoral plans (e.g. general land use plan, industrial plans and economic policies) had to align themselves with the corresponding five-year plans. In the North Jinqiao EPZ, the compliance of urban master plans with the five-year plans was prioritised over vertical consistency within the urban planning system.

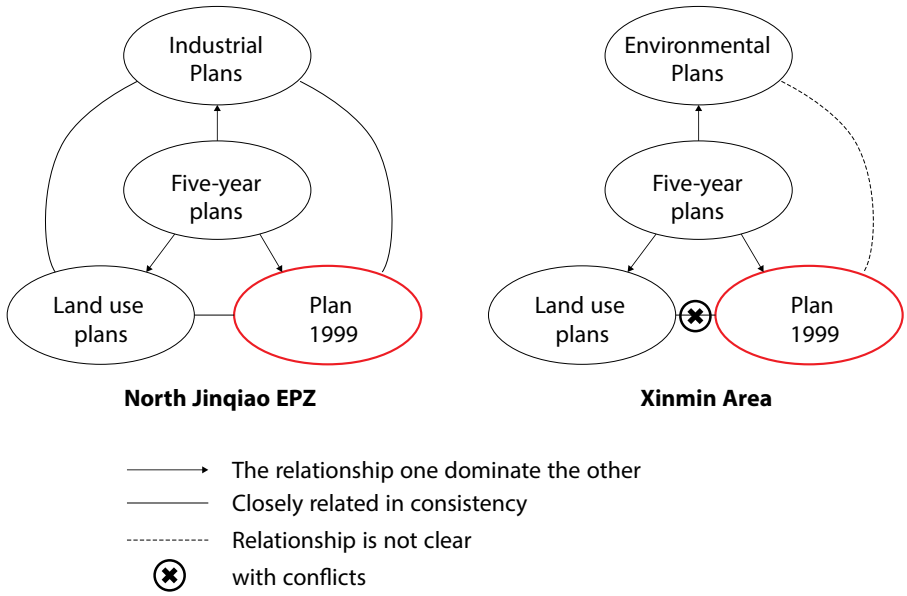


Figure 7.11
The interactive relationships between various sectoral plans and the urban plans in the two cases (author's own)

The interaction between the *Plan 1999* (the urban master plan) and the general land use plans were different in the two cases. In North Jinqiao EPZ, these two types of plans maintained coherence because of the involvement of the D&MCs and the use of regulatory unit plans, which helped to reconcile the conflicts between different municipal departments. In the Xinmin Area, the conflicts between the general land use plan and urban plans were critical. Despite the *Plan 1999*'s environmental considerations for Xinmin, it was not defined as a non-urban land in the General Land Use Plan because of its convenient location, which made it attractive in the land and housing market, and as such, an opportunity for economic profits for both developers and local government.

A key reason for such contradictions is that plans were in the hands of different government departments. Different municipal departments made sectoral plans according to their own priorities. They did not coordinate with one another during the plan making process (Interview Yao, 2012). The contradiction is also related to the different time frames between five-year plans (5 years), general land use plans (15 years) and urban master plans (20 years). When the Plan 1999 was made, the corresponding general land use plan was enacted six years before. During those six years, Shanghai's circumstances had changed dramatically, in other words, the decision situation had changed. Consequently, concerns of the *Plan 1999* were discontinued. This suggests that synchronising the making of sectoral plans and urban plans is important for the coherence of the planning system.

Recently, there were some attempts to decrease the contradictions between various sectors. In 2008, the Urban Planning Bureau was merged with the Land Resources Bureau. Correspondingly, the plan making processes of the general land use plans and urban master plans were integrated. The institutional coalition decreased the contradictions between these two types of plans. The new bureau became more powerful than the previous two entities. In 2009, it contributed to 80% of Shanghai's GDP through land leasing and real-estate related incomes (Wang, 2009). However, the new bureau was considered to be too powerful, in the sense that it could deliver its objectives of land development without the help of other sectors. Possessing such extensive power and autonomy may hinder cooperation or consensus building between the new bureau and other sectors as well as civil society (Interview Wu, 2012).

§ 7.3.3 Utilisation: framing effects of the plan for operational actions

Coherence between the Plan 1999 and its subsequent urban plans as well as the sectoral plans contributes to a better performance of the planning implementation. The ways that the involved actors took the *Plan 1999* as a reference for their operational actions is also important for planning performance. In the practice, the utilisation of the *Plan 1999* was totally different in the two cases possibly due to the changing decision situations. In the North Jinqiao EPZ, land development was a coordinated process guided by the D&MCs. The main actors took the Plan 1999 as a frame of reference for their planning practices. D&MCs also guided and supervised the other actors to take the plan as a frame of reference through a series of regulatory unit plans, DCPs and regulations. In Xinmin Area, the land development process was based on case-by-case bargaining over every single project and its land leasing rights rather than on a broader consensus between all the involved actors. None of the main involved actors took the *Plan 1999* into consideration in their decision-making or operational actions.

Two crucial factors made the difference. The first is how the two main actors separated management powers from the generation of profits from land leasing. In North Jinqiao EPZ, the D&MCs played a significant role in the land development process through managing land development, leasing land use rights and making local plans. However, they were not driven by the need to generate income from land leasing because, first, the D&MCs were (in) directly funded by the central government, and had functions similar to that of local governments in urban projects. Furthermore, only a small part of revenues from land leasing went to the D&MCs. Most of the earnings still belonged to the district government (Zhu, 2012a). The separation of the managing powers and the profit from land leasing assured that land leasing in North Jinqiao EPZ was not excessively driven by market forces.

In the Xinmin Area, on the other hand, the two main actors (the private real estate developers and Xinqiao Town Government) intentionally ignored the *Plan 1999*. The Xinqiao Town Government was responsible for leasing land use rights and coordinating with private developers for local projects. It ignored the Plan 1999, which defined Xinmin Area as a non-urban area and thus are unable to help with generating revenues from leasing land use rights. Private developers also profited from the land developments. As such, these two main actors relied on each other and gradually formed a bilateral relationship in the land development process, in which they easily ignored the voice of other actors as well as the provisions of the *Plan 1999*. They framed their actions and decision-making according to future economic benefits rather than the *Plan 1999*'s ideas.

The second factor is, once again, the contradictions between different municipal agencies. In Xinmin Area, general land use plans and *Plan 1999* stated different land uses, reflecting the contradictions between the Land Resource Bureau and the Urban Planning Bureau in the municipality. These contradictions made it possible for the Xinqiao Town Government, which had acquired a lot of authority in planning practices, to follow another sectoral plan instead of the urban master plan, as a reference in the planning practice.

In the North Jinqiao EPZ, the general land use plans and the Plan 1999 were less contradictory, because the industrial park was a national project driven by public authorities. The D&MCs and their professional staff also played a significant role in coordinating the different interests of actors, including the Land Resource Bureau and the Urban Planning Bureau. They sometimes played a role as a mediator to avoid direct conflicts between the market and plans in the day-to-day planning practices. Moreover, according to Zhu (Interview, 2012), the entrepreneurial operations of the D&MCs made the local plans more feasible and suitable for the market.

