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**Article**

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# National Land Use Management in China: An Analytical Framework

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**ABSTRACT.** Rapid urban land growth has been a major characteristic of urbanization in China since reform and open-door policies began in the late 1970s. Due to its unique political system, historical experience, and geographic conditions, urban land growth in China is still characterized by short periods of land acquisition, large-scale land development, and large-scale industrial use. Although urban land use is basically a local issue for cities, many important policies are also framed by the Chinese central government to ensure that national interests are protected.

Following a review of urban land growth in China, this study found that the role of the central government in urban land growth has been changing in recent years. The once exclusive objective of ensuring urban economic development has been replaced by multi-objective considerations of economic, social, and environmental issues, addressing both urban and rural interests in the process of urban land growth. This transition has also greatly influenced the policies of city governments, which has in turn influenced local land use patterns. However, attaining these multiple objectives is becoming increasingly difficult. This paper examines the underlying causes of this shift and discusses various approaches to adjusting the future role of the central government.

**KEYWORDS.** *National land policy, garbage can, game theory, China*

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## 1. INTRODUCTION

Urbanization in contemporary China has attracted attention from around the world due its striking speed and the manner in which this process has been managed from a planned system to a market-oriented system. Between 1949 and 1978, the average annual increase in the urbanization ratio was 0.25%; however, between 1979 and 2004, this increased to 0.91% (Gu, 1992; Chinese Academy of Science, 2005; National Bureau of Statistics, 2005). The employed population in cities and towns increased by 42 million between 2001 and 2005, and is expected to have increased by 45 million between 2006 and 2010 (National People's Congress PRC, 2006). A recent influential report predicts that the urbanization ratio of China is likely to increase from 36% in 2000 to over 75% in 2050 (Editorial Committee of China Urban Development Report, 2002), which means that 500-600 million new urban residents will have to be accommodated between 2000 and 2050. This represents an increase in the urbanization ratio of approximately 0.8%; an increase of over 10 million urban residents per year. According to current guidelines for urban master plans, 100 square meters per capita is required in new urban areas, which represents 50 to 60 thousand square kilometers of land between 2000 and 2050, or 1.0-1.2 thousand square kilometers that must be available each year to accommodate the increasing number of urban residents (Figure 1).

As a result, managing urban growth has become a key issue in the national land policy of China. The government sector in China has played a determinative role in urban growth by monopolizing nearly all urban land supply since the 1950s. Governments are tasked with providing adequate new land to ensure economic development and industrialization, accommodate new immigrants from rural areas, and improve urban housing conditions. During the process of land conversion, governments must also ensure that converted land is used efficiently, protect the interests of rural residents through adequate compensation, and minimize damage to the environment.

However, national land policy dealing with urban growth in China does not reflect a uniform, coherent effort; rather, it represents a combination of interventions at various levels of both central and local governments. Although urban land use decisions are basically local issues, with most of the responsibility for planning and control delegated to local governments, the central government maintains ultimate power to override local governments. Recently, the central government has been attempting to implement national goals and remedy the poor management of some local governments with regard to urban development.

Growth management has also been adopted by the federal government in the United States as an important tool to curb sprawl and protect farmland and the natural environment; however, this has been carried out primarily through state and local programs, because the authority control

land use was delegated by Congress to the states, and from the states to local governments (Libby, 2003). By contrast, the central government in China maintains more direct control, which includes distributing the responsibility for land use between the central, regional, and local governments,<sup>1</sup> issuing national administrative orders, and providing notification of certain conference decisions. Moreover, at each level of government, the various land management programs implemented by different government sectors also influence urban land growth patterns.

A large number of studies have dealt with issues related to national land use; however, most of this research tends to view the public sector (governments at the central and local levels) as a whole. Little attention has been paid to the governing mechanisms through which national land policies are implemented (at the central and local level). The study paper developed a theoretical framework to describe these mechanisms.

Section 2 reviews the instructional instruments used to implement national land use policy. Section 3 presents a model to describe the formation of national land use policy. Section 4 presents empirical examples to demonstrate the operation of the model. Conclusions are presented in Section 5.

## **2. Research Design and Methodology**

Because the present paper explores the workings of the Chinese government in managing national land use, the research design and methodology are relatively loosely constructed. More specifically, we first review the structure of the Chinese government with a focus on land management. We then provide a descriptive, conceptual model to describe the formation of national land use policy, depicting how land use policies emerge within the structure. Empirical evidence is provided to demonstrate the efficacy of this approach. However, no conclusions can be made until a more rigorous research methodology is conducted and more data collected.

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1. The most evident case may be the withdrawal of the approval power of rural land acquisition through the 1998 Land Administration Law.

### 3. INSTITUTIONS FOR NATIONAL LAND POLICY

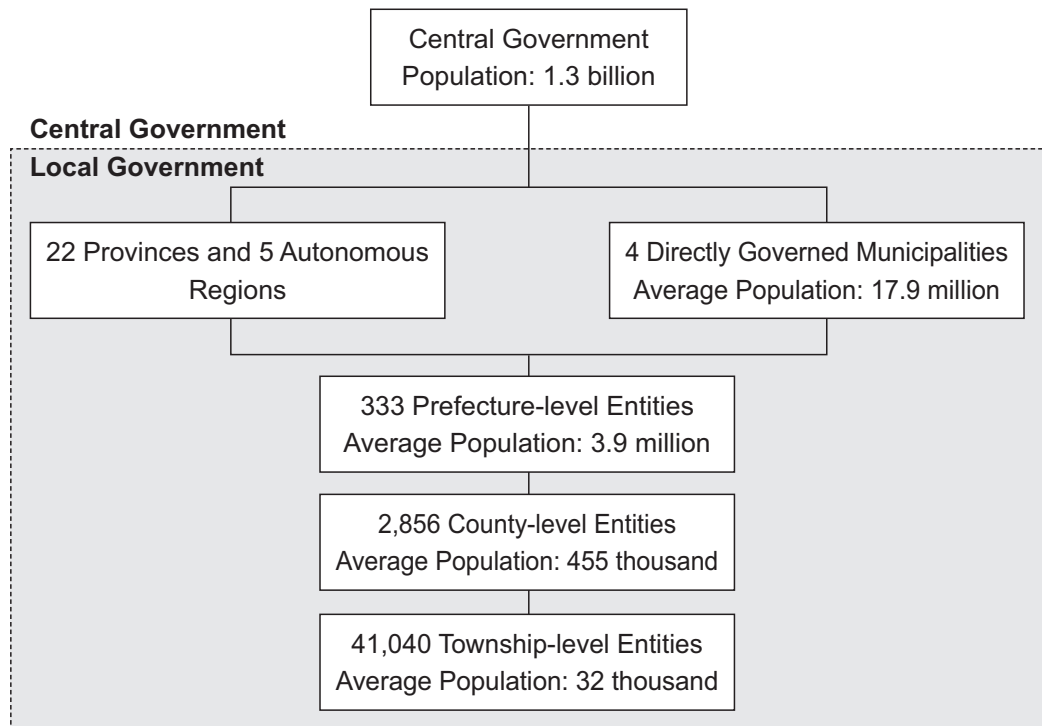
#### *3.1 Central and Local Governments*

A variety of definitions have been provided for the term “central government” in different countries and in different eras. This paper primarily discusses the administrative bodies (the State Council and its subordinate bodies); however, to explain national policy, we also address the government in a broader sense, including the congress and the supreme court. Moreover, due to the centralized system particular to China, the influence of the CCP (Chinese Communist Party) should not be neglected in any discussion related to the role of the central government in social and economic issues. Thus, the role of the “central government”, as discussed in this paper, broadly includes a cluster of administrative, legislative, and judicial bodies, as well as the ruling party.

