

Re-defining the Rural-urban: Discovering Spatial Patterns of Chinese Rural Development

LESLIE LOK

Cornell University

Keywords: rural-urban, urbanization, townization, mapping spatial transformation, rural transformation.

The perception of the rural has shifted and has been incarnated with various narratives and policies of urbanization since the founding of the People's Republic of China. Although the most intense periods of rapid urbanization have been mainly driven by the incessant development of cities and megacities, the countryside has played a central role in the country's urbanization process through in situ transformations of towns and villages as integral parts of urban economics, the industrialization of the countryside, and the steady conurbation of rural towns and urban centers¹. Reaching 58.52%² of urban population in 2017 and with the goal of continuing to urbanize its population to 75% by 2025, the growth of rural villages and townships emerged as the predominant context for urbanization under the 2005 New Socialist Countryside policies. The rural context, and in particular, the ambiguous zones of rural-urban, have shifted to the focal point of urbanization. More recently in 2014, *China's National New Townization Plan* directs the focus to develop small cities, towns, and villages. The process of townization engages a wide range of territorial landscapes that are neither distinctly urban nor distinctly rural. With much at stake in the transformation of the rural-urban context, there lacks a clear spatial characterization and definition which defines the multivalent landscape. First by outlining the changing narratives and policy phases of rural development, the paper aims to identify limitations in the current administrative and binary classification of the urban cities and rural villages. By further analyzing five case study cities, the paper attempts to reveal emerged and collaged architectural and growth patterns of the rural-urban context, to provide methods of mapping the transformation of their spatial structure at the territorial scale, and lastly, to argue for the importance of the rural-urban as a valuable condition for designing better urbanization models.

SHIFTING POLICIES AND NARRATIVES FOR THE COUNTRYSIDE

The transformation of the rural can be largely categorized into economically and socially driven policy reforms since the founding of The People's Republic of China in 1949. The reforms oscillate between stimulating economic growth in the countryside with an emphasis on rural development (1958-1991), encouraging coordinated urban and rural development

driven by the megacities (1991-2012), and directing the focus of economic and social development in the rural area again (2012-present)³. In the essay, *Designing China's Rural Transformation*, the author Dingliang Yang outlined five different phases that provide an overview of the political reforms which foreground the rural configuration and development. Phase 1 began the "Great Leap Forward" Campaign with a dual focus on industrialization and maintaining collective agricultural production. The idea of the rural utopia occupied the pre-1978 period when the socialist transformation of agricultural cooperatives saw the development of communes and administrative townships. A critical policy was implemented in 1958 to restrict rural-to-urban migration by assigning agricultural or non-agricultural residency registration (*hukou*)⁴. The distinction formalized a dual society of urban residents and rural residents, this would have immense ramification on the structure of urbanization in the following decades.

The period between 1978-1991, described as phase 2 *Industrialized Countryside* in Yang's essay, witnessed the emergence of Chinese rural-urban transformation when industrial production served as the driver to support economic growth in the countryside. Policy reforms released agricultural labor to support the development of collectively-owned township and village enterprises (TVEs). This stemmed industrial growth in villages and prompted a period of rapid urbanization of the rural landscape. Subsequently, prompted a rural reconfiguration of promoting countless villages to the town status⁵ and marked a drastic spatial transformation of generic masterplan grids to hold factories and warehouses superimposed on agricultural land.

Followed by Phase 3 *Integrated City and Countryside* during 1991-2005, urbanization was highlighted by the growth of mega-cities and intense urban migration. The rapid development of large cities drew an exodus of rural labor force from the countryside, this produced vast disparity in economic and infrastructural development between large urban centers and rural villages. Rural communities were further marginalized by the *hukou* system which precluded rural migrants from social benefits in the urban areas. In response to the disproportionate development and with a bias for rural development, the government responded with a national urbanization policy to stimulate town-based urbanization⁶ by integrating industry with agriculture and urban residents with rural villagers through

policies and space-making. This resulted in a reconfiguration of the urban fringe with masterplans populated with homogenous buildings referencing urban construction, these structures did not consider local culture and spatial practices in the rural context⁷. Despite the efforts to industrialize the villages and towns, it was unsuccessful in balancing the urban and rural transition and income disparity.

