

## High-quality integration in the Yangtze River Delta:

### What can planning do

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**The Yangtze** River Delta region is one of the regions with the most active economic development, the highest degree of openness and the strongest innovation ability in our country, its integrated development is not only related to the adjustment of regional economic structure, the innovation of social management and the construction of ecological civilization, but also to the promotion of high-quality national development and the construction of a new development pattern. However, the integration of the Yangtze river delta is facing many challenges such as administrative barriers, regional coordination, green transformation and so on.

To this end, the editorial department of the “Yangtze River delta high-quality integration: what can planning do?” As the theme, the organization of a new academic talk, invited 13 experts from the front-line views. Professor Zhang Jingxiang pointed out that the integration of the Yangtze River Delta was restricted by the threshold of market and factor flow and allocation, those pure top-down push, lack of broad consensus in the region, stay in the empty slogan of integration planning are difficult to really implement; Deputy Director Tu Qiyu pointed out that the current regional strategic space is still mainly identified in the natural layer, while the tourism dimension is limited to tandem, and the industrial dimension planning is extremely dependent on market regulation, the Science and technology innovation dimension planning is inefficient and does not adapt to the increasingly active subject cooperation network; Zhao Min believes that some new-type park planning and development plans have the phenomenon of local blindness and low-level duplication of construction, wang Wei has revealed two major problems that often occur in current regional integration, that is, deep-seated interest barriers lead to unimplementable and “Face-type, bonsai-type” projects lead to unsustainable. The solution to these problems must be guided and implemented through scientific and rational planning.

What follows is a concise summary of the experts' thoughts and views on this subject, which revolves around the following three questions:

Closely linked to the Yangtze River Delta integration of high-quality development of the new requirements, planning should be in which areas, which regions to make a difference?

In view of the above issues, Duan Jin emphasized the importance of ecological protection and urban design in key demonstration areas, proposed the concept of water and rural living room, and pointed out the key role of planning and design in solving the problems of regional integration In order to solve the problem of the fragmentation of the space strip in the Yangtze River Delta, Gu Hao first inspector put forward the concept of compound corridor, and thought that the emphasis should be put on the overall planning of corridor Tu Qiyu, deputy director of the Yangtze River Delta integration should form a super city-region, its inner metropolitan area, metropolitan area, urban agglomeration multiple embedded, so as to form a solid support;

Director Wang Wei pointed out that not only planning and design “Space container”, but also planning and design “Energy magnet” and “Scene stage”.

How can planning play a leading and coordinating role in promoting rational allocation of production factors, cross-regional synergy of industrial innovation, joint protection and governance of the ecological environment, and joint construction and sharing of infrastructure? Professor Fang Chuanglin put forward the blueprint of “Beauty” of Yangtze River Delta from four aspects: carbon reduction, pollution reduction, green expansion and growth Professor Chen Wen, on the other hand, thinks that we should plan and continue to broaden the path of realizing the value of ecological products, explore the mechanism of horizontal ecological compensation and protection, and accelerate the transformation of ecological advantages into economic advantages and development advantages Professor Yang Dongyuan pointed out that the regional orbit is an important link to support the inner connection of urban agglomerations, and it is urgent for urban agglomerations outside the central urban area to be able to carry emerging industries in their space, to attract the associated high-quality employment groups to live in the social life space; Gu Hao Level 1 inspector that planning should be supported by resources to identify key areas and key projects to tilt, in order to achieve the concentration of factors to the dominant areas or to the local needs of accurate allocation, professor Ning Yue-min pointed out that planning to strengthen the overall capacity, more attention should be paid to the coordination of natural and socio-economic development, and regional development.

How can we innovate the planning synergy mechanism to push the high-quality integrated development of the Yangtze River delta deeper?

Professor Yu Tao-fang suggested that the development of complex giant systems should be followed to enhance and develop resilience and adaptability; Professor Tang Zilai stressed that as a space coordination framework for consultation, joint construction, joint management and shared benefits, the territorial and spatial planning of the Yangtze river delta region needs to “Meet national interests, deal with neighboring relations and take into account local demands”, focusing on cross-border coordination and network research, propose the important role of planning in promoting equal consultation, solving specific problems and coordinating institutional mechanisms; Professor Zhang Jingxiang believes that the key lies in the design of a system and policy system that has a positive incentive effect on member cities in the region, “A good government plus an efficient market” will motivate the implementation of integrated planning.

The editorial department of the Journal of urban planning is pleased to record the insights of the experts in this issue, believing that our readers will surely benefit from them, we look forward to hearing back from you on your experiences and thoughts.

**Regional planning for the Yangtze River Delta should focus on cross-border collaboration and web-based research**

Tang Zilai (professor, School of Architecture and urban planning, Tongji University)

The Yangtze River Delta region is a geographical unit composed of several neighboring provincial administrative districts (including Shanghai, Jiangsu, Zhejiang and Anhui) . Therefore, there are both administrative jurisdiction attributes and geographical location attributes, but also exist between each other's functional correlation. One of the key points of land space planning in the Yangtze River Delta (as well as other regions) is the coordination among several provincial administrative bodies. Therefore, the key to high-quality integration in the Yangtze river delta lies in "Breaking the administrative boundary without changing the current administrative subordination relationship, and realizing the consultation, joint construction, joint management and win-win situation of each administrative jurisdiction", relevant provinces and cities should identify common interests, form common understanding, and construct a common vision. The common feature of "The outline of regional integration development plan for the Yangtze river delta" and "The master plan of territorial space for the demonstration area of ecological green integration development of the Yangtze River Delta (2021-2035)" is the coordinated development across the provincial administrative jurisdiction.

As a space coordination framework for consultation, joint construction, joint management and win-win sharing, the territorial spatial planning of the Yangtze River Delta region (and that of other regions as well) needs to "Satisfy the national interests, deal with the adjacent relations and give consideration to the local demands", whether it is industrial systems, infrastructure, the environment or public services. Taking the Yangtze River Ecological Corridor as an example, it is not only an ecological element at the national level (each province and city must implement it spatially) , but also runs through the entire Yangtze River Delta region (each province and city must connect with each other) , provinces and cities may have special situations to deal with (each province and city must be connected internally) .

Thus, the spatial planning of the Yangtze River Delta region is more of a spatial coordination framework. A city and three provinces should follow the principle of "Meeting national interests, dealing with neighboring relations and taking into account local demands", which can "Identify common interests, form common cognition and construct common vision".

The land spatial planning at the regional level of the Yangtze River Delta should be based on the study of regional development. The traditional research focuses on the urban hierarchy, while the new research focuses more on the urban connection network. In other words, although there are similar hierarchical differences among the cities in the region, the important correlation dimensions and the hinterland of the cities may be different.

The study of urban connectivity networks presents a multi-perspective, multi-level, and multi-time perspective. The multi-perspective of the study of Urban Association network involves the perspectives of economy, science and technology, ecology, culture and transportation. The research team did some research on the relationship between cities in different dimensions, levels and time periods, which involves the Yangtze River Delta region of enterprises, capital, science and Technology and transport dimensions of inter-city network.

Take the high-speed rail network between cities as an example. The function and status of a city in the high-speed railway network should be considered not only in the total number of train trips, but also in the ratio of train trips from beginning to end and stops. The city status is the dominant factor affecting the total number of high-speed rail trips, and the location is the significant factor affecting the composition of high-speed rail trips. According to 2021 statistics, although Shanghai, Nanjing, Hangzhou, Hefei and Suzhou are all in the first tier of the total number of high-speed rail trips, these cities can be divided into three types in terms of the composition of the trips. Shanghai is the economic center of the Yangtze River Delta region and even the whole country. Not only is the total number of high-speed rail trips at the first level, but it also occupies the first place (close to 80%) . Nanjing, Hangzhou and Hefei are the provincial capitals, 20% of the high-speed rail trips are from beginning to end. Nanjing, for example, is not only the stop-and-go city of Beijing-shanghai high-speed railway at the national level, but also the beginning and end of shanghai-nanjing high-speed railway at the regional level. Suzhou, as a prefecture-level economic strong city, is located in Beijing-shanghai high-speed rail and shanghai-nanjing high-speed rail“Must pass through”, although the total number of high-speed rail trips in the first level, but the proportion of the beginning and end trips is only about 1% .

### **Planning and design services for the high-quality integrated development of the Yangtze River Delta**

Duan Jin (member of the Chinese Academy of Sciences, Professor of Southeast University)

The integrated development of the Yangtze River Delta is a major national strategy personally planned, deployed and promoted by General Secretary Xi Jinping. As a planning and design worker, I have the honor to lead a team to participate in the master planning work camp, put forward the idea of “water town living room” and prepare urban design and detailed planning of national land space, prepare a cross-provincial planning and construction guidelines, carry out a study on the protection and development of regional features and styles, and participate in the planning and design of Yangtze River Delta Integration Demonstration Area at multiple levels. We have participated in the planning and design of the Yangtze River Delta Integration Demonstration Zone at various levels, and have formed a little experience to share with you.