In a similar manner, the definition of local government in China must also be clarified. The government of China is an extraordinarily complex system with five distinct levels: national, provincial, prefecture, county and township.<sup>2</sup> Among all the levels of governments, only the governments at the level of prefecture, county, and township are responsible for providing local infrastructure for urban development. However, provincial governments have the same status as governments at the prefecture-, county-, and township-levels. Moreover, governments at the provincial level are often more concerned with locally-oriented land use issues. Thus, this paper defines land use issues as an aspect of local governments (Figure 1).

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2. Provincial level entities include provinces, autonomous districts and directly governed municipalities; county-level entities include districts and counties; and township-level entities include towns and villages.



**Figure 1.** Structure of Government in China Constructed by author, Data source: Ministry of Civil Affairs, 2007

The authority of the central government to intervene in local issues is rooted in the historical traditions of China, which has a long history of unitary systems of government. China's feudal period lasted for approximately 2000 years, during which time the unitary system and a powerful centralized central government were widely accepted and consolidated by the Chinese people. After the founding of the PRC in 1949, a highly centralized system from the Soviet Union was immediately applied in China. The operation of the planned economy directed by the communist ideals maintained the unitary system of government.<sup>3</sup> All local authorities were empowered by the central government, which appointed high-ranking officials to provinces, autonomous regions, and important cities. The central government also has the authority to change the boundaries of

3. According to Item 3 in the 1982 Chinese Constitution, the distribution of the authority in the central and the local governments shall be based on the national administration, and in favor of local interests.

provincial and local governments,<sup>4</sup> and to determine the revenue sharing rules among various levels of governments.<sup>5</sup> Since the 1980s, the role of the central government has undergone considerable change. The Congress of CCP issued the documents of Economic Reform in 1984 and General Plan of Political Reform in 1987, to clarify and adjust the relationship between CCP, the government sector, and various economic units. Decentralizing the planned economic regime was an important concern of these reforms. The 14th Congress of the CCP in 1992 advanced the notion of Socialist Market Economy, requiring the transformation of the government from the role of “dictator” in the planned economy to a “watchman” in the market-oriented economy. Governments were expected to grant much of their power to the private sector. The central government was also expected to delegate power to provincial and local levels. This trend of transference is still in progress. Despite the recent changes, the central government maintains a lead role in the direction of nearly all social and economic activities nationwide.

### ***3.2 The Top-down Institutional Structure***

Despite Chinese claims that it is implementing a market-oriented economy, governmental regulation of land use is clearly based on an top-down structure. The enforcement of this system relies on consistency in the local implementation of policies demanded by the central government.

#### ***3.2.1 Legislative System***

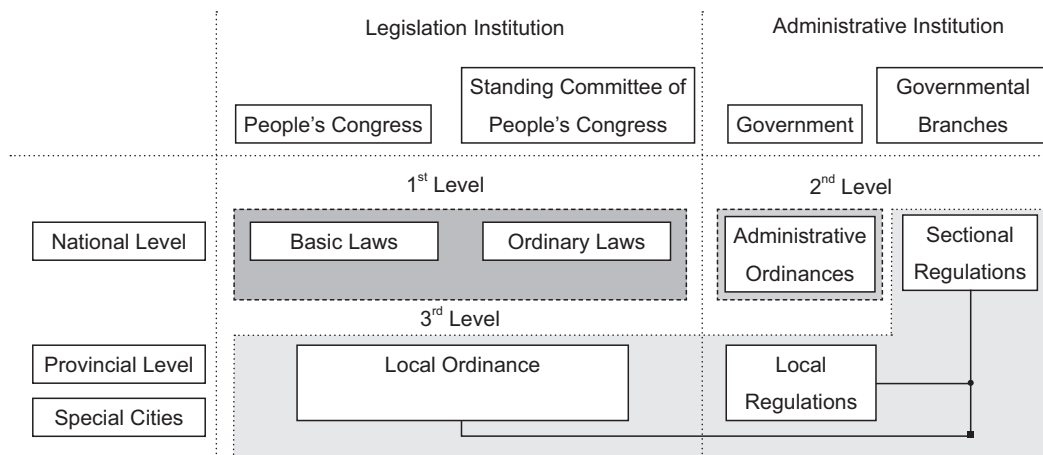
According to “Organizing Law of All Levels of Local People’s Congress and Local Governments” in 1979, the Chinese constitution in 1982, and the Chinese Legislative Law in 2000, the legal system of China comprises three levels: (1) the Chinese Constitution and all laws based on it; (2) administrative ordinances promulgated by the State Council; (3) local ordinances promulgated by the local congress, the local regulations issued by the local government, and the sectional regulations issued by the ministries and committees of the State Council (Figure 2, Table 1, Table 2). Chinese legislators have granted the government sector comprehensive powers for legislation. Moreover, the State Council has administrative power exceeding that of

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4. Since PRC was founded in 1949, the number and boundaries of governments at provincial level have changed 11 times, and governments at the rural level have kept changing every year,

5. China has experienced three large-scale fiscal decentralizations, starting in 1958, 1970, and 1994 respectively.

local ordinances, which demarcates the activities of the local congress under the direction of the central government. The legislative system of contemporary China appears to be one of the most centralized systems in the world, which firmly guarantees the authority of the central government and bolsters the policies implemented by it.



**Figure 2.** Legal System of China

- Contradictions between local ordinances and sectional regulations are first coordinated by the state council. If the state council supports the local ordinance, the sectional regulation should be adjusted according to the local ordinance; if the state council supports the sectional regulations, the case should be submitted to and finally judged by the standing committee of the people's congress. (Legislation Law, Item 86)
- Contradictions between different regulations are arbitrated by the state council. (Legislation Law, Item 86)

**Table 1.** Examples of Laws, Ordinances, and Regulations in China

ITEM	EXAMPLE
Basic Laws	Chinese Constitution Chinese Legislative Law
Ordinary Laws	Land Use Administration Law Urban Planning Law
Administrative Ordinances	Land Use Administration Ordinance Management Ordinance of the Land in Villages and Towns for Use in Construction



Sectional Regulations	Urban Planning Drafting Method
Local Ordinance	Urban Planning Ordinance of Beijing City
Local Regulations	Regulations for the Management of the Construction and Planning of Villages and Towns in Beijing City

**Table 2.** Instruments of Legislation

Classification	Item	Legislation Institution	Promulgator
Law	Fa	National People's Congress	President
Administrative Ordinances	Tiao Li	The State Council	Prime Minister
	Gui Ding		
	Ban Fa		
Sectional Regulations	Guiding	Ministries & Committees of the State Council	Minister
	Banfa		
Local Ordinances	Tiao Li	Local People's Congress of Provincial Level and of Big Municipalities <sup>6</sup>	Local People's Congress of Provincial Level and of Big Municipalities
	Gui Ding		
	Ban Fa		
Local Regulations	Guiding	Local People's Government of Provincial Level and of Big Municipalities	Provincial or Municipal Governor
	Banfa		

