

Collegio di Pianificazione e Progettazione

Territorial, Urban, Environmental and Landscape Planning

Curriculum: Planning for the Global Urban Agenda

Master Thesis

Opportunities and challenges of China's spatial governance and planning system reform: evidence from Kaihua county and Yudu county

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Abstract

From 2014, China has been initiating to re-establish the national spatial system followed by "Bottom-up" and "Top-down" models. "Top-down" refers to the national formal institutional reform and "Bottom-up" refers to the implementation of "multiple-plans integration" in provincial and local-level pilot cities. The latter will be focused on in this paper to explore the results and experience of the spatial planning reform in China, because the local level especially the county level is the basic unit for the implementation of "multiple-plans integration", the experience of county-level pilot reforms has a significant impact on the construction of national spatial planning system across the country.

This paper begins with the analysis and development of spatial governance and planning systems in Europe and China, based on the course "Territorial Governance and Spatial Planning Systems" during the Master's degree. Secondly, it elaborates the evolution of spatial governance and planning system in China. Also, the reform of the spatial planning system in China is discoursed further to gain a better understanding of "multiple-plans integration". During the reform, Kaihua County and Yudu County are taken as main cases, both of which are included in 28 "multiple-plans integration" pilot counties list identified by four ministries and commissions: the National Development and Reform Commission, the Ministry of Housing, Urban-Rural Development (planning function was integrated by Ministry of Natural Resources in 2018), and the Ministry of Environmental Protection (Replaced by Ministry of Spatial planning reform in China through the deepening study and analysis of these two cases. Finally, on the basis of the above research, it makes comparison, discourse analysis and puts forward some policy recommendations plus future research perspectives.

Keywords: Territorial spatial governance; planning system; China; Multiple-plans integration





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Chapter 1 INTRODUCTION



This introduction details the objective of the present research thesis, its conceptual and contextual background, the research questions and hypotheses. Moreover, it provides a first glimpse on the results achieved through the work.

First, a brief description of the context of the research is introduced, before the general objective of the thesis, its specific objectives and research questions are elaborated to explain what outcomes would be achieved. Second, the research methodology and the structure of the thesis are presented, to inform and guide the reader. Last but not least, some preliminary outcomes concerning the effectiveness of the recent reform of spatial governance and planning in China are introduced.

1.1 Framing the research context

Spatial planning could be defined as the coordination of practices and policies affecting spatial governance generally, which is synonymous with the practices of urban planning in the United States but at larger scales and the term is often used in reference to planning efforts in European countries (Van Assche, Beunen, Duineveld, and de Jong. 2013, pp.177-178). Discrete professional disciplines which involve spatial planning include land use, urban, regional, transport and environmental planning, other related areas are also important, including economic and community planning, which often take place on local, regional, national and inter-national levels and often results in the creation of a spatial plan. Hence, the spatial governance and planning system refers to the methods and approaches used by the public and private stakeholders to influence the distribution of people and activities in spaces of various scales based on the rational protection and effective utilization of spatial resources (Van Assche, Beunen, Duineveld, and de Jong. 2013, pp.177-198). In addition, planning system can be recognized as a technology to improve physical environment with social participation, which is a connection between government and society (Janin Rivolin. 2012, pp.63-85).

Since the specific histories and geographies of particular places, and the way these interlock with national institutional structures, the spatial planning systems are divided into three models (Janin Rivolin. 2017, pp.9-15) in Europe. The conformative model (Greece, Italy, Spain France and Portugal), which ensures the certainty and conform. The performative model (Britain), which can be administered by government or public groups. The plan of local authorities does not have to conform with the permission of development. The neo-performative model (Germany,Denmark and the Netherlands), which prevents a blind pre-assignation for land use and ensures the efficiency. Before the plan is agreed, it has to been negotiated by the public authority.

Strikingly, in China, the spatial planning system is the system that emphasizes the spatial management power of all levels of government from social and economic coordination, rational development, utilization of land and resources, effective supervision of ecological environment protection, and orderly advancement of new urbanization. It integrates the spatial responsibilities of various departments by breaking the sectoral barriers to conduct cross-regional spatial planning and planning management system construction.

At present, China's spatial planning system is based on the principle of "vertical collaboration and horizontal integration" national spatial planning system (Wang Xiangdong, Liu Weidong. 2012, pp.7-15), which can be divided into development planning and spatial planning. Among them, the development planning series include the national economic and social development planning and industrial development strategies. The spatial planning series includes the national territorial



planning, land use planning, regional planning and urban planning (Gao Zhonggang, Zhang Bing. 2009, pp.26-32). Hence, the reform of China's spatial planning system is from the protection of spatial resources (land, ocean, ecology), spatial structure optimization and spatial efficiency improvement to explore the construction of territorial spatial planning system and implementation of the "multiple-plans integration" tool and their management and supervision mechanisms.

1.2 Objective and main research questions

The main research objective of this paper is to take the spatial planning reforms from Kaihua County and Yudu County as examples, the provinces where these two counties are located are in the "Provincial Spatial Planning Pilot Program" list, Kaihua County is the first county in the country to promulgate county-level spatial planning. And Yudu County was chosen partly because these two cases are comparable, which would be explicated in chapter 5, partly because the author could collect more sufficient primary data so that a comprehensive and objective analysis would be carried out. It begins with the introductions of both counties to discourse on the reform processes, spatial governance tools and achievements of the "multiple-plans integration" through the understanding of the spatial planning system in China. On the other hand, their problems, directions and viability during the reform would be explored and compared, while some suggestions are put forward to provide a reference for China to build efficient territorial spatial planning systems at the county level.

In order to reach the general objective, the paper examines the spatial planning system in China to make a contribution to the current research comparing the actual effects before and after spatial planning reform from the perspective of several specific objectives.

1. Analysis of the current challenges of spatial planning in China at the macro level.

2. Analysis of the necessity of China's spatial planning reform.

3. Exploration of the effectiveness and weaknesses of "multiple-plans integration" at the provincial level.

4. Analysis of achievements and potential problems of the "multiple-plans integration" spatial planning reform in Kaihua County and Yudu County, which are representative of the general China condition of spatial planning. The economic gap between these two counties is relatively large in terms of annual GDP per capita (36,476 yuan/ \in 4864 in Kaihua County, 21,775 yuan/ \in 2903 in Yudu County in 2018) and they could each represent China's economically relatively developed and underdeveloped counties, from which their experience in the process of "multiple-plans integration" could be summarized, providing a reference for other regions at the local level.

In particular, the core research questions around which, the study is constructed in the following:

- What were the challenges and exiting problems of the spatial planning system in China?

- How did "multiple-plans integration" function in China?

- What were the effectiveness and achievements after the spatial planning system reform in China?

- Did the "multiple-plans integration" spatial planning reform play an important role in the spatial planning systems of Kaihua County and Yudu County? Comparing the local spatial planning that before the reform, which areas have been improved, and which areas still have problems.



- Could the experience of Kaihua County and Yudu County's spatial planning reforms be referred to counties across the country?

1.3 Research methodology

The main methodological approach of this paper is the qualitative method (e.g. interviews), which is a standard methodology in the spatial planning field, through which, primary data could be collected and analyzed by summarizing, categorizing and interpreting, and the research questions proposed above could be answered.

In qualitative methods, there are two main methods implemented for data collection in the paper. First, interviews. Six stakeholders of planning sectors in Yudu County and Kaihua County are the selected participants, and all of who are involved in the "multiple-plans integration" reform in these two counties. They are contacted by the author's father who is a civil servant and works for the government. Then, the interview is conducted by telephone in semi-structured form and recorded in note-taking by the author for three hours and a half in total. Second, existing data. The case study materials are selected among official documents, journals and news reports relevant spatial planning reform in Yudu County and Kaihua County, some of which are collected on the official websites and academic websites, some are recorded by the author and provided by stakeholders during the interviews.

Furthermore, specific methods are included in this paper.

1. Desk research by policy analysis and interviews. By reading books, periodicals and online materials relevant to spatial planning, analyzing the case studies of spatial planning reform in Kaihua County and Yudu County. At the same time, stakeholders in charge are interviewed by telephone and email to obtain relevant information.

2. Content analysis. Collect comprehensively the documents corresponding to the spatial planning system in China and "multiple-plans integration" agenda, while summarizing the research results of the predecessors to further refine the prime points to explicate the basic ideas and principles of this research.

3. Discourse and comparative analysis. This method would be denoted in two ways. The effectiveness and challenges of spatial planning before and after the reform, Kaihua County and Yudu County's "multiple-plans integration" spatial planning reform before and after are compared respectively, from which the trajectory and results of China's spatial planning system reform would be embodied intuitively.

1.4 The structure of the thesis

The process of the study is advanced step by step, based on the administrative hierarchy system (national level, provincial level, county-level) of China's spatial planning and adopts a "top-down" approach to narrate.

In the first two chapters, some general contexts and concepts relevant spatial planning system and spatial or territorial governance of this paper are introduced, and they provide an overview and definition of the main concepts and objectives of the research, as well as the main issues related to the topic of the study. It explores the backgrounds and functions of the spatial planning system in China and defies a conceptual framework applied to understand the



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functioning and evolution of spatial planning in China, from which, the fields and topics of the paper are explicated.

Next (chapter 3), China's spatial governance and planning system is focused and elaborated by the trajectory of planning tools and structure of China's spatial planning system before the reform and discourse on its achievements and deficiencies, after which, the general cognition of China's spatial planning is gained at the national level, and it is understandable that the need and necessity for the reform.

In the following chapter (chapter 4), it analyzes further the process of China's spatial planning reform, and the role of "multiple-plans integration" in China's spatial planning system, which autonomously started in several developed capital cities of provinces before implemented in an official way at the national and provincial level. And it should be noted that in chronological order, the reform of China's spatial planning follows a "bottom-up" model. And Shanghai Municipality and Hainan Province are analyzed to compare the effectiveness and challenges of China's spatial planning reform at the provincial level.

In chapter 5, as the core of the paper, it mainly conducts in-depth research and analysis on the reform of the spatial planning system in Kaihua County and Yudu County, as well as the impacts before and after the reform, and elaborates the individual challenges of "multiple-plans integration" reform at the local level, which gain a better and profound understanding of China's spatial planning reform from the "bottom-up" perspective. After the elaboration of the reform at the local level, a systemic discourse and comparison of the results of the spatial planning system reform are interpreted in kaihua County and Yudu County in order to highlight positive and negative elements. Through the analysis of the similarity and differences of the reform in these two counties, more valuable details and information about the reform could be observed.

Last but not least, the answers to the research questions would be concluded, the effectiveness of China's spatial planning system reform in county-level is evaluated and the limitations of this paper are summarized, furthermore, the possible innovations and future research perspective in the field of study are considered (chapter 6 and 7).

1.5 Some preliminary outcomes

Since 2011, China's national "Twelfth Five-Year Plan" had for the first time established the framework of a national spatial planning system, and the reform of China's spatial planning system has been gradually progressing. In 2014, the "Notice on Carrying out the Pilot Agenda on 'multiple-plans integration' in Cities and Counties" was issued by the National Development and Reform Commission, the Ministry of Land and Resources, the Ministry of Environmental Protection and the Ministry of Housing and Urban-Rural Development, and it was proposed to launch "multiple-plans integration" pilots in 28 municipalities across the country.

In 2018, China has elevated "multiple-plans integration" into a national strategy that is relevant to the modernization of national spatial governance systems. In March, the State Council promulgated the "Deepening Party and State Institutional Reform Plan" that proposed the establishment of the Ministry of Natural Resources which integrated the planning functions of manifold ministries, unified the conducts of all land space use control plus ecological protection and restoration, while established a whole spatial planning system theoretical framework. The target is to achieve standardized, institutionalized and procedural planning coordination and



management whilst effectively allocate land resources to improve the government's spatial governance capabilities.

In the next chapter, the spatial governance and planning system is elaborated in detail.





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Chapter 2 CONTEXT OF ANALYSIS



This chapter is structured in three main parts to introduce the field of study in which this thesis fits, provides a preliminary definition and dynamic understanding of the spatial governance and planning system that would be adopted through the work, as well as defines a conceptual framework to understand the functioning and evolution of spatial planning in China.

The first part integrates the relevant information to introduce China and Europe's understandings of the concept of spatial governance and planning systems. The second part elaborates on the research trajectory and dynamic understanding of spatial governance and planning systems in Europe and China. The last part of this chapter explains the operation, function and evolution of China's spatial planning system through two conceptual frameworks.

2.1 Conceptual definition

2.1.1 Spatial governance

Semantically, governance is different from government, the former "comprises all of the processes of governing - whether undertaken by the government of a state, by a market or by a network - over a social system (family, tribe, formal or informal organization, territory or across territories) and whether through the laws, norms, power or language of the organized society" (Mark. 2012, pp.1-2), which means that the scope of governance power extends to the field of public affairs, and is no longer limited to political activities, including economic activities, social activities and cultural activities, the governance of which could be understood as spatial governance or territorial governance in practice and "the political and technical practices used to order space play an essential role in all societies" (Gaeta, Rivolin and Mazza. 2017, pp.265-266). In Chiti's view, the term of territorial governance is "the complex of policies by which public powers rule - in accordance with the distribution of the competencies established by Constitutions - the multiple lands uses, combining the various relevant interests without the attribution of a prevailing relief to any of them" (Chiti. 2003, pp.93).

Combined with the above points of view, territorial governance or spatial governance is to redress conflicts and frictions in land use and resources allocation caused by various activities, which would be achieved by two levels of political synthesis: horizontal coordination (amidst administrative layers and scales of intervention); vertical coordination (sectors of intervention including the state, market and society). The degree of coordination depends on the peculiar features of the spatial planning system that is founded in different countries under different domestic conditions, such as sovereignty, population, territory and political institution, etc.

2.1.2 Spatial governance and planning system

The concept of spatial planning was first proposed by the European Union in the 1980s. The "European Regional / Spatial Planning Charter (also known as the Torremolinos Charter)" (Recommendation No.R(84) 2 of the Committee of Ministers to member states on the European Regional / Spatial Planning Charter. 1984) was promulgated and implemented by the European Regional Planning Ministerial Conference in 1983, which clarified that spatial planning is mainly used by the public sector to influence the spatial pattern of future activities. The "European Spatial Development Perspective(ESDP)" (ESDP, European Spatial Development Perspective, 1999) in 1999 defined spatial planning as a policy that expresses economic, social, cultural, and



ecological issues. It is also a scientific concept, an interdisciplinary and administrative management tool, and achieves regional development balance and physical space integration (see Figure 1). After that, the EU countries began to reform their spatial planning systems to adapt to EU standards.



Figure 1: Categories for the analysis of the scope of spatial planning in legal and professional terms (Source: Nadin, Fernández Maldonado and Zonneveld, et al., 2018, pp.14)

In China, spatial planning has general and detailed concepts. The detailed spatial planning refers that a series of spatial plans on specific development indicators of agriculture, cities, and ecology issued by the government. For example, the "Provincial Spatial Planning Pilot Program" issued by the General Office of the Central Committee of the Communist Party of China (CPC) and the General Office of the State Council in 2017 to develop the provincial-level spatial planning system, which concentrates on the scope of urban, agricultural, ecological space and ecological protection red line, permanent basic farmland, urban development boundary, pays attention to the development intensity control and the main control line of lands, and coordinates all kinds of spatial planning (Official website of the Central Government. 2017.

<http://www.gov.cn/zhengce/2017-01/09/content_5158211.htm>).

Since then, manifold provinces have begun to formulate "spatial plannings", which are detailed spatial plannings.

Spatial planning in the broad sense refers to the planning that has the characteristics of space, time, comprehensiveness, coordination, and strategy. The spatial planning referred to in this paper is the general spatial planning, rather the detailed "spatial planning". And the spatial planning system is a collection of various spatial plannings with a certain logical organization and management systems (Lai Xiaoxia. 2017, pp.5). It is a general term for the spatial planning administrative system, legislative system, and operating system.

After clarifying the definition of spatial governance and planning system, it is more accessible to sort out the relationship between the two. As a public policy of the city government on the effective allocation of space resources, spatial planning reflects the functions of guidance,



standardization, governance, service and operation in the process of spatial governance, which is an important tool for rational spatial governance. Furthermore, some new social, economic, and environmental problems arise during the construction of the city, spatial planning could be used to "govern" the problems and ensures efficient implementation in an arranged system. In this process, the role of "governance" is the most significant, which essentially contains several other functions and runs through the entire process of spatial planning, construction, and management.

On the other hand, as an indispensable part, the spatial planning system is reasonable or not, which in turn affects the urban governance capacity and governance effect. As mentioned before, spatial governance has been affected by horizontal coordination and vertical coordination. Therefore, in order to build an impartial spatial planning system, it is necessary to realize the participation of multiple subjects, including the government, the market and the public, all of which participate in the entire process of planning and management, so as to reflect and maximize the public interest.

2.2 Dynamic understanding of spatial governance and planning systems

2.2.1 Research trajectory and dynamic understanding of European spatial planning system

The spatial planning system in Europe is no longer an isolated system of urban planning in regional space, and European countries have gone through the process from regulating urban areas to regulating lands, while there is no phenomenon that the plans are prepared by overlapped departments, competition for land development rights and spatial governance rights, but a set of complete spatial planning system from the national to the local level, including planning, supporting laws, and management agencies. European scholars' research on the spatial planning system mainly focuses on the relationship amidst the spatial planning system, politics and institutions, which has resulted in the classification and exploration of planning models for the spatial planning systems of different countries (see Figure 2).



Figure 2: Classification of spatial planning system by ideal types (Source: Cotella. 2018, pp.10)

Taking Newman and Thornley's classification method as an example (Newman and Thornley. 1996, pp.1-55), they divided the European spatial planning system into British, Nordic, Germanic, Napoleonic, etc. According to different administrative and legal systems, among which, the British system is a centralized system, and the country is mainly represented by the four different nations (England, Scotland, Wales and Northern Ireland). Nordic systems have a lack of spatial planning at the national level due to the serious tendency of national decentralization. Coordination is carried out only through city-level spatial planning. Norway, Sweden, Denmark, Finland, and Iceland are the main countries. The Germanic department is represented by Germany, known for its rigor, and reached consensus through the cooperation of subordinate and peer agencies. Napoleon France's system is a mix of central regulation and local management.

Nowadays, according to the modern classification of the territorial governance system, there are three main spatial planning models in Europe (see Table 1).

• Conformative model (Greece, Italy, Spain France and Portugal), which ensures the certainty and conform, and the plan is the decisive ultimate, if the project does not conform the plan, the whole process requires to be assessed.

• Performative model (Britain), which can be administered by the government or public group. The plan of local authorities does not have to conform with the permission of development, but the permission is the principle endowed to each process, which is not connected.



| | Conformative model | Performative model |
|--|---|---|
| Principles | Hierarchy, dirigisme | Vertical and horizontal subsidiarity |
| Technical assumptions | Plan as a binding collective strategy | Plan as a not-binding collective strategy |
| 'Systemic' consequences | Fusion of 'spheres of interaction': planning functions are melted | Distinct 'spheres of interaction': planning+control |
| Juridical effects | Incoherencies resolved according to conformance | Existing use rights in land till different public decision |
| Advantages | Certainty | Flexibility |
| Disadvantages | Rigidity | Discretion |
| Political and technical responsibilities | Centred on plan elaboration | Centred on plan elaboration and on projects evaluation |
| In force | Almost all European countries LISA | LIK ELL coatial planning |

Table 1: Comparison between the Conformative model and Performative model(Source: Janin Rivolin. 2008, pp.178)

• Neo-performative model (Germany,Denmark and the Netherlands), which prevents a blind pre-assignation for land use and ensures the efficiency. Before the plan is agreed upon, which has to be negotiated by public authority, meanwhile, the research and survey are obligatory in the light of the plan.

2.2.2 Research progress and dynamic understanding of China's spatial planning system

The National Economic Development Plan implemented in 1953, also known as the "First Five-Year Plan", was China's first spatial planning. Since then, the five-year plan and urban planning have become the mainstay and evolved multiple-department organizations and multiple-type plans, while planning laws, regulations and administrative institutions have gradually been established. In 2011, the national "Twelfth Five-Year Plan" for the first time established the framework of a national spatial planning system, which is in consonance with the master plan of national economic and social development, based on the plan of major functional areas, special plan and land use plan, supported by the regional plan, city and county-level spatial development plan.

Since 2014, China has begun to reform the spatial planning system. In 2014, the "Notice on Carrying out the Pilot Agenda on 'multiple-plans integration' in Cities and Counties" was issued, and it was proposed to launch "multiple-plans integration" pilots in 28 municipalities across the country. In 2017, the "Provincial Spatial Planning Pilot Program" was officially announced, which was launched in specific 9 provinces: Jilin Province, Zhejiang Province, Fujian Province, Jiangxi Province, Henan Province, Guangxi Province, Hainan Province, Guizhou Province, and Ningxia Province. In 2018, China had elevated "multiple-plans integration" into a national strategy that is relevant to the modernization of national governance systems. In March, the State Council promulgated the "Deepening the Party and State Institutional Reform Plan" that proposed the establishment of the Ministry of Natural Resources which integrated the planning functions of manifold ministries, unified the conducts of all land space use control plus ecological protection and restoration, while established a whole spatial planning system. The target is to achieve



standardized, institutionalized and procedural planning coordination and management whilst effectively allocating land resources to improve the government's spatial governance capabilities. In 2019, China evolved "multiple-plans integration" reform into territorial spatial planning system from the national level to the local level.

In the context of spatial planning reform, Chinese scholars' research on spatial planning systems could be divided into four types (Xu Jingquan, Shen Chi and Hu Tianxin, et al. 2017, pp.5-11).

• Learn from the spatial planning systems of developed countries through the types, models, structures, trends, and systems before exploring the beneficial experience to China. The main reference countries are Britain, France, Germany, the Netherlands, Japan and the United States, etc.

• Start from the entire planning system of China, analyze the problems and challenges of the current spatial planning system in China, and put forward certain suggestions based on the analysis.

• Conduct a comparative study of various spatial plans in the spatial planning system, explore the relationship between the planning and coordination mechanisms. From the "two-plans integration" including urban and rural master plan and land-use master plan to the "three-plans integration" added by the national economic and social development plan, to the "multiple-plans integration" considering environmental protection plan.

• Look forward to the perspective of China's spatial Planning system, propose the general ideas, tasks and framework.

There is no absolute right or wrong for these four mainstream theoretical studies, they jointly promote the reform and development of China's spatial planning from different perspectives.

2.3 The conceptual framework of spatial planning system in China

The spatial planning system refers to the integrated arrangement of the social, economic, cultural and ecological aspects of a country in the national territorial space. And it corresponds to the administrative system in China (Li Tao, Liu Kewei. 2016, pp.16-22). The administrative system of China includes five levels: national, provincial, prefecture-level city's, county's and town's level. From 2014 to 2018, China's spatial planning system has undergone successive reforms at the local, provincial, and national levels. This section interprets the conceptual framework of China's spatial planning system and compares China's spatial planning system before and after the reform.

2.3.1 Before the reform

China has built a spatial planning system that composes of horizontal planning hierarchy and vertical planning type, which are divided into development planning and spatial planning. Among them, the development planning series include the national economic social development plan and industrial development strategies, etc. The spatial planning series comprises the land-use master plan, the regional plan and urban - rural master plan, etc. (Gao Zhonggang, Zhang Bing. 2009, pp.26-32).

The development planning series have higher authority in China, among which, the national economic and social development plan is authorized by the Constitution and other plan series are



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required to be connected with or based on it; the regional plan for national economic and social development is often used as a national strategy, which focuses on urban agglomerations that cross administrative boundaries and development or protection zones, etc. (Wang Xiangdong, Liu Weidong. 2012, pp.7-15).

The spatial planning series is primarily implemented in the local administrative departments, such as Land and Resources Bureau, Local Development and Reform Commission and Housing and Urban-Rural Development Bureau that under the leadership of the Ministry of Land and Resources, the National Development and Reform Commission and the Ministry of Housing and Urban-Rural Development respectively. The higher-level planning administrative department must provide guidance and supervision to the lower-level planning administrative department (Qian Zihua, Yi Zheng and Wang Fang. 2015, pp.57-63). The above two major planning series constitute the main body of China's spatial planning.

Other plans are often demanded to be included in their series whenever possible. However, due to the limitations of the two major planning series, environmental plans and infrastructure plans still have relatively independent development space. For example, the ecological demonstration zone is created and implemented by the environmental protection department, but the mining geological environment protection plan, the geological disaster prevention and control plan are prepared by the national land department and the road network plan is prepared by the transportation department. Unconventional plans based on special needs are also prevailing, such as the regional layout plans for superior agricultural products, "emergency" planning for the Wenchuan earthquake in 2008, industrial revitalization plans and medium to long-term food security planning.

In brief, before the establishment of the Ministry of Natural Resources and the introduction of policies related to the national spatial planning system, China's original types of planning mainly included the following (see Table 2).

| Name | National authorities | Relevant laws and policies |
|--|---|---|
| National Economic and Social Development Plan | National Development and Reform Commission | Constitution of the People's Republic of China (2004) |
| Main Function Area Plan | National Development and Reform Commission | Opinions on accelerating the construction of ecological civilization (2015) |
| Land-use Master Plan | Ministry of Land and Resources | Land Administration Law (2005) |
| Urban-rural Master Plan | Ministry of Housing, Urban-Rural development | Urban and Rural Planning Law (2007) |
| Environmental Protection Plan | Ministry of Environmental Protection | Environmental Protection Law (2005) |

Table 2: China's original types of planning (partial enumeration) (Source: Author's own)

All these plans are part of the national spatial planning system that consists of three stages: the national, provincial and city plans. Each stage has a different administrative department that performs different responsibilities and is divided into five levels: National spatial planning, provincial spatial planning plus city and county spatial planning and town planning (see Table 3).



The vast majority of spatial plannings follow the "top-down" model, which means that the higher level is the outline and guidance of the lower one while the lower-level plans and their targets are the decompositions and concrete implementation of the higher-level planning objectives (Cai Yumei, Gao Ping. 2013, pp.60-61).

| Sector Hierarchy | National Development and Reform Commission | Ministry of Land and Resources | Ministry of Housing, Urban- Rural development | Ministry of Environmental Protection | Special planning of other sectors |
|--------------------------------|--|--|---|--|--|
| National level | National Economic and Social Development Plan; Main Function Area Plan | Land-use Master Plan | Urban-rural Master Plan | Environmental Protection Plan | Industry plan; Science, education and culture plan; Traffic plan; water-use plan; "Emergency" planning,etc. |
| Regional level | / | / | Economic zones and urban agglomerations group development | / | / |
| Provincial level | National Economic and Social Development Plan at provincial level | Land-use Master Plan at provincial level | Urban-rural Master Plan at provincial level | Environmental Protection Plan at provincial level | At provincial level |
| Prefecture-city level | National Economic and Social Development Plan at city-level | Land-use Master Plan at city- level | Urban-rural Master Plan at city- level | Environmental Protection Plan at city- level | At city- level |
| County (local) level | National Economic and Social Development Plan at county- level | Land-use Master Plan at county- level | Urban-rural Master Plan at county- level | Environmental Protection Plan at county- level | At city- level |
| Township/Town (local) level | National Economic and Social Development Plan at town- level | Land-use Master Plan at town- level | Urban-rural Master Plan at town- level | Environmental Protection Plan at town- level | At town- level |

 Table 3: China's national planning system before the reform (Source: Author's own)

China's national planning system before the reform is mainly divided into 4 aspects.

National - level



At the national level, it focuses on policy regulation and control. On the one hand, it formulates national comprehensive strategic program plans that integrate natural, social, economic and environmental aspects to tackle major regional development problems whilst formulating spatial planning as well as "emergency" planning (responding to natural disasters such as earthquakes) policy guidance and classification guidelines. On the other, it is responsible for the construction of the approval and supervision function for the preparation and implementation of spatial planning (Xu Jingquan, Shen Chi and Hu Tianxin et al. 2017, pp.5-11).

Regional - level

Regional spatial planning mainly concentrates on the coordinated group development plans of manifold economic zones and urban agglomerations such as the Pearl River Delta and the Yangtze River Delta (see Figure 3), which are not real administrative divisions. It is the provinces or regions of similar economic development levels that conduct economic and cultural development, and many regions have been upgraded to "national strategic regions" through the planning (Zhang Jingxiang, Lin Huace and Chen Hao. 2018, pp.1-6).



Figure 3: China's urban agglomerations (2015) (Source: Fang Chuanglin. 2015, pp.1003-1024)

• Provincial - level

The provincial-level is the guidance of the subordinate level, playing a connecting and coordinate role in the whole system. According to the strategic deployment of the national comprehensive spatial planning and actual conditions, specific reviews and refinement that mostly would be implemented in control planning are carried out, while these measures are included in some informal plans too, such as inter-regional spatial planning and key regional spatial planning (He Zizhang. 2006, pp.87-90).

Local - level



As an important link to ensure the implementation of planning, the city and county levels advocate the "bottom-up" model to carry out the senior plans from the actual development of the region, in other words, the lower level planning and goals are the decompositions and concrete implementation of the higher-level planning objectives (Yang Zhiheng. 2011, pp.5-9).

2.3.2 After the reform

It is worth noting that reformed China's spatial planning system does not mean to discard all previous plans, but to incorporate these plans into it on the premise of retaining these plans, in order to solve the problems caused by conflicts in coordination amidst the functions of various plans and sectors, and contradictions among the original plans. Furthermore, the legal status of China's spatial planning system is also established at the national level in 2019. "The state founded a territorial spatial planning system... The territorial spatial plan approved by law is the basis for various types of development, protection, and construction activities. Land-use master plan and urban-rural master plan will no longer be prepared after the development of the territorial spatial planning system (Xin Hua News. 2019.

<http://www.xinhuanet.com/politics/2020-01/17/c_1125474664.htm>)."

Reformed China's territorial spatial planning system could be summarized as "Five Levels, Three Types and Four Systems" (The paper, 2019.

<https://www.thepaper.cn/newsDetail_forward_3520905>) according to its level and content (see Table 4).

• "Five Levels" correspond to the five levels of China's administrative management system: national, provincial, prefecture-level, county's and township's levels. The national plan focuses on strategy, the provincial plan concentrate on coordination while the city, county and township plans undertake implementation.

• "Three Types" are divided into three types of planning: general planning, detailed planning and relevant special planning. 1) The general planning emphasizes the comprehensive nature of the plan, and it is a national arrangement for the protection, development, utilization, and restoration of land and space involved in a certain area. 2) The detailed planning emphasizes implementation. It is generally organized by the city and county level and is an implementation arrangement for specific land use and development intensity. Detailed planning is the statutory basis for carrying out land space development and protection activities, including implementing land space use control, issuing planning permission for urban and rural construction projects, and carrying out various constructions. The village plan outside the boundaries of urban development is also considered as detailed planning. 3) Relevant special planning concentrates on specificity and is generally organized and prepared by the natural resources department or related departments. It could be prepared at the national, provincial, city and county levels, especially for specific regions or river basins. It is also a special arrangement for the development, protection and utilization of space (Official website of the Ministry of Natural Resource of the People's Republic of China. 2019. http://gi.mnr.gov.cn/201905/t20190530_2439129.html).

• "Four systems" includes the planning preparation and approval system, the planning implementation supervision system, and the regulations, policies, and technical standards system that support the planning operation.





Progettazione

| Level | General planning | Detailed planning | Relevant special planning |
|-----------------------|---|--|---------------------------|
| National level | National territorial spatial planning | / | Relevant special planning |
| Provincial level | Provincial territorial spatial planning | / | Relevant special planning |
| Prefecture-city level | Prefecture-city territorial spatial planning | (Within (Outside | Relevant special planning |
| County level | County territorial spatial planning | development development boundary) boundary) | Relevant special planning |
| Township level | Township territorial spatial planning | Planning Planning | / |

Table 4: Reformed China's territorial spatial and planning system (Source: The paper, 2019. <https://www.thepaper.cn/newsDetail_forward_3520905>)

Simultaneously, reformed China's territorial spatial planning also reconsiders the space scope of ecological, agricultural, and urban functional, as well as the ecological protection red line, permanent basic farmland, and urban development boundaries.

