Multi-Planning Integration: Construction and Progress of China's National Territory Spatial Planning System

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Abstract: Spatial planning entails the adept control and scientific management of national territorial space a task crucial for achieving a balance between development and conservation.

In 2019, China initiated a spatial planning framework. This reform stands as a milestone, showcasing significant innovation in planning concepts, technical methodologies, and management systems in China over recent decades. This paper first reviews the pre-reform landscape, including the diverse planning types, prevalent issues, and experimental endeavors. Subsequently, it delineates the principal measures undertaken in China's national territorial spatial planning, encompassing aspects such as institutional management, systematic composition, compilation content, and technical methods. Lastly, it discusses the consequential shifts in objectives and goals within the realm of national territorial spatial planning objects and goals. China's spatial planning reform offers valuable insights for nations and regions grappling with the challenges of global climate change and aspiring for sustainable development.

Keywords: Spatial planning; National territory spatial planning; Planning reform; China.

1. Introduction

Spatial planning originated within the context of European integration. In the 1960s, strategic spatial planning was elevated as the conventional approach for urban and regional planning in Europe (Liu and Zhou, 2021, p.1). The European Spatial Development Perspective (ESDP), issued in 1999, was a quantum leap in the practical application of spatial planning (Rivolin and Faludi, 2005, p.196). The European Commission (1999) concluded that regional development was propagated through coordinated spatial policies, enhancing economic, social, and environmental harmony. Subsequently, governments and their planning communities across European Union countries began implementing spatial planning in practice (Yu, Cheng and Jiang, 2020, p.16). Spatial planning is considered a vital public policy for rational land resource allocation and orderly spatial structure layout in most countries globally (Medeiros, 2019, p.172; Trkulja, Tosic and Zivanovic, 2012, p.1729). It has become a fundamental institutional framework for addressing the challenges of spatial development and governance, especially in an era of economic globalisation (Zhang, Man and Zhang, 2023, p.1). The specific content, organisational methods, hierarchical systems, and other aspects of spatial planning vary among countries by being tailored to their socioeconomic development and national characteristics. However, they typically exhibit strong systematic and continuous features, ensuring comprehensive planning and management coverage of their territories. Spatial planning plays a significant role in the comprehensive coordination of national or regional political, economic, social, and ecological elements.

During the early 21st century, as China evolved, it progressively formulated methods in spatial planning, including urban-rural planning, land-use planning, main functional zone planning, etc. The implementation of these plans has propelled the rapid urbanisation process. However, in recent years, China has faced challenges such as global climate change, slowing urbanisation rates (Niu et al., 2024, p.24), negative population growth (Cheng and Guo, 2023, p.102), and environmental pollution (Yang, Xing and Jones, 2019, p1; Cai, Wang and Li, 2023, p.76). Due to limited resources and environmental carrying capacity, the government must utilise inventory resources and attain sustainable development. The previous approach to incremental development, predominant during China's rapid urbanisation, and managed by

various departments, is no longer suitable for the current national situation (Song et al., 2024, p.10). Against this backdrop, in March 2018, part of the institutional reforms in China was establishing the Ministry of Natural Resources (MNR). This ministry was tasked with establishing a spatial planning system while overseeing its implementation, marking the most significant spatial planning reform in China's history. "The Opinions on the Establishment and Supervision of the Implementation of the National Territory Spatial Planning System" (hereinafter referred to as the "Opinions") released in May 2019, proposed the establishment of a "top-level design" for the National Territory Spatial Planning (NTSP) system and its supervision (the Central Committee of the Communist Party of China and the State Council, 2019). This launched the comprehensive implementation of spatial planning reform nationwide. In 2022, the first national-level comprehensive implementation of "multi-planning integration" for overall plans was executed. The plans of 31 provincial-level regions in mainland China were submitted to the State Council, with 14 consented to. The authorizing bodies have received over 90 percent of the 350 municipal-level overall plans and 2,220 county-level overall plans nationwide, with the majority having completed the review process. Some municipalities and counties are receiving approval gradually. Overall, a unified and scientifically efficient NTSP system was formed nationwide. In an era of ecological civilisation, this newly established NTSP system is a plan that induces high-quality development and coordinates the protection and development of space. It also follows the requirements of strategic guidance and rigid control, achieves integrated urban-rural development, and coordinates the allocation of comprehensive territorial elements. It aims to address issues such as overlapping scopes and conflicting content among various previous plans, strictly adhere to the bottom line of food security, ecological security, and national security, and achieve high-quality development and life in urban and rural areas. It realises the organic integration of various spatial planning such as economic and social development, urban and rural construction, land use, ecological environment protection, forestry, water conservancy, transportation, and marine affairs.

