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CHAPTER 4

Providing Rural Public Services Through Land Commodification: Policy Innovations and Rural–Urban Integration in Chengdu

Qian Forrest Zhang and Jianling Wu

The provision of public services in rural areas faces three major challenges. First, because of their disadvantaged positions in the economic division of labor vis-a-vis urban areas, rural areas generally suffer from a shortage of value-added economic activities that can generate enough financial resources for local public authorities to fund the provision of public services. Second, the geographically dispersed rural settlement pattern further increases both the cost and difficulty of delivering public services and

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goods to a spatially spread-out population. Last, everywhere the reliance of public services provision on public authorities, which can act as the policymaker, service provider, or both, creates the problem of accountability and agency control. In rural areas, the additional reliance on fiscal transfer from outside, which is made necessary by the first condition mentioned above, further makes local policymakers and service providers less sensitive to local demands and less accountable to local service users, and the problem of agency control more severe. Together, these three conditions have made public services provision to the rural population a highly challenging task that has rarely been successfully implemented in the developing countries of the world (World Bank 2003).

In the post-Mao Reform era, China's performance in delivering public services to the rural population has not been impressive either (West 1997). After the fiscal recentralization reform in 1994 and before the rural tax reform carried out between 2002 and 2006, rural public services provision depended heavily on the myriad of taxes and fees collected by local authorities from the rural population and rural enterprises. The detrimental impact of this approach of financing and implementing rural public services provision on deteriorating local state–society relationship is now widely known. Cash-strapped local governments already had to rely on extra-budgetary local fees and surcharges to even pay for the salaries of officials. Faced with more unfunded central mandates of public services provision, such as the nine-year mandatory education program, they had to impose increasing burdens of taxes and fees on the rural population, creating the infamous 'peasant burden' problem, which led to widespread resistance from the rural population and frequent violent confrontation between them and local governments (Bernstein and Lu 2003).

The rural tax reform that started in 2002 sought to address this problem of both lack of financing for services provision and lack of control over wayward local agencies with a three-pronged approach (Kennedy 2007; Li 2007). First, the central government implemented a tax-for-fee reform that tried to replace the arbitrary fees imposed by local governments with formalized and regulated taxes. This reform eventually evolved into the abolition of the agricultural tax, which by 2006 has been implemented nationwide, and total elimination of the rural population's tax burden. Second, now that local governments had been deprived of their primary revenue source, the central government also increased fiscal transfers to rural areas to fund both local governments' operation and welfare programs for the rural population. Such central fiscal transfers include direct subsidies to rural residents, earmarked funds for welfare programs and government projects, and budgetary allocations to local governments. Third, to tighten the control over their local agents and ensure local compliance, the central government also implemented a downsizing of local bureaucracies and imposed more stringent top-down monitoring and evaluation of local government officials.

Most studies have found that the rural tax reform has succeeded in its original goal of reducing the state's tax extraction from the rural population and defusing the increasingly tense relationship between the rural population and grassroots government (Chen 2014; Kennedy 2007; Li 2007). However, it has also resulted in the unintended consequence of further depleting rural public services (Li 2008; Luo et al. 2007). In the first few years after the tax reform, the central fiscal transfers that were intended to replace local tax revenues were inadequate to make up for the revenue shortage created by the tax reduction. Then, as central transfers increased in more recent years (as much as over ten times, from 42 million yuan in 2005 to 562 billion yuan in 2008, according to Li [2008]), another problem emerged: The grassroots-level agents that are crucial for service delivery, the township-level governments, have been largely decapacitated by the tax reform—fiscally stripped of revenue sources, politically demoralized, and administratively hollowed out (Kennedy 2007; Smith 2010). Local governments' tendency toward selectively implementing central policies to serve the political or financial interests of themselves and their allies has long been known (O'Brien and Li 1999). Now that their capacity for both penetrating into rural society to solicit and incorporate the demands of service users and delivering services to an increasingly socially differentiated and geographically mobile rural population has been greatly weakened, even if they have the right incentives, it remains highly uncertain whether the increased central spending on rural public services can really be devoted to services provision and reach the targeted population instead of being squandered in wasteful campaigns that only advance local officials' interests (Li 2008, 260).

Since 2006, the central government's investment in rural public spending has mostly been channeled through the 'Building a New Socialist Countryside' policy initiative (Looney 2015). Of the two main components of this policy initiative—welfare provision and village reconstruction—studies have found that the first one has had greater success (Ahlers and Schubert 2009; Looney 2015). This divergence is mainly because, for welfare provision, the central government can directly transfer funds into personal accounts (for programs such as the New Rural Cooperative Medical Scheme, Minimum Living Allowances Scheme, and Rural Social

Pension Scheme) to increase rural populations' participation in and coverage by these programs or directly to county governments to fund the expenses of programs such as nine-year compulsory education. But for the latter, village reconstruction and the active involvement and effective implementation by grassroots governments (townships and villages) are indispensable. When the implementation of the policy is left to the discretion of grassroots governments, whose capacity for effective implementation is highly in doubt, we again see the familiar pattern of them using campaign-style mobilization to create 'demonstration projects' to win upper-level approval, but often without addressing real demands of the local population (Looney 2015; Perry 2011).

While no systematic evaluation of the nationwide implementation of the 'New Socialist Countryside' policy is yet available, existing case studies show that this central policy initiative has not successfully addressed the three inherent obstacles in rural public services provision, and as a result, its impact in that regard has been limited. The whole program depended heavily on central funding, which made it not sustainable when the central government's policy priority shifts. And indeed in recent years under the new central leadership of President Xi Jinping, central funding for it has declined and its implementation stagnated. The village reconstruction projects started under this policy focused mainly on the beautification of existing villages rather than the transformation of the rural settlement pattern (Looney 2015). The spatial dispersion of the rural population remains a challenge for public services delivery. Finally, without re-capacitating grassroots governments and enabling public participation, the problem of motivating and controlling local agents has persisted.

