

Responses of Urban and Rural Planning Education to a New Spatial Planning System in China

Longbin Zhu^{1*}, Yitong Yan¹, and Hongyan Zhu¹

¹ Department of Urban Planning, Nanjing Tech University, Nanjing 210018, China

* longbinzhu@hotmail.com

ABSTRACT

In the context of the spatial planning system reform in China, this article studies the impact of the new unified national territory spatial planning system on the planning profession and the planning education, examining the new knowledge and skills required by the system for the urban and rural planning professionals, and the correlation of the urban and rural planning discipline to the national territory spatial planning. It further explores how the urban and rural planning education should conform to the requirements of the new system and practice, reforming its educational system for the cultivation of high-level spatial planning professionals who can better meet the needs of social development.

Keywords: *New spatial planning system, Urban and rural planning, Educational responses.*

1. INTRODUCTION

“Guidelines on the building of a national territory spatial planning system and the supervision of its implementation”, released by the Communist Party of China Central Committee and the State Council in May 2019, proposes to establish a unified planning system for national territorial space, integrating the plans for main functional zones, land use, and urban and rural development. And it puts forward to establish related laws, technical standards and an evaluation mechanism by 2025 to guarantee the implementation of the new system. This indicates that the top-level design of a unified national territory spatial planning system has been in place, which will exert significant and far-reaching impact on the planning profession and planning education. As an applied program of study, the urban and rural planning discipline has a strong practical orientation. Under the background of the spatial planning reform, it is an important and urgent task to study as how to adapt the urban and rural planning education to the needs of the new situation and to train professionals who can meet the requirements of the new planning system.

The Guidelines state clearly that “the education department should make researches and strengthen the construction of relevant disciplines in territorial spatial planning” [1]. In May 2019, Tsinghua University and Tongji University jointly held a seminar to discuss the

development and reform of the urban and rural planning discipline under the new situation, and proposed that the discipline should adapt to the new planning system, creatively develop scientific theories and technical methods, actively construct the knowledge system of territorial spatial planning, and promote corresponding teaching reforms in urban and rural planning courses. [2] In September 2019, at the annual conference on urban and rural planning education in China, the changes and challenges of the planning system had been discussed as key issues, including whether the discipline name of “urban and rural planning” needs to be changed, whether the extension and connotation of the discipline needs to be adjusted accordingly, and how the planning education can adapt to the new practical needs. [3] In November 2020, sponsored by the Planning Bureau of the Ministry of Natural Resources, and arranged under the “Notice on building educational resources in related fields of national territory spatial planning” by the Higher Education Department of the Ministry of Education, a seminar on spatial planning education was held at Nanjing University. Participants from the government and 20 universities proposed the education and discipline construction should respond to the new needs of national construction and the new direction of social development, and discussed the new requirements of the national territorial spatial planning for the quality, capability and structure of talents in relevant fields. In this context, some universities have set on studying how

to reform their undergraduate and graduate programs. There has been now a general consensus on the challenges and the necessity for adaptation under the new situation, but it is still in the initial stage of exploration as how. Therefore, in the process of establishing the national territorial spatial planning system, how to update the knowledge and education system of the urban planning discipline is an important topic in recent years that needs to be explored with more progress.

2. IMPACT OF THE NEW SPATIAL PLANNING SYSTEM ON THE PLANNING PROFESSION AND DISCIPLINE

The new spatial planning system is mainly divided into five levels and three categories. National and provincial territorial spatial planning is mainly to implement national security strategies, coordinate regional development strategies and main functional zones strategies, clarify national and provincial spatial development goals, optimize urbanization patterns, agricultural production patterns, and ecological protection patterns, determine spatial development strategies, as well as formulate an overall framework for space development, protection and use control. The territorial spatial planning of cities, counties and towns is divided into overall planning and detailed planning. It details and implements the requirements of national and provincial territorial spatial planning, and makes specific arrangements for the development and protection of the administrative area by land use zoning, including construction permission management based on the plans. In terms of planning operation, the new unified national territory spatial planning system will be composed of a planning preparation and approval system, an implementation supervision system, a relevant law and regulation system, and a technical standard system. [4] The impact of the new system on the profession and discipline of urban and rural planning is mainly reflected in the following aspects.

2.1. Reflect the requirements of eco-civilization

The establishment of the new spatial planning system is essentially to implement the construction of ecological civilization, strengthen spatial governance, and promote the reform of the governance system. The ecological civilization has rich connotations, involving a series of ideological understanding and reform and innovation such as ecological construction, economic patterns, spatial system, social governance, and institutional mechanism. This will also be the starting point for the practice and theoretical system of urban and rural planning.