As a“First-hand chess” and a breakthrough in the implementation of the integrated development strategy of the Yangtze River delta, yangtze River Delta Ecological Green Integration Development Demonstration Zone (hereinafter referred to as the“Demonstration zone”) needs to explore the“Regional integration development” of this global problem of innovation. The“Hu-su-jia” junction, where the demonstration zone is located, is a depression of development in the three areas and also a place of concentrated conflicts. Administrative Division brings about a series of problems, such as culture, transportation, water affairs, environmental protection, etc. , for a long time, these problems have not been effectively resolved, resulting in a lack of convergence and a lack of connectivity. In the light of the above-mentioned problems, we propose that at the origin of the boundary between the two provinces and one city, where the contradictions are most prominent, to create a“Jiangnan

courtyard, waterside living room”, which embodies oriental artistic conception, accommodates harmonious living environment, provides a pleasant environment for recreation and a creative environment for all, to practice and demonstrate the development concept of “Urban water symbiosis, vitality and regional sharing”, and further propose the construction of a coordinated with the natural environment, the symbol of the culture of the south of the Yangtze river in wugen is “Square Hall Water Court”, which provides the exchange place and supporting service function. The idea was widely accepted and included in the overall land and space planning of the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone (2021-2035) approved by the central government.

It is an important means to compile detailed planning for how to implement the General Plan after its approval. As our country's first cross-provincial land and Space Plan, we have been invited to compile the detailed land and space plan for the water village living room of the Yangtze River Delta Ecological Green Integration Development Demonstration Zone, it further clarifies the requirements for the management and control of land types, spatial structure, ecological environment, urban design, industrial development, public services, housing, transportation, municipal administration, safety and disaster prevention systems in the demonstration zone, providing a legal basis for the development and construction, use control and planning permission of living rooms in water villages.

In the meantime, in view of the main difficulties of the demonstration area, such as the mismatch of functions, the disharmony of space, the disunity of style and the inexact management, we joined hands with the Shanghai Planning Institute and the Shanghai Municipal Council, based on the analysis of the status quo of the planning and construction management of the demonstration zone, drawing lessons from and contrasting the advanced international concepts, technologies and standards, and paying attention to the coordination of the existing local standards in Qingpu district, Wujiang district and Jiashan County, adopting the new “3 + 1 + X” model (3 being the current standard for the three administrative subjects in the demonstration zone, 1 being the national (industrial) standard and X being the standard for several regions or cities with slightly higher or equal levels of development at home and abroad), overall coordination of “Water, forest, field, town, village,” the preparation of the “Yangtze River Delta Eco-green Integration Development Demonstration Zone pilot zone planning and construction guidelines. As the first achievement of standardization of inter-provincial planning and construction in our country, this guideline has been on trial for two years, and the second one was approved and officially released on January 2, 2024, for the initial construction phase of the demonstration area to provide a unified compliance with the space quality baseline and implementation benchmarks.

At the same time, in order to explore how to anchor the ecological base through planning, plant cultural advantages, highlight the characteristics of human settlements, we carried out the “Yangtze River Delta Eco-green integration development demonstration zone in the new era of Jiangnan City and rural regional characteristics shaping research”, for the demonstration zone features of the characteristics of the deep excavation and revealed a plan. Based on the team's continuous follow-up study of urban space in the Taihu Lake basin for more than 20 years, by summarizing the spatial genes formed by the interaction of urban space with nature and

humanity in the Taihu Lake basin, it provides important technical support for the protection and development of the urban and rural regional characteristics of the demonstration area.

On February 20, 2024, the Demonstration Zone released the Physical Examination Evaluation Report on the implementation of the overall territorial and spatial planning of the Yangtze River Delta eco-green Integrated Development Demonstration Zone (2023), the report concluded that "The pattern of land and space protection and development in the demonstration zones has been continuously improved, the level of integrated regional space governance has improved significantly, and the planning and Management System of unified compilation, joint application for approval and joint implementation has basically taken shape, providing strong support for high-quality economic and social development in the demonstration zones." Among them, the water village living room detailed planning has realized the demonstration area general plan "The precision vertical transmission", the planning construction guideline has realized "A set of standard tube quality".

At present, 145 key projects have been advanced in the demonstration area, the construction of the Square Hall Water Academy project has begun, the blue ring pilot section of the water village living room, the first stage of the polder field in the south of the Yangtze River and the first stage of the mulberry fish pond have been completed, the connectivity and integration of the three regions are being fully implemented, the skeleton of the ecosystem and the transportation network is preliminarily revealed, and the construction of important function nodes is being pushed forward in an orderly manner. All these fully reflect the high-quality integrated development of the Yangtze River Delta Planning and design played a leading and coordinating role. In the future, we look forward to further strengthening the coordination of all types of planning, and making new explorations in the whole life cycle of planning, design, construction, operation and use in the whole process of planning, construction and governance, the power demonstration area becomes the demonstration window and the core bearing place of the high-quality development of the inter-administrative integration.

### **We should give full play to the platform value of planning and push forward the construction of the Yangtze River Delta regional community**

Wang Kai (President of China Academy of Urban Planning and design, professor-level senior planner, national engineering survey and Design Master)

Since the integration of the Yangtze River Delta Economic Zone became a national strategy in 2018, the region has shown great resilience in the face of complex and changeable domestic and foreign environments, more than 50% of the Yangtze River Delta Regional Integration Development Plan Outline Development Goals. In this process, planning has played a positive role in consolidating development consensus, promoting coordinated action, rationalizing the system and mechanisms, and has become an important governance platform for promoting regional synergy.

The “Platform value” of the plan is reflected

Planning is a platform to promote consultation on an equal footing and build consensus on development. In view of the spatial characteristics of multi-administrative subjects and interest subjects in the Yangtze River Delta, equal consultation and seeking common ground while reserving differences are the basis for promoting high-quality integration. In this sense, the preparation process of cross-border area planning is the process of promoting mutual understanding and maximizing the overall interests of the region. “Shanghai metropolitan area spatial coordination planning” through “Joint organization, joint preparation, common identification, common implementation” to achieve cross-provincial coordination and win-win development consensus.

Planning is a platform for solving specific problems and promoting coordinated action. Lack of infrastructure connectivity, construction standards are not unified, ecological governance coordination is the lack of integration of the development of the objective bottlenecks. The plan aims at the conflicts in the critical areas, combing the development intentions and conflicts of different subjects, and promoting the landing of projects in infrastructure, ecological environment, etc. , we will jointly push forward the opening of the dead-end road, the linking of the greenways around Dianshan Lake and the expansion of the Yongzhou Artificial Waterway, so that the coordinated development will move from concept to implementation.

Planning is also a platform for coordinating institutional mechanisms and promoting the dynamic improvement of policies and regulations. In the process of integration, a series of special institutional mechanisms, such as land management, factor mobility, fiscal and tax sharing, and service rationing, are proposed in the master plan for land space of the Yangtze River Delta eco-green Integrated Development Demonstration Zone (2021-2035) , ensuring the orderly implementation of the plan.

Thinking about planning for high-quality integrated development

The integration of Yangtze River Delta still has some gaps in some key directions and fields to meet the requirements of global city group and higher quality and more sustainable development. Planning can give further play to the platform value and leading role, promote the construction of “Regional Community”, for the Yangtze River Delta integration strategy to continue to contribute to the depth of the “Planning force.

First, we will promote the building of regional innovation communities. The autonomous and endogenous scientific and technological innovation capacity of the Yangtze River Delta Economic Zone still lags far behind that of the world's leading urban agglomerations, and the “Choke point” in key areas such as biomedicine, new-energy vehicles and chip manufacturing has been highlighted, the mechanism and pattern of regional innovation collaboration also need to be improved. In order to strengthen the level and influence of science and technology innovation in the Yangtze River Delta Economic Zone, spatial planning can lead in science and Technology Innovation Synergy and supply chain organization. Focusing on regional innovation corridors such as the shanghai-nanjing Science Innovation Corridor, the G60 Science Innovation Corridor,

the Science Innovation Corridor along the Yangtze River and the science innovation belt around the Taihu Lake, promoting the development of major innovation base platforms in a coordinated manner and deepening the exploration of mechanisms for regional innovation collaboration, we will accelerate the formation of an independent, controllable, safe and efficient industrial chain supply chain that serves the whole country.

Second, we will promote the building of a community of regional security resilience. The regional and transboundary water ecological environment problems in the Yangtze River Delta Economic Zone are still prominent, and the flood risk is still the primary security threat in the region. In 2022, the Yangtze River delta economic zone discharged more than 13.6 billion tons of sewage, accounting for 21.4 percent of the national total, and the per capita sewage discharge was about 1.3 times the national average, typical transboundary rivers and lakes such as the Taipu River have problems such as conflicting upstream and downstream functional positioning and inconsistent control standards. In addition, extreme events such as heavy rainfall and storm surges triggered by climate change have increased, increasing threats to security. Planning can play a leading role in joint protection and management of Transboundary Water Bodies, coordination of flood and waterlogging risks in river basins and response to climate change.

Third, promoting the building of regional cultural communities. The protection and activation of culture in the Yangtze River delta economic zone are mostly promoted from bottom to top by cities, and lack of regional co-construction and co-ordination from the perspective of integration. From the 2001 joint application of ancient towns in the south of the Yangtze River to the 2019 Yangtze River Delta Integration Demonstration Zone and the 2020 Grand Canal National Cultural Park and the Yangtze River National Cultural Park, in the Yangtze River Delta, there are only a few key projects that have been implemented by regional co-construction, and the lack of regional coordination in the construction of the project has led to the prominent homogenization of cultural and tourism products. Planning can be in the coordination of regional cultural projects and common cultural brand-building on the strengthening of leadership. Through shaping cross-regional“Cultural Road”, cultivating regional cultural theme“Heritage Group” and other ways, increasing the core items of coordinated protection and development, forming a regional tourism brand, we will build the Yangtze River Delta into a culturally prosperous region with international influence.