At this point, we have a systematic understanding of spatial planning, and at the same time, through a more comprehensive understanding of the development and research process of China and European spatial planning, we can better analyze and compare in the next chapter of the evolution of China's spatial governance and planning system.



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Chapter 3

EVOLUTION OF SPATIAL GOVERNANCE AND PLANNING SYSTEM IN CHINA



The aim of this chapter is to illustrate the traditions, essential features, tools and structures of China's spatial governance and planning system and to analyze the evolution trajectory of it. Furthermore, it interprets the role and functions of China's spatial governance and planning system in different periods, simultaneously, discusses the existing problems and challenges behind the system, based on which, a more comprehensive understanding of China's spatial governance and planning system (before the reform in 2019) would be presented.

Section 3.1 details the structure of China's territorial governance, and China's spatial governance and planning system was established in accordance with it, plus analyzes the main elements engaged in this system at all territorial levels, such as constitutional and legal framework relevant to these actors. Section 3.2 introduces the evolution of the tools of China's spatial governance and planning system in the order of time development. The last part of this chapter explores and discourses on the role and status of China's spatial planning system in territorial governance and spatial planning, which usually reverse due to the dynamic nature of politics, economy and society in China at that time, especially around the 1990s. Since the implementation of the reform and opening-up policy, it has brought radical shifts toward Chinese society and the economy. Under this background, it experienced the first major transformation with the economic structure adjustment from the planned to the market economy, which resulted in many complete new problems and challenges behind it. Based on these analyses, the necessity and inevitability of China's spatial planning reform are derived.

3.1 Tradition and structure of China's spatial governance and planning system

3.1.1 Structure of the territorial governance in China

• Geographical and socioeconomic context of China

China is located in the eastern part of Asia and on the west coast of the Pacific Ocean. The territory is vast and has a total area of about 9.6 million square kilometers, ranking the third in the world. China borders 14 countries around it (see Figure 4). In 2019, the total population of the mainland in China¹ was 1.495 billion

(Xin Hua News. 2020. <http://www.xinhuanet.com/politics/2020-01/17/c_1125474664.htm>), the prominent characteristics of the population are the large population base, rapid population growth and numerous ethnic groups.

¹ Exclude Hong kong, Macao and Taiwan Province.



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Figure 4: Map of China Provinces (Source: Geology. 2018. <https://geology.com/world/china-satellite-image.shtml>)

The People's Republic of China is a socialist country that was founded in 1949. China comprehensively followed the planned economy system of the former Soviet Union in the early decades after its founding. An important manifestation was the beginning of the "First Five-year Plan" in 1953, which is primarily to develop major national construction projects, such as heavy industry and railway traffic, that are important proportions of the national economy, to arrange the distribution of productive forces, and to set goals and directions for the prospects of national economic development (Han Zenglin, Liu Tianbao. 2009, pp.12-17).

In 1978, China implemented the reform and opening-up policy which established a socialist market economy dominated by the state and the government, also the market was involved in. This policy has been affecting China's society, politics, economy, culture and other aspects, and has a positive impact on the evolution and development trajectory of China's spatial planning system. The GDP of China in 2018 was 12.24 trillion dollars, ranking 2nd in the world (see Figure 5).



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Figure 5: The Global Economy by GDP (Source: Jeff Desjardins. 2018. The \$80 Trillion World Economy in One Chart. <https://www.visualcapitalist.com/80-trillion-world-economy-one-chart/>)

• Administrative structure and relevant reforms

According to the Chinese Constitution in 2004, there are 34 provincial-level administrative districts which are divided into 23 provinces, 5 autonomous regions (Inner Mongolia Autonomous Region, Guangxi Zhuang Autonomous Region, Tibet Autonomous Region, Ningxia Hui Autonomous Region, Xinjiang Uygur Autonomous Region), 2 special administrative regions (HongKong, Macao) and 4 municipalities directly under the Central Government, including Beijing, Shanghai, Chongqing, Tianjin (see Figure 6); 334 prefecture-level cities; 2851 counties and 39,888 towns.



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Figure 6: China Administrative Map (Source: China Tourist Maps. 2008. <http://www.chinatouristmaps.com/china-maps/administrative-divisions/china-political-map.html>)

When the People's Republic of China was established in 1949, the country was divided into 30 provinces, 1 autonomous region, 12 municipalities directly under the central government, 5 administrative districts.

Until 1967, the district was adjusted several times. In 1967, it was adjusted to 22 provinces, 5 autonomous regions, and 3 municipalities with a total of 30 provincial administrative regions. Since then, it has been basically fixed. In 1997, Chongqing City under Sichuan Province was rescinded and Chongqing Municipality directly under the Central government was established. The municipality has the right to surpass the city and has provincial functions. In 1997 and 1999, Hong Kong and Macao returned to China respectively. And two new administrative regions were established, with provincial functions. According to the administrative division code, China could be divided into North China, East China, Central China, Northeast, Southwest, Northwest, Hong Kong, Macao and Taiwan Province (see Figure 7). But this is not an administrative structure. It is only a division based on geographical features amidst several provinces.



Figure 7: The administrative map of China based on geographical characters (Source: Researchgate. 2018. <https://www.researchgate.net/figure/The-administrative-map-of China_fig1_329063368>)

3.1.2 Tradition and essential features of spatial governance and spatial planning system in China

Spatial planning systems are rooted in "the specific histories and geographies of particular places, and the way these are interlocked with national institutional structures, cultures and economic opportunities" (Healey, Williams. 1993, pp.710), which is also manifested in China. In the early decades of the reform and opening-up policy, China primarily focused on economic construction that had been the main task since the shift from the planned economy towards the market economy, and urban construction had been mentioned as an important agenda. As a result, urban planning had ushered in a period of rapid development and the development process of the spatial planning system was tortuous (Official website of the National Development and Reform Commission, People's Republic of China. ">https://www.ndrc.gov.cn/>).

In the early 1980s, most cities broke through the control indicators of the original master plan, resulting in the unrestrained development and utilization of lands. But China was deeply aware of the limited and scarce nature of land resources. Therefore in 1986, the State established the Land Administration Authority at different levels and promulgated the Land Administration Law to regulate land use.

In 2001, the National Development and Reform Commission made an opinion on the reform of the planning system and proposed the concept of spatial coordination and balance (People Net. 2001. <<u>http://www.people.com.cn/GB/jinji/31/179/20010808/530284.html</u>>). For the first time in 2006, the national "Five-Year Plan" outline clearly proposed the concept of the main functional area (Official website of the Central Government. 2006.



<http://www.gov.cn/gongbao/content/2006/content_268766.htm>).

While the urban and rural master plan, land-use master plan, and main functional area planning were payed attention to, many regions had experienced the phenomenon that urban development occurs with large-scale environmental issues. Consequently, the state established the Ministry of Environmental Protection in 2008.

With the gradual establishment and development of China spatial planning system, it is obvious to discover that China's spatial planning system is constantly adjusted and improved with major contradictions and core issues in different periods (Han Zenglin, Liu Tianbao. 2009, pp.12-17) (see Table 5). In the early period, the system was completely handed over to the single decision of urban planning, and later became the two plans of the urban-rural master plan and land-use master plan. Nowadays, it has developed into a system with land use master plan, urban and rural master plan, environmental protection plan, and other plans to function together (Qiu Baoxing. 2005, pp.269).

| Period | Main contradiction | Spatial planning system | Core objective |
|-----------------------|----------------------------|---------------------------|----------------------------|
| Rapid development | Planned economy and | Urban planning | Urban construction and |
| (1978-1986) | Market economy | | economic development |
| Continuous innovation | Urban construction and | Land-use plan and urban | Land-use index and |
| (1986-2000) | protection of cultivated | construction plan | cultivated land red line |
| | land | | |
| Adjustment and reform | Interests and rights among | Main functional area plan | Scientific development and |
| (2000-2008) | planning sectors | construction plan | delegation of authority |
| | | Main functional area plan | |
| | | | |
| Renewal and | Social equity and | Land-use plan | Comprenensive, |
| transformation | environmental protection | urban construction plan | coordinated and |
| (2008-2014) | | Environmental protection | sustainable development |
| | | plan | |

Table 5: Evolution of China's spatial planning systems (Source: Author's own)

The followings are the main elements engaged in spatial governance and planning system with the relevant constitutional and legal framework.

1) The National Economic Development Plan has the highest level of preparation, and the plan is prepared and constitutionally authorized from the state to the local level in the vertical direction. The preparation method model is integrated throughout the country with certainty, which is approved by the National People's Congress.

2) China's land-use master plan began after the establishment of the State Land Administration authority in 1986 and the official publication of the Land Administration Law. The current regulations on land-use master plan agenda are still based on the Land Administration Law, which emphasizes administrative management. This law governs relevant special regulations and plays the dual role of the main law and the supporting law. So far, two rounds of the national land-use master plan have been prepared (the third round of national land-use master plan is under preparation) (see Figure 8).

The land planning legislative system is a relatively independent system in the land legislative system. It is a legal norm in the preparation, implementation and management of land planning, and follows certain rules and principles. However, from the perspective of practice, the existing



regulations are far from being able to adapt to the needs of land-use master plan agenda, and there is still a considerable gap among the actual administrations according to law and the actual needs of the planned land.



Figure 8: The legal system of land-use master plan (Source: Author's own)

3) The urban and rural master plan started earlier with no integrated regulation in the country, and it did not become a local matter until 1978. Since 1978, urban planning standards had been implemented, and unified management has been carried out. The planning is organized by government organizations at all levels, and the construction planning department has taken the lead in building construction plans only for government jurisdictions. With the rapid development of urban and rural construction, the legal system construction of urban and rural master plan in China has also been continuously improved (Fu Lide.2008, pp.50-53) (see Figure 9). Since the official implementation of the Urban and Rural Planning Law on January 1, 2008, it has become the core law of urban and rural master plan in China. At present, because of the unclear, unspecified and imperfect aspects of the Urban and Rural Planning Law, it is necessary to improve and deepen through supporting legislation to further implement the Urban and Rural Planning Law. China's current urban and rural master plan technical standards system fails to meet the requirements of the Urban and Rural Planning Law.



Figure 9: The legal system of urban and rural master plan (Source: Author's own)

4) The environmental protection plan started in 1973. After decades of development, China's environmental legislation has developed 26 major environmental laws, including one basic law and 25 single-line laws. China's current environmental legislation system could be considered as a combination of the Basic Law and the Single Law (see Figure 10). For a long time, the Environmental Protection Law, as the basic environmental law, has led the specific environmental law to solve all environmental protection problems.



Figure 10: The legal system of environmental protection plan (Source: Author's own)

After long-term adjustment and improvement, China's spatial planning system has formed the National Economic and Social Development Plan prepared by the State Council and the National Development and Reform Commission; Land-use Master Plan prepared by the Ministry of Land and Resources; Urban and rural Master Plan prepared by the Ministry of Housing and Urban-Rural Development. And the Environmental Protection Plan is prepared by the Ministry of Environmental Protection, all of which constitute the national spatial planning system.

3.2 The planning tools of spatial governance and planning system in China

Referring to the evolution of China's spatial planning system, correspondingly, the planning tools of spatial governance and planning system in China also change with specific historical backgrounds, which could be divided into two background periods-before and after reform and opening-up (before and after the 1980s).



3.2.1 Before the 1980s, the planning tools were subordinate to the "Five-year Plan"

During this period, China joined the socialist camp and followed the Soviet Union to begin the "Five-year plan for National Economic and Social Developments", and was provided the aid construction project by the Soviet Union. China's first round of urban master plan was born under such a background (Wang Zhaobing, Yang Yongchun. 2012, pp.45-54.).

In the planned economy period, there were basically no planning conflicts in China due to the lack of market involvement. The national economic development plan and urban master plan were the first types of plans that were created on the basis of studying the Soviet Union planned economic system, both of which had a clear primary and secondary division of labor. All construction and economic activities were under strict control and distribution, the urban population and scale were strictly supervised. For example, urban and rural areas were not allowed to move arbitrarily and urban construction was basically stagnant.

The government at all levels was the only investor, each sector was the main economic activity management unit obtained the land free of charge from the allocation of the state and provided basic social welfare for the employees. Followed the "Top-down" administrative model, the local government merely acted as the chief executive officer (CEO) and social manager of the central government, but with no capital and no incentive to drive economic growth. During the 1960s, due to the food pressure from the huge population at that time, the government encouraged considerable urban residents to go to rural areas for agricultural activities.

Under the suppression of the government, the process of urbanization was much lower than the industrialization. This development model reduced the supply cost of urban infrastructure and also created a state of urban development with high accumulation and low consumption. As a result, urban planning was developed based on the national economic plan and cooperated with the construction of key projects to comprehensively organize the city's production and life. The content of the preparation is relatively simple and feasible (Gu Chaolin. 2015, pp.11-13), however, as a subsidiary, the urban planning did not have the function of independently regulating resource allocation. To sum up, the continuation of the plan or the obedience to the planned economy was the most important feature of urban planning in that era.

3.2.2 After the 1980s, planning tools continuously adapted to market economy development and policy adjustments

In 1978, the Third Plenary Session of the 11th CPC (Communist Party of China) Central Committee decided to focus on socialist modernization and to carry out reform and opening-up policy to adapt to changes in the international environment. This period was a beginning reform of the planning tools, which was a process of narrowing the scope of the national mandatory plan and expanding the scope of market regulation (Zhang Jingxiang, Luo Zhendong. 2013, pp.35). After the policy, China began the process of exploring and constructing the spatial planning system.

• The 1980s - the early 1990s: Exploration of the initial construction of the spatial planning system

In 1982, the 12th National Congress of the Communist Party of China proposed the overall economic development framework of "Planned Economy supplemented by Market Regulation".


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Since then, China's market-oriented reforms had continued to advance. Correspondingly, the national administrative system was also undergoing adaptive adjustment, but overall it lagged behind the pace of economic and social reforms because the "top-down" management and bureaucratic control system was still powerful.

This period was also the process of exploring and constructing China's spatial planning system. In general, it adapted the national macro-control mode in the era of the planned economy. After the reform and opening-up in 1978, the central government decided to learn the experience of the territorial governance from western European countries (Hu Xuwei. 2006, pp.8-12), began to explore the national level planning and regional planning agenda at the macro level, and reorganized the planning department to lead the preparation of the national economic development plan through the land planning and regional planning. In the process of preparation and implementation of urban planning, the requirements must be closely integrated with the national macro guidance plan to ensure the balance between subjective ability and objective needs.

In 1986, the Land Administration Authority was established and the Land Administration Law of the People's Republic of China was introduced in the 16th meeting of the Standing Committee of the Sixth National People's Congress. In 1987, the Land Administration Law was officially implemented. The land-use master plan was applied and played an active role in strict land management, improving the efficiency of land resource allocation.

At the macro level, the three major economic zones of the Coastal, Interior and Western, and gradually special economic zones in multiple cities across the country were set up by the central government, which means local governments could share more autonomy in territorial governance and spatial planning development (see Figure 11). These interventions affected the overall spatial development pattern of the entire 1980s.





Figure 11: China's Special Economic Zones (Source: World Bank. 2009. <https://transportgeography.org/?page_id=4103>)

Nevertheless, the land use planning system that was prepared in 1987 did not clearly define the legal relationship with other plans. Therefore, it failed to effectively play a coordinating role, as a result, conflicts and contradictions between various plans in the spatial planning system began to emerge, which mainly were embodied in the preparation, implementation and supervision, among which the responsibilities of planning management departments were relatively expedient. And a spatial planning system was constructed from the national (national land plan) to the regional (regional land plan) to the local (urban master plan) based on the landuse master plan.

From the micro perspective, in the end of 1988, the overall land and urban planning of cities and counties across the country was completed, and the coastal cities with special economic zones such as Shenzhen and Zhuhai were further developed with detailed planning and various professional plans. During this period, many cities in various provinces, municipalities and autonomous regions carried out urban construction in accordance with the approved plan, and most of the implementations were satisfactory.

• The 1990s - the early 2000s: Urban planning was the main body of the spatial planning system

In 1992, the Third Plenary Session of the 14th CPC Central Committee established the reform goal of establishing socialist market economic system. China's comprehensive opening-up pattern and the export-oriented economic growth path began to take shape.

The reform of the tax-sharing system in 1994 marked the devolution of the central government and the relaxation to local control, which was the most significant feature of China's economic and social development from the early 1990s to the early 2000s. In order to stimulate economic growth, China chose a growth-oriented policy system from the central to the local with a highly entrepreneurial and growth-oriented government characterized by the pursuit of utilitarian and short-term growth goals through economic activities and urban constructions.



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Since then, competitions amidst different regions had been increasingly intense (Zhang Jingxiang, Zhao Dan and Chen Hao. 2013, pp.45-50).

It follows that globalization, marketization, and decentralization had greatly reversed the traditional governance structure between central and local governments. Local governments at all levels under the central government all concentrated on the internal developments and established a spatial planning system based on local (urban) which could bring rapid and efficient economic growth. Thence, urban planning became an important governance tool for adapting to market-oriented, globalized environments and serving urban growth (Wu, 2015, pp.56). During that period, the "top-down" land planning and regional planning considered to be a product of the planned economy were omitted by the government.

In 1990, the Urban Planning Law was officially promulgated and implemented, forming a set of legal spatial planning systems constructed by urban system planning, urban master plan, zoning plan, binding detailed plan and constructive detailed plan were developed by the law. It is worth mentioning that at this time, after the regional planning and land planning were deprecated, the provincial urban system planning and urban agglomeration planning promoted by the construction department had actually played the role of regional planning. In addition, a large number of "non-statutory regulations" such as "Urban Development Strategic Planning" and "Urban Circle Planning" had emerged to "manage cities" and enhance urban competitiveness as a result (Zhang Jingxiang, Wu Binlong and Cui Gonghao. 2004, pp.1-5), which denoted that planning is no longer just an embodiment of government planning, but also an important way to attract market capital.

In the late 1990s, faced with the increasingly intense expansion of urban space, the central government began to control the construction of land and standardize urban construction as an important goal of macroeconomic regulation and control.

The introduction of the new version of the Land Administration Law in 1999 made a fundamental modification in the relationship amidst the land-use master plan and urban master plan, and the land-use master plan had significantly enhanced the rigid constraints on urban planning. For protecting land resources, the land-use master plan introduced by the Ministry of Land and Resources had also shifted from rural land-use plan to full coverage of urban and rural land-use plan. Furthermore, the land-use master plan was revised in accordance with the principles of supply constraints. The land-use master plan had played an important role in the development scale and development site selection by using land supply and use controls.

The planning departments at all levels under the leadership of the State Planning Commission (renamed the National Development and Reform Commission in 1998) still have strong macro-control capabilities.

However, although the spatial planning system with urban planning as the main body had been basically established at this time, the contradiction among various plans had begun to appear, behind which was the contradiction between the central and local, regional and interdepartmental rights.

The 2000s - 2017: The "muddling" era of the spatial planning system with multiple conflicts

Due to the prominent problems of extensive and exposure in the environment and plan coordination of the previous period, the Third Plenary Session of the 16th CPC Central Committee proposed to adhere to the human-oriented, comprehensive, coordinated and sustainable "scientific concept of development" and valued the construction of the ecological environment. Under the background of marketization and globalization, and the outbreak of the financial crisis



in 2008, the central government had continuously strengthened its macro-control and control capabilities since the mid-2000s. The Third Plenary Session of the 18th Central Committee had clearly stated that "promoting the national governance system and governance capacity". "Modernization governance" had opened the prelude to comprehensively deepening reforms. In 2014, due to the pressure of rapid urbanization, the State Council issued the "Notice on Adjusting the Standards for City Size Division" (Official website of the Central Government. 2014.

<http://www.gov.cn/zhengce/content/2014-11/20/content_9225.htm>), which states that the city size classification standards take the city's permanent population as the statistical caliber and divide the city into five categories to enhance the urban governance capacity (see Table 6).

| Categories | Meaning |
|---------------------|---|
| A super mega-city | A permanent population of more than 10 million. |
| A mega-city | A city with a permanent population of more than 5 million but less than 10 million. |
| A big city | A city with a permanent population of more than 1 million and less than 5 million. Among them, cities with more than 3 million and less than 5 million are Type I cities, and cities with more than 1 million and less than 3 million are Type II cities. |
| A medium-sized city | A city with a permanent population of more than 500,000 and less than 1 million. |
| A small city | A city with a permanent population of less than 500,000. Among them, cities with more than 200,000 and 500,000 are type I small cities, and cities with less than 200,000 are type II small cities. |

Table 6: The standards for city size division (Source: Author's own)

As an essential starting point for strengthening macroeconomic regulation and coordination, spatial planning had been highly valued by the central government. During this period, especially regional spatial planning had been greatly promoted, "One Belt and One Road", "Beijing-Tianjin-Hebei Coordinated Development", "Yangtze River Economy Belt", "The three major national strategic plans", as well as the coordinated development plans of many economic zones and urban agglomerations such as the Pearl River Delta and the Yangtze River Delta, had been completed, and manifold regions had been regarded as "national strategic regions" through planning.

Furthermore, various sectors launched their spatial planning for the sake of interests and power struggles such as discourse on power and resource allocation rights.

Starting from the "Eleventh Five-Year Plan" period (2006-2010), the development and reform department created and promoted the main functional area plan that divides territory space into four zones: optimized development, key development, restricted development and prohibited development according to the resource and environmental carrying capacity of different districts at the national and provincial levels to participate in spatial and ecological management (Official website of the central government. 2010.

<http://www.gov.cn/zwgk/2011-06/08/content_1879180.htm>), which was considered as the basis for various spatial planning at that time.



The residential construction and land-based departments had guarded their power areas by strengthening urban and rural master plan and land-use master plan. At the same time, the environmental protection department had introduced new spatial planning types such as ecological environment plan and ecological red line plan, resulting in objects were misaligned and uneven in depth among various plans, and conflicts and contradictions in technical specifications and standards (Zhu Debao. 2016, pp.44-52).

Generally speaking, China's spatial planning system was rather dysfunctional in the early 2000s, which led to serious multiple conflicts in the hierarchy system. After 2000, although different departments had successively introduced spatial planning at the national level though, the unsystematic national spatial planning that uncoordinated the overall condition failed to play its role. The national main functional area plan had gradually reflected its strategic, basic and binding effects though, it could not be regarded as a national spatial plan that coordinates other plans.

From the perspective of the overall development process, China's spatial planning system had gone through the "one regulation" (national economic and social development plan) to the "three plans integration" (national economic and social development plan, urban and rural master plan, land-use master plan).

In response to different geographical regions and different issues, China had formulated a number of spatial plans with different levels and different contents and formed a complex system to jointly exert the economic, social, ecological and other policies, mainly including urban and rural construction plan, economic and social development plan, land and resources plan, ecological environment plan and infrastructure plan, etc. (see Figure 12-15).

| Urban and rural construction planning | | | | | | | |
|--|---|---|---|----------------------------|---|--|--|
| Туре | Level | Contents | Implement ation | Authority | Remarks | | |
| Urban village system planning | National, provincial, municipal, county, and township | Including the ubon system planning of the notional provincial musclical and courtly levels, and the planning of the villages and towaris in the courtly (city) and towarish (own) reas, etc. the content tore uban (village and town) spotial development fortbajes and audieslines, and towns (Village and towns) development of facilities support system, scale control of key towns (Village), etc. | Guide and approve the basis of subordinate planning, and review the scale of urban population and land use at the following level | Construction department | The Urban and Rud Planning Law Highdres that the national and exoricial urban system planning is a national statutory plan: the "Urban Planning Compliciton Measures" and the original "Urban Planning Law" should that that here are urban and county town system plans: Township township system planning, there are other types in practice | | |
| Urban development strategy planning | municipality, municipal level, countylevel | Thinking and research on urban development strategy such as urban and regional relations, industrial structure adjustment and industrial development, spatial structure and development strategy, infrastructure support and ecological security. | References for the preparation of urban master plans, etc. | Construction department | Non-national statutory planning, the form and content are relatively flexible, many cities care self-developed and implemented (Juch as Guarabaou, Nanjing, Hangzhou, Tianjin), and Tianjin has also promulgated the "Tianjin Space Development Strategic Planning Regulations". | | |
| Town master plan | municipality, municipal level, county level, township level | development orientofon, functionalizaria, land use layosti, Integradet hanspartation system, a contraining, variouu basic and public facilities, etc., planning area scope. Indu use catele, foundation and public facilities land, water source and watersystem Basic farmland and greening land, environment laprotection, portection of natural and historical culturalheritage, and disaster prevention and mitigation should be mondatory | The main basis for the preparation of lower-level planning. The important basis and means to guide and regulate whon construction, such as the "four-line" defineation and management | Construction department | The notices statutory plane sticured in the User on Suck Reining town the potnet observation and one takes and the resonance technical of the national or provide contraction department for native, and all higher data at the users data and users and the native statutory and the statute the extension of the user part of the units and the part plant at the extension of the user part of the units and the statute point and the users and the statute part of the units and point at the extension of the user part of the statute part of the one point and the users and country. | | |
| Urban zoning planning | City level, county level | functional division within the scope of land, nature and layout of land use, four-line scope, location and scale of public facilities and infrastructure at all levels, etc. | guiding other planning | Construction department | Non-nationalstatutoy planning, the original "Urban Planning Low" stipulates that large and medium-sized cifes can prepare zoning plans on the basis of overall planning, and in practice, they are still compiled according to the. | | |
| Town's recent construction plan | municipality, municipal level, countylevel, township level | Clarify the time series, development direction and spatial layout of the recent construction of the town, especially the construction of infrastructure, public facilities and housing, | Basis for the arrangement of urban construction projects in the near future | Construction department | National statutory planning is an important part of urban master plan and implementation measures | | |
| Town co | Town control detailed planning. Urban construction detailed planning. Village (Market) Planning | | | | | | |

Figure 12: Urban and rural construction planning (Source: Author's own)

Town special planning



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Development planning

| Туре | Level | Contents | Implement ation | Authority | Remarks |
|---|--|--|--|---|---|
| National economic and social development master plan | National, provincial, municipal, county, and township | The overol and strategic issues concerning the economic and isolial development of the country or region, including the environment and conditions for development, advelopment good and targets, the three rural issues, inclustrat invariant more in and evelopment. The development, the country of the solitons and development, the country of the solitons. Social management, cultural development, etc. | Through indicators guidance and constraints, guidance on the preparation of relevant plans, related policy development and performance appraisal, etc. | Development and Reform Department | The Contribution authors the proposition and implementation of governments to all levels. It is a strategic programmatic and comprehensive plan for economic and social development. It has high authory and contribution if the government's performance of economic regulation, management and public service responsibilities for management and public service responsibilities |
| Regional planning for national economic and social development | National, provincial, municipal, county level | Beginal de velopment trategi, industrial de velopment direction, uten longut, reginalitativature, en construction, environmental protection and ecological construction, resource utilization protection | Gulded by gulding relevant planning and policy formulation | Development and Reform Department | Non-tit a stylutor jonoing i the refinement and implementation of the overaligion to reaconic and associal development in specific regions, lacking retwort legal basis and retexat document specifications, mostly in one-off implementation. |
| Special plan for national economic and social development | National, provincial, municipal, county, and township | incluting economic development social lawBood, resource environment infrastructure and other categories, the content is complex national-level special planning is limited to important areas in principle. | Project approval government investment arrangements, and basis for policy development in specific areas | multi-sector | Non-state statutory planning is a refinement of the overall jelaning of accorner, and social development in specific creas, usually distinguishing between key special tierns and general special items. |
| Main functional area planning | National, provincial | Analysis and evaluation of land space, the number, location and scope of various main functional press, functional postforing, development direction, development liming and control requirements of various main functional areas, differentiated supporting policies, etc. | Basis for approval of construction project EIA, differential environmental management, differential performance evaluation and ecological compensation policy formulation | Development and Reform Department | Non-national statutoy planning, the development process is shart, the "National Main Functional Area Planning" was implemented a der approvale by the State Council (320), and the provincial main functional area planning has not yet been released. |

Figure 13: Development planning (Source: Author's own)

| Туре | Level | Contents | Implementation | Authority | Remarks |
|--|--|---|---|------------------------|---|
| National Land Planning | National, provincial | Unclear, still in the pilot and exploration stage | not clear | Ministry of Lands | There have been many provincial pilot projects, and the national land planning out fine has been launched, positioning strategic, comprehensive and basic planning. |
| Land use master plan | National, provincial, municipal, county, and township | Planning objectives and indication unable lead and basic formation planning control, infrastructure and major project construction and power, esclapical languar, use zoning and spaces control, supplementary inglementation and sub-level planning index. decomposition control, 4cc, where forwartio-level planning is implemented to the parcel | Total and incremental indicator control, annual plan, target responsibility assessment, use control and transfer permit, land use planning per-trial basic formland delimitation, project construction, inspection and inspection, etc. | Ministry of Lands | The notional stabutary joins and the programmatic document of load management assistubuted in the load Administration loaw are important basis for implementing load use control johnning what nan dravel construction and coadrianting various lond use activities especially county of primary and the stabutary of the stabutary of the cound tion, planning database construction is also advancing |
| Land use special planning | National, provincial, municipal, county, and township | The industry or a specific land use problem: the land remediation plan includes the objective and scope of remediation, the task of supplementing authored land, rectifying key projects or projects, demonstration project areas, etc. | Relevant project arrangements and relevant policy development basis, guiding | Ministry of Lands | Non-state statutory planning, in practice, mainly for land comprehensive remediation planning (land development and rehearsal planning), basic farmland protection planning |
| Forest land protection and utilization planning | National, provincial, and countylevel | The status of forest i land resources forest i and use centrel and thereobic intrangement. I seek in ad status con- ord, unit ment and utilization management, i horest i and reglensithment. Torest i and protection engineering measures, etc. National and provincial planning should emphasize strategic and policy-ariseted, county-level planning should be prominent Spatial structural and operational | quota cutting, conversion control, ecological public welfare forest division definition, ecological restoration and afforestation, returning farmland to forests, etc. | Forestry department | The endioxe) tablepoint (fability) and the fabric taw lots of short history banchas. The swerk is and account here planning began to require a file rithe State Council approved the National Forest Land Protection and Utilization Plan (2010-2020) in 2010. Still in the preparation stage |
| Grassland protection construction and utilization planning | National, provincial, municipal, and countylevel | Divided into general and special plans, the former mainly includes planning objectives and measures, grastland functional division and overall deployment of various constructions, etc. | basic grassional protection and construction of grassional nature reserve, returning formation to grassional grashing operative transmission of the state of the construction, folding grassional improvement, grassianal aslanter prevention and mitigation, and pastronal water conservancy projects, etc. | Agricultural sector | No notical inductor plantationed in the disaster law's of inportant basis for the provide the control of the reform use of granusa, the history of practice selections in a non-the national disaster Rotection control of the other selection of the national disaster Rotection based on the selection of the national disaster and the selection protection and utilization and the national disaster and the protection and utilization of grasses protection in various aministrative regions now not not seen reasted and implemented. |
| Mineral Resources Planning Water resources planning | | | | | |

Land and resources planning

Figure 14: Land and resource planning (Source: Author's own)



| Ecological environment planning | Environmental protection plan Ecological function zoning Ecological demonstration zone planning Geological disaster prevention planning Mine geological environment protection plan Soil and water conservation planning Sand control plan Wetland protection planning |
|---------------------------------------|---|
| Infrastructure planning | Road network planning Waterway development plan Port planning Railway development plan Power development planning Pipeline planning |

Figure 15: Other plannings (Source: Author's own)

• 2018: The first year to reshape the national spatial planning system

Since the increasingly deep contradictions and conflicts amidst various spatial plans, the Third Plenary Session of the 18th CPC Central Committee proposed the reform of the national spatial planning system for the first time.

After 2014, the central government made an attempt to explore and improve the spatial planning system of provinces, cities and counties, to establish a planning coordination mechanism. Through the active exploration of some developed cities, the "three plans integration" in Guangzhou City (Lai Shouhua, Huang Huiming and Chen Jiaping. 2013, pp.63-68), the "two plans integration" in Shanghai Municipality (Hu Jun. 2010, pp.20-25), and the "multiple-plans integration" in Xiamen City (Xie Yingting, Wang Wei. 2015, pp.15-21) emerged after another.