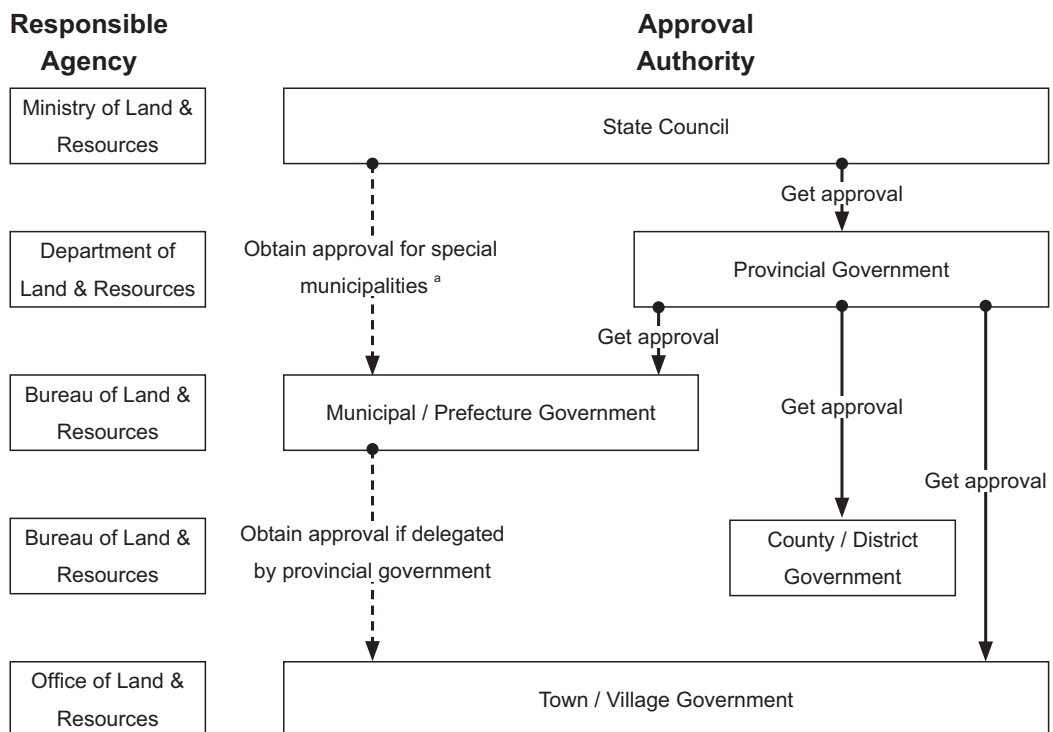
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6. Large Municipalities: according to the Organizing Law of All Levels of Local People's Congress and Local Governments (constituted in 1979, revised in 1982, 1986, 1995 and 2004 respectively), "Large Municipalities" are referred to as the municipalities empowered by the central government to share the same power with the capitals of provinces and autonomous districts to frame and promulgate local ordinances and local regulations. The central government has nominated 18 such cities. However, according to the Chinese Legislation Law (constituted in 2000), "Large Municipalities" also include 27 capitals of provinces and autonomous districts and four municipalities nominated as "special economic development zones" (SEDZs), with the total number of 49.

**DATA SOURCE:** Management Method for the Documents of State Government (State Council 2001), Chinese Legislation Law (National People's Congress PRC 2000), Organizing Law of All Levels of Local People's Congress and Local Governments (National People's Congress PRC 1979)

### 3.2.2 Land Use Master Plan

The land use master plan was initiated at the end of 1980s, immediately after the foundation of the State Land Administration<sup>7</sup> in 1987. From 1996-1998, the central government drafted the second round of the land use master plan nationwide. The third round of land use master plan began in 2005 and is still in progress. According to the Land Administration Law, the land use master plan is carried out through a strict five-level hierarchical system, including the plans of national, provincial, municipal/prefecture, county/district, and village/town levels (Figure 3).



**Figure 3.** Five Levels of the Land Use Master Plan

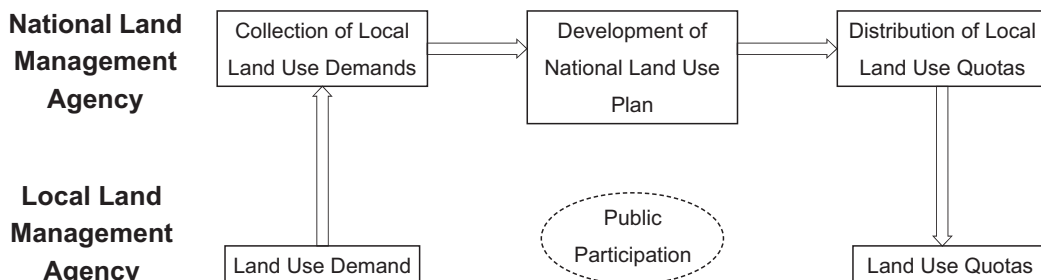
7. Ministry of Land and Resources after 1998.

**DATA SOURCE:** (Liu 2005), revised by authors according to National People's Congress PRC (1991)

Special municipalities include three types of municipalities: (1) the capitals of provinces and autonomous districts; (2) municipalities with a population exceeding 100 million; and (3) municipalities empowered by the central government to share the same power with the capitals of provinces and autonomous districts to frame and promulgate local ordinances and local regulations (National People's Congress PRC 1991).

The land use master plan system, including land use master plans, yearly land use plans, and the thematic land use plans, has gradually become one of the most direct and important instruments for the central government to manage national land use, as it follows strict a top-down planning structure and is the only way to conduct land use control from the national level. The Land Administration Law demands that a land use master plan drafted by a low level government follow the one by a higher level government (National People's Congress PRC, 1991).

Land use quotas in a land use master plan act as an easy tool to implement growth management. The quotas include: (1) cultivated land quota, (2) basic cultivated land quota, (3) urban and rural construction land quota, (4) quota for land conversion from cultivated use to urban use, (5) quota for cultivated land supplement through land reclamation, (6) per capita urban industrial and mining land quota, (7) construction land quota, (8) urban industrial and mining land quota, (9) increasing construction land quota, (10) quota for land conversion from agricultural use to urban use. The first six quotas are required and the last four are directives in the third round of a land use master plan. A mechanism to allocate land use quotas from a higher administrative authority to a lower one is crucial because these quotas decide the scale and speed with which local areas may be developed in the next 15 years. This mechanism functions through several basic steps, as illustrated in Figure 4.