Between 2005-2012, Phase 4 *New Socialist Countryside* gestured a significant departure from the focus of megacities to the development of rural areas through the *Building Socialist New Villages* reform plan to curb urban migration. The policy prompted an additional extensive reconfiguration of the rural area administratively and spatially through two strategies. “The first called for improving and upgrading the existing natural landscape and built environment by renovating and adding amenities and services; separate villages would form single entities, which would raise living standards for the area. The second proposed the wholesale demolition of several villages and their re-creation as new, larger ‘new agricultural town’ ”⁸. This resulted in mostly masterplans that demolished villages and local architecture to implant new village towns to consolidate existing ones, usually on an agricultural field in the center of a cluster of villages. Spatially, the sites were often situated along new infrastructural system and the planning of these new villages imitated urban typologies. The planning of these central towns neglected to incorporate local spatial practices and was often disconnected from the productive land. This resulted in a collage of monotonous urban landscape superimposed on the rural landscape.

With more than half of the population resides in cities since 2011, the enactment of China’s *National New Townization Plan* in 2014 reframed the concept of urbanization to townization, which once again aims to ease social and economic disparities between the urban and the agricultural areas. The goals are to focus on rural urbanization at third-tier cities⁹ and the integration with surrounding towns at the county level, as well as urbanizing villages with developable land. As a result, this plan engages the transformation of immense swath of urban fringe and rural-urban context including “new socialist villages” developed in prior reforms. Along with various policies that incentivized rural residents to retain their agricultural *hukou* from earlier years, such as the elimination of agricultural tax in 2006, the secured rights to own agricultural land tenure in 1997, and the gradual improvement of social benefits and infrastructure comparable to the urban counterparts, it has now become desirable to retain one’s agricultural *hukou*.

SHORTCOMING IN CURRENT CLASSIFICATION OF RURAL AND URBAN

After undergoing a series of spatial and functional transformation over the past several decades, the rural and rural-urban territory developed a more complex and multi-layered context consists of a collage of hierarchical infrastructural network, regularized urban housing fabric, tracts of productive landscape, vernacular village fabric, and natural landscape system. The

character of such area is best summarized as neither distinctly rural nor distinctly urban. However, the largely policy-driven evolution has limited the classification and definition of this vast emerged context to based solely on administrative units. In Figure 1, the diagram describes the parameters for rural and urban designations and outlines how the population ratio of non-agricultural registration (*urban hukou*) and agricultural registration (*rural hukou*) determines the classification. Prior to 2006, urban areas are defined by their administrative status as cities and towns, in the case of a township, it can be designated as urban if 10% or more of its population has *urban hukou*¹⁰. Additional factors include GDP, public finance, and infrastructure¹¹. The 1999 revised definition of urban settlements are based on “continuity of urban construction and population densities within municipal districts”, although this began to address the spatial and physical characteristics of a place, it is still limited in scope to depict an accurate picture of the urban and rural territories. The most recently adjusted definition in 2006 included “villages in outer urban and suburban areas that are ‘directly connected’ to municipal infrastructure, and that receive public services from urban municipalities”¹², the revised parameter improves the calculation of urban resident at the administrative scale. There are several problematic aspects of how the regulations define “urban” and “rural”. Mainly, to base on bureaucratic status inadequately reflects the diverse characteristics of the spatial territories. In periods of fluid migration, to depend on the residency registration also marks an insufficient measure of actual rural residents and urban residents owing to the fact that the premise of *hukou* designation is biased towards one’s birth location rather than the means of labor. The administrative definition of urban and rural limits the countryside to policy-driven transformation, which often applies blanket and uniform strategies to different local contexts. By neglecting the importance of spatial characters unique to the rural context, townization will transform the landscape with generic urban models and tower deserts¹³ while disregarding regional spatial practices, connection to the productive landscape, and vernacular architecture. Additionally, the oversimplified binary classification of urban and rural precludes a more precise and nuanced reading of the multivalent rural-urban context. While there is no definition to capture the rapidly transforming landscape in the dispersed spectrum of site and demographics, various approaches were proposed to define urban and fringe boundaries¹⁴, however, these methods lack critical spatial, typological, and qualitative definitions which are crucial to the design of physical materialization of rural-urban environment.