In March 2018, the national institutional reform was launched in the National People's Congress. The main goal was that the spatial planning functions scattered across multiple departments were assigned to the newly formed Ministry of Natural Resources to guide the national spatial planning system, the new Ministry of Natural Resources integrates the relevant responsibilities in planning of the Ministry of Land and Resources, the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development, the Ministry of Water Resources, the Ministry of Agriculture, National Forestry and Grassland Administration, the State Oceanic Administration, and State Bureau of Surveying and Mapping to focus on redressing overlapping spatial planning problem (Official website of The Central Government. 2018. <<u>http://www.gov.cn/guowuyuan/2018-03/17/content_5275116.htm</u>).

3.3 Discourse on spatial governance and planning system in China

After the interpretation of the tradition, structure, and tools of China's territorial governance and planning system, it is necessary to analyze and summarize the role, function, challenges and existing problems of China's spatial planning system before the reform, which could be compared to the reformed spatial planning system.

3.3.1 The influences on actors of spatial governance and planning system in China

As above-mentioned, since the 1980s, China had gradually established a socialist market economic system, the central government strengthened the central finance, implemented a tax-



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sharing system, promoted the sharp depreciation of Chinese Yuan(CNY) and the integration of the exchange rate, separated preliminarily between the policy finance and commercial finance. These interventions realized that the establishment of a new macroeconomic regulatory framework, the role of the market in resource allocation was significantly enhanced, while a pattern of common development with public ownership as the mainstay and a variety of economic components had formed. In this context, land use rights had gradually been considered, and the rational allocation of land and spatial resources had become the core link of national economic and social development plans, urban plans and land use plans.

To sum up, the influences of China's spatial planning are mainly embodied in the following aspects. Freely trade realized in land, demographic change, plus economic development and transformation.

Since the 1980s, a large number of economic construction activities have promoted the rapid development of China's economy with the "market-led" path. When land was freely traded (but ownership still belongs to the state), competitions between cities were more intense. In order to pursue economic development, local governments encouraged domestic and foreign investors to develop and construct, so that large areas of urban land were expanded and urban boundaries were continuously realized expansion, super mega cities were gradually forming, occupying rural arable land for urban construction. And the government obtained a large amount of financial revenue from land transactions for urban infrastructure construction, such as public transportation, communication facilities, energy facility, water supply and drainage facilities, etc, among which many phenomena of corruption, malfeasance, abuse of power occurred. Due to the increase in job opportunities in the city and the improvement of living conditions, considerable people have poured into the city after the gradual relaxation of household registration² control, China's urbanization has always lagged behind the level of industrialization, since the reform and opening-up, the level of urbanization has continued to rise. Furthermore, owing to the combined effect of marketization and decentralization, a variety of actor constellation participates in planning practice in different regions, especially increased role of private stakeholders, i.e. landowners, developers and scholars, etc. However, it is worth noting that the government at different level-public stakeholder has decisive and pivotal status in decision-making.

In 1992, after Deng Xiaoping³'s speech during his southern inspection, China's cities and coastal areas entered a period of great development, the scope and scale of opening-up policy to the outside world further expanded, and a general opening-up pattern from coastal to inland, from general processing industries to basic industries and infrastructure was formed. Growthdriven planning had become mainstream. The result from the high demand for spatial growth, in this period, in addition to the "industrial zones" and "development zones" were dominated by industrial development, some areas such as "science zone" and "university zone" were created.

As a result, the unprecedented success had been achieved in economic field. During the "Eighth Five-Year Plan" period (from 1991 to 1995), the average annual growth rate of China's

² Household registration, also named "hukou" is the registration of an individual in the system. A household registration record officially identifies a person as a resident of an area and includes identifying information such as name, parents, spouse, and date of birth. A hukou can also refer to a family register in many contexts since the household register is issued per family, and usually includes the births, deaths, marriages, divorces, and moves, of all members in the family.

³ After Chairman Mao Zedong's death in 1976, Deng Xiaoping rose to power in 1977 as Chairman of the Central Military Commission in 1989, became the actual "paramount leader" of China, and led China through a series of far-reaching marketeconomy reforms, which earned him the reputation as the "Architect of Modern China".



economy reached 11%. In 2010, China's total GDP surpassed Japan and became the secondlargest economy in the world. In the same year, China surpassed Britain, France, and Germany as the third-largest shareholder of the IMF. The G20 Finance Ministers' Meeting decided that China's share would jump from 3.72% to 6.39%, and voting rights would also rise from the current 3.65% to 6.07% (People Net. 2010. <http://politics.people.com.cn/GB/1026/13594169.html>).

In terms of the economic system, due to the establishment of a market economy in the 1980s, a large number of state-owned enterprises had been transformed into private enterprises, the government was no longer responsible for corporate profits and losses, resulting in a large number of employees laid off, and college students were no more assigned by the state (before the reform and opening-up, all college students in the country were provided jobs by the state), so that manifold independent entrepreneurs have appeared in the society, and the employment rate indicator has begun to be paid attention to by the government.

However, marketization, modernization, and economic development-centered cogitation were accompanied by a series of problems and challenges. Cultivated land was occupied by urban construction land, causing a large number of peasants to reduce their own arable land, urban food problems were highlighted. The disordered development of cities has brought about various city diseases, such as population expansion, traffic congestion, housing difficulties, environmental deterioration, and resource constraints.

After the central government recognized the problems, it also carried out some interventions. In 1989, the Authority of Land Management and the Ministry of Geology and Mineral Resources were merged to form the Ministry of Land and Resources. The Land Planning Department under the Planning and Development Commission was also transferred to the Ministry of Land and Resources, which was responsible for implementing comprehensive planning of land, land use, mineral resources, geological environment, and so on (Gu Chaolin. 2018.

<http://m.planning.org.cn/zx_news/8837.htm>). In 1991, the Ministry of Housing, Urban-rural Construction held the second National Urban Planning Agenda Conference (Zhihu. 2018.

<https://zhuanlan.zhihu.com/p/53107928>), which proposed that urban master plan should not entirely be a continuation and reflection of the national economic plan. As a carrier of economy and various activities, cities increasingly operated in accordance with market and their development conditions. However, governments at all levels that disregarded the predominant problems and challenges were immersed in the rapid economic development, which makes the relevant regulations could not be implemented efficiently at the local level.

Eventually, when the speed of economic development began to decline, these problems finally began to affect the sustainable and healthy development of society and cities. The original spatial planning was difficult to tackle the related issues and no longer applied to the increasingly innovative Chinese society. Considerable challenges about spatial planning were beginning to be exposed.

3.3.2 Main challenges and problems of China's spatial governance and planning system

China's spatial governance and planning system before the reform, such as regional development plan, urban and rural master plan, land-use master plan, agricultural plan, and environmental protection plan, all of which involve spatial development issues and have made tremendous contributions during the period of market economy construction. Nevertheless, with



the improvement of the market economic system, the problems exposed by the existing planning system have been more obvious.

On the one hand, the land-use master plan, the national economic and social development plan, the urban master plan and other plans all involve the development of the city but are managed by the overlapping authorities, which makes that different spatial plans have different goals, overlapping contents, and multiple development strategies (Wang Xiangdong, Liu Weidong. 2012, pp.7-15). On the other hand, as a result of the rapid economic growth, leading to an increase in the demand for the supply of land, labor, and capital. Rapid urbanization and growth have also contributed to economic structural issues, spatial and social polarization issues, and problems in resource ecology as well as environments. The root cause of these problems and challenges could be explored by system, legislation and regulatory perspective (see Table 7).

| System Perspective | Legislation Perspective | Regulatory Perspective |
|---|---|--|
| The spatial planning system is complex at the macro level | Legalization and standardization are lagging behind | More"gray areas" emerged in the planning system at the local level |
| The spatial planning system is defective at the micro level | / | / |
| Conflicts in plans derive from uncoordinated planning authorities | / | / |

Table 7: The main challenges of existing planning system (Source: Author's own)

System Perspective

The spatial planning system is rather intricate at the macro level

1) China's spatial planning system is generally diverse and complex. The urban and rural master plan, development plan and land-use master plan are under the supervision of different departments that have their independent planning systems, which makes it difficult to coordinate.

2) Each system has manifold specific planning types at different levels. As a result, it is necessary to experience numerous steps of approvals from special plans to general plans for one projection, which has an adverse impact on efficiency and effectiveness.

One of the reasons is that many planning types that were formed in the originally planned economy era have been retained until now, some of which are made use of by the divisional management system as important means of striving for rights and interests rather than be revoked or revised. These phenomenons make it difficult to form a comprehensive and coordinated planning system (Zhao ke. 2008, pp.126-130).

The spatial planning system is defective at the micro level

1) As the basis of the planning system, the detailed development planning is not substantial in scale. Most cities, especially tiny towns, have not achieved full coverage of spatial planning, whilst village construction plan coverage is not extensive in rural areas. Among the planning system, the main functional area plan is only considered at the national and provincial levels. Furthermore, the land and resources planning series also lacks more detailed and operational plans or designs for agricultural land, forest land and grassland.

2) The content of the spatial planning system is not coordinated well. The overall plan for economic and social development is dominated by their counterparts, most of which are non-



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spatial aspects. On the other hand, the land-use master plan is mainly conformed with the arable land and basic farmland protection plan without sufficient research on the utilization of ecological land, non-cultivated agricultural land and urban land (Wang Xiangdong, Liu Weidong. 2012, pp.7-15).

Conflicts in plans derive from uncoordinated planning authorities

1) For example, the major infrastructure, industrial layout, resource allocation and other projects involved in the land-use master plan prepared by land and resource department intersect with the functions of the urban-rural master plan drafted by urban construction department, and the urban village system plan for urban construction planning is also the part of the land-use master plan.

2) The problem of poor coordination among different planning categories is prominent, including amidst different planning series and between different types within the same planning system.

The main reasons followed by first, due to the lack of a coordinated database amidst authorities, different departments adopt different land classification and data results without an effective mechanism for data sharing. Second, preparation periods, planning periods and the implementation progress are quite different (see Table 8).

| Туре | Preparation department | Term(Years) | Content |
|---|--|-------------|--|
| National economic and social development plan | National Development and Reform Department | 5 | Overall planning for regional economic and social development |
| Urban-rural master plan | Urban construction department | 20 | Coordinate urban development and construction land arrangements |
| Land-use master plan | Land and Resources Management Department | 15 | Comprehensive deployment of land use, development and protection |
| Environmental protection plan | Environmental protection department | 5 | Eco-functional zoning that follows ecological laws and protects the environment |

Table 8: China's main planning department, term and content (Source: Cui Xufeng, Wang Zhenzhen. 2018, pp.34-39)

Legislation Perspective

Legalization and standardization are lagging behind

1) The legalization of spatial planning in China is not fully developed, the normalization of planning, implementation and management is insufficient, whilst the existing relevant legal contents are defective. In China's spatial planning system before the reform, the urban and rural master plan based on the Urban and Rural Planning Law is relatively advanced though, there are



still many problems. For instance, among the plan, the legal nature of national statutory planning such as the binding detailed plan is ambiguous.

2) The lack of norms and basis is the most obvious problem of the planning system and content, planning preparation and approval as well as implementation and revision of planning.

On the one hand, the problem of planning legalization and standardization is subject to the rule of law and the administrative environment of China. On the other hand, there are no relevant spatial planning laws to guarantee and guide the status and effective implementation of the spatial planning system in China.

• Regulatory Perspective

More "gray areas" emerged in the planning system at the local level

The unresolved problem that higher-level planning is less restrictive to the lower-level planning exists in the urban and rural master plan and the development planning. The main driving force is that the devolution from the central government to the local, which is beneficial for the authorities to proceed with the reform in the planning system according to actual conditions with more autonomy in essence. However, it provides more "gray areas" in the planning system at the local level with the lack of corresponding regulation and supervision. For example, although the land-use master plan has achieved the control of the lower-level planning from high-level planning, it has paid a large economic, social and ecological costs that could be summarized as corruption, excessive land reclamation and other undesirable phenomena that exist extensively before the relevant regulatory and supervision was introduced.

The following reasons could be taken into account. First, the higher-level government possesses more powers (including financial power) but the lower-level government needs to deal with more work related to the public, which eventually results in the local authorities would rather ingratiate themselves with the higher-level administrative departments than consider the public interests when making decisions (Wang Jinyan, Wu Dianting and Chang Xu, et al. 2008, pp.62-68). Second, the procedure of making plans disregards to put scientific standards into practice, plus the understanding and grasp of the differences in plannings at the different levels are still insufficient, which fails to respect the local actual conditions when drafting the plans.

To sum up, since the 1980s, under the framework of the early commodity economy and later market economy system, it had greatly stimulated the cross-city and cross-regional flow of production factors such as capital, land, labor, and technology. Due to the accelerated concentration of economy and production in cities or regions, further breaking through the limits of the city or region's carrying capacity in freshwater resources, sewage capacity, land supply, and ecological environment. The failure or inaction of the spatial planning system formed during the planned economy period further exacerbated the development problems of population explosion, traffic congestion, insufficient housing, and high housing prices, environmental pollution, and serious ecological degradation.

If these regional problems and metropolitan diseases fail to be tackled in a timely manner, a series of spatial, economic, social, institutional, environmental, and ecological problems would emerge gradually, which leads to the decline of regional competitiveness and the deterioration of the investment environment, even the serious recession of the region.

In order to solve the above-mentioned problems, the reform of China's spatial planning system is mainly based on radical reforms in reorganizing government authority, advancing the reorganization of government departments, and restructuring the national spatial planning system, combined with the approach of "gradual reform", which is on the basis of the "bottom-



up" model, the original department planning institutional framework and the spatial planning system. The goal of the reform is to extract the spatial planning authority of each department's planning, and form a fully developed national spatial planning system that contains only one plan, one strategy and is higher than other plans.

Through this chapter's in-depth analysis of the development process of China's spatial planning, many long-standing problems have been revealed, and we have a better understanding of the need for China's spatial planning reform. Therefore, the next chapter will elaborate on the trajectory of China's spatial planning reform step by step.



POLITECNICO DI TORINO

Collegio di Pianificazione e Progettazione

Chapter 4

THE REFORM OF CHINA'S SPATIAL GOVERNANCE AND PLANNING SYSTEM: "MULTIPLE-PLANS INTEGRATION"



DI TORINO Collegio di Pianificazione e

As has been presented in chapter two, the original conceptual framework illustrated to understand China's spatial governance and planning system before the reform (see Table 3) that was proposed at the Central Government Urbanization Conference in 2013 (Liao Wang Institute. 2017. <http://www.lwinst.com/cjqjzk201701/3336.htm>). After the institutional reform in 2018 at the national level, a reformed conceptual framework was established in 2019, which has been elaborated in chapter two (see Table 4), which would be realized gradually in practice by "multiple-plans integration" reform from at the national level that integrates multiple plans, such as national economic and social development plan, urban and rural master plan, land-use master plan, and ecological environmental protection plan on a region (a province, a city or a county), by the integration of sectoral planning function. This reform would be guided by one unified plan and one blueprint to solve the problems of content conflicts and coordination confusion, etc.

This chapter explores in detail the reform process of China's spatial governance and planning system from the following aspects: the background and necessity of "multiple-plans integration", the main objectives, the evolution process and the major changes brought by the reform. Meanwhile, the reasons for the selection of 9 provinces and 28 pilot cities for reforms of the provincial and city-level spatial planning systems are discussed respectively.

In the last part of the chapter, the research methods of desk research and comparative analysis are used in two case studies. Through the collection of relevant official documents, journals related to the spatial planning reform in Shanghai Municipality and Hainan Province, etc. on the website before analyzing and comparing the reform trajectory of these two cases to summary the experiences and deficiency.

Shanghai Municipality and Hainan Provinces that are selected from the provincial planning reforms to analyze the actual effectiveness and limitations of "multiple-plans integration". Shanghai Municipality is one of the developed city in China, although Shanghai was not officially included in the 2016 "Provincial Spatial Planning Pilot Program", it was the first directadministered municipality that autonomously conducted spatial planning reform in 2008. Therefore, the experience of Shanghai Municipality's spatial planning reform could be used for reference by other three municipalities (Beijing Municipality, Tianjin Municipality, Chongging Municipality), all of which have more autonomy to carry out reforms to adapt the local population, economy, resources, and area or other conditions. Hainan Province was approved firstly to carry out the "multiple-plans integration" in 2015 by the central government before the promulgation of "Provincial Spatial Planning Program". Hainan Province is also an island province of China and the nation's southernmost province dominated by tertiary sector of industry such as tourism and modern logistics. As a pioneer in the "Provincial Spatial Planning Program", Hainan Province provides experiences for the provincial spatial planning system reform for other provinces.

4.1 The background and necessity of "multiple-plans integration"

Since the 1980s, there had been more than 80 various types of plans with a legal basis, and considerable plans prepared by planning departments without a legal basis in China, which affected the administrative efficiency and market economy consolidation. Furthermore, the increasing social anxiety, inequity and urban diseases caused by the problems of resources and the environment in rapid industrialization and urbanization, and the increasing pressure on the reform of the economic system, administrative management system and ecological system, plus other challenges, which has adversely impact on the development of China's spatial planning



system, whilst China's GDP growth rate began to slow down to 7.9 % since 2012, down to 6.6 % in 2018 (Official website of the National Bureau of Statistics of China. 2012.

<http://data.stats.gov.cn/search.htm?s=2012%20GDP>). This accelerated the shift of Chinese society from attaching importance to the speed of economic development towards the life quality of people, social equity and governance capacity of the government.

If these long-standing problems fail to be addressed in a timely manner, a series of spatial, economic, social, institutional, environmental, and ecological problems would be further generated, which leads to the decline of regional competitiveness and the deterioration of the development and investment environment, even the recession in economy of the region and the state.

Under this background, it is necessary to establish new national spatial planning theories, methods and mechanisms to meet the development demands, to comprehensively solve the urban diseases, living environment and other issues, which is the main driving force and valued by decision-making authorities.

4.2 The main objectives and meanings of the reform

The main goals of exploring "multiple-plans integration" reform to achieve the reconstruction of China's spatial planning system are as follows.

• Resolve contradictions and coordination issues in China's spatial planning system

Before the reform, China had a wide range of horizontal, vertical, general, and special plans and each department had its planning system to guide the development of the plan. But there were problems such as overlapping content and boundaries, and scarcity of coordination among various types of plans, which seriously affected the effective implementation of plans. "Multipleplans integration" would fundamentally tackle these problems from the technical and consolidation perspectives to ensure valid implementation of the plan.

• Realize the intensive, sufficient and sustainable use of land resources

China's land resources have four basic characteristics: a large absolute number and a small per capita possession; complex and diverse types with a small proportion of cultivated land; complex utilization conditions and significant regional differences in productivity; uneven regional distribution, and prominent protection and development contradictions (Official website of The Central Government. 2005.

<http://www.gov.cn/test/2005-06/24/content_9234.htm>). Some disorderly plans had led to various illegal demolition and construction, causing damage to the ecology and environment, and wasting the limited land resources. "Multiple-plans integration" aims to ensure the sustainable use of land and resources from the perspectives of spatial governance, science and rationality.

• Reform the planning management system and rebuild the spatial planning system

There were many problems that had emerged from the authorities, for instance, vague powers and responsibilities circumscriptions among planning departments, resulting in overlapping planning and conflicts. Through the consolidation of plans, "Multiple-plans integration" further integrates and reforms the planning administrative system, and achieve the coordination of the spatial planning system.

• Implement the concepts of governing the country by laws

One of the main reasons for various plans problems before the reform was the lack of legislation on planning, as mentioned before, there were manifold plans drafted by



administration departments without a legal basis. The reform of China's spatial planning system based on "multiple-plans integration" is to found the legal status of China's spatial planning system and to ensure that all types of plans could be carried out in parallel with laws.

In summary, the purpose of China's spatial planning reform is not to achieve the simple integration of multiple plans in the form, but to emphasize the effective connection between government sectors at all levels, in order that all authorities could consider and proceed with the solution of social-economic issues through the "multiple-plans integration". Furthermore, it is ensured that the legal status of spatial planning is guaranteed and must not be modified arbitrarily due to administrative intervention.

4.3 Exploration history of the reform

Although China did not first formally propose the conceptual framework for the national spatial planning system reform until 2013, China has been exploring and practicing the reform of the spatial planning system for approximately 20 years with the constant consummation of "multiple-plans integration", which had experienced the following stages: the early exploration stage, the formal formulation and pilot phase in the policy stage, the deepening pilot stage plus the comprehensive promotion of "multiple-plans integration", followed the model of "bottom-up".

• The early exploration stage

In October 2003, as the prototype of the "three-plans integration", the National Development and Reform Commission officially launched pilots of the spatial planning system reform in six cities - Suzhou City in Jiangsu Province, Anxi County in Fujian Province, Qinzhou City in Guangxi Autonomous Region, Yibin City in Sichuan Province, Ningbo City in Zhejiang Province, and Zhuanghe County in Liaoning Province, attempted to consolidate three plans on a common spatial planning platform, respectively the national economic and social development plan, urban-rural master plan and land-use master plan.

In October 2008, during the institutional reform of the Shanghai Municipal Government, the former Urban Planning Administration and the land administration department of the former Land Administration Bureau were integrated to form a new Shanghai Municipal Planning and Land Resources Bureau to achieve "Plans-Land integration". Based on that, the planning of the "two-plans integration" was carried out, and pilot projects were conducted in Jiading and Qingpu Districts in Shanghai. The main planning reform is to define the "three lines" - the urban construction land scope control line, the basic farmland protection line and the industrial zones control line separately, to achieve "zero growth" in construction land. Up to this time, an efficient and unified approval platform that comprehensively links the core approval procedures between urban planning and land management was established. In the light of the success in Shanghai Municipality, "Plans-Land integration" became the core concept in China's planning management and government institutional reform in 2009 and had been implemented in manifold major cities such as Wuhan City and Shenzhen City (Pan Qisheng. 2018, pp.52-67).

In March 2012, Guangzhou City took the initiative in exploring the "three-plans integration" without breaking the administrative structure of authorities. As a result, Guangzhou had established an information linkage platform for the implementation of "three-plans integration", including public platform, planning subsystem, national land resource subsystem as well as





development and reform subsystem, corresponding to public information services, urban planning, land management and social-economic development respectively.

Additionally, at the national level, the central government has repeatedly emphasized that "three-plans integration" is the core for spatial planning system reform, which means that the exploration and reform relevant to it ought to be advocated and promoted.

The formal formulation and pilot phase in the policy stage

In 2013, the conceptual framework of China's spatial governance and planning system (see Table 3) was introduced at the Central Government Urbanization Conference. Since then, the central government had begun to consider spatial planning reforms in some pilot cities and counties around the country with the core concept of "multiple-plans integration", and "topdown" authoritative reform was the main feature (Huang Zhengxue, Huang Lingxiang. 2019, pp.40-49).

In 2014, "the Notice on Carrying out the Pilot Work on 'multiple-plans integration' in Cities and Counties" was proposed to execute the "multiple-plans integration" in 28 pilot cities (see Figure 16), and clarified the tasks and measures for conducting the reform, which was issued by the National Development and Reform Commission, the Ministry of Land and Resources, the Ministry of Environmental Protection and the Ministry of Housing and Urban-Rural Development (Official website of The Central Government. 2014.

<http://www.gov.cn/xinwen/2014-12/06/content 2787509.htm>).



Figure 16: The distribution of 28 "multiple-plans integration" pilot cities and counties⁴ in China in 2014 (Source: Luojiadeyi Net. 2014. <http://www.luojiadeyi.com/index.php/index-view-aid-645.html>)

Prior to the spatial planning reform in cities and counties, the specific number of pilot cities and counties was not determined. Four ministries and the commission that initiated the reform

⁴ Red dots are pilot counties, and blue dots are pilot prefecture-level cities.



were in charge of inspections and reviews, then decided the final list according to the positioning of different major functional areas in cities and counties after the voluntary applications from 31 provinces (Sina Finance Net. 2014.

<http://finance.sina.com.cn/china/20141119/013820855229.shtml>). As a result, the Ministry of Land and Resources was responsible for seven cities and counties, the Ministry of Housing and Urban-Rural Development was responsible for seven cities and counties, the National Development and Reform Commission was responsible for seven cities and counties, and the Ministry of Environmental Protection was responsible for seven City and County, too (see Table 9).

| Leading Ministries and the commission | Pilot cities and counties |
|---|---|
| The Ministry of Land and Resources | Jiaxing City - Zhejiang Province Huantai County - Shandong Province Ezhou City - Hubei Province Nanhai District - Foshan City-Guangdong Province Jiangjin District - Chongqing City Nanxi District - Yibin City - Sichuan Province Yulin City - Shaanxi Province |
| The Ministry of Housing and Urban-Rural Development | 8. Deqing County - Zhejiang Province, 9. Shou County - Anhui Province 10. Xiamen City - Fujian Province 11. Sihui City - Guangdong Province 12. Dali City - Yunnan Province 13.Fuping County - Shaanxi Province 14. Dunhuang City - Gansu Province |
| The National Development and Reform Commission | Acheng District - Harbin City - Heilongjiang Province Jurong City - Jiangsu Province Kaihua County-Zhejiang Province Zengcheng District-Guangzhou City-Guangdong Province Mianzhu City-Sichuan Province Yudu County-Jiangxi Province Hezhou City-Guangxi Autonomous Region |
| The Ministry of Environmental Protection | 22. Lvshunkou-District-Dalian City-Liaoning Province 23. Tongjiang City-Heilongjiang Province 24. Huaian City-Jiangsu Province 25.Jiangyan District-Taizhou City-Jiangsu Province 26. Huojia County-Henan Province 27. Linxiang City-Hunan Province 28. Yumen City-Gansu Province |

Table 9: The Leading Ministries and the commission of 28 Pilot Cities and Counties(Source: Huang Zhengxue, Huang Lingxiang. 2019, pp.40-49)

During this period, all cities and counties were in the exploratory stage, and there were no mature regulations and technical standards to guide them. Therefore, the selection of pilot cities was mainly based on the agenda priorities of ministries and the commission's departments. For example, the gap between urban and rural development was large in 10. Xiamen City, hence the preparation of the urban and rural master plan was the priority to promote the development of overall urban and rural. For economically underdeveloped counties, 16. Jurong City, for instance, the national economic and social development plan should be the lead in the reform to boost the



economy, as well as the northern and central districts with severe environmental damage, such as 23. Tongjiang City and 28. Yumen City, the comprehensive land and spatial planning based on environmental protection plan was the main goal.

• The deepening pilot phase

With the continuous deepening reform of "multiple-plans integration" in cities and counties, spatial planning pilots had also been launched at the higher provincial level.

In June 2015, the central government approved Hainan Province and Ningxia Province to carry out pilot reforms of "multiple-plans integration" on coordinating economic and social development plan, urban and rural master plan, and land-use master plan at the province level.

In December 2016, the General Office of the CPC Central Committee and the General Office of the State Council issued the "Provincial Spatial Planning Pilot Program" (Official website of The Central Government. 2017.

<http://www.gov.cn/zhengce/2017-01/09/content_5158211.htm>), which included Jilin Province, Zhejiang Province, Fujian Province, Jiangxi Province, Henan Province, Guangxi Province, and Guizhou Province into the pilot scope, and formed nine provincial-level spatial planning pilots with Hainan Province and Ningxia Province (see Figure 17).



Figure 17: The distribution of 9 "multiple-plans integration" pilot provinces⁵ in China in 2016 (Source: Author's own)

The reason of selection of the nine pilot provinces primarily considers the following four aspects. First, Fujian Province, Jiangxi Province, Guizhou Province (purple circles) and Hainan Province (bottom red circle) are the first batch of "The National Ecological Civilization Experimental Zone" (Official website of The Central Government. 2016.

⁵ The red circle indicates that the two provinces were approved by the central government in 2015, and the purple circle and the green circle indicate that the other 7 provinces were issued by the General Office of the CPC Central Committee and the General Office of the State Council in 2016.



<http://www.gov.cn/xinwen/2016-08/23/content_5101548.htm>)⁶ established by China and the implementation of spatial planning reform is the main task of it. Second, the existing spatial planning system and relevant policies of Jilin Province, Zhejiang Province, Henan Province, Guangxi Autonomous Region (green circles) and Ningxia Autonomous Region (top red circle) are relatively well developed. Furthermore, conducting pilot programs in Jilin Province and Ningxia Autonomous Region would further support the revitalization and development of the Northeast and Northwest regions in China. Third, the land area, resource status, topography, and development level of the 9 provinces are different, which is conducive to enriching the experience of pilot exploration, verifying the effectiveness of the pilot, and replicating the reform to the whole country (Official website of The Central Government. 2017.

<http://www.gov.cn/zhengce/2017-01/09/content_5158211.htm>). Fourth, based on the pilot agenda of the city-county spatial planning, the provinces with forwarding spatial planning reforms in cities and counties are chosen, such as Zhejiang Province and Jiangxi Province.

The main significance of carrying out the "Provincial Spatial Planning Pilot Program" is that as the connection and transition between the city and county's levels and the national level in China's spatial planning system, the provincial level plays an important role and provides experience in rebuilding an integrated China's spatial planning system, while laying the foundation for improving national-territorial spatial governance capacity and efficiency at a higher level.

• The comprehensive promotion of "multiple-plans integration"

In March 2018, the State Council promulgated the "The Deepening Institutional Reform Plan on the Party and the State" that proposed the establishment of the Ministry of Natural Resources which integrated the planning functions of manifold ministries, unified the conducts of all land spatial use control plus ecological protection and restoration, while reestablished a whole spatial planning system, which has greatly promoted the development process of "multiple-plans integration". Consequently, "multiple-plans integration" had entered the stage of comprehensive practice.

With the practice of "multiple-plans integration" at different levels, the legal status of China's spatial planning system is also established at the national level in 2019. "The state founded a territorial spatial planning system... The territorial spatial plan approved by law is the basis for various types of development, protection, and construction activities. The land-use master plan and urban-rural master plan will no longer be prepared after the development of the territorial spatial planning system (Xin Hua News. 2019.

<http://www.xinhuanet.com/2019-08/26/c_1124923935.htm>)", based on which, the reformed conceptual framework of the spatial planning system was constructed.

4.4 The Reforms bring the main changes to China's spatial planning system

Since 2013, in order to realize China's spatial planning reform with "multiple-plans integration" as the core, China's pilot regions have achieved some positive results. Although the

⁶ The National Ecological Civilization Experimental Zone was implemented in 2016. The main objective is to combine the "toplevel" design of the central government with specific local practices, to improve the ecological civilization system, and to promote the modernization of national governance.



specific practices of each pilot region are different, a configured and systematic mechanism has gradually been formed (see Figure 18) and the impact and change of the reform could be elaborated at the national, provincial and local levels in "top-down" hierarchy.



Figure 18: "Multiple-plans integration" planning system framework (Source: Huang Yong, Zhou Shifeng and Wang Lin, et al., 2016, pp.82-88)

4.4.1 The national level

The change at the national level is mainly embodied in the establishment of the legal status of the national spatial planning system and the promulgation of the re-institution of spatial planning system contents.

Formerly, "multiple-plans integration" was regarded as the guidance and program by the central government but with no specific management department, however, the foundation of the Ministry of Natural Resources provided an administrative organizational guarantee for it, which reduced the administrative costs in communication and coordination among various planning departments (Cui Xufeng, Wang Zhenzhen. 2018, pp.34-39), whilst when plans are formulated, they are unified and vested in the management of natural resource department that coordinates all kinds of planning and conducts the organization of "multiple-plans integration". Furthermore, the legal status of China's spatial planning system is also established at the national level. "The state founded a territorial spatial planning system... The territorial spatial plan approved by law is the basis for various types of development, protection, and construction activities. The land-use master plan and urban-rural master plan will no longer be prepared after the development of territorial spatial planning system (Xinhua News. 2019. <<u>http://www.xinhuanet.com/2019-08/26/c_1124923935.htm</u>)."

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After that, a series of spatial planning theoretical frameworks had been introduced based on "Notice of the Ministry of Natural Resources on Comprehensively Carrying out Territorial Spatial Planning Development", which could be summarized as "Five Levels, Three Types and Four Systems" (see Table 4), based on which, relevant standards and configurations are set up, such as "Dual Evaluation" and "Three Zones and Three Control Lines", which are also regarded as tools of the reformed binding national spatial planning system.