### **Correctly grasp the goals and tasks of urban agglomeration regional orbit, promote the Yangtze River delta high-quality integration**

Yang Dongyuan (professor, School of Transportation Engineering, Tongji University, President of Shanghai Urban Planning Industry Association)

Regional track (including urban track, suburban track and part of inter-city railway) is an important link to support the inner connection of urban agglomerations. However, some of the built projects have not reached the expected scale of passenger flow, causing many concerns and debates. In the process of high-quality integration in the Yangtze river delta, how to correctly



grasp the goals and tasks of the regional orbit of the urban agglomeration, and promote the coordinated construction of the regional orbit and the space development/reconstruction along the region, it is an important question that needs to be answered jointly by transportation planners and land and space planners.

The decision-making logic of urban rail planning and construction in the center of big cities and megalopolises is clear: to meet the traffic demand and form mass-flow intensive public transport channels. In plain language, decisions are made around the size of the passenger traffic that is likely to be attracted. Compared with the central urban rail lines, the passenger flow of a regional rail line, judging from development experience and land use planning, is ideally only 100,000-300,000 person-times per day, the traditional decision logic based on the scale of passenger flow is facing the challenge of invalidation, so the decision logic based on the commuting circle is recommended. Of course, this is the development path that developed countries have gone through, but it is also the rule determined by the characteristics of the evolution of their specific industrial structure (the hollowing out of real industry) . The implementation of the regional track function will significantly increase the proportion of the long-distance commuter population, but also does not meet the requirements of livable and low-carbon development-oriented demands. Another view is that the regional orbit and outer space land development closely linked, which is affected by the land finance of a decision-making logic, but the fear of leaving behind an unproductive social asset-a track that has to be maintained at high operating costs-has also sparked controversy over the kidnapping of regional track construction by real estate development.

In this context, despite the support of a series of relevant data resources, despite the application of many quantitative analysis techniques, despite the regional track construction by local governments and residents along the high recognition and attention, however, the fuzzy understanding of the basic logic of planning and construction leads to confusion and hesitancy in the process of decision-making and construction, which affects the development of regional track effect.

The high quality development of the Yangtze River Delta needs scientific decision-making, and the regional orbit planning and design needs to clear up the original source of decision-making logic. At the present stage of development, the strategy of industrial upgrading and national supply chain of industrial chain requires the urban agglomeration of the Yangtze River Delta Economic Zone to form an internationally competitive space for livable and business-friendly development, to form a social living space that can support emerging industries and attract high-quality employed people associated with them. This is the essential demand of urban agglomeration track construction, and therefore the spatial activity and flow relying on regional track.

It should be emphasized that, in contrast to the one-sided investment-driven and real estate-development thinking, a network of spatial elements and function-gathering spaces are connected in series by rail lines in the urban-rural dual-structure areas outside the cities, the layout of related public service facilities and the gathering of enough employment and living

scale to support the livable and employable social life are the gist of the construction of urban agglomeration regional orbit.

In large cities and extra-large urban areas outside the central urban areas, the construction of a highly clustered regional rail livable belt/bead-shaped social living space and industrial space, it is necessary to study "Spatial organization-layout strategy-resource allocation" at the level of network structure, and "Value gain-operation organization-land use coordination" at the level of routes and corridors, research "Function integration-activity organization-implementation strategy" at the level of site and associated space development. This is not a decision-making exercise that traditional transportation planning or urban planning techniques can do on their own. It requires the synergy of different disciplines at the intersection and edge of disciplines.

At the same time, when the Yangtze River Delta Economic Zone forms a new development space based on the regional rail network, both the construction of the new area and the renewal of the stock space must pay attention to the spatial connection caused by the rail connection. The interaction of spatial factors caused by the flow space mechanism and the Association of spatial activities under the support of traffic network make the utility and competition of spatial factors go beyond the area of location contiguity, therefore, it is necessary to consider the cooperation relation in the flow space, and to strengthen the research of external environment dependence, constraint analysis and system effect.

### **Yangtze river delta high-quality integration: planning "Beauty" blueprint, building a beautiful Yangtze river delta**

Fang Chuanglin (Research Fellow, Institute of Geographic Sciences and Resources, Chinese Academy of Sciences, Director, Research Center for coordinated development of Chinese urban agglomerations and Beijing-Tianjin-Hebei, member of the International Eurasian Academy of Sciences)

Beautiful urban agglomerations are an important direction for the high-quality development of urban agglomerations in China. Under the new development pattern, we need to build the beautiful urban agglomerations into green urban agglomerations with low carbon and less pollution and environmental friendliness, forming a new pattern of urban agglomeration development featuring high-quality economic and social development, high-level protection of the ecological environment, efficient use of natural resources, and a high degree of harmony between man and nature, it will become a key and model area for high-quality economic and social development and high-level protection of the ecological environment in China. In the development of urban agglomerations as the country's richest and strongest areas, the country's most beautiful areas, to build both rich and beautiful urban agglomerations. It should be noted that Green Mountains and rivers but backward and poor are not beautiful urban agglomerations, neither are prosperity and environmental pollution.

Yangtze River Delta Economic Zone is an important support for the construction of a beautiful China, as well as a model for the construction of a beautiful China. The development plan for the Yangtze River Delta Economic Zone, released by the State Council in May 2016, while positioning the development of the Yangtze River Delta as China's most economically dynamic resource allocation center, a high ground of scientific and technological innovation with global influence, a global important modern service industry and an advanced manufacturing center, for the first time, the Yangtze River Delta Economic Zone should be built as a model for the construction of a beautiful China. Published by the Central Committee of the Communist Party of China (CPC) and the State Council on December 1, 2019

“Yangtze River Delta regional integration development planning outline” will be positioned as a national high-quality development model area. At the 20th party congress in October 2022, the party proposed to comprehensively promote the building of a beautiful China by cutting carbon, reducing pollution, expanding green areas and increasing growth, on January 11, 2024, the CPC Central Committee and the State Council issued and implemented the opinions on comprehensively promoting the building of a beautiful China. Thus, the Yangtze River Delta Economic Zone, as a model area for the construction of a beautiful China and a model area for the high-quality development of the whole country, plays an irreplaceable strategic supporting role in the construction of a beautiful China and the high-quality development of the whole country, the ultimate goal of high-quality integration in the Yangtze River delta is to build it into a world-class mega-city Cluster that is both rich and beautiful.

An important measure of high-quality integration development of the Yangtze River delta is to build a beautiful Yangtze river delta, which can not only provide a model for the construction of a beautiful China, but also find a new breakthrough for the construction of a world-class mega-city cluster in the Yangtze River Delta. To build the beautiful Yangtze River Delta, we first need to implement the new requirements put forward by the party's 20th National Congress report for the construction of a beautiful China, focus on carbon reduction, pollution reduction, green expansion, growth and other four areas of high-standard planning of the Yangtze river delta “Beauty” blueprint, drawing a high-quality development of the Yangtze River Delta Road Map.

First, a high-level preparation of the Yangtze River Delta Carbon Reduction Integration Plan, drawing the Yangtze river delta integration “Carbon Reduction Roadmap.”. Urban agglomerations are key areas and responsibility zones for peak carbon and carbon neutrality. The Carbon Reduction Index of the Yangtze River Delta economic zone rose from 33.72 to 78.57 in the decade from 2012 to 2022, which is in the good category but not yet in the excellent category. In the future, high-quality integration in the Yangtze River Delta needs to clarify the responsibility for carbon reduction and push forward the six major integration of carbon reduction in urban agglomerations, that is, integration of low-carbon industry and layout, integration of low-carbon urban and rural development, integration of low-carbon transport facilities, integration of low-carbon energy development, integration of low-carbon markets, low-carbon society and basic public services. Through the six integration of carbon reduction, the Yangtze River Delta Economic Zone will be the first to build a carbon-neutral pilot demonstration zone, carbon-neutral city cluster.

Second, high-standard preparation of the Yangtze River Delta integration planning, drawing the Yangtze river delta integration "Pollution Reduction Roadmap.". In the 10 years from 2012 to 2022, the Pollution Reduction Index of the Yangtze River Delta economic zone rose from 50.17 to 81.76, just reaching the excellent level, but still falling short of the target value of 100, we need multi-city coalitions to continue to fight the crucial Battle of Pollution Prevention and control, the battle to protect blue skies, blue water and clean land, and to persist in systematic pollution control, overall pollution reduction and long-term pollution control, we will turn the Yangtze River delta economic zone into a clean city cluster.

Third, the high-level formulation of the Yangtze River Delta Green integration planning, drawing the Yangtze river delta integration "Green Road Map.". In the 10 years from 2012 to 2022, the Yangtze River Delta Economic Zone's green expansion index rose from 78.04 to 80.98, just reaching the excellent level. However, the rate of green expansion is very slow, and there is a certain gap with the target value of 100, we need multi-cities to continue to promote ecological construction and land greening action, enhance the stability and sustainability of the Yangtze River Delta Economic Zone ecosystem, the Yangtze River delta urban agglomeration into a Green Eco-city.