Recently, NTSP has been a focal point of Chinese societal attention and a hot topic of discussion in the domestic planning academic community. However, due to being in a continuous process of reform exploration, there has been relatively little research on it internationally. After nearly six years of practice, the reform of China's NTSP has yielded phased achievements. In this context, this study systematically reviews the progress of China's NTSP reform and summarises its practices and characteristics. The aim is to provide a reference for countries or regions facing global climate change challenges and needing sustainable development.

2. The Origin of China's NTSP Reform

2.1 China's Spatial Planning Types Before the Reform

Most developed countries coordinate and guide spatial development through integrated spatial planning systems. Dissimilar to this, this is determined by China's institutional characteristics and basic national conditions. Before the NSTP reform, there were multiple plans instead of a strictly unified national spatial planning system. According to incomplete

data, over 80 types of plans, which the traditional spatial planning system incorporates, have a legal basis (Li et al., 2020, p.63). Each plan serves a different purpose. Amongst various types of plans, strategic, land and resources, ecological and environmental, urban and rural construction, and infrastructure (Figure 1), may serve the purpose of strategic guidance, resource protection and utilisation, construction, and development. The content is diverse but not well-structured.

Per laws, regulations, and national government documents, spatial planning with clarity and extensive influence include urban-rural planning, land-use planning, main functional zone planning, and eco-environmental protection planning. They are managed by the Ministry of Housing and Urban-Rural Development, the former Ministry of Land and Resources, the National Development and Reform Commission, and the former Ministry of Environmental Protection respectively. Based on China's administrative division system, spatial planning is split into national, provincial, municipal, county, and township administrative levels, Conclusively, due to a lack of consolidation and disorderly nature, the coexistence of multiple plans with "each doing its own thing" has led to prominent issues.

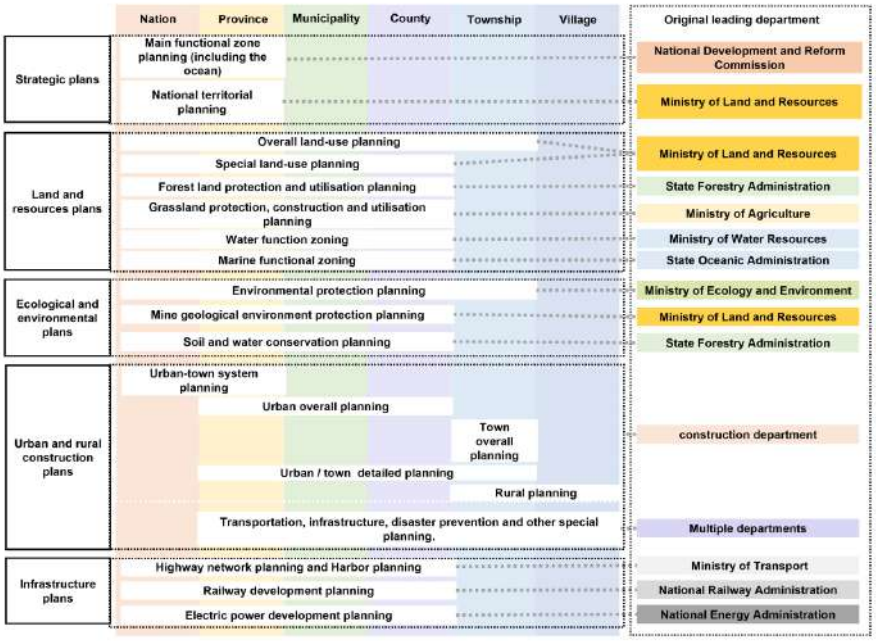

Figure 1: Traditional spatial planning system in China

2.2 China's Spatial Planning Issues Before the Reform

Before the NSTP reform, many spatial planning types with overlapping and conflicting content existed. Over 80 different types of plans corresponded to various administrative levels. They were managed by different departments, had different preparation and approval authorities, and were based on different laws and regulations. They also held different legal

statuses, and used different technical standards, making coordination and alignment challenging. Additionally, there were often significant disparities in objectives, content, and outcomes due to the diverse values and focal points. Prominent issues of functional overlap and content discord ensued among different plans.

The approval processes for various plans were complex, lacking overall coordination among management departments. Due to the leadership of several administrative departments, institutional and structural obstacles existed operationally in spatial planning at all levels. During the administrative review, different approval authorities, procedures, and focus areas led to a more prolonged coordination process. Furthermore, by statute and administrative documents, administrative powers to allocate land development rights were granted to different planning departments, thus creating independent approval authorities between departments and a lack of coordination.

