



Targeted poverty alleviation and its practices in rural China: A case study of Fuping county, Hebei Province

Yuanzhi Guo^{a,b}, Yang Zhou^{a,b}, Yansui Liu^{a,b,*}

^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 University of Chinese Academy of Sciences, Beijing, 100049, China

ARTICLE INFO

Keywords:

Targeted poverty alleviation
Rural development
Rural revitalization
Fuping county
China

ABSTRACT

After nearly seventy years of poverty alleviation, China has basically solved the problem of providing food and clothing to the rural poor. However, the islanding effect of the distribution of the poor and the marginal diminishing effect of the antipoverty resources, which restrict the effects of poverty-eliminating strategies, are increasingly obvious. In this context, targeted poverty alleviation is designed by the Chinese central government. Therefore, it is necessary to systematically analyse targeted poverty alleviation and explore the mechanism of its practices. In addition to reviewing the process of antipoverty in rural China, this study investigated the connotation of targeted poverty alleviation and considered the case of Fuping in Hebei Province to explore targeted antipoverty practices. Results showed that poverty alleviation in rural China could be divided into six stages, and the essence of targeted poverty alleviation lied in helping those who truly needed help and achieving genuine outcomes by accurately identifying and assisting poverty-stricken households, accurately managing objects and measures and accurately assessing antipoverty effectiveness. The practices of targeted poverty alleviation in Fuping county mainly involved industrial development, resettlement assistance, financial and educational development, together with medical security and land consolidation, all of which built an endogenous and sustainable mechanism enabling regional development. This study suggests that targeted poverty alleviation is an innovative strategy which is suitable for overcoming the islanding effect of poverty distribution and helping policymakers formulate detailed and targeted measures to eliminate poverty.

1. Introduction

Poverty has long been a global problem (Haushofer and Fehr, 2014; Liu et al., 2017), and eradicating poverty has become one of the severest challenges faced by developing countries in achieving sustainable development (UN, 2015b). According to the Millennium Development Goals Report 2015, despite significant progress in global poverty reduction, over 836.0 million people continued to live in extreme poverty in 2015, lacking access to adequate food, clean drinking water and sanitation (UN, 2015a). Poverty used to be considered as an economic phenomenon and referred to conditions under which individuals or households could not afford basic living necessities (Hagenaars and van Praag, 1985; Liu et al., 2017). From a comprehensive perspective, poverty not only refers to the scarcity of material, social and cultural resources, but also involves the lack of capabilities, opportunities and

access to social services (Sen, 1976; Alkire and Foster, 2011; Guo et al., 2018). Scholars have developed a series of methods for measuring poverty, including the income-consumption standard (Ravallion et al., 1991), human development index (HDI) (UNDP, 2010) and multidimensional poverty index (MPI) (Alkire, 2011; Alkire and Foster, 2011). MPI, in particular, has been widely used to reveal poverty in different regions (Ayala et al., 2011) and countries (Alkire et al., 2014). These understandings and methods have guided the formulation of public policies in poor areas to reduce poverty and prevent deprivation.

China is the largest developing country in the world and once had the largest rural poverty-stricken population (Liu et al., 2017, 2018), which has hampered its social and economic development. Poverty thus has attracted widespread attention from scholars in such disciplines as sociology, geography, economics and development studies. These studies mainly focus on the delimitation of poverty lines (Tong and Lin, 1994;

* Corresponding author. Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, 11A Datun Road, Chaoyang District, Beijing, 100101, China.

E-mail addresses: guoyz.16b@igsrr.ac.cn (Y. Guo), liuys@igsrr.ac.cn (Y. Liu).

<https://doi.org/10.1016/j.jrurstud.2019.01.007>

Received 4 March 2018; Received in revised form 8 January 2019; Accepted 13 January 2019

Available online 20 February 2019

0743-0167/© 2022 Elsevier Ltd. All rights reserved.