It is in this context that an innovative program in one locality, Chengdu, which successfully addressed the three inherent obstacles and greatly improved the provision of public services in rural areas, becomes particularly interesting for studying policy innovation. There are three key innovations in this so-called 'Chengdu model': First, leveraging on the most important resource in rural area—land, or rather land development rights—and through its commodification, creating a financial source that can fund public services provision; second, transforming traditional rural residential settlement patterns and concentrating the rural population in newly built residential communities; and, finally, using both market and hierarchical tools to both motivate and control grassroots governments and creating new institutions to facilitate public participation in services delivery.

In the remainder of this chapter, we first introduce both the national policy context of land rights and land-use regulations that created the possibility of land development rights trading and the unique local conditions in Chengdu that made such trading a transformative force for Chengdu's rural development. We then detail the local policy innovations that created the institutional arrangements and shaped the implementation processes and outcomes of Chengdu's rural reconstruction programs. We also offer a preliminary assessment of the impact of Chengdu's policy innovations. Data used in this study come from both primary data collection and secondary documents obtained from various government bodies. One of the authors followed closely the evolution of the experiment in Chengdu from 2008 onward and was engaged by the municipal government to conduct assessment of the implementation and impacts of the program. During the past seven years, the two authors, independently and jointly, visited over 300 villages and conducted over 500 interviews with rural residents and local officials. We also conducted three rounds of questionnaire survey of about 2500 residents in 100 villages. The survey results are not directly used in the paper, but they informed our analysis.

The Commodification of Land Development Rights

Under China's current land system, rural land is divided into several land-use categories, including agricultural land (*nongyongdi*), which is the main target of protection of the Land Management Law and contains farmland *(gengdi*) as a sub-category within it; family housing construction land (*zhaijidi*), which is collectively owned and allocated to members of rural collectives free of charge as a membership entitlement for constructing their own housing; and construction land (*jianshe yongdi*), which is typically controlled by the village authority and can be used for local public facilities, non-farm enterprises, and other non-agricultural uses.

The regulatory system of land use in rural China is characterized by two central features: farmland preservation and centralized land-use regulation (Lin and Ho 2005; Xu et al. 2009; Wang et al. 2010). Farmland preservation became a policy priority in the late 1990s, when the central government became alerted to the steadily declining stock of arable land caused by rapid urbanization over the past two decades and perceived farmland loss as an unacceptable threat to national food security (Lin and Ho 2003). Central government passed the Land Management Law in 1998 and started to devise a national Land Use Master Plan to put nationwide land-use practices under tight central control (Wang et al. 2010). This Master Plan sets out a series of targets for various types of land use for the next 15 years, including, for example, the amount of farmland to be preserved and the amount of agricultural land that can be converted to urban use.[1] For each year, an Annual Land Use Plan then breaks down these long-term objectives into annual quotas for different types of land use and allocates these land-use targets to each province. Starting from provinces and down to townships, lower-level governments must then formulate and adhere to their respective land-use plans and annual land-use quotas. The first and foremost goal for these regulatory measures is farmland preservation. The most memorable item from the national Master Plan is the 120 million-hectares 'red line' for farmland preservation. This is specified as the minimum amount of farmland that China needs to ensure food self-sufficiency and constitutes a bottom line that cannot be crossed.[2] By 2007, however, the country's total amount of farmland has already declined to 121.7 million ha, leaving little room for further loss (Long et al. 2012).

Under this context of strict farmland preservation and centralized land-use regulation, the central government exercises tight control over the conversion of rural land (particularly farmland) into urban uses. This makes the ability to use a piece of rural land for urban development—the land development right, LDR hereafter—a scarce opportunity that is highly sought after in the rapidly urbanizing rural China. While rural areas all have abundant supply of land, most of the land lacks land development right: It cannot be used for urban development without being granted the LDR by upper-level governments—by being given either a quota from the annual land-use plan or some other ad hoc authorization. Under the annual land-use plan, the quotas of LDR are administratively allocated and are not tradable across local government units. If the LDR quota becomes tradable, however, then some rural areas can trade the valuable LDR quotas they have for financial gains. Two later national policies created this possibility of LDR trading.

The Emergence of LDR Trading

The rapid pace of urbanization in China has created a seemingly insatiable appetite for rural land, which cannot be adequately supplied under the existing annual land-use plan. The intensifying conflict between farmland preservation and urban demand for rural land conversion made it inevitable that the central government had to settle for a compromise in the form of a 'no net loss' policy regarding farmland preservation, seeking a dynamic balance rather than static preservation. This policy, known as *zhan bu ping heng* (hereafter, ZBPH)—balancing farmland occupation with farmland reclamation—was codified in the 1998 Land Management Law (and its 2004 revised version) as the requirement for land users who occupy farmland for urban uses to reclaim new farmland of the same amount and quality to ensure no net loss of farmland.

Under this regulatory framework, in effect since 1998, for all local governments from provinces down to townships, when they convert farmland to urban uses, even when this is within the Annual Land Use Plan, the same amount of new farmland must be reclaimed from other types of land. This has therefore created a demand for the reclamation of new farmland; some rural areas can then specialize in supplying such new reclamation and trade that for financial gains. The only case of LDR trading in China that has been studied in the English-language literature was such a program of trading ZBPH quotas in Zhejiang (Wang et al. 2010; Zhang et al. 2014). But due to its violation of the central land-use plan, that experiment was terminated by the central government in 2009.

