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Targeted poverty alleviation and land policy innovation: Some practice and policy implications from China

Yang Zhou[a,b,c,*], Yuanzhi Guo[a,d], Yansui Liu[a,b,c,d], Wenxiang Wu[a], Yurui Li[a,c]

[a] Institute of Geographic Sciences and Natural Resources Research, Center for Assessment and Research on Targeted Poverty Alleviation, Chinese Academy of Sciences, Beijing 100101, China
[b] College of Resources Science and Technology, Beijing Normal University, Beijing 100875, China
[c] Key Laboratory of Regional Sustainable Development Modeling, Chinese Academy of Sciences, Beijing 100101, China
[d] University of Chinese Academy of Sciences, Beijing 100049, China

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ABSTRACT

Poverty is the common challenge faced by the international community. The human society has never ceased to struggle against poverty. China was once the developing country with the largest rural poor population in the world. Facing the decreasing effect of economic input to poverty reduction, land policy innovations could contribute to promoting poverty alleviation, particularly in China, where the defects in policy making is regarded as a major factor in rural poverty. This study explores the institutional innovation of China's poverty alleviation since 2013 and further reveals the mechanism behind land policy innovation promoting the targeted poverty alleviation based on a case study of Songjiagou village of Fuping county, Hebei province. We found that the Chinese central government has innovated the mechanism for the TPA to lift the remaining rural poor out of poverty by 2020 as scheduled. Implementing the TPA could confront the labor, capital and land dilemmas. Combined land policy innovations and land engineering with the ex situ poverty alleviation relocation (ESPAR) can help to break the institutional barriers. We argue that land policy innovations and the ESPAR not only contributes to poverty reduction and improve living conditions of the poor, but also needs to guard against its potential risk. These findings can provide policymakers with a sound scientific basis for poverty reduction planning and decisions in China and other poor countries.

1. Introduction

Poverty alleviation is a global challenge (Bapna, 2012; Griggs et al., 2013). The international community has never stopped to narrow the rural-urban gap and eliminate poverty (Mani et al., 2013; Haushofer and Fehr, 2014; Zhang et al., 2015; Tollefson, 2015). The academic has carried out extensive and intensive studies on the definition, theories, measurements and types of poverty and anti-poverty strategies (Du et al., 2005; Zhang and Wan, 2006; Ravallion and Chen, 2007; Wang and Alkire, 2009; Montalvo and Ravallion, 2010; Glauben et al., 2012; Yu, 2013; Rodríguez-Pose and Hardy, 2015; Alkire and Seth, 2015; Liu et al., 2016; Wang, 2017). Different disciplines have their own understanding and cognition on poverty. Economics focuses on the basic needs of individuals from income and consumption aspects, and Sociology focuses on social exclusion. New institutional economics links poverty problem with the system or institutions, arguing that the system is a determinant of economic performance and that an effective system promotes economic growth (Sen, 1985; 1999; Wagle, 2002; Park et al., 2002; Alkire and Foster, 2011; Alkire and Sumner, 2013; Bossert et al., 2013; Wang, 2017). The classical theories of poverty or anti-poverty include the Vicious Circle of Poverty (Nurkse, 1952), the Low-level Equilibrium Trap (Nelson, 1956), the Critical Effort (Leibenstein, 1957), the Circular and accumulative causation (Myrdal, 1957), the Multidimensional Poverty Theory (Sen, 1999), the Property Right Theory (Coase, 1937), the Economic Growth Theory (North, 1955) and the Intergenerational Transmission of Poverty (Gottschalk et al., 1994; Corcoran and Adams, 1997; Bird, 2007). Other relevant studies mainly focuses on the poverty line (Chen et al., 2013), the types of poverty (Jalan and Ravallion, 2000; Chen and Ravallion, 2007; Duclos et al., 2010; Glauben et al., 2012; Ward, 2016), the causes of poverty (Jalan and Ravallion, 2000; Glauben et al., 2012; Wu et al., 2005), vulnerability to poverty (McCulloch and Calandrino, 2003; Ward, 2016; Cao et al., 2016), multi-dimensional poverty measurement (Wang and Alkire, 2009; Yu, 2013; Alkire and Santos, 2014; Alkire and Seth, 2015; Alkire et al., 2015; Liu and Xu, 2016), eco-environment protection and poverty alleviation (Ferraro and Hanauer, 2014; Agrawal, 2014),

* Corresponding author at: 11A Datun Road, Chaoyang District, Beijing, 100101, China.
E-mail address: zhouyang@igsnrr.ac.cn (Y. Zhou).

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raising food production and poverty reduction (Fischer and Hajdu, 2015), the anti-poverty effect of economic input (Ravallion, 2001; Ravallion and Chen, 2007; Montalvo and Ravallion, 2010; Barrett and Carter, 2013; Lü, 2015; Gao et al., 2015) and mapping of poverty (Jean et al., 2016). These studies focus more on the evolution of poverty theories and its multi-dimensional measurements, but less attention was paid to how to guide anti-poverty practice.

China's poverty problem.[1] has attracted wide attention from academics at home and abroad due to its various types and complex causes as well as arduous task of anti-poverty (Du et al., 2005; Zhang and Wan, 2006; Ravallion and Chen, 2007; Montalvo and Ravallion, 2010; Glauben et al., 2012; Yu, 2013; Li et al., 2015a, 2015b; Ward, 2016; Lo et al., 2016). Poor area has been the short-board of economic growth in China, which is characterized by a large area and population sunk in poverty[2] At the beginning of the founding of new China, the country has a large poverty-stricken population in the rural areas. Since the 1980s, the Chinese government has spared no effort to reduce poverty.[3] Over the past three decades, China has achieved the millennium development goal of halving poverty ahead of schedule, making outstanding contributions to global poverty alleviation (UN, 2015; Liu et al., 2015a, 2015b). Despite this, China is still a developing country with a large number of people living in extreme poverty (Liu, 2016). China's relative poverty problem is prominent and the deep-seated contradictions restricting the development of poverty-stricken areas still exist, and the phenomenon of returning to poverty happens occasionally (Liu, 2016; Liu et al., 2016). These pose great challenges for China to achieve the goal to become a comprehensive well-off society by 2020 (Long et al., 2010, 2011; Long and Liu, 2016). Institutional defect is also considered to be a major cause of poverty (Zhou, 2006; Bowles et al., 2006; Wang and Duan, 2015; Liu et al., 2016). Institutional factors affecting China's effectiveness of poverty alleviation mainly include land system, household registration system and ecological environment protection policies (Dong, 1996; Uchida et al., 2005; Heilig et al., 2006; Emran and Hou, 2013; Zhang et al., 2015). Therefore, institutional innovations play an important role in promoting poverty alleviation (Milder et al., 2010; Pamuk et al., 2015; Yan, 2015; Liu et al., 2016). Although these studies have noted that institutional or policy innovations are conducive to the promotion of poverty alleviation, few studies have focused on how these innovations, particularly land policy, can promote poverty alleviation. Thus, the key aim of this study was to investigate the mechanism behind land policy innovation and land system reform promoting poverty alleviation and development. The specific objectives of this study are to: first analyze the targeted poverty alleviation (TPA) strategy and the ex-situ poverty alleviation relocation; then examine the land, funds and population dilemma faced by implementing the TPA; and finally provide a framework to explain the mechanism behind land policy innovation and rural land system reform promoting the TPA by a case study. These finding not only contribute to deepening the basic theory of poverty and comprehending the mechanism behind land policy innovation promoting poverty reduction, but also merit particular attention from policy makers in China and Asia-Africa-Latin America countries.