There were many other factors that influenced the ways of coordination in both cases. First, the number and types of involved actors is vital. The civil society was absent in the urban development processes in both cases, which caused problems. In North Jinqiao EPZ, residential compounds were built according to what the Plan 1999 proposed (e.g. Biyun community to the south and some residential compounds for compensation purposes to the west). The new homes were unaffordable for the employees, who had to search for housing outside and mostly far from North Jinqiao. The mismatch between the employees' demands for housing and the real estate development targets indicates that the citizens were not involved in the decision-making process. The involvement of more actors would help to balance power relations in the development process, and ensure that the different actors take the Plan 1999 into consideration. If there were fewer actors involved in the urban development process, bilateral or dependent relationships were formed easily.

Proper instruments to ensure the coordination between different actors were also lacking in both cases. In Pressman and Wildavsky's (1984) words, '*there are some ''technical details'' that combined to delay the program and frustrate planners' hopes, aside from designing the innovative policy, committing funds, and obtaining initial local agreements*'. To begin with, land-leasing contracts, which did not properly define development timeframes, each actor's workload and a series of regulations, were a main barrier for further coordination between involved actors. The Xinqiao Town Government, which became less influential in the land development process after the land was leased to private developers, was a typical case (Interview Sun, 2011). Furthermore, a focus on ordinances and regulations, which were used as the most important regulating instruments, were usually not what the spatial plans meant by spatial features (Interview Shi, 2012). They also overestimated the importance of physical planning issues (e.g. plot ratio, building heights, concessive distance, and building density). In the North Jinqiao EPZ, the actual urban developments complied with the regulations in terms of building indices. However, the spatial features were not aligned with the objectives of the Plan 1999. Different industrial compounds were not really integrated. Their exteriors were indifferent to the surrounding structures. In short, the ordinances and the permits deterred coordination between different actors.

Last but not the least, factors beyond the scope of the planning system also significantly influenced the actions of involved actors and the ways of cooperation. These factors include market forces and mechanisms, historical relations between citizens and the government and traditional attitudes towards land and property ownership, the changes in decision situations in other words (Nadin et al., 2000). The case of the Xinmin Area strongly reflected the changing priorities of the local government to the market intervention. The case of North Jinqiao EPZ illustrated the effectiveness of state intervention in area development and the continuity of concerns of the Plan 1999 where market forces alone were insufficient in shaping the development process.

§ 7.3.4 Final remarks

Aside from the empirical findings, this chapter also reflects the contribution of the analytical framework for the performance-based evaluation of plan implementation that I proposed in Chapter 3. This framework consists of three criteria: 1) project conformance between *Plan 1999* and the actual urban development, 2) the framing effects of the *Plan 1999* on decision making, and 3) the framing effects of the *Plan 1999* on operational actions. It involves various issues, such as the changing historical, cultural and political circumstances within which planning operates, the roles and cooperation of involved actors, planning instruments and the relations between the urban master plan and subsequent urban plans as well as related sectoral plans. In a word, my performance-based evaluation of *Plan 1999* is an exploratory analysis that reflects on the entire urban development process. Although there might be elements that are not taken into consideration due to time limitations and difficulty with obtaining the research information, this chapter still provides a framing perspective for understanding the whole dynamic process, rather than only conformity with deeper explanation.

Furthermore, case studies are employed for the first time to illustrate planning performance. In this chapter, two case studies, which are representative examples in Shanghai, are analysed. For each case, the project conformity is examined; the related plans are reviewed and the involved actors are interviewed. They expose certain key issues in the implementation processes in Shanghai and even in China although there are many other examples. Nevertheless, more cases will be analysed in future research initiatives. Last but not the least, the two case studies further show the relationship between the project conformity and the planning performance. In both cases, the project conformity, although does not directly reflect their performance, are a prerequisite to understanding the performance of the plan in the implementation process.

8 Conclusions and Reflections

Since the 1970s, the system of urban planning has changed significantly in terms of its role in the urban development process as well as its operational instruments in many countries. In China, the top-down approach that national ministries and commissions used for zoning and resource allocation for urban planning and management has given way to an approach where municipal governments have more autonomy. These planning circumstances have also become increasingly complex, with influences from uncertainties brought by market forces and many more actors involved in the land development process. A number of major cities on China's eastern coast (e.g. Shanghai, Beijing and Guangzhou in particular) have experienced incredibly rapid rates of urbanization, drastic population growth and urban expansion. In such dynamic circumstances, urban planning, especially in the major cities, confronts many obstacles in guiding future urban development.

Shanghai is the financial and commercial centre of China. In the past two decades, it has experienced an unprecedented economic growth and urban development. Its GDP growth rate has been greater than 10% for more than 15 years. Its population (2013) is twice the city's population in 1979. Shanghai's rapid urbanisation, population growth and its dynamic urban development are very unusual in history in the world; although this pattern of urbanisation is not dissimilar from other rapidly growing cities in China and much of Asia. Its singular development, especially under such a rapidly changing context, may anticipate the future of other Chinese cities. Its present experience is thus, a very important precedent for other cities, which are undergoing or will experience similar trends. More importantly, Shanghai is generally acknowledged to have had some success in guiding urban development within China. Therefore, a better understanding of Shanghai's situation is very useful for the future planning practice in Chinese cities.

The motivation of this research is to evaluate the implementation of urban master plans in the Chinese context, a topic which has not yet been explicitly explored to any extent. More specifically, this study investigates the extent to which and how the most recent urban master plan, *Shanghai Master Plan 1999-2020 (Plan 1999)*, has been applied, used and implemented in the planning practice in order to shape Shanghai's urban development. Consequently, this research makes a contribution in both practical and theoretical terms. Practically speaking, it fills the gap of understanding present planning practices in Shanghai from a plan implementation perspective. It unveils the main factors that have influenced plan implementation. Academically, there has been a lack of in-depth evaluations of plan implementation in China. I therefore, establish an analytical framework for the evaluation of plan implementation, which is suitable to the Chinese context. This research also helps to complement the theories of evaluating

plan implementation in the application of conformance-based and performance-based approaches for the evaluation of plan implementation.

The theories concerning the evaluation of plan implementation were reviewed in Chapter 2; and an analytical framework was established in Chapter 3. The background of the analytical target in terms of the spatial evolution as well as the changing planning system of Shanghai was provided in Chapters 4 and 5 respectively. Chapters 6 and 7 applied the theories to the empirical analysis of the Chinese context through evaluation of the implementation of the *Plan 1999*, the most recent urban master plan in Shanghai, from both conformance-based approach and performance-based approaches. In this chapter, I complete the research by summarising the main empirical findings (Section 8.1), drawing out practical reflections the plan implementation (Section 8.2) as well as the theoretical implications for evaluative research on plan implementation (Section 8.3), and indicating future research directions (Section *8*.4).

§ 8.1 Main empirical findings

In this section, I summarise the empirical research findings. In the first two sub-sections, two issues proposed in Chapter 1 are discussed: 1) the peri-urban development in Shanghai between 1949-99; and 2) the current planning system of Shanghai. They provide basic the knowledge foundations to investigate the influences of the *Plan 1999* on the peri-urban development in Shanghai. In the third and fourth sub-sections, the two key sub-research questions are answered: 1) the level of conformity between the *Plan 1999* and the actual urban development; and 2) the performance of the *Plan 1999* in the planning practice.