The central government started to quietly roll out another initiative in 2004, under a very cautious approach, which further broadened the scope of LDR trading in rural China. The new initiative, officially described as 'linking up increase in urban construction land with decrease in rural construction land', was first experimented in 2006 in five pilot provinces, including Sichuan, where Chengdu is located, and gradually rolled out nationwide in the following five years (Long et al. 2012). For this policy, known in Chinese as *zeng jian gua gou* (linking up increase [in urban construction land] with decrease [in rural construction land], hereafter ZJGG), the object of regulation is no longer farmland, as was the case for the ZBPH policy, but construction land. For ZBPH, the policy goal is 'no net loss' of farmland; for ZJGG, it is '*no net gain*' of construction land—and in fact, a net *increase* of farmland. More specifically, when any non-agricultural developments, including urbanization programs in rural townships, occupy farmland and result in an increase of urban construction land, some rural construction land must be reduced, and reclaimed into farmland. The ZJGG policy gives these pilot regions a new channel of turning farmland into urban uses, in addition to and independent of the existing channels regulated by the land-use Mater Plan, annual quotas, and practice of ZBPH.

In real practice, this policy shifted local governments' attention from reclaiming new farmland, which can come from a variety of sources such as other types of agricultural land, to reducing rural construction land. But how to reduce rural construction land? The answer, almost invariably across localities, comes from rural housing land. Nationwide, all rural housing land adds up to 9.12 million hectares in 2005 and accounts for 55 percent of all rural construction land; its size had also increased in the ten years prior to the implementation of the ZJGG policy (Song et al. 2008). Rural housing land also has huge potentials for reduction. The rural settlement pattern results in low land-use density. Furthermore, over-construction of houses—for example, multiple houses for one family, an illegal but widespread practice—and abandonment of houses, as a result of rural depopulation, which has created the widespread problem of 'hollowed villages' (Long et al. 2012), increases the 'wastage' in the use of rural housing land. Reduction of rural construction land can therefore come through both reducing existing unused housing land and changing rural settlement patterns to further reduce housing land use.

The ZJGG policy sets up a framework for the transfer of LDR. The locality that turns a piece of land previously used as rural construction land into farmland is giving up the development right of that piece of land. Under the ZJGG policy, that right can then be transferred, in the form of a quota—through either some market mechanisms or administrative allocation—to another locality, which can then use it to 'develop' its agricultural land. The transfer of LDR under the ZJGG policy is, however, further restricted by three requirements. First, the central government continues to exercise a tight control over the total scale of all ZJGG projects through allocating annual quotas to local units. From 2006 to 2010, the Ministry of Land and Resources (MLR) only released a total quota of 49,000 ha. Second, in its implementation, the two projects of *jian xin* (building new construction and thus increasing urban construction land) and *chai jiu* (demolishing old buildings and thus reducing rural construction land), which are spatially and often temporally separated, must form a one-to-one linkage and be approved together as a single project. Last, the two linked projects must be within the jurisdiction of the same county-level unit, which restricts the scope of LDR transfer within the county boundary.

These restrictions show the caution that the central government has toward the ZJGG experiment. It has never intended it to be a transformative force in rural development and land-use regulation. In all other localities, the policy has only had localized and minor impact. Only in Chengdu, it led to transformative changes.

The Chengdu Case: Central Concessions

Before the MLR formally started ZJGG experiment in 2006, it selected one township in Chengdu—Tangyuan town in Pi County—to conduct a pilot study. Then in 2006, when the MLR expanded the experiment to the five pilot provinces, the entire municipality of Chengdu became a designated experiment zone and was given an annual quota of 7000 *mu* under the ZJGG scheme. This meant that, besides the annual quota of farmland that can be converted to urban use specified under the national land-use Master Plan (50,000 *mu*), the ZJGG scheme gave Chengdu an additional quota of 7000 *mu* construction land, a 14 percent increase, most of which would require conversion of farmland. This annual quota was increased to 10,000 *mu* in 2007. Then, the whole situation changed unexpectedly as a result of the 2008 Wenchuan earthquake.

On May 12, 2008, a massive earthquake struck Sichuan; the epicenter in Wenchuan County was just 70 kilometers from the center of Chengdu. The earthquake devastated several counties in Chengdu and created an urgent need for a massive reconstruction in the vicinities of Chengdu, which could not proceed without greater flexibility in land use. During his visit to the disaster-stricken area on June 22, the then President Hu Jintao instructed that Chengdu should use the experimental scheme of ZJGG to speed up post-disaster reconstruction. The MLR gave Chengdu the green light so that in the following three years, the practice of ZJGG in Chengdu would be exempted from the two restrictions of quota control and within-county transfer. This gave the Chengdu municipal government a blank check for the next three years to create as much new urban construction land as it needed under the ZJGG scheme, a privilege that no other local governments had.

Besides the policy support, urban development also needs investment. Chengdu was again at the right historical juncture. The global financial crisis that started in late 2008 accelerated the relocation of manufacturing capacities from China's land-expansive and labor-scarce coastal area to inland provinces. Chengdu, thanks to its lax land-use regulation and recently improved infrastructure, became a top destination. Chengdu also received an influx of inter-provincial aid for post-disaster reconstruction. Both these created unprecedented demands for new construction land in Chengdu, which were then met through the emancipated version of the ZJGG policy. The result is a re-configuration of rural space on an unprecedented scale: In the three years from June 2008, Chengdu had converted a whopping 400,000 *mu* of farmland to urban use under the ZJGG scheme, eight times the allocated annual quota under the national Master Plan, and reduced an even larger amount of rural housing land.