Disorderly growth caused by the absence of long-term effective guidance in Urban development stems from the frequent changes in local plans caused by the lack of a planning authority. The "priority of superior power" feature of China's governance system, ensures that higher-level governments possess more authority. Higher-level plans serve as a basis for lower-level plans, with higher-level departments authorizing approval and supervising the implementation of lower-level plans. Higher-level plans often lack strategic and policy guidance. Thus, when lower-level plans try to imitate them, they lack operational and adaptive strength. At the same time, there is a phenomenon where lower-level plans tend to prioritise their interests, magnify the scale of development incrementally, and adjust layouts accordingly to the detriment of the higher-level plans' frameworks.

The foundational data for various plans lack uniformity (Liu, Zhan and Liu, 2019, p.51), with discrepancies in geographic coordinate systems, making it difficult for plans to connect. Cities like Guangzhou, early adopters of the "multi-planning Integration" approach, objectively face this challenge. Consequently, it is crucial to establish a unified coordinate conversion platform and a unified data infrastructure platform to achieve the conversion of different geographic coordinate systems and unify the spatial basic parameters of multiple plans. This would facilitate the subsequent planning and implementation of the "multi-planning Integration."

2.3 China's Exploration of " Multi-Planning Integration " Before the Reform

In the 1990s, prior to the NTSP reform, local cities like Shanghai conducted voluntary exploratory experiments, integrating different tiers of plans independently. In 2014, this evolved into pilot projects executed in 28 cities and counties selected by the National Development and Reform Commission, the Ministry of Environmental Protection, the Ministry of Land and Resources, and the Ministry of Housing and Urban-Rural Development. This initiated research on the "multi-planning Integration" scheme for economic and social development planning, urban-rural planning, land-use planning, and eco-environment protection planning. For the duration, a plan served as the core with other plans complementing it. It comprised three schemes dominated by economic and social development planning, urban-rural planning, and land-use planning, respectively.

In 2017, predicated by the city and county pilot projects and led by the General Office of the Communist Party of China Central Committee and the General Office of the State Council, nine provincial-level administrative units were selected. These units, inclusive of Hainan and

Ningxia, were chosen to conduct provincial-level spatial planning pilots and formulate unified provincial-level overall planning. It was mandatory to adopt a "top and down linkage, collaborative promotion" approach, synchronously advancing provincial, municipal, and county-level NTSP pilot projects. This ensured the interconnectivity and hierarchical management of spatial planning. Due to institutional reforms, this pilot project was discontinued. Overall, the phases of evolution in "multi-planning integration" from local voluntary experiments to departmental deployment and nationally coordinated pilots are replete with accomplishment and experience aiding NTSP reform. However, challenges as departments overly emphasise their functions persist, leading to insufficient integration of multiple plans.

2.4 A New Era of China's Spatial Planning Reform

In 2019, the "Opinions" officially proposed establishing a "multi-planning integration" NTSP system. This consolidates the previous separate spatial planning (main functional zone planning, land-use planning, urban-rural planning, etc.) previously managed by different departments, into a unified NTSP system. It shall be regulated by the Ministry of Natural Resources (MNR).

This unified system represents the inheritance and development of main functional zone planning, land-use planning, and urban-rural planning. It is a comprehensive, systematic, and innovative construction of the spatial system. Its purpose is to make overall arrangements for the all-region, all-element, and all-process development and protection of terrestrial and marine, urban and rural, above-ground and underground "mountains, rivers, forests, farmlands, lakes, grasslands, sands, glaciers," and other national territorial spaces. Its terminus a quo includes responding to the requirements of China's new era of ecological civilisation construction, changing the previous emphasis on development and neglect of resource protection, and guiding the sustainable development of national territorial space. Synchronically, the government has clarified the legal status of NTSP reform from the legislative perspective, amending the "Land Administration Law" to stipulate the requirements and legal effectiveness of NTSP. It represents a systemic and reconstructive planning reform in aspects such as planning systems, management institutions, technical methods, and interdisciplinary fields, for China in recent decades.

3. Major Measures of China's NTSP (Reform

3.1 Unified Management Functions of Spatial Planning

China being vast in territory and population, possesses a complex national administration. Over time, numerous spatial planning and management mechanisms have been developed lacking a unified top-level design and institutional framework. This has resulted in conflicts between different management departments, driven by departmental interests and the struggle for "discourse power," leading to conflict between different spatial planning.