2. Targeted poverty alleviation in China

2.1. China's poverty alleviation since 1949

2.1.1. Six stages of China's anti-poverty

China has been committed to the eradication of poverty since the founding of the Communist Party of China. The country's anti-poverty programs can be roughly divided into 6 stages (Fig. 1): (1) The traditional relief-type approach (1949–1978). At the beginning of the founding of new China (1949), the country's economic development level is very low and the whole society was in a widespread poverty status (Zhao, 2013). During this period, China's poverty alleviation was mainly to solve the problem of human existence and took a blood-transfusion-type poverty relief (Liu et al., 2017a); (2) Institutional reforms promoting poverty alleviation (1978–1985). At the end of 1978, there were more than 250 million poor population living on less than the national poverty line in rural China. The system was considered to be the main factor that hinders the development of the society (Yan, 2015). Rural economic system reform that replaces collective management system with household responsibility system gave farmers' the autonomy of agricultural production and greatly arouse their enthusiasm, thus increasing grain production and promoting the rapid development of rural economy in China (Yan, 2015). The country's poor population decreased from 250 million in 1978–125 million in 1985; (3) Large-scale development-oriented poverty alleviation (1986–1993). During this period, some key measures have been taken to anti-poverty, i.e., setting up special help-the-poor work units and allocating special funds. The rural poor population dropped from 125 million in 1986–80 million in 1993. (4) Tackling key problems of poverty relief (1994–2000). During the period, China implemented the National 'Eight-Seven' Poverty Alleviation Plan, aiming to solve the basic food and clothing needs of 80,000 rural poor in around 7 years (Park and Wang, 2001). The rural poor population dropped from 80 million to 32 million during the period 1994–2000 (Yan, 2015). (5) Poverty reduction policy in the new century (2001–2013). At the turn of the twenty-first century, China's poverty alleviation faced new challenges and it promulgated the Rural Poverty Alleviation and Development Program (2001–2010). In 2011, the country promulgated and implemented the Outline for Development-oriented Poverty Reduction for China's Rural Areas (2011–2020). The Outline delimitated 14 contiguous poor areas with special difficulties and identifies these areas as the main battlefield for poverty alleviation (Yan, 2015).[4] (6) The TPA since 2013. In 2013, Chinese President Xi Jinping put forward the TPA strategy. Poverty alleviation has been put on the agenda of China's 13th Five-Year Plan for Economic and Social Development for the first time.

2.1.2. Major achievements and challenges in China's poverty alleviation

The first Millennium Development Goal (MDG 1) set by the United Nations Millennium Declaration in 2000 was to halve the proportion of the world's people between 1990 and 2015 (UN, 2015). The United Nations has adopted the 2030 agenda for sustainable developments in 2015 and put 17 sustainable development goals (SDGs). The first SDG target is to end extreme poverty for all people everywhere by 2030 (Griggs et al., 2013). Globally, more than one billion people have been lifted out of extreme poverty over the last two decades due to global, regional, national and local joint efforts (UN, 2015). In developing regions, the number of people living in extreme poverty, defined as getting by on less than $1.25 a day has declined by nearly half, dropping from 1.96 billion in 1981–1.01 billion in 2011. But excluding China, this figure is around 927 billion in 2011, the same as it was 1981 (1.1 billion) (Fig. 2). The global drop in the percentage of population living in extreme poverty can be largely attributable to China's poverty reduction efforts (UN, 2015). China has lifted more than 700 million people out of poverty during the period 1980–2011 (UN, 2015).

Furthermore, China's rural poor population has dropped from 250 million in 1978–70.17 million in 2014 and the corresponding poverty headcount ratio has decreased from 30.7% to 7.2%[5] (NBS, 2015). The

[1] Poverty in this paper refers only to rural poverty in China.

[2] The poor area refers to the area with poor population. Poor population refers to the population living below the national poverty line. China's poor areas or poverty-stricken areas include the 14 contiguous poor areas with particular difficulties, 832 poverty counties and 128000 poor villages.

[3] http://www.china.org.cn/china/Off_the_Wire/2016-10/17/content_39504308.htm.

[4] http://news.xinhuanet.com/english2010/china/2011-11/16/c_131249948.htm.

[5] The headcount ratio refers to the proportion of people below the poverty line to the

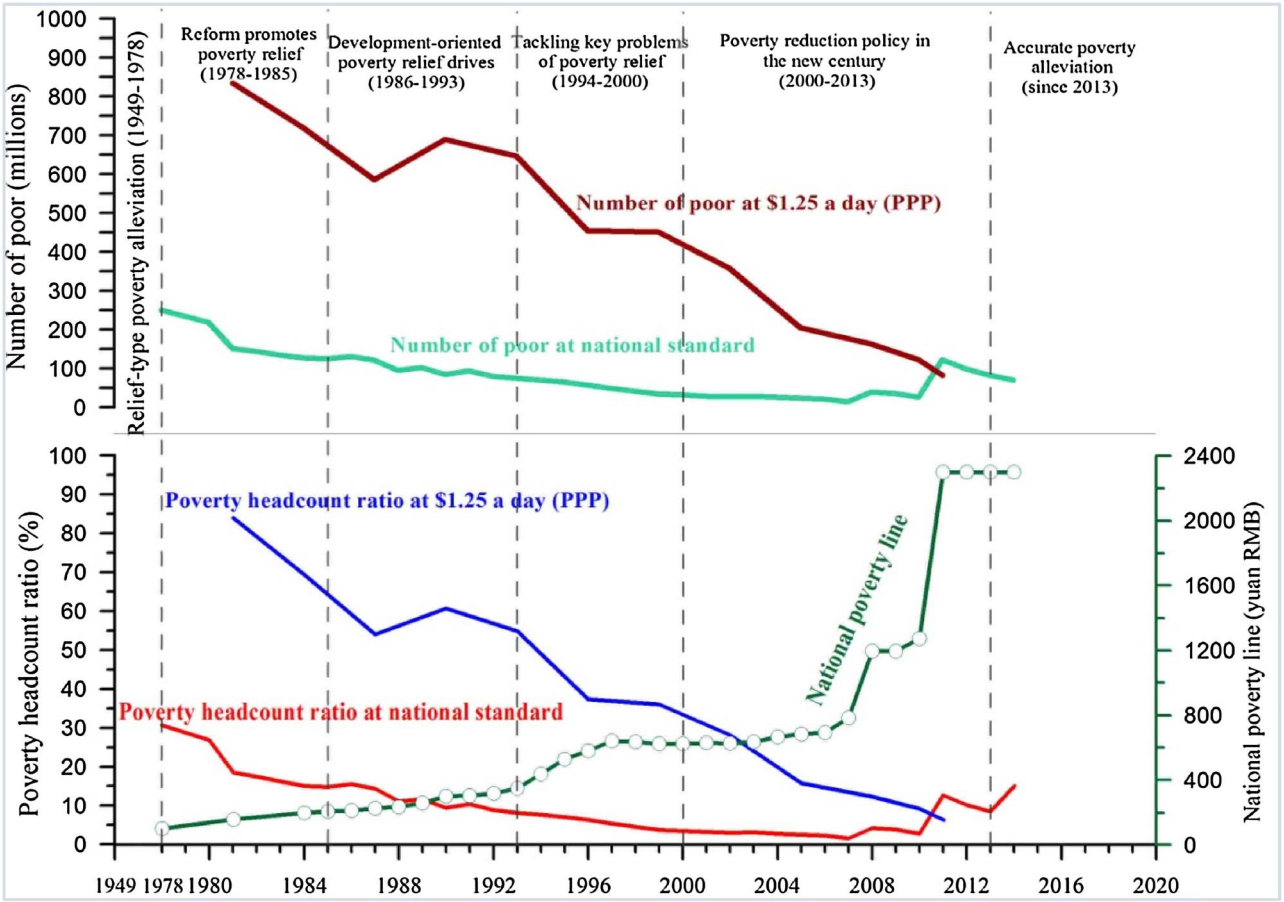

Fig. 1. Major poverty alleviation policy/program in China.
Sources: NBS, 2015; http://povertydata.worldbank.org/poverty/country/CHN