"Dual Evaluation"

The evaluation includes "Resource and environment carrying capacity" and "Land spatial development suitability evaluation". "Resource and environment carrying capacity" refers to "the comprehensive support level of natural resources, environmental capacity, and ecological service functions to human activities on certain areas." And "Land spatial development suitability" means "suitability of land and space to a different development, protection, and utilization methods such as ecological protection, agricultural production, and urban construction (Official website of the Central Government. 2019.

<http://www.gov.cn/zhengce/2019-11/01/content_5447654.htm>)."

• "Three Zones and Three Control Lines" (see Table 10)

This standard reconsiders the sphere of "Three Zones": Ecological, Agricultural, and Urban functional space scope, as well as "Three Control Lines": Ecological Protection Red Line, Permanent Basic Farmland, and Urban Development Boundaries, which are required to be laid out and demarcated according to the results of "Dual Evaluation" (Li Hongwei, Tang Fanglin and Wang Jianping. 2019.

<http://epaper.gmw.cn/gmrb/html/2019-02/16/nw.D110000gmrb_20190216_1-05.htm>). Among them, "Three Control Lines" are defined as follows.

1) Ecological Protection Red Line: An area that has special important ecological functions within the scope of ecological space and must be strictly protected.

2) Permanent Basic Farmland: Cultivated land under permanent special protection to ensure national food security and supply of important agricultural products. If there are any problems with delineation, illegal occupation, or serious pollution in the delineated permanent basic farmland, comprehensive rectification should be carried out to ensure that the area of permanent basic farmland would not decrease and the quality would be improved.

3) Urban Development Boundaries: In a certain period of time, due to the needs of urban development, urban construction could be concentrated on, and the regional boundary mainly based on urban functions involves cities, formed towns, and various development zones.



| Three Zones | Three Control Lines | | |
|-----------------------------|------------------------------|----------------------|--|
| | Ecological Protection | Core Nature Reserve | |
| Ecological Zone Scope | Red Line | General Control Area | |
| | | Other areas | |
| | Other ecological spaces | | |
| Agricultural Zone Scope | Permanent basic farmland | | |
| | Other agricultural spaces | | |
| Urban Functional Zone Scope | Urban development boundaries | | |
| | Other urban spaces | | |

Table 10: Correspondence between "Three Zones" and "Three Control Lines" (Source: The Paper Net. 2019. <https://www.thepaper.cn/newsDetail_forward_3520905>)

In some way, it is conducive to address the planning conflicts caused by the land supply and demand contradictions, sectoral interests and the lack of effective coordination mechanism for a long time with these reforms, and the establishment of the Ministry of Natural Resources has integrated the planning functions of the National Development and Reform Department, the Ministry of Land and Resources and the Ministry of Housing and Urban-Rural Development, which is constructive to improve overall planning during the preparation and execution period, streamline the relationship among the various aspects of the operation and management process, and promote "multiple-plans integration" to complete management and technical docking. In general, an unified management organization is beneficial to solving the conjunction problems faced in the planning, while timely coordinating multi-regulation development goals, land use scale, spatial management requirements and technical aspects.

4.4.2 The provincial level

Following the framework and principles of the "Notice of the Ministry of Natural Resources on Comprehensively Carrying out Spatial Planning System", the review and formulation of provincial spatial planning system have a more coherent direction, The provincial-level territorial spatial planning system plays an pivotal role as a transition and decomposition between the superstructure and the specific implementation at the local level. It is similar to the pre-reform China's spatial planning system that, on the one hand, the provinces demand to further refine the national territorial spatial planning indicators such as "Five Levels, Three Types and Four Systems", "Dual Evaluation" and "Three Zones and Three Control Lines" in conformity with their conditions, which is binding and could be summarized that realization of territorial and spatial development and protection goals; Implementation of national-territorial and spatial development intensity, construction land scale, ecological protection red line control area, natural coastline retention rate, cultivated land area, permanent basic farmland protection area, total water consumption and intensity control; Division of main functional areas, coordinated implementation of urban development boundaries, ecological protection red lines, and permanent basic farmland; Urban system layout, spatial governance of key areas such as urban agglomerations and metropolitan areas, etc. (Official website of the Ministry of Natural Resource of the People's Republic of China. 2019. <http://gi.mnr.gov.cn/201905/t20190530_2439129.html>).



On the other hand, the territorial spatial planning system at the provincial level is a general outline to the local level that promulgates relevant policies and regulations that ensure the implementation of the plan, and guide, supervise plus review on city and county planning. Furthermore, it is striking that other actors that were disregarded in the past are valorized in the reformed territorial spatial planning system at the provincial level. Apart from the layout of major infrastructure networks, and requirements for the deployment of urban and rural public service facilities, ecological barriers, ecological corridors and ecosystem protection patterns are supplemented in the system, which means that provinces demand to attach more importance to the ecology and environment protection in each district. And the nature reserve system and historical and cultural protection systems that reflect local characteristics are valued as the indicators of natural and cultural heritage protection. According to data released by the National Bureau of Statistics of China, at the end of 2018, the urbanization rate of China reached 59.58%, an average annual increase of 0.71 percentage points (Official website of the Central Government. 2019. <hr/>
http://www.gov.cn/xinwen/2019-08/16/content 5421576.htm>).

With the large population, labor force, and industries flowing into cities, the economic development of rural areas has lagged, and the gap between urban and rural areas has gradually widened, although the development of urban-rural integration has always been mentioned in the central government, it was disregarded in the implementation by the governments at all levels in the rapid urbanization process. Hence, in the territorial spatial planning system at the provincial level rural spatial layout, principles and requirements are reviewed as key points to promote rural revitalization.

As pilot provinces of "multiple-plans integration", Hainan Province, Shanghai Municipality and Ningxia Province had all achieved initial success in provincial planning systems.

During the pilot period, these provinces unified the boundaries of various plans to reach efficient spatial governance. For example, by the merger of plans plus lands and resource bureaus, the integration of "plans" and "lands" within the departments is realized (Shen Chi.2015, pp.17-19). Furthermore, most provinces had established the "multiple-plans integration" leadership group to coordinate the spatial governance boundaries involved in the functions of each department. At that moment, all the planning divisions involving spatial boundaries were coherent and combined with the administrative examination and approval reform, which improves the efficiency of the planning review.

4.4.3 The local level

Correspondingly, the preparation of the city and county-level spatial planning system includes the subsequent binding aspects, following the principles and norms of the provincial-level territorial spatial planning system.

In the territorial spatial planning system at the local level, in addition to the refinement of the main points of the provincial-level territorial spatial planning, such as city's territorial spatial planning zoning and the control rules of utility in line with "Dual Evaluation" and "Three Zones and Three Control Lines" at the provincial level, it also stipulates the specific elements of local urban development, in the urban planning and land-use planning aspect, the review of urban functional layout and land use structure in central city is complemented, in terms of municipal engineering, the layout principles and standards of major transportation hubs, important linear engineering networks, urban safety and comprehensive disaster prevention systems,





underground space, and neighboring facilities and other facilities are as examined explicitly as the housing, education, health, retirement, culture and sports, and other urban and rural public service facilities.

In the dimension of detailed spatial planning, the local-level territorial spatial planning system added additional review points. For example, within the boundaries of urban development, the control scope and balanced distribution requirements of open spaces such as urban structural green spaces and water bodies, the protection scope and requirements of various historical and cultural relics, the layout and control requirements of ventilation corridors; the urban development intensity and other spatial form control requirements (Official website of The State Council Information Office of the People's Republic of China. 2019.

<http://www.scio.gov.cn/xwfbh/xwbfbh/wqfbh/39595/40528/zy40532/Document/1655483/1655 483.htm>).

China has been carried out the "multiple-plans integration" pilot agenda at the city and county level for four years. These pilot cities implemented various explorations in terms of planning integration, path model, regulation, system mechanism and legislative guarantee in light of their actual conditions. As a result, some experiences are formed and they laid the foundation for promoting the "multiple-plans integration" to other cities throughout the country.

First, a series of spatial plannings had been formulated in various areas. The pilot municipalities had valorized the integration of land-use master plan, urban and rural master plan, ecological environmental protection plan plus economic and social development plan, and actively executed the development of "multiple-plans integration" spatial planning. For instance, Xiamen City introduced the "Beautiful Xiamen Strategic Plan", Kaihua County, Zhejiang Province published the "Kaihua County Spatial Planning", and Jiangjin District, Chongqing Municipality promulgated the "Jiangjin District Territorial Spatial Comprehensive Plan" (Gao Guoli.2017, pp.41-46), which all reflected the targets of "multiple-plans integration", plus indicated the characteristics of the pilot cities.

Second, the pilot cities and counties rely on their legislative powers to formulate relevant regulations or governance measures to enhance the standardization and authority of the pilot agenda. For example, Xiamen City formulated the "Regulations on the Governance of 'multiple-plans integration' in Xiamen Special Economic Zone", and Yulin City, Shaanxi Province formulated the "Governance Measures for 'multiple-plans integration' in Yulin city" (Gao Guoli.2017, pp.41-46). These regulations reinforced the "multiple-plans integration" at the legislative level, guaranteed the continuous and steady advancement of pilot agenda, whilst provided support for the next step in the formulation of relevant laws and regulations at the provincial or national level.

Additionally, considering the acceleration of the "multiple-plans integration" pilot agenda in cities and counties, some provinces actively carried out pilot projects of "multiple-plans integration" at the provincial level before the implementation of "Provincial Spatial Planning Pilot Program". For instance, Jiangxi Province formulated "the overall planning for urban and rural areas in Jiangxi Province and 'multiple-plans integration' plan" and Gansu Province coherently explored the path for promoting advanced urbanization with the support of "multiple-plans integration".

4.5 Practices on the provincial level: Shanghai Municipality and Hainan Province



This part exerts desk research, which collects and analyzes relevant official documents, academic journals and reports that explores and introduces spatial planning reform about two cases to sort out the whole process of spatial planning reform in them through websites, to take Shanghai Municipality and Hainan Province as examples to interpret how "multiple-plans integration" has been implemented during the reform whilst the effectiveness and limitations from which on the provincial spatial planning system.

As one of China's four direct-administered municipalities (see Figure 19) with a developed economy, Shanghai plays an essential role in the reform, improvement and innovation of the national spatial planning system (The Introduction of Shanghai Municipality. 2019.

<http://www.shanghai.gov.cn/shanghai/newshanghai/%E4%B8%8A%E6%B5%B7%E6%A6%82%E 8%A7%88.pdf>), although Shanghai was not officially included in the 2016 "Provincial Spatial Planning Pilot Program", it was the first direct-administered municipality that autonomously conducted spatial planning reform in 2008.

The four direct-administered municipalities in China have the same rank as provinces and form part of the first tier of administrative divisions of China notwithstanding, direct-administered municipalities possess a large population of residents and usually have an important position in the political, economic, cultural, and tourism aspects of the country. Due to the special positioning of municipalities, the first secretary of the four municipality is generally a member of the Political Bureau of the CPC Central Committee.

Therefore, the experience of Shanghai Municipality's spatial planning reform could be used for reference by other municipalities, all of which have more autonomy to carry out reforms to adapt the local population, economy, resources, and area or other conditions.



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Figure 19: The distribution of direct-administered municipalities in China⁷ (Source: Internet Archive. 2012. <https://web.archive.org/web/20120313211234/http://english.gov.cn/links/content_25073.htm>)

Hainan Province was approved firstly to carry out the "multiple-plans integration" in 2015 by the central government before the promulgation of "Provincial Spatial Planning Program". Hainan Province is also an island province of China and the nation's southernmost province. It's known for its tropical climate, beach resorts and forested, mountainous interior (Official website of The People's Government of Hainan Province. 2019.

<http://www.hainan.gov.cn/hainan/hngl/201809/02b6b908146c4ce89c0dbd1fad7720a6.shtml>).

Furthermore, it is the only provincial-level special economic zone and one of the "China Pilot Free Trade Zone (Port)"⁸(Meng Guangwen, Liu Ming. 2012, pp.2). Whilst a world-class international tourist island is currently being built and it is the annual conference place of "The Boao Forum for Asia"⁹ (Official Website of Boao Forum for Asia. 2001.

<http://english.boaoforum.org/gyltbjjsen.jhtml>). As a pioneer in the "Provincial Spatial Planning Program", Hainan Province provides experiences for the provincial spatial planning system reform for other provinces.

⁷ Number : (1 Beijing; 2 Tianjin; 3 Chongqing; 4 Shanghai)

Populations : 30.49million (2018)(Chongqing) - 21.7 million (2018)(Beijing) - 24.23 million (2018)(Shanghai) - 15.62 million (2018)(Tianjin)

Areas : 6,787 km² (Shanghai) - 82,400 km² (Chongqing) - 16,410.5 km² (Beijing) - 11,946 km² (Tianjin) ⁸ China Pilot Free Trade Zone(Port) was established by China in 2011, it refers to the designation of specific areas outside the customs of sovereign countries or regions, allowing foreign goods to enter and exit free of tariffs. China has set up 18 free trade zones as of 2019.

⁹ The Boao Forum for Asia (BFA) is a non-profit organization that hosts high-level forums for leaders from government, business and academia in Asia and other continents to share their vision on the most pressing issues in this dynamic region and the world. It was officially announced in February 2001 in Boao Town, Qionghai City, Hainan Province, now there are 29 member states.



4.5.1 Shanghai Municipality: "Two-plans Integration"

• The overview of Shanghai Municipality

Shanghai is a direct-administered municipality that directly under the Central Government, a first-tier city that covers the total area 8,239 square kilometers, of which the land area is 6,787 square kilometers in China, and one of the international financial, trade and shipping centers with the most flourishing ports in the world. Shanghai's GDP ranks first in China's cities and second in Asian cities, second only to Tokyo, Japan. In 2018, the population is 24.23 million, of which the local registered population accounts for 59%, reaching 14.39 million (Official website of Shanghai Municipal People's Government. 2018.

<http://www.shanghai.gov.cn/nw2/nw2314/nw24651/nw43437/nw43442/u21aw1311502.html>, according to the standard for city size division in 2014, Shanghai is a mega-city that refers to a city with a permanent population of more than 10 million (Official website of the Central Government. 2014. <http://www.gov.cn/xinwen/2014-11/20/content_2781156.htm>).

Shanghai has jurisdictions over 16 municipal districts, with 105 streets, 107 towns and 2 townships, among which, Huangpu District, Xuhui District, Changning District, Jing'an District, Putuo District, Hongkou District and Yangpu District are traditional central urban areas. Pudong is a district of Shanghai located east of the Huangpu River across from the historic city center of Shanghai in Puxi. It is now administered as the Pudong New Area established in 1990, a state-level new area which extends all the way to the East China Sea. Pudong New Area was endowed municipal-level economic management authority by the Shanghai Municipal Government in 2019 (see Figure 20). According to data from the Ministry of Commerce of the People's Republic of China, Shanghai's urbanization rate has reached 89% in terms of permanent population in 2014, ranking first in the country (Official Website of the Ministry of Commerce of the People's Republic of China. 2014. <<u>http://www.mofcom.gov.cn/article/resume/n/201408/20140800682921.shtml</u>>).



Figure 20: Administrative Division Map of Shanghai Municipality (Source: Travel China Guide. <https://www.travelchinaguide.com/cityguides/shanghai/orientation.htm>)

• The implementation of "two-plans Integration" planning system

In order to explore the reform breakthrough of China's spatial planning system, Shanghai originally launched the "two-plans integration" preparation agenda that associated the urban master plan with the land-use master plan from 2009 to 2012. As a result, Shanghai completed the city - district (county) - township (village) three-level land-use master plan, which was integrated with the urban and rural master plan implementation. This reform was concluded as "two-plans integration" in the governance of urban and land (Jiang Yuejin. 2014, pp.44-47). This planning system further emphasized, systematized and optimized the hierarchy, the positioning, the preparation requirements as well as the governance regulations of each level of planning from overall, district to binding details to be in accordance with the principle of "division, approval, and implementation" (see Figure 21).

Furthermore, the planning approval authority was redistributed. Precisely, except for the city's urban master plan approved by the State Council and the village plan approved by the district government, all other plans are approved by the municipal government, which improves the efficiency and flexibility of local governance.



Figure 21: Spatial governance integration system in Shanghai Municipality (2013) (Source: Jiang Yuejin. 2014, pp.44-47)

• The main outcomes of the reform in Shanghai Municipality

The capacity of coordination and governance has been enhanced

As a mega city, in order to ensure the governance is orderly and effective, Shanghai Municipality has always attached importance to building a comprehensive planning system to guarantee the implementation of plans. In consideration of the actual characteristics of Shanghai's condition, the governance intentions and requirements of layer-by-layer implementation are embodied in the "two-plans integration" planning system. Under this framework of the system, the district planning, suburban county master plan, new city general rules and central city unit planning have achieved full coverage. The overall planning of the new towns was completed 2/3 and the coverage rate of control regulations is over 80%, hence the construction land is reasonably and effectively expanded after unified and completed planning (Shanghai Minhang District People's Government. 2016.

<http://xxgk.shmh.gov.cn/UpLoadPath/documentspare/eWebEditor/uploadfile/2018-06-22/a3c2aa9b-374c-4f36-8b19-0f9fbeae16f8.pdf>).

"Shanghai Urban Master Plan and Land-use Master Plan" requires that the construction of a "one central city, seven new districts, about sixty new towns, and about six hundred central villages" urban-rural planning system ought to be achieved (see Figure 22), the urban spatial layout system would be advanced while the development trend of urbanization and suburbanization would be guided scientifically. Simultaneously, the development of Pudong New Area would be promoted to form a polycentric development model in Shanghai Municipality.



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Figure 22: Shanghai Spatial Governance Strategy (2010) (Source: Zhuo Jian. 2017. Shanghai 2040: Integration between urban transport and land use. <https://slideplayer.com/slide/13918082/>)

The efficiency of land use is improved to control urban growth disorderly

Shanghai has entirely exploited the governance function that could be summarized as "full process, refined and powerful" in the land-use master plan and has formed a new pattern of "planning leads territories plus land security", which has further promoted Shanghai's planned land governance level.

The governance of agricultural land is to stabilize agriculture and production conditions, to achieve elemental security in the total area of agricultural land. By 2020, the municipal agricultural land would reach 249,300 hectares, accounting for 36.7% of the municipal total land area. In terms of constructional land, the total scale of constructional land required to be strictly controlled and the reasonable utilization of construction land would be achieved. By 2020, the constructional land would reach 298,100 hectares, accounting for 36.18% of the total land area (Official website of The Ministry of Natural Resources of the People's Republic of China. 2010. <<u>http://g.mnr.gov.cn/201807/t20180727_2147668.html</u>>) (see Table 11).



| Indicator names | | 2005 | 2010 | 2020 | Indicator properties |
|--|--|--------|--------|--------|----------------------|
| Total indicators (Unit: h | | | | | |
| | Total cultivated land | 273100 | 258000 | 249300 | Binding |
| | Basic farmland area | 214800 | 218700 | 218700 | Binding |
| Agricultural | Garden area | 11100 | 13000 | 15000 | Not-binding |
| land | Woodland area | 20700 | 22000 | 27200 | Not-binding |
| | Total area | 240100 | 259000 | 298100 | Not-binding |
| Constructional land | Urban-rural constructional land area | 217000 | 230000 | 260000 | Binding |
| | Industrial and mining land area | 161200 | 183000 | 220000 | Not-binding |
| Incremental indicators | (Unit: hectare) | | | | |
| The total area of newly | y constructional land | - | 26000 | 86900 | Not-binding |
| Area of agricultural land occupied by newly constructional land | | - | 21300 | 65000 | Not-binding |
| Area of cultivated land occupied by newly constructional land | | - | 16000 | 45200 | Binding |
| Area of reclamation and development of newly cultivated land | | - | 16000 | 45200 | Binding |
| Efficiency indicator (Un | | | | | |
| Urban industrial and m | nining land per capita | 102 | 106 | 110 | Binding |

Table 11: Land-use regulation indicator (2010) (Source: Official document. 2010)

On the other hand, the urban development boundary is settled at the municipal level whilst the whole scale of planning and construction land is coherent, including the urban construction zone of the main districts, new town, industrial zone (industrial base) and specific large-scale public facilities. At the district's level, some definite interventions are executed at county and township's plannings. For example, the urban development boundary is specified in districts, the scale control of planning plus construction land is implemented and the layout of construction land is optimized (see Figure 23) (Official document. 2015.

<https://wenku.baidu.com/view/0c8def8c3c1ec5da51e27067.html?re=view>).





Figure 23: Shanghai's urban land-use master plan (2006-2020)¹⁰ (Source: Official document. 2010)

The efficiency of construction project approval is improved result from the coordination amidst the relevant sectors

After the reform, Shanghai's "two-plans integration" has realized the data sharing that effectively connect with the project approval process and includes manifold sectors, such as Development and Reform Commission, Land and Resource Bureau and Housing Construction Bureau, which is the premise that a linkage mechanism for multi-sector joint review could be established during the planning and governance. This advancement avoids the contradictions and conflicts that exist in the various departments while achieves collaborative spatial planning.

Furthermore, to all kinds of plans and projects that obligate to be examined and approved, the opinions of the special planning administrative departments must be solicited while the relevant special planning departments are involved in the audit to achieve a coherent pace in implementation governance. This immensely improves the quality of planning, strengths the authority of spatial plannings and shortens the length of approval (Xiong Jian, Fan Yu and Song Wei. 2017, pp.42-51).

• The limitations of the reform

In the vertical dimension, the spatial planning system is not streamlined

First, one of the main features of the current system is hierarchical, the contents and indicators of plans are decomposed layer by layer and implemented at different levels without a unified and coordinated mechanism, which is straightforward to result in a lack of differentiation in planning at all levels. The plans fail to be adapted to local conditions in a consequence.

Take the central city zoning plan, district binding plan and detailed binding plan as examples, all of which decompose the relevant indicators of land-use intensity, spatial environment, public

¹⁰ The figure on the left is the current status of land-use in 2005, and the figure on the right is the master plan for land-use. The brown part in the figure is urban constructional land, the yellow part is cultivated land, the dark green part is woodland, the light green part is garden land, and the purple part is traffic land.



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services and municipal infrastructure layer by layer. However, consider the scope of these plans, the contents of them overlap to some extent. And in the subject of examination and approval, the above plans are all approved and reviewed by the Shanghai Municipal People's Government, which turns out that the actual role that each level of planning should play is weakened because of the absence of lower-level coordination.

Second, it is rather sophisticated to draw new plans for a new town in Shanghai in consonance with "Shanghai Urban Master Plan and Land Use Master Plan". The types of planning to be prepared include the new town master plan, the township-level land-use master plan, the village layout plan, and the historical and cultural town protection plan (Xu Ke. 2011, pp.72-77), all of which are at the same level without emphasizing the crucial position of the integration of town master plan and township-level land-use master plan.

Last but not least, the preparation period of plans is lengthy. According to the governance regulations of the detailed binding plan, the preparation stage is divided into three steps and nine links. In addition, the Land and Resource Bureau of every district has generally reflected that the existing detailed binding plan lacks certain flexibility in the content, resulting in frequent adjustments. At present, Shanghai Municipality is enduring the development pressure of tight constraints on resources and the environment. The demands for urban renewal and industrial land stocks are urgent (Official website of The People's Government of Shanghai Municipality. 2015. <<u>http://www.shanghai.gov.cn/nw2/nw2314/nw3766/nw3895/nw43958/index.html</u>>).

These problems could not be solved by solely planning the "resource reallocation" from the top level. There is an obligation for a "bottom-up" interest coordination mechanism. More attention should be paid to the characteristics of each district's planning and prominent issues.

In the horizontal dimension, the "two-pans integration" is not achieved comprehensively

Shanghai has essentially realized the platform of centralized governance as the core for the urban master plan and land-use master plan to carry out administrative governance, examination and approval agenda, but there are still some plans and land governance norms are not finished at the town-level, while the approval process has not yet been completed, which precisely affects the efficiency of administrative examination and approval (Hu Yaowen, Yin Qiang. 2016, pp.55-62). In the time dimension, the dynamic evaluation mechanism is not implemented extensively

According to the "Shanghai Urban and Rural Planning Regulations", the assessment agenda shall be conducted at least once in five years, and the public opinion demands to be solicited by a demonstration meeting, a hearing or other means. And after the preparation of the planning, relevant departments shall submit an evaluation report that attaches a request for improvement to the standing committee of the people's congress at the same level and the original examination and approval authority (Official website of The Shanghai Municipality Governance and Administration Execution Bureau. 2016. <<u>http://cgzf.sh.gov.cn/main/news_123.html></u>). In practice, nonetheless, the previous implementation assessments have not been fully conformed, the conclusions from which also have no corresponding legal effects. The lack of attention to the time dimension is also one of the reasons why the current implementation of planning is increasingly being questioned.

4.5.2 Hainan Province: Plan the province as a "city"

• The introduction of Hainan Province



Hainan Province is not only China's special economic zone and "Pilot Free Trade Zone(Port)", but the southernmost provincial administrative district in China with appropriate geographic location: the west is opposite to Vietnam, the south is facing the South China Sea, Taiwan is in the east, the southeast and the south are neighboring the Philippines, Brunei and Malaysia in the South China Sea. The total area of Hainan island in Hainan Province is 33,900 square kilometers, and the sea area is about 2 million square kilometers. By the end of 2019, Hainan Province has 4 prefecture-level cities (Haikou City, Sanya City, Sansha City¹¹, Danzhou City), and 15 provincial-level administrative units (including 4 counties, 6 autonomous counties, and 5 county-level cities) plus 8 municipal districts (see Figure 24 and Figure 25). In 2018, the permanent population of Hainan Province at the end of the year was 9,343,200, and the proportion of the urban population was 59.06% (Official website of Hainan Provincial Bureau of Statistics. 2019.

<http://stats.hainan.gov.cn/tjj/tjgb/fzgb/n_71782/201901/t20190128_2282048.html>). while the proportion of the tertiary industry in Hainan Province is close to 50%, mainly including foreign trade and tourism.



Figure 24: Administrative Division Map Of Hainan Province (Source: Maphill Net. 2011. http://www.maphill.com/china/hainan/maps/political-map/)

(Official Website of The People's Government of Hainan Province. 2016.

¹¹ Sansha City is a prefecture-level city established in the South China Sea on July 24, 2012, by the People's Republic of China, under the jurisdiction of Hainan Province. It has legal jurisdiction over all the islands and reefs of the Xisha Islands, Zhongsha Islands, and Nansha Islands and their sea areas, about 180 square kilometers. The Sansha Municipal Government is located in Xisha Island. It is the prefecture-level city with the southernmost location, the smallest land area, and the least population in contemporary China. As of December 2015, there are more than 2,500 permanent residents.

<https://web.archive.org/web/20160316161945/http://www.hainan.gov.cn/hn/zjhn/sxgl/sss/>)


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Figure 25: The location of Sansha City (Source: Beijing Review Net. 2012. <http://www.bjreview.com/Cover_Story_Series/2012-07/02/content_466987.htm>)

• The implementation of "multiple-plans integration"

In March 2015, Hainan Province officially launched the "multiple-plans integration" agenda to coordinate four major types of planning involving economic and social development plan, industrial development plan, ecological environmental protection plan and basic farmland protection plan, to standardize various types of plans as well as solve problems such as system and content conflicts (Information for Deciders Magazine. 2015, pp.22-23), which were to guarantee that the plans of various sectors at the provincial level and the main spatial planning of each city were integrated. Consequently, a set of "multiple-plans integration" spatial planning mechanisms (see Table 12) was established to resolve existing planning contradictions and to guide the preparation of the next round of planning.



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| Hierarchy | Resolved contradictions | New function |
|---------------------|---|--|
| First hierarchy | Coordinate the contradictions of "development plans" : National economic and social development plan ("12th Five-Year Plan") Urban master plan (2012-2020) Land-Use master plan (2005-2020) | Guide a new round of plans : National economic and social development plan ("13th Five-Year Plan") Urban master plan preparation (2020-2030) Adjustment of land-use master plan (2020-2030) |
| Second hierarchy | Coordinate the contradictions of "prohibition plans" : Urban Environmental Protection Plan Woodland protection and utilization plan (2010-2020) Marine functional zoning plan (2007) | Guide the revision of "prohibition" plans : Protection plan for ecological red line area (unified name with provincial plan) Woodland protection and utilization plan (2020-2030) Marine use and functional zoning plan (unified name with provincial planning) |
| Third hierarchy | Coordinate the contradictions of "special plans" : Industrial plans, transportation plans Basic public service plan (including medical, sports, etc.) Comprehensive disaster prevention plan, protection plan for historical cities | Guide the preparation of a new round of "special plans" : Industrial plans, transportation plans Basic public service plan (including medical, sports, etc.) Comprehensive disaster prevention plan, protection plan for historical cities |
| Fourth hierarchy | Coordinate the contradictions of "other plans" : Detailed binding plans Other spatial plans | Guide the revision of "other plans" : Detailed binding plans Other spatial plans |

Table 12: Spatial planning mechanism of Hainan Province 2015(Source: Information for Deciders Magazine.2015, pp.18-19)

Simultaneously, the "Hainan Province Comprehensive Planning" (see Figure 26) had been issued based on the mechanism, whilst the strategic goals for 2020 and the development vision for 2030 had been determined. "Hainan Province Comprehensive Planning" is the provincial overall planning, which is the constitution and general framework for constructing an integrated spatial planning system in the province, while it elaborated the development vision and five-year goals of the national economy, society, and industry (Hu Yaowen, Yin Qiang.2016, pp.55-62). In reference to the urban system, it is reasonable to identify the development boundary and the scale of construction land, parallel to optimize the allocation of spatial resources to delineate the development boundaries of the city and county plus the key cities and towns and coordinate the layout of provincial facilities, which contributed all regions to take an explicit development direction.



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Figure 26: Schematic diagram of "Hainan Province Comprehensive Planning" based on "multiple-plans integration" mechanism (Source: Information for Deciders Magazine. 2015, pp.18-19)

• The main outcomes of the reform in Hainan Province

Hainan Province as a "city" for centralized planning

In terms of the spatial layout of urban development and land use, Hainan Province divides the whole island into five functional areas, emphasizing different economy and social development orientations in five areas (see Figure 27).

The northern part relies on the "HaiChengWen integrated comprehensive economic circle"¹² and provincial capital city - Haikou ($\not\exists \Box$), focusing on the development of tourism, modern finance, aerospace science and technology and other industries, positioning as the headquarters economic zone, high-tech industrial base, international convention and exhibition center.

¹² "HaiChengWen" refers to Haikou City, Chengmai County, Wenchang City. The three cities and counties are located at the northern end of Hainan Province. The total land area is 6,835 square kilometers, accounting for about 20% of the province's land area. With the advantages of location, capital, and technology, the "HaiChengWen integrated comprehensive economic circle" is of great significance to the construction of the economic of Haikou City and is one of the foundations to build "Pilot Free Trade Zone(Port)"

⁽Official website of The People's Government of Hainan Province. 2016. < http://www.hainan.gov.cn/zxtadata-7277.html>).



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Figure 27: Urban Spatial Governance Structure of Hainan Province (Source: Zhang Bing, Hu Yaowen.2017, pp.19-23)

The south depends upon the tourism economic circle of Sanya, Lingya, Ledong and Baoting cities and counties, concentrates on the advancement of tourism, marine technology, and tropical high-efficiency agriculture, which is positioned as an international tropical coastal scenic tourist city. The east is centered on Qionghai and Boao cities, develops tourism, exhibition, medical and health industries, and is arrayed as a platform for international economic cooperation and cultural exchanges as well as a national public diplomatic base. The western region is centered on Danzhou-Yangpu urban agglomeration that prioritizes the exploitation of shipping logistics, oil and gas industry as well as marine fishery, which is managed to build an international shipping hub, logistics center and national strategic energy reserve base. Last but not the least, the central region contains Baisha, Wuzhishan and Qiongzhong counties to boost eco-tourism, tropical ecological agroforestry and the construction of a tropical rainforest national park, considering it as an ecological core protected zone (Sun Hui. 2018, pp.21).