The core measure of the NTSP reform is to centralise the responsibility of NTSP under one department, while "strengthening the guiding and restraining the role of NTSP on various special plans." The previous issue of "multi-planning conflicts" precipitated by institutional mechanisms will be explored.

To bolster the management of NTSP, China established the MNR in 2018. It integrated

previous responsibilities for the formulation and approval of all spatial planning. This consolidation comprises the management of national territorial planning and land-use planning from the former Ministry of Land and Resources, main functional zone planning from the National Development and Reform Commission, and urban-rural planning from the Ministry of Housing and Urban-Rural Development. It also includes resource investigation and demarcation registration management responsibilities related to natural resources from the Ministry of Water Resources, the Ministry of Agriculture, the State Forestry Administration, the State Oceanic Administration, and the National Bureau of Surveying, Mapping, and Geoinformation. A high degree of accord in spatial planning rights has been achieved through institutional reforms. This initiated the reconstruction of the NTSP system, ending the history of "Nine Dragons Water Control" of planning formulation and management by multiple departments. All spatial planning formulations are to be uniformly managed by the MNR.

The MNR is tasked with establishing the spatial planning system and supervising its implementation, promoting the strategy and system of main functional zones. It oversees the formulation, approval, and implementation of overall, detailed and special planning by governments at all levels and relevant competent departments (Table 1). The MNR issued guidelines for formulating plans and has convened national video conferences to promote the formulation of NTSP. The aim is to standardise the development of NTSP across the country according to the requirements of a "unified map, unified standards, unified planning, and unified platform."

Table1: Institutions responsible for formulating and approving NTSP (NTSP Bureau of the MNR, 2021, p.11)

Corresponding planning			**Formulation department**	**Approval department**
overall planning	national-level NTSP		The Ministry of Natural Resources and relevant departments	the Central Committee of the Communist Party of China and the State Council.
	provincial-level NTSP		provincial-level Government	After deliberation by the local People's Congress Standing Committee, it shall be submitted to the State Council
	municipal, county and township level NTSP	the municipal-level NTSP approved by the State Council	municipal-level Government	After deliberation by the local People's Congress Standing Committee, the provincial-level government shall report to the State Council

	other municipal, county and township level NTSP	same-level Government	Provincial governments clarify the requirements for the compilation and approval of content and procedures
detailed planning	Within the boundaries of urban-town development	natural resources department of the municipal or county government	Municipal and county level government
	Village areas beyond the boundaries of urban-town development	township government	Municipal and county level government
special planning	special planning for coastal zones, nature reserves, and trans-administrative or basin NTSP.	local or higher-level natural resources department	same-level Government
	Special planning for specific fields involving spatial utilisation,	relevant authorities	Approved according to relevant regulations

3.2 Composition of the NTSP System

The "multi-planning integration" NTSP system framework includes "five levels, three types, and four systems" (Figure 2). The "five levels" are the administrative levels of the national, provincial, municipal, county, and township in China's management system. The "three types" of planning include national territorial spatial overall planning, detailed planning, and special planning. The "four systems" are the formulation and approval system, implementation and supervision system, legal and policy system, and technical standards system of NTSP.