DISCOVERING SPATIAL PATTERNS OF THE RURAL-URBAN CONTEXT

To gain an understanding of the spatial transformation driven by top-down policy reforms, the research mapped five case study cities and towns to capture the urbanization patterns of the rural-urban landscape, specifically the spatial structure of how a rural fabric is transformed into an urban one, and consequentially, how villages and towns become county-level towns and cities. From the case studies and in Figure 2, the process of

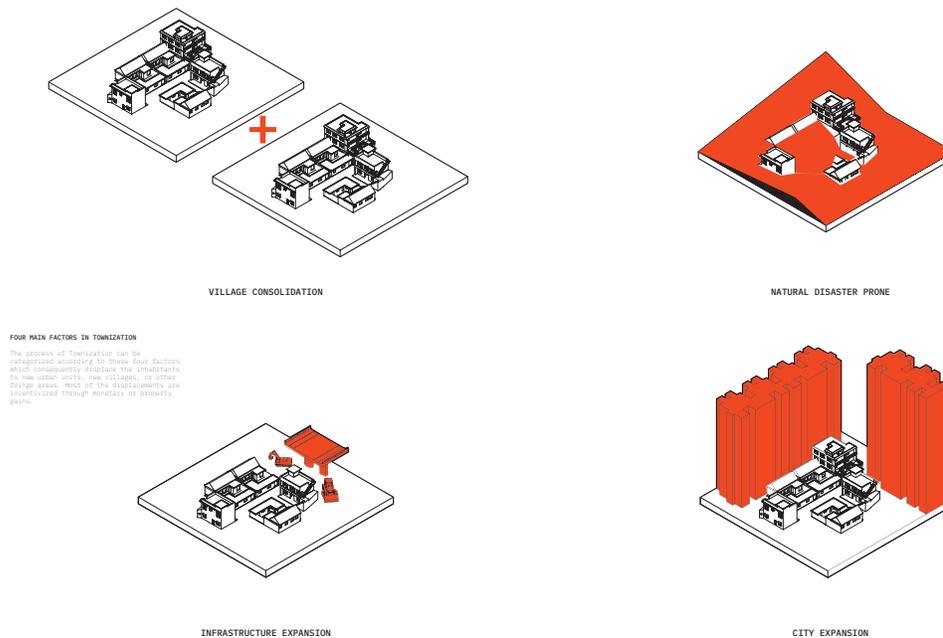


Figure 2. Key Factors in Townization.

townization can be categorized into four factors: 1. *Village consolidation* aims to urbanize villages by combining smaller towns to economize resources and public services; 2. *Infrastructure expansion* guides the trajectory of potential development and connection to industries; 3. *City expansion* guides the transformation of surrounding fringe towns and villages; 4. *Natural disaster* serves as a development opportunity to re-configure existing towns. In most cases, these factors consequently displace the inhabitants to new urban units, villages, or other fringe areas. The research seeks to capture the architectural and urbanization patterns of the rural landscape at two scales. First at the territorial scale, deploying GIS data to map differentiated layers of urban built-up, suburban built-up, rural built-up, urbanized natural land, and captured open land as seen in Figure 3. Mapping these layers over time revealed spatial patterns that directed urban growth, some in the form of relational expansion from town consolidation and others in the form of outward expansion to build a network of satellite towns. The second scale observes the rural and urban fabric through satellite images by observing architectural forms, road networks, agricultural landscape, and natural landscape. This scale revealed important edge adjacencies, thus highlighting the unique spatial structure of a hybridized rural-urban fabric.