The special concessions given to Chengdu by the central government created three conditions that allowed Chengdu to use the ZJGG policy to construct a unique policy program for rural transformation. First, the abolition of scale control allowed the municipal government to apply the policy to all its subordinate units. Second, allowing the ZJGG quotas to be transferred across counties created a market for LDR between the hinterland counties which can specialize in the creation of ZJGG quotas and peri-urban counties which have more financial resources and can use those to buy the ZJGG quotas. It was this financial transfer that occurs together with the LDR transfer that provided the much-needed financial resources for rural public services provision. Finally, the earthquake and the central political concessions also created an imperative of rural reconstruction for local governments, which forced them to devote more resources to rural public services provision. While these central political concessions have now created the favorable conditions for a large-scale reconstruction of Chengdu's rural areas, how resources would be used and how the program would proceed still need to be determined by the municipal government through setting up the specific institutions that shape the practical implementation of these policies.

Local Policy Innovations: Land Commodification, Residential Reconstruction, and Agency Control

The Chengdu Municipality consists of 19 county-level units.[3] These 19 sub-units are differentiated by both geographic location and level of urbanization into three layers: (1) the central urban area, which comprises five urban districts that are already fully built up and have virtually no agricultural land left; (2) the peri-urban area, which includes six counties that immediately surround the urban core and have been facing rising demands for urbanization; and (3) eight counties in the hinterland area, which have far fewer opportunities for urbanization but a far greater reserve of rural construction land. The peri-urban counties and hinterland counties face two sharply different scenarios in land use. The former are the preferred locations for urban expansion and new industrial developments and have urgent needs for LDR so that they can convert their farmland into urban uses. The latter, in contrast, are sending their rural population to urban jobs in the central city and per-urban areas and have increasing amounts of under-used rural housing land that can be reclaimed into farmland and used to create LDR quotas under the ZJGG scheme. The two are also in different financial situations: The peri-urban counties have more financial resources and can further expand their revenue sources once they obtain LDR for their farmland and convert farmland to urban uses; the hinterland counties, however, have benefited far less from urban growth and face a shortage of fiscal resources to fund public services provision.

The immovability of land and the spatially uneven nature of economic development determine that the benefits of urbanization are not equally shared by peri-urban and hinterland counties. The ZJGG scheme, when it can be applied across counties as in Chengdu's case, however, has now created a mechanism that can potentially redistribute the financial benefits derived from urban development from peri-urban to hinterland counties and provide the latter a fiscal resource. Hinterland counties can specialize in the production of LDR quotas (through the reduction of housing land use), which they can exchange with peri-urban counties for financial returns; by paying hinterland counties for the LDR quotas, peri-urban counties are in effect transferring a part of the financial benefits they gain from urbanization, thanks to their locational advantages, to the hinterland counties.

For this to happen, however, specific local institutions must be set up to regulate the production of LDR, the transfer of LDR, and the use of financial resources derived from such transfers. By imposing the policy of farmland preservation, the central government has created the LDR as a scarce resource and forces peri-urban counties to acquire it. But it gives no guidance on how LDR quotas are produced, how they are transferred once they are produced (through market exchanges or administrative allocations?), or, if financial gains are derived from the transfer, how they should be used by local governments. In fact, there are no central regulations that link the LDR transfer to rural public services provision. It is only through local policy innovations in Chengdu that the solutions to all these questions are determined. As a result, as we will show in detail in the following, market institutions were created to enable the trading of LDR quotas as a commodity, the production of LDR quotas was linked to the construction of New Rural Communities (NRCs) for concentrated settlement, and finally, financial gains from the LDR trading were channeled into public services provision in the NRC. This innovative program therefore successfully solved the three inherent problems facing public services provision in rural areas: The LDR trading created a financial transfer from the richer peri-urban counties to the cash-strapped hinterland counties to fund their services provision; the construction of NRCs transformed the spatial dispersion of rural residential settlement to make services delivery more efficient; and a combination of top-down control and bottom-up participation improved agency control.

Creating the Market for LDR Trading

For the LDR quota to become a commodity tradable between its producers and eventual users, a whole set of institutions must be built first before this market can emerge. At the two ends of the TDR transaction are two very different parties. The original owners of development rights over small and scattered pieces of rural housing land are individual rural households; the potential end users of such development rights are, however, mostly urban businesses who need a much bigger area than any single rural housing plot. It is highly improbable that any transfer of LDR could spontaneously occur between these two parties. Many stumbling blocks like this one must be cleared before LDR trading can happen; and through innovative and effective institutional building, local governments in Chengdu played the role of the market maker for LDR trading.

In Chengdu, the whole process of LDR trading involves 11 steps. These steps, in their operational sequences, and local governments' involvement at each are detailed below.

Step 1: The participation in the LDR trading under the ZJGG scheme in Chengdu is a voluntary process. While the unit of participation is the village, the process is typically initiated and operated by the county government's Land and Resource Bureau. County governments in the hinterland region would select villages that they consider to have conducive conditions for implementing such projects and ask them to apply. Such conditions include strength of grassroots leadership, history of petition or collective resistance (or the lack thereof) and presence of social cohesion, which are all indications that the implementation of the ZJGG project will likely be smooth. Because of the complex and competitive nature of applying for ZJGG projects, villages often hired professional companies to prepare the application materials.