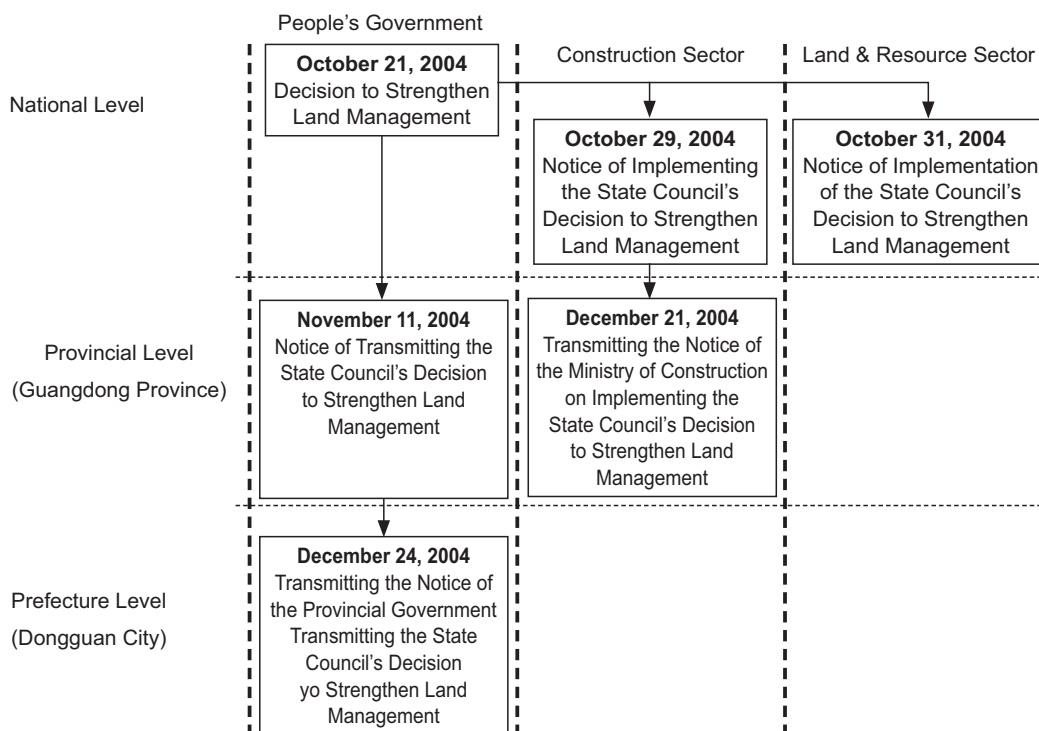


**Figure 4.** Distribution of Land Use Quotas

First, the land use demand is submitted from a lower land management agency to a higher one (i.e., from the local to the national), as illustrated in Figure 4. Second, the demands of various local areas are collected and summed up by the national land management agency. The national land use plan is then drawn up according to the information of local land use demands. Finally, national land use quotas are distributed and designated in various localities according to their previous land use conditions, population growth projections, and expected economic development. However, the distribution is never made in strict accordance with an index of indicators, as it is basically a political rather than a scientific issue. The options of local governments are not generally considered in the drafting of national land use plans or decisions related to the distribution of land use quotas, since all local governments tend to exaggerate their own land use demand, rendering local land use demands unreliable. The central government has also reserved a number of land use quotas as “mobile quotas” in its land use master plans. These “mobile quotas” can be allocated to any local administration according to the needs of the central government, which enables strong central control over local governments in issues related to land use. Although public participation is required (in accordance with the Land Use Planning Framing and Supervision Method), no concrete measures have been adopted with which to actually implement this. This mechanism ensures that land use quotas are distributed by the national land management agency to the local ones in a strictly hierarchical and bureaucratic manner. Similarly, land use quotas are distributed from higher local administrative bodies to lower local administrations.

### *3.2.3 Administrative Intervention*

In addition to the administrative ordinances issued by the State Council and regulations issued by the ministries and committees of the State Council, administrative orders have been frequently used as the most direct way by which the central government achieves its objectives. For historical reasons, administrative intervention had been the most important instrument in the management of urban land use and other social-economic issues in the post-Mao era. Since the implementation of the Chinese Constitution in 1982, a considerable number of laws have gradually replaced the function of administrative orders; however, administrative orders are still often applied as the most direct and effective way of controlling the social-economic issues by the central government (Figure 5, Table 3). The most evident case is that of the State Council suspending the conversion of farmland into urban construction land all over the country through emergency orders in 1997 and 2003. Despite the fact that the influence of these orders is temporary, they have greatly influenced urban land use patterns in China.



**Figure 5.** Example of Urban Land Use Management through Administrative Orders in 2004

**Table 3.** Types of Administrative Orders

Classification	Item	Legislation Institution	Promulgator
Administrative Orders	Jue Ding Gong Gao Tong Gao Tong Zhi Tong Bao Bao Gao Zhi Shi Pi Fu Yi Jian Han Hui Yi Ji Yao	Various Agencies and Branches of CCP (Chinese Communist Party) and the People's Government	Various Agencies and Branches of CCP (Chinese Communist Party) and the People's Government

**DATA SOURCE:** Management Method for the Documents of State Government (State Council 2001)

#### 4. MODEL OF NATIONAL LAND POLICY FORMATION

Two theories are commonly applied to explain the interaction and process of governments in decision making: the garbage can model and game theory.

The garbage can model is a description of chaotic choice behavior in organized anarchies. It stresses how decisions are made in the context of garbage cans with regard to problems, solutions, and decision makers. The model views the decision process in an organization as four independent streams: problems, solutions, decision makers, and choice opportunities or decision situations. These four elements interact in an unpredictable and chaotic manner, such that if problems, solutions, and decision makers meet at a particular choice opportunity, a decision may or may not be made, depending on whether the energy supplied exceeds that demanded. In addition to the interaction of the four streams of elements, there are structural constraints that determine who is eligible to make decisions, which problems are to be dealt with, and what resources can be brought to bear under given opportunities. Despite the simplicity of organizational choice behavior, the system generates extremely complex, unpredictable behavior that yields interesting, robust patterns. For example, the model predicts that most decisions are made without solving problems; however, when structures, such as planning, are imposed on the system, events change (Lai, 1998). Order emerges from the chaos, and the system appears to be tamed by the imposition of structure, such that problems and decision makers tend to be fixed within specific choice opportunities through time. However, fewer problems are solved with planning than without planning, which results in speedy decision making. The garbage can model has been extended to explain the agenda setting process in the U.S. federal government (Kingdon, 2003).

By contrast, the two-person, iterated prisoner's dilemma in game theory is particularly useful in framing and planning related situations because it considers whether two interacting parties would cooperate for the collective good. For example, in deciding whether to invest in land, a developer and the local government must decide how to regulate land use. This could be formulated as a two-person, iterated prisoner's dilemma, such that the regulated development is a collective good; however, the developer and local government have incentives not to cooperate. In the end, the ideal outcome, (i.e., regulated development), would not come about without coercive action. Another example is the negotiation between land owners in a community and the local government attempting to find a location for a NIMBY (Not-In-My-Back-Yard) facility, such as a landfill site. The best outcome would be for the local government to make reasonable compensation to the land owners for locating the facility near the affected community, such that the land owners concur with the local government's offer. Because both parties seek to maximize their self-welfare or social-welfare, they have incentives not to cooperate. The outcome of the

collective good is usually difficult to achieve without coercive action.” (Chiu and Lai, 2008)

Given the complex structure of the central and local governments, it is clear that the process of composing national land policy in China does not involve the top-down order perceived by most scholars. Rather, this process is laden with surprises and unpredictability. Because of common interests, this study argues that the process of establishing national land policy with the central government is less strategic than the process between the central and local governments, in which conflicting interests pervade. Therefore, we hypothesize that the process of establishing national land policy within the central government can be better characterized by the garbage can model (e.g., Kingdon, 2003), whereas the process between the central and local governments is best represented by game theory (e.g., Lai et al., 2008).

In a similar manner to Kingdon (2003), we hypothesize that national land policies are established by the central government through policy windows. A policy window is an opportunity in which policies are brought to bear by various participants, including interest groups, policy makers, media, and legislators who are preoccupied with existing problems and solutions. There is also an independent stream of political events that progresses according to its own dynamics and rules. Policies emerge within policy windows and may or may not be adopted. The independent streams of policy windows, participants, problems/solutions, and political events meet in unpredictable ways within given structural constraints of the central government.