CASE STUDIES FOR MAPPING SPATIAL TRANSFORMATION

Case study 1, the city of Pingxian in Jiangxi province (Figure 3) started as a multi-core urban development that focused on mining in 1989. Initially consisted of three towns, Xiangdong, Anyuan, and Pingxiang, an urban axis developed between the cities along a new infrastructural network connecting the megacities of Changsha and Nanchang, the increased flux of vehicular and train traffic at these crossroads immensely

facilitated the development in the region. A noted growth of industrial fringe between towns and to the north of the cities marked a development pattern that is explicitly informed by the landscape. A further extension of urban region along the transit axis continues in the southwest consequentially formed an industrial conurbation that reclaimed a vast amount of natural and farmland. Due to the characteristic of a multi-core urban development along an infrastructural axis, the satellite image reveals multiple phases of townization simultaneously along a single road in Pingxiang, traversing vestigial rural agricultural landscape, high-rise development at the urban fringe, manufacturing industries, organic agricultural villages, and finally the natural landscape. The urbanization of Pingxiang was prompted by the policies during the *Industrialize Countryside* phase and its spatial growth trajectories were prominently influenced by the factor of *infrastructure expansion*. The resulting spatial structure is highly diverse and multi-faceted urbanistically and architecturally.

In the 2nd and 3rd case studies, Yulin in Guanxi province and Zunyi in Guizhou province are both examples of urban growth by the consolidation of small villages related to the *New Socialist Countryside* phase. In Figure 4.0, case study 2 began as two distinct towns with a manufacturing core which consolidated as a county-level city, in its most recent transformation, Yulin once again consolidated with neighboring villages to form the new Greater Yuzhou District. The spatial transformation of the urban fabric introduced a new road network, providing a perimeter for large-scale buildings to anchor the street front and to progressively urbanize the encircled rural settlement by regularizing the bottom-up village settlement with new construction. Similarly, as shown in the satellite mapping and diagram of Zunyi, a cluster of small agricultural villages was sited within the context of a