Step 2: The municipal government would review all applications. Once a project is approved, the real challenges emerge. Under the ZJGG scheme, for a LDR trading to happen, one piece of rural housing land would give up its development right and then be reclaimed into farmland; this right will then be transferred to another piece of farmland, which can then undergo urban development. This means that some rural houses must first be demolished and the housing land reclaimed into farmland. This presents a host of challenges in real practice. Residents whose houses are demolished need places to live. Although there are uninhabited houses and unused housing land in rural areas, to reach a meaningful scale, a ZJGG project would always involve many inhabited houses. Rural areas also have little rental housing stock to provide temporary housing. Only one solution is left: constructing new residential housing before demolition starts. But that raises more questions. Before any de-construction is done, where to find additional land for new construction? How to get approval for this, which typically involves occupying farmland? How to fund it when no LDR has been sold yet?

For the whole process to start rolling, there must be a first kick—the advancing of fund for a lengthy process that includes housing demolition, new construction, and farmland reclamation. Here, the municipal government made a crucial contribution by setting up the Municipal Land Reserve, which serves as a LDR bank and gives out interest-free loans to townships and villages for starting the approved ZJGG projects. These loans will eventually be recouped from the sales of construction land (in Step 11), but must be advanced long before that. In recent years, the municipal government has tried to attract private capital into playing this role, but due to the long delay in repayment (typically three years or longer) and lack of high returns, there have been few takers. The municipal government remains the 'lender of last resort'.

Step 3: Once a ZJGG project is approved and start-up funds advanced from the Land Reserve, the township and village governments can then start recruiting villagers to participate in the project. A project must reach a certain scale in its housing land reduction (i.e., the size of the LDR quota) to be economically meaningful. In fact, in its application, a project needs to specify its intended size, which requires grassroots officials to do groundwork in surveying villagers for their intentions to participate and come up with an estimate. After the approval, township and village officials would host mass meetings in villages and conduct door-to-door visits to mobilize support for the project and persuade villagers to participate. In most cases, villagers participated with enthusiasm. In fact, projects were often over-subscribed and participating villagers needed to pay a deposit to hold their places.

Step 4: Once enough villagers have signed up and contracts are signed, a site for the construction of new housing (the 'New Rural Communities', NRC) would be selected and the land-use rights for that plot acquired. In practice, this is the most challenging step, as it involves not only finding a new location that is desirable (the overwhelming preference of villagers is proximity to a market town), but also obtaining use rights from its original users, which can be villagers in other villages. One solution is land swap, but the most widely adopted approach is paying cash compensation to villagers whose farmland would be occupied, and the cost would be shared by all villagers participating in the ZJGG project. The LDR that is required for using the selected farmland for housing construction comes from the LDR quota produced from housing land reduction.

Step 5: The township government would organize the construction of the NRC, allocation of housing, and relocation of villagers. While the construction is straightforward, the allocation of new housing, which involves compensating for villagers' demolished old housing, is another complicated political task. The township government then needs to decide at what rate villagers' old housing will be 'traded-in' to offset the price of new houses and at what price the new housing will be sold (a tiered pricing scheme is usually used). This valuation process is fraught with tension, as the government needs to negotiate with hundreds of families on whether and how the old housing's age, size, condition, building materials, location, and type of use will be included in the pricing of the trade-in value.

Step 6: It is only after the NRC has been built and villagers have relocated when the reduction of housing land (i.e., the demolition of old housing, the process that really produces the LDR quota) can begin. In most cases, the demolition and farmland reclamation is outsourced to professional companies.

Step 7: The municipal government inspects the housing land reduction and farmland reclamation. Only with its approval, the LDR released from the reclaimed farmland can then be granted a LDR quota (*zhibiao* in Chinese), legally registered, and become a tradable commodity. This commodity is finally created after all the seven steps have been completed, a process impossible without the institutional building and political involvement of local governments.

Step 8: While a ZJGG project ultimately connects rural households with urban land users, the real LDR trading happens between two county governments (typically one peri-urban on the demand side and one hinterland as the supplier), mediated by the municipal government. For this trading, the municipal government has set up another key institution, the Rural Property Rights Exchange (RPRE). The LDR quota is first acquired by the Land Reserve and then listed on the RPRE for bidding. The LDR market is, therefore, both created and monopolized by state actors: LDR quota is approved by the municipal government, can only be bought and sold by the Municipal Land Reserve and RPRE, respectively, and only county governments can sell to and buy from them.

Step 9: Any county, according to its development needs, can bid for the LDR quota in auctions run by the RPRE. Detailed mechanisms of the bidding process will be discussed later. The municipal government can also do matchmaking between the supplying and buying counties in Step 2 when the project is approved; but in most cases, the municipal government has allowed the production of the LDR quota (i.e., Steps 1–7, the 'decrease' part of ZJGG) and its sales (Steps 8–11, the 'increase' part) to be de-linked.[4]

Step 10: Once the LDR quota is obtained, the county government can then carry out land requisition in its selected site to turn collectively owned farmland into state-owned land ready for urban development. Affected rural residents will need to be compensated. This is another conflict-ridden process and violent confrontations caused by this type of land requisition are legions; Chengdu is no exception.

Step 11: Now the county government that has bought the LDR quota has turned a piece of farmland into state-owned urban construction land equipped with full development rights. Only as such, this piece of land can enter into the urban land market and be auctioned off to urban users, which can be any qualified companies.