§ 8.1.1 Peri-urban development in Shanghai and the influences of urban master plans

How has peri-urban development in Shanghai evolved from 1949 to 1999 in relation to changing socio-economic contexts, and what are the implications for corresponding urban master plans?

Chapter 4 reviewed the spatial evolution of Shanghai's periphery in the second half of the twentieth century in relation to the three editions of urban master plans until 1999. Peri-urban areas have been playing an increasingly important role in Shanghai's urban

development, transforming from deprived rural territories into vanguard locations that attracted significant amount of investments and urban activities. The local population and built-up areas increased dramatically in the peri-urban areas. From 1949 to 2000, the population increased by over 300%, from 5.02 million to 16.08 million. The built up area increased by nearly 400% from 487.96 km^2 to 1681.35 km^2. Satellite towns, a new CBD and local development poles shaped the peri-urban structure. The urban master plans contributed significantly to the improvement of the spatial conditions in the periphery in terms of urban infrastructures and per-capita living spaces.

The tradition and history of plan implementation in Shanghai in terms of the level of conformity are also indicated in this chapter. All of the three urban master plans led the peri-urban development in Shanghai under their specific socio-political contexts. However, the level of conformity between the plans and the actual peri-urban development has gradually decreased. Under the centrally planned economy, industrial development, population relocation and the development of facilities within the Danwei (work-unit) system complied very well with the governmental plans. The strong capacity of public authorities in allocating resources and commanding every aspect of urban development under the centrally planned economy was closely related to the high level of conformity between the plans and the actual development of peri-urban areas. Despite the high level of conformity, plan implementation during this era had limitations. Government gave little attention to living conditions, and the development of infrastructure beyond the Danwei compounds was not implemented according to the plans. Finally, ensuring the long-term success of planned developments was ignored. The first generation of satellite towns, which were rapidly built in the 1960s according to *Shanghai Master Plan 1959*, had deteriorated by the 1980s. This raises questions about the quality and performance of these plans.

In the late 1990s, Shanghai restarted its rapid development after the Pudong SEZ was established. Its urban development model gradually replaced the Danwei compound system. Due to changing external factors (economic globalisation, rapid urbanisation, and market-orientation), mismatches between the plans and the spatial outcomes occurred more frequently than before (Wu, 2006, Wu, 2007). Maintaining 'control' over spatial developments in the peri-urban areas became increasingly difficult during the first years of the open market economy. However, infrastructure development between the Danwei compounds, which was hardly and issue under the centrally planned economy, improved significantly according to the corresponding plans.

§ 8.1.2 Transformation of Shanghai's urban planning system and its current features

What are the main features of the current planning system in Shanghai after a series of transformations that mix the influences of state controls, market mechanisms and local responses?

Chapter 5 gave an overview of the urban planning system in Shanghai, its transformation and its current features under the transitional socio-economic and institutional context. Local governments have gained more power to influence urban development than they did under the planned economy. They gradually used urban planning as an important instrument to intervene in the urban development process. Meanwhile, the urban planning system has changed profoundly in terms of its internal structure and its relationship with the external environment.

The urban planning system has experienced a structural reorganisation in three aspects: the levels of plans, involved actors and planning instruments. First, a five-tier system of plans replaced the previous two-tier levels of plans. The new system better matches the four-tier administrative organization in Shanghai. The competencies of each level of planning are more precisely and strictly identified in the new five-tier system. However, the new system is still hierarchical, following a top-down approach. Plan making at the subordinate levels has little discretion because it has to strictly follow what is stated in the higher level plans. The new system was focused on urban land for a long period, because only urban land was considered and planned for in the plans. However, since 2008 both urban and rural land and their integration was being taken into consideration in urban plans.

Furthermore, many more actors are now involved in the planning practice, such as private developers and local governments, neighbourhood commissions and village governments. As a result, the power relations between these actors have changed. Conflicts between different departments of the municipality have intensified due to their different interests. Local governments and the private sector increasingly support each other for growth-oriented development projects. On the one hand, private developers rely on local governments, which control the available land. On the other hand, local governments also need revenues gained by leasing land to private developers. Some important groups such as the involved residents, civil society and non-government or non-profit organisations, are still absent in the planning practice preventing public participation in the plan making and implementation process. At the local level, there is a different and complex mix of objectives that create an implementation, 'gap' comparable to what numerous studies have previously identified in the US and Europe (see Section 2.2).

Finally, public authorities have changed their instruments in the plan implementation process to adapt them to the changing power relations, resources and rights they now have. Regulatory tools for development controls are still the main focus of planning. A top-down physically oriented and architectural approach centred on plot density and building height still dominates the practice of development control. In contrast, the use of facilitation instruments responding to the existing situation, such as the changing socio-economic context and rapid urbanisation, is still very limited.

§ 8.1.3 Implementation of the Plan 1999 from conformance-based approach

To what degree did the actual peri-urban developments in Shanghai conform to the Plan 1999? What factors have affected the level of conformity?

Chapter 6 evaluated the level of conformity between the *Plan 1999* regarding Shanghai's planned peri-urban development and the actual peri-urban developments. The mapping results did not give 'yes' or 'no' answers, nor did they precisely calculate the extent of conformity in plan implementation. They instead showed the main characteristics of conformance and the difficulties in plan implementation.

The results showed that the rate of peri-urban development in Shanghai was much more rapid and extensive than what was anticipated in the *Plan 1999*. Land development expanded significantly and beyond expectations. Over half of the peri-urban development was unplanned. Urban expansion modified the previous 'multi-axis, multi-centre and multi-level' urban structure. External influences, for example, the rapid urbanisation process and market forces, brought many uncertainties into planning practices and made the plan implementation process more complex and difficult. The *Plan 1999* generally lagged behind actual developments (or decisions) and did not effectively guide urban restructuring or peri-urban development. It was not able to accurately forecast future population growth, and consequently did not adequately plan for enough housing and infrastructure land to meet the increasing demands. As a result, much more land was authorised for housing than what the plan allocated. Nevertheless, the pilot programmes and key projects proposed in the *Plan 1999* have been implemented with a high level of conformance. Most of the planned new cities and industrial parks have been built as planned, in terms of their location, the size of their territory and the extent of investments. Three issues can be established from the analyses of the plan implementation process:

- Quantitative objectives were easier to achieve than the objectives of spatial distribution. In general, planned spatial distribution could not be realised if the quantitative goals were not achieved.
- The level of conformance varied between different types of developments. Development led by the municipal government or the state, such as development of public transport, was usually better implemented in relation to the plan than market-led developments, which was generally housing development. However, these different types of developments were closely interrelated.
- The level of conformance varied between locations. Conformity between the Pla*n 1999* and actual urban developments was less evident at the urban fringes.