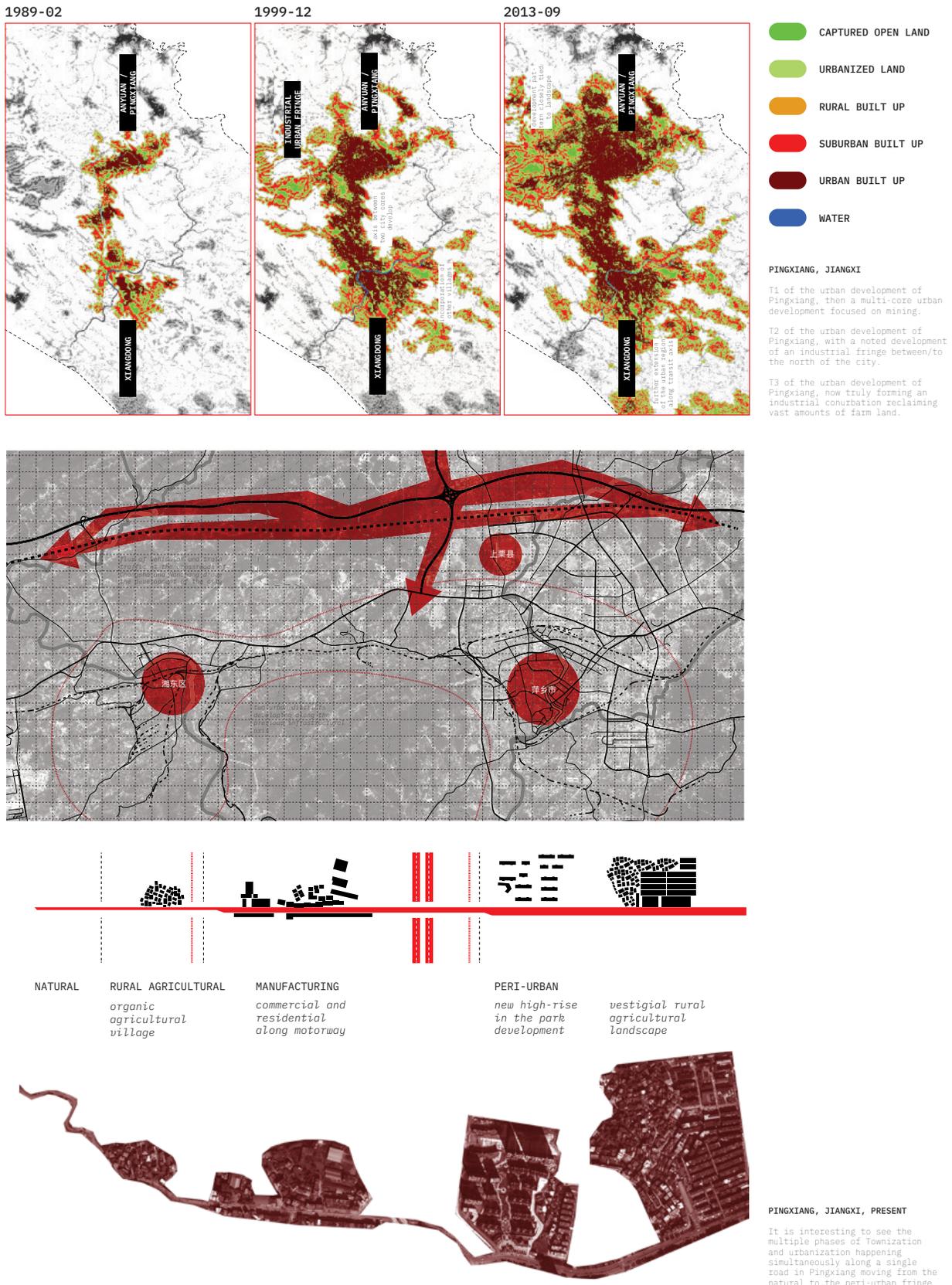


Figure 3. Rural-urban Transformation of Pingxiang, Jiangxi.

productive landscape. The construction of new urban road system and buildings disconnected the villages from their agricultural land. This led to the dissolving of the rural structure and the transformation of large-scale high-rise urban fabric. In both cases, top-down imposition of road networks drastically altered the context with the replacement of generic urban planning and architectural models.

In case study 4, the city Xuyi in Jiangsu province share similar onset of urbanization as Pingxiang from case study 1. Began as a small agriculture and fishing town on the shores of Huai River, Figure 5 shows Xuyi and its neighboring city, Xucheng, developed along an infrastructural axis and consolidated to form a larger urban manufacturing network. The spreading of the manufacturing boom in the urban fringe was accompanied by the juxtaposition of the orthogonal street grid, existing small rural villages, and agricultural fields. This produced clusters of mixed spatial structures of agricultural land and villages collaged between large manufacturing structures and regularized urban residential development. This unique pattern of co-existing urban and rural systems is repeated throughout this fringe area.

Infrastructural network operated similarly in the 5th case study. In Figure 6, Tangshan in Hebei province was designated and rebuilt as a large city after the 1978's earthquake disaster, it has been integrated with and annexed various cities and counties within its administration. As it expanded into the surrounding fringe and rural areas, the orthogonal town slowly enveloped older settlements which forced either an interesting condition of town within the city, or simply razed previous settlements to the ground and rebuilt from a tabula rasa with a series of residential tower deserts that are devoid of public street life and lack of spatial complexity. The intermediate condition of the town within the city, however, is an emerged example of a unique rural-urban characteristics. This particular collage of agricultural land, villages, and urban development produce a diverse context beyond its spatial implication, it suggests and allows for the coexistence of both agricultural and urban workers as a coherent economic and social community.