2.2. Emphasize the importance of resource constraints

In the past, urban and rural planning was mostly based on the needs of local development. More attention had been paid to the space for manufacturing and living, while insufficient attention had been paid to the finiteness and non-renewability of natural resources. However, one of the most notable features of the new spatial planning system is that it embodies and strengthens the importance of the safety bottom line of natural resources and assets. This is reflected in the shift from being demand-oriented to constraint-oriented in the planning profession and discipline, with the urban and rural resource constraint system being a basic and core connotation [5].

2.3. Strengthen overall integrated methods and urban studies

The new national territory spatial planning emphasizes a scientific and orderly overall layout of ecological, agricultural, urban and other functional spaces, and delimits spatial control boundaries such as ecological protection red lines, permanent basic farmland, and urban development boundaries. The planning needs to reflect the constraints of natural resource endowments and ecological environmental conditions in a wider range on urban economic and social development. To make a comprehensive planning for the whole area and guide a rational allocation of the land and space elements, it needs first to carry out suitability evaluation of territorial space development based on the regional resources and environmental carrying capacity, and then to determine the arrangement of the ecological functions, agricultural functions, and urban development in a region. Therefore, spatial planning means not only urban space design and planning, but also an emphasis of urban studies. It needs to establish an analysing system of full urban and rural development elements and environment resources, and adopt the researches and methods of environment and resource sciences. And at the same time, it is necessary to strengthen research on planning evaluation and implementation evaluation, space policy and legal system for planning.

2.4. Innovation of technical methods and supporting technologies

In the past, there was not enough coordination between various plans; therefore plans were sometimes hard to be implemented due to conflicts between departments. The new spatial planning system will establish unified technical regulations and standards. With "one blueprint" as basis, it will provide support for the unified territory space and land use control, planning permit of construction projects, and supervised

implementation of the plans. [6] For this reason, the planning profession needs to establish unified working and information platform for the coordination of different departments, adopt unified technical methods and technical standards. And at the same time the supporting technologies should go deeper into all levels and specialized areas of spatial planning, being more integrated and instrumental, and easy to use. And new appropriate planning approaches need to be developed with comprehensive application of spatial designing, modern information technology and big data.

2.5. Tighten rigid control of the planning

The significance of a unified spatial planning system is not only to establish unified technical regulations and standards for “one blueprint”, but also to use spatial planning as a carrier to establish a spatial governance system to resolve various contradictions and issues in the process of rapid urbanization. Therefore, the rigid control of the planning will be tightened, which requires more overall coordination of planning, construction and management. Meanwhile, planners need to build an effective mechanism for communication and decision-making among government, the public, and investors to ensure the implementation of spatial plans.

3. CORRELATION OF THE URBAN AND RURAL PLANNING DISCIPLINE TO THE NEW PLANNING SYSTEM

Opinions are now divided on whether to set up a new discipline entitled “national territory spatial planning” or to keep the existing discipline of “urban and rural planning”. [7] Spatial planning involves a wide range of contents, running through multiple macro and micro levels vertically, and covering all elements of land and space horizontally. It needs to be supported by multiple related disciplines of liberal arts, science and engineering. A new discipline or a new academic program will not cover the full connotation of spatial planning. International experiences show that the discipline of urban planning is relatively stable, and that the discipline does not necessarily correspond to different levels of legal planning and planning practice. Taking German universities as example, there are usually multiple relevant undergraduate and postgraduate programs including urban and regional planning, urban design, geodesy and geo-information science, environmental planning, and urban ecosystem sciences etc., rather than a single spatial planning program covering all fields. [8]

Similar to the design of a building that needs to be supported by multiple disciplines such as architecture, civil engineering, hydropower, heating and ventilation, and construction project management, the practice of national territorial spatial planning should be resolved

through both division and cooperation of different disciplines. The planning and related research should be fulfilled as a team work by professionals with multi-disciplinary backgrounds. As urban and rural planning discipline has developed a most complete system among all kinds of spatial planning, it should serve as the basis of the new unified spatial planning. According to our survey of the on-going pilot projects of the national territorial spatial planning, urban planning departments and urban planners have played a core role. This is also determined by the comprehensive quality and ability of planners endowed by the comprehensive, strategic, and forward-looking nature of the urban and rural planning discipline. Therefore, urban and rural planning, as a first-level discipline under the engineering category, should still exist as an independent discipline after the establishment of the national territorial spatial planning system. And it should also function as the core discipline in the new system, serving for an effective, fair and sustainable use of territorial space, and the modernization of the governance system and capabilities. [9]

4. EDUCATIONAL RESPONSES OF THE URBAN & RURAL PLANNING

Although the reform of the spatial planning system will not subvert the core theories of the urban and rural planning study, it still poses new requirements and challenges. Urban and rural planning education must be based on the continuation of the core of the discipline, actively reform, carrying out systematic changes in the knowledge system construction and professional education.