The potential factors that influenced the success of plan implementation were also explored in this chapter. First, there was a large gap between the main objectives of the *Plan 1999* and its spatial strategies. The so-called spatial strategies were still physically oriented and location specific. They were not able to fully achieve their objectives, which concerned not only physical aspects but also environmental issues and a much broader spatial structure. Second, the plan also lacks the flexibility to deal with changing circumstances and uncertainties. Action plans, which were updated every five years based on the *Plan 1999*, were supposed to make the plan implementation more feasible and practical. However, they were usually 'trending plans' reacting to existing developments in a passive way, rather than actively offering new visions or strategies for future urban developments. Third, cooperation between sectoral plans, which respectively guided those different types of peri-urban developments, was lacking. The sector departments had the power and competence to 'implement' their own sectoral plans, irrespective of the spatial plan. Lack of cooperation between the sectoral plans resulted in contradictions between the different types of peri-urban development and ultimately decreased the level of conformance between the *Plan 1999* and comprehensive peri-urban development.

§ 8.1.4 Performance of the Plan 1999 in local urban developments

How did the Plan 1999 influence local urban development and projects in peri-urban areas of Shanghai? (A. Are other urgban plans of various sectors, at different levels and in different periods coherent with the objectives of the Plan 1999? B. To what extent and how did the plan supply a frame of reference for operational decision-making and actions?

Based on both a conformance and performance-based evaluation, the research examined how the objectives and visions regarding peri-urban development in the *Plan 1999* were delivered to local urban development. In Chapter 7 the investigation was

reported involving two case studies: the North Jinqiao EPZ and the Xinmin Area. There were many differences between these two cases in the way the objectives of the *Plan 1999* were transposed into actual local developments.

First, the *Plan 1999* performed differently in delivering its main objectives to subsequent urban plans and actual urban developments in the two cases. In the case of the North Jinqiao EPZ, the main objectives of upgrading industries and restructuring spaces in the *Plan 1999* were reflected in the local plans and subsequent spatial outcomes. In the case of Xinmin Area, the original idea of preserving the green space proposed in the *Plan 1999* was not reflected in local plans and spatial outcomes. Also, in both cases, the plan contents (e.g. land use divisions, distribution of metro lines and number of metro stops) in different editions of urban plans were inconsistent. Such divergences indicate that the delivery of planning objectives is very different from the consistency of plan contents. The integrity of the planning system can only guarantee the consistency of plan contents, but not the conveyance of planning objectives between plans.

Furthermore, the interactions between the *Plan 1999* and related sectoral plans were also different in these two cases. In general, five-year plans, general land use plans and urban (master) plans are the three most influential types of plans intervening in the urban development processes of these two cases. The other sectoral plans, such as industrial plans and environmental plans, were in a disadvantaged position. The five-year plans at various levels, in both cases, played dominant roles in deploying resources and guiding urban and rural development process. The implementation processes of urban plans and other sectoral plans (e.g. general land use plans, industrial plans and economic policies) had to strictly adhere to corresponding five-year plans. However, the relationship between the *Plan 1999* and the general land use plans differed in the two cases. In the former case, the *Plan 1999* and corresponding general land use plans were coherent with one another. In the latter case, the *Plan 1999* was not coherent with the corresponding *General Land Use Plan 2006-2010 (this difference will be explained later)*. The general land use plan was usually more influential than the *Plan 1999*. The contradictions between these two types of plans increased the possibility that the local government, i.e. the Xinqiao Town Government, did not take the *Plan 1999* as reference. Overall, plans from different sectors were more coherent in the case of the North Jinqiao EPZ compared to the case of the Xinmin Area.

Moreover, the modes of interaction between involved actors and their reactions to the *Plan 1999* were also different in these two cases. In the case of North Jinqiao, the development and management companies (D&MCs) - the chief actors - not only took the *Plan 1999* in framing their decision-making and actions, but also guided and supervised the other actors (including the land resource bureau who made general land use plans) to take the plan as an important reference. The positive role of the D&MCs in implementing the *Plan 1999* was partly because they were funded by the state, and

partly due to the separation of management powers and profits from land leasing. In the case of Xinmin Area, only two main types of actors, the Xinqiao Town Government and private real estate developers, were involved in the development process. They formed an interdependent corporatist relationship in the land development process. They relied on each other and ignored the *Plan 1999* as well as other sectors. Instead, they both took market dynamics (rather than the *Plan 1999*) as main frame of reference for their operational decision-making and actions.

Finally, land development approaches were also different in these two cases. In the case of the North Jinqiao EPZ, land development was a coordinated process guided by the D&MCs. In the case of Xinmin, the land development process was based on bargaining over individual projects rather than a broader consensus building process between the involved actors. The various modes of coordination in operational decision-making and actions were influenced by many factors, such as institutional structures, the interaction between sectors, the planning instruments being utilised as well as factors beyond the planning system, such as the extremely dynamic peri-urban development trends in Shanghai. It was very difficult for the administration to keep up with such dynamic trends.

§ 8.2 Practical reflections

In light of the in-depth evaluation of the *Plan 1999's* implementation and the conclusions of each chapter, two main challenges and subsequent reflections can be mentioned about the plan implementation practices in the Chinese context. The first challenge concerns the relationship between the planning system and its external circumstances. The second challenge refers to the 'participation and consensus reaching' process in both the plan implementation and plan making stages.

§ 8.2.1 Urban planning in response to the external challenges

Urban planning in China has evolved from a closed system where formerly state actors commanded every aspect of urban development, as discussed in the previous chapters. Presently, external variables such as rapid urbanisation, dramatic population growth and the intervention of foreign and local private investment exert a considerable influence on urban development in Shanghai, as well as in the formulation and implementation of urban plans. Chapter 4 shows how the level of conformance

between the spatial development and the urban plans decreased between 1949 and 1999 when the private/foreign investment and market dynamics intervened more extensively in the urban development process. Chapter 6 shows that government-led urban development conformed more closely to the *Plan 1999* than market-led development. Urban development in remote suburbs also conformed better with the *Plan 1999* because it experienced relatively little population growth. Chapter 7 shows that the *Plan 1999* was not properly consulted in the case of the Xinmin Area, where private real estate developers played dominant roles. In general, urban development when more influenced by external circumstances is less likely to conform to the plans, although the outcome may fit actual needs of the population growth. This suggests that an effective way for the current planning system to respond to increasingly complex external circumstances is still lacking.

The lack of coordination between the planning system and external conditions is reflected in three aspects. First, planners did not leave enough flexibility (anticipate or sufficiently plan in other words) for the changing socio-economic circumstances (dynamic external challenges), such as rapid urbanisation, urban growth and the growing influence of economic globalisation in plan making. According to Pressman and Wildavsky (1984: 169),

'...because of cognitive limitations and the dynamic quality of our environment, moreover, there is no way for us to understand at first all the relevant constraints on resources. We can discover and then incorporate them into our plans only as the implementation process unfolds'.

Chapter 6 shows that many ambitious planning objectives that were proposed in the *Plan 1999* actually exceeded the municipality's capacity for implementation. The population of Shanghai in 1997 (14.89 million) was almost the same as the planned amount for the year 2010 (15 million). Shanghai Municipal Government did not take the potential rapid population growth into account. In reality, the population grew to 23 million by 2010. As such, an insufficient amount of housing and infrastructure were planned for the subsequent period. Consequently, many unplanned housing projects were built to meet increasing demands. Many successive local plans, acknowledged as trending plans, were made to react to the unplanned developments. They were closely related to ambitious objectives, such as the capacity of the city to accommodate population growth and land development as discussed in Chapter 6.