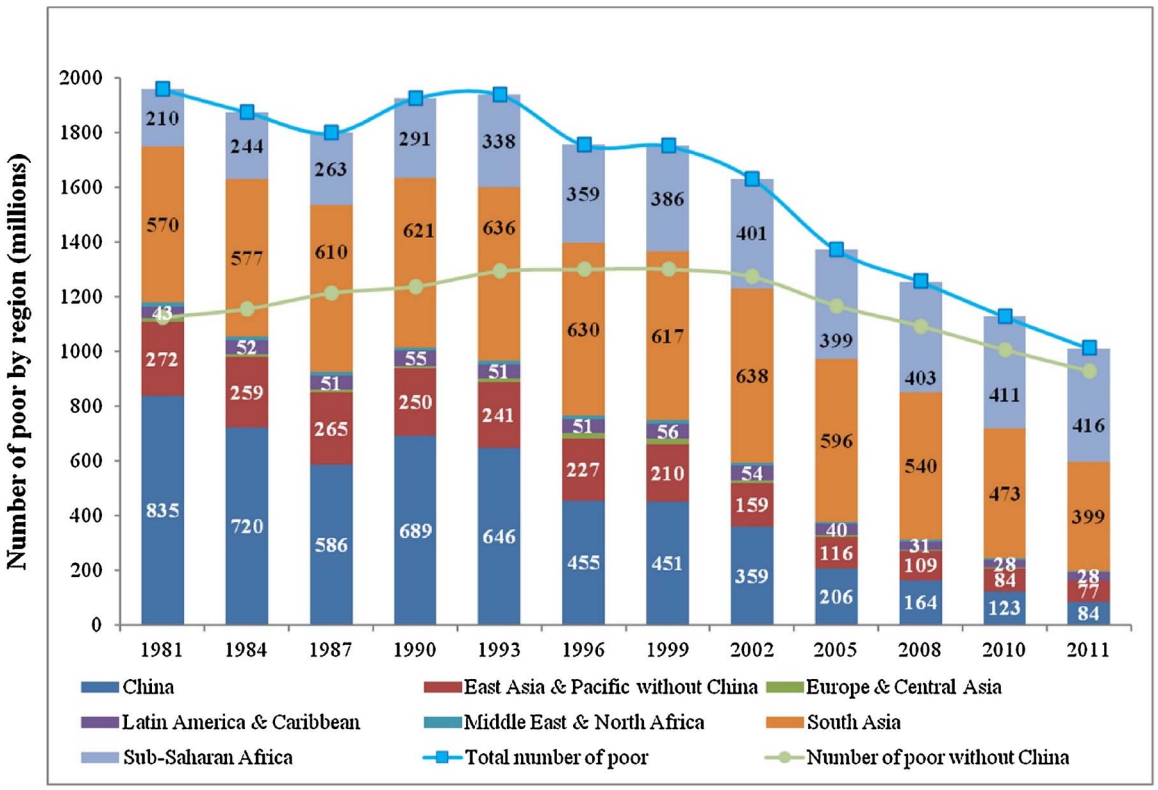

Fig. 2. Number of people living on less than $1.25 a day in the developing regions.
Source: World Bank, http://data.worldbank.org/

impressive poverty alleviation progress can be attributed to the Chinese government's long-term emphasis on poverty reduction and sustained economic growth as well as the investment of special aid-the-poor funds over the past three decades (Ravallion and Chen, 2007; Montalvo and Ravallion, 2010; Park and Wang, 2010; Yu, 2013; Meng, 2013; Rogers, 2014; Liu et al., 2015). However, many challenges for China's poverty alleviation still exist. First, China's poverty reduction task is still grim and becomes increasingly difficult to reduce by conventional anti-poverty measures (Liu et al., 2016; Li et al., 2016; Liu, 2015, 2016). The scale of poverty is large and anti-poverty tasks are pressing (Liu et al., 2017a). Over the past decades, those areas and people with better conditions to shake off poverty have been lifted out of poverty. The rest who remain stuck in poverty usually lack capacity of self-development. Second, the reasons behind poverty are complicated. Presently, the majority of Chinese impoverished people live in 14 contiguous extremely poor regions with fragile ecological environments, poor infrastructure and underdeveloped public services (Liu et al., 2017a). Furthermore, a large proportion of those people are impoverished due to illness, educational costs, and physical disability. According to statistics, more than 92% of the poor's education level was below the junior secondary school level and 42.2% of the poor to poverty was due to illness (Liu, 2016). It is also common for those who just escaped poverty can be filled into it again as suffering from natural disasters, illness, or issues involving education, marriage and housing (Xinhua, 2016).

2.2. Targeted poverty alleviation strategy in China

To lift the remaining rural poor out of poverty by 2020 as scheduled, China has established a mechanism for the TPA since 2013 that requires local governments to identify poor areas and to build up the electronic archives for each poor household with dynamic management to ensure an effective support to the poor (Li et al., 2016). The TPA has thus become a basic strategy for China's fight against poverty. Unlike the previous measures, the TPA strategy aims to eliminate the factors that cause poverty through targeted assistance for the poor (Wang, 2016). The new anti-poverty strategy targets every poor household and individual, which highlights the importance of accurate poverty identification, appropriate projects arrangement, accurate use of funds, accurate implementation of helping measures and sending the helping carders to poverty-stricken villages and households to ensure the accuracy of the effect of poverty alleviation (*LiuGe Jingzhun*) (Li et al., 2016). By the end of 2013, China has completed the registration of the poor population nationwide and identified 128,000 impoverished villages, 30 million poor families and 70 million people (Liu et al., 2016, 2017a). All poor households details about the families, available resources, income sources, and reasons of poverty have been registered in the national poverty alleviation information system.[6]

The specific measures of the TPA include ten projects and five measures. The ten projects include vocational education and training, helping cadres residency in impoverished villages, microfinance, ESPAR, e-commerce, tourism, photovoltaic power generation, papyrifera planting, entrepreneurship training of the rich leaders, and leading enterprises driving poverty alleviation.[7] Furthermore, the central government has taken five unconventional measures (*Wuge Yipi Cuoshi*) to push forward the TPA strategy. The five measures include: (a) Supporting the poor households who have the ability to work and possess productive skills to develop their industries and helping them solve employment difficulties; (b) Relocating 10 million of the poor in remote areas with harsh living condition to more hospitable villages or towns (also known as ex situ poverty alleviation relocation, ESPAR); (c) Implementing ecological compensation policies; (d) Strengthening education to prevent the intergenerational transmission of poverty; and (e) helping the physical disability and social groups with special difficulties out of poverty through the guarantee of social security (Wang, 2016). In addition, to strengthen community-level poverty alleviation capacity, China's governments at various levels have dispatched officials to 128,000 poverty-stricken villages serving as first secretary and poverty relief team leaders. The State Council Leading Group Office of Poverty Alleviation and Development, a public agency in charge of poverty alleviation, has delegated academic institutions and non-governmental organizations to carry out the independent annual third-party evaluation on the poverty reduction performance of local governments from 2016 to 2020 (Li, 2016).

2.3. Ex-situ poverty alleviation relocation

Over the past decades, millions of Chinese citizens have been relocated for a variety of reasons such as the Three Gorges Dam, the South-to-North water diversion project (Zhang, 2009) and eco-environmental restoration (Rogers and Wang, 2006). In an effort to eradicate stubborn poverty in the most remote and marginal areas of the country, the Chinese government turned to resettlement (Merkle, 2003; Xue et al., 2013; Lo et al., 2016). The mountainous and environmentally degraded areas are the poorest areas in China, which are characterized by marginality, inaccessibility, and fragility. The Chinese government considers resettlement as a tool to alleviate poverty and rehabilitate the environment (Chen et al., 2014). The ex-situ poverty alleviation relocation, as an important measure to implement the TPA strategy, aims to help the rural poor living in the regions with harsh conditions to relocate and shake off poverty on a voluntary basis. It is an effect measure to implement the TPA. Since 2001, the ESPAR project has been gradually carried out nationwide.[8] By the end of 2015, the Chinese central government has arranged 36.3 billion yuan RMB special funds for the ESPAR project and relocated 6.80 million rural poverty population (Xinhua, 2015). The National Development and Reform Commission (NDRC) has issued the 13th Five-Year Plan for the Ex Situ Poverty Alleviation Relocation (2016–2020) and planned to relocate about 10 million registered impoverished people to lift them out of poverty.[9] The government provides subsidies for the construction of housing and other basic production and living facilities for the relocated masses. The poor areas which needs to be relocated include the regions without development conditions, the prohibited or restricted developed zone provided by the national main functional area planning, and the region where the infrastructure and basic publish service facilities are weak which requires high construction and operating costs as well as the endemic and geological disasters prone areas (NDRC, 2016). The number of rural poor households for different reasons of poverty need to be relocated is shown in Fig. 3. The rural poverty population who are planned to relocation is mainly concentrated in the areas with backward public services and high built cost and with insufficient resources carrying capacity.