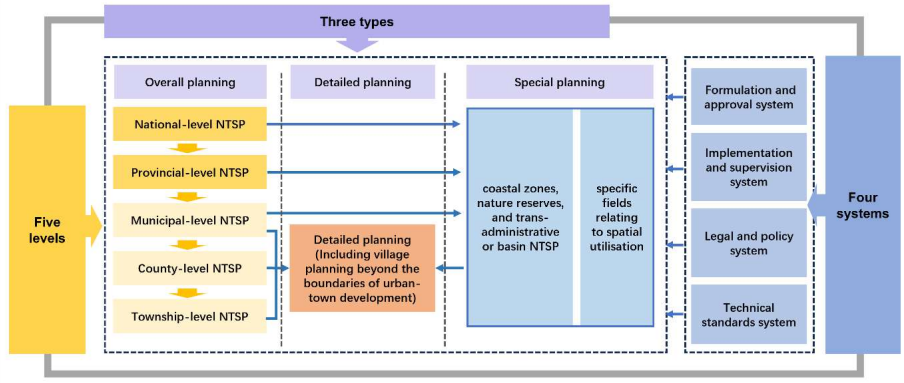

Figure 2: "five levels, three types, and four systems" of NTSP system

3.2.1 Overall Planning of NTSP

The national-level overall planning is a comprehensive arrangement that outlines the policies and principles for protecting, developing, utilizing, and restoring national land space, while focusing on strategic considerations. It is formulated by the MNR and other relevant departments, authorised by the Central Committee of the Communist Party of China and the State Council. The Provincial-level overall planning which implements the national-level overall planning, guides the formulation of overall planning at the municipal and county levels, and emphasises coordination, is organised by provincial governments. Post-review by the local People's Congress Standing Committee, it is submitted to the State Council for approval. Municipal-level, county-level, and township-level overall planning refine the requirements of higher-level overall planning and provide specific arrangements for development and protection within their administrative regions, centred on implementation. Municipal governments organise several municipal-level overall planning, approved by the State Council, reviewed by the local People's Congress Standing Committee, submitted to the provincial government, and transferred back to the State Council. The framework for planning content and procedures is enshrined in the overall planning for municipal-level, county-level, and township-level, based on local conditions by provincial governments. The township-level overall planning may be compiled based on several townships as units or consolidated with municipal-level overall planning, all contingent on local circumstances by local authorities.

3.2.2 Detailed Planning of NTSP

The detailed planning provides practical arrangements for land use, development intensity, and construction in specific areas. It serves as the legal framework for land development and protection activities, land use control, issuance of urban and rural construction project planning permits, and various construction activities. There are two types of detailed planning; within urban-town development boundaries and beyond urban-town development boundaries. The former is organised by the natural resources department of the municipal or county government and submitted for approval by the same-level government. The latter are in rural areas with one

or several administrative villages, used as a unit. Detailed planning is prepared by the township government as a practical village plan and submitted for approval by the higher-level government.

3.2.3 Special Planning of NTSP

Special planning rare specialised arrangements created for specific regions (basins) or fields indicating specific functions and requirements for spatial development, protection, and utilisation. It includes; (1) Special planning for coastal zones, nature reserves, and trans-administrative or basin NTSP. This is organised by the local or higher-level natural resources department and submitted for approval by the same-level government. (2) Special planning for specific fields involving spatial utilisation, such as transportation, energy, water conservancy, agriculture, information, municipal infrastructure, public service facilities, military facilities, ecological and cultural heritage protection, forestry, and grassland planning, organised by relevant authorities.

3.3 Core Contents of NTSP Compilation

The current NTSP invokes the implementation of national strategies, clarification of spatial development goals, and optimisation of urbanisation patterns, agricultural production patterns, and ecological protection patterns. It dictates the determination of spatial development strategies, the transformation of territory spatial development and protection methods, and the enhancement of the quality and efficiency of territory spatial development and protection. On this basis, preliminary work as unified base map data, clear classification and zoning standards for land and sea use, double evaluation, and double assessment in the compilation of NTSP has been executed by various regions. The structural optimisation of territory spatial layout and the protection and utilisation of various natural resource elements have been executed. Delineating the "three zones and three lines" is the principal objective of establishing the entire NTSP (Figure 3). Coordinated planning and this delineation are at the core of unified control of various spatial planning purposes.

The "three lines" refer to the permanent basic farmland red line, ecological protection red line, and urban-town development boundary. The permanent basic farmland red line indicates the cultivated land under permanent special protection. This ensures national food security and the supply of important agricultural products. It is necessary to strictly demarcate according to relevant national regulations while implementing the permanent basic farmland protection tasks, disintegrated and assigned by superior plans. The ecological protection red line is a rigid control line within the ecological space. It indicates areas with special and important ecological functions within the ecological space that must be safeguarded, ensuring national ecological security. This is inclusive of forests, grasslands, wetlands, and water bodies. It also comprises urban and rural areas, mining land, and aquaculture areas that should be gradually and orderly phased out. The urban-town development boundary is the territorial spatial boundary where urban development and concentrated construction can be executed within a certain period. It includes cities, towns, and various development zones. It is a policy line for urban spatial control, emphasizing conservation, intensification, and green development. Each province controls the scope of urban development boundaries, not exceeding 1.3 times the total scale of

urban construction land in 2020, while having the autonomy to guide cities and counties in delineating urban development boundaries.

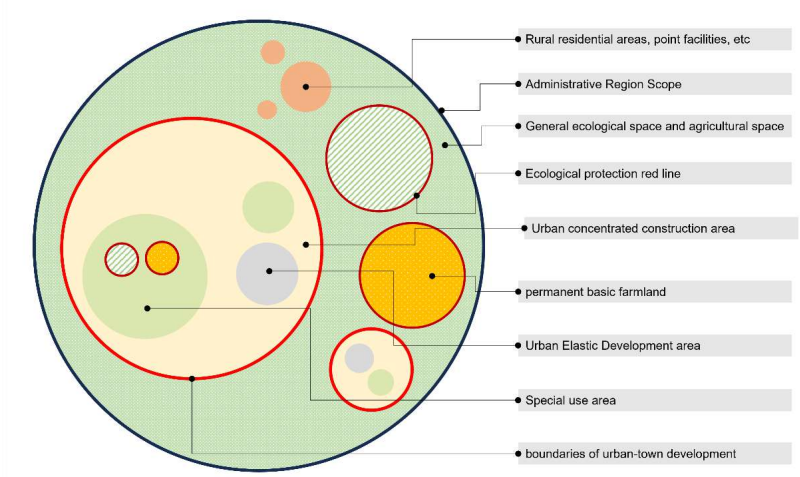

Figure 3: The division of the "three zones and three lines"