Delineation of ecological red line and ecological function area

In accordance with "Hainan Province Comprehensive Planning", the control objectives of the ecological protection and resource consumption took hold, in parallel with the ecological red line to preserve the environment protection minimum threshold (see Figure 28). Broadly, it was determined that the area of the ecological red line in the land area reached 11,535 square kilometers, accounting for 33.6% of the total land area of the province, and the total area of the ecological red line area of the cological protection reached 3021.1 square kilometers, which accounted for 12.7% of the coastal water area, while the protection scopes of basic cultivated land, basic farmland (see Figure 29) and woodland (see Figure 30) were also set up, all of which were divided into multiple functional zones (see Table 13).



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Figure 28: Ecological Spatial Governance Structure Plan of Hainan Province (Source: Zhang Bing, Hu Yaowen.2017, pp.19-23)



Figure 29: Basic Farmland Control Line Plan of Hainan province (Source: Zhang Bing, Hu Yaowen.2017, pp.19-23)



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Figure 30: Woodland Control Line Plan of Hainan Province (Source: Zhang Bing, Hu Yaowen.2017, pp.19-23)

| | 2020 | | 2030 | |
|-----------------------------|---------------------------------------|---------------------------------|---------------------------------------|------------------------------------|
| Type of function zone | Index area of each functional area | Proportion of land space in the | Index area of each functional area | Proportion of land space in the |
| | (square kilometers) | province | (square kilometers) | province |
| First-level ecological | 11535 | 33.60% | 11535 | 33.60% |
| function zone ¹³ | | | | |
| Second-level ecological | | | | |
| function zone ¹⁴ | 15984 | 46.40% | 15984 | 46.40% |
| Development function | 3571 | 10.40% | 3699 | 10.80% |
| zone | | | | |
| Other use of lands | 3309 | 9.60% | 3181 | 9.20% |
| Total(Land+Ocean) | 34399 | 100.00% | 34399 | 100.00% |

Table 13: Summary of various function zones in Hainan Province (Source: Information for Deciders Magazine. 2015, pp.18-19)

A standardized and efficient approval process was developed

Hainan Provincial Government has initiated a "multiple-plans integration" reform leading group with fully participating in the whole process from planning, review to revision, simultaneously set upon an expert committee to examine the "multiple-plans integration" agenda of each city and county whether it is consistent to "Hainan Comprehensive Planning",

¹³ First-level ecological function zone - The ecological red line area : refers to the area where the ecological protection red line is strictly controlled and rigidly restricted.

¹⁴ Second-level ecological function zone: Restricted by the "Hainan Comprehensive Planning", refine the layout of land such as basic farmland, woodland, general cultivated land, garden land, etc.





furthermore it is requested to be revised and improved within the appropriate scope (Hu Yaowen, Yin Qiang.2016, pp.55-62). Ultimately, the provincial "multiple-plans integration" reform leading group assesses and approves one by one, which is advantageous to the efficiency of administrative approval and the project implementation.

The limitations of the reform

The challenge in distinguishing the planning priorities of different sectors

The preparations of the urban master plan and land-use master plan have been proposed in Hainan Province to coordinate with each other though, the successive problems are exposed. In general, the post-planning plans should take the pre-planning plans that are coordinated and approved as paradigms, instead, the former ones need to be revised individually owing to the changes in objective conditions, and other plans which fail to be amended belonging to different sectors concurrently (Shen Chi.2015, pp.17-19). This is the challenge that Hainan Province obligates to settle, the integration of main plans is achieved nonetheless, the interventions of reallocation of interests and authorities from different departments are not embodied in the reform. Resulting from this circumstance, it frequently generates competition for sectoral interests and planning power among various authorities, making it reluctant to compromise, collaborate and integrate among different sectors, which has an adverse impact on the effectiveness of "multiple-plans integration" implementation.

Insufficient integration of planning content

This problem is primarily embodied in two aspects, one of which is that the boundaries of different types of planning are obscure, and the other as a result of the incoherent planning period.

The national economic and social development plan is a plan that centers on economic and social development at the macro level, while urban master plan and land-use master plan are relatively sectoral plans, compared with the former that have control and implementation characteristics. It is an acute difficulty of how to achieve macro-planning and meso-planning coordination that requires to be addressed. Firstly, when determining the specific preparation and management, it is inevitable to consider the hierarchical relationship between meso-planning and macro-planning, the latter is obligated to take both the overall factors, the requirements of micro-planning development and the issues of various planning attributes into account (Cui Xufeng, Wang Zhenzhen.2018, pp.34-39). For example, the main functional area plan and the industrial plan are parts of the national economic and social development plan, while the land-use master plan and urban master plan are spatial governance and binding planning. Their status and relationships need to be defined. In view of the fact that the natural resources department has been endowed a comprehensive planning authority in 2018, it is required to take the responsibility of protecting all types of spatial resources, optimize the allocation of resources, whilst form a new spatial development pattern that is coordinated by economic development, natural resources and environmental protection.

As mentioned in Table 8 above, the national economic and social development plan is a programmatic plan, and the planning period is generally 5 years, the urban master plan is a longterm arrangement for urban development and construction, its planning period is relatively long, generally 20 years. While the land-use master plan is based on the principle of protecting cultivated land and the rational use of land, of which the planning period is generally 15 years (Cui Xufeng, Wang Zhenzhen.2018, pp.34-39). In the new spatial planning mechanism of Hainan Province, the terms of the urban master plan and the land-use master plan are unified to 10 years



in the first hierarchy in which the national economic and social development plan is also included, which is prepared in every 5 years. This is another issue that Hainan Province requires to consider. Is it possible to integrate the 3 plans with different terms in the same hierarchy or to exclude the national economic and social development plan to achieve fully unitary rapidly?

The lack of legal norms

Although the "multiple-plans integration" spatial planning mechanism was established in Hainan Province to resolve existing planning contradictions, regarded as the regulations and guidance documents promulgated by the government, but has not yet issued relevant laws to underpin its implementation. Without the support and constraints of the law, it is difficult to guarantee the stability and effectiveness of the "multiple-plans integration" reform and implementation.

In China's current planning system, the main body, legal basis and legal status of each plan are different. The development plan is based on the Constitution, which is prepared and implemented by the development and reform department and approved by the people's congress at the same level. The urban planning is prepared and implemented by the construction department according to the Urban and Rural Planning Law. After deliberation by the people's congress at this level, it is reported to the people's government at the higher level or the State Council for approval; The land planning is prepared and implemented by the land and resources department according to the Land Administration Law. After review by the people's congress at the same level, it is reported to the provincial people's government or the State Council for approval; the environmental protection plan is organized by the environmental protection department according to the provisions of the Environmental Protection Law, which will be approved and implemented by the people's government st the same level (Chen Wen, Yan Dongsheng and Sun Wei. 2015, pp.17-21).

The differences in the provisions of the various planning laws have resulted in different effects. In terms of the development plan, the legal status is the highest, but the compulsory is low and there is no corresponding legal and policy basis except the constitution.

After the establishment of the Ministry of Natural Resource, and the formulation of the legal status of spatial planning at the national level, it is necessary to introduce relevant laws to support the implementation of the "multiple-plans integration" spatial planning mechanism at the provincial level.

The outcomes of spatial planning reforms in China at the provincial level are manifested through the trajectory and cases analysis, in chapter five, the "multiple-plans integration" reform would be explored in-depth at the county-level, from which, a systemic reform process would be presented from the national level, provincial level to county-level, and a comprehensive cognition about the mutual influence amid the central and the local to the reconstruction of China's territorial spatial planning system.



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Chapter 5

CASESTUDIES: KAIHUA COUNTY AND YUDU COUNTY



This chapter, together with the last part of chapter 4, is the core of the research and analysis to explore and interpret the influence of China's spatial planning system reform on local and provincial levels respectively. Different from the study of Shanghai Municipality and Hainan Province, at the local level, the qualitative method is implemented in this chapter. The semi-structured interviews of six stakeholders who are public actors by the telephone are the main method to undertake regarding questions about the process, effectiveness and limitations of the reform in these two counties in three hours and a half in total, both of which were selected from 28 "multiple-plans integration" pilot cities in 2014, furthermore, it is worth noting that due to the spatial planning reform is dominant by the government at all levels, hence, the public stakeholders of case studies are interviewed mainly so that we could gain a better understanding of spatial planning reforms in these two counties by further discourse.

First, the current status of spatial planning in Yudu County and Kaihua County with their problems and reasons are analyzed individually, and the necessity of "multiple-plans integration" is expounded. Second, through telephone interviews with stakeholders of the two counties, the implementation of "multiple-plans integration" in Yudu County and Kaihua County are discussed separately, as well as the achievements and deficiencies after interventions. After the elaboration of two case studies, the comprehensive condition of the spatial planning system of which would be manifested, and the discourse and comparison are further conferred in the next chapter.

Yudu County is a county under the jurisdiction of Ganzhou City, Jiangxi Province. The reasons why select Yudu County as one of the cases studies are that Yudu County carried out the "multiple-plans integration" spatial planning reform in 2014, and Jiangxi Province was also a pilot province of the "Provincial Spatial Planning Pilot Program" in 2016, as a province that has conducted spatial planning pilots at the provincial and local levels, the research on the spatial planning reform of Yudu County explores whether the reform experience of Yudu County could be applied to other counties and cities, which contributes to establishing an integrated provincial spatial planning system. Furthermore, Jiangxi Province is also the author's hometown, it is more convenient to communicate with the stakeholders.

Kaihua County is a county under the jurisdiction of Quzhou City, Zhejiang Province. There are several reasons that Kaihua County is chosen, firstly, the condition in Zhejiang Province is similar to that in Jiangxi Province, both of which have conducted spatial planning pilots at the provincial and local levels. Secondly, the "Spatial Planning in Kaihua County (2016-2030)", as the first county-level spatial plan approved in the country, which means that the "multiple-plans integration" pilot project of Kaihua County from the exploration stage to the implementation stage. It is obvious that this progress promotes the development of the spatial planning system in Zhejiang Province, which could be used as a reference for more counties.

In terms of economic conditions, the annual GDP of the former is almost 2.5 times than the latter, in 2019 the GDP of Zhejiang Province was about 6 trillion yuan (\notin 800 billion), an increase of 6.8% over the previous year, and Jiangxi Province was 2.4 trillion yuan (\notin 320 billion), an increase of 8.0% over the previous year (Official website of The Central Government.

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5.1 The analysis of methodology in Yudu County

In this case study, four stakeholders were invited to take the interview - Director Liu from the Local Development and Reform Commission in Yudu County, Planner Li from the Housing and Urban-Rural Development Bureau, Planner Liu from the Land and Resources Bureau, Expert Yuan from the Environmental Protection Bureau. All of them are the main stakeholders and members who conduct and participate in the "multiple-plans integration" agenda in Yudu County.

Because of the COVID-19 epidemic, this interview would be held as a semi-structured (semiopen) interview by telephone (two hours in total), which makes the author could express their opinions, guide and ask questions to the interviewees during the interview, this encourages them to give more useful information about spatial planning agenda in Yudu County, such as their opinions toward limitations of the reform. Plus, the structured part of semi-structured interviews provides the author with reliable, comparable data as well.

Before the interview, the author has read many essays and journals relevant to the spatial planning reform at the local level and was provided with the official document about the spatial planning agenda in Yudu County, which is conducive to understand fundamentally the condition of the reform in Yudu County and propose and arrange the questions that are useful to analyze comprehensively the case. Here are the questions that were prepared for the interview (see Table 14).

Questions

1. What are the main directions that "multiple-plans integration" work was conducted at the beginning of Yudu County?

2. What changes did it bring compared to the past? And what problems and challenges remained?

3. What are the responsibilities of the "multiple-plans integration" reform leadership group in Yudu County, which is the temporary or perpetuated institution?

4. How does the "multiple-plans integration" reform solve the conflicts and contradictions between the original plans as well as the planning sectors?

5. Have the problems of connection and coordination between the urban-rural master plan and the land-use master plan been addressed?

6. Does the "multiple-plans integration" reform have a positive impact on the ecological environment?

7. Is public participation in planning and decision-making promoted? Government information is transparent or not?

Table 14: The questions prepared for the interview in Yudu County (Author's own)

The following elaboration and analysis would be based on the above questions and are organized according to the interview contents.

5.2 Yudu County

5.2.1 The introduction of Yudu County

Yudu County is located in the south of Jiangxi Province and east of Ganzhou City. With a total area of 2893 square kilometers, it is a type II big city that has jurisdiction over 9 towns and 14 townships (see Figure 31), with a total population of 1.115 million (2017), and an urbanization



rate of 48.98%. It is the only county in Ganzhou City with a population of over 1 million. Yudu County has not only a large population and abundant labor resources but also has economic advantage (Official website of The People's Government of Yudu County.

<http://www.yudu.gov.cn/c100058/list3.shtml>). It achieved a GDP of 23.74 billion yuan (€3.17 billion) in 2018 (Official website of The People's Government of Yudu County.2019.

<http://www.yudu.gov.cn/c100033/2019/03/08/content_1fe890f6ea4e44fd83293a6149421644.s html>).



Figure 31: The location of Yudu County (Source: Google Map, doctoroftcm)

Yudu County is rich in natural resources. River Gongshui lies in the county's watershed area of more than 500 square kilometers, which crosses the central urban area of Yudu County (see Figure 31). There are many types of minerals, tungsten, silver, lead and zinc are relatively concentrated in the county. Hematite is an advantageous mineral in the country and the province. And the forest coverage rate is over 70%. Luotianyan Forest Park, Pingshan Alpine Pasture, and Gongjiang Scenic Reserve are important ecological functional zones (Official website of The People's Government of Yudu County.

<http://www.yudu.gov.cn/c100058/list3.shtml>).

On the other hand, Yudu County's economic and social development has sufficient policy support. It has successively obtained a number of pilot reform issues such as "multiple-plans integration" pilot, public hospital reform pilot, e-commerce in rural area pilot, and agricultural fund integration pilot. In 2015, the "Overall Development Plan of Ruijin City, Xingguo County and Yudu county in the Economic Revitalization Pilot Zone" was officially approved by the National Development and Reform Commission (see Figure 32). The pilot zone covers Ruijin, Xingguo and Yudu counties (cities), with a total population of approximately 2.3 million people. The planning is to build the three counties (cities) into a special economic zone in Jiangxi Province (People Net. 2015. <<u>http://politics.people.com.cn/n/2015/0324/c70731-26739114.html</u>>).



 Видина
 Колон

 Колон
 Колон

 Калан
 Колон

Figure 32: The location map for economic revitalization of Ruijin City, Xingguo County, Yudu County (Source: Souhu Net. 2019. https://www.sohu.com/a/311157375_727432)

Combined with geographical location characteristics and policy advantages, Yudu County proposed the strategic positioning: build the national tourism and cultural base, the national metal industry base, the national green energy and new energy industry base, the regional transportation hub, and trade logistics center and took the county center as the core economic circle to promote the county's economic development.

5.2.2 The spatial planning tradition before the reform in Yudu County

As mentioned before, China's spatial planning system follows the hierarchy, which means that the functions of the lower administrations are the decompositions of the higher, forming the "top-down" model. Hence, in accordance with the corresponding sectors at the national level, the Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau and other departments are established in Yudu County to correspond to the National Development and Reform Commission, the Ministry of Housing, Urban-Rural Development, the Ministry of Land and Resources, the Ministry of Environmental Protection respectively to prepare various spatial plans, which guide local spatial planning development.

• The main planning sectors in Yudu County

Spatial resources are managed and allocated by the Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau in Yudu County to conform their respective statutory responsibilities, whilst to prepare various spatial plans for this region according to relevant laws, regulations or higher-level plannings, which were detailed by Director Liu of the Local Development and Reform Commission in Yudu County.



The powers of the Local Development and Reform Commission are mainly embodied in regional reform, development and major strategic objectives, covering economic development, urban and rural construction and ecological construction. Housing and Urban-Rural Development Bureau focuses on population size, urbanization rates, land use in urban planning areas and central urban areas. Land and Resources Bureau carries out the overall layout of the land in the region, concentrating on the proportional relationship among agricultural land, construction land and unused land to ensure the balance between the occupation of cultivated land and compensation (Official website of Jiangxi Government Service of Yudu County.

<http://gzyd.jxzwfww.gov.cn/jxzw/frbs/getFrbsIndex.do?webId=106&orgId=&themeId=BA940E87 C46C4BCCBF4A610C98E8C182>). According to the development goals determined by the national economic and social development plan, the Environmental Protection Bureau formulates corresponding environmental quality and pollution reduction targets, however, the implementation is insufficient.

The following table arranged from the interview with Planner Li from the Housing and Urban-Rural Development Bureau, Planner Liu from the Land and Resources Bureau, Expert Yuan from the Environmental Protection Bureau compares the authorities of the above departments (see Table 15).





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| Departments | Main functions | Planning Goals | Indicator system | Limitations |
|---|---|---|--|--|
| The Local Development and Reform Commission | Formulate and organize the implementation of the national economic and social development plans, major construction projects and productivity distribution | Efficient and coordinated development | Cover multiple indicators such as economic and social development, urban and rural construction, and ecological construction | Inadequate attention to specific constructions, which made it difficult for projects to implement |
| Housing and Urban- Rural Development Bureau | Formulate policies, rules and regulations for urban and rural planning, and supervise implementation | Avoid disorderly development and construction | Non-binding indicators, generally based on social development goals, including urbanization rate, population size, construction land size, per capita construction land, etc. | Lack of overall consideration of the balance of land occupation and compensation, leading to the cultivated land is occupied by urban construction |
| Land and Resources Bureau | Protect and rationally use natural resources such as land and mineral resources; optimize land resource allocation | Control the use of urban and rural land and protect cultivated land | Total indicators (binding indicators in cultivated land, basic farmland protection areas, etc.) 2.Incremental indicators (binding indicators are the scale of newly- occupied cultivated land). 3.Efficiency indicator (per capita urban industrial and mining land is a binding indicator) | Inadequate consideration of economic and social development factors such as urbanization, affecting the structural integrity of urban layout |
| Environmental Protection Bureau | Organize the preparation of environmental functional zoning | Pollution control of urban and rural construction projects, protect ecology | Emission reduction rate of major pollutants | Lack of spatial control for construction project |

Table 15: Main planning functions and planning indicator system of each department(Source: Author's own)



In view of different planning responsibilities and principles, each department adopts different planning and governance control regulations to ensure that the plans are achieved.

For instance, the Local Development and Reform Commission adopts the "the project proposal"¹⁵ for governance. Land and Resources Bureau focuses on the project land preexamination and land use right approval. Housing and Urban-Rural Development Bureau follows the "one book, two certificates"¹⁶ to control the development intensity of the project (Zhou Jinsong.2007, pp.2-7) (see Table 16).

| Sectors | Authorities | Main administrative governance methods |
|--|------------------------------|---|
| The Local Development and Reform Commission | The project approval | "The project proposal" |
| Housing and Urban-Rural Development Bureau | Construction land permit | "one book, two certificate" |
| Land and Resources Bureau | Land classification and land | The project land pre-examination and |
| Environmental Protection Bureau | Conservation of ecosystem | Approval of environment impact |
| | conservation of ecosystem | assessment report |

Table 16: The authorities and governance methods of each department(Source: Hu Chao. 2019, pp.16)

• The main spatial plannings in Yudu County

Based on their respective functions and objectives, the sectors have formulated all kinds of long-term development and special spatial plans to govern the sustainable and sound economic and social development of Yudu County. Such as the national economic and social development plan, urban and rural master plan, land-use master plan, ecological environmental protection plan, etc. (see Table 17), which was introduced by Director Liu from the Local Development and Reform Commission.

¹⁵ "The project proposal" is submitted by the project preparation unit or project legal person on a specific new construction or expansion project based on national economic development, national and local medium and long-term planning, industrial policies, productivity layout, domestic and foreign markets, and local internal and external conditions. The proposed document is a general framework for the proposed project. It requires to discuss the necessity and possibility of project establishment from a macro perspective.

¹⁶ "One book and two certificates" refers to the submission of the construction project site approval, construction land planning permit, and construction project planning permit approved and issued by the urban planning administrative department according to the Urban and Rural Planning Law.





| Leading sectors | Main Plannings | objectives |
|--|---|---|
| The Local Development and Reform Commission | "Outline of the 13th Five-Year Plan" of Yudu County "Medium and Long-term Development Plan of Yudu Industrial zone (2013-2020)" | Promote the county's economic, social and industrial development and optimize the layout of leading industries |
| Housing and Urban-Rural Development Bureau | "Urban-rural Master Plan of Yudu County (2013-2030)" | Guide the urban construction and spatial layout of Yudu County |
| Land and Resources Bureau | "Land-use master Plan of Yudu County (2006-2020)" | Strict protection of cultivated land and basic farmland to achieve intensive and efficient land use |
| Environmental Protection Bureau | "Ecological county construction plan of Yudu County (2012-2020)" | Implement ecological civilization construction |
| Other departments | "Water resources plan of Yudu County (2012-2020)" "Transportation plan of Yudu County (2013-2020)" | Water resources protection and optimized traffic layout |

Table 17: Main Spatial Planning of Yudu County (Source: Author's own)

It is obvious that as a result of the different responsibilities and planning goals of each sector, there are differences in the content, technical standards and spatial control requirements of each plan (see Table 18). For example, the urban-rural master plan delineates the scope of restricted and appropriate construction areas depended on the evaluation of land suitability. However, the land-use master plan delineates permitted construction areas, restricted construction areas, and prohibited construction areas according to relevant standards. In the original spatial planning system, different plans possessed isolated categories and standards, and the scopes of which are not coherent.





| Major planning types | Legal and regulatory basis | Spatial control requirements |
|---|--|---|
| The national economic and social development plan | Outline of National Economic and Social Development Planning (Every five years) | Optimization development zone, key development zone, restricted development zone, prohibited development zone |
| Urban and rural master plan | Urban and Rural Planning Law of the People's Republic of China (2007) | The scopes of the restricted construction zone and appropriate construction zone are defined in the urban master plan |
| Land-use master plan | Law of the People's Republic of China on Land Administration (2005) | Permitted construction areas, restricted construction areas, and prohibited construction areas |
| Ecological and environmental protection plan | Environmental Protection Law of the People's Republic of China (2005) | Optimization of access areas, key access areas, restricted development areas, and no entry areas |

Table 18: Comparison of main spatial planning types in Yudu County(Source: Hu Chao. 2019, pp.15)

5.2.3 The challenges and issues brought by the original spatial planning in Yudu County

In this part, four stakeholders were involved in discussion one by one, they shared opinions and concerns in their fields with the author from urban construction, land use, ecological environment and approval system.

• The contradiction between urban construction land and agricultural land was prominent

In recent years, Planner Li from the Housing and Urban-Rural Development Bureau said, as a result of urban expansion, the urban space of Yudu County has been expanding continuously, whilst many industrial zones and new districts were formed. Gradually, the natural landscape and basic farmland have been occupied without corresponding protective measures, the pressure on cultivated land and ecological protection has increased, which has affected the balance and high-quality development of Yudu County. According to statistics from "Multiple-plans integration" Agenda Plan of Yudu County, from 2006 to 2012, the increased construction land area in Yudu County was about 720.63 hectares, of which about 463.15 hectares of agricultural land was occupied, accounting for 64.27%, of which 30.22% was cultivated land (see Table 19).



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| Year | Increased construction land area (Hectares) | Occupied area of agricultural land (Hectares) | Occupied area of cultivated land (Hectares) |
|-------|--|--|--|
| 2006 | 18.73 | 18.73 | 5.41 |
| 2007 | 43.82 | 22.31 | 20.63 |
| 2008 | 84.95 | 46.96 | 26.62 |
| 2009 | 64.20 | 25.90 | 19.02 |
| 2010 | 145.42 | 98.22 | 39.82 |
| 2011 | 236.68 | 171.29 | 56.98 |
| 2012 | 126.83 | 79.74 | 49.29 |
| Total | 720.63 | 463.15 | 217.77 |

Table 19: Increased construction land area of Yudu County from 2006 to 2012(Source: Official document. 2015)

Even though the "Land-use master Plan of Yudu County (2006-2020)" was implemented to reduce the increase in the construction area, Planner Liu from the Land and Resources Bureau mentioned, with the advancement of the urbanization process and impetuously pursue the economic development brought about by large-scale construction in Yudu County, the non-agricultural construction land in future still occupied a large amount of cultivated land (see Table 20).

| Land-use type | Short-term planning(2015-2020) (Hectares) | Long-term planning(2021-2030) (Hectares) |
|-----------------------|--|---|
| Urban land | 3435.59 | 5681.81 |
| Town land | 924.00 | 1423.46 |
| Village land | 212.00 | 215.00 |
| Industrial land | 206.00 | 502.00 |
| Transportation land | 589.00 | 1087.00 |
| Scenic tourism land | 270.00 | 310.00 |
| Water facilities land | 315.00 | 601.00 |
| Total | 5951.59 | 9820.27 |

Table 20: Prediction of cultivated land area occupied by non-agricultural construction land in Yudu County(Source: Official document. 2015)

It is denoted from the table that under the condition that the cultivated land area would be decreasing in future planning, Yudu County's urban construction still demands more cultivated land for economic development.

It is worth noting that the planned area of industrial land increased the most, nearly 2.5 times, which results from the implementation of "Overall Development Plan of Ruijin City, Xingguo County and Yudu county in the Economic Revitalization Pilot Zone" in Yudu County. This plan focuses on light industrial development, such as the electrical manufacturing and pharmaceutical industry, the cultural tourism industry, etc.

The cause of this situation is mainly embodied in two aspects, Planner Liu concluded. First, due to the differences in the planning terms, the "13th Five-Year Plan" for the national economic and social development and the urban-rural master plan were not completed until 2013 when the land-use master plan was prepared. In consequence, major projects such as water conservancy,



transportation, industry, and environmental protection infrastructure were not governed. Whilst, the deadline for the land-use master plan and the national economic and social development plan was 2020, and only the urban master plan continued to 2030.

Second, occasioned by the mutual constraints and even conflicts amidst plans, this makes it difficult for many lands to be used efficiently, which means that there are spatial delineation gaps of lands among plans. According to statistics from "Multiple-plans integration" Agenda Plan of Yudu County, as of the end of 2016, the spatial delineation gaps of lands between the urban-rural master plan and land-use master plan in the central urban area of Yudu County is 3.27 square kilometers, which makes up 12.4% of the total planned urban land area. As a result, many projects failed to be approved owing to the conflicts among the plans, these projects had to be adjusted through regulations and policies to promote the implementation, which dramatically reduced the efficiency of land resource.

• The ecological environment was at stake

Expert Yuan from the Environmental Protection Bureau said, according to the results of the third remote sensing survey of soil erosion in Jiangxi Province (2005), the soil erosion area was 883.5 square kilometers in Yudu County, of which the extreme intensity erosion area was 126.6 square kilometers and the severe erosion area was 66.3 square kilometers. Annual soil erosion amounted to 324.9 tons (Qi Shuhua, Jiang Meixin and Yu Xiubo. 2011, pp.7-13). Although the scale of soil erosion in Yudu County has been mitigated after years of treatment, the pressure on the ecological environment is still relatively large (see Figure 33).



Figure 33: The soil erosion modulus for every county in Jiangxi Province in 1995 and 2005¹⁷ (Source: Qi Shuhua, Jiang Meixin and Yu Xiubo.2011, pp.10)

Expert Yuan from the Environmental Protection Bureau concluded the reasons, on the one hand, from the perspective of natural factors, the climate type of Yudu County is a subtropical monsoon climate with rich precipitation, and the soil types in the territory are mostly red soil with

¹⁷ The red circle is Yudu County



increasingly prominent.

high quartz content and loose structure, which result in soil erosion frequently (Huang Guoqin, Li Wenhua. 2006, pp.117-119).

On the other hand, the deficiency of ecological and environmental planning is the leading cause. In 2018, the forest coverage rates of Jiangxi Province and Yudu County were 63.1% and 71.68%, respectively (Official Website of The People's Government of Jiangxi Province.2019. http://www.jiangxi.gov.cn/art/2019/3/12/art_396_665576.html).

Nevertheless, the environmental protection sector has not been valorized by governments at all levels for a long time, the ecological and environmental protection plan lacks binding and mandatory measures, making it difficult to achieve effective protection for the environment. Furthermore, the construction of environmental governance facilities in Yudu County is insufficient, the construction of sewage treatment facilities have not been covered in the county, some of which fail not to demand environmental protection requirements, and deforestation occurs occasionally due to the lack of supervision, rural environmental problems are becoming

• Inefficient approval for construction projects

First, project approval procedures are complicated. According to the Director Liu from the Local Development and Reform Commission, the approval process of the investment project (approval) of Yudu County-level authorized enterprises is taken as an example. From project establishment to construction, more than 20 approval documents from about 17 sectors such as The Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau are required, which takes 146 working days approximately to complete it. Some large-scale projects involve submitting applications that require to be reviewed from the county, city, province, state, etc. It takes a year or even a long time to complete the entire approval process.

Second, the project approval process is not standardized and systematic. Each sector demands individual approval in accordance with its own process and responsibility requirements without a coordination mechanism. For example, in the project establishment stage, the site selection review work of the Housing and Urban-Rural Development Bureau and the land review work of the Land and Resources Bureau overlap in operation, resulting in low administrative efficiency between the two sectors.

Last but not least, the approval authority is somewhat centralized. There are manifolds administrative review and approval powers for projects at higher-level functional sectors, and lower-level governments could only execute orders from higher-level governments without considering actual conditions, resulting in some plans that do not conform to the local.

5.2.4 The necessity of spatial planning reform in Yudu County

After dialogues with the stakeholders, the challenges and problems of the spatial planning system were analyzed to explore the necessity and reasons behind it.

• Planning sectors demand to be coordinated

From the challenges brought by the spatial planning system before the reform in Yudu County, it could exemplify that there have been many limitations in various plans which result from the functions of planning sectors at all levels that have overlapped, these departments prepare manifold redundant plans that embody sectoral interests. The same level planning resists a cohesive mechanism out of their benefits, which is not conducive to the comprehensive and



coordinated development of the county. It is concluded that various planning authorities, review and approval agencies, implementation bodies and evaluation institutions are different (see Table 21). For example, Yudu County's urban master plan and land-use master plan are difficult to coordinate. The same plot of land could be used for different purposes in the urban master plan and land-use master plan, resulting in conflicting project approvals.

| | | The national | | | Ecological and protection | environmental n planning |
|---------------|----------------------|---|---|---|--|---|
| Planning type | | economic and social development planning | Urban and rural master planning | Land-use master planning | Environmental protection planning | Eco- environmental Function Zone Planning |
| Governance | Leading sectors | The Local Development and Reform Commission | Housing and Urban-Rural Development Bureau | Land and Resources Bureau | Environmental P | rotection Bureau |
| | Planning nature | Economic Synthesis | Spatial synthesis | Spatial project | Environment project | Spatial project |
| | Preparation basis | Higher level national economic and social development plans | The national economic and social development planning | Higher level land-use planning | Higher level environmental protection plan; National level economic and social development plan | Higher level Eco- environmental Function Zone Planning |
| Preparation | Legal basis | Constitution; Outline of National Economic and Social Development Planning | Urban and Rural Planning Law of the People's Republic of China | Law of the People's Republic of China on Land Administration | Environmental Protection Law of the People's Republic of China | Ecological function zoning technology planning |
| | Objectives | Determine development goals and project scale; overall deployment of industrial development and urbanization | Emphasize the layout and construction of urban space | Emphasis on the protection of cultivated land; protection of ecological environment land; total use of land and annual indicators | Set targets for environmental quality and pollution control; arrange major environmental protection projects | Divide the space from the perspective of the ecosystem, identify the key ecological functions of each region |
| | Planning terms | 5 years | 20 years | 10-15 years | 5 years | 10-15 years |



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| Approval | Approval Institutions | Local People's Congress | Higher level government | State Council, Higher level government | Local government | Local People's Congress |
|---------------------|--------------------------|---|---|---|--|----------------------------|
| | Approval content | Development condition and indicator system | Population and land size | Cultivated land protection and land-use indicators | Pollution reduction target and index system | Ecological function zoning |
| | indicators | Binding | Binding | Binding | Binding | Binding |
| Implemen- tation | Plannings | Annual government work report | Short-term construction planning | Annual Land - use Indicator | Special planning | / |
| | Institutions | Local People's Congress | Local People's Congress; Higher level government | Higher level government | Local government | Local People's Congress |
| Control | Methods | Mid-term assessment | Evaluation report, planning revision | Evaluation report | Mid-term assessment, annual environmental quality report | / |
| | Technology | Statistics Data | Updated Status survey | Satellite Remote Sensing; Law Enforcement | Environmental monitoring | Investigation |

Table 21: Analysis and comparison of various types of spatial planning in Yudu County(Source: Hu Chao. 2019, pp.21)

Due to the differences in governance, preparation, approval, implementation and control of various plans in Yudu County, there would be many contradictions and disadvantages in spatial governance. Hence, one of the objectives of spatial planning reform in Yudu County is to coordinate planning conflicts and carry out "multiple-plans integration" from the top design.