The rural poor population who are planned to be relocated was distributed in 1400 counties of China's 22 provinces, which is mainly concentrated in the central and western regions (Fig. 4). More than 70% of the rural poor population who are planned to be relocated is distributed in the CPAPDs and the state-designated poverty counties. The proportion of the rural poor population that needs to be relocated to the total poverty alleviation resettlements' population in the western, central and eastern regions is 67.7%, 30.2%, 2.1%, respectively.[10] The

(*footnote continued*)
rural registered population.

[6] http://cpadis.cpad.gov.cn/cpad/.

[7] http://news.xinhuanet.com/politics/2014-12/25/c_127333512.htm.

[8] http://www.gov.cn/xinwen/2016-09/23/content_5111052.htm.

[9] http://www.gov.cn/xinwen/2016-09/23/content_5111052.htm.

[10] The eastern region includes Liaoning, Beijing, Tianjin, Hebei, Shandong, Jiangsu,

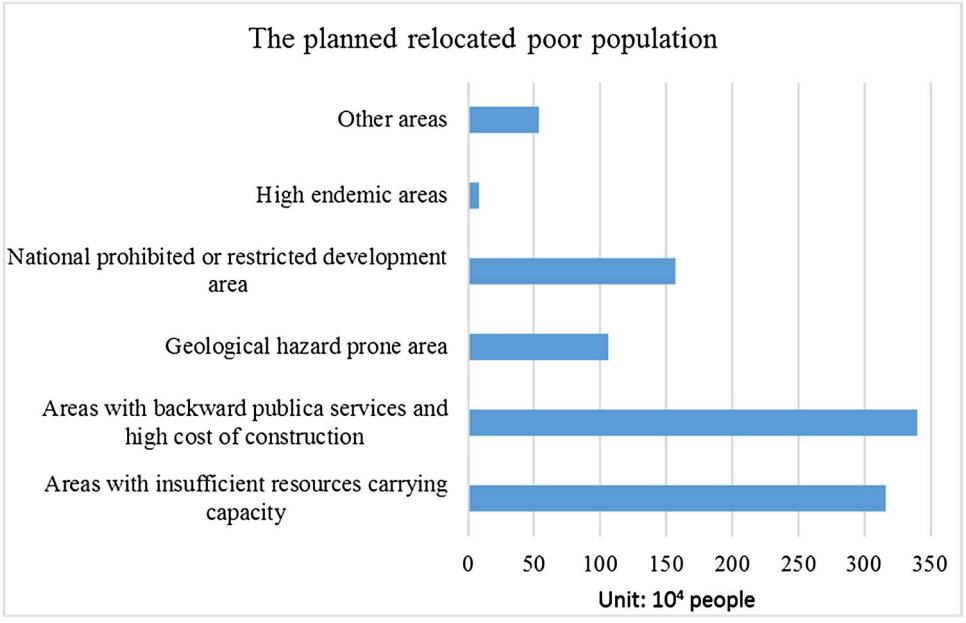

Fig. 3. The main causes of poverty for the rural poor population who are planned to be relocated during the period 2016–2020.
Sources: The 13th Five-Year Plan for the ESPAR (NDRC, 2016).

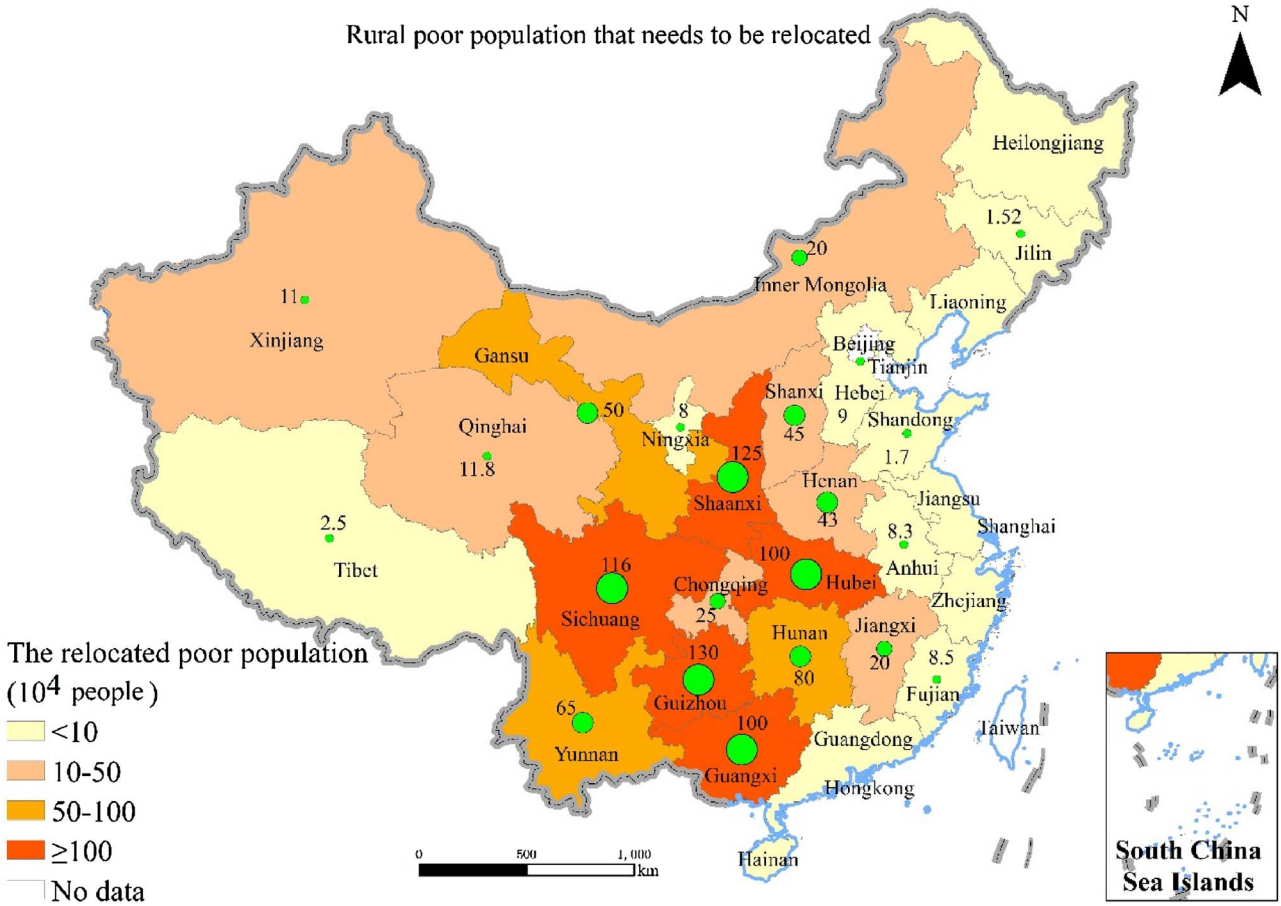

Fig. 4. The rural poor population who are planned to be relocated for each province between 2016 and 2020.
Sources: The 13th Five-Year Plan for the ESPAR (NDRC, 2016).