These considerations must be adhered to in delineating the "three lines": (1) The "three lines" must be perceived as the red line with non-navigable boundaries for adjusting economic structure, planning industrial development, and promoting urbanisation. Protection targets of 18.65 billion mu of arable land and 1.546 billion mu of permanent basic farmland must be set by the state by 2020 (NTSP Bureau of the MNR, 2023, p.79). (2) Demarcation per the priority order of arable land and permanent basic farmland red line, ecological protection red line, and urban-town development boundary. This ensures the three control lines do not intersect, overlap, or conflict. (3) An incorporation of the results of this delineation of "three lines" into "one map" of NTSP, achieving integration of "numbers, lines, and maps". Synchronously, it improves the functionality of the national territory spatial basic information platform, ensuring that targets such as arable land, permanent basic farmland red line, and ecological protection red line be implemented, assessed, and held accountable.

The national results of this delineation reveal that more than 30 percent of the land territory and 150,000 square kilometers of sea area are designated as ecological protection red lines, leading the world in implementing the ecological protection red line system (People's Daily, 2023).. Policies like comprehensive land consolidation, redevelopment of inefficient urban land, the nexus of urban and rural construction land increase and decrease, and entry of collectively operated construction land into the market should be introduced. These policy measures should be consolidated with the overall planning and detailed planning implementation management mechanism to form a platform and institutional design. This optimises the territory spatial pattern after delineating the "three zones and three lines", which is both principled and flexible, shifting focus from "how to delineate" to "how to manage".

3.4 Digital Technology Application of the NTSP System

The NTSP system emphasises the use of digital technology to establish a unified national

digital NTSP "one map" system (Figure 4). This aims to lead the transformation of territory spatial governance through "digitalisation" and advance government management and service efficiency.

The "one map" system of NTSP is characterised by; (1) Basic data possessing authenticity, systematicity, and standardisation. Based on "the third national land survey and annual change survey", high-resolution remote sensing images and three-dimensional surveying and mapping data, integrating various spatial data like meteorology, hydrology, geology, and population, the system adopts unified standards for data inclusion. This unified base map accurately indicates the national territory spatial data. (2) Management implementation which features interconnectedness, efficiency, and authority. Data is relayed through the system to various departments and regions.

Using the basic information platform, the NTSP "one map" implementation supervision information system is constructed, integrating the results of the national "three zones and three lines" delineation and the "five levels, three types" of NTSP. This encapsulates the entire domain, effectively updates, and is authoritative and unified. This serves as a framework for cross-departmental, cross-level, and cross-process planning management. The digital and intelligent management of the entire process of the NTSP is a noteworthy accomplishment.

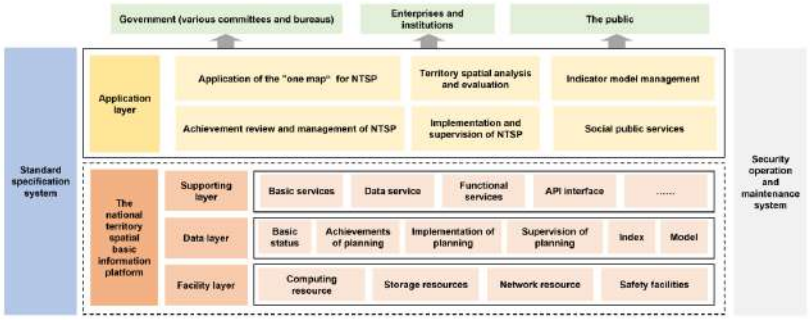

Figure 4: Construction framework of NTSP "One Map" (NTSP Bureau of the MNR, 2023, p.190)

4. Discussion

4.1 From Urban-Oriented Planning to Entire Land and Sea Area-Oriented NTSP

An important change in the reform of NTSP is the expansion of planning scope from urban areas with concentrated populations, facilities, and industries to encompassing the entire territory. This covers marine and terrestrial areas, including elements like urban and rural construction land, transportation, and water conservancy. It consists of other construction areas and non-construction land (arable land, forests, and water). This change is closely linked to the concept that "mountains, rivers, forests, farmlands, lakes, and grasses form a community of life" which is emphasised by Chinese President Xi Jinping. In preparation for NTSP at all levels and based on this idea of coordinated governance, coordination of all types

of natural resource elements across the entire territory is perceived as an important goal.