• Plans demand to be coherent

The problem of coherence in the spatial planning of Yudu County has to be solved to facilitate the implementation of the "multiple-plans integration" reform. The problem is primarily embodied in the following two aspects.

Incoherent planning periods. The planning deadlines, planning base years, and planning target years of various types of plans are all different, resulting in incoherent basic data on the status quo of each planning. These data fail to be shared between sectors. The land-use master plan in Yudu County was prepared ahead of other plans, as a result, the economic and social development condition was insufficiently estimated by the plan, and the land supply was difficult to meet the development demand. For example, At the time of the preparation of the land-use master plan, GDP was expected to reach 6 billion yuan (€ 800 million) in 2010 and 16.7 billion yuan (€ 2.23 billion) in 2020. In fact, the GDP of Yudu County exceeded 10 billion yuan (€ 1.33 billion) in 2010 and reached 14 billion yuan (€ 1.87 billion) in 2013 (Official website of The People's Government of Yudu County. 2014.



<http://www.yudu.gov.cn/c100033/2014/12/25/content_f9e89edfa937475fbf1bcaf886823362.sh tml>).

Incoherent planning objectives. To converge the original intention of various plans, each has a planning target indicator system. The national economic and social development plan indicator system involves economic development, science and technology education, resources and environment, and people's living condition indicators, 28 detailed indicators included; the main indicators of urban and rural master plan involve the population within the three administrative areas of the entire administrative region, urban planning area, and central urban area, area, construction land scale and other indicators, 15 detailed indicators approximately; the land-use master plan indicators mainly include total indicators, incremental control indicators, about 12 detailed indicators; ecological environmental protection plan consist of the total emission control, environmental quality control and ecological red line protection area indicators, about 8 detailed indicators. These planning indicators are repeated in various plans (see Table 22).

| Number of indicators overlap | The national economic and social development plan | Urban and rural master plan | Land-use master plan | Ecological and environmental protection plan |
|---|---|--------------------------------|----------------------|--|
| The national economic and social development plan | / | 4 | 3 | 2 |
| Urban and rural master plan | 4 | / | 3 | 2 |
| Land-use master plan | 2 | 3 | / | 2 |
| Ecological and environmental protection plan | 2 | 2 | 2 | / |

Table 22: The Number of indicators overlap of spatial planning in Yudu County(Source: Hu Chao. 2019, pp.21)

• The informal institutions are necessary for planning reform

The above list is all about the need for the formal institutional reform, which refers to administrative aspect of spatial planning. Nevertheless, the formal and informal institutions could both determine planning practice (Mario, Panagiotis and Hans. 2014, pp.8), the latter primarily comprises social involvement and public-private participation, etc, which means society and public participation play an irreplaceable role in spatial planning.

The lack of social involvement is another issue in China's spatial planning. Local governments used planning revision as a policy tool to increase fiscal revenue from land transfers without a transparent decision-making process, which led to the unlimited expansion of urban boundaries and the occupation of a large amount of cultivated land, and seriously weakened the authority of planning. Likewise, since 2006, the land-use master plan of Yudu County had been reviewed substantially every two years, one of the reason is that local government was keen to increase fiscal revenue and disregarded the scientific nature of the plan.



On the other hand, due to the strong professionalism of spatial planning, it is difficult for citizens to effectively participate in the preparation of local plans, and the planning decision-making process is relatively closed under the condition. A questionnaire survey was provided to illustrate public participation in urban planning for the local people in Yudu County (see Table 23). From the results of the questionnaire, it is obvious that the public's willingness to participate in urban planning in Yudu County is strong, conversely, the public participation rate is relatively low.

| Questionnaire content | Percent(%) |
|---|------------|
| A better understanding of Yudu County urban planning | 66 |
| Satisfied with the urban planning of Yudu county | 52 |
| Know how to participate in urban planning | 18 |
| Participated in urban planning project hearings | 8 |
| Suggestions for urban planning projects | 8 |
| Interested in urban planning | 116 |
| Think that public participation in urban planning is important | 103 |



5.2.5 "Multiple-plans integration" reform in Yudu County

"Multiple-plans integration" agenda in Yudu County was interpreted by Director Liu from the Local Development and Reform Commission who provided the digital version of "Multiple-plans integration' Agenda Plan" to help the author to gain a better understanding of the reform.

Since Yudu County's original spatial planning system brought many obstacles to social and economic development, Yudu County applied to the Jiangxi Provincial Government for a pilot project of "multiple-plans integration" reform to solve the problems existing in the implementation and governance of spatial planning, which was approved by the National Development and Reform Commission in 2014.

After that, the implementation of spatial planning reform was officially launched in Yudu County, which started from four aspects: spatial management system, formal institutional reform, plans coordination, approval reform.

• Establishment of the "multiple-plans integration" Reform Leadership Group

According to the demands from the National Development and Reform Commission, Yudu County has formulated and introduced the "'multiple-plans integration' agenda plan", and established a "multiple-plans integration" Reform Leadership Group (see Figure 34), which is the precondition that implements spatial planning reform. The mayor of the Yudu County People's Government also is the deputy secretary of Yudu County CPC serves as the leader of the group, which was divided into four agenda fields: economic and social development, land use, ecological environment protection, and urban and rural construction, the senior officials of the relevant planning department is responsible for each field, to further promote the overall planning and coordination of relevant planning, and to foster the construction of "multiple-plans integration" pilot in Yudu County.



As the official guide organization of the planning agenda, the "multiple-plans integration" Reform Leadership Group coordinates other planning sectors to draft and review all kinds of planning agenda and finally submits it to the Jiangxi Provincial Government for approval.

| | 于办函〔2014〕25号 | | |
|------------------------|------------------------|-----------|-------------|
| 中共于都县委办公室 关于成立于都县"多 | 于都县人民政府办公室 规合一"试点工作 | | |
| 领导小组 | 的通知 | | |
| 各乡(镇)党委、人民政府,县引 | 各有关部门,县直(驻县)有关 | | |
| 单位: | | | |
| 为加强组织领导, 进一步推 | 动经济社会发展规划、城乡规 | | |
| 划、土地利用规划、生态环境保 | 护规划等规划的统筹协调,扎 | | |
| 实推进于都国家级"多规合一" | 试点县建设,形成一本规划、 | all I for | |
| 一张蓝图,确保高质量完成试点 | 任务,经县委、县政府研究, | A TAL | |
| 决定成立于都县"多规合一"试 | 点工作领导小组。现将领导小 | No nE | (I A |
| 组成员名单通知如下: | | 中土平和卫军力以下 | 于都具人民政府办公室 |
| 组 长:陈阳山 县 | 委副书记、县政府县长 | + 1 12 | |
| 常务副组长: 刘秋天 县 | 委常委、县政府常务副县长 | 小公主 | 2014年10月16日 |
| 副 组 长:梁敏辉 县 | 委常委、县政府副县长 | \sim | 1 出版窗 |
| 王子康 县 | 委常委、县政府副县长 | | UT IN E |
| 刘晓龙 县 | 政府副县长、贡江镇党委书记 | | |
| 成员:刘耿县 | 委办主任 | | |

Figure 34: Notice on the establishment of "multiple-plans integration" reform leadership group in Yudu County (Source: Official document. 2015)

• The construction of spatial management system

According to the different objectives by protection and development, multiple control spaces are delineated within the scope of the county, which could be summarized as "Three development and protection zones and seven spatial management areas" (see Table 24), all of which are coordinated based on the identical spatial data to form an integrated spatial management system (see Figure 35).





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| Development and protection zones | Spatial management areas | Components | Space classification criteria | |
|-------------------------------------|---|---|-----------------------------------|--|
| | | Built-up area | Built-up area | |
| Urban and village construction zone | Control areas of urban construction land | New urban construction land | Suitable area for construction | |
| | Expansion areas of urban construction land | Urban development growth boundary | Expansion of construction area | |
| | Rural construction area | Market town, central village, general village | Suitable area for construction | |
| Agricultural production | Red line area of permanent basic farmland | Basic farmland | Prohibited construction area | |
| zone | General agricultural area | General farmland, garden land, part of forest land, part of pastureland, breeding land, etc. | Restricted construction area | |
| | | Important ecological function area | Prohibited construction area | |
| | Red line area of ecological protection | Ecologically vulnerable area | | |
| Ecological protection zone | | Prohibited development area | | |
| | Ecological control area | Part of woodland, part of pastureland, land of scenic spots and facilities | Restricted construction area | |

Table 24: Spatial management and control system in Yudu County (Source: Official document. 2015)



Figure 35: Space classification of Yudu County¹⁸(Source: Official document. 2015)

The red and green parts are mainly core zones under the strict control of construction, such as mountains, woodlands, and ecological protection areas. The objective is to protect ecological and agricultural land. The blue and purple parts are the main areas that could be built in the central city or other towns and surrounding buffer zones (see Figure 36).

¹⁸ The green part is the restricted construction area, the purple part is the construction area with specific condition, the blue area is the suitable area for construction, the red part is the prohibited construction area.



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图 例
 已就区
 适宜建设区
 用利建设区
 禁止建设区

Figure 36: Space classification of Yudu County town¹⁹ (Source: Official document. 2015)

The construction area of Yudu County is primarily distributed along the river channel of the county, the restricted construction area as a buffer zone to protect the surrounding mountain and forests.

The spatial management system is coordinated by the "multiple-plans integration" reform leadership group, and the planning sectors are responsible for different spatial division elements. Housing and Urban-Rural Development Bureau focuses on the urban and village construction zone, Land and Resources Bureau concentrates on the agricultural production zone, and Environmental Protection Bureau is in charge Ecological protection zone.

These spatial divisions used the latest 1: 10000 or 1: 50000 topographic maps or remote sensing image maps of the county area as the working base map; the ArcGIS or MapGIS platform was used to build a "multiple-plans integration" planning spatial database and coordinated projection to realize the mutual conversion of spatial data of various sectors planning.

• The coherence of spatial planning

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So as to enhance the coherence of spatial planning, Yudu County has formulated the "Master Plan for the Development of Yudu County", which is considered from the perspective of coordinating the contradiction of spatial planning and integration of the objectives of spatial planning.

Firstly, initiate from 2014, the periods of major plans are conformed with each other, which include the national economic and social development plan, urban and rural master plan, landuse master plan, ecological environmental protection plan, etc. The mid-term period of these plans is set to 2020, and the long-term target year is set to 2030, especially the urban and rural master plan and land use master plan are macro layouts for regional development, the planning

¹⁹ The order from top to bottom according to the legend is: Built-up area, suitable area for construction, restricted construction area, prohibited construction area, planning boundary.



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period should not be too short to avoid problems such as insufficient infrastructure construction for basic public facilities and ecological environmental protection.

Secondly, "Master Plan for the Development of Yudu County" elaborates on the coordination amidst manifold plans on construction land layout. The layout of construction land should be adjusted in accordance with the principle of respecting legal construction land to determine the land layout, for example, to differentiate the spatial layout of land use from the urban and rural master plan and land-use master plan. The difference between the national economic and social development plan, other major plans and construction land layout demand to be convened by relevant sectors and experts to fully demonstrate and coordinate the spatial layout of construction land, the contradiction in the layout of the ecological protection red line area, permanent basic farmland protection area and construction land is considered as ecological protection land and permanent basic farmland; the small differences caused by the differences in the construction map borders are carried out and adjusted in the planning agenda.

The development goal of the "multiple-plans integration" is to promote the rational and efficient utilization of spatial resources. Based on the existing indicator system of the national economic and social development plan, land-use master plan, urban-rural master plan, and ecological environmental protection plan, whilst the conditions of Yudu County were taken into account. Four major categories of economic and social development, resource and environment protection, resource and environment utilization efficiency, and spatial development and utilization were prepared to integrate the objectives, which were divided into binding indicators and not-binding indicators (see Table 25).





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| | Indicator name | Indicator properties | Formulation basis | | |
|---|---|-------------------------|--|--|--|
| Economic and | GDP of Yudu County | Not-binding | National Economic and Social Development Plan | | |
| social development | industrial structures | Not-binding | National Economic and Social Development Plan | | |
| | Total population | Not-binding | National Economic and Social Development Plan | | |
| | Urbanization rate | Not-binding | Urban master plan | | |
| | Amount of Cultivated land | Binding | Land-use master plan | | |
| | Basic farmland protection area | Binding | Land-use master plan | | |
| | Urban and rural construction land area | Binding | Land-use master plan | | |
| Resource and environment protection | Surface water quality compliance rate | Binding | Eco-environmental protection plan | | |
| | Air quality | Binding | Eco-environmental protection plan | | |
| | Forest cover rate | Binding | Eco-environmental protection plan | | |
| | Ecological red line protection area | Binding | Eco-environmental protection plan | | |
| Resource and | Reduced water consumption per unit of industry | Binding | National Economic and Social Development Plan | | |
| environment utilization | Reduced energy consumption per unit of GDP | Binding | National Economic and Social Development Plan | | |
| efficiency | Reduced CO2 consumption per unit of GDP | Binding | National Economic and Social Development Plan | | |
| | Scale of urban construction land | Not-binding | Urban master plan | | |
| Spatial development and | Urban spatial growth boundary | Binding | Urban master plan | | |
| utilization | Urban industrial and mining land per capita | Binding | Land-use master plan | | |

Table 25: "Multiple-plans Integration" Indicator System in Yudu County
(Source: Official document. 2015)

• An integrated project approval platform was built

Considering the effective implementation of "multiple-plans integration" and the improvement of government work efficiency, Yudu County has established a "Joint Office Agenda Platform", which comprises the work responsibilities of multiple departments, and integrates approval, governance, and performance (see Figure 37).



Figure 37: The flow chart of Yudu County "multiple-plans integration" Project approval (Source: Hu Chao. 2019, pp.27)

5.2.6 The main outcomes after the reform

After the elaboration, four stakeholders talked about the changes and outcomes of their sectors work bought by the reform.

• Industrial development layout and cultivated land are optimized and redistributed

Planner Li from the Housing and Urban-Rural Development Bureau introduced that the new industrial zone of Yudu County moved into the surrounding suburbs to develop industrial economy. The area of the zone has expanded to 10.4 square kilometers, and the three pillar industries of mining, machinery and electronics have completed industrial added value of 4.4 billion yuan (\notin 572 million).

Yudu County strives to build the satellite city that is included in the core urban area of Ganzhou City and promotes the integrated development of urban and rural areas. A total of 199 new rural constructions in Yudu County are completed, and a number of characteristic towns such as Hefeng, Xiaoxi and Luojiang were built. Lingbei Town and Hefeng Town are listed as the top 100 central towns in the province.

On the other hand, various new constructions in Yudu County reduce 217.77 hectares land that transforms into arable land, and 653.39 hectares of arable land is added in total through land



remediation, which completes 40.07% of the tasks required by the plan, including 40.37 hectares of arable land by land consolidation and 613.02 hectares by land development.

• The contradiction between urban construction and land use is solved

Before the reform, the predominant contradiction among the plans was that the difference between the land-use master plan and the urban and rural master plan on land classification standards. The former is based on territorial spatial protection, and the latter is based on construction land arrangements. Planner Liu from the Land and Resources Bureau interpreted that during the "multiple-plans integration" agenda, the "Master Plan for the Development of Yudu County" elaborates on the new land classification standards that the urban and rural construction land classified by Housing and Urban-Rural Development Bureau, and Land and Resources Bureau is in charge of the non-construction land classification. The integration forms a unified land classification between urban construction and land use (see Table 26), which improves the efficiency of spatial governance and management.

| Land use classification for the land use master plan | | | | | Land use classification for the urban and rural master plan | | Integrated Land use classification | | |
|--|----------------------|------------------------------|----------------|---------|--|-------------|---------------------------------------|--------------------|---|
| F | irst class | See | cond class | Th | nird class | С | | | |
| Code | Name | Code | Name | Code | Name | o d e | Name | Code | Name |
| | | | | 1110 | Paddy field | E 2 | arable land | 1100 E20 | Paddy field / arable land |
| 1000 | Agricultural land | 1100 | arable land | 1120 | Irrigated land | | | 1120 E20 | Irrigated land / cultivated land |
| | | | | 1130 | non- irrigated farmland | | | 1130 E20 | non-irrigated farmland / Cultivated land |
| | | 1200 | garden | / | / | E 3 | Garden | 1200 E30 | Garden |
| | | 1300 Agricultural land | 00 woodland | 1310 | Woodland | E | E woodland 4 | 1310 E40 | woodland |
| | | | | 1320 | Shrub land | | | 1320 E40 | Shrub land / Woodland |
| | | | | 1330 | Other wood land | | | 1330 E40 | Other woodland |
| | | 1400 pasture | 1410 | Natural | E | nasture | 1410 E50 | Natural pasture | |
| | | 1400 | pusture | 1420 | Artificial | Ĵ | pactor c | 1420 E50 | Artificial pasture |
| | | | | 1510 | agricultural land with facilities | E | Need to be manually interpreted | 1510 E00 | Other |



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| | | | | 1520 | Rural road | E | Need to be manually interpreted | 1520 E00 | Other |
|------|----------------------|------|-------------------------------------|------|-------------------------------|------------------------------------|--|--|--|
| | | | | 1530 | Water surface | E 1 | Waters | 1530 E10 | Waters |
| | | | | 1540 | Farmland water use land | E 1 | Waters | 1540 E10 | Waters |
| | | | | 1550 | Field | E 2 | Arable land | 1550 E20 | Field / arable land |
| | | | | | | R | Residential land | 2110 R00 | Urban land / residential land |
| | | | | | | с | Land for public facilities | 2110 C00 | Urban land / public facility land |
| 2000 | Construction land | 2100 | Urban-rural construction land | 2110 | Urban construction land | М | Industrial land | 2110 M00 | Urban / industrial land |
| | | | | | | w | Storage land | 2110 W00 | Urban land / storage land |
| | | | | | | S | Road plaza | 2110 S00 | Urban land / road plaza land |
| | | | | | U | Land for municipal utilities | 2110 U00 | Urban land / municipal public facility land | |
| | | | | | | G | Green land | 2110 G00 | Urban land / green land |
| | | | | 2120 | Rural residential | E 6 1 | Village and town residential land | 2120 E61 | Rural residential land / village residential land |
| | | | | | land | E 6 2 | Land for village and town enterprises | 2120 E62 | Land for rural residential areas / village and town enterprises |
| | | | | | | E X | Reserved development land | 2120 EX0 | Village residential land reserved for development |



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2130 Mining land Е Mining land Mining land 2130 8 E80 Other construction 2140 Industrial land land / M M00 industrial land Other construction 2140 W 2140 Other Storage land W00 land / construction storage land land Other U Sanitation 2140 construction 4 facilities U40 / sanitation facilities

Table 26: Unified land classification between urban construction and land use(Source: Official document. 2015)

During the integration and cohesion, the planning indicator system was coordinated, which further optimizes the functional layout, and prioritize the protection of major infrastructure. Furthermore, spatial delineation gaps of lands in the original spatial planning were adjusted, eliminating the contradiction amidst construction land and cultivated land protection, as a result, the efficiency of land resource utilization was improved, and more space for urban development was created.

• Ecological environmental protection is valorized

As above-mentioned, Yudu County is one of the counties with serious soil erosion in Jiangxi province (see Figure 38). After the spatial governance in recent years, Expert Yuan from the Environmental Protection Bureau narrated that the momentum of the scale of soil erosion in Yudu County has been curbed, but the pressure on ecology is still relatively immense. The protection of surrounding core zones and the preservation of the ecological systems would be paid attention to in future development. Yudu County initiated the implementation of the "ecological county construction plan", among which Luojiang etcl, three townships are named "provincial ecological townships", and Huangsha Village and Jingshi township are listed as a pilot project of "beautiful village plan" nationwide. Furthermore, Yudu County vigorously promotes the construction of "forests surround the city" to enhance the convergence between core zones and buffer zones.



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Figure 38: Analysis and distribution of soil erosion in Yudu County²⁰ (Source: Official document. 2015)

• Resource and information are shared, administrative efficiency is enhanced

Director Liu from the Local Development and Reform Commission said that the "Joint Office Agenda Platform" integrated and utilized the results data of existing geographic spatial information and planning from each sector, and established an inter-sector coordination mechanism, which promoted the interconnection of information resources among sectors, while avoided contradictions among plans and sectors. Director Liu said that the project approval efficiency is faster than before by an average of one and a half months. Horizontally, governance and control requirements of various departments were coherent, which means that all information on construction projects was not isolated. When processes decision-making, it provides a scientific basis for government governance, and accelerate investment and project implementation.

5.2.7 Unresolved difficulties in Yudu County's spatial planning

At the end of the interview, "multiple-plans integration" agenda was summarized and the author put forward to some obstacles remained in Yudu County's spatial planning, which was discoursed with four stakeholders.

• Formal institutional reforms are not completed

²⁰ The pink part is the highly sensitive area of soil erosion, the yellow part is the sensitive area of soil erosion, and the green part is the area with low sensitivity.


Formal institutions mainly refer to two aspects, legal and administrative. Although the legal status of China's spatial governance and planning system has been established at the national level in 2019, it has not yet been implemented into the spatial planning reform system of provinces, cities, and counties, making the "multiple-plans integration" reform lacks authority and necessary legal support. At present, the urban-rural master plan, environmental protection plan, and land-use master plan of Yudu County are approved by Jiangxi Province, all of which have corresponding legal systems. The various special plans formed after the reform of "multiple-plans integration" in Yudu County are non-statutory plans. Thereby, the execution, the effectiveness and feasibility of the plans are affected to a certain extent.

On the other hand, in 2018, the State established the Ministry of Natural Resources, which clearly explicated the role of the Ministry of Natural Resources in leading other spatial planning in the administrative system. Similarly, the administrative reform has begun to reorganize in the local area. "Joint Office Agenda Platform" was founded in Yudu County to guide spatial planning reform, but the efficiency and function of the temporary institution were very limited. As a result, the responsibilities and interests of the various departments have not been completely coherent, which makes it difficult to coordinate the sectors horizontally and vertically. According to Director Liu, manifold pilot cities already started to establish the Natural Resources and Planning Bureau, Yudu County is also preparing for it, and the authority of "multiple-plans integration" agenda group would be replaced by the new department.

Lack of systematic spatial planning

Even though Yudu County has implemented a strategy of "multiple-plans integration" as the core to guide the other four major plans: the national economic and social development plan, urban and rural master plan, land-use master plan, ecological and environmental protection plan, and the contradiction amidst the urban and rural master plan and land-use master plan is tackled, it is evident that the contradictions result from authorities by interests of other plans are serious because of no predominant spatial planning system. The Reform Leadership Group could play a sufficient role in distributing and integrating responsibilities and interests of relevant departments through "Joint Office Agenda Platform" to some extent, however, it is possible that the effectiveness and execution are weakened, partly because these sectors would follow the original statutory plans out of interests rather than less binding "Master Plan for the Development of Yudu County", partly because given the lack of integrated planning system and the non-binding regulations, which has an adverse impact on the process of "multiple-plans integration". Hence, it is essential that the construction of the spatial planning framework ought to be taken into account to regulate and integrate other plans' scales.

• Public participation in planning decisions is still not valued

Public participation in the process of decision-making is always emphasized in the government agenda report at all levels, however, the bureaucracy results from the "top-down" hierarchy model is also prevailing in authorities. Bureaucracies believe that compare to hold a hearing to collect public opinions, the demands by the higher-level government that is in charge of the approval right and financial powers should be taken priority, which is the binding demand that leads to the change of work focal points.

On the other hand, formalism is another potential challenge, some authorities did conduct public participation activities, but the objective is to complete tasks rather than gaining opinions from the public.



Director Liu added that each sector would regularly announce planning decisions to the public on the official website in Yudu County, in which the citizens could check the relevant policy documents online and ask questions, which would be solved by relevant departments.

• External planning approval process to be optimized

Although Yudu County has established an integrated project approval platform to improve project approval efficiency, the current major planning approval process in Yudu County is still complicated. Both urban-rural master plan and land-use plan must be approved by higher-level governments. The approval process is lengthy. In the pilot cities and counties, it is necessary to optimize the planning approval process, strengthen the decision-making power and autonomy of local governments, improve the effectiveness of government services, and enhance the effectiveness of planning governance.

5.3 The analysis of methodology in Kaihua County

In the case study of Kaihua County, two stakeholders were invited to take the interview -Director Xu and Section Chief Wang from the Local Development and Reform Commission that conduct the reform in Kaihua County. Compared to the case study in Yudu County, fewer stakeholders were interviewed in the study of Kaihua County, due to the Covid-19 epidemic, many local government departments have not determined when to reopen the office, therefore, some stakeholders have not been contacted in Kaihua County, in spite of which, the detailed information and valuable data were provided by them given the massive report of the experience from Kaihua County's spatial planning. And both of them are also the main stakeholders and members who conduct and participate in the "multiple-plans integration" agenda in Kaihua County.

In the same way, this interview would be held as a semi-structured (semi-open) interview by telephone (one and half hours in total), which makes the author could express their opinions, guide and ask questions to the interviewees during the interview, this encourages them to give more useful information about spatial planning agenda in Kaihua County, such as their opinions toward limitations of the reform. Plus, the structured part of semi-structured interviews provides the interviewees with reliable, comparable data as well.

Before the interview, the author read various essays, news reports and journals relevant the spatial planning reform at the local level, the primary success of the reform in Kaihua County and was provided with the official document about the spatial planning agenda in Kaihua County, which is conducive to understand fundamentally the condition of the reform in Kaihua County and propose and arrange the questions that are useful to analyze comprehensively the case. Here are the questions that were prepared for the interview (see Table 27).





Progettazione

 Questions

 1.What are the main directions that "multiple-plans integration" work was conducted in Kaihua County?

 2. Did "Spatial Planning of Kaihua County(2016-2030)" play essential role in the reform?

 3.What changes did it bring compared to the past? And what problems and challenges remained?

 4.What are the responsibilities of the "multiple-plans integration" reform leadership group in Kaihua County, which is the temporary or permanent institution?

 5.How does the "multiple-plans integration" reform solve the conflicts and contradictions between the original plans as well as the planning sectors?

 6.Have the problems of connection and coordination amidst the urban master plan and the land-use master plan been addressed?

 7.Why is the ecological environment valued greatly by Kaihua County during the reform?

 Table 27: The questions prepared for the interview in Kaihua County (Author's own)

Likewise, the following elaboration and analysis would be based on the following questions and are organized according to the interview content.

5.4 Kaihua County

5.4.1 The introduction of Kaihua County

Kaihua County is located in the western part of Zhejiang Province and northwest of Quzhou City. It is a type I small city that has a total area of 2236.61 square kilometers (see Figure 39), has 8 towns and 6 townships under its jurisdiction with a resident population of 340,000 (2018) and an urbanization rate of 50.17% (2018). Kaihua County has a forest coverage rate of 79.2% and is an important ecological county in the country and Zhejiang Province, and vigorously develops the ecological economy. In the aspect of the economy, in 2018, the GDP of Kaihua County reached 13.199 billion yuan (\notin 1.76 billion) (Official website of The People's Government of Kaihua County. 2019. <*http://www.kaihua.gov.cn/col/col1346212/index.html>*).

In terms of national policy support, in 2014, Kaihua County officially began the pilot reform of "multiple-plans integration". On December 7, 2016, the National Development and Reform Commission issued a notice that includes Kaihua County as the third batch of national new urbanization comprehensive pilot²¹. In 2018, Kaihua County was listed as the second batch of national ecological civilization construction demonstration counties by the Ministry of Ecology and Environment (Official website of the Ministry of Ecology and Environment. 2018.

<http://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/201812/t20181213_684713.html>).

²¹ National New Urbanization Comprehensive Pilot: Since 2014, in order to alleviate the pressure of urban development brought about by urbanization, the National Development and Reform Commission issued the "Notice on the Comprehensive Pilot Work of National New Urbanization", and announced three batches of pilot cities, focusing on the integration of migrant workers, Cultivation of towns, urban green and intelligent development, integrated production and urban development, the transformation of development zones, redevelopment and utilization of inefficient urban land during the urbanization.



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Figure 39: The location of Kaihua County (Source: Google Map)

The natural resources of Kaihua County are mainly forest resources, animal and plant resources, and few mineral resources, so there are fewer heavy industry enterprises in the county. Kaihua County pays attention to protecting rare and endangered animals and plants in Zhejiang Province, such as Taxus chinensis var. Mairei and Black fronted Muntjac.

5.4.2 The spatial planning tradition before the reform in Kaihua County

Similar to the spatial planning system in other counties of China, the spatial planning of Kaihua County is mainly divided into the national economic and social development plan, urban and rural master plan, land-use master plan, environmental protection plan, etc, respectively drafted by the Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau (see Table 28). The establishment of various local administrative systems conform to the high-level government according to Director Xu.



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| Planning type | Terms | Objectives | Legal and regulatory basis | Leading department |
|---|-----------------------------|--|--|---|
| The 13th Five-Year Plan for National Economic and Social Development of Kaihua County | (2016- 2020) 5 years | Promote the county's economic, social and industrial development and optimize the layout of leading industries | Outline of National Economic and Social Development Planning (Every five years) | the Local Development and Reform Commission |
| Urban master plan of Kaihua County | (2007- 2020) 15years | The urban population size will be controlled in the near (2010) 93,000 people and the long-term (2020) 140,000 people. The urban construction land size will be controlled according to 15 square kilometers (2020) | Urban and Rural Planning Law of the People's Republic of China (2007) | Housing and Urban- Rural Development Bureau |
| Land-use master Plan of Kaihua County | (2006- 2020) 15years | By 2020, the total scale of Kaihua County's construction land shall be controlled within 7189 hectares, with the protected area of permanent basic farmland not less than 18647 hectares, and the protected area of standard farmland not less than 9267 hectares | Law of the People's Republic of China on Land Administration (2005) | Land and Resources Bureau |
| Environmental function zoning of Kaihua County | (2010- 2020) 10 years | The space of Kaihua County is divided into natural ecological zones, ecological function guarantee zones, agricultural product environmental guarantee zones, and settlement environmental maintenance zones | Environmental Protection Law of the People's Republic of China (2005) | Environmental Protection Bureau |

Table 28: Comparison of main spatial planning types in Kaihua County (Source: Author's own)

5.4.3 The challenges and issues brought by the original spatial planning in Kaihua County

In this part, two stakeholders were involved in discussion one by one, they shared opinions and concerns in their fields with the author from the intricate plan system, land classification and administrative efficiency.

Just as the challenges and problems of China's spatial planning system analyzed in Chapter 3, in the "top-down" hierarchy, these issues are primarily manifested in the conflict of interests between sectors, the coherency and the complexity of plannings in Kaihua County's spatial planning before the reform.

• Complex plans resulted in low efficiency of resource utilization

Director Xu from the Local Development and Reform Commission interpreted that there were a large number of county-level plans and special plans in Kaihua County, and some of which





even reached more than 100. These plans cost plenty of manpower, material resources, and financial resources, which brought a huge burden to Kaihua County's finances. According to statistics data provided by Director Xu, before the pilot reform of "multiple-plans integration", 124 plans of various types were prepared by the Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau, Transportation Bureau, Culture and Tourism Bureau and other sectors of Kaihua County, with financial expenditures reaching 68.68 million yuan (\in 9.1 million). A large number of plans overlapped each other, leading to an inflated planning system, and the government's spatial governance capacity had been weakened.