Secondly, planners did not sufficiently investigate the existing situation during the plan making process. Chapter 7 shows that when the *Plan 1999* defined Xinmin Area as a construction sensitive area, most of the land had actually been rented out to private developers. Some land had already been developed for housing projects. Such contradictions between the *Plan 1999* and the actual situation reflected how planners did not always investigate the real situation in several aspects beyond the physical

conditions when making the plan. Overall, a lack of coordination between the planning process and the existing situation led to a large gap between the plan and actual spatial outcomes.

Thirdly, the planning instruments used by public authorities did not take fully into account the external challenges connected to the impact of market forces and dynamic changes. The urban planning system has many instruments to designate the locations of industrial parks, to plan for the number of houses as well as to control the density and layout of a development area. These regulatory tools were used to avoid uncertainties brought on by external challenges and to depict a concrete future, especially in physical terms. These tools basically concern the output of plans, their level of conformity, a typical 'planning-and-control model' of implementation (Pressman and Wildavsky, 1984). However, they did not efficiently control the development outcomes. The operational actions frequently deviated from the plan to react to market-driven dynamics. Private developers successfully bargained with the planning authorities for the approval of unplanned developments. They usually took advantage of loopholes within the planning system, of conflicts between different sectors, and of the growth-oriented preference of planning authorities, willing to increase their revenues from land leasing processes. Eventually, all those unplanned developments were permitted. The inefficiency of the inflexible regulatory tools led to a significant mismatch between the plans and actual urban developments. This suggests that more incentives and responsive instruments are necessary to guide or initiate urban development in coordination with the external challenges (Tian and Ma, 2009).

We know that there are no perfect plans or planning systems, which could guarantee flawless plan implementation. According to Pressman and Wildavsky (1984:61): '*If we want to think of a plan as a tool in the hands of the implementer, we must bear in mind that even a tool is only a cluster of dispositions. To say that something is a tool is to say that it can produce certain results under appropriate circumstances; it is not to say that it is drilling, sawing, or welding at any particular moment*.' The empirical findings of this study verify Pressman and Wildavsky's statement. To ensure the successful delivery of planning objectives, the planning system, including the plan making process and planning instruments within the planning practice, have to respond to external challenges and to be suited to the planning context in which they operate.

§ 8.2.2 Cooperation between actors in the planning practice

The planning system itself has experienced significant changes as discussed in Chapter 5 and Chapter 7. Many more actors -- local governments at various levels, their corresponding bureaus, private developers, state-funded enterprises -- have become involved in the urban development process. Chapter 4 shows that the level of conformity was decreasing drastically in the early 1990s, when private actors became involved in the urban development process. Chapter 7 concludes that the involvement of the D&MCs in the North Jinqiao EPZ case contributed significantly to the effective performance of the *Plan 1999*'s implementation process. This was because they streamlined communication, alleviated conflicts and catalysed cooperation between the involved actors. The two cases reveal that a lack of cooperation between involved actors in the urban development processes was the main hindrance of plan implementation success in Shanghai. In general, increased cooperation between the involved actors is crucially important for the success of plan implementation.

The analyses of the cases revealed that the public authorities did not cooperate in the planning practice. On the one hand, no consensus was reached between local governments at different levels because the planning system operates top-down. The plan-making processes did not encourage or facilitate cooperation or communication between actors. Although local plans were allowed to propose local policies and objectives in the framework of the five-year and higher level plans, they were not allowed to have different opinions, visions and decisions from the ones at higher levels, even if the latter did not properly reflect the actual situation. In this way, local governments made plans that did not reveal their true intentions or were not intended to be realised. Instead, they intervened in the actual planning practice to reflect their real intentions, which made their 'false plans' purely symbolic. The word 'obedience' rather than 'coherence' more accurately describes the relationship between plans from different levels or sectors (Interview Xu, 2012). Although there was an element of bottom-up planning by which the *Plan 1999* learned from the local-level plans, the top-down approach of the plan-making process was dominant. Such approach prevented local plans from reflecting the real demands of a specific area, made the delivery of planning objectives more difficult and ultimately resulted in unplanned spatial outcomes (Zou, 2003). This suggests that the current types of plans are not appropriate for Shanghai's dynamic situation. Local governments should have more discretion to make their local plans, because they have better knowledge of the local situation, the local market dynamics and actual population demands.

From this point of view, the plan-making process in the Netherlands provides a good example of a bottom-up planning system. Governments at different levels are allowed to have their own visions. Municipal governments do not need to follow the plans at the provincial level. If conflicts occur, they can argue for their own considerations. There

is a sharing of competencies and a two way process: top–down and bottom-up. This is based on the Dutch understanding of decentralisation, which is different from the Chinese concept of understanding decentralisation (Interview Colombo, 2012).

On the other hand, a consensus was not reached even between different bureaus within the municipal government. The contradictions between the urban plans and general land use plans was a big hindrance to plan implementation in the Xinmin Area case as well as many other developments in the second half of the 1990s and throughout the 2000s. Such contradictions reflect the lack of cooperation between the Land Resource Bureau and Urban Planning Bureau. It also shows that the agencies lacked common objectives at the local level. The institutional alliance between these two bureaus in 2008 enabled the synthesis of plan making between their two types of plans. However, some scholars have argued that this institutional alliance is not convenient for consensus building because the new bureau has acquired too much power and resources (Tian and Ma, 2009). This could motivate it to achieve its objectives without considering the interests of other actors in the planning process (Wang et al., 2009).

The analyses suggest that power relations need to be more thoroughly examined, understood and fine-tuned, in order to promote more effective participation. The merger of the Urban Planning Bureau and Land Resource Bureau may improve efficiency but may not be an advantage to balance stakeholders' power. It would be desirable to rethink the cooperation (to what extent and in which way) between related sectors, which should become more comprehensive and operable. Financial relations may also stimulate changes in power relations, such as the role of D&MCs in the North Jinqiao EPZ case.

Although private-sector actors have become involved, and municipal governments have gained more power in urban planning practice, the number of involved actors is still limited in most urban development processes. The fewer actors that are involved in urban development processes, the more power each actor obtains. If there are only few actors who gain large amounts of resources and powers, they dominate the urban development process and do not need to collaborate with other stakeholders to initiate urban projects. They readily rely on each other and work closely together to obtain common benefits sometimes at the expense of the interests of the general public as well as official plans. Civil society and NGOs are still excluded in planning processes, either the implementation process or the plan making stages. The absence of civil society groups in planning practice prevented the municipal government from gaining a better understanding of complex existing situation and actual demands of local residents or the environment. Therefore, the participation and involvement of more actors is of great importance for plan implementation, as a way to break the interdependent relationship of dominant actors and to balance power relations.