CONCLUSION

Through the mapping of the case studies, the discovered co-existence and varying degree of adjacencies between the spectrum of local-specific and urban generic opens the possibility of cultivating a productive heterogeneous environment, as well as providing important clues to rethink more sustainable mode of urbanization. The development of the rural should not be automatically based on models of existing urban construction. To better capture and define the unique context of the rural-urban qualitatively and spatially, the multivalent character can be studied, mapped, and cataloged systemically with parameters such as intensity or forms of urban and agricultural adjacencies, scale and density of collaged patterns, transforming patterns of building types, etc. This would allow for design and planning strategies to integrate the local spatial practices and landscape systems with urban growth, and simultaneously enable a viable

social and economic context for both agricultural and urban residents. Recognizing the emerged rural-urban context can be highly complex, spatially diverse, and mutually productive for both rural and urban settlements, it would be relevant to further develop potential definitions for this unique context and to incorporate the rural-urban as an essential condition of urbanization.

ENDNOTES

1. Kamal-Chaoui, Lamia, Edward Leeman, and Zhang Rufe. *Urban trends and policy in China*, OECD Regional Development Working Papers, 2009/1, OECD publishing, 18.
2. National Bureau of Statistics of China. China Statistical Yearbook 2018. Available online: <http://www.stats.gov.cn/tjsj/ndsj/> (accessed on 10 October 2019).
3. Dingliang Yang, *Designing China's Rural Transformation*, in *Common Frameworks: Rethinking the Developmental City in China*, edited by Christopher C. M. Lee, Cambridge, MA: Harvard University Graduate School of Design, 2016, 227-241
4. Kamal-Chaoui, Lamia, Edward Leeman, and Zhang Rufe. *Urban trends and policy in China*, OECD Regional Development Working Papers, 2009/1, OECD publishing, 7. The *hukou* system was established in 1958 as a form of residency designation to limit mobility across regions. Each person is bound to the place where one's *hukou* is tied to. This policy generated various ramifications through different stages of urbanization creating unequal access in social benefits for rural migrants who work in urban areas, the *hukou* system has been revised in the following decades to draw incentives of retaining rural residency.
5. Yang, *Designing China's Rural Transformation*, 231.
6. Kamal-Chaoui, Lamia *Urban trends and policy in China*, 10. The policy plan entailed enabling conversion of rural to urban hukou, allowifarmers to sell their land to other farmers to increase the scale and efficiency of production, and converting agricultural land to town construction land for industrial parks.
7. Yang, *Designing China's Rural Transformation*, 236.
8. Ibid, 237
9. Third-tier cities have populations ranging from 1 to 5 million, many of these medium and small size urban regions are located in land.
10. Kamal-Chaoui, Lamia, Edward Leeman, and Zhang Rufe. *Urban trends and policy in China*, OECD Regional Development Working Papers, 2009/1, OECD publishing, 15.
11. Infrastructure entailed 55% of tap water coverage and >50% of proper road coverage are serviced for urban population. Source from China National Bureau of Statistics, Available online: <http://www.stats.gov.cn/english/ClassificationsMethods/Classifications/> (accessed on 10 October 2019).
12. Kamal-Chaoui, *Urban trends and policy in China*, 16.
13. Lok, Leslie. "NO MORE TOWER DESERTS! Towards a New Urbanism of Mat-organization" In ACSA Fall 2017 Conference Proceedings, 2017
14. Peng, Jian, Shiquan Zhao, Yanxu Liu, and Lu Tian. *Identifying the Urban-Rural Fringe Using Wavelet Transform and Kernel Density Estimation: A Case Study in Beijing City, China*. Environmental Modelling and Software 83: 286–302. <https://doi.org/10.1016/j.envsoft.2016.06.007>.