These 11 steps trace the flow of the LDR quota from its production through trading to its eventual use. The flow of financial resources occurs in the reverse direction and in a different sequence. The Land Reserve first advances funds to townships in Step 2. That loan will be repaid by the township in Step 9 when the LDR quota is sold on the RPRE. The funds that the peri-urban county uses to pay for the LDR quota in Step 9 must also be advanced by the county government from its budget, so are the funds for land requisition in Step 10. Those funds will be repaid after the sales of urban construction land in Step 11. Ultimately, it is the revenue from Step 11 that pays for the LDR quota and the costs of producing it, which therefore constitutes a financial transfer from the richer peri-urban counties (from the economic benefits it gains from urban developments) to poorer hinterland counties to fund public services provision there. This scheme of funding public services provision through a cross-county transfer of the financial benefits from urban development is equalizing, locally based, and more sustainable than the reliance on central fiscal transfer.

Figure 4.1 uses one example of a ZJGG project implemented across two counties (the peri-urban Shuangliu county and hinterland Qionglai county) to illustrate these two flows. The LDR quota (545 mu) was produced in the Longfeng Village of Qionglai county through demolition of

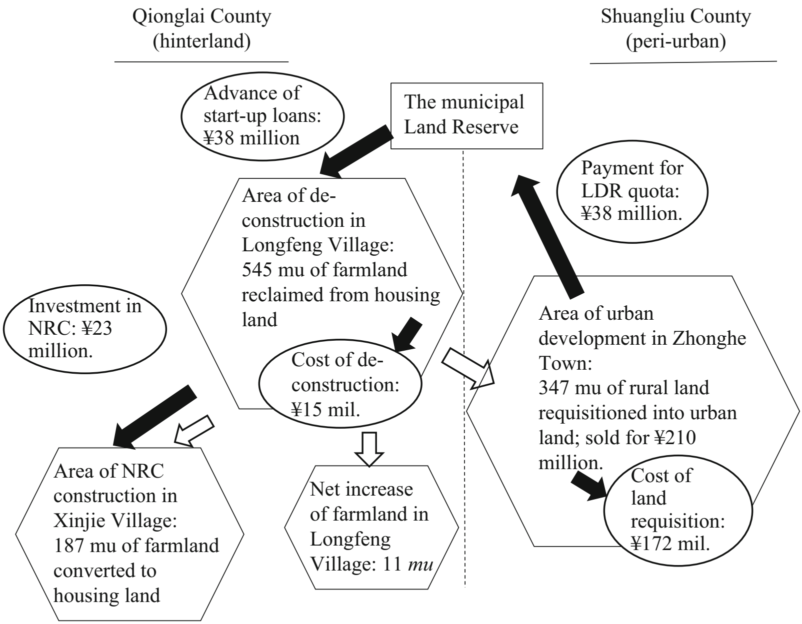

Fig. 4.1 Cross-county flows of LDR and financial resources in a ZJGG project. *Notes*: *Solid arrows* represent flows of financial payments and *transparent arrows* represent flows of LDR quotas. *Hexagons* indicate areas of land-use changes; *ovals* indicate the amount of financial transfers

old housing. The quota then went to three destinations: a token balance of 11 mu of increased new farmland in the same village, 187 mu was used for the construction of the NRC in another village in Qionglai, and finally, the biggest part, 347 mu was first sold to the Land Reserve and then auctioned off to Zhonghe Town in Shuangliu county for urban development there. With this LDR quota, Zhonghe Town was then able to transform 347 mu of rural land into urban construction land and sold that to developers for 210 million yuan. The bulk of this revenue, 172 million yuan, was actually used to cover the cost of land requisition in Zhonghe Town. The rest, 38 million, had been paid earlier to the Land Reserve to acquire the LDR quota. This was also the amount which the Land Reserve had loaned to Qionglai County to pay for the costs of the LDR production. For Qionglai, the net gain was the 23 million yuan that was used to build the NRC in Xinjie village and provide public services there.

Residential Reconstruction: Building 'New Rural Communities'

As the preceding discussion shows, the production of LDR in Chengdu is tied to the construction of NRCs and therefore always involves a reconstruction of the rural residential settlement patterns that transforms the spatial dispersion of rural settlements into concentrated living. The spatial dispersion of rural settlements is particularly pronounced in the Chengdu Plain area due to both its flat topography and history of recent immigration settlement (Skinner 2001). Clusters of a few houses in bamboo- or tree-shaded areas in the middle of farm fields created what is known as the *linpan* landscape, a pattern of spatial fragmentation (Abramson and Qi 2011). The relocation of rural residents into NRCs is only one part of the municipal government's three-pronged approach of rural restructuring. The so-called 'three concentrations' (*sange jizhong*) program also involves concentrating rural industries in centralized developmental zones and concentrating farmland in scaled-up agriculture.

Through this residential reconstruction, rural settlements begin to concentrate in centralized housing sites—the NRCs—which almost without exception are built along a major road or around market towns, while the scattered settlement pattern and the *linpan* landscape are gradually dissolved. In these NRCs, residents from multiple natural villages within an administrative village now live in much greater density and closer proximity to each other. This spatial transformation brings a major advantage to the provision of public services: public spending in one location—a new

NRC—can now reach a far greater population and an economy of scale can be achieved.

The municipal government imposes two requirements on these NRCs. First, in designing the communities and regulating the use of space in the communities, an urban-planning regime is adopted. These NRCs are modeled after an urban ideal of tightly regulated and homogeneous residential space and the spatial segregation of work and living. The goal here is not only to satisfy the practical needs of residents, but also to transform both the rural lifestyle and rural residents.[5] This urban-planning regime imposes a standardized appearance on all NRCs. With their brand new houses, landscaped greeneries, paved roads and abundance of public facilities, these NRCs contrast sharply with the traditional villages, where many of the public facilities are absent and run-down single-story brick houses cluster amid farm fields. They bear far greater resemblance to gated communities in the suburbs; in fact, the municipal government explicitly cited the British urban planner Ebenezer Howard's concept of 'garden city' (Howard 1965) as an inspiration and template.