Fourth, high-target development of the Yangtze River Delta Growth Integration Planning, drawing the Yangtze river delta integration "Growth Road Map.". The total economic volume of the Yangtze River Delta Economic Zone accounts for about 18% to 20% of the country's total, making it the largest urban agglomeration contributing to the national economy. In 2012.2022, the growth index of the urban agglomeration of the Yangtze river delta increased from 48.36 to 82.28 over the past decade, reaching the excellent level, there is still a certain gap with the target of 100. The future needs to match the level of developed cities in developed regions internationally, rely on innovation-driven cultivation of new quality productivity, stimulate new drivers of growth, and accelerate the transformation of green, low-carbon and efficient development in the Yangtze River Delta, we will comprehensively improve the resilience of the Yangtze River delta economy and its labour productivity.

Through the compilation and implementation of the above-mentioned four integration plans, the "Beauty" blueprint of high-quality integration in the Yangtze river delta is described. In the 10 years from 2012 to 2022, the composite beauty index of the Yangtze River Delta economic zone rose from 52.66 to 80.96, just reaching the excellent level. However, there is still a gap of 19.04 when compared with the 100 composite beauty index of the planned Yangtze River Delta, in the future construction, we need to connect the international high standards, find out the short board gap according to the international standards, take the problem as the guidance, plan the "Beauty" map of the high-quality development of the Yangtze River Delta, make up the short board in time, and build the beautiful Yangtze River Delta, to take the lead in building a world-class mega-city Cluster that is both rich and beautiful, nationally and globally.

**What can planning do to protect the ecological environment in Yangtze River Delta**

Chen Wen (professor, Nanjing Institute of Geography and Lakes, Chinese Academy of Sciences)

The coordinated protection of the ecological environment is an important guarantee for the green and sustainable development of the Yangtze River Delta. There are many lakes in the Yangtze River Delta, the Yangtze River, the Huaihe River, the Qiantang River and other water systems running from east to west, the Grand Canal running from north to south, Taihu Lake, Hongze Lake, Chaohu Lake, Qiandao Lake and many other lakes and reservoirs, the pressure to protect water resources, prevent and control water pollution, and restore water ecology is relatively high. Planning, as an important component of regional public policy, also plays an important role in promoting the joint management of ecological environment.

To carry out Integrated Spatial Planning for transboundary watersheds

A watershed is a catchment area formed by natural boundaries and is a natural unit that affects the aquatic environment. The upstream and downstream, left and right bank, main stream and other related areas are often under different administrative jurisdiction. To this end, integrated spatial planning can break administrative boundaries and be carried out according to different types of small watershed units, the system management of Transboundary Water Resources, water ecology, water environment and water security and the implementation of main functional zones and “Three zones and three lines” should be integrated in different functional river basins. Among these, small watersheds with industrial and agricultural development as the mainstay of urban space and agricultural production will be developed, the integrated application of technologies focusing on the reduction and prohibition of agricultural pesticides and fertilizers, cleaner production in industry, energy replacement and urban-rural recycling, low-carbon society and water environmental governance can be considered, further coordination of industrial restructuring, pollution control, ecological protection, response to climate change, etc. . Small watersheds with natural and ecological protection as the main body need to focus on biodiversity protection and water conservation, promote inter-provincial water conservation function of small watershed co-protection cooperation agreement, explore the establishment of inter-provincial nature reserves, protect regional water resources and water security. A new consultative planning mechanism needs to be established for the integrated spatial planning of river basins in order to adhere to the priority of overall interests, increase the awareness of integration, overall planning of water and land, and coordination between upstream and downstream, the relevant administrative units should carry out this work with equal status and consultation.

Plan and continuously widen the path of realizing the value of ecological products, explore the mechanism of horizontal ecological compensation and protection, speed up the transformation of ecological advantages into economic advantages and development advantages

For example, “The establishment of ecological compensation mechanism in the Taihu Lake Basin” task negotiations game and specific promotion are facing serious challenges. Planning can enhance the study of transboundary economic-ecological synergies in the hydrological and water resources utilization processes in the Taihu basin, to carry out integrated planning and comprehensive assessment of Water Resources Utilization, flood prevention, water supply,

water ecological environment restoration and rehabilitation, and shipping support in relevant cross-border areas in the Taihu Lake basin, to further clarify the roles, responsibilities and rights of the three provinces and one city. At the same time, we should promote system innovation of government-market interaction on the basis of scientific research and judgment, optimize working consultation mechanism, perfect fund compensation and fund co-construction. At the same time, we will expand the field of ecological compensation and accelerate the establishment of mechanisms for ecological compensation in the fields of atmosphere and solid waste, to construct a multi-level and whole-field ecological compensation system system with “Landscape, forest, field, lake and grass” life community as the core idea.

To explore the establishment of inter-provincial, inter-regional coordination of ecological protection redline regional cross-border convergence and integration and optimization of the consultation mechanism

At present, the seamless connection of Ecological Protection Red Line in three provinces and one city is restricted by the rigid control of “Three districts and three lines” in land space planning, which can not be adjusted in principle. At the same time, constructive activities are strictly prohibited or restricted in the ecological protection redline area, which makes some ecological restoration work can not be carried out in an orderly manner. It is suggested that the differential management system should be explored according to the administrative level of Ecological Red Line: for the Unified Ecological Protection Red Line, to promote the establishment of a city, three provinces and the Ministry of Ecological Environment, natural resources and other relevant ministries to improve the national ecological protection redline adjustment procedures and mechanisms; To explore the establishment of a consultation mechanism (platform) for regional integration and optimization of ecological redlines at or below the provincial level among the three provinces and adjacent areas of a city, and to consider the demands of development with local characteristics and the needs of major projects, establishing a unified regional red line for ecological protection and a negative list; adhering to the bottom line of “No reduction in ecological function, no reduction in area, and no change in nature”, it will promote the orderly implementation of ecological restoration and other related projects in the Redline area. We should further coordinate and link up the management boundaries and related systems of different types of areas within the red line of ecological protection (such as forest parks and list of national parks of China).

Planning and construction of the Yangtze River Delta region eco-environmental protection and joint technical support system

Integrating the Yangtze River Delta's resources, environment, Artificial Intelligence, life sciences and other research forces, to promote the integration and intersection of Earth Science, Environmental Science, economic and social management science, biochemical technology science and big data artificial intelligence, and build a research base for green and innovative science and technology, building a national laboratory for low-carbon emission reduction and ecological health to provide scientific research support for regional, national and global sustainable development, and help to achieve the regional green technology market chain-wide process of innovation and green strong dynamic growth.

**To explore the implementation path of the integrated planning of planning co-drawing, ecological co-insurance, facilities sharing and mechanism co-construction**

Gu Hao (first-class Inspector of Natural Resources Department of Zhejiang Province)

When General Secretary Xi Jinping visited Zhejiang during the Asian Games, he put forward several new requirements for Zhejiang: firstly, to be at the forefront in shaping new advantages in development by scientific and technological innovation, and to create a number of strategic emerging industry clusters and digital industry clusters with international competitiveness. Therefore, we insist on making scientific and technological innovation and industrial cluster development the top priority of Zhejiang. Secondly, we should be the first to demonstrate in promoting common prosperity, deepen the ten million projects, and further improve the integrated development of urban and rural areas. The Yangtze River Delta region has a very good foundation for urban-rural integrated development, and is also one of the regions with the smallest urban-rural gap in the country, the General Secretary hopes that Zhejiang can conduct more exploration in urban-rural integrated development. Third, it is necessary to deepen reform, expand opening up, renew a new chapter, and give full play to the functional role of various opening-up platforms. Fourth, it is necessary to build Chinese civilization, actively explore on modern civilization, and strengthen the protection of cultural heritage and cultural exchanges and dissemination.

Around the general secretary's request, Zhejiang Province is actively planning. In its reply to the provincial territorial and spatial plan for Zhejiang, the State Council further clarified that Zhejiang should become a leading area for chinese-style modernization and should further explore new mechanisms for regional action, we will promote the coordinated development of the four metropolitan areas in the province and the Shanghai metropolitan area, strengthen the synergy of regional innovation, promote the connectivity of infrastructure, speed up demonstration and advance exploration, and link multiple sectors.

In view of the Yangtze River Delta territorial space planning, to actively explore the establishment of planning co-mapping, ecological co-insurance, facilities, mechanisms for co-construction of integrated planning implementation path, I think the following aspects deserve further consideration.

First, as a special plan to implement the National Strategy, the land spatial planning of the Yangtze River Delta should focus on the implementation of the strategy of the main functional area to further promote the coordinated development of the region. In the planning, we should take the strategy of the main functional area as the important hand to promote the coordinated development of the region, and optimize the regional development pattern by implementing the strategy of the main functional area, at the same time, the coordination between different administrative regions should be further strengthened. In order to implement the strategy of main function area, it is very important to define the differentiated evaluation system and implement the differentiated evaluation and factor allocation system according to the different

main function, to achieve the main functional area strategic direction, the direction of layout and structure optimization and spatial elements of the flow of the three directions of coordination.