(*footnote continued*)
Shanghai, Zhejiang, Guangdong, Fujian and Hainan provinces; the central region includes Heilongjiang, Jilin, Shanxi, Henan, Anhui, Jiangxi, Hubei and Hunan provinces; and the western region includes Xinjiang, Gansu, Qinghai, Inner Mongolia, Ningxia, Shaanxi, Sichuan, Chongqing, Guizhou, Yunnan and Guangxi provinces (Zhou et al., 2015).

number of the rural poor population that needs to be relocated in Guizhou province is the highest, followed by Shaanxi, Sichuan, Hubei and Guangxi provinces. The number of the rural poor population in China that needs to be relocated in 2016, 2017, 2018, 2019, 2020 is

expected to be 2.49 million, 3.40 million, 2.80 million, 10 million and 1.2 million people, respectively (NDRC, 2016).

3. Land, funds and labor dilemma faced by implementation of the TPA

3.1. The land plight of industry development to help the poor

Development of industry is the most important way to achieve the TPA. The Chinese government plans to help 300 million rural poor households to shake off poverty through the development of industry (NDRC, 2016). However, in fact, the problem of land supply has become a major constraint for promoting industrial poverty alleviation smoothly. The traditional agriculture has innate weakness with the characteristics of high input, long cycle, high-risk and low returns. Driven by the comparative advantage of industry, a large number of rural young labor forces transferred to work in the large and medium-sized cities, which has resulted in rural population hollowing and aging as well as shortage of human capital (Liu et al., 2014a, 2014b; Chen et al., 2014; 2016; Lo et al., 2016; Long et al., 2016; Liu et al., 2017a). As the economy developed rapidly, a large number of rural laborers have left their homes to work in other cities. According to the National Bureau of Statistics data, the total number of rural-urban migrant workers increased 22.54 million in 2008–27.75 million in 2015 (NBS, 2015). With the rapid development of urbanization, the problem of rural hollowing in China has also become increasingly serious in recent decade (Liu et al., 2014a, 2014b; Li et al., 2015a, 2015b). Population aging is closely related to poverty incidence in rural China (Chen et al., 2016). Constrained by the nature of capital profit, rural financial capital investment is not enough. The double deficiency of human capital and financial capital certainly contributes to rural economic poverty (Yao and Long, 2016). Furthermore, migrant workers can increase their income and the transfer income of older people through rural-urban remittances (Wang and Deng, 2014). However, migration of young children to cities would increase the burden of the elderly. The left behind elderly are easily marginalized and fall into poverty. Therefore, rural-urban migration can contribute to rural aging and cause the problem of poverty in the elderly (Wang and Deng, 2014).

Rural tourism, sanatoria industry and deep processing of agricultural and sideline products will inevitably occupy certain construction land. Affected by long-term heavily city light township, the newly-added construction land is mainly arranged in the city when making the general land use planning, and little or no newly-added construction land is allocated for rural areas (Liu et al., 2014a, 2014b; Tang et al., 2015). Rural stock collective construction land is mostly homestead and its distribution scatters without contiguous collective construction land, and industrial development often requires continuous scale of construction land (Li et al., 2014; Long, 2014). Therefore, to some extent, the lack of rural construction land leads to the difficult of industrial projects to the ground.

3.2. The financial and land plight of ex-situ poverty alleviation relocation

The ESPAR is a complex livelihood project, which requires a lot of capital investment in resettlement housing, basic public services, supporting infrastructure, production and living facilities, and ecological rehabilitation of the relocated areas. Although China's special funds for poverty alleviation continue to increase in recent years, funding gap is always the core problem that plagues the TPA. Specifically, the special help-the-poor funds from Chinese central and local governments has increased from 12.75 billion yuan RMB ($1.83 billion) used in 2001–107 billion yuan RMB ($15.38 billion) in 2016, with an average annual increase of 12.22% (Fig. 5). However, the per capita special funds for poverty reduction is not enough because China still has a large number of rural poor population. The country was expected to lift the annual population of 10 million out of poverty since 2016, but the fund per capita is approximately 6700 yuan RMB (CPAD, 2016).

The question how to address the old residential areas or homestead and cultivated land of the relocated farmers is also a thorny issue faced by implementing the ESPAR. Usually, the ESPAR can be divided to two spatial forms: long-distance resettlement, which relocates people to cities or towns, and short-distance settlement, which resettles people to a nearby village (Lo et al., 2016). No matter what kind of relocation, it will involve in the re-use of the old homestead or residential areas and expands the farming radius of the poor households, which further increases the risk of farmland abandonment (Xie and Jiang, 2016; Qian et al., 2016; Lo et al., 2016).

For the abandoned land, the transfer of land management rights will help to improve the efficiency of land, thus ensure the country's food security. Land transfer needs the support of enterprises and funds. As for the old homestead, land consolidation and reclamation is required to make it reusable. Constructing the newly concentrated residential areas for the relocated poor households inevitably occupies the construction land. This involves in land compensation, the readjustments of land property rights and the issues related to infrastructure and public services. In accordance with the overall requirements of "affordable relocation, stable development and possibility for becoming rich", the country needs to be supported by post-relocation industry and land skilling training to ensure that lefts steadily the relocated households out of poverty (NDRC, 2016). In addition, development of distinctive industries in the relocated areas also inevitably involves in land security issues.

3.3. Population dilemma in implementing the TPA strategy

Currently, China's rural population is confronting to four crises: aging, disability, hollowing and declining birthrate (Mu, 2015). The rural exodus and population aging in China are an additional issue in poverty-stricken areas (Liu et al., 2011). The poverty headcount ratio of the elderly in rural China is three times more than that in the urban area (Cai et al., 2012). Strong son preference and discrimination against females have contributed to sex-selective abortions and excess female infant. Gender imbalance has exacerbated the male marriage squeeze in China, resulting in an increase in the lifelong never-married population (Ebenstein and Sharygin, 2009; Jiang et al., 2011). The "five-guarantees" households (i.e., the aged, the infirm, old widows and widowers, and orphans) and the singles is a very common phenomenon in rural poor areas of China (Jiang et al., 2011). What's more, there are about 10 million people to poverty because of chronic or serious illness (Liu, 2016). Undoubtedly, population aging and the exodus from rural China will lead to insufficient internal impetus driving rural economic growth, bringing new challenges to the country's poverty reduction (Liu et al., 2017a, 2017b).

4. Land policy and institutional innovations boosting the TPA in China

Land reform or policy innovation can contribute to injecting new vitality for effectively promoting the TPA strategy (Zhen et al., 2014; Zhang et al., 2015; Yao and Long, 2016). In recent years, China has made a beneficial attempt to promote the TPA though the innovation of land system (Yao and Long, 2016). The country has formulated and implemented a series of official documents and plans to boost the poverty alleviation and development. Meanwhile, land use policy for poverty alleviation have been further innovated (Liu et al., 2017b). For example, the Chinese government has adjusted its overall land use planning and taken a holistic approach to planning the scale, structure and distribution of land used for construction and gave a high priority to the need for construction land in poor areas. More flexible land policies toward the administration of land resources have been also adopted in the poverty-stricken areas. The quotas on the newly-added construction land, the increasing vs. decreasing balance of urban-rural