However, the involvement of more actors in the planning process did not necessarily result in realisation of the urban master plan because this is also closely related to the interaction between the involved actors. The newly involved actors performed differently in the different planning practices. In the case of the Xinmin Area, private real estate developers overrode the *Plan 1999* and ensured that the *Plan 1999's* plan implementation process performed poorly. In the case of North Jinqiao EPZ, the D&MCs cooperated with the other actors in order to take the *Plan 1999* as a reference to frame their operational actions. This means that the number of actors, their modes of participation and especially their interaction, defined the quality of cooperation and further determined the application of urban plans in actual planning practices. Some institutional innovations, such as regular joint conferences between major actors, may contribute to better communication between the actors (Song and Chen, 2012).

On the other hand, participation and cooperation do not only refer to the involvement of different actors after a plan has been conceived but also to the plan-making stage. According to Barrett (2004: 253), '*...implementation should be regarded as an integral and continuing part of the political policy process rather than an administrative follow-on, and seen as a policy-action dialectic involving negotiation and bargaining between those seeking to put policy into effect and those upon whom action depends*'. In the studies case, actors deviated from the plan in the implementation process because the planning objectives conflicted with their interests. Such conflicts indicated that some interests were not taken into consideration when the plans were made. The preparation of a plan usually did not go through any formal public hearings although they announced they would do so (Sun, 2001). In general, reaching as much of a consensus between the involved actors early in the plan making stage is considered necessary. Planning visions and objectives could be applied only on the basis of consensus building through multilateral dialogues. The evaluation of plan implementation not only gives reflections on the implementation process in planning practice; it also contributes to the improvement of plan making and the quality of plans themselves (Baer, 1997).

§ 8.3 Theoretical implications

Aside from the empirical findings and practical reflections based on the comprehensive analysis of the *Plan 1999*'s implementation, this research also helps to supplement the theories of evaluating plan implementation. In this section, the theories relating to the Chinese cases are discussed in two aspects: 1) the contribution of the analytical framework presented in Chapter 3; and 2) the linkage between the level of conformity and performance. This section also helps to answer one of the research questions: *which approach for evaluating the implementation of urban master plans is better suited for Shanghai?*

§ 8.3.1 Reflections on the analytical framework

An analytical framework to evaluate the implementation of a strategic plan was presented in Chapter 3 on the basis of conformance- and performance-based approaches. Generally, a conformance-based approach is used for the evaluation of project plans, which focus on small area development at local level. A performance-based approach is generally used to evaluate strategic plans, which usually focus on regional development. In my analytical framework, the approach to link these two approaches to the various scales of development is different from this. The implementation of the *Plan 1999* is evaluated in terms of the level of conformity by comparing the planning targets and the overall spatial structure of Shanghai at the metropolitan level. A conformance-based approach is applied to the metropolitan level. The performance of the *Plan 1999* is analysed further through analysing its application in local urban projects at the local level. In other words, a performance-based approach is used at the local level to assess the metropolitan level plan.

This framework was made taking into account the characteristics of the *Plan 1999* discussed at the beginning of Chapter 3. The empirical findings suggest that the conformance-based analysis at the metropolitan level is suitable to the *Plan 1999*. This plan focuses more on the quantitative outputs (e.g. the number of houses, the length of roads) defining precise target figures for them. Consequently, its influences on the spatial structure of Shanghai are straightforward and direct, as they matched the key concepts of the conformance-based approach. On the other hand, the performance-based approach is appropriate for analysing the *Plan 1999's* application in local urban projects. Its influences on local urban projects are indirect, because they require the coordination with other plans as well as other actors. As such, to put the performance-based evaluation down to the local-scale helps us to more exactly examine the dynamics of multiple actors, and how actor interaction took place.

The empirical analyses have helped to modify existing theories about the use of the conformance-based and performance-based approaches. The conformance-based approach is not only applicable at the project level. Likewise, the performance-based approach is not necessarily appropriate for the regional scale. The use of these two approaches can alternate and be adjusted to the characteristics of plans and the styles of planning.

Moreover, there is a third dimension of analysis in the framework I established for the evaluation: a diachronic analysis of the changing planning system in Shanghai as well as peri-urban development. The diachronic perspective focuses on linking the analysis to changes overtime. The empirical analysis shows that the diachronic approach helps to provide a better understanding of plan implementation. The previously proposed conformance-based and performance-based approaches are only able to evaluate the implementation of a plan in a certain time period, which is a temporarily fixed situation. This made the understanding of plan implementation a bit simpler than real-life situations because actual implementation processes are influenced by deeper-seated reasons including changing institutional contexts and historical events. In other words, a diachronic analytical perspective is a very important step or component for the evaluation of plan implementation.

§ 8.3.2 The linkage between conformity and performance

Many scholars say that low level of conformity does not necessarily reflect poor performance (Mastop and Faludi, 1997). However, the analyses showed that the level of conformance between the *Plan 1999* and reality is closely related to its performance during the implementation process in the Chinese context. In order to make this point clearer, I will start with how the conformance and performance are defined in this research.

Implementation conformity is defined through the direct linkage between plans and actual urban developments. The most frequently used models include the grid overlay model and PIE (plan implementation evaluation) model, which focus on the outputs. They are usually used for the evaluation of land use plans or sectoral plans. For the *Plan 1999*, in which many issues refer to peri-urban development, the evaluation of its implementation conformity is more complicated than in the most frequently used models. The empirical findings show that a high level of conformity in terms of a type of development (e.g. land uses) is not equivalent to the successful implementation of the urban master plan, the *Plan 1999*. For instance, accomplishment of infrastructure development did not reflect the successful implementation of the *Plan 1999*, in which the goals of preventing urban expansion and improving environmental qualities

were also important. Therefore, conformity in terms of the most important layers of development in the *Plan 1999*, which are closely interrelated, is necessary. For instance, development of metro lines directly stimulated new town development. Thus, determining whether the construction of the metro line actually improved the accessibility of the new town is more important than counting the number of metro stops or the length of metro lines for evaluating plan implementation. Such linkages and interaction between different layers of urban development remind us that a conformance-based evaluation of plan implementation should not only focus on outputs, but also in the interaction of involved actors, which is the core concept of the performance-based approach.

Implementation performance is defined through the application of the master plan in planning practice. According to Pressman and Wildavsky (1984: 167),'*implementation is not whether implementers conform to prescribed policy, but whether the implementation process results in consensus on goals, individual autonomy, and commitment to policy on the part of those who must carry it out*'. In other words, implementation performance is concerned more with outcomes (e.g. housing quality rather than the number of houses). The performance-based evaluation in Chapter 7 was built upon Faludi's PPIP (policy-plan/program-implementation-process) model and Oliveria and Pinho's PPR (plans-process-results) model. Both models provided a very comprehensive and operational foundation for the case studies and worked well in the Chinese context. Specifically, they helped explain the influences of the *Plan 1999* in the plan implementation processes in greater detail.

The empirical analysis shows that the implementation performance is closely related to the level of conformity between actual development and the plan in the Shanghai context. Local developments with a high level of conformity usually enabled the *Plan 1999* to perform better or be fully consulted by involved actors in its implementation process, as it was the case in the North Jinqiao EPZ. In local developments with subordinate level of conformance, the plan was not properly used by the involved actors, as it happened in the Xinmin Area. This suggests that a performance-based evaluation of plan implementation has to primarily take the conformity between plans and actual urban developments as an important reference.