Second, the Yangtze River Delta's territorial and spatial planning should be based on the premise of spatial protection. Yangtze River Delta Economic Zone is an important part of the development of the Yangtze River, we must take space protection as an important premise, especially the area around the Taihu Lake Space Protection Coordination. Yangtze River Delta eco-green integrated development demonstration area is around the Dianshan Lake, the Yangtze River Delta land spatial planning should be around the Taihu Lake basin eco-agricultural space protection, which is the focus of future spatial coordination. With regard to the protection of the Taihu Lake basin, as the key direction of spatial planning, special attention should be paid to how the Yangtze River Delta Economic Zone can jointly further improve food security and self-sufficiency, we will jointly advance the delineation of the scope of key eco-agricultural areas, clarify the objectives and requirements of coordinated protection, and actively explore the spatial patterns and carrier paths of agricultural modernization.

Third, to build a cross-regional high-quality life as the goal of actively cultivating high-efficiency innovation circle. We will promote regional collaborative innovation by identifying regions with coordinated high-quality development. One of the most important tasks in the preparation of territorial and spatial planning for the Yangtze River delta is to identify areas of urbanization and urban circles of high quality that are functionally closely linked, and to organize high-quality living circles in space through planning, by attracting elements of innovation through high-quality living circles, it provides an endogenous impetus for fostering innovation circles. Therefore, innovation is actually a question of synergy between quality of life enhancement and the creation of an innovation ecosystem.

Fourth, we need to attach great importance to the implementation of synergy between provinces and cross-border regions. At present, the most difficult problem in regional coordination is the coordinated development of administrative border areas, especially the inter-provincial administrative border areas. For the Yangtze River Delta Economic Zone, the focus should be on the overall planning of corridors. All areas of the Yangtze river delta have been fragmented by corridors, and corridors of different departments have turned a complete space into one piece, one, and so on. It is suggested that we should learn from the practice of common ditches in urban planning to realize compound corridors.

Fifth, the Yangtze River Delta territorial space planning to pay more attention to policy research. The core lies in how to achieve the concentration of factors to the dominant areas or the precise allocation of factors to the places where they are needed. Explore the utility of a map from a province to a whole area of the Yangtze river delta, really achieve multi-planning.

### **We will further improve regional spatial planning for the Yangtze River Delta**

Administrative territorial entity of the People's Republic of China, East China Normal University



At present, the Yangtze River delta has two sets of spatial planning, have been approved by the State Council. First, the “Yangtze River Delta Economic Zone Development Plan”, prepared by the national development and Reform Commission and the Ministry of Housing and construction, covers 25 prefecture-level cities in Shanghai and Jiangsu, Zhejiang and Anhui

The Ministry of Natural Resources is in charge of land and spatial planning, with one for each of the three provinces

City has been completed according to their respective administrative regions, planning period to 2035. From a spatial perspective, although the two sets of plans have different emphases, the former focuses on the development of the Yangtze River delta economic zone and therefore does not cover the entire territory of the three provinces and one city, while the latter plans according to their respective administrative regions, the impact of physical and geographic factors on the protection and use of land and space in the Yangtze River Delta Economic Zone has been split.

In order to adapt to the higher quality development of the Yangtze River Delta, it is necessary to further improve and upgrade the two sets of spatial planning.

It has been 8 years since the development plan for the Yangtze River Delta Economic Zone was approved by the Standing Committee of the State Council in May 2016. In the past eight years, the situation at home and abroad has changed dramatically. First, the digital economy has become the growth pole of economic development, but the changes in sino-us relations have deepened the vulnerability of global industrial and supply chains, but the flow of people to individual first-tier cities is accelerating. The Matthew effect appears in the city scale system, that is, the population of high-grade cities increases rapidly, while the population of many counties increases negatively. The plan predicts that Hangzhou will have a permanent population of 9.5 million by 2030, but by 2023

The city's urban population alone will exceed 10 million. In order to speed up the construction of global city-group in the Yangtze River Delta Economic Zone, we should timely evaluate and revise the progress of city-group construction since the promulgation of the development plan of the city-group in the Yangtze River Delta. In order to improve the core competitiveness of the Yangtze River Delta Economic Zone, the first is to analyze the status of the first city in the Yangtze River Delta and the evolution of the urban network, and the second is to integrate industry and transportation systems around the construction of world-class supply chain hubs, third, to predict the distribution of city size and promote the process of high-quality urbanization in the Yangtze River Delta.

Our country formulates the National Territory Space Plan from 2017. In 2023, all three provinces of Jiangsu, Zhejiang and Anhui had their territorial and spatial plans approved by the State Council. However, the province-level division of our country often divides the natural geographical area, so the compilation of a unified territorial space planning of the Yangtze River Delta is an important measure to promote the coordinated development of the region, it is also

the basis for all kinds of development, protection and construction activities in the Yangtze River Delta.

To compile the regional land spatial planning of the Yangtze River Delta, the key point is to solve the contradiction between the integrity of the natural geographical area, the sustainable development and the administrative division. For example, Qingliangfeng National Nature Reserve is located at the border of Anhui and Zhejiang, but Qingliangfeng Nature Reserve in Anhui province and Qingliangfeng Nature Reserve in Zhejiang province have been established respectively, plans for nature reserves have been drawn up in recent years. Therefore, the Yangtze River Delta Regional Land and space planning to pay special attention to the inter-provincial junction of land and resources integration and coordinated development. Second, land and sea planning should be emphasized. The Yangtze River estuary and Hangzhou Bay are the most polluted areas in our country, with heavy metals exceeding standards. However, the area is under the management of the relevant authorities in Jiangsu, Zhejiang and Shanghai, while the environmental protection authorities have not carried out effective management of the marine pollution problem, resulting in a long period of unresolved marine pollution problems. The land-sea integrated planning in the territorial spatial planning of the Yangtze River Delta should regard the land-sea border area as the unity of "Nature-economy-society" and pay more attention to its protection and management, from the point of view of coastal marine environmental capacity, the measures of marine environmental governance and the reasonable development scale of related industries should be put forward.

The national land and space plans of different administrative regions that have been completed in China all draw three red lines from their own land-use status, resulting in more emphasis on the protection of agricultural space in economically backward regions, this is not conducive to balanced regional development. There are significant differences in the regional development among the provinces and cities in the Yangtze River Delta. The overall land and space planning should not only focus on the protection of natural resources, but also promote the integration of the whole region, give the economically backward regions more opportunities for spatial development to promote progress in social equity. For example, the Huaihe River Plain in the north of the Yangtze River delta is an important granary of our country. Bozhou, Huaibei, Fuyang, Suzhou and Bengbu in the Huaihe River basin of Anhui province account for half of the grain crop sown area in the province, but it is also the most economically backward area in the Yangtze River Delta and the main area of population outflow. To promote the development of northern Anhui, the National Development and Reform Commission issued a statement

Implementation Plan for Shanghai-jiangsu-zhejiang twinning cooperation to help cities in northern Anhui. In the future, on the one hand, we should continue to improve and upgrade the mechanism of pairing cooperation and support, on the other hand, we should also implement city counterpart support in the territorial spatial planning. For the cities in developed areas, the use of land after industrial transfer can be given certain preferential conditions; for the target cities, to give preferential policies for new urban land. To sum up, the land space planning of Yangtze River Delta should strengthen the overall planning ability, pay more attention to the coordination of natural and social economic development, the coordination between regional development.

## **Planning to promote the Yangtze River delta high-quality integration is the key to up and down response**

Professor, Institute of Urban and population development, Shanghai Academy of Social Sciences

The attribute of planning is public policy, and the effect of planning on regional development belongs to the category of institutional integration. Therefore, which dimensions should be advanced planning to lead the social and market to evolve? What areas are public policies that need to be planned to adjust existing institutions that already constrain the practice of functional integration? This is the starting point for thinking about “High-quality integration in the Yangtze River Delta: What can planning do?”.

Since the founding ceremony of the People's Republic of China, the achievements of regional cooperation in the Yangtze River delta can be summarized as the interaction of the two paths: institutional and functional. Is institutional integration leading to functional integration? Or is functional integration forcing an institutional response? If the two clues are well coordinated, the progress of integration in the Yangtze River Delta will be good. Today, to promote the high-quality integration of the Yangtze River delta is to deal with the interaction of the two clues in the new era from the perspective of innovation, coordination, Green, open and sharing. Planning work, especially spatial planning, is bound to have a bright future.

Planning is the most difficult task

In the process of regional integration, the main actors of functional integration are market subjects (mostly enterprises) and social subjects (people and social organizations) . The integration of the Yangtze River Delta region's geography and human relations determines that the will and action of the legal person and the natural person in the high-quality integration are highly consistent.

The driving force of institutional integration is the government, and planning is an important public policy. But different from the planning of a single administrative unit, the relevant planning of the Yangtze River Delta region is a multi-administrative subjects of consultation, coordinated institutional arrangements. The small-but-complete, block-economy and localism reflect the fact that there is competition among the government subjects regulated by regional planning. Therefore, the planning is the most difficult task in the integration of the Yangtze River delta-taking into account the interests of all parties. Local interests can not be evaded, and local government tournaments have intensified the emphasis on local performance, while the development cycle is in a fluctuating and downward phase, competition, rather than cooperation and sharing, is an understandable move by local government actors.

Planning also recognizes the boundaries of competence

As a public policy, planning should stick to the boundary of providing and regulating public goods, leaving what belongs to the market to the market and what belongs to the Society to the society.