To cope with this change, corresponding changes have been made in the technical methods used in planning preparation, including making the types of basic land use and spatial zoning more complex. In this process, the MNR issued the "Classification Guidelines for Land and Sea Use in Territorial Spatial Survey, Planning, and Utilisation Control." It unified the investigation, statistics, and planning classification standards for all NTSP involved, including 24 primary classes, 113 secondary classes, and 140 tertiary classes. It is worth noting that this classification absorbs and connects the original classifications of land-use planning and urban-rural planning. It incorporates concepts related to marine functional zoning, which was not previously addressed by land-use planning and urban-rural planning.

Due to the significant changes in the objects and scope controlled by planning guidance, there has been a huge impact on the development of the planning industry in mainland China. In planning preparation, the composition of planning teams has become unprecedentedly diverse. In addition to urban planning professionals, many professionals in geographic information technology, land planning, geography, marine science, ecology, and mineral resources have joined, forming comprehensive planning teams with multidisciplinary backgrounds. Previously, most of China's urban master plans were prepared by urban planning institutions such as the China Academy of Urban Planning & Design. The units responsible for preparing the overall planning of NTSP have become a tripartite situation of urban planning institutions, land planning institutions, and surveying, mapping, and information institutions. Completion of a plan often requires the collaborative efforts of these three types of institutions, sometimes supplemented by local urban design institutions. They form a consolidated vessel to complete the planning together, dissimilar to the traditional planning projects that can be completed by a single design unit or team. In the specific work of planning preparation, because the teams involved belong to different units, and sometimes work locations are not in the same city, there are also significant differences in work habits. During the several years of preparation, the entire project is often segmented into several sub-projects for operation. This means that it is in a fragmented state, and each team completes its section according to its work habits and expertise, resulting in a mosaic-like outcome. This type of planning preparation consortium is not in line with the requirement of "multi-planning Integration" advocated which undermines the systematic nature of planning and leads to significant fragmentation.

4.2 From Blueprint Planning to Bottom-Line Planning

Another important change in the reform of NTSP is that the planning objectives are more comprehensive than before. This shifts from a previous focus solely on maximizing the spatial expansion of local economic growth to effectively addressing ecological, environmental, and social-cultural issues while continuing economic growth, emphasizing ecological priority, green development, and sustainable development. This reflects a change in the value of planning, emphasizing tight constraints on resources and the environment, and increasing the level of resource conservation and intensive use.

This change is precipitated byo the requirements of China's ecological civilisation system reform. To achieve the goal of sustainable development, it is necessary to scientifically constrain urban-town spatial development and strictly protect the bottom line of food security

and core ecological space. Therefore, delineating of the "three lines" has become one of the core contents of NTSP. Among them, the permanent basic farmland red line and ecological protection red line determine the bottom line of national land resource protection. This aims to ensure agricultural production and ecological security; the urban-town development boundary determines the upper limit of land development, ensuring high-quality development.

This bottom-line thinking of planning is different from that in Western developed countries. The pressure of population and cities on the environment and farmland in Western countries has not been so great as to affect national security and survival. There has been no systematic planning theory based on the premise of protecting farmland. In countries where the relationship between people and land, especially land resources, is not tense, the focus and approach of spatial planning control may differ. Although there is also an emphasis on controlling urban sprawl, the urban space in Western countries typically exhibits large areas of ecological leisure and agricultural space, extensive low-density suburban residential areas, and small-scale high-density central cities. After more than 40 years of rapid urbanisation in China, issues such as food security and ecological security have emerged. This has not been seen in Western developed countries, and it affects the public's survival and quality of life. By delineating the "three lines", China's reform of NTSP aims to ensure ecological security, food security, and national security.