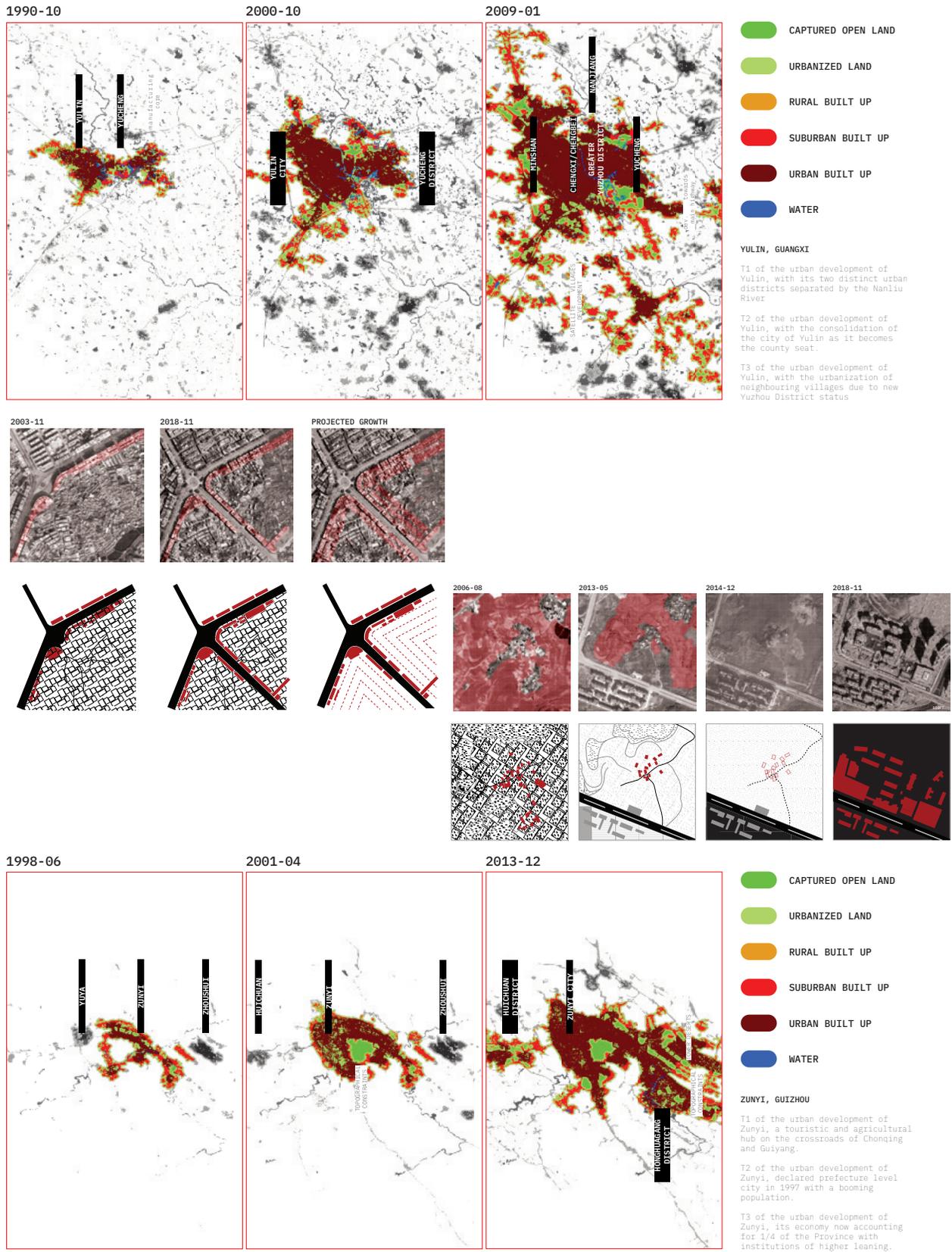


Figure 4. Rural-urban Transformation of Yulin, Guangxi [Top]; Zunyi, Guizhou [Bottom].



Figure 5. Rural-urban Transformation of Xuyi, Jiangsu.