Regional public goods clearly include a common vision of regional development, energy transport infrastructure, ecological resources, such as mountains, rivers, forests, lakes, grass and sand market equity mechanism. Regional quasi-public products involve the overall arrangement of scientific and technological innovation factors, important strategic resource factors, and so on.

In the area of regional economy, it is welcome to break down administrative barriers and promote market integration (which belongs to the construction of market infrastructure) Planning can provide public goods such as industry foresight and industry platform that market enterprises may not be able to do; planning can guide industrial division of labor, function deployment, industrial clusters, and various chain formation, it needs to be done carefully. Planners should bear in mind that markets without distortions may themselves be more effective guides to regional economies, giving firms greater incentives to build the most efficient product niches, peer relationships, and upstream and downstream chains. In the practice of economic planning in the Yangtze River Delta since the founding ceremony of the People's Republic of China, it is not uncommon to see cases where the wall-hanging system has not been implemented; or cases where it has been partially implemented but is inefficient and costly. Of course, in today's world, there are indeed a number of economic sectors with strategic attributes (strategic emerging industries, industries of the future) due to huge forward and backward driving forces and inter-country competitiveness. These industries are thus quasi-public goods, making public policy interventions possible. However, at the regional scale, planning to ensure a friction-free and distortion-free market is still the most basic condition for the development of strategic industries; planning to determine where and by whom to develop what strategic industries, in fact, going back to planning logic is not feasible today.

The planning must innovate the coordination mechanism to advance moderately

If the planning is too far ahead of the functional integration process, the planning will fail; if the planning lags behind the market-driven functional integration, the planning will become a constraint and be broken through in practice. As a public policy planning, the ideal state is a moderate lead, do not step empty also do not fall empty, play a practical leading role.

To guide central cities to exercise leadership

As the leader of the region, the central city should take the responsibility of the supply of the key public goods, initiate the concerted action and lead the formulation and implementation of the plan. Super-mega-cities, if the demarcation, then good is also tens of millions of people, trillions of gross domestic product of the good. How many megacities do we need and can we create to support the vast expanse of China with a billion-strong population, 10 trillion yuan of GDP and 10 million square kilometers? Once the regional integration, the formation of a Super City-region (its inner metropolitan area, metropolitan area, urban agglomeration multiple embedded) its support is solid. Under the vision of the two contradictions of unbalanced and insufficient development in our new era, the Yangtze River delta is a region of relatively balanced and

sufficient development, fully qualified and responsible, the region as a whole will achieve high-quality development. Megalopolis development itself can reach new heights in the rising tide.

#### Identify regional strategic space

The transformation of the mature experience of spatial planning can still play an important role in the high-quality development of the Yangtze River Delta. For example, strategic space is still needed from city to region. Regional strategic space can act as a "Bull's nose" for regional integration. Regional strategic space is a space with the attribute of regional public goods, which undertakes the regional important function mission. At the beginning of the 21st century, Yangshan Port is competing for the maritime hub on the scale of the western Pacific Ocean. Its achievement is not only Shanghai, but also the whole Yangtze River Delta has become a leading international shipping center and Trade Center.

At present, the regional strategic space is mainly identified in the natural layer. The human layer is mainly a series of cultural tourism dimensions (relatively successful, but only limited series) Industrial dimension active planning even if it exists is in fact hanging on the wall (the existing cross-domain industrial clusters, cooperation is often formed by market regulation) ; The Science and innovation dimension is similar to the industry in general (inefficient planning is not suitable for the increasingly active science and Innovation Subject Cooperation Network) . The G60 is particularly valuable for a small number of examples of government-led regional cooperation initiated by grass-roots governments with some degree of effectiveness and recognition.

#### Planners practice the new frontier of participatory planning

Planning is a public policy, but planners do not have to serve only one government's public policy (a region is essentially a multi-administrative subject) , even not only serve the government's public policy (the main body of regional coordination also enterprises and institutions, people, social organizations) . For this purpose, regional planning should learn from community planners in terms of planning concepts and techniques. In the practice of community planning, it is to provide the optimized and feasible community space planning and design and even the interactive rules for the main body of the community. In fact, the multi-subjectivity of regional action determines that only the full reflection of the participation of all parties, the formation of effective integration of the demands of all parties in order to implement the plan.

#### **Planning should be "Embroidery needle" for integration of Yangtze River Delta into deep water area**

Wang Wei (head, associate professor, Department of Urban Management, School of government, Central University of Finance and economics)

In the 1970s, the famous French geographer Jane Gottman proposed that the Yangtze River Delta Economic Zone, centered on Shanghai, would become one of the six largest cities in the world. After more than 40 years of reform and opening up, the Yangtze River Delta Economic Zone has grown into a truly global urban area driven by the multi-dividend of industrialization, urbanization, marketization and globalization. It should be said that in this process, the policy dividends of planning have been continuously injected: in 2008, for the first time, regional integration in the Yangtze River Delta was included as a national strategy in the guiding opinions of the State Council on further promoting reform and opening up and economic and social development in the region, in 2010, the State Council issued a regional plan for the Yangtze River Delta (2011-2020) , and in 2016, the National Development and Reform Commission issued a development plan for the Yangtze River Delta Economic Zone In 2019, the outline of the Regional Integrated Development Plan for the Yangtze River Delta was published In 2023, the State Council approved the country's first cross-provincial statutory plan, the master plan for land and space of the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone (2021-2035) . In the above context, why still want to think about and explore the“High-quality integration of the Yangtze River Delta: What can planning do”? I think it is because we are in an era full of uncertainty, not only to solve the problem in the change, more importantly, “Problem-solving environment and conditions” is also changing, the problem-solving ideas naturally need to keep up to date. Here, from the“Goal, problem, ability” three levels to talk about some personal thinking.

First, on the“Goal” level, what is the purpose of integration? From the perspective of the high-line goal, under the competition and gaming of major powers, the new global order pattern is being reshaped, and the momentum of the integration of the Yangtze River Delta will face enormous challenges, its role of representing the state in global competition urgently needs to be based on the“Workshop of the world” to cultivate more“World office”, “World living room” and“World Incubator” functions, to avoid the rat race, we must constantly make new cakes, with the digital economy, low-carbon green economy driven by global climate change, and human-oriented economy under the reduction of national population dividend, the new economic form and mechanism characterized by“Network, flow and compound interest” are formed, all of these require planning to further reflect on the division of labor and cooperation in the integration of the Yangtze River Delta from the perspective of regional patterns, to respect the new economic, social and ecological laws, and to widely absorb the theories and concepts of the world's advanced cities, guided by satisfying human needs and releasing human potential, it helps to establish space rules, order and places suitable for micro-economic activities and for the liberation and further release of productive forces, planning and designing not only the“Container” of the design space, but also the“Energy magnet” and“Scene Stage”, shaping a new type of strong active growth pole, forming a new development advantage and development space, to enable the entire region to form a“Strong, quality” fist, on behalf of the country to participate in a new round of global competition.

Next is“The question” the stratification plane, should move toward what kind of integration? The integration of the Yangtze River delta is strategic, not strategic, and needs to be based on real consensus, win-win and symbiosis. However, at present, there are two kinds of problems in our country's regional integration work: one is the integration that can not be implemented, and this

kind of integration is often hindered by deep-seated interests and interests, the result is that planning and implementation are often trapped in the “First kilometre” or “Last kilometre”; the other is unsustainable integration, this integration is often in the form of “Face-type, bonsai-type” projects, resulting in fragmentation of integration work, shallow, lack of systematic and sustained. It should be said that the integration of the Yangtze River delta is at the forefront of the development of regional integration in our country. It has entered the deep water area. In the past, you could cross the river by feeling for stones. Now, the water is too deep to reach the stones. To cross the river, you must find the right direction and grasp the key points, find the right navigational aids. To this end, planning should be based on the overall system, like an embroidery needle, refinement, planning granularity, precision, accuracy, based on the Yangtze River delta regional space resources assets “Bottom map, bottom number, bottom line, inside story”, for life, production, ecology, business, “Four” resonance with the same frequency threading thread, building industry and, ecology and, culture and, social and governance and the regional community of shared destiny.

Finally, at the “Capability” level, what kind of planning does integration require? Space provides us with the most natural platform for governance and is the core of the discipline of planning. Faced with new goals and new problems of integration, the applicability of traditional experience is undergoing significant marginal changes, and we can not use traditional tools to solve future-oriented problems, need to further innovate planning cognition, theory and methods, strengthen the planning “Embroidery needle” of the “Six” ability: 1 the joint ability of space governance. In accordance with the three principles of separation of powers, namely, the principle of convergence of interests, the principle of trans-regional relations and the principle of complexity of information, we will further establish and improve a multi-level coordination and governance mechanism for Yangtze River delta spatial planning involving central ministries, provinces, cities, districts, counties, townships and townships, so as to form effective synergy from top to bottom. (2) bridging space interests. We will promote institutional and policy design for linking spatial planning with industrial planning, fiscal and tax sharing, land transfer, rights and interests of natural resources and assets, and ecological and environmental compensation in the Yangtze River Delta, we should establish a balance sheet of land and space assets of the Yangtze River Delta region, balance the value distribution of protection and development, break the interest barrier of administrative regions and move towards common prosperity. 3 spatial information integration capacity. Fully comply with the trend of digitalization and intelligentization, seize the opportunity of CSPON construction, build a multi-level brain network of Yangtze River Delta, and use more comprehensive and agile information to improve the overall operation efficiency of urban agglomerations.