Second, and more important to this study, the municipal government requires that when any NRC is built, a standardized set of public services must be provided. The cost for providing these public services is already included into the price which the Land Reserve pays townships when it acquires the LDR quota produced by that township. In other words, in the transfer of the LDR quota from its producer (a township) to the Land Reserve, the price is not determined by market, but administratively set by the Land Reserve.[6]

The replacement of market mechanisms with administrative command here makes a crucial difference to the provision of public services. A danger of direct LDR trading between local governments in a free-market fashion is that suppliers of the LDR quota, when their potential supply outstrips demand,[7] would enter into a race to the bottom by continuously lowering their cost of the LDR-quota production. Alternatively, when demand surpasses supply and the rewards are high, local governments would then have incentives to create more supply, by force if necessary. Either way, in practice, this means forcing more rural residents to demolish their houses, relocating them into high-rise buildings, and minimizing compensation to rural residents and public service provision. All these are recipes for social contention and political resistance, as experiences in Shandong attest to (Long et al. 2012).

In place of scale control, as the central government intends to do, Chengdu chose to instead regulate the cost of LDR quota production.

This was done through two measures. First, the purchasing price of LDR quota was set by the Land Reserve, the only buyer in the market, to preempt the competition among townships on the basis of price. Second, the price was set much higher than the costs of de-construction, reclamation, relocation and new housing construction, but also covers costs of the mandated services provision in the NRCs.

When the ZJGG scheme was first scaled up in 2008, the Land Reserve set the purchasing price at 150,000 *yuan* per *mu* and mandated the provision of a package of 13 public services in NRCs; by the end of the three-year period, the price had risen to 300,000 *yuan* per *mu*, and the mandated public services had increased to 21 items. The 21 items are the minimum required for rural communities in villages; for communities near the county seats or towns, the minimum is raised to 23 items. These public services include a comprehensive social service station, clinic, childcare center, library, convenience store, ATMs, public toilet, and connections of gas, electricity, water and sewage system. The LDR quota would only be granted (Step 7) after the NRC and its public service provision has passed the municipal government's inspection.

Controlling Grassroots Governments and Enabling Public Participation

Chengdu government from the very beginning of the experiment made two critical choices that distinguished it from all other comparable cases. Besides mandating the provision of public services in NRCs and administratively setting the price for LDR quotas to cover the cost of services provision, the other choice is decentralizing the financial benefits created by the LDR trading to its sub-units—county and township governments. If the first created an effective mechanism of controlling local agents and preventing them from cutting corners on services provision, then the second created strong incentives for them to implement ZJGG projects. For township governments, which nowadays are starved of discretionary fiscal resources, a ZJGG project brings in a huge fiscal transfer. These funds not only allow the township to transform its physical landscape and potentially draw in more non-farm businesses, which further generate fiscal revenues; more importantly, all these construction activities create profit-making—and even rent-seeking—opportunities for local officials—usually by directing businesses to their clients and relatives in the 'shadow state' (Smith 2010).

Compared with Chengdu, in other pilot zones such as Tianjin, the provincial governments monopolized the land incremental value from LDR transfer. The production of the LDR quota was first handed down to lower-level governments as an administrative task from the province, and once produced, the LDR quota was then centralized and allocated by the provincial government. This created at least two problems: first, county governments had few incentives to implement the ZJGG program; and second, little of the incremental value was allocated to rural areas.

Once the incremental value is decentralized to county-level governments, another danger emerges: Since the valuable TDR quota can only be produced from reducing rural housing land, over-zealous local governments, now motivated by the financial gains from TDR, will force such reduction to happen, which was what exactly took place in Shandong province, also one of the five pilot provinces that started with the ZJGG experiment in 2006 (Long et al. 2012). Therefore, the administrative price-setting and public service provision mandate is critically important for Chengdu to avoid this pitfall. Setting the LDR quota price artificially high created an equity-enhancing fiscal transfer; mandating public service provision precluded the misuse of the fiscal transfer.

In choosing these policies, the municipal government was primarily motivated by practical considerations: It needed a way to both discipline and motivate local governments to perform political functions of the state, and it did not need to foot the bill, as the funding came from end users. In 2007, Chengdu also became the national pilot zone for rural–urban integration, which gave its leaders greater incentives to promote rural investment and use excellence in this area for political gains.

In recent years, the municipal government further enhanced spending on rural public services by allocating an annual cash budget of 200,000 yuan to each administrative village, earmarked for public services provision. At the same time, a new mechanism of increasing public participation in decision-making regarding public services provision was set up. Aside from the village committee that already exists in every village, which, despite being democratically elected by all villagers, has mostly functioned as an executive branch office of the township government, a new Democratic Deliberation Council (*minzhu yishihui*) is established in each village, its members all directly elected by villagers. One of the key functions of the Council is to determine the use of this new earmarked fund for public services provision.

Conclusion

Chengdu's experiment with LDR commodification under the ZJGG framework has progressed successfully since 2008. By the end of 2013, the municipal government's own statistics show that a total of 1839 'new rural communities' are at various stages of construction, including 1219 already completed, all financed by the sales of LDR quota under ZJGG projects. These 1839 communities involve a total of 307,064 rural households and 987,496 rural residents. This means that this program has relocated over one fifth of Chengdu's total rural population (4.6 million in 2013) into newly constructed residential communities, where physical conditions and provision of public services are on par with urban areas, a big accomplishment in a context of long-standing severe rural–urban disparities. The fact that this all happened without major incidents of protests, petitions or violent confrontations is another rare achievement in today's China. Participation in the program has remained voluntary, and in every village that relocated to a new community, we always met households who stood their grounds and refused to move. They faced efforts of persuasion and sometimes, social pressure, but never the use of violence.