Liu, 2003; Zhang and Zhang, 2010), types of poverty (Liu and Xu, 2016; Wang and Wang, 2016; Chen et al., 2017; Wang and Chen, 2017), regional differences of poverty (Yao et al., 2004; Ravallion and Chen, 2007a; Liu and Xu, 2016), the mechanism of poverty (Jalan and Ravallion, 2002; Fan and Chan-Kang, 2008; Glauben et al., 2012; Chen et al., 2016), antipoverty strategies (Rozelle et al., 1998; Park et al., 2002; Ravallion and Chen, 2007a; Ravallion, 2009; Glauben et al., 2012; Zhou et al., 2018a), multidimensional measurements of poverty and the mapping of poverty (Olivia et al., 2011; Qi and Wu, 2014; Yu, 2013; Liu and Xu, 2016; Wang and Chen, 2017), antipoverty effect of economic development (Rozelle et al., 1998; Yao, 2000; Meng et al., 2005; Zhang and Wan, 2006; Montalvo and Ravallion, 2010), and international comparisons (Luong and Unger, 1998; Ravallion, 2009, 2011).

Since the founding of the People's Republic of China (PRC) in 1949, the country has made great efforts to tackle the problems of poverty, and successfully explored Chinese methods of poverty alleviation and development (Du, 2012; Guo et al., 2018). These endeavours have greatly alleviated poverty in rural China. From 1978 to 2012, the cumulative number of people overcoming poverty in rural China exceeded 700.0 million (UN, 2015a; Liu et al., 2017; NBS, 2017), enabling China to become the first country in the world which successfully achieved the goal of halving the population living in extreme poverty (Guo et al., 2018; Zhou et al., 2018a). However, the long-standing urban-rural dualistic structure, together with the natural and social factors that restrict rural development (Liu et al., 2017; Guo et al., 2018), left a total of 43.4 million still living in poverty at the end of 2016 (NBS, 2017). Most of them lived in densely mountainous, highly arid, ecologically vulnerable, disaster-prone and habitat conservation areas, which were mainly old revolutionary bases or places where minorities clustered (Wang and Wang, 2015; Liu et al., 2017). In this context, the islanding effect of the distribution of the impoverished population and marginal diminishing effect of antipoverty resources pose great challenges to poverty alleviation and development in China (Liu et al., 2016; Liu and Cao, 2017), which cannot be effectively solved by existing strategies.

To overcome poverty and achieve the Well-off Society by 2020 as scheduled¹, the Chinese government implemented targeted poverty alleviation (TPA) in 2013. As the main strategy for poverty alleviation in China currently and in the near future, TPA changes the targeting of antipoverty from regional and county levels to village and household scales (Wang et al., 2007; Li et al., 2015; Guo et al., 2018; Liu et al., 2018), introducing targeted measures that have greatly improve the power of antipoverty resources. However, the way how these measures work and their specific effects are little known. It is necessary to systematically analyse the TPA and explore the mechanisms underlying targeted antipoverty practices. This study investigates the connotations of TPA after reviewing the history of poverty alleviation in rural China and takes the old revolutionary base of Fuping, a poverty-stricken mountain county in Hebei province, as a case to investigate how poverty was alleviated via localization approaches under the framework of TPA. The findings of this study could provide valuable implications for the local planning and implementation of TPA in China, thereby contributing to global poverty alleviation and development.

2. Poverty alleviation in rural China

When the PRC was founded, the country was in a situation of universal poverty, and the central government adopted relief-type poverty alleviation to meet the needs of the poor (Guo et al., 2018; Liu et al., 2018). Subsequently, the practices of poverty alleviation in rural China can be summarized as structural reform-promoted poverty relief,

¹ The Well-off Society refers to a medium-term CPC national plan proposed by Deng Xiaoping during the late 1970s and early 1980s. In 2015, Xi Jinping further proposed the goal of eradicating poverty and building a moderately prosperous society in all respects by the year 2020.

development-oriented poverty relief drive, tackling key problems in poverty relief, as well as consolidation-oriented comprehensive poverty alleviation and targeted poverty alleviation (SCIO, 2001; Liu et al., 2018; Zhou et al., 2018b). As a result of these efforts, the poor population in rural China decreased from 250.0 million in 1978 to 43.4 million in 2016 (NBS, 2017) (Fig. 1), accounting for more than 70.0% of all those who had overcome poverty around the world (UN, 2015a).

2.1. Relief-type poverty relief