For example, the urban-rural master plan, land-use master plan and environmental protection plan regulated different use properties to the same land for their interests. As a result, contradictions among the plans have been generated, and projects have been rejected or delayed because of that.

The contradiction between land classification and space control criteria

Section Chief Wang from the Local Development and Reform Commission introduced that the land classification standards for various spatial planning in Kaihua County lack coordination. For example, the urban-rural master plan divided the land into 9 categories, the land-use master plan divides land into 12 categories, some of which overlap each other under different categories, increasing the technical difficulty of preparing spatial planning (see Table 29).





| Planning type | Space classification criteria | Land classification criteria | |
|-----------------------------|--|--|--|
| | Optimization development zone | None | |
| | Key development zone | | |
| Main Function Area Planning | Restricted development zone | | |
| | Prohibited Development Zone | | |
| | Built area | residential land, public management and public service land, commercial service facilities land, industrial land, logistics storage land, transportation facility land, and land for facilities, green and square land, non- construction land | |
| Urban-rural master plan | Suitable area | | |
| | Restricted area | | |
| | Allowed construction area | cultivated land, garden land, forest | |
| | Construction area with specific conditions | land, grassland, commercial land, industrial and mining land, residential land, public management and public | |
| Land-use master plan | Restricted construction area | service land, special land, transportation land, water area and | |
| | Prohibited construction area | water conservancy facilities land | |
| | Settlement development and | | |
| | maintenance area | | |
| Environment protection also | Food safety zone | None | |
| Environment protection plan | Resource development zone | | |
| | Natural ecological reserve | | |
| | Ecological Function Regulation Area | | |

Table 29: Major spatial planning classification criteria (Source: Wang Xuyang, Huang Zhengxue. 2018, pp. 26-31)

On the other hand, different plans delineated the incoherent boundaries of ecological space and control measures, which leads to blurred boundaries amidst spatial development and protection, as a result, the situation that construction projects occupy ecological space occurred occasionally. There was a case narrated by Section Chief Wang, an enterprise planned to invest 100 million yuan (€ 13.3 million) in the construction of a factory that develops rare mineral resources in Tiantong Town, Kaihua County. Even though the site selection met the standards of the land-use master plan and the urban-rural master plan, during the construction period, it was found that the land area was within the natural ecological red line determined by the environmental protection sector, the project had to be forced to suspended to reduce the damage to the ecological environment.

• Difficulty in coordinating sectors caused low administrative efficiency

The lack of coordination among different planning sectors was prevalent across China, including Kaihua County. Director Xu from the Local Development and Reform Commission elaborated that the main manifestation is that the land classification standards, spatial layout, and technical standards were incoherent amidst the plans. Furthermore, the urban-rural master plan, land-use master plan and environment protection plan of Kaihua County were prepared and



revised according to their independent laws and regulations, which had exacerbated the contradictions among plans. These contradictions had caused manifold projects to take half a year to be approved between multiple sectors, most of which was spent on sectoral coordination and planning revisions.

5.4.4 The necessity of spatial planning reform in Kaihua County

After dialogues with the stakeholders, the challenges and problems of the spatial planning system were analyzed to explore the necessity and reasons behind it.

• The lack of predominant planning

"The five-year plan" for national economic and social development was the leading plan in the spatial planning system of Kaihua County before the reform. Nevertheless, in terms of planning terms and contents, "the five-year plan" failed to play a dominant role in the planning system. When it comes to planning terms, the economic and social development plan continues 5 years, and the planning term of the urban master plan, land-use master plan and environmental protection plan is usually 10-20 years. It is unreasonable that the plan with a shorter period would guide the plan with longer-term. On the other hand, the planning contents of the economic and social development plan, the urban-rural master plan, land-use master plan and environmental protection plan overlap with each other to some extent. Furthermore, various planning departments formulate plans and strategies that conform to their interests, which limits the coordination function of the economic and social development plan.

• The orientation of planning is vague

The objective of formulating plans is to distribute and coordinate various types of economic and social resources. But Kaihua County Government blurred the boundary between the government and the market in decision-making, causing the government to make numerous plans and interfere with the self-regulation of market resources. As a result, it results in the inefficient implementation of the plans.

• The inadequate planning approval system

From the perspective of the approval level, the upper-level overall plan is often approved by the county government, while the lower-level urban-rural master plan and land-use master plan are approved by the provincial government, and the latter takes longer than the former in approval, causing anarchy in various planning statuses. Judging from the order of approval, the overall plan ought to be approved first, followed by all kinds of special plans, but the process is not strictly adhered to in practice, which results in a disconnection amidst various types of planning contents. Moreover, owing to the large differences in the approval procedures and period of various plans, the content of manifold plans demands to be adjusted and revised continuously during the approval process, which also makes it difficult to coordinate each plan.

5.4.5 "Multiple-plans integration" reform in Kaihua County

"Multiple-plans integration" agenda in Kaihua County was interpreted by Director Xu, and the digital version of "Spatial Planning of Kaihua County (2016-2030)" was provided by Sector Chief Wang to help the author to gain a better understanding of the reform. Since 2014, Kaihua County has begun an active exploration of "multiple-plans integration", and completed the "Spatial Planning of Kaihua County(2016-2030)", which was approved by the Zhejiang Province



Government in 2017, and which is the first city and county spatial plan approved in China. The main interventions and implementations of the reform in Kaihua County were in conformity with the new spatial planning that plays a momentous role in this reform.

• The spatial planning system is restructured

In accordance with "Spatial Planning of Kaihua County (2016-2030)" prepared by the Local Development and Reform Commission, the new spatial planning system focuses on the long-term issue of the use of county-level territory and space (see Figure 40) and coordinates the major relationships among the development of various economic and social fields, industries and land-use, which are regarded as the top-level guide that focuses on the county's spatial development strategy, development orientation and development goals. Under its guidance, the urban-rural master plan concentrates on coordinating the layout of county-level urban and rural settlements, development and construction indicators; Land-use master plan manages the protection and regulation of cultivated land and basic farmland; environmental protection plan is based on a special evaluation of the ecological environment, and aims at ecological protection and environmental supervision. During the planning period, an annual plan or action plan would be further prepared in combination with the spatial planning of the county, some special plans are reserved in terms of transportation, energy, education, culture, etc.



Figure 40: Spatial planning system of Kaihua County (Source: Han Jiani. 2018, pp.39)

• Demarcation of "three zones and three lines"

The county area is divided into three categories to conform with the spatial planning system: ecological protection zone, urban development zone and agricultural production zone, and the ecological protection red line, basic farmland red line, and urban development boundary control line are superimposed within each type of space, which are summarized as "three zones and three lines" (see Figure 41).



The ecological protection zone is located in the western and northwestern parts of the county, covering an area of 1,121.38 square kilometers, accounting for 50.2% of the total area of the county. The agricultural production zone is located in the eastern, central and southern parts of Kaihua County, which covers an area of 903.75 square kilometers, accounting for 40.5% of the county's total area. The urban development zone is mainly located in the southeast area of Kaihua County and takes the central city as the core, including the important industrial development zone, the ecological landscape land and the reserve land for urban development. It covers an area of 208.76 square kilometers, accounting for 9.3% of the county's total area. However, the area of the three major zones is not static, and the proportion of which is expected to be 80.43%, 17.23%, and 2.34% respectively by 2030. Director Xu stated that Kaihua County has always attached great importance to ecological environmental protection and the protection of natural resources as an official national ecological civilization construction demonstration county approved by the Ministry of Ecology and Environment in 2018, so the reform of spatial planning in Kaihua County would further promote ecological protection, which is the conformity to carry out economic development.



Figure 41: The distribution of three zones in Kaihua County²² (Source: Tang Huan. 2015, pp.29-30)

In addition, the spatial planning of Kaihua County also explicitly specifies the objective of each zone (see Table 30).

²² The green part on the right figure is the ecological protection zone, the white part is the agricultural production zone, and the yellow part is the urban development zone.



ZonesObjectivesEcological protection zoneSet ecological protection boundaries and establish protection
systemsAgricultural production zoneDelineate the boundary of permanent basic farmland, and form
a spatial pattern with moderate densityUrban development zoneClarify the specific land use layout for urban construction,
promote the transformation of old districts and the
construction of new districts, expand urban capacity

Table 30: The objectives of three zones in Kaihua County (Source: Official document. 2017)

At the same time, the three major spaces integrate some spatial management and control indicators of the urban-rural master plan, land-use master plan, and environmental protection plan with three lines (see Figure 42).



Figure 42.1: "Spatial Planning of Kaihua County (2016-2030)" integrates other spatial planning control indicators(Part 1)²³ (Source: Official document. 2017)

²³ Solid arrows indicate all inclusions, dotted arrows indicate partial inclusions





Checked winds, fix drifting sand water and soil conservation

Figure 42.2: "Spatial Planning of Kaihua County (2016-2030)" integrates other spatial planning control indicators(Part 2) (Source: Official document. 2017)

• Integration of the basic data and information of each plan

The reform divides the data involved in various types of planning into spatial data and basic data to unify. The spatial data includes the scale of urban construction land, the area of ecological protection areas and the area of basic farmland protection, the basic data embraces population, urbanization level, forest coverage, environmental capacity, etc.

- The spatial data

The scale of urban construction land: In 2012, the current scale of Kaihua's urban construction land was determined to be 5659.4 hectares, and it would be uniformly controlled at 8927.5 hectares in 2020. For the area of ecological protection areas: The definition of the area of ecological protection zones is an important method to curb the disorderly growth of urban development. The area of Kaihua County ecological protection area was determined to be 1125.94 square kilometers, around 112,594 hectares in 2016, accounting for 50.4% of the total





area of the county. And in terms of the area of basic farmland protection: According to the recent survey and evaluation of the current land-use condition, in 2010, the cultivated land area was adjusted to 19266.67 hectares, and the basic farmland protected area was adjusted to 18580.0 hectares. The cultivated land area in 2012 was regulated to 23185.66 hectares, and the basic farmland protected area was 18510.0 hectares;

- The basic data

Total population. In 2013, the number of permanent residents in Kaihua County was 243,000. Urbanization level. In 2013, the integrated urbanization rate of Kaihua County was 40. 7%. The forest coverage rate was unified at 80.4% in 2013.

Before the reform, the scale of Kaihua County's urban-rural master plan was 1: 100,000 based on the Xi'an 80 projection coordinate system; the scale of the land-use master plan was 1: 50,000 with the Xi'an 80 projection coordinate system; the scale of the ecological environment plan was 1: 125,000 with Xi'an 80 projection coordinates. The new spatial planning requests that Arcgis software must be used for processing, transform to the 2000 national geodetic coordinate system and integrating the scale to 1: 100,000, which are saved to the file format of shapefile.

The planning approval system is established

The Planning Coordination Committee was established under the reform, the county mayor as the committee director, the deputy county mayor and other stakeholders of the planning sectors as the deputy directors, and the committee responsible for the daily planning and coordination of examination and approval to reduce conflicts of interest amidst various sectors. The county's spatial planning is prepared by the Kaihua County People's Government and the Local development and Reform Commission, and after being reviewed by the County People's Congress, it is reported to the Provincial People's Government for assessment and approval, and to the People's Government of Quzhou City for the registration. Finally, the assignment is carried out by the Planning Coordination Committee (see Figure 43).





Figure 43: Planning approval process of Kaihua County (Source: Official document. 2017)

5.4.6 The main outcomes after the reform

After the elaboration, two stakeholders interpreted the achievements and outcomes of the reform.

• Backward industries are eliminated and the ecological environment is of higher quality

After the "three zones and three lines" were demarcated, Kaihua County paid more attention to the protection of the ecological environment logically for reaching the objective in 2030. The county eliminated 123 high-pollution enterprises, helped 10,000 people participate in environmental migration, gave priority to the development of eco-tourism, eco-agriculture, and eco-industry, and developed corresponding industries based on "three zones and three lines".

Director Xu from the Local Development and Reform Commission made an example that Yaojia Village in Kaihua County is located in the agricultural production zone, which is not suitable for the development of high-pollution industries such as brick-making. Subsequently, the Environmental Protection Bureau of Kaihua County carried out special remediation of this industry, developed local tourism resources, and transformed it into creative accommodations in the farm to attract tourists.

• The efficiency of administrative approval and land resource utilization are improved



The reformed planning approval process mainly improves efficiency by reducing approval time to promote project implementation and optimize the investment surroundings. According to statistics provided by Section Chief Wang, by June 2018, the Kaihua County government investment projects' approval time was reduced from the past 108 working days to 32 working days, and the industrial investment project approval time was reduced from 64 working days to 19 working days.

On the other hand, through the unification of planning basic data and the coordination of various planning sectors, many abandoned lands that previously disregarded by various planning sections are arranged and excavated, then the stock of land is revitalized to 87.13 hectares, and the new construction land indicator is added to 203.3 hectares to achieve intensive use of land resources.

• The rapid development of ecotourism economy

In the process of "multiple-plans integration" reform, Kaihua County has not only strengthened ecological protection but also promoted the local social and economic development. According to the data from Director Xu, the county's GDP in 2017 increased by 5.0% over the previous year, received 10.37 million tourists, a year-on-year increase of 22.3%, and tourism revenue of 6.658 billion yuan, a year-on-year increase of 24.3%. In addition, for a sample survey of households in the county, the per capita disposable income of urban permanent residents was 31,798 yuan (€ 4,239.7), an increase of 9.6% year-on-year, and the per capita disposable income of rural permanent residents was 15,739 yuan (€ 2098.5), an increase of 9.5% year-on-year²⁴.

• The coordination of urban-rural master plan system and land-use master plan system

Section Chief Wang from the Local Development and Reform Commission mentioned that the establishment of a new classification system to solve the problem of the difference between the urban-rural master plan and land-use master plan on land classification (see Figure 44). For the land with minor differences, the principle is to follow the land-use master plan. If the urban-rural master plan and the current land use are consistent with the same land classification but the land-use master plan is opposite, the latter would be revised. For example, the following figures are the urban-rural master plan, land-use master plan, and the status quo of land-use respectively (see Figure 45).

²⁴ According to the national average in 2017, the per capita disposable income of urban residents is 36,396 yuan (€ 4852.8), and the per capita disposable income of rural residents is 13,432 yuan (€ 1790.9) (Official Website of Central Government. http://www.gov.cn/xinwen/2018-01/31/content_5262362.htm).





Figure 44: Unified classification system for the urban-rural master plan and land-use master plan²⁵ (Source: Official document. 2017)

²⁵ The blue dashed line in the figure is the urban-rural master plan, and the red dashed line is land-use master plan.





Figure 45: The comparison of the urban-rural master plan, land-use master plan, and the status quo of land-use (Source: Tang Huan. 2015, pp.44)

In these figures, the land in the red circle is non-construction land in the urban-rural master plan and current land use, but it is a construction land in the land-use master plan, therefore, the land-use master plan is required to be conformed with the urban-rural master plan and current land use.

5.4.7 Unresolved difficulties in Kaihua County's spatial planning

At the end of the interview, "multiple-plans integration" agenda was summarized and the author put forward to some obstacles remained in Kaihua County's spatial planning, which was discoursed with two stakeholders.

Although "multiple-plans integration" reform has achieved staged results in Kaihua County, the pilot agenda could not be elaborated until some problems to be solved, which are manifested in the following aspects.

• The connection between the "three zones and three lines" and the main spatial plannings demands to be amended

Even though the connection amidst the "three zones and three lines" and urban-rural master plan, land-use master plan and environmental protection plan were strengthened in the "multiple-plans integration" pilot, the delineation of the "three zones and three lines" is still relatively rough to some extent, more refinements should be added, for example, which is regarded for further improvement. Additionally, the "three zones and three lines" classification standard has also been continuously amended in the pilot.

The ecological protection red line and the permanent basic farmland red line have overlapped in many pilot zones, among which, the overlap between the cultivated land and the forest land is the most prominent, with an area of nearly 1,500 hectares. These are not conducive to realizing the expected results of space division, and to the implementation of spatial policies and spatial governance.

• The status of the new spatial planning system is vague

The "Spatial Planning of Kaihua County (2016-2030)" is technically regarded as a top-level guide for various spatial plans such as urban-rural master plan, land-use master plan and





environmental protection plan during the reform, however, due to various reasons, coordination tasks are still arduous.

First, after the introduction of the "Spatial Planning", Zhejiang Provincial Government still demands the preparation of the county-level urban-rural master plan, land-use master plans and environmental protection plan, which weakened the authority of the "Spatial Planning".

The second is that "Spatial Planning" is not well connected with other plans. It is connected with the land-use master plan until 2020 for instance, while Land and Resource Bureau fails to determine whether it could be connected until 2030 or not.

Third, the planning implementation method is relatively single. At present, the implementation of "Spatial Planning" is only at the technical level of using remote sensing and monitoring without the support of economic, administrative and legal means. For example, the "Spatial Planning" is not well-defined whether it could be used as a basis for the preparation of regulatory detailed plans, township land-use plans, or other implementation plans.

The fourth is the lack of management and implementation in planning. The Local Development and Reform Commission, Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau all assume certain functions of preparation and draft of plans, which inevitably occurs cross-functional conflicts, while the Planning Coordination Committee with its impermanent characteristic fails to meet the demand that longterm governance of the plan. Regarding this issue, Director Xu said that Kaihua County has established a "Natural Resources and Planning Bureau" to integrate planning management and planning functions of other sectors. However, the personnel changes of the department and the division of sector functions are still in progress.

Lack of legal support for the "Spatial Planning"

The root cause of the above problems is the lack of legal status of spatial planning. According to the requirements of Article 14 of the Urban and Rural Planning Law (Urban and Rural Planning Law of the People's Republic of China. 2008), Article 17 of the Land Administration Law (Land Administration Law of the People's Republic of China. 2005) and Article 13 of the Environmental Protection Law (Environmental Protection Law of the People's Republic of China. 2005), people's governments at all levels shall draft the urban-rural master plans, land-use master plans, and environmental protection plans. Although the "Spatial Planning of Kaihua County (2016-2030)" has been approved by the People's Government of Zhejiang Province in 2017, and the legal status of China's spatial governance and planning system has been established at the national level in 2019, it is vague whether the spatial plan could replace the planning of each sector as a top guide for spatial governance at all levels.

Furthermore, the "three zones and three lines", land classification standards and management information platform developed during the reform are incoherent with the existing land-use master plan and other statutory plans. It is difficult for spatial planning to manage other spatial planning without determined legal support.

After the comprehensive cognition of the spatial planning reform at the local level, it is obvious that Yudu County and Kaihua County both achieved some positive outcomes with different directions, but both of which exist challenges that demand to be compared and analyzed, which would be discoursed in the next chapter.





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Chapter 6

DISCUSSION: OPPORTUNITIES AND CHALLENGES



After the analysis of spatial planning reform in Yudu County and Kaihua County in the previous chapter, this chapter aims to compare and discourse on the experience and outcomes of the two case studies from the model and result perspectives, which bases on the reviews collected from discussions and interviews, in order to highlight positive and negative elements and to draw the relevant conclusions.

6.1 The comparison of the case studies from the model perspective

Judging from the comparison of the basic conditions of Yudu County and Kaihua County, the two counties have an area of about 2500 square kilometers, and the urbanization rate has reached about 50%, both of which belong to the ecological counties of their respective provinces, except for some difference in population, GDP and GDP per capita.

From a comprehensive analysis, although the overall GDP level of Kaihua County is lower than that of Yudu County, the per capita GDP is higher, which are analyzed in section 1.2 and chapter 5. The forest coverage rate of both counties is higher than 65%. Kaihua County pays more attention to the protection and governance of the ecological environment and the establishment of the overall spatial planning system. Yudu County tends to solve the spatial planning contradictions through the "multiple-plans integration" tool. It can be seen that regarding the economic strength of Kaihua County differentiates the counterpart of Yudu County, to solve the problems and challenges of spatial planning, the two adopt different models. The reasons behind these differences like the economy, reform direction can be explored following.

Firstly, geographic conditions and development orientations. There are rich mineral resources in Yudu County, hence, the industry has been developing in these years, and the local government encourages the light industry, especially the textile industry to invest, but the tertiary accounts for 39.6% in 2018 (Official website of The People's Government of Yudu County. 2019.

<http://www.yudu.gov.cn/c100033/2019/11/14/content_1fe890f6ea4e44fd83293a6149421644.s html>). On the contrary, the mineral resource in Kaihua County is not as rich as Yudu County, the former tends to exploit natural resources to prosper modern agriculture and tourism (Official website of The People's Government of Kaihua County. 2019.

<http://www.kaihua.gov.cn/art/2020/6/28/art_1346240_49228635.html>) and was ranked as a national ecological civilization construction demonstration county in 2018. The latter was selected as an advanced industrial county in Ganzhou City. Besides, The population of Yudu County is four times that of Kaihua County, but in terms of annual GDP, Yudu County is less than twice that of Kaihua County in 2018, and the growth rates of annual GDP are close to 9% in both counties, which leads to a gap between the two regarding GDP per capita and economic strength. Based on these conditions, the local governments chose different paths to conduct the "multiple-plans integration" reform. With its own economic strength and emphasis on the ecological economy, Kaihua County can initially establish a systematic spatial planning system. As opposed to Yudu County, its economic structure is dominated by the secondary industry, and there are many contradictions involving construction land, agricultural land, and the ecological environmental protection, which are the primary issues that demand to be tackled.

The "multiple-plans integration" agenda in Yudu County concentrates on the construction of spatial management system named "three development and protection zones and seven spatial management areas" to address the specific challenges, which explicates the relationship among the urban-rural master plan and the land-use master plan through reclassifying the land use in the





whole district, accordingly, solved the long-term contradiction between the urban construction land and the agricultural land utility. Moreover, it proceeded with the reconstruction of the development goals from various plans to coordinate the conflicts and interests of relevant planning sectors. In terms of approval, administrative efficiency gets promoted compared to the past.

Nevertheless, there is one aspect that should be noted that Yudu County fails to build an integrated spatial planning system to coordinate all of these work, which has an adverse impact on the reform of the spatial planning system in future though the reform did achieve some results. This concern also was discussed with the stakeholders of Yudu County, they clearly mentioned that it is an essential work to build a sound spatial planning system, but in view of the condition of Yudu County, it would be better to do that after the organization of "Natural Resource and Planning Bureau". Hence, it does not manifest that this model is illogical, for counties that demand to redress the contradictions and inflicts which hinder the development of social and economic in spatial planning and boom the prosperity or rapid economic growth, this case is of the reference value.

In summary, the preparation and construction period for "multiple-plans integration" agenda in Yudu County is relatively short with effective results, but there are some parts are not as valued as others, such as ecological environment protection, as a county with high forest coverage and severe soil erosion, environment protection plan requires to be taken into account more. It tends to redress predominant problems first, then systematizes others, gradually, as the reform is further advanced, more comprehensive consideration and coordination are in need.

On the contrary, the spatial planning reform of Kaihua County focuses on the construction of overall spatial planning system, which strips and reintegrates the overall aspects of the existing the land-use master plan, urban-rural master plan, environmental protection plan and other plans to form the "Spatial Planning of Kaihua County", and then implements the detailed and special plans by sectors to form a spatial planning system of "1 spatial planning + X detailed plans" (Pang Haifeng, Jiang Hua. 2018, pp.12-30). But compared to Yudu County, the local social and economic development plan is excluded to the "multiple-plans integration" to achieve integration in period and indicators, etc, which is regarded as a guide plan to conduct the "multiple-plans integration" reform instead in Kaihua County. And the relationship between the local social and economic development plan with other major plans did not explicate in "multiple-plans integration" reform of Yudu County when the local social and economic development plan is involved in the integration. Nevertheless, "three zones and three lines" replaced the original basic spatial divisions that were not coherent among the various sectors, the former consists of urban, agricultural, ecological zones and ecological protection red lines, permanent basic farmland, and urban development boundaries, which determines the comprehensive management and control measurements such as development intensity, land use, environmental access, industrial orientation, investment and construction of each zone and forms a general planning base map, based on which, the layout planning of various spatial facilities was carried out.

These interventions in Kaihua County serve the requirements of the territorial spatial planning system at the national level. On the other hand, the organization system of the "Spatial Planning of Kaihua County" has a tendency of "large integration and full scale", which influences the effectiveness in practice to some extent. Kaihua County intends to follow the tendency to achieve the coherent planning goals of the whole county.



This model does have certain operability for the key ecological county such as Kaihua County that possesses 85% mountains and hills, which means that the primary objective is to integrate the promotion of ecological economy and protection of the ecological zone. However, it is difficult to prepare such a deep and wide-ranging medium- and long-term spatial planning to other counties that integrate different development directions and contribute to economic development. In addition, the supporting system and mechanism reform measures of "Spatial Planning of Kaihua County" demand the legislation and redistribution of power, the follow-up planning execution effectiveness would be greatly weakened if the formal institution fails to be completed.

In conclusion, the "top-down" and hierarchical planning system of Kaihua County's spatial planning is worthy of reference, but the whole model is not prevailing for other counties. As previously analyzed, Kaihua County initiated the development of ecological economy, however, throughout the counties and cities of the country, many of which are mainly secondary industries, such as coal industry, petroleum industry, electricity industry, steel industry, construction industry and textile industry etc. If the spatial planning reform model of Kaihua County is to be adopted, it is bound to increase the area proportion of ecological space, such as 50%-80%, and the activity space for production and life should be extremely reduced. This intervention has an adverse impact on the prosperity of most regions, and it is difficult for these industrial-oriented regions to forcefully achieve results through policy reforms. Furthermore, thousands of cities and counties in China are facing different difficulties in economic structural transformation as well as the diverse contradictions in land use. Hence, it is unrealistic to conduct a single model to solve all problems but should adapt to local conditions.

6.2 The comparison of the cases studies from the result perspective

Throughout the spatial planning reforms in Yudu County and Kaihua County, it could be denoted that due to the different social and economic development and the actual conditions, the two counties are different in the directions and agenda focus of the spatial planning reform, from which some positive elements and negative elements could be concluded (see Table 31).



| County Elements | Yudu County | Kaihua County |
|--------------------------|---|---|
| Leadership sectors | "Multiple-plans integration" Leadership Group (√) | Planning Coordination Committee (\checkmark) |
| Orientations | "Spatial management system" "Three development and protection zones and seven spatial management areas" (√) | Spatial planning system "Three zones and three lines" (\checkmark) |
| Highlight outcomes | Tackle the contradiction between urban construction land and agricultural land utility (√) Ecological environment protection (×) | Tackle the contradiction between urban construction land and agricultural land utility (√) Ecological environment protection (√) |
| Internal approval system | More efficient (√) | More efficient (🗸) |
| External approval system | To be amended ($	imes$) | More efficient (\checkmark) |
| Formal institutions | Lack of legislation (×) Natural Resource and Planning Bureau (√) | Lack of legislation (×) Natural Resource and Planning Bureau (√) |
| Public participation | Mention but no action ($	imes$) | No mention ($	imes$) |
| Details | Spatial planning system to be rebuilt (×) | Spatial planning system to be optimized (×) |

Table 31: The comparison elements between Yudu County and Kaihua County 26(Source: Author's own)

In spite of the fact that the two models from Yudu County and Kaihua County could not be configured and applied by other counties, the elements still have reference meanings, and it is obvious that the results of Yudu County and Kaihua County are similar after the reform, both of which redress the contradiction and interest conflicts between the urban construction sector amid the land-use sector from Table 26 and Figure 44, redistribute impartially finite spatial resources from Figure 35, 41 and promote the administrative efficiency to some extent from Figure 37 and 43.

On the other hand, the methods and processes that are used to achieve the analogous outcomes demand to be differentiated in Yudu County and Kaihua County. It is observed in Figure 40 and 42 that an integrated spatial system was founded in Kaihua County, the indicator and boundary of "Three Zones and Three Lines" were delineated under the system, in contrast, from Table 24, "Three Development and Protection Zones and Seven Spatial Management Areas" was set up in Yudu County as a spatial management system that is considered as a tool rather than a superstructure. "Master Plan for the Development of Kaihua County" was introduced to integrate plans though, it failed to function as efficient as "Spatial Planning of Kaihua County" without systemic mechanism.

From the comparison of Figure 37 and 43, the administrative efficiency of Yudu County and Kaihua County is enhanced, but the former demands to consider the integration with provincial approval system and the external approval system requires in both counties to be optimized, which means that the connection between county-level and provincial level spatial planning

 $^{^{26}}$ (\checkmark) indicates positive; (\times) indicates negative.



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system should be strengthened, the county-level system could get more autonomy on planning approval from devolving. Additionally, the "Multiple-plans integration" Leadership Group or Planning Coordination Committee in both counties plays a pivotal role in spatial planning reform with function well before the foundation of the relevant department. It should be noted that the administrative reform ought to determine the authority of the new sector and coordinate plans rather than reorganize simply.

Last but not least, the reform in ecological and environmental protection fields that did not perform as expected in Yudu County, the situation of soil erosion has generally advanced, however, the ecological environment did not reach significant improvement through this reform from Figure 38. Furthermore, the construction of legislation, informal institution and regulation of the spatial planning system should be noted in Yudu County and Kaihua County, which are the predominant challenge that the local needs to face, are also the main driving force to further promote the reform.



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Chapter 7

CONCLUDING REMARKS, POLICY RECOMMEDATIONS AND FUTURE RESEARCH PERSPECTIVES



This paper explores the original challenges of China's spatial planning, the "bottom-up" reform trajectory of "multiple-plan integration", the pilot reform of spatial planning in Yudu County and Kaihua County, and discourse on the internal mechanism of the territorial spatial planning system from the national level, provincial level to the local level, which is expected to provide a certain amount of support for the pilot of "multiple-plan integration" in cities and counties currently under implementation, as well as the preparation of national and provincial territorial spatial planning as the reference to formulate a more complete and feasible spatial planning system.

7.1 Concluding remarks

The spatial governance and planning system is an important platform and tool for the country to carry out resource distribution. Building an integrated national spatial planning system is an inevitable demand for realizing the goal of modernizing the national governance system and governance capacity. Although the term "spatial planning" was born in Europe, due to different political, economic, historical, and cultural environments, it is necessary to differentiate between China and typical European spatial planning (Italy, France, Germany, and the United Kingdom). With the constant changes in the social and economic macro-environment in China, all kinds of planning have overlapped and existed conflicts in the allocation of spatial resources, which leads to the reforms of "bottom-up" and "top-down" have been undertaking in China these years. As a result, the territorial spatial planning system and the legal status of spatial planning were founded at the national level in 2019, and "multiple-plans integration" has been exploring in manifold pilot cities, which plays a pivotal and transitional role in the development of the territorial spatial planning system in China. This paper provides an overview of the tradition and development of China's spatial planning system, interprets and compares the results of spatial planning reform in Yudu County and Kaihua County to explore the experience, key difficulties and perspective for the reconstruction of China's spatial planning.

Through the study and analysis of case studies, it is learned that both pilot counties at the local level have established planning agenda groups to guide and supervise the reform of "multiple-plans integration", both of which have achieved success in resolving conflicts in spatial planning and the coordination of interests within the sectors, and the preparation of various other plans is guided by new planning system. However, it is worth noting that as mentioned in the previous chapter, due to the different development orientation of each county, the spatial planning reform at the local level should be based on local conditions.

Nevertheless, the general reform directions of the pilot cities should be maintained to reconstruct the territorial spatial planning system in China after 2019, hence, the integrated framework and configuration would be determined at the national level, which could be implemented at the local in "top-down" model. This does not denote that the previous work would be neglected, instead, the transform of the following reform focus has to be based on the results and achievements of the preceding to realize the connection to the territorial spatial planning system at the national level.

In sum, the main results are followings.

- First of all, the contradictions and conflicts between planning sectors at the national level have been resolved with the establishment of the Ministry of Natural Resources in March 2018



and the creation of the territorial spatial planning system framework, and have been underpinned in the direction of reform with the gradual reinforcement of the legal status of spatial planning.