The interaction between the central and local governments can to some extent be characterized by a prisoner's dilemma game, in which the two players either cooperate or opt out. For example, the central government could be considered a regulator and the local government a developer. Note that in this prisoner's dilemma game, the central and local governments are asymmetric in the sense that the former has more authority than the latter. In this formulation, we can focus on the interaction between the central government and a local government in making plans as a starting point. More complicated situations can be developed in the future based on the simplified model. Knaap, Hopkins, and Donaghy (1998) constructed a game theory model to examine the logic and the effects of land use planning in the context of local governments and developers, rather than central and local governments, but the same logic applies in both cases. Their model provides useful insight into the way plans influence the behavior of local governments and developers in game situations, and suggests hypotheses for empirical tests. In their model, perfect rationality is assumed, such that both the local government and the developer behave in a manner that maximizes the value of the objective functions. Despite the logic of the model, perfect rationality is far from reality. In our formulation, we assume that the central and local governments behave according to bounded rationality. That is, neither the central government nor the local government is rational in the classic economic sense. An iterated prisoner's dilemma game can be used to model the interaction more realistically. That is, the central government and

the local government are two players in the game with property rights in land as the payoff, as shown below:

		Local Government (Developer)	
		Cooperate	Opting out
Central Government	Cooperate	R, R	S, T
	Opting out	T, S	P, P

**Figure 6.** Matrix of Payoffs in the Prisoner's Dilemma Game

Note that  $T > R > P > S$  and  $(S + T)/2 < R$ , which are payoffs measured in terms of the property rights of land. The central government could either regulate (cooperate) or not regulate (opt out) the usage of a piece of land, while the local government (developer) could either invest (cooperate) or not invest (opt out). The Nash equilibrium for the game is for the central government not to regulate, while the local government (developer) does not invest. However, the benefits for both increase if the central government regulates and the local government (developer) invests. If the two players iteratively play the game indefinitely, cooperation might emerge with the central government regulating and the local government (developer) investing (Axelrod, 1984). It would be interesting to examine what would happen in the event that either the central government or the local government (developer) made plans for their moves, or both made plan for their moves. In the iterated prisoner's dilemma game, no player has perfect foresight as to what the other player would do; thus, bounded rationality is assumed. A preliminary examination shows that the model effectively describes the land development situation in China (Lai et al., 2008).

It is worth mentioning that the view of an emergent web of plans might describe the land planning process in China better than the comprehensive hierarchy conceived by most scholars (Donaghy and Hopkins, 2006). For example, within the central government, plans are made by different governmental units (Development and Reform, Housing and Urban-Rural Development, and Land and Resources) with different scopes and uncoordinated efforts. Implementing these plans requires that local governments assert their own plans through regulations, also with different scopes and uncoordinated efforts. All of these plans emerge to form a web of plans interacting with each other that is independent of the depicted garbage can model of the process of establishing national land policy.



## 5. EMPIRICAL EVIDENCE

### *5.1 Policy Making and Implementation in the Central Government*

#### *5.1.1 Many Actors*

As discussed in the previous chapter, many government sectors are involved in the decision making associated with national land policy. The Ministry of Housing and Urban-Rural Development focuses on planning and control in urban areas, the Ministry of Land and resources in rural areas, and the National Development and Reform Commission in both. Other sectors, such as the Ministry of Agriculture, the Ministry of Environmental Protection, the Ministry of Transport, the Ministry of Railways, and the Ministry of Water Resources all participate in the decision making process; however, none of these governmental sectors could assume absolute control of this process.

Of these central government sectors, three ministries or commissions play a major role in the decision making of national land policy: The Ministry of Housing and Urban-Rural Development, the Ministry of Land and Resources, and the National Development and Reform Commission (Table 4).

The Ministry of Housing and Urban-Rural Development assumes control of the constitution and supervision of town system plans, urban master plans, urban detail plans and plans for national parks, which are empowered by the Urban Planning Law.

The Ministry of Land and Resources was founded in 1998 through the integration of the State Land Administration, the Ministry of Geology and Mines, State Bureau of Surveying and Mapping, State Oceanic Administration, and the rural land use management of the Ministry of Agriculture. It takes charge of all levels of land using master plans and controls the urban land use supply. Its influence on urban land use is primarily carried out through the control of urban land supply by the land use master plan system empowered by the Land Administrative Law.

The National Development and Reform Commission evolved from the National Planning Commission, one of the most important sectors in the government prior to land reform, which at the time determined the rate and scale of urban land growth throughout the country. In the current market-oriented system, the influence of the Development and Reform Commission has become indirect, exerted mainly through the comprehensive plans and yearly plans of national economic development and the planning of national productivity distribution. However, the plans of a number of important national projects prepared by National Development and Reform Commission still exert a very strong and direct influence on urban land use issues in many cities.

**Table 4.** Functions of Land Use Planning and Control in Different Central Government Sectors

Ministry/Committee	Department in Charge	Functions of Urban Planning
The Ministry of Housing and Urban-Rural Development	The Department of Urban and Rural Planning	To frame the methods of drafting planning in urban centers, towns, and villages; to supervise and approve town system plans in provinces, autonomous regions, and some large cities; and to supervise and approve the planning of important national parks.
The Ministry of Land and Resources	The Department of Planning	To draft the national land use plan; to frame the drafting methods of land use master plans and other thematic land use plans; and to supervise and approve land use master plans and other thematic plans in provinces, autonomous regions, and some large cities.
The National Development and Reform Commission	The Department of Development Planning The Department of Regional Economics	To draft long-term, medium-term, and yearly national economic and social development plans; to approve important national projects; and draft the plan of national productivity distribution.

Although the land use master plan system is the only one conducted using a strict hierarchical system, all three of these ministries and commissions in the central government have corresponding local sectors to execute land management functions (Table 5). These functions occasionally overlap with each other, causing areas of ambiguity, in which the responsibilities of various government sectors are not clearly specified.

**Table 5.** Urban Land Use Planning by the Three Sectors of Government

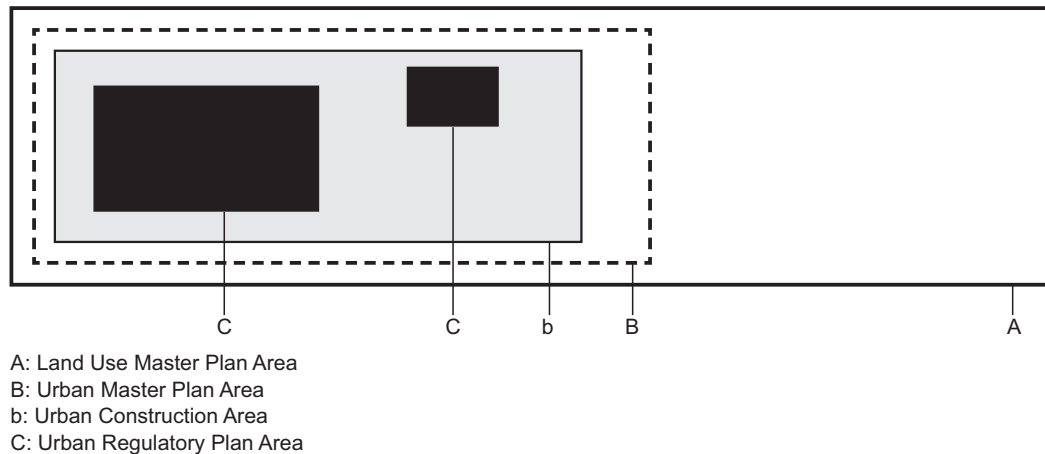
Sector in Charge	Sector of Development and Reform Commission	Sector of Construction				Sector of Land and Resources		
		Town System Plan	City Master Plan		City Detailed Plan	Land Use Master Plan	Thematic Land Use Plan	Yearly Land Use Plan
Name of Plan	Economic and Social Development Plan		Long-term Plan	Short-term Plan				
Effective Period	5 years	Usually 20 years		5 years	uncertain	Prepared by the central government	Prepared by the central government	Every year
Nation	•	•				•	•	•
Province								
Autonomous Regions	•	•				•	•	•
Directly Governed City								
Prefecture City	•	•	•	•	•	•	•	•
District	•		•	•	•	•	•	•
County	•	•	•	•	•	•	•	•
Town/Village	•		•	•	•	•	•	•

### 5.1.2 Fragmented Interests and Actions of Various Government Sectors

The interests of different government sectors are always fragmented, resulting in the coexistence of competing, or even contradictory policies.