The NTSP must plan the development of urban individuals under the premise of meeting national food and ecological security. Subsequently, the "three lines" become a prerequisite for urban-town spatial planning. In the specific process of planning preparation, the delineation of the "three lines" is carried out uniformly at the national level, and the MNR has formulated rules for delineation. Protection tasks are determined from the national level to the township level, including scale, quantity, and layout, with an accuracy reaching the scale of patches and then delineated in a coordinated manner from the bottom up on a unified base map. In this process, three rounds of trials of "top-down" and "bottom-up" have been experienced, forming a unified national "three lines" result, which is incorporated into NTSP at all levels. As can be seen, the "three lines" as a bottom-line constraint, in the five-level NTSP system, the requirement is for strict implementation from top to bottom and gradual transmission. The results of delineating the "three lines", to become one of the independent outcomes of NTSP, have been officially used before planning is approved. Between September 28, 2022, to April 11, 2023, the MNR approved the delineation results of the "three lines" for all provinces nationwide. Thus, the first comprehensive delineation of the "three lines", that is the most basic and important control outcome in the NTSP system, has been completed. It serves as the foundation for land use control in territorial spatial planning. In the process of approving construction land, various regions must strictly implement control measures under the "third line". After delineating the "three lines", how to use the results specifically and formulate corresponding management rules is one of the key areas currently being researched by the MNR.

It is worth noting that delineating the "three lines" is an attempt at reform, representing an innovative endeavor that inherits various historical regulatory policies, technical standards, and relevant planning initiatives. Due to factors such as data limitations, temporal constraints, and experiential gaps, certain controversies surrounding the practical application of the outcomes within society are inherent. A perspective suggests that the outcome lacks precision

and may pose certain hindrances to regional economic development, advocating for potential adjustments in the future. The feasibility and modalities of such adjustments constitute a widely debated topic among the academic and professional planning communities.

5. Conclusion

In addressing the historical issue of inconsistency in multiple planning systems, China has undertaken a nationwide reform of its NTSP in recent years. This reform not only reflects changes in the governance approach of the country but has also sparked intense academic discourse. Since 2018, over 2000 Chinese-language papers have been published on the subject. Scholars and industry professionals in China have engaged in vigorous discussions regarding the reform, spanning various disciplines such as urban planning, geography, land resource management, ecology, resource science, environmental science, and marine science. In the practical realm of planning, these academic discussions have aided the government continuously, particularly the MNR. This is done by formulating technical guidelines and showcasing a collective effort between academia, government, and industry to actively explore solutions at the nexus of technology- theory- institutional frameworks.

At the institutional level, this reform has completed the top-level design of the NTSP system, establishing the foundational and statutory status of NTSP within the national spatial governance system, thereby forming the "Chinese solution" to spatial governance. At the operational level, under the leadership of the MNR, significant progress has been made in the formulation of NTSP. This includes the establishment of the "three lines" nationwide, which serve as non-negotiable boundaries for sustainable development. Furthermore, the overall planning at the national, provincial, municipal, county, and township levels has almost been completed, approved, or in the process of approval. Additionally, a unified digital territorial spatial planning "one map" system has been established nationwide. These efforts have laid the groundwork for China's sustainable development. It will serve as the basis for development activities until 2035, serving as the primary public policy tool for spatial and resource allocation.

While China's NTSP reform has achieved breakthroughs in multi-planning Integration, several unresolved contradictions and issues persist. First, legislative reforms are imperative.. Although the revised "land management law" of 2019 clarifies the legal status of NTSP, detailed provisions regarding its formulation, approval, implementation, and oversight are lacking. Consequently, NTSP is currently in a transitional state deficient of comprehensive legal support, undermining the gravity and authority of the planning process. There is a need to strengthen legislative efforts to specify the entire process and critical junctures of planning formulation, approval, implementation, modification, and supervision. This must ensure alignment with existing laws and enhance the role of the rule of law in guiding, regulating, and safeguarding the " multi-planning Integration " reform. Second, interdepartmental coordination still requires strengthening. Despite achieving integration among the main functional zone planning, land-use planning, and urban-rural planning, NTSP cannot replace special planning, and other departments still need to formulate corresponding special planning. These industry regulatory authorities often prioritise their development needs, paying less attention to conflicts between development and protection, and the tight

constraints between demand and resources. This often results in special planning lacking precise alignment with the content of overall planning and insufficient guidance for detailed planning formulation, thus limiting the effectiveness of coordinated guidance. It is imperative to promptly establish a special planning management system, break down barriers between different departments, and coordinate spatial conflicts on the "one map" of NTSP. There should be a strengthening of the implementation of special planning derived from overall planning and better promotion of socio-economic development.

Spatial planning, as a form of public policy, exerts significant influence on the development of a country or region. Despite substantial political, economic, and socio-cultural disparities between China and other countries, China has incorporated experiences from developed nations such as the Netherlands and Japan in formulating its spatial planning reform. Over the past few years, China has accumulated its own experiences and lessons, which could serve as a reference for countries or regions in similar development stages, grappling with global climate change challenges, and striving for sustainable development to enhance their spatial planning systems.

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