4.1. Expand knowledge system and strengthen interdisciplinary knowledge learning

The new spatial planning system tends to use more cross-domain and comprehensive planning methods, from focusing on physical space to taking economic, social, and environmental fields into account, from focusing on urban development areas to urban-rural integrated development. Mountain, water, forest, field, lake, sea and grass are managed as a “community of life”, and multiple plans such as economic and social development plan, urban master plan, land use plan, and ecological environmental protection plan are unified. This requires urban and rural planning professionals to expand their knowledge system. So urban and rural education needs to include in particular knowledge of economics, sociology, geography, ecology, environmental science and engineering, law and management, supplement knowledge in forestry, agriculture, marine, water conservation, and ecological environment, and increase knowledge reserve in watershed planning, sea area planning, forest planning, and land remediation planning, etc..

4.2. Improve students' new technology application ability

Informatization and systemization in territorial spatial planning and management is the trend of the planning profession. "One blueprint" and unified information platform of the new national territory spatial planning system will call for application of information technology. GIS thus becomes the basis of planning. At the same time, Internet and big data analysis, and artificial intelligence planning methods as new tools will provide higher reducibility and reliability of results for planning research and model analysis. Therefore, in the urban and rural planning education, the application of GIS technology, big data and cloud computing, complex measurement models and artificial intelligence in research, planning and design should be strengthened, so that students can better adapt to the changes in the planning profession.

4.3. Improve students' comprehensive coordination ability

Spatial planning is a technical and policy tool for scientifically coordinating and arranging various spatial elements. Besides forward-looking prediction, comprehensive thinking, professional analysis, and impartial processing, planners should also have cross-professional collaboration and consensus building ability. Therefore, to meet the technical and practical requirements of spatial planning, emphasis should be paid to cultivate students' comprehensive abilities in coordination, communication, and organization and management, and quality to lead other specific plans, departmental policies, operation plans, action plans, and organize and coordinate public participation.

5. CONCLUSION

The urban planning education in China has experienced evolution from the setting of a discipline of "urban planning" to a study of "urban and rural planning", and the spatial objects focused have been continuously extended, and the connotation expanded. With the gradual establishment of the new spatial planning system, urban and rural planning is facing transformation to the "unification of multiple plans" and "comprehensive and coordinated planning" that integrates land use, economy and society, ecological environment protection and other fields. For a greater role, the urban and rural planning discipline must conform to the requirement of the reform to expand the content and extension of the discipline. Judging from the development and trends of related national and international disciplines, the new national territory spatial planning is not simply a denial of certain educational program or discipline, but a process of multi-discipline integration and collaboration. The

education of urban and rural planning should make adaptive adjustments, integrating new knowledge to the existing professional knowledge system, absorbing knowledge and methods from other disciplines, and strengthening the cultivation of students' comprehensive coordination ability. Different universities should also carry out individualized reforms in syllabus and curriculum systems in accordance with their own characteristics, so as to better adapt to the needs of social development.

ACKNOWLEDGMENTS

The study is supported by the Graduate Education Reform Project of Nanjing Tech University.

REFERENCES

- [1] Communist Party of China Central Committee and the State Council, Guidelines on the building of a national territory spatial planning system and the supervision of its implementation, People's Publishing House, Beijing, 2019.
- [2] CAUP, New situation of the reform of territory spatial planning system, 2019, <https://upd-caup.tongji.edu.cn/3b/25/c14722a146213/page.htm>.
- [3] Y. Shen, J. Ran, L. Wang (Eds.), Collaborative planning, innovation education, Proceedings of annual conference on education of urban and rural planning in China, China Architecture & Building Press, Beijing, 2019.
- [4] China SCIO, Territory spatial planning is divided into five levels and three categories, 2019, <http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/39595/40528/zy40532/Document/1655483/1655483.htm>
- [5] Editorial department, Disciplinary development in the context of the reform of the spatial planning system, Urban Planning Forum, 2019 (1): pp. 1-11.
- [6] S. Jiao, Focus on the construction of "one map" of territorial spatial planning and current situation assessment, China Natural Resources News, 2019. http://www.mnr.gov.cn/dt/pl/201907/t20190726_2449331.html.
- [7] X. Huang, X. Zhang, T. Yu, On the reform of the higher education for territorial spatial planning, China Land Science 34(8), 2020, pp. 107-114.
- [8] TU Berlin, Study programs, 2021, https://www.planen-bauen-umwelt.tu-berlin.de/menue/studium_und_lehre/studiengaenge.
- [9] M. Zhao, Brief analysis on territorial spatial planning, urban and rural planning and planning discipline development, 2020, <http://www.planning.org.cn/news/view?id=11236>.