§ 8.4 Directions for future research

This PhD research helps to understand present planning practices in China from a plan implementation perspective. It also fills the knowledge gap of applying both the conformance and performance approaches to the empirical evaluation of a strategic plan, the *Plan 1999*. However, there are some limitations.

§ 8.4.1 Need for more case studies

For the analyses of the performance-based evaluation of plan implementation, I have only used two case studies. The results show that the *Plan 1999* played different roles in the plan implementation processes in the two cases, which represent two distinctive types of local urban development. However, Shanghai has many other types of peri-urban development, which have different management modes, levels of conformity and development periods. Industrial parks, new towns, key villages, local transport hubs, and environmental-protected national parks are all developed in very different ways. Consequently, the role of the *Plan 1999* in the plan implementation processes changed according to the different types of development. Therefore, the results of the performance-based evaluation based on these two cases cannot be generalised for Shanghai as a whole, let alone China.

More case studies in Shanghai would be necessary in order to comprehensively understand the status of plan implementation in Shanghai. Further, more local case studies would help to test and to fine-tune the analytical framework that I used for the implementation evaluation. More case studies within China and other Asian countries undergoing similar urbanisation trends would be also desirable, to compare similar developments in order to explain implementation status in greater depth.

§ 8.4.2 A regional perspective to understand the implementation of urban master plans

Shanghai is no longer perceived as a stand-alone metropolis. The *Plan 1999* acknowledged the importance of Shanghai within the Yangtze River region, national dimension, and even at the international level. Peri-urban development was consequently regarded in close relation to the regional, national and even international contexts. Forces beyond the city boundaries have increasingly influenced peri-urban

development and its relationship with the *Plan 1999*. Shanghai's development is closely related to international capital flows. For instance, investors from Singapore would be interested in financing industrial compounds in China. The development of a new economic pole, lagging due to the 2008-economic crisis, could be stimulated by means of the location of an international airport. For this research, however, the plan implementation of Shanghai's peri-urban areas was only discussed in the dimension of the internal spatial reorganisation and its local planning system. Although the lack of coordination between the planning practice and external circumstances is mentioned, it is not explained and analysed in greater detail. This missing regional perspective should be taken into account for the future evaluation of plan implementation.

§ 8.4.3 Importance of the policy-making stage for successful plan implementation

As Pressman and Wildavsky (1984:167) state, '*... the goals of the plan and the implementation actions are part of a process of interaction. Each element is dependent on the other... thus we can not isolate policy and implementation for separate discussion, the purpose of evaluation analysis is to bring them into closer correspondence with one another. In general, implementing a policy is a unitary process or procedure, not a tandem operation of setting a goal and then enforcing the plan that embodies it.*' This empirical analysis also suggests that the poor performance or low level of conformity of the *Plan 1999* in relation to plan implementation is closely related to the attributes of plans (e.g. lack of flexibility) and plan making approaches. For instance, the lack of consideration from other sectors concerning the *Plan 1999* ultimately resulted in the lack of coordination between the urban planning bureau and the land resource bureau, leading to poor performance. Therefore, the evaluation of plan implementation not only provides insights about planning practices in the implementation process, but it also suggests the importance of improving the plan making process and the quality of the plan itself. Future research initiatives should further examine the influences of plan-making approaches as well as plan attributes on plan implementation.

§ 8.5 Final remarks

Peri-urban areas are more important than ever before for Shanghai's present and future urban development and growth. They have accommodated most of the city's new urban development and growing population. However, urban development in the peri-urban areas at the metropolitan level was not really guided by the urban master plan (the *Plan 1999*) proposed by Shanghai Municipal Government. Despite the importance of the Plan 1999, urban plans met difficulties with their implementation. In local urban projects, the *Plan 1999* also performed differently in terms of the delivery of planning objectives, consistency with sectoral plans, and interaction between involved actors in the land development process. Additionally, the lack of coordination became a critical hindrance to successful plan implementation. This happened because the planning system did not adequately respond to external circumstances, and a lack of cooperation between involved actors.

The important role of plan implementation should be recognised in contemporary urban planning and management in Shanghai, as well as in other cities of China. Current planning tools should be revised and adapted, searching innovative ways to coordinate the planning system and external circumstances, as well as ensuring cooperation between the multiple actors involved in the planning process, in order to more effectively guide future urban developments. The analytical framework based on conformance and performance approaches presented here may help to comprehensively evaluate plan implementation in the Chinese context. The empirical findings supplement the theories about evaluation of plan implementation. Likewise, they advance existing theories about the use of conformance-based and performance-based approaches. Finally, the empirical study redefines the linkage between conformity and performance-based approaches.

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Appendix I Interviewees

Name	Organisation	Position
Zhu lifang	Detailed Regulatory Plan Department of Shanghai Urban Planning and Land Resources Bureau	Officer
Yao kai		Director
Yang xifeng		Vice director
Sun shiwen	Urban Planning and Architecture Faculty of Tongji University	Professor
Wu jiang	Tongji University	Vice president
Xu wenwen	Shanghai Urban Planning and Design Institute	Principal planner
Chen lihong	Detailed Regulatory Plan Office of Jinshan Urban Planning and Land Resources Bureau of Shanghai	Office head
Fransisco Colombo	Urbanism Department, TUDelft	Assistant professor
North Jinqiao EPZ		
Zhu xinjie	Shanghai Pudong New Area Planning & Design Institute	Urban planner
Wei wen	Pudong Urban Planning and Land Resource Bureau	Vice president
Shen jie	China East Normal University	Assistant Professor
Yang yang	Tongji University	PhD candidate of Wu zhiqiang
Xinmin Area		
Xu ting	Songjiang Urban Planning and Land Resources Bureau of Shanghai	Office head
Wu panfeng	Detailed Regulatory Plan Department of Shanghai Urban Planning and Land Resources Bureau	Officer
Mrs Jin	Songjiang Urban Planning and Research Institue	Director
Yang lei	Hua'run Real Estate Corporation	Employee of architectural office
Ding hui	Urban Planning and Land Resources Bureau of Huangpu District	Officer

Appendix II Interview guide

1 Is 'plan implementation' taking into account in the urban planning practice?
- 规划实施的议题在规划实践中得以体现了么？

a. Do you think the Plan1999 have been implemented? Or the ideas in the plan have been realised?
– 你觉得这一轮的总规是得到实施了么？或者说其中的规划理念得以实现了么？

b. What are the differences between urban master plans and detailed regulatory plans in terms of plan implementation?
– 你觉得总体规划和控规在实施上具有什么区别，以及各自的难度。

c. Since 2008, plan implementation has been paid great attention to. What is exactly the difference between now and before?
– 从2008年开始，规划实施的议题被提到了规划法的议程上。这一改变对于规划实施及其评估带来了什么影响？

2 Role of the interviewee and plan implementation issue within his/her organisation
- 受访者担任的职务对于规划实施的业务范围

a. Which branch/office of your organisation tackle the plan implementation issue?
– 你们单位哪些部门会接触到规划实施的事情？

b. In most cases, how do you use your tools, resources or powers to realise the plan?
– 一般而言，你们用来实施规划的主要工具手段、资源、权力范围包括什么？

c. And in which circumstance, what drives you deviate what the plan suggested?
– 然而在什么情况下，你们会做出有悖规划意图的决定？

3 Actors involved
- 参与者

a. Who else are the main actors or involved in the plan implementation?
– 还有什么机构或者社会群体是直接参与到规划实施过程中的？

b. What are their respective roles, i.e. their powers, resources and tools?
– 那么这些利益相关体在规划实施过程中具有什么权力、资源和工具手段？

4 Governance and coordination mechanisms

- 规划实施过程中的合作

a. Which organisations/groups (vertical, cross-sectoral and cross-boundary) does your institution collaborate with on plan implementation? Is this collaboration existing for long or newly established?