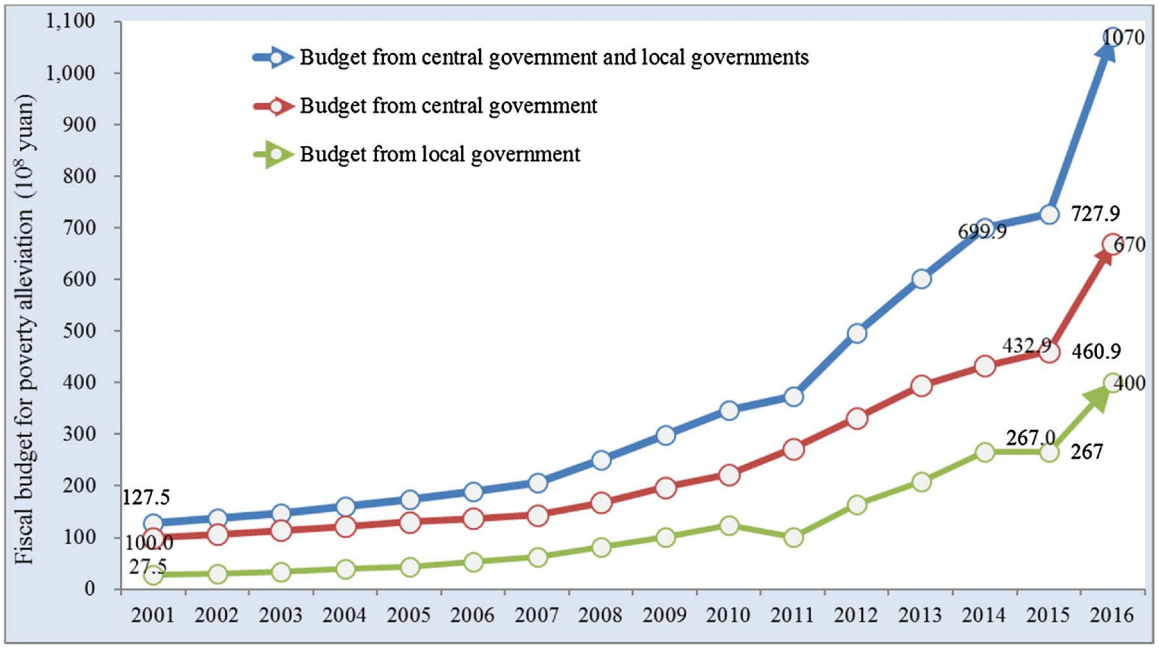

Fig. 5. Special fiscal budgets for poverty alleviation in China between 2001 and 2016 (CPAD, 2016).

construction land and the mining wasteland reclamation are required to title to the poverty-stricken areas for supporting poverty alleviation. The land consolidation and the construction of high standard farmland in the impoverished areas is also strongly supported. In addition, the country has planned to increase the annual quota of construction land of 600 mu (40 ha) for each state-designated poverty-stricken county every year since 2016.[11] More importantly, the Chinese government has allowed valid surplus quota of construction land to circulate within each province for the first time. The surplus quotas on construction land can be used for the development of real estate and agritourism, which helps to increase the collective economy in poor areas.

Accessibility to markets and land policy are especially important for decreasing poverty (Guedes et al., 2014). Rural land tenure system reform could provide the guarantee and driving forces for the advancement of the TPA strategy. To activate the land transfer mechanism, optimize land resource allocation and advance rural economy, the Chinese government has implemented the system of "The Separation of Three Rights of Land (STRL)", which is seen as the core of the new rural land tenure system reform. The three rights include ownership right, contract right and management right of land. The new land system needs to recognize collectives' ownership right, protect farmers' contract right and accommodate land management right (Fig. 6). The main innovation of the STRL lies in allowing farmers to transfer their contracted land. In addition, the Chinese central government also proposed to establish the asset income support system (AISS) for the rural poor residents, particularly for those peasants who cannot work without labor. The key aim of this AISS was to turn the finely dispersed resources (i.e., the idle or abandoned land) into assets and integrated it into the dominant industry platform to fully tap the potential of various resources. On the premise of keeping the unchanged of the collective land ownership, not crossing the red line of farmland and prejudice to the interests of farmers, the local governments can guide farmers to share their land contract management right to the enterprises, cooperatives and family farms. These farmers could get the dividends or capital gains from this circulation.

Land policy innovation could play a crucial role in poverty alleviation in China. The policy of "requisition-compensation balance of arable land" was originally proposed in the 1990s, which requires that units which occupy arable land for non-agricultural use should reclaim same quantity and quality of arable land (Liu et al., 2014a, 2014b). The 'increasing vs. decreasing balance' land-use policy requires equilibrium in the supply of land by balancing increases in urban construction land with decreases in rural construction land in China (Long et al., 2012).

More specially, the Chinese government has planned to relocate about 10 million rural poor residents thought the ESPAR during the period 2016–2020. The former rural construction land could consequently be reused for construction land, woodland and farmland by land engineering (including land reclamation, consolidation and remediation) (Fig. 7). The newly-build concentrated residential areas for the relocated residents needs to occupy a certain area of arable land. Usually, the quantity of newly-added construction land obtained from the old homestead by land consolidation is greater than the arable areas occupied by newly-built residential areas for the relocated poor households. According to the land policy of the increasing vs. decreasing balance of urban-rural construction land and the requisition-compensation balance of cultivated land, there would produce surplus construction land quota after the ESPAR because centralized resettlement is usually adopted for the relocated farmers. Currently, the surplus construction land quota in the impoverished areas can be allowed to transfer within each province that it was originally not allowed to trans-regional circulate. These circulation land can be used to support the development of poverty alleviation industries, such as photovoltaic power generation, agritourism and planting and breeding industry. Furthermore, the relocated farmers' cultivated land could also be used as an asset to circulate for local industry and they could also work nearby in the enterprise, thus increasing property and wage income of poor households. The consolidated land could also be used to develop modern agriculture. In addition, China also allows farmers to mortgage their land management rights and could get finical supports from bank, so they could also develop and manage own business. It can be seen that land policy innovation provides land and financial support for the poor households as well as solves the problem of rural labor employment, which can help to promote the ESPAR.

[11] http://china.huanqiu.com/hot/2016-05/8933045.html.

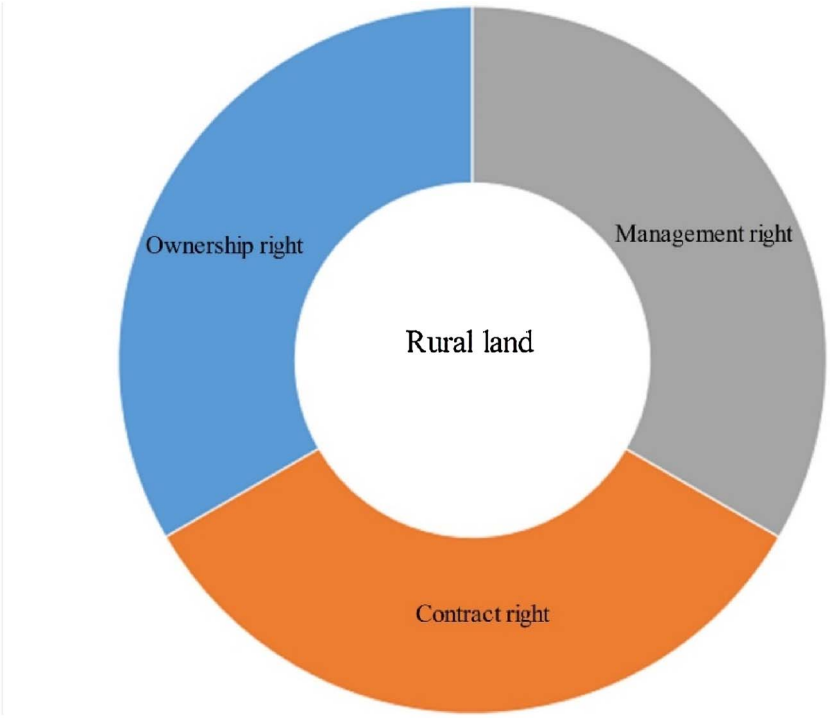

Fig. 6. Separation of Three rights of land in China.