One example is the application of two different national land classification standards by the Ministry of Housing and Urban-Rural Development and the Ministry of Land and Resources.

For all types of urban plans, a land use classification scheme framed by the Ministry of Construction is adopted; for land use master plans, a different classification scheme framed by the Ministry of Land and Resources is adopted (Figure 7, Table 6). This has resulted in considerable confusion in land statistics and urban land administration. Recently, the former classification has been more widely applied in the area of urban master plans, which includes the urban construction area and the buffering zone surrounding it; while the latter is applied in rural areas.



**Figure 7.** Concept of Different Planning Areas

**Table 6.** Land Use Classification in Urban Master Plan (issued on Mar. 1st, 1991)

Area		Code	Item
Urban Planning Area	Urban Construction Area	R	Residential
		C	Commercial and Public Facilities
		M	Industrial, Manufacturing
		W	Warehouse
		T	Transportation
		S	Road, Street and Square
		U	Municipal Utilities
		G	Green Space
		D	Specially Designated
		E	Water Area and Others

**Table 7.** Interim Land Use Classification in Land Use Master Plan (issued on Jan. 1st, 2002)

Category		Sub-category	
Code	Item	Code	Item
1	Agricultural Land	11	Cultivated Land
		12	Orchard
		13	Forestry Land
		14	Pastureland
		15	Other Agricultural Land
2	Construction Land	21	Commercial Service Land
		22	Industrial, Mining, and Warehouse Land
		23	Public Facility Land
		24	Public Architectural Land
		25	Residential Land
		26	Transportation Land
		27	Water Conservation Land
		28	Special Land
3	Unused Land	31	Unused Land
		32	Other Land

Moreover, fragmentation in the interests of different government sectors is also shown in the contradiction between two basic national strategies: to facilitate urbanization and to slow the decrease in cultivated land.

Given the rapid urbanization in China, the need to convert land from rural to urban use is enormous and urgent. The current urban planning system based on standards promulgated by the Ministry of Construction is to satisfy the needs of land use. However, the land use planning system calls for stringent control of the amount and location of all types of land use, particularly cultivated land. Efforts to protect cultivated land can be traced back to 1953, when the first Land

Acquisition Method for State Construction (issued in 1953, revised in 1958) was promulgated. It states that “construction should occupy no arable land or occupy as little as possible”. However, no concrete tools were developed to accomplish this at that time. Because governmental management was restored after the Cultural Revolution (1966-1976) and the loss of arable land began accelerating since the initiation of reforms in the late 1970s (Feng, Liu, et al., 2005; Han, 2005), the protection of cultivated land was established and strengthened as a national policy to ensure food security (Liu, 1997; Chen, 1998; Yin, Liang, et al., 1998; Zhu, 2004). Additional objectives were added later to reform the environment (Xiao, 1999), and promote the development of agriculture and the preservation of rural areas (Wu, 2002; Zhao, 2004). Decelerating the loss of arable land has been a gradual process, carried out primarily through land use quota controls and centralizing the authority related to land conversion.

The individual efforts of two ministries to manage national land during urbanization represent two different approaches: demand-oriented and supply-oriented. Integrated decision making becomes uncertain, depending on whether one approach is able to meet the other elements of decision making in a chaotic decision-making system, and whether it obtains energy to gain the support of the State Council.

### *5.1.3 Stochastic Decision Making Process with Emergent Outcomes*

Whether a decision is made depends on stochastic or unknown opportunities. For example, policy for the protection of cultivated land is probably the most important national land policy adopted by the central government; however, it was originally established and strengthened by transient events. In 1985, the area of cultivated land in China decreased by 10,000 hectares. In a direct reaction, on August 1, 1986, the State Land Administration was established as a functional agency directly beneath the State Council. Under the direction of the State Council, the first round of the national land use plan was promulgated nationwide; however, it was never actually implemented because the other departments of the central government and local governments refused to follow such a plan. It was not until 1994 when L. R. Brown’s controversial article *Who will feed China? Wake-up call for a small planet* was published on *Earth Watch* that the national government started to firmly implement the policy of protecting cultivated land. In 1994, the Ordinance of Basic Cultivated Land Protection was established to protect cultivated land in good quality.<sup>8</sup> It demanded that Basic Cultivated Land be divided into two levels, and the first level of Basic Cultivated Land over 500 Mu (33.3 hectares) would require the approval of the central

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8. The area of Basic Cultivated Land was about 77% of that of all the cultivated land in the year of 1994 in China.

government.

It is obvious that without the publication of Brown's article and the resulting debate, the national cultivated land protection policy would not have been strengthened at that time. In fact, it was likely that the national government would have adopted policy promoting urbanization or a moderate national land policy.

Subsequent events have also favored the cultivated land protection policy. In 1998, devastating floods in China heightened the sense of urgency with respect to land use and environmental preservation. The Land Administration Law was taken up by the State Council and NPC (National People's Congress) as an important component of the government response to the underlying causes of the floods, and was adopted at the third reading on 19 August 1998 (Asian Development Bank, 2000). The Land Administration Law greatly strengthened the approval power of the central government with regard to cultivated land (Asian Development Bank 2000), requiring all basic cultivated land<sup>9</sup> and cultivated land over thirty-five hectares to be approved by the central government. The Ministry of Land and Resources was founded in the same year by integrating the State Land Administration with other ministries and state bureaus to manage national land. Thus, new national land institutions were finally confirmed.

We believe that national land policy is formed through a garbage can process, which includes four elements: policy window, participants, problems/solutions, and political events. In establishing a national cultivated land protection policy the following framework applied: the policy window was the opportunity to make this policy; the participants were various sectors of the central government; the problem was the loss of cultivated land and the fear that China might not be able to feed itself; the solution was to enact new laws and establish a national land use planning and control system; the political event was the international debate on the issue of food in China.

