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Research paper

The changing settlements in rural areas under urban pressure in China: Patterns, driving forces and policy implications

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HIGHLIGHTS

- Rural settlements have remained evenly distributed in Daxing.
- Rural settlements were getting more regular and compact.
- Role of market towns should be emphasized in rural development.
- Larger settlements and settlements which have merged should be emphasized.
- Controlling industrial land growth is important for rural land use.

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ABSTRACT

Rural areas under urban pressure (rural areas under pressure) in China face a growing conflict between the expansion of developed areas and the protection of cropland. The concentration of rural settlements has been embraced by local governments as a strategy to alleviate the conflict between these two landuse needs. This paper used Daxing District, Beijing, China as a case study to discuss the evolution of rural settlements in China over the past three decades and to consider the policy implications for rural settlement concentration. The results showed that: (1) over the past three decades, rural settlements have remained evenly distributed, and in 2007 each settlement had an average of 609 inhabitants; (2) the area of rural settlements has increased by approximately 100% because of various factors such as decreasing household size, increasing numbers of migrants, and improvements in living conditions; and (3) the shape of rural settlements has become more regular. These factors pose challenges to concentrating rural settlements. This study recommends that rural settlement concentration and restructuring should pay special attention to the economies of scale of market towns and large and merged villages, which can house larger populations and better accommodate industry in the future.

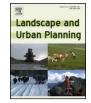
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1. Introduction

In rural areas, villages have become established social units because of the connection between the people and the land, historical factors, and sociopolitical relationships (e.g., cultural identity) (Demangeon, 1998; Jin, 1989; Jones, 2010; Robinson, 2003). However, some rural settlements have also experienced significant changes, especially in developing countries, due to a variety of factors such as rapid urbanization, social transformation, increasing levels of car ownership, and declining employment opportunities in rural areas (Kiss, 2000; Lewis & Mrara, 1986; Tian, Yang, & Zhang, 2007). The changes vary across regions. In remote areas, reduced employment opportunities are forcing people to migrate to urban areas, resulting in a decline in the number of rural settlements

0169-2046/\$ - see front matter © 2013 Elsevier B.V. All rights reserved. http://dx.doi.org/10.1016/j.landurbplan.2013.08.016 (Antrop, 2004; Górz & Kurek, 1999; McGrath, 1999; Rey, 1998). However, in rural areas near cities, the changes in rural settlement are quite different. Overpopulation in urban areas leads to a number of distinctive socio-economic and environmental problems, including urban pollution, traffic problems, loss of public green space, and soaring housing prices. As a result, businesses move to suburban areas for lower rents, and urban residents move into suburban areas to live in a cleaner environment (Clark, McChesney, Munroe, & Irwin, 2009; Huang, Wang, & Budd, 2009; Portnov & Pearlmutter, 1999: Stead & Hoppenbrouwer, 2004: Sutcliffe, 1981: Wannop, 1999). Thus, rural settlements and rural areas are under significant pressure from urbanization. To cope with the pressure of urban development, countries have developed various planning strategies in suburban areas. For instance, land readjustment is a method used to develop new areas or reorganize urban areas to meet increasing demands for land for urban development in Germany, Italy, Sweden, Japan, South Korea, and Turkey (Larsson, 1997; Sorensen, 2000).







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In China, rural settlements are experiencing dynamic changes in the process of rapid urbanization (Dumreicher, 2008). The changes also vary across regions. In remote areas, the dual-track structure of rural-urban socio-economic development has resulted in the phenomenon of 'village-hollowing' (Long, Li, Liu, Woods, & Zou, 2012). The phenomenon can be characterized: (1) a decrease in the rural population mainly due to rural-urban migration, and (2) an increase in the number of houses in some rural areas. In China, migrants cannot afford the high cost of living in urban areas, so they build houses in the rural areas in which they were raised (Sun, Chen, & Wang, 2008).

In contrast, rural settlements adjacent to cities are expanding rapidly because they can provide land for housing and industry that is unavailable in city centers. The increase in land occupied by both rural settlements and industry inevitably results in a loss of cropland (Lin & Li, 2007; Tan, Robinson, & Li, 2011).

However, the Land Administration Law of the People's Republic of China of 2004 requires that governments at the provincial level, including provinces, autonomous regions and municipalities, adopt measures to ensure that there is no reduction in the total amount of cropland within their jurisdictions. This policy is also called the Total Quantity Dynamical Equilibrium of Basic Farmland (TQDEBF). Beijing and Shanghai, as the two largest municipalities in China, face tough challenges in the implementation of the TQDEBF policy because the amount of available cropland per capita is very low. Therefore, a conflict has developed between the expansion of developed urban areas and the protection of cropland. In this context, experts and policy-makers are beginning to pay attention to changes in rural settlements, and many now believe that concentrating rural settlements (ChecunBingdian) is a good strategy to alleviate the conflict. This strategy entails merging rural settlements or building multi-story buildings to house rural residents in China. For instance, the 2004 report Deepening Reform in Strict Land Management Decisions of State Council emphasizes that increases in urban land should be accompanied by decreases in the amount of land used for construction in rural areas, mainly through the concentration and consolidation of rural settlements. However, such concentrations of rural settlements may negatively impact traditional village culture if villagers are housed in multi-story buildings to reduce the total coverage of built areas (Levine, Hughes, Mather, & Yanarella, 2008).

Thus, before progressing with the rural settlement concentration policy, there are two key planning issues that need to be addressed in China. How have rural settlements changed over the last several decades, especially since 1978, when economic development and urbanization started to speed up? And, what are the key factors influencing the changes in the spatial pattern of rural settlements? Currently, particularly in rural areas in China, little attention has been paid to these two issues, which form the basis for discussing or planning rural settlement concentration. The aim of this study is to address these two questions and to provide recommendations for rural settlement concentration in rural areas under pressure in China. Furthermore, because the patterns of rural settlement are changing in many countries, this study may represent a case study for comparing changes in rural settlements in China to those of other countries.

Beijing is the capital of China and the economic center of North China (Fig. 1). From 1978 to 2010, the city's GDP increased approximately 25-fold at constant 2010 prices, and the permanent population rose from 8.7 million to 19.6 million (BMBS, 2011). Consequently, Beijing experienced an increase in the demand for land for both industrial development and housing (Hu & David, 2001; Wu, 2000). As in other regions in China, Beijing has attempted to alleviate the demand for land for housing by rural settlement concentration. This study examines Daxing, a district of Beijing, as a case study to analyze rural settlement changes. One important reason for choosing this district was that Daxing is primarily comprised of relatively flat plains. This makes it easier to investigate how rural settlement has evolved and to identify the socio-economic factors causing changes in rural settlement patterns. In mountainous or hilly areas, the changes in rural settlement distributions are significantly affected by irregular topography.

This paper is structured as follows. The next section describes the study area. Section 3 introduces the data and methods used in this study. The Section 4 examines the characteristics of and changes to rural settlement distributions. The Sections 5 and 6

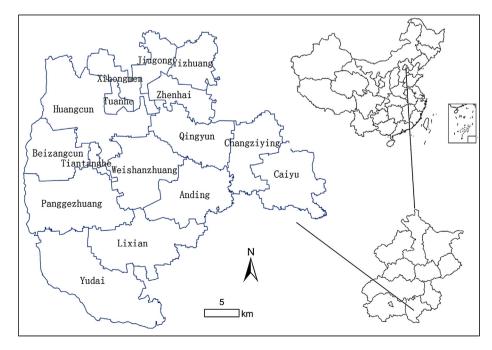


Fig. 1. The location and names of small towns of the Daxing District of Beijing.

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