5. Case study of Songjiagou village, Hebei Province

5.1. General background of the Songjiagou village

Fuping county (N38°9′ ~ 39°7′, E113°45′ ~ 114°31′) is located in western Hebei province. It is a typical mountainous county and state-designated impoverished county. The land area of Fuping county is 250,580 ha, with unused land of 171,520 ha. Among the unused land, slope of 34,840 ha of the land is less than 25°. Songjiagou village is located in the south of Fuping county, Hebei province and is approximately 20 km away from the county (Fig. 8). Songjiagou includes seven unincorporated villages and has 207 households with 710 people by 2016. The acreage on woodland, irrigated land, dry land, and paddy field in the village is 71.46 ha, 43.27 ha, 2.72 ha and 6.15 ha, respectively. The rural residential land area is approximately 13.6 ha. In addition, the village has idle wild grassland of 419.74 ha and wild woodland of 11.05 ha. The main grain crops in this village are corn, with less than 300 kg per mu (1 mu equals to 0.067 ha). Like other poor areas, the main dilemma facing by Songjiagou village's development is the shortage of capital, land and technology. In 2015, the per capita net income of the peasants was approximately 1877 yuan RMB, and the main source of income is the breeding industry and migrant workers. Currently, there are about 380 rural poor population living on less than the national poverty line.

5.2. Land consolidation project of the Songjiagou village

Respond to the call of national policy, in 2015, Fuping county introduced a land consolidation company to revitalize the idle land resources of the Songjiagou village. A land consolidation project in the village was carried out to reclaim the idle and barren hills and uncultivated land into farmland by land consolidation engineering (Fig. 9). The total investment of the project is 81.30 million yuan RMB. It is expected to increase additional arable land of 247.32 ha and improve the irrigation area of 178.68 ha. The newly added arable is planned to develop forest fruit industry and create a modern agricultural demonstration zone. These newly-added cultivated land will be unified operated and managed by the enterprise.

5.3. Benefit analysis of land consolidation project

Songjiagou villagers will mainly benefit from three ways in this project. First, farmers can get income from the transfer of land management rights in the process of land consolidation. Under the current land use policy system of the "Three Rights Separation", the right to operate the barren hills and woodland of some farmers is used for circulation and they can get the rent from the circulation. The land consolidation project involves in land management rights of 182 households, of which 95 households are the poor households and their family per capita net income is lower than the national poverty line.

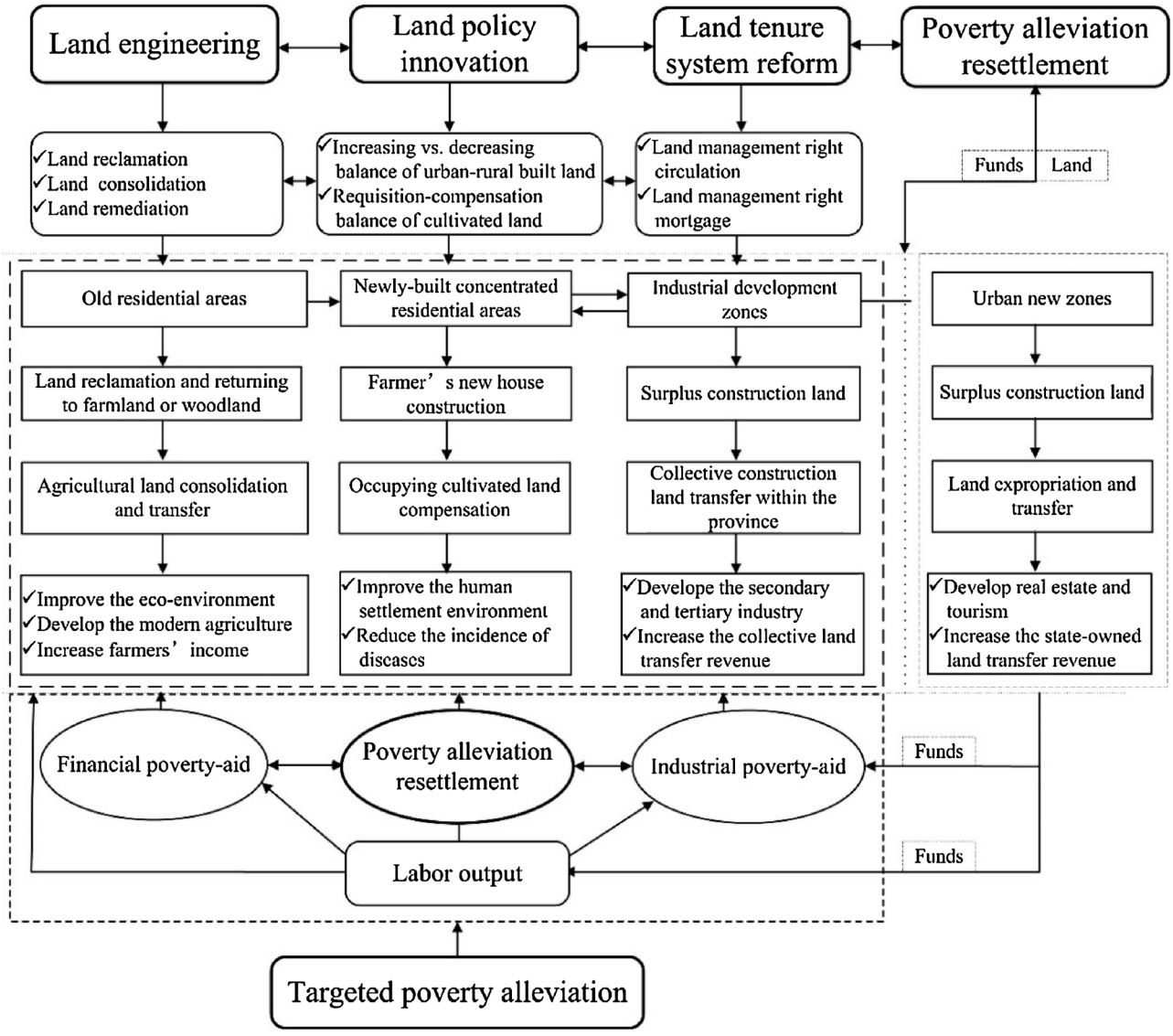

Fig. 7. Land policy innovation promotes TPA in China.

The total village has circulated the forest land of more than 1400 acres and the barren land of 4000 acres. Land transfer fee per acre is about 800 yuan RMB. Second, farmers can get income from participating in land remediation and follow-up operation and management of forestry and fruit farming. The construction period of land consolidation project was 6 months and part of the villagers with labor force participated in the project. The wage income is about 80 yuan RMB for every female worker and 120 yuan RMB for every male worker a day. Third, farmers can share the land into enterprises for managing forest fruit industry and, after 5 years, dividends from it by 50% of enterprises' profit. According to a preliminary calculation, the enterprises will pay 13.4 million yuan RMB to the villagers every year and each villager would share 15,000 yuan RMB after 5 years. These would provide a basic guarantee for the sustainable and stable increase in farmers' income, and also create favorable conditions for helping the poor to get rid of poverty. In addition, cultivated land of Fuping county will increase about 247 ha from this project.

According to the land policy of the increasing vs. decreasing balance of urban-rural construction land and the requisition-compensation balance of cultivated land in China, there will get more than 200 ha of construction land quota only from the Songjiagou village that can be used for the transfer and trade within the province. This not only invigorates the idle land resources, but also increased the government's fiscal revenue. Fuping county makes full use of national policy and combines the land policy innovation with the TPA, which effectively solves the problem of insufficient funds and poor land quality bottleneck in poverty-stricken mountain areas. The county implemented a comprehensive development model of mountainous area that combines the government co-ordination, village-level organizations promotion, farmers' participation as a shareholder with enterprise development and management. Fuping county will serve as a national model for promoting the TPA by implementing land consolidation.