## ***5.2 Making and Implementing Policy: Central and Local Governments***

### *5.2.1 Games between Central and Local Governments*

One of the initiatives of the reform and open-door policy in 1978 was to stimulate local governments to improve social and economic development with their own resources. Thus, they

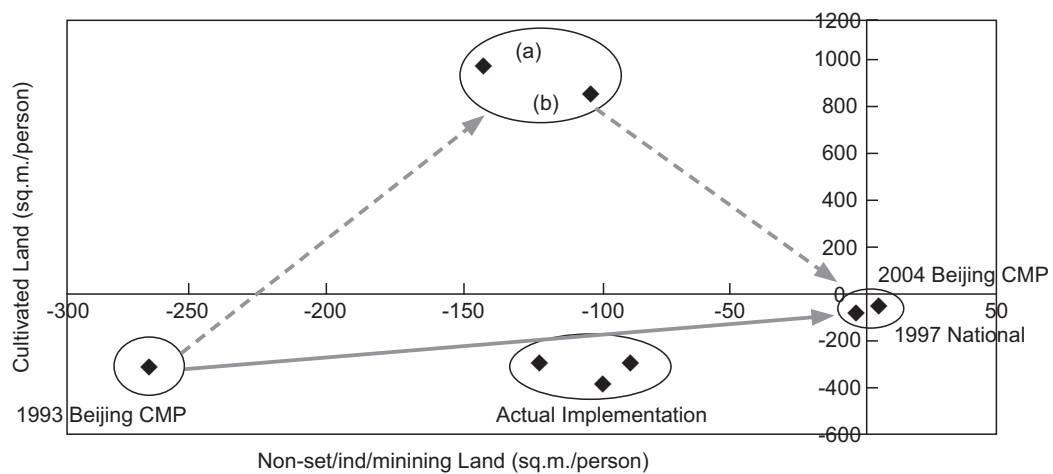
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9. The area of Basic Cultivated Land was about 84% of that of all the cultivated land in the year of 2001 in China.

were given much more freedom than they had in the planned economy. With such freedom, local governments developed many methods to achieve their own objectives. Some of these methods do not conflict with existing institutions dominated by the central government; while others undermine the efforts of the central government in regulating national land use. Nonetheless, there remains the possibility that the central government will tolerate such local “innovations” by enabling local governments to profit from such ventures.

The most famous example of the gaming between central and local officials is the adoption of the household contract responsibility system. In 1978, the Xiaogang Village in Anhui Province abandoned the traditional collective working system and initiated household contracts, which resulted in a good harvest. This system was adopted as the nation-wide household contract responsibility system in 1982, becoming a symbol of national rural reform. In this game, the local government of Xiaogang Village opted out by breaking the national rules; the payoff can be regarded as the increase in the harvest.

Another example is the development of Guangdong Province, which has created many “firsts” in China. The attempt to separate land use rights from land ownership first began in Guangdong in 1987. In 1992, it was the first province to abandon food rationing. In 1992, the first direct election of village cadres was held in Guangzhou. The first large-scale economic developments were located in Guangzhou when other provinces failed to receive the approval of the central government. The payoff for opting out can be regarded as the considerable profits made in the 1990s. This is one of the most important reasons why Guangdong Province became one of the most developed provinces in China.



**Figure 8.** Cross-plan Management of Open Space Consumption Measured by Non-settlement / Industrial / Mining and Cultivated Land



In the decision making processes associated with national land policy, the interests of national and local efforts usually differ. Figure 10 shows the implementation of the Beijing City Master Plan, the Beijing Land Use Master Plan, and the National Land Use Master Plan. It can be observed that the requirements of different plans are very diverse, and even contradict one another, but the actual implementation is in the middle sphere of these requirements, or in the compromise of each of these plans. Therefore, we argue that this is very likely to be a result of the game between central and local officials, and between various sectors within the local government.

### *5.2.2 The D-C Game of the Local-Central Interaction*

The second round of land use plan is probably the most ambitious national land policy in China. The crux of implementing this plan is the centralization of the approval power for the land conversion from cultivated use to other use, and the land use quota control.

#### *5.2.2.1 Land Use Quota Control*

The land use quotas were not applied by the central government of China until 1999 for the purpose of cultivated land protection. These quotas were primarily implemented in the land use master plan system, including the area of Basic Cultivated Land, of cultivated land, and of the conversion from cultivated use to construction use.

#### **1) Basic Cultivated Land**

According to the Land Administration Law and Ordinance of Basic Cultivated Land Protection, which has been effective since 1999, the area of basic cultivated land in each province, autonomous region, or municipality directly under the central government, should make up at least 80% of the total cultivated land. Details related to the proportions in each administrative area should be confirmed according to the national land use master plan. The following types of cultivated land should be classified as basic cultivated land:

- a) Cultivated land inside the provision bases of grain, cotton, and vegetable oil that is authorized by branches of the State Council or the People's government beyond the county level.
- b) Cultivated land with good irrigation and good conservation of soil and water, and less fertile cultivated land that can be or is being improved.
- c) Vegetable provision base.
- d) Cultivated land for scientific research, teaching and experiments.

e) Other cultivated land authorized by the State Council.

The boundaries of basic cultivated land should be confirmed in each Xiang (Village) or Zhen (Town), and organized by the land administration branch and the agricultural branch of the county government (Land Administration Law, Article 34). Basically, basic cultivated land cannot be used for other agricultural functions, such as forestry, horticulture, or fisheries (Land Administration Law, Article 36).

## **2) Cultivated land**

Since 1999, an occupation-compensation system has applied for all cultivated land. According to the Land Administrative Law in 1999, the people's government of the provinces, autonomous regions, and municipalities directly under the central government should strictly administer the land use master plan and the yearly land use plan to ensure the cultivated land area in their administrative area does not decrease. Any approved urban construction that will occupy cultivated land must reclaim the same amount and similar quality of cultivated land in other places under the supervision of the land administration and agricultural sections of the State Council. If a province, autonomous region, or municipality directly under the central government cannot achieve land reclamation in its own administrative area, an application has to be made to reclaim the land in the other administrative areas, which needs to be approved by the State Council (Land Administration Law, Article 33).

Recently, in order to take into account the quality of cultivated land, an administrative order was issued by the Ministry of Land and Resources, requiring the grading of cultivated land according to productivity (Ministry of Land and Resources PRC, 2005). New land reclamation thus requires the consideration of land grade according to the following formula:

Area of Cultivated Land to be Reclaimed = Area of Cultivated Land Occupied × Grade Converting Rate

## **3) Conversion from Cultivated Use to Construction use**

The setting of quotas for the conversion of land from cultivated use to construction use is conducted parallel to the control of cultivated land area. According to the 1999 Land Administration Law, the conversion from agricultural use to construction use must be strictly controlled. In the Compendium of Land Use Master Plans of China (1997-2010), the total area of conversion from cultivated use to construction use between 1997 to 2010 was restricted to less than 1.97 million hectares (Ministry of Land and Resources PRC, 1999). Following the guidance of Compendium of Land Use Master Plans of China (1997-2010), in the Land Use Master Plan of Beijing City (1997-2010), the total area of conversion from cultivated use to construction use in Beijing City between 1997 and 2010 was controlled to less than 22 thousand hectares (Beijing

Municipal Bureau of Land and Resources, 2000).

#### 5.2.2.2 Compensation in Land Acquisition

Since the 1950s, nearly all of the available urban land has been monopolized by governments. Although fees for the acquisition of rural land, including compensation for land, young crops, and improvement of the site, as well as allowances for housing displacement, have been sanctioned by national laws, standard prices have been based on the agricultural value of the land, but not the expected value for urban use (Table 8) (National People's Congress, PRC, 1958; National People's Congress, PRC, 1982; National People's Congress, PRC, 1986; National People's Congress, PRC, 1999). Consequently, the land acquisition fee has been kept very low, although it has been gradually increased through the establishment and revision of related laws by the central government in recent years.