– 在规划实施过程中，你们机构和哪些机构有合作？这种合作是由来已久的还是刚刚建立的？

b. In which ways are you collaborating with each other, e.g. regular meeting, small working groups with people from different sides?

– 你们的合作方式是什么？比如，例会，专项工作组？

c. Can you give examples of challenges/conflicts in the plan implementation process? And how do you negotiate with others for the problems?

– 请问你能举例说明几个在规划实施中的矛盾么？ 你们是如何解决的？

d. Could you give examples of where plan implementation worked well, and what contributes to this?

– 你能举例说几个规划实施过程中合作非常顺畅的例子么？你认为这种顺畅得益于？

5 Impacts of plan implementation evaluation on the improvement of planning efficiency

- 规划实施的研究对于规划实践的效率的提高的意义

a. Has the plan implementation focus affected the ways in which your institution interacts with the other actors in the planning practice?

– 对于规划实施的重视会否影响规划实践、及其参与者的合作模式？

Appendix III List of plans, documents and organisations

Plans	
Shanghai Master Plan 1999-2020	上海市城市总体规划1999-2020
Short-term Construction Plan of Shanghai Master Plan 1999-2020 (2001, 2006, 2011)	上海市城市总体规划1999-2020 中、近期建设行动计划
Shanghai General Plans for land uses (2008)	上海市土地利用总体规划（2008）
Great Shanghai Plan (1931)	大上海计划 (1931)
New Urban development Plan of Shanghai (1937)	上海市新城市发展规划(1937)
Urban Plan in Great Shanghai (1946)	大上海规划 (1946)
Shanghai Green Space System Plan (2002-2020)	上海市绿地系统规划（2002-2020）
Comprehensive Development Plan of Pudong District (2002)	浦东新区综合发展规划（2002）
Master Plan of JINQIAO Export Processing Zone (1990)	金桥出口加工区规划图（1990）
Adjustment Plan of JINQIAO Export Processing Zone (1991)	金桥出口加工区规划调整（1991）
Regional Plan of Jinqiao Functional Area (2007)	金桥功能区域规划（2007）
Regulatory Unit Plans	控制性编制单元规划
Detailed development control plans	控制性详细规划
Detailed construction plans	修建性详细规划
Songjiang Regional Development Plan (2004-2020)	上海市松江区区域规划纲要（2004-2020）
Implementation Proposal of Songjiang Regional Development Plan (2006-2020)	松江区区域总体规划实施方案（2006-2020）
Policies/programmes/ordinances	
Advice on Pilot Projects for Shanghai Urban Development 2001	关于上海市促进城镇发展试点意见-沪府发[2001]1号
Promotion of Three Concentrations for ccelerating Shanghai Peri-urban Development 2004	关于及时推进"三个集中"加快上海郊区发展的规划纲要[2004]
Twelfth Five-year Plan for Economic and Social Development 2010	国民经济和社会发展第十二个五年计划（2010）
City Planning Act of People Republic of China (1989)	中华人民共和国城市规划法（1989）
Urban and Rural Planning Act of People Republic of China (2008)	中华人民共和国城乡规划法（2008）
Site-selection note	选址意见书
Land-use planning permit	建设用地规划许可证
Project construction permit	建设工程规划许可证

Regulations on Environmental Protection of Shanghai (1997)	上海市环境保护条例（1997）
Urban Planning and Implementation Assessment Approach (2009)	城市总体规划实施评估办法（试行）（建规[2009]59号）
Shanghai Urban Planning Ordinance (2003)	上海市城市规划条例(2003)
Promotion of Three Concentrations for accelerating Shanghai Peri-urban Development (2004)	关于切实推进"三个集中"加快上海郊区发展的规划纲要（2004）
Pilot comments on promoting urban development in Shanghai (2003)	关于上海市促进城镇发展的试点意见（2003）
Research on planning standards for Shanghai eco-city (2006.12)	上海建设生态型城市的规划标准研究 (2006.12)
	上海市基本生态网络空间规划
Organisations	
Urban Planning and Land Resource Bureau	上海市城市规划与国土资源管理局
Shanghai Development and Reform Committee	上海市发展和改革委员会
Shanghai Urban Construction and Transportation Commission	上海市城乡建设和交通委员会
Shanghai Environmental Protection Agency	上海市环保局
Shanghai Administrative Department of Afforestation and City Appearance	上海市绿化和市容环保局
Shanghai Agriculture Committee	上海市农业委员会
Shanghai Urban Planning and Design Institute	上海市城市规划设计研究院
China Urban Planning Academy	中国城市规划学会

Biography of He Jinghuan

He Jinghuan (Hebe) was born in Changsha (capital city of Hunan Province), China in July of 1983. She received her bachelor's degree (B. Arch) with honours and Master's degree (M. Arch) from Hunan University respectively in 2006 and 2008. Between 2005 and 2008, she worked as part-time architect in two architecture design companies: Architectural Design and Research Institute of Hunan Province (湖南省建筑设计研究院)(August 2005 –March 2006) and Built Environment Institute of Hunan University (湖南大学建筑与环境研究所)(March 2006- August 2008). During this period, she also involved in the editing of an architectural catalogues (books), Deshimen (德士门). Besides, she involved in teaching of Bachelor's courses in the second semester of 2007.

In March 2008, Jinghuan was granted scholarships by China Scholarship Council (CSC) for further study abroad. In the end of October 2008, she began her PhD under the supervision of Prof. Vincent Nadin and Dr. Ana Maria Fernandez Maldonado in Urbanism Department of Delft University of Technology. During her PhD period, she attended several international conferences (AESOP, International Conference on China's Urban Transition and City Planning) and PhD workshops with her papers on the topic of 'planning implementation'. She published a peer-reviewed journal paper in her field (Jan, 2014) in Chinese (Urban Planning International). She took a work placement in Detailed Regulatory Plans Office of Shanghai Urban Planning and Land Resource Bureau (上海市规划和国土资源管理局详细规划与编制处) for three months from March to May, which contribute to her academic life. She is also active in social activities. For instance, she was responsible of coordinating the chair/department seminars that took place every ten days or every two weeks for three years. She played an important role as financial head of the Association of Chinese Students and Scholars in the Netherlands (Delft ACSSNL), Delft branch.

From May 2014, Jinghuan started working for the Architecture Faculty, South China University of Technology (华南理工大学). She involves in an urban design studio of bachelor students in their fourth year and follows a Transportation Planning course.