Land Use Policy 76 (2018) 246–251

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Conflicts of land expropriation in China during 2006–2016: An overview and its spatio-temporal characteristics

Qiaowen Lin[a], Shukui Tan[a,*], Lu Zhang[a], Siliang Wang[a], Chao Wei[b], Yanan Li[c]

[a] College of Public Administration, Huazhong University of Science and Technology, China
[b] College of Public Administration, China University of Geosciences, China
[c] School of Public Administration, Wuhan Institute of Technology, China

ARTICLE INFO

Keywords:
Spatio-temporal analysis
Land conflicts
Per capita GDP
China

ABSTRACT

In recent years conflicts of land expropriation in China have received a lot of concern. Recent systematic reviews highlight causes, types and resolution of land conflicts, yet very few of these studies have considered the spatial-temporal characteristics of the issue. Utilizing spatial statistical analysis and statistical software, this paper aims to build a contextual overview on Chinese land expropriation conflicts and explore spatial and temporal distribution of it during 2006–2016. Correlations of land conflict intensity with per capita GDP and urbanization rate have been studied. This paper indicates that farmers should share responsibilities for the occurrence of land conflicts as well due to their improper behavior. Offensive language and acts of defiance make the issue more complicated. Furthermore, the study reveals that the number of land expropriation conflicts in China has declined since 2013 due to government's positive actions. Overall, the conflict of land expropriation in space is categorized as "high intensity in the south and low intensity in the north". The most conflicted areas in China are south and the southwest. Among them, Guangdong and Yunnan are particular regions with a high intensity of land conflicts. Last but not least, by use of data we have shown that land conflict intensity in China does not have a statistically significant spatial pattern on the whole. However, the relationship between per capita GDP and land conflict intensity has a statistically dispersed spatial pattern.

1. Introduction

In recent years, the rapid development and urbanization has led to the constant expropriation of land in developing countries. However, this land expropriation with the public interest has frequently encountered ferocious opposition from farmers and caused sharp social contradictions (Mathur, 2013). China is one of the well-recognized countries in the world with the largest amount of land use, the most dramatic change and the most serious land conflicts (Zhong et al., 2010). Its urban construction land area increases from 6720 km^2 in 1981 to 49,982.7 km^2 in 2014, whose net growth is 43 262.7 km^2, increased by 6.44 times. The average annual growth rate is as high as 6.27% (Fang et al., 2017).

With the continuous expansion of cities in China, a wide range of serious problems such as the widening of the gap between urban and rural areas, environmental damage, sharp growth of population crises of resources and so on have been revealed. Among them, land issues have become the key problems affecting Chinese rural stability (Huang et al., 2016). In farmers' petition in China, the land issues account for more than 65%, while 73.2% of it is concerned with the expropriation of land (Liu and Sun, 2014). Land expropriation conflict becomes a threat against stability of society in China.

Meanwhile, land conflicts in China has attracted considerable empirical and theoretical analysis (e.g., Eddie et al., 2013; Hui and Bao, 2013; Tan and Zhang, 2016). Land conflict is identified by Brazilian human rights groups to include verbal confrontation, vandalism, expulsion, physical altercations and, at the extreme, assassinations (Hui and Bao, 2013). It is also taken as the peasants' struggle to change unequal agrarian social relations by Upreti (2004). Wehrmann(2008) argues that land conflict could be described as a social fact in which at least two parties are involved in order to pursue the property rights to land. Land conflict, therefore, can be understood as disputes or misuse over land property rights. Causes of conflicts in land acquisition have been studied which mainly refer to institutional flaws, illegal land acquisition by local governments, disharmony between the rapid expansion of the city and the space conversion (Zhou, 2003; Tan and Qi,

* Corresponding author at: College of Public Administration, Huazhong University of Science and Technology, No.1037 Luoyu Road, Hongshan District, Hubei Province, Post code: 430074, China.
E-mail addresses: marylin@hust.edu.cn (Q. Lin), tansk@hust.edu.cn (S. Tan), zhanglu54522@hust.edu.cn (L. Zhang), wangsiliang@hust.edu.cn (S. Wang), weichao@cug.edu.cn (C. Wei), lyn@wit.edu.cn (Y. Li).

https://doi.org/10.1016/j.landusepol.2018.05.018
Received 10 January 2018; Received in revised form 8 May 2018; Accepted 8 May 2018

2011; Huang and Sun, 2013). Specific analyses of land expropriation system including land property rights system, land compensation system, assessment system on the risk of land acquisition conflicts, and early warning mechanism of land acquisition conflicts are studied (Ding et al., 2013; Zhong, 2013). Different types of conflicts in land acquisition which include conflicts around the purpose of land acquisition, conflicts about the procedure of land acquisition, conflicts concerning the compensation for land acquisition and the settlement of landless peasants have been surveyed (Yu, 2005; Hou, 2015; Zhu, 2015; Liu and Peng, 2006). The research on the psychology of landless farmers and the game playing between the government and farmers are being done (Tang, 2016). However, to our knowledge there is little research on the spatio-temporal analysis of land conflicts. The characteristics of temporal and spatial distribution have not received adequate analytical discussion in the literature, despite the fact that the land acquisition conflicts frequently occur in China (Liu and Sun, 2014). In this paper, conflicts of land expropriation in China during 2006–2016 are deeply analyzed in order to build a contextual overview on Chinese land conflicts and explore the spatial and temporal characteristics of land conflicts in China. Moreover, correlation of land conflict intensity with per capital GDP and urbanization is discussed. Hopefully, it can provide guidance on land management for the decision-makers at local and regional level in China.