At the same time, the LDR quota created from these rural relocations has allowed urban built-up areas, as well as the urban economy, to expand rapidly in the peripheral counties. Take the Economic Development Zone in Longquanyi county for example, Chengdu's only national-level development zone. Its size increased from 990 ha in 2008 to 6100 ha in 2013, with full legality thanks to the ZJGG practice. The development zone, all built on rural land, now houses nine major automakers and has become one of the largest bases of automobile industry in western China.

Chengdu's experience contrasts sharply with stories of forceful evictions and violent confrontations that have been widely reported in the literature on land dispossession in China. Putting aside the shortcomings of that literature, we can still see that Chengdu's differences with other localities are real. In fact, with the exception of Chengdu, on a national scale, the implementation of the ZJGG policy has caused widespread protests and violent resistance. Local policy innovations in Chengdu, we argue, caused this divergence.

Chengdu's municipal government created market institutions to facilitate first the commodification of LDR and then its trading between counties that have unequal access to the benefits of urbanization. The LDR trading structured in this way created a de facto fiscal transfer from richer peri-urban counties to poorer hinterland counties. Using two additional policy tools—administrative price setting to include in the LDR quota price the cost for NRC construction and a public services provision mandate for LDR quota production—the municipal government further forced local governments at the county and township level to invest the financial gain from LDR trading in public services provision. Through the combination of these innovative local policies, the Chengdu government successfully solved all three challenges to public services provision in rural areas: The LDR trading turns rural land into a financial resource that can fund services provision, the NRCs transform the spatial dispersion of rural population and creates concentrated communities for easy service delivery, and finally, profit decentralization, administrative price-setting and mandating public services provision create both incentives for local agents to implement the policy and constraints on their use of financial resources.

Chengdu's success in constructing NRCs is only possible as a result of a combination of local policy innovations and central political concessions. It is only in this unique policy context that rural reconstruction can be sufficiently financed by the commodification of LDR. This should make it abundantly clear that the biggest challenge in any rural reconstruction program is the lack of such financial resources.

In an informative article that vividly describes a case of rural reconstruction in Jiangsu province, Bray (2013) introduces the Chinese central government's ambitious plan, as a part of its 'Building a New Socialist Countryside' program, of extending urban planning to the countryside to help modernize and reconstruct rural areas. While Bray's sensitivity to the tension between the discourse and practices of urban planning and rural spatiality and livelihoods is commendable, he gives undue significance to the 'state-sponsored urban planning regimes' but overlooks the challenges of financing rural reconstruction. Without financial resources, the central government's requirement that 'every administrative village in China … to commission and implement a 20-year "master plan" for redevelopment' (Bray 2013, 54) will only create useless paperwork.[8] In fact, most of the villages we have studied in southwestern China outside Chengdu are even too fiscally starved to hire urban planners to draw the useless paperwork.

Other studies of the 'New Socialist Countryside' programs have also over-optimistically assessed the program of physically transforming rural China when the only source of funding is central government's fiscal transfer (Schubert and Ahlers 2012). In most places, such transfers are both too small and too loosely regulated, and the only physical transformation that took place in villages is façade painting along the road which upper-level inspection teams travel.

Only in places like Chengdu, where land commodification provides sufficient funds earmarked for rural reconstruction, urban planning can have the legs to 'go rural'. Even in Chengdu, the sustainability of this model depends on continued growth of the urban economy and the demands it creates for new construction land. In fact, during the three post-earthquake years, the municipal government had wanted to take advantage of the central concession and do a total overhaul of rural Chengdu by using the ZJGG policy to move all villages into NRCs. But the plan only proceeded to the degree today because of insufficient urban demand for construction land and, as a result, shortage of fund to finance rural reconstruction.

Notes

1. The first national Land Use Master Plan was made in 1997, but soon revised in 2005; the current national Master Plan is in effect from 2006 to 2020.
2. More specifically, the targets are to preserve 121.2 million ha farmland by 2010 and 120.33 million ha by 2020, of which 104 million ha should be prime farmland. *Mu* is the commonly used measure in China; one *mu* equals one fifteenth of a hectare.
3. In China's territorial administrative system, a county-level unit can be called variously as a county, an urban district and a municipality. Chengdu has nine districts, four municipalities and six counties. For simplicity sake, they will all be referred to as 'counties' in this paper.
4. As mentioned earlier, this one-to-one linkage between de-construction and new construction is mandated by the MLR. Chengdu has devised a local policy (called the 'Project of Constructing Concentrated Rural Housing') to circumvent this restriction.
5. See Bray (2013) for an insightful analysis of this process, which he calls 'urban planning goes rural'.
6. This is different from the price that the Land Reserve sells the LDR quota to a peri-urban county. That price is determined by market mechanisms through auctions run by the RPRE.
7. In any Chinese city, the urban fringe area typically has a far greater potential of reducing rural construction land than there is demand for new construction land, which tends to concentrate in the peripheral urban area. This is one of the reasons that the central government tried to limit the supply by impos-

ing an annual ZJGG quota. But in Chengdu's case during the three post-earthquake years, such supply restriction was removed, and oversupply became a real possibility.

8. China now still has 571,611 administrative villages (Long et al. 2012). If we use the new 'rural community' in Qionglai in Fig. 5 as the standard, which costs 20 million yuan just for housing construction and infrastructure building, to apply 'urban planning' to all villages in the entire country would cost an astronomical figure—over 11 trillion yuan.

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