4 stitching ability of spatial network. Based on the law of human activity and biological activity, the functional spatial pattern of “Point-line-surface-network” is perfected and completely satisfied with the harmonious coexistence of human and nature, to construct a multi-loop nesting system of community life circle, Town Circle, Metropolis Circle and biosphere. 5 the linking ability of spatial subjects. The paper fully analyzes the distribution of value chain, supply chain and innovation chain in the economic operation of emerging industries, and systematically evaluates the spatial sources, blockages, breakpoints, weaknesses and blind spots in regional economic integration, in accordance with the requirements of building a unified market, with the

help of digital technology to guide multi-agent, multi-element link. The ability to integrate spatial knowledge. In the face of major changes not seen in a hundred years, everything will be set up in advance, do not foresee waste, planning and cognitive decision-making development ideas, the role of such platforms as the Yangtze River Delta Regional Cooperation Office, the Yangtze River Delta Urban Economic Coordination Committee and the Shanghai Metropolitan Area Annual Forum can be brought into play to enhance knowledge sharing on planning among different cities, better promote the simultaneous enhancement of regional planning knowledge and efficient exchange of consensus.

### **Multi-scale linkage, promoting prosperity, resilience and cultural influence**

Yu Tao-fang (associate professor and doctoral tutor, Dean of the School of Architecture, Tsinghua University)

Yangtze River Delta Economic Zone has the most overall competitiveness in China's regional development. Good location and natural conditions, strong economic aggregate and development level, diverse industrial structure, diverse development dynamics, rich cultural heritage and human capital. The integration of the Yangtze River delta economic zone, driven by the market, the government, the central and local governments, small towns, central cities, endogenous and exogenous models, is very prominent at home and even internationally, it is a model.

But integration is an ongoing process of constant adjustment and reconciliation. In the past, regional integration in the Yangtze River Delta continues to spiral in terms of regional transport connectivity, shared infrastructure, joint prevention and control of environmental protection, vertical and horizontal inter-governmental coordination and capacity-building for governance, from the perspective of regional governance, these approaches will remain key choices for the future.

As a region with the strongest level of comprehensive development and integration, the future integration of the Yangtze river delta is bound to be high-quality oriented under the concept of high-quality development. In the new political and economic environment at home and abroad, on the one hand, the task of the Yangtze River Delta Economic Zone to transform the country's development model, enhance the country's international competitiveness, and realize the "Leading role" and "Engine" of chinese-style modernization is even more arduous, like other regions, the Yangtze River delta economic zone is facing multiple challenges and problems in its economic development model and driving force, especially how to improve the economic return and output level of investment, how to stimulate the enthusiasm and initiative of the investors and innovators. Accordingly, let the Yangtze River Delta more gather to promote innovation and prosperity and development, more tenacity to promote the adaptability and security of complex systems, more cultural cohesion to rebuild the Yangtze river delta habitat "Paradise" brilliant, is an important strategic consideration in planning to promote regional integration.



First, multi-scale spatial linkage. First of all, world-class urban agglomerations exert “Control” influence at different regional scales, this is true in the greater New York area, the greater Tokyo area, the Greater London area and other parts of the global city. In the history of China, the Yangtze River Delta Economic Zone has been the leader and center of the Far East Region in modern times. In fact, the multi-scale expansion and change rule of its direct influence can be seen in the continuous “Expansion” trend of the Yangtze River Delta Economic Zone. In terms of planning, on the one hand, it is necessary to further strengthen the connectivity of infrastructure such as key coastal cities and ports and airports. Shanghai will travel north to Lianyungang and Rizhao via Nantong to Qingdao and even Tianjin and Dalian, Shanghai through Ningbo to Wenzhou, Ningde to Fuzhou, Xiamen, and even Guangzhou and Beibu Bay, further consolidate and promote the region along the Yangtze River by Hui, link the Triangle region, further radiation Sichuan and Chongqing; On the other hand, regional transportation corridors such as the national high-speed railway will promote the flow of elements with Jiangxi, Hunan and Guizhou to Yunnan and Xizang in the southwest, and with Anhui, Henan to Shaanxi and Inner Mongolia in the northwest, further enhance the control of the Yangtze River Delta, enhance Shanghai's shipping center and Financial Center, Trade Center status. Secondly, while expanding the extension, the “Core” areas, especially the Shanghai-Nanjing-Hangzhou-centered Jiangsu, Zhejiang and Shanghai areas also need to improve the quality of integration. After 30 to 40 years of rapid development, after primary factor-driven development and investment-driven development, the Yangtze River delta economic zone and even the whole country have entered the stage of innovation-driven development, a brand-new “Adjustment” cycle begins: a new cycle of start-up, take-off, acceleration and constant velocity, a new cycle of development from non-equilibrium to equilibrium, from growth pole, Axis to network. Under the concept of increasing returns to concentration, density and scale, “Return to the eastern region, return to the mega-cities, return to the central urban areas” is the current stage of innovation-driven, investment reporting, financial and other important ideas of risk avoidance, this has been fully reflected in the 14th five-year plan. Therefore, in the narrow sense of the Yangtze river delta economic zone, the strength of high-end services, the level of human capital and the ability of scientific research and innovation in central cities such as Shanghai, Nanjing and Hangzhou have become the important basis and driving force of regional integration, at the same time to promote Shanghai, Nanjing, Hangzhou and other cities as the center of the construction of the circle, the same is the case. In the future, sparing no effort to invest and guide the public resources in the central urban areas and metropolitan areas of mega-cities is an important spatial measure for the integrated development of the Yangtze River Delta in the new era.

Second, follow the development law of complex giant system, improve and play the resilience and adaptability of development. Yangtze River Delta Economic Zone is a complex giant system, reflected in the natural, economic, social and urban and rural settlements and other aspects. For such a huge system, planning needs on the one hand through engineering technology means, intelligent ways to fine-grained governance, arrangements, to avoid risks and improve performance; on the other hand, building on the refinement of the negative list and the strict definition of ecological and disaster baseline spatial controls, there is a need to enhance and develop regional resilience and resilience, we need to harness the dynamism of bottom-up local and civil society innovation and adaptation exploration in the Yangtze River Delta. Today, with

the continuous improvement of the market economy, it is all the more necessary to give full play to the comparative advantages of human settlements units at different levels, prosperity and innovation can not depend entirely on planning or the government.

The integration that remakes habitat heaven. The impact of the Yangtze River Delta Economic Zone in the future will not only be reflected in export processing, manufacturing development, and regional gross domestic product, moreover, cultural cohesion and beautiful living environment should be regarded as the key elements of investment and livable. The crucial economic development of the present time also depends not only on imports and exports, consumption and investment, but also on the attraction and accumulation of human capital. Historically, the Yangtze River Delta has attracted people from all over the world in terms of ecology, culture and society, and created a remarkable regional culture and human settlements. Other developed cities in the world, such as the Greater London area and the Greater New York area, also attach great importance to regional cultural cohesion, regional eco-environmental quality and world influence. The next step of regional integration should be to restore the splendor of paradise habitat as an important goal. First of all, we should set things right and build natural systems such as rivers, lakes, valleys, mountains, forests, lakes and grasses. Second, we should protect and inherit the multi-cultural heritage of the Yangtze River Delta, which has attracted worldwide attention. Third, through certain spatial incentive measures, the future of the vigorous development of culture to provide a carrier and hotbed.

### **To promote high-quality development and high-level governance of the Yangtze River Delta with innovative integrated planning**

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The integration of the Yangtze River delta is an important national strategy to support China's response to the new global development environment and the requirements of the new era. In short, we should promote the Yangtze river delta to achieve high-quality development and high-level governance with innovative integrated planning, which is mainly reflected in the following aspects.

Understanding the significance of regional integration planning in the new era from a new perspective

Regional integration planning is not a new thing, especially since the 1980s, China has been from the top down, from the bottom up has a rich practical exploration. In recent years, under the influence of "Anti-globalization" and covid-19, the "Near-regional reorganization" of global industrial and supply chains has become a significant trend, in order to effectively implement the strategy of "Domestic and international double circulation", the state has put forward the request of building "National unified big market", but the market and factor flow caused by "Administrative region economy" for a long time, passive segmentation is still widespread. Therefore, the integration of the Yangtze River Delta in the new era requires that we should not confine ourselves, as in the past, to the co-zoning of space, the co-protection of the environment,

the co-construction of infrastructure and the sharing of social services, we need to focus more on how to optimize and reorganize the industrial and supply chains in the region through integrated planning, so as to take into account the efficiency, quality and safety resilience of industrial development, and more on how to integrate, planning to break the market and the flow of factors, the allocation of the threshold constraints, so through the Yangtze River Delta, the integration of the demonstration effect to leverage the national unified market construction.