The structure of the paper is as follows. Methods will be introduced in next part, which is followed by the overview of land conflicts in China. Spatial and temporal distribution of land conflict is explored and the results are discussed within the national context. In the end, conclusions of the paper have been clearly stated.

2. Methods

2.1. Data collection

There are no specific governments or non-government organizations which collect the statistics concerning Chinese land conflicts until now. Land conflict cases in this article are mainly collected through the legitimate websites. Official documents, research papers and publicly available media reports are also used to verify the authenticity of the events. Taking names of county-level administrative areas, conflict of land requisition, land disputes, land acquisition violence, land conflict and so on as keywords, this paper collects and collates 106 cases of land conflicts. The time span is from June 2006 to November 2016. Obvious conflict behavior and cause of the conflict are clarified in the majority of these cases. What should be clarified is that this paper mainly discusses land conflicts in mainland China. Hong Kong, Macao and Taiwan are not included in the study areas due to the lack of relevant data. Data of GDP per capita and ratio of urbanization are from china statistical yearbook and corresponding-period databases of provincial level.

2.2. Calculation of land conflict intensity

According to the characteristics of land conflicts and survey data, the land conflict in China is divided into four types which includes tremendous land conflict, serious land conflict, considerable land conflict and ordinary land conflict.

The direct economic loss, the number of participants and casualties caused by the conflict of land expropriation are explored in each type (See Table 1). The first type is tremendous land conflict. It refers to the situation that has caused more than 10 deaths, or more than 50 serious injuries, or direct economic losses of more than 1 million yuan, or has more than 2000 people involved. The second one is called serious land conflict. Issues which result in loss of lives higher than 3 and lower than 10, or seriously injuring more than 20 and less than 50 people, or there is a direct economic loss ranging from 0.5 million yuan to 1 million yuan below in the conflict, or more than 300 people and less than 2000 people are involved in the conflict. The third one is considerable land conflict which results in loss of lives of less than 3, or seriously injuring more than 5 and less than 20 people, or direct economic loss ranging from 50,000 yuan to 0.5 million yuan, or more than 30 people and less than 300 people are involved. The fourth one is named ordinary land conflict, which results in no loss of life or less than five people being injured, or it causes a direct economic loss of up to 50,000 yuan or less, or it involves 30 people or less.

N stands for the number of persons; E stands for direct economic loss and its unit is yuan.

In this paper, land conflict intensity is used as an indicator to measure the severity of land conflict in a certain region, and it is represented by the weighted sum of the amount of land conflicts. Calculation of the formula is as following:

$$D = \Sigma (Kn*Cn)$$

D represents land conflict intensity in a certain region. C is the type of land conflicts. K is the value of weight of different types of land conflicts, which can be obtained by experts grading method.

3. Analyses

Statistical analyses were performed using SPSS 18.0, ArcGIS 9.3, and GeoDa 1.12. Land conflict intensity in each area was calculated first. An overview on land conflicts regarding the main subjects of land conflicts, death and loss of land conflicts, causes of land conflicts was conducted. Subsequently, time distribution was demonstrated using SPSS 18.0. A spatial analysis was done to get to find out spatial characteristics of land conflicts by the use of ArcGIS 9.3 and GeoDa software. In addition to testing for differences in absolute numbers, hierarchical cluster was used to determine the classification among block groups.

Spatial autocorrelation describes the distribution of a variable, or the distribution of the relationship between two variables, over space. The pattern of a variable can be clustered, where high (low) values occur near other high (low) values, or dispersed, or where high (low) values occur near low (high) values or the pattern could be random (Burt and Barber, 1996).

To determine if the spatial patterns of each variable are clustered, we measured the spatial autocorrelation using GeoDa software for land conflict intensity. To compare the level of a variable in one block group to that of the second variable in neighboring block groups, we conducted a bivariate analysis. This analysis determines if the spatial patterns of land conflict intensity with GDP per capital and urbanization rate are clustered, dispersed or random (Anselin et al., 2006). For example, the bivariate analysis determines if block groups with high value of land conflict intensity are next to block groups with a high or low

Table 1
Different types of land conflicts in China.

Types of land conflicts	Number of participants	Number of injuries	Number of death	Direct economic loss
Tremendous land conflict	N ≥ 2000	N ≥ 50	N > 10	E ≥ 1,000,000
Serious land conflict	2000 > N > 300	50 > N > 20	3 < N ≤ 10	1,000,000 > E > 500,000
Considerable land conflict	30 < N ≤ 300	5 < N ≤ 20	N ≤ 3	50,000 < E ≤ 500,000
Ordinary land conflict	N ≤ 30	N ≤ 5	0	E ≤ 50,000