- Second, at the provincial level, due to the implementation of "Provincial Spatial Planning Pilot Program" and early exploration in some economically developed provinces, the practices and effectiveness of the provinces are not coherent, but they also provide a reference for provinces with different levels of economic development, making different provinces based on actual conditions has more autonomy in spatial planning reform. However, it should be noted that except Hainan Province, Jiangxi Province and Zhejiang Province, etc. Most provinces fail to pay more attention to the ecological environment concerns due to the lack of environmental principles as well as urban-rural integration tools, more importantly, but excessively take economic development as the priority in the provincial agenda. During the preparation of the territorial spatial planning system at the provincial level, the direction and connection to the national level ought to be explicated.

- Third, at the local level, through the "multiple regulations in one" reform of 28 cities and counties, many cities and counties have achieved more or less outcomes, especially Kaihua County and Yudu County have carried out referential practices in the reform. On the one hand, pilot counties adopt approaches that follows their conditions, especially the ecological environment concerns are valorized at the local level, and the "multiple-plans integration" tool is proven its function. On the other hand, since 2019, the direction of the reform should turn to the construction of territorial spatial planning system at the local level based on the outcomes of "multiple-plans integration". Further, the prerogative of effectiveness and competitiveness should be attracted attention in counties. Due to the lack of direct supervision from the central government in the "top-down" hierarchy, the government at the local level sometimes break the balance between the efficiency and legitimacy to achieve the objectives of the spatial planning reform without the legislation support, for example, in order to achieve the ecological and cultivated land protection target, the urban construction projects are forcibly canceled through administrative law enforcement, and vice versa. Hence, the reconstruction of the territorial spatial planning system at the local should take formal institution as a priority.

7.2 Policy recommendation

After five years of "bottom-up" and "top-down" spatial planning reforms, the theoretical system of territorial spatial planning has been established at the national level, whilst how to merge it with local "multiple-plans integration" reform would be a challenge to be addressed in future. After the analysis and discourse on the spatial planning reforms in Yudu County and Kaihua County, this paper explores the general orientations for the further policy recommendations of spatial planning reform at the local level in China associated with the analyzed elements.

• The need for promotion the top-level design of the spatial planning system based on an integrated technology standard system

At present, the superstructures of spatial planning systems at provincial and local levels and their interrelationships have not yet been manifested. Also, the relationship between spatial planning at the same level and various special plans has not been explicitly stipulated, as a result, the authorities of different levels of government spatial governance rights and responsibilities are arbitrary to some extent (Han Qing, Gu Chaolin and Yuan Xiaohui. 2011, pp.44-50).



It is recommended that the territorial spatial planning should be prepared from the provincial level to the local level, and technical regulations such as the development intensity calculation, "three zones and three lines" delineation, spatial management and control principles, land classification standards and management information platform formed in the "multiple-plans integration" reform are merged with the indicators of territorial spatial planning at the national level, and the legitimacy of the regulations ought to be determined, in this way, a merged national spatial planning technical standard system become feasible, reproducible and expandable models gradually could be established and learned by other cities and counties. At the same time, the communication and round-way interaction among pilot cities require to be effectively enhanced.

• The need for fortification the delegation of authority and brighten the legal status of local spatial planning system

The core of the spatial planning reform lies in the establishment of a legal system that could manifest the authority and legal effectiveness of spatial planning. Hence, the results and experience of the pilot cities could be combined to push forward the acceleration of legislation of spatial planning, as well as the revision of Land Administration Law and Urban Planning Law to enhance and adapt the legal system of the territorial spatial planning system. It is recommended that China's spatial planning system could implement sectoral reform at the local level on the basis of pilots and draft the "Territory and Spatial Planning Law" to connect the spatial planning system with the local, endowing the dominating and independent legal positioning of the spatial planning system.

On the other hand, the premise of promoting legislation is that the high-level governments grant more autonomy to the pilot cities. For example, when the spatial planning laws have not been established, the provincial People's Congress temporarily authorizes city and county spatial planning to replace the original multiple spatial plans, which means that the spatial planning is regarded as the basis and the superior planning for the preparation of detailed binding planning, township land-use planning and other plans. If laws, regulations, sectoral rules and standards, etc. at the national and provincial levels could not be adjusted in a timely manner, cities and counties are allowed to be the decision-makers to explore according to the condition.

Last but not least, the preparation and implementation of the territorial spatial planning involve many issues such as legislation, management, organization setting, and sectoral authority. It is insufficient to found a temporary planning leadership group, which is difficult to guarantee the long-term implementation of spatial planning. Therefore, it is considered that supporting system reforms such as the government sector reform are feasible (Zhu Hongfang, Xu Jian. 2017, pp.36). For example, other pilot cities could be brought forward to take the lead in reforming the planning sectors and implementing supporting system reform with a "top-down" model. The planning functions of Housing and Urban-Rural Development Bureau, Land and Resources Bureau, Environmental Protection Bureau and other departments could be integrated and reorganized into "Natural Resources and Planning Bureaus" that specially responsible for the implementation and management of spatial planning at local-level, which has already been set up in manifold cities and counties. These new sectors correspond to the Ministry of Natural Resources at the national level. However, functional integration is not merely an effortless superposition, which involves personnel, interests, resource optimization, redistribution within and amidst sectors, according to the "top-down", from local to central, it is also a tedious task, likewise, "multipleplans integration" is not an elementary mergence of multiple plans. And other original sectors are



still reserved, but according to the division of functions of the department, the implementation responsibilities are distributed to specific sectors.

• The upgrade of informal institution concerns

The construction of the informal institution is embodied in two aspects. on the one hand, the disclosure of planning information should be transparent (Deng Weiji, Xie Yingting and Cai Lili. 2018, pp.32-36). The relevant planning information is in strict accordance with the authority of the sector, for instance, Land and Resources Bureau strengthens the dynamic disclosure of land-use information, Environmental Protection Bureau focuses on the supervision of the ecological protection of the city, and Housing and Urban-Rural Development Bureau concentrates on the construction of the city and spatial control, all of which would under public supervision.

On the other hand, public participation in spatial planning ought to be promoted and encouraged. The government takes the initiative to disclose planning information on the adjustment of zoning functions and the layout of major projects, guides the public to actively participate in the whole process of planning, implementation and supervision, and holds public hearings on planning adjustments that involve the vital interests of the people to obtain their support.

7.3 Future research perspectives

This paper sorts out China's spatial planning system from the perspective of tradition, tool and reform process and combines the pilot experience of "multiple-plans integration" in Kaihua County and Yudu County, after which, it proposes the inadequacies and challenges of the implementation of China's territorial spatial planning reform at the local level, and puts forward relevant recommendations. However, the research approaches in this paper also have limitations. Although Kaihua County and Yudu County are representative of the pilot spatial planning reform, only two case studies were selected from the 28 pilot counties and cities rather than sufficient cases, which makes the in-depth analysis of spatial planning reform be deficient. And in the case of Kaihua County, due to the impact of other force majeure factors such as COVID-19 epidemics, the author did not interview ample stakeholders, so that the information collection is not comprehensive adequate. Furthermore, the exploration of detailed spatial planning is not as explicit as the general, such as a series of spatial plans on specific development indicators of agriculture, cities, and ecology.

At present, there are still many perspectives of China's national territorial spatial planning reconstruction and "multiple-plans integration" that deserve further research especially after COVID-19 epidemics, with a view to providing a certain reference value for the subsequent "Provincial Spatial Planning Pilot Program" and the preparation of national territorial spatial planning at provincial and local level: (1) How to draft an independent "Territorial Spatial Planning Law" at the provincial and the local level, which provides legal positioning and connect to the spatial planning system at the national level; (2) The specific content of spatial planning reform at various levels still demands to be further explicated, particularly the emphasis on ecological environment concerns and urban-rural integration in provincial spatial planning, taking priority to the superstructure construction of spatial planning and public participation mechanisms; (3) When preparing the "territorial spatial planning system", what should be noted to fortify the connection between different levels to establish an integrated mechanism; (4) The reform of the administrative system at all levels, the positioning and role of the "Natural Resources and



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Planning Bureau" at all levels of government, for efficient connection, how to deal with the interests of other sectors maintains to be discussed; (5) In the process of preparing the spatial planning system, how to combine new trends of urban morphology (smart cities, sponge cities, etc.) in the future to achieve sustainable urban development; (6) The COVID-19 epidemic in 2020 is a immense test of the governance systems and capabilities of all countries. In China, with the reconstruction of the territorial spatial planning system, this epidemic has exposed that there are some perspectives that demand to be drew attention in the process of spatial planning reform. First, the importance of public spatial environment monitoring mechanism to the division of epidemic prevention zones in urban planning spatial information system, and how to ensure the investment and construction of urban emergency management and disaster prevention infrastructure (Rogier van den Berg. 2020.

<https://thecityfix.com/blog/will-covid-19-affect-urban-planning-rogier-van-den-berg/>).

Furthermore, the lack of preparation of special plans for infectious diseases, relevant plans for sanitation and epidemic prevention in various residential and commercial buildings, and the content of epidemic prevention plans in disaster prevention plans involving public safety (Official website of the Ministry of Natural Resource of the People's Republic of China. 2020.

<http://www.mnr.gov.cn/dt/ywbb/202003/t20200311_2501161.html>).





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Chapter 8 BIBLIOGRAPHY



Beijing Review Net. (2012). Sansha by the Sea.

http://www.bjreview.com/Cover_Story_Series/2012-07/02/content_466987.htm.

- Cai Yumei, Gao Ping. (2013). Types and Enlightenment of Spatial Planning System in Developed Countries. China Land, pp.60-61.
- Chen Wen, Yan Dongsheng and Sun Wei. (2015). "Multiple-plans Integration" Reform and Innovation in Cities and Counties: Problems, Challenges and Path Keys. Planner, pp.17-21.
- China Tourist Maps. (2008). Detailed China Political Map. http://www.chinatouristmaps.com/china-maps/administrative-divisions/china-politicalmap.html.
- Chiti M.P. (2003). Il ruolo dello Comunità europea nel governo del territorio, in "Rivista Giuridica dell'Edilizia", voi.3, pp.93.
- Cui Xufeng, Wang Zhenzhen. (2018). Historical Evolution and Optimization Path of "Multiple-plans Integration". China Famous City, pp.34-39.
- Deng Weiji, Xie Yingting and Cai Lili. (2018). Construction of the Spatial Planning System Oriented to the Implementation of Planning-The Practice and Reflection of "Multiple-plans Integration" in Xiamen City. Journal of Urban Planning, pp.32-36.
- ESDP, European Spatial Development Perspective. (1999).

https://ec.europa.eu/regional_policy/sources/docoffic/official/reports/pdf/sum_en.pdf.

- Fang Chuanglin. (2015). Important progress and future direction of studies on China's urban agglomerations. Journal of Geographical Sciences, pp.1003-1024.
- Fu Lide. (2008). Suggestions on supporting legislation for urban and rural planning. Planners, pp.50-53.
- Gaeta, Rivolin and Mazza. (2017). Governo del territorio e pianificazione spaziale. Luca Gaeta, Umberto Janin Rivolin, Luigi Mazza, EAN: 9788825174199,ISBN: 8825174195, pp.265-266.
- Gao Guoli. (2017). The effectiveness, constraints and countermeasures of "multiple-plans integration" pilot in municipalities in China. Economic Aspect, pp.41-46.
- Gao Zhonggang, Zhang Bing. (2009). On the Innovation of Technical System for Urban Planning in China. Urban Planning, pp.26-32.
- Geology. (2018). Map of China Provinces. *https://geology.com/world/china-satellite-image.shtml*.
- Giancarlo Cotella. (2018). Presentation of Territorial Governance and Spatial Planning Course, systems 01, pp.10-17.
- Gu Chaolin. (2015). Discourse on China's "multiple-plans integration" : separation, evolution and integration. Geographical Research, pp.11-13.
- Gu Chaolin. (2018). Discourse On the Process and Trend of China's Spatial Planning. http://m.planning.org.cn/zx_news/8837.htm.
- Han Jiani. (2018). "Multiple-plans integration" : Internal conflicts and order reconstruction-Example from Zhejiang Province pilots. Zhejiang University of Commerce and Industry, pp.39.
- Han Qing, Gu Chaolin and Yuan Xiaohui. (2011). Research on Urban Master Plan and Control Space of Main Function Districts. Urban Planning, pp.44-50.
- Han Zenglin, Liu Tianbao. (2009). The overall nature of urban planning transformation and systemic urban issues, pp.12-17.
- He Zizhang. (2006). The Theory and Research Progress of Urban Spatial Planning in China.Planner, pp.87-90.
- Healey.P, Williams.R. (1993). European urban planning systems: diversity and convergence. Urban studies, pp.710.



- Hu Chao. (2019). Research on "multiple-plans integration" Reform in Yudu County. Jiangxi University of Finance and Economics, pp16-27.
- Hu Jun. (2010). Planning Reform The Practice and Thinking of "Two plans Integration" in Urban Plan and Land-Use Plan in Shanghai. Urban Planning, pp.20-25.
- Hu Xuwei. (2006). Evolution and Prospect of China's Regional Planning. Urban Planning, pp.8-12.
- Hu Yaowen, Yin Qiang. (2016). Exploration and Practice of Spatial Planning in Hainan Province-Taking "Hainan Province Master Plan (2015-2030)" as an example .Urban Planning Journal, pp.55-62.
- Huang Guoqin, Li Wenhua. (2006). Soil Erosion in the Central and Subtropical Region of China. Research of Soil and Water Conservation, pp.117-119.
- Huang Zhengxue, Huang Lingxiang. (2019). The Evolution of Territorial Spatial Planning. Public Management and Policy Review, pp.40-49.
- Huang Yong, Zhou Shifeng and Wang Lin et al. (2016) Basic Theory And Technique Of "Multipleplans Integration". Planner, pp.82-88.
- Information for Deciders Magazine. (2015). Hainan Province released the country's first "multipleplans integration" general rules, pp.18-19.
- Information for Deciders Magazine. (2015). The Real Realization of "Multiple-Plans Integration" in Hainan Province, pp.22-23.
- Internet Archive. (2012). Local Governments. https://web.archive.org/web/20120313211234/http://english.gov.cn/links/content_25073.h tm.
- Janin Rivolin U. (2012). Planning systems as institutional technologies: a proposed conceptualization and the implications for comparison, Planning Practice and Research, pp.63-85.
- Janin Rivolin U. (2008). Conforming and Performing Planning Systems in Europe: An Unbearable Cohabitation. Planning, Practice and Research, pp.178.
- Janin Rivolin U. (2017). Global crisis and the systems of spatial governance and planning: a European comparison, European Planning Studies, pp.9-15.
- Jeff Desjardins. (2018). The \$80 Trillion World Economy in One Chart.

https://www.visualcapitalist.com/80-trillion-world-economy-one-chart/.

- Jiang Yuejin. (2014). Exploration and Practice of "Multiple-plans integration" in China. Zhejiang Economics, pp.44-47.
- Lai Shouhua, Huang Huiming, Chen Jiaping, et al. (2013). From technological innovation to institutional innovation: Heyuan, Yunfu, Guangzhou "three-in-one" practice and thinking. Journal of Urban Planning, pp.63-68.
- Lai Xiaoxia. (2017). Research on the construction of urban governance-Oriented spatial planning compiling system in Xiamen City. Xiamen University, pp.5.
- Li Hongwei, Tang Fanglin and Wang Jianping. (2019). Scientific Delineation of "Three Zones and Three Control Lines". Guangming Daily, February 16, 2019 05 edition. http://epaper.gmw.cn/gmrb/html/2019-02/16/nw.D110000gmrb_20190216_1-05.htm.
- Li Tao, Liu Kewei. (2016). Research on the reform of China's spatial planning system Taking the county overall planning as an example. Urban Development Research, pp.16-22.
- Liao Wang Institut. (2017). How to implement "multiple-plans integration". http://www.lwinst.com/cjgjzk201701/3336.htm.



Luojiadeyi Net. (2014). The distribution of 28 "multiple-plans integration" pilot cities in China in 2014.

http://www.luojiadeyi.com/index.php/index-view-aid-645.html. Maphill Net. (2011). Political Map of Hainan Province.

http://www.maphill.com/china/hainan/maps/political-map/.

- Mark Bevir. (2012). Governance: A very short introduction. Oxford, UK: Oxford University Press, pp.1-2.
- Mario Reimer, Panagiotis Getimis and Hans Heinrich Blotevogel. (2014). Spatial planning systems and practices in Europe, pp.8.

Meng Guangwen, Liu Ming (2012). Establishment and Evaluation of Tianjin's Free Trade Zone in Binhai New District. Acta Geographica Sinica, pp.2.

Newman, P, Thornley. A. (1996) Urban Planning in the Europe: International Competition, National System and Planning Projects. London and New York: Routledge, pp.1-55.

Official document. (2010). Shanghai Land Use Master Plan (2006-2020), pp.60-61.

Official document. (2015). Outline of Urban Master Plan in Shanghai Municipality (2015-2040), chapter 3. https://wenku.baidu.com/view/0c8def8c3c1ec5da51e27067.html?re=view.

Official document. (2015). "Multiple-plans integration" Agenda Plan of Yudu County.

Official document. (2017). "Spatial Planning of Kaihua County (2016-2030)".

Official website of Boao Forum for Asia. (2001). Overview.

http://english.boaoforum.org/gyltbjjsen.jhtml.

Official website of the Central Government. (2017). The General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the "Provincial Spatial Planning Pilot Program".

http://www.gov.cn/zhengce/2017-01/09/content_5158211.htm.

Official website of the Central Government. (2018). Description of the State Council's institutional reform program. *http://www.gov.cn/guowuyuan/2018-03/17/content_5275116.htm*.

Official website of the Central Government. (2010). The national main functional areas plan released by The State Council. *http://www.gov.cn/zwgk/2011-06/08/content_1879180.htm*.

- Official website of the Central Government. (2006). Outline of the Eleventh Five-Year Plan for National Economic and Social Development of the People's Republic of China. http://www.gov.cn/gongbao/content/2006/content_268766.htm.
- Official website of the Central Government. (2014). "Notice on Adjusting the Standards for City Size Division" released by The State Council.

http://www.gov.cn/zhengce/content/2014-11/20/content_9225.htm.

- Official website of the Central Government. (2019). "Guidance on the general planning and implementation of the 'Three Control Lines' in land and spatial planning". http://www.gov.cn/zhengce/2019-11/01/content_5447654.htm.
- Official website of the Central Government. (2005). The introduction of land resource in China. http://www.gov.cn/test/2005-06/24/content 9234.htm.
- Official website of the Central Government. (2019). China's urbanization rate has increased significantly in 70 years.

http://www.gov.cn/xinwen/2019-08/16/content_5421576.htm.

Official website of the Central Government. (2014). China promotes "multiple-plans integration" in 28 pilot cities and counties.

http://www.gov.cn/xinwen/2014-12/06/content_2787509.htm.



- Official website of the Central Government. (2017). "Provincial Spatial Planning Pilot Program". http://www.gov.cn/zhengce/2017-01/09/content 5158211.htm.
- Official website of the Central Government. (2016). The General Office of the CPC Central Committee and the General Office of the State Council issued the "Opinions on Establishing an Unified and Standardized National Ecological Civilization Experimental Zone".

http://www.gov.cn/xinwen/2016-08/23/content_5101548.htm.

Official website of the Central Government. (2017). The General Office of the CPC Central Committee and the General Office of the State Council issued the "Provincial Spatial Planning Pilot Program".

http://www.gov.cn/zhengce/2017-01/09/content_5158211.htm.

Official website of the Central Government. (2014). The State Council issued the "Notice on Adjusting the Standards for City Size Division".

http://www.gov.cn/xinwen/2014-11/20/content_2781156.htm.

Official website of the Central Government. (2005). Environmental Protection Law of the People's Republic of China.

http://www.gov.cn/ziliao/flfg/2005-08/05/content_20923.htm.

- Official website of the Central Government. (2005). Land Administration Law of the People's Republic of China. *http://www.gov.cn/banshi/2005-05/26/content_989.htm.*
- Official website of the Central Government. (2008). Urban and Rural Planning Law of the People's Republic of China. *http://www.gov.cn/flfg/2007-10/28/content_788494.htm.*
- Official website of Hainan Provincial Bureau of Statistics. (2019). Statistical Report of the National Economic and Social Development of Hainan Province in 2018.

http://stats.hainan.gov.cn/tjj/tjgb/fzgb/n_71782/201901/t20190128_2282048.html.

Official website of Jiangxi Provincial Government Service of Yudu County.

- http://gzyd.jxzwfww.gov.cn/jxzw/frbs/getFrbsIndex.do?webId=106&orgId=&themeId=BA940 E87C46C4BCCBF4A610C98E8C182.
- Official website of the Ministry of Ecology and Environment. (2018). "Announcement on naming the second batch of national ecological civilization construction demonstration cities and counties". http://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/201812/t20181213_684713.html.
- Official website of the Ministry of Natural Resource of the People's Republic of China. (2019). "Notice of the Ministry of Natural Resources on Comprehensively Carrying out Territorial Spatial Planning". http://gi.mnr.gov.cn/201905/t20190530 2439129.html.
- Official website of The Ministry of Natural Resources of the People's Republic of China. (2010). Land-use Master Plan of Shanghai Municipality (2006-2020).

http://g.mnr.gov.cn/201807/t20180727_2147668.html.

Official website of The Ministry of Natural Resources of the People's Republic of China. (2020). Planning enlightenment under the epidemic.

http://www.mnr.gov.cn/dt/ywbb/202003/t20200311_2501161.html.

- Official website of The National Development and Reform Commission, People's Republic of China. (2015). *https://www.ndrc.gov.cn/.*
- Official website of the National Bureau of statistics of China. (2012).

http://data.stats.gov.cn/search.htm?s=2012%20GDP.

Official website of the Shanghai Municipality Governance and Administration Execution Bureau. (2016). Urban and Rural Planning Regulations of Shanghai Municipality. http://cgzf.sh.gov.cn/main/news_123.html.





Official website of The State Council Information Office of the People's Republic of China. (2019). Territorial spatial planning system is divided into "Five Levels, Three Types" according to the level and content.

http://www.scio.gov.cn/xwfbh/xwbfbh/wqfbh/39595/40528/zy40532/Document/1655483/ 1655483.htm.

Official website of The People's Government of Hainan Province. (2019). Geographic Location of Hainan Province.

http://www.hainan.gov.cn/hainan/hngl/201809/02b6b908146c4ce89c0dbd1fad7720a6.sht ml.

Official website of The People's Government of Hainan Province. (2016). The introduction of cities. https://web.archive.org/web/20160316161945/http://www.hainan.gov.cn/hn/zjhn/sxgl/sss /.

Official website of The People's Government of Hainan Province. (2016). Promoting the integration of "HaiChengWen". http://www.hainan.gov.cn/zxtadata-7277.html.

- Official website of The People's Government of Shanghai Municipality. (2018).
 - http://www.shanghai.gov.cn/nw2/nw2314/nw24651/nw43437/nw43442/u21aw1311502.ht ml.
- Official website of The People's Government of Shanghai Municipality. (2015). 2035 development goals of Shanghai municipality.

http://www.shanghai.gov.cn/nw2/nw2314/nw3766/nw3895/nw43958/index.html.

- Official website of The People's Government of Yudu County. The introduction of Yudu County. http://www.yudu.gov.cn/c100058/list3.shtml.
- Official website of The People's Government of Yudu County. (2019). The Government Agenda Report of Yudu County 2019.
 - http://www.yudu.gov.cn/c100033/2019/11/14/content_1fe890f6ea4e44fd83293a61494216 44.shtml.
- Official website of The People's Government of Yudu County. (2014). The Government Agenda Report of Yudu County 2010.

http://www.yudu.gov.cn/c100033/2014/12/25/content_f9e89edfa937475fbf1bcaf88682336 2.shtml.

Official website of The People's Government of Jiangxi Province. (2019). The Communique of Jiangxi Provincial Land and Greening condition in 2018.

http://www.jiangxi.gov.cn/art/2019/3/12/art_396_665576.html.

- Official website of The People's Government of Kaihua County. (2019). The introduction of geography. http://www.kaihua.gov.cn/col/col1346212/index.html.
- Official website of The People's Government of Kaihua County. (2020). The Government Agenda Report of Kaihua County 2019.

http://www.kaihua.gov.cn/art/2020/6/28/art_1346240_49228635.html.

- Official website of The Ministry of Commerce of the People's Republic of China. (2014). http://www.mofcom.gov.cn/article/resume/n/201408/20140800682921.shtml.
- Pang Haifeng, Jiang Hua. (2018). Reconsideration on "Multiple-Plans Integration" and Spatial Planning with the Practice in Zhejiang Province, pp.12-30.
- Pan Qisheng. (2018). China-US Comparative Study on "multiple-plans integration". Public Management and Policy Review, pp.52-67.


- People Net. (2001). Special plan of the "10th Five-Year Plan" for urbanization development. http://www.people.com.cn/GB/jinji/31/179/20010808/530284.html.
- People Net. (2010). In 2010, China's GDP surpassed Japan to become the world's second largest economy. http://politics.people.com.cn/GB/1026/13594169.html.
- People Net. (2015). Ruijin City, Xingguo County and Yudu County were approved as economic revitalization pilot districts.

http://politics.people.com.cn/n/2015/0324/c70731-26739114.html.

- Qi Shuhua, Jiang Meixin and Yu Xiubo. (2011). Evaluation of soil erosion in Jiangxi Province from 1995 to 2005 based on remote sensing and ULSE model. China Environmental Science, pp.7-13.
- Qian Zihua,Yi Zheng and Wang Fang. (2015). The Reform of Urban and Rural Planning under the Concept of Urban and Rural Coordination Practice Exploration and Reform Outlook. Urban Planning, pp.57-63.
- Qiu Baoxing. (2005). Urban planning changes in the process of urbanization in China. Shanghai: Published by Tongji University, pp.269.
- Researchgate. (2018). The administrative map of China.

https://www.researchgate.net/figure/The-administrative-map-of-China_fig1_329063368.

- Recommendation No.R (84) 2 of the Committee of Ministers to member states on the European Regional/Spatial Planning Charter. (1984). https://rm.coe.int/native/09000016804c87cb.
- Rogier van den Berg. (2020). How will COVID-19 affect urban planning?

https://thecityfix.com/blog/will-covid-19-affect-urban-planning-rogier-van-den-berg/. Shanghai Minhang District People's Government. (2016). The Report of Comprehensive Plan and

General Land-use Plan of Minhang District. (2016). The Report of Comprehensive Plan and General Land-use Plan of Minhang District.

http://xxgk.shmh.gov.cn/UpLoadPath/documentspare/eWebEditor/uploadfile/2018-06-22/a3c2aa9b-374c-4f36-8b19-0f9fbeae16f8.pdf.

- Shen Chi. (2015). Discussion on Difficulties and Solutions of "Multiple-Plans Integration". Environmental Protection, pp.17-19.
- Sina Finance Net. (2014). 28 pilot cities and counties plan to launch "multiple-plans integration". http://finance.sina.com.cn/china/20141119/013820855229.shtml.
- Souhu Net. (2019). The economic revitalization pilot districts. https://www.sohu.com/a/311157375_727432.
- Sun Hui. (2018). Hainan Province's master spatial layout of an open economy under the framework of "multiple-plans integration". Architecture Times, pp.21.
- Tang Huan. (2015). Case Study of "multiple-plans integration" in Kaihua County, Zhejiang Province. Zhejiang University, pp.29-30.
- The Introduction of Shanghai Municipality. (2019).
 - http://www.shanghai.gov.cn/shanghai/newshanghai/%E4%B8%8A%E6%B5%B7%E6%A6%8 2%E8%A7%88.pdf.
- The Paper Net. (2019). Several Opinions of the Central Committee of the Communist Party of China and the State Council on the Establishment and Supervision of the Territial Spatial Planning System. *https://www.thepaper.cn/newsDetail_forward_3520905.*

Travel China Guide. Shanghai City Layout.

https://www.travelchinaguide.com/cityguides/shanghai/orientation.htm.





- Van Assche, K., Beunen, R., Duineveld, M., and de Jong, H. (2013). Co-evolutions of planning and design: Risks and benefits of design perspectives in planning systems. Planning Theory, pp.177-198.
- Vincent. Nadin, Ana María Fernández Maldonado and W. A. M. Zonneveld, et al. (2018). COMPASS-Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe. Applied Research 2016-2018 : Final Report. Political Science, pp.14.
- Wang Jinyan, Wu Dianting and Chang Xu et.al. (2008). The Era Dilemma and Model Reconstruction of China's Spatial Planning System. Urban Problems, pp.62-68.
- Wang Xiangdong, Liu Weidong. (2012). China's Spatial Planning System: Status Quo, Problems and Reconstruction. Economic Geography. pp.7-15.
- Wang Xuyang, Huang Zhengxue. (2018). Stones from Other Hills: The Practice of Spatial Planning in Kaihua County, Zhejiang Province. Urban Development Studies, pp.26-31.
- Wang Zhaobing, Yang Yongchun. (2012). The Evolution of China's Macro-Spatial Planning since the Founding of New China - Taking the Urban Master Plan as the Starting Point. Research of Modern Cities, pp.45-54.
- World Bank. (2009). World Development Report 2009: Reshaping Economic Geography. https://transportgeography.org/?page_id=4103.
- Wu F. (2015). Planning For Growth: Urban and Regional Planning in China. NewYork & London: Routledge. RTPI Library Series, pp.56.
- Xie Yingting, Wang Wei. (2015). From "Multiple-plans integration" to Reconstruction of Spatial Planning System . Journal of Urban Planning, pp.15-21.
- Xin Hua News. (2020). Mainland China's population exceeds 14 billion. http://www.xinhuanet.com/politics/2020-01/17/c_1125474664.htm.
- Xin Hua News. (2019). Land Administration Law of the People's Republic of China. http://www.xinhuanet.com/2019-08/26/c_1124923935.htm.
- Xiong Jian, Fan Yu and Song Wei. (2017). Thoughts on the Construction of the Spatial Planning System of "Two Planning Integration and Multiple-plans Integration" in Shanghai. Urban Planning Journal, pp.42-51.
- Xu Jingquan, Shen Chi and Hu Tianxin, et al. (2017). The general thinking and main tasks of constructing China's spatial planning system. Planner, pp.5-11.
- Xu ke. (2011). Thoughts on the Compilation of Shanghai New Towns' Master Plan under the Background of "two planning integration". Shanghai Urban Planning, pp.72-77.
- Yang Zhiheng. (2011). The Conception of China's Spatial Planning System Framework. Science and Management, pp.5-9.
- Zhang Bing, Hu Yaowen. (2017). Exploring scientific Spatial Planning Based on Hainan Province Comprehensive Plan and the Practice of "Multiple-Plans Integration". Planner, pp.19-23.
- Zhang Jingxiang, Lin Huace and Chen Hao. (2018). The changes and reforms of China's spatial planning system for 40 years. Economic Geography, pp.1-6.
- Zhang Jingxiang, Luo Zhendong. (2013). The contemporary urban and rural planning trend of China. Southeast University Press, pp.35.
- Zhang Jingxiang, Wu Binlong and Cui Gonghao. (2004). Strategic Planning of Urban Development:
 - A Perspective of Local Government Governance in a Intense Competition Environment. Human Geography, pp.1-5.
- Zhang Jingxiang, Zhao Dan, Chen Hao. (2013). The end of growthism and the transformation of urban planning in China. Urban Planning, pp.45-50.



- Zhao ke. (2008). Reconstructing China's Spatial Planning System : International Experience and Implications. Reform, pp.126-130.
- Zhihu. (2018). China's Urban and Rural Planning Events. https://zhuanlan.zhihu.com/p/53107928.
- Zhou Jinsong. (2007). Study on the Implementation Scheme of "One Book, Two Certificates" Electronic Certificate. Chinese Society of Urban Planning, pp.2-7.
- Zhu Hongfang, Xu Jian. (2017). Exploring the path of advancing the reform of strategic spatial planning in the new situation. Housing and Real Estate, pp. 236.
- Zhu Debao. (2016). Exploration on the Construction of County and City Spatial Planning System Based on "multiple- plans integration". Modern City Research, pp.44-52.
- Zhuo Jian. (2017). Shanghai 2040 : Integration between urban transport and land use. https://slideplayer.com/slide/13918082/.