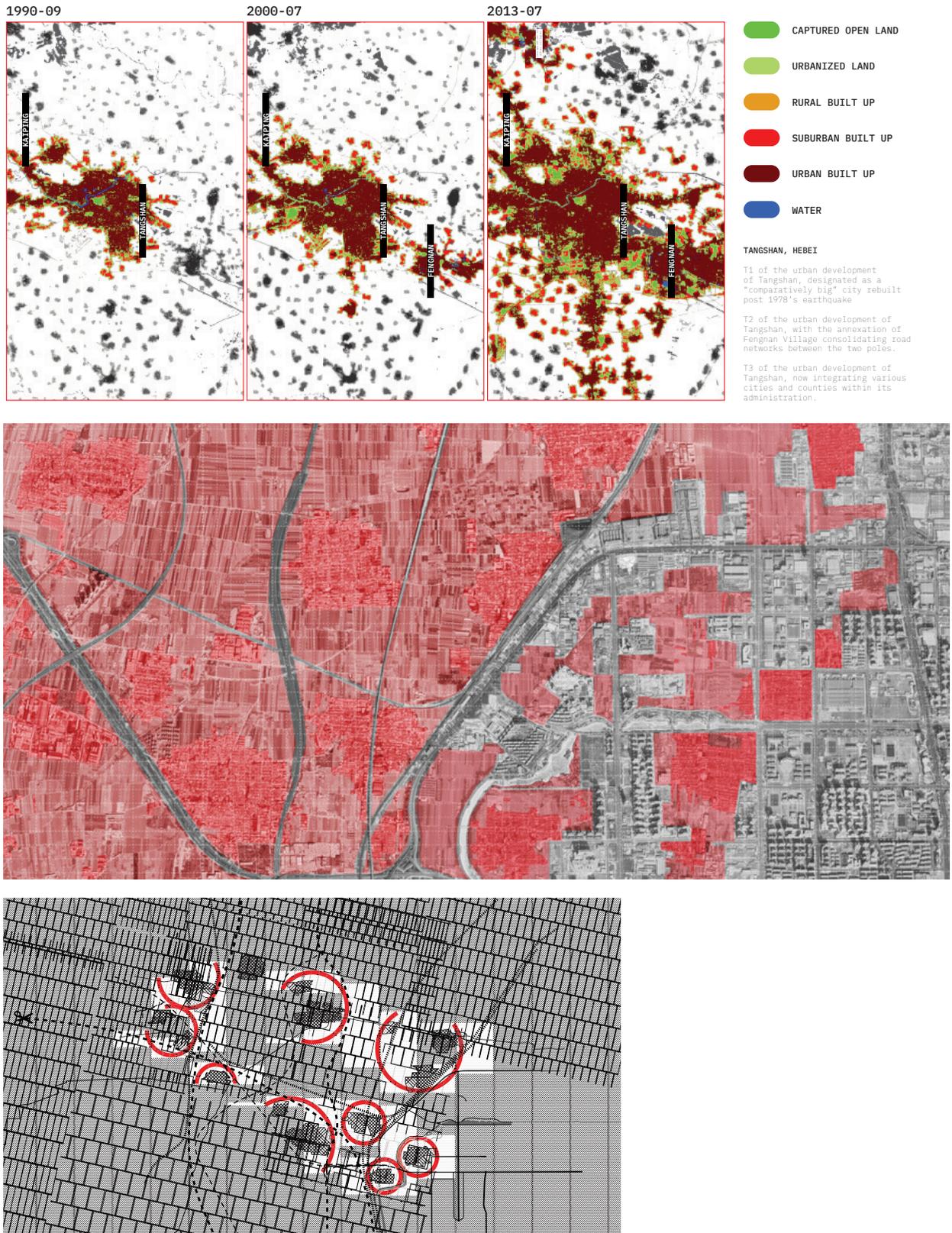


Figure 6. Rural-urban Transformation of Tangshan, Hebei.