With the new concept of integration planning as a multi-agent regional governance platform integration planning the biggest feature is to face the region's many local interests

The practice at home and abroad has proved that the successful regional planning must be the result of top-down and bottom-up repeated game and eventually to synergy integration. We can not hold high the banner of "Regional Integration" and ignore or even refuse the reasonable demands of the local subjects, nor can we change the regional planning into a simple "Patchwork, type planning" because of accommodating the local interests. In recent years, the practice of regional integration planning in China has proved that it is difficult to implement the integration planning which is simple, driven from the top down, lacking the broad consensus in the region and staying in the empty slogan. It is necessary to construct a multi-subject, multi-subject, multi-subject and co-operative governance consultation platform with a new concept, which should recognize and respect the co-operation of various interest subjects, it should also be active, innovative, seek consensus and common action. Therefore, in this sense, the formulation of regional integration planning forms and processes, than the final "Planning text" to come more meaningful and far-reaching. In recent years, in the planning practice of the Yangtze River Delta Integration Planning and Shanghai metropolitan area planning, we have begun to pay attention to play the role of the integration planning "Governance Platform", and has achieved good results.

To reconstruct the logic of planning and implementation with institutional and policy design

Different from the implementation planning of space use control in urban areas, the regional integration planning can not directly affect the specific space use control in general, its essence is to promote the cities to reach a "Common code of conduct", to promote the adoption of "Regional common action". However, each city government in the region is also a "Rational actor" on the basis of various interest games and trade-offs, the key is not to draw an ideal space vision, but to design a set of member cities in the region have a positive incentive effect

Should be the system and policy system, such as the region's fiscal and tax sharing policy, farmland insurance compensation and construction land index trade policy, eco-product cross-regional value realization mechanism, and so on. In short, the delicate system structure and policy design is the real bottom logic of regional integration planning and implementation. In recent years, the Yangtze River Delta eco-green Integrated Development Demonstration Zone, which has been jointly built by two provinces and one city, has seen practical exploration in this regard, some successful practices, experiences and innovative policies have been replicated outside the region.

To “Effective government + effective market” to stimulate the implementation of integrated planning momentum

The specific national conditions and the system mechanism function has caused our country each place “The administrative region economy” the phenomenon widespread existence. Under the effect of “Administrative region economy”, local government is not only the positive promoter of regional integration, but also the biggest “Obstacle” of regional integration. Therefore, the implementation of regional integration planning can not entirely rely on the strength of the government, the government in some areas of the appropriate retreat just to leave space for integration, conducive to the realization of integration. Regional integration planning should consider how to play the role of government, market and society at the same time, the behavior boundary of government, market and social subject should be clearly defined: the government should make integrated rules, systems and policies, build infrastructure and provide public services; The main function of the market is to allocate and reorganize all kinds of development-oriented resource elements efficiently, to keep the strong factor mobility and development vigor, and the main role of social forces is to promote the broad consensus of integration, promoting multi-level and diversified social interactions and forming a positive public opinion atmosphere for regional cooperation.

This paper briefly describes the bottom line, leading and cooperative vision of the regional land spatial planning of the Yangtze River Delta

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“The Yangtze River Delta integration development” has said for many years, has done the research and formulated the plan also innumerable, at present the integration development degree is also very high. However, the development of regional integration of Yangtze River Delta in the new era should aim at higher level and higher quality.

As far as the spatial unit is concerned, the current planning object “Yangtze River delta area” is the expansion of “Yangtze River Delta” in the sense of geography. In 2019, the Central Committee of the Communist Party of China (CPC) and the State Council issued an outline for the regional integration development plan for the Yangtze River Delta, which covers Shanghai, Jiangsu, Zhejiang and Anhui provinces, at the same time with Shanghai, Nanjing, Wuxi, Changzhou, Suzhou, Nantong, Yangzhou, Zhenjiang, Yancheng, Taizhou, Hangzhou, Ningbo, Wenzhou, Huzhou, Jiaxing, Shaoxing, Jinhua, Zhoushan, Taizhou, Hefei, Wuhu, Maanshan, Tongling, Anqing, Chuzhou, Chizhou, Xuancheng and other 27 cities as the central area, therefore, this is a territorial space category corresponding to the administrative region.

In order to promote regional integration and high-quality development of the Yangtze River Delta, the corresponding inter-administrative planning and implementation mechanisms. At

present, Shanghai, Jiangsu, Zhejiang, Anhui and other cities have formulated economic and social development plans and territorial space planning; “Yangtze River Delta regional territorial space planning” should be a superior planning, its compilation should implement and deepen the “National territorial space planning outline”, and in the space arrangement and implement the “Yangtze River Delta regional integration development planning outline” related requirements. The basic function of “Regional land spatial planning of the Yangtze River Delta” should be to make supplementary arrangements and provisions for the allocation and control of spatial resources related to the overall high-quality development of the region, therefore, there is no need for this plan to be “All-round” and “Comprehensive”. We should also actively explore and innovate in the formulation and form of the results, such as combining binding and guiding provisions to form an open and dynamic “1 + N” results system.

In view of the realistic development condition and national mission of the Yangtze River Delta region, the compilation of the regional land spatial planning of the Yangtze River Delta should pay special attention to the issues of bottom line, guidance and coordination. A brief explanation is as follows.

The first is the bottom line, that is, to focus on planning and constructing the overall spatial framework of regional ecological protection and to propose guidelines for action, so as to strengthen the co-protection of ecological space and maintain the common lifeline of sustainable development in the Yangtze River Delta, and jointly build a green and beautiful homeland. There are many rivers, lakes and mountains in the Yangtze River Delta, including the coastal ecological corridor, the Yangtze River Ecological Corridor, the Huaihe-hongze Lake Ecological Corridor and the Taihu Lake basin, and the ecological system protection framework of southern Anhui, western Zhejiang and southern Zhejiang needs to be constructed across administrative regions, it also requires inter-provincial coordination, common standards and joint actions. In addition, the construction of coastal, Yangtze, Huaihe, Beijing-hangzhou Grand Canal, Taihu and other rivers and lakes protection forest system, as well as the establishment of ecological compensation and protection mechanisms and pollution compensation mechanisms, and so on, there is also a need for collaborative planning and cooperation between different regions.

The second is to lead, that is, to the Yangtze River Delta Science Innovation Center for the core task and top level

Objective, in the planning of Regional Science and technology innovation to comb the space system, and then optimize the allocation of space resources. It is the national mission of the Yangtze river delta to “Aim at the cutting edge of Science and technology and the commanding heights of industry in the world, and build the scientific and technological innovation and manufacturing R & D Highlands with national influence”. The Yangtze River Delta region has a strong scientific and technological force, at present, the construction of National Science and technology innovation policy zones, such as the Shanghai Global Science and Innovation Center and the Zhangjiang Science City, the Zhejiang National Information Economy Demonstration Zone, the Jiangsu Southern National Independent Innovation Demonstration Zone, the Hefei Comprehensive National Science Center in Anhui Province and the hefei-wubeng National Independent Innovation Demonstration Zone, are being advanced. At the same time, some

prefecture-level cities and even county-level administrative districts are also introducing plans and development plans for new types of parks, such as Science Innovation Zones, science and technology cities, and science cities. Their enthusiasm is worthy of recognition, but it is urgent to strengthen “Meta-governance”, to overcome local blindness and avoid low-level duplication of construction. Scientific and technological innovation has a strong regularity and should follow the logic of “Basic research”, “Applied research”, “Development research”, “Original innovation”, “Technological innovation” and “Industrial Innovation”, and we should strengthen the forward-looking layout of scientific and technological innovation and pay attention to the sharing of various resource elements. When it comes to spatial planning, we should clearly define the different positions of “Science city”, “Science and technology city”, “Science and technology industrial park”, “Emerging industrial park”, etc. , it is also necessary to make overall planning for the Yangtze River Delta Data Center, promote the construction of regional information hub ports, and realize the coordinated distribution of data center and inventory resources. In short, only joint efforts to create a Yangtze River Delta community of scientific and technological innovation, to achieve the “National source of important innovation,” the grand goal.

Finally, Synergy. At the provincial and municipal levels, territorial and spatial planning is well established,

in order to achieve regional integration and coordinated development, the coordination role of “Land spatial planning of Yangtze River Delta” is indispensable. First, the planning coordination between the metropolitan areas: the Yangtze River Delta region in addition to the “Shanghai metropolitan area”, as well as Nanjing, Hangzhou, Hefei, Suzhou, Wuxi, Chang, Ningbo and other metropolitan areas, these metropolitan areas have overlapping in space, cross-connection and radiation in economic and social development, so we can not talk about the planning of metropolitan areas, but must strengthen the coordination of planning and construction among metropolitan areas, for example, the coordinated development of Shanghai and Shanghai, Suzhou, Wuxi and Changzhou metropolitan areas, the coordinated development of Nanjing and Hefei metropolitan areas, the coordinated development of Hangzhou and Ningbo metropolitan areas, and the joint and cooperation between Shanghai Metropolitan Area and Nanjing and Hangzhou metropolitan area. Second, regional integrated transportation system and important infrastructure construction planning synergy: to jointly build the Yangtze River Delta on the track, at present, it has planned and laid out a modern rail transport system that integrates high-speed railway, ordinary railway, inter-city railway, urban (suburban) railway and urban rail transport, the planning and layout of the river-crossing channels, such as Changtai, Longtan, the second Sutong and Chonghai, and the sea-crossing channels, such as the second Donghai Bridge and the Shanghai Zhouyong Bridge, are proposed, the relevant ministries of the state and the provinces and cities of the Yangtze River Delta also have ambitious plans or planning goals. To this end, the new regional planning should play a coordinating role, ensuring that strategic projects and major “Bottlenecks” are broken down, while at the same time identifying unreasonable local and departmental demands, and avoid duplication of construction, excessive redundancy or inappropriate timing.