6. Conclusions and policy implications

The impoverished areas are still the short boards in China's ambition of building an all-round well-off society until 2020 and have become a problem for economic development and social cognitive level. Since 2013, China has implemented the TPA strategy to ensure that the remaining rural poor will move out of poverty by 2020. This study explores the mechanism on how land policy innovations promote the TPA. We argue that the implementation of the current TPA is facing the dilemma in land, capital and labor export. The combination of land tenure reforms and land policy innovations with land engineering could contribute to promoting the industry, financial and institutional poverty alleviation, which thus increases farmers' assets and wage

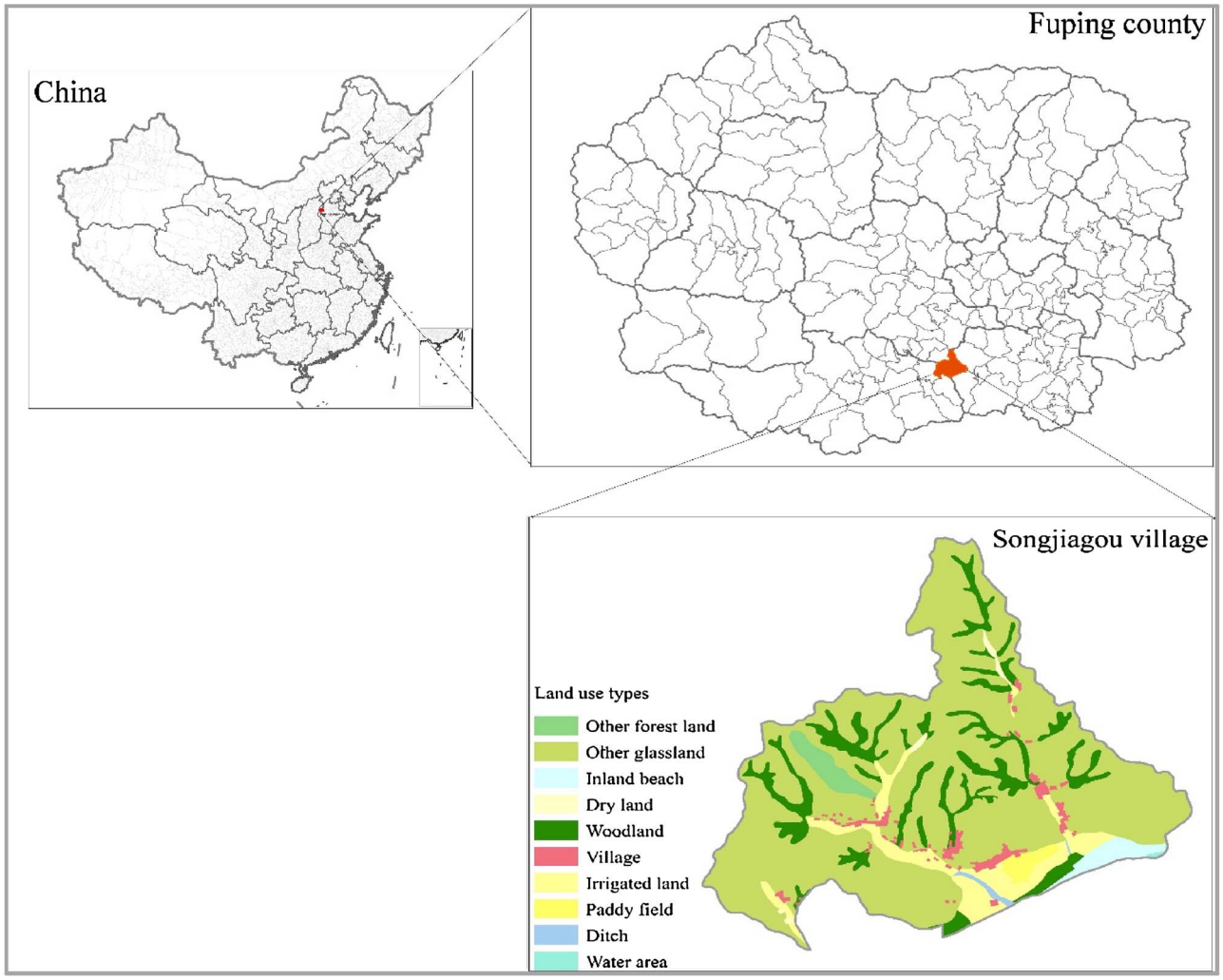

Fig. 8. The Location of Songjiagou village in Fuping county, Hebei Province.

income and lefts them out of poverty.

With the support of the increasing vs. decreasing balance policy and land engineering, the ESPAR could provide land and financial support for effectively promoting the TPA. The STRL and the permission of the cross-regional circulation of construction land quota within province in the impoverished areas can help to make an inventory of land resources and promote the transformation of resources to capital and assets, thus increasing the farmers' property income. Furthermore, the establishment of the AISS could provide institutional guarantee for the farmer's asset income. Besides these, there is still some room for further boosting the TPA through land use policy innovations. First, China should not limit the trading range of construction land quota that obtains from the increasing vs. decreasing balance of urban-rural construction land policy, and allow it to interprovincial deal throughout the country to maximize the differential profit of land. Second, the country also has to break the local separatist regime and establish a unified rural property rights trading market or platform to protect the legitimate assets income of farmers. Third, land consolidation and land management right circulation should be combined to revitalize the rural land resources. Land consolidation usually requires a lot of labor force and provides employment opportunities for poor households, which effectively prevents from rural labor force migration and reduces the cost of migrant workers as well as increases their income. To ensure food security, China should vigorously enlarge high standard farmland construction in poor areas using land consolidation as platform, and develop modern agriculture though rural land transfer and appropriate-scale management. Meanwhile, the poor areas have huge second-mover advantage in ecological environment, geographic space, mineral, agricultural, water and tourism resources. These resources and conditions have not been fully excavated due to the limitations of location and traffic conditions and policy constraints. These advantages will be brought into play with the advance in science and technology, improvement of traffic conditions and institutional reform. The local governments should make full use of the second-mover advantages and innovative the public-private-partnerships model of land consolidation and introduce the leading enterprises into the poor areas. In addition, industry poverty alleviation is an important measure of hematopoietic anti-poverty, which can help to provide employment of poor households and increase their income. It is necessary to use the industrial development as a supporting facility for implementing the increasing vs. decreasing balance program and promote the organic integration of the primary, secondary and tertiary industries.

Poverty resettlement is a complex process. Not only has the programme lifted the poor above the poverty line, it has delivered improvements in housing conditions, infrastructure, and amenities (Lo et al., 2016). The ESPAR through land policy innovations and land engineering contributes to the increase in farmer's income and improvement of regional ecological environment. However, what we should clearly realize is that poverty alleviation resettlement may create tension and conflicts between migrants and host communities, as well as environmental damage such as forest degradation, regional water shortages, and ecological problems, especially in the arid grass-

Fig. 9. Land consolidation project of the Songjiagou village. Note: Photo taken by Yingen Hu.

land area of China (Lemenih et al., 2014; Fan et al., 2015). Furthermore, the ESPAR also leads to some negative effects such as landlessness, homelessness, joblessness, increased morbidity, food insecurity, loss of access to common property and social disarticulation. Land consolidation of the emigration region may exert wide and profound influences to regional natural ecosystems and human socioeconomic systems, it may also bring ecological risks while improving the eco-environment (Yu et al., 2010). Many pitfalls should be avoided and many lessons should be learned to ensure that the resettles can truly benefit from this relocation. A successful poverty alleviation resettlement programme depends on adequate processes during the pre-resettlement, resettlement, and post-resettlement phases (Lo et al., 2016).

Furthermore, institutional poverty is one type of poverty (Zhou,

2006; Bowles et al., 2006). Insufficient innovation in rural institutional and institutional backwardness is embedded in the rural land-use system, household registration system and rural grassroots administrative management system. Lagging social security and deprivation of social rights restrict opportunity, which in turn affects the poor's ability to improve their income and quality of life, ultimately leading to poverty (Yan, 2015). With regard to this type of poverty, China must quickly and effectively break the institutional barriers in existing unreasonable systems. In general, China's poverty alleviation model promoted by land policy innovations can provide beneficial references for other poor countries as they design their own strategies.

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