**Table 8.** Rural Land Acquisition Fees in China

Type of Land	Item of Compensation	Land Acquisition Ordinance for State Construction in 1982	Land Administration Law in 1986	Land Administration Law in 1999
Cultivated Land	Compensation for Land	3 to 6 times the annual value of production, which is calculated by the average production of the previous 3 years	3 to 6 times the annual value of production, which is calculated by the average production in the previous 3 years	6 to 10 times the annual value of production, which is calculated by the average production of the previous 3 years
	Compensation for Young Crops and Improvements on the Site	Decided by the provincial government	Decided by the provincial government	Decided by the provincial government

	Housing Displacement Allowance	<p>2 to 3 times the annual value of the production per Mu (667 square meters) for each person</p> <p>In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 20 times the annual value of production</p>	<p>2 to 3 times the annual value of the production per Mu (667 square meters) for each person</p> <p>In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 20 times the annual value of production</p>	<p>4 to 6 times the annual value of the production per Mu (667 square meters) for each person</p> <p>In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 30 times the annual value of production</p>
Other Collective-owned Rural Land	Compensation for Land	Decided by the provincial government, referring to the compensation for cultivated land, but no compensation for non-profitable land	Decided by the provincial government, referring to the compensation for cultivated land	Decided by the provincial government, referring to the compensation for cultivated land
	Compensation for Young Crops and Improvements on the Site	Decided by the provincial government	Decided by the provincial government	Decided by the provincial government

	Housing Displacement Allowance	2 to 3 times the annual value of the production per Mu (667 square meters) for each person, but no allowance for the acquisition of rural housing land  In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 20 times the annual value of production	2 to 3 times the annual value of the production per Mu (667 square meters) for each person  In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 20 times the annual value of production	Decided by the provincial government, referring to the compensation for cultivated land  In special cases can be increased, but the sum of Housing Displacement Allowance and Compensation for Land should not exceed 30 times the annual value of production
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**DATA SOURCE:** Land Acquisition Ordinance for State Construction in 1982, Land Administration Law in 1986, and Land Administration Law in 1999.

The low land acquisition fee (Wu, 2002; You, Chen, 2004) sometimes makes it impossible for the previous land users (farmers) to keep their new residence. At the same time, the price of urban land after simple land improvement can reach tens or hundreds of times the value of agricultural land, causing serious discontentment for previous land users. According to an investigation of land acquisition and relocation compensation fees in areas of Shanghai in the early 1990s, the total compensation that farmers received for each square meter was 12.8 times the total compensation for land and young crops of grain/cotton fields, and 9.3 times the total compensation for vegetable plots. If the additional allowance for employment were paid to farmers directly, it would be 19.2 times that of grain/cotton fields and 15.6 times that of vegetable plots (Institute of Finance and Trade Economics of Chinese Academy of Social Sciences and the Institute of Public Administration, USA, 1992).

### *5.2.3 The D-C Game of Central-Local Interaction*

The central government could also opt out of the game with local governments. In the implementation of land use master plans, the opting out of the central government would mean that the local government was not mandated to enforce the plan, change the plan, or cancel the plan. The first round of the land use master plan was required by the central government; however, it was very poorly implemented, primarily because the central government did not have adequate motivation to implement the plan. This can be regarded as opting out of the game by the central government.

With increased national concern for the protection of cultivated land, the central government demanded that local governments implement the second round of the land use master plan through a very strict, hierarchical system, the period of validity for which is from 1997 to 2010. However, when the central government was informed that the quotas for the conversion from cultivation use to non-agricultural use had been used up in developed provinces, it did not consider punishing these provinces; rather it initiated the third round of the land use master plan, the period of which was from 2005 to 2010. This indicates that the central government instigated the actions of local governments and selected a more practical way to implement its policy. In this game, the local governments which had used up their quotas prior to 2005 received the largest pay off. The central government received the smallest pay off because the rules had been broken and the national objective of protecting cultivated land was undermined. The other local governments that had followed the land use master plan were in between.

It appears that more pay off would encourage all local governments to opt out of the game. However, the governors of local governments face the risk of being punished by the central government. The game between central and local officials has become iterative, constrained to a low intensity by the administration system.

## **6. CONCLUSIONS**

In the post-Mao period, the central government has given up comprehensive control of urban land growth; however, a highly centralized system remains in which the market system is directed with regard to various national issues. A large proportion of power over urban land growth is held at the national level, through administrative legislation, to implement a land use master plan system with strict hierarchical control, which achieves certain goals through the direct intervention of direct administrative orders.

The promotion of land acquisition fees, facilitated land provision, the designation of special zones, quotas, and the centralization of approval power for land acquisition are the primary

strategies adopted by the central government in achieving its objectives. In the management of urban land growth, the central government has concentrated primarily on the control of the extent and timing of development. In some specific cases, controlling the location of development was also considered by the central government; however, the control of the timing and location of development is a local issue administered by local governments.

Implementing the two major objectives of the central government reveals that the promotion of industrialization and economic development has seldom been side tracked by other policies and has been quite successful. This has been despite limitations, such as poor efficiency in land use and the neglect of the interests of rural residents. Slowing the loss of cultivated land has been undermined by problems with its implementation, due primarily to resistance to the policy of turning cultivated land back into forests, as well as new problems, including the prevalence of illegal land conversion and serious declines in the productivity of cultivated land.

Due to the extraordinary weakness of civil society in China, the management of urban land growth is almost exclusively the domain of governments. Several factors may contribute to the two elementary objectives of the central government. First, despite the gradual shift from a concern for economic development to the advancement of social and environmental causes, the latter has been unable to garner the support of the former. Because the cultivated land surrounding urban settlements is the primary source of land for urban growth, it is exceedingly difficult to balance both urban development and the protection of cultivated land. Currently, economic development is primarily reflected in the GDP, making it one of the most important factors in evaluating the success of development even at the national level. Therefore, it is common for the central government to compromise in the protection of cultivated land to facilitate urbanization and industrialization.

Second, the expanding gap between the interests of the central and local governments has seriously undermined the efforts of the central government. Although the government was for a long time considered a single unit, there were actually significant conflicts between the central and local governments. Nonetheless, the central government had the power and resources required to monopolize nearly all of the resources and control. Since social and economic reforms began in the late 1970s, several events (particularly the Tax Sharing Reform), have entirely dispelled this image of a holist government. In 1994, the taxation administration was divided into two sections: national and local. After several revisions of the sharing schemes between the central and local governments, local governments were awarded the largest share of land conveyance fees. In 1995, the land conveyance fee accounted for as much as 550.5 billion Yuan (approximately 68.8 billion US dollars), 70% of which was shared by local governments. The vast economic interests associated with the management of land conveyance and transfer have sometimes offset the local strategies from the track set by the central government.

Implementing the objectives of the central government greatly depends on the amount of support provided by local governments, because all national control must be implemented at the local level. Consequently, the powerful incentives for local governments to promote urban land use for profit has advanced industrialization and economic development to a greater degree than efforts to curb losses in cultivated land (Figure 16).

Third, the fragmentation of government sectors has also encumbered the implementation of central government strategies. Although this fragmentation strengthened the checks and balances in urban land management to a certain degree, it has led to many problems, including mismatched statistical data and land classifications, confusion in the land management of urban fringe areas, and a weakening of the authority associated with urban land use planning. In all types of urban plans, the land use classification scheme framed by the Ministry of Housing and Urban-Rural Development has been adopted; in the land use master plan, a different classification (framed by the Ministry of Land and Resources) has been adopted. This has resulted in considerable confusion in land statistics and urban land administration. Currently, the former classification is more commonly applied in the area associated with urban master plans, which includes the urban construction area and a buffering zone surrounding it; while the latter is applied mainly in rural areas. This fragmentation in the management of land use has been criticized by many studies for impeding the progress of measures designed to deal with the loss of cultivated land.

A predominantly government led model with poor civil society and little public participation is still the hallmark of urban land growth management in China, and this may remain unchanged for some time into the future. We have provided a conceptual model to explain the national policy making process in China as a starting point for empirical testing and justification. The effectiveness of these policies could be assessed in the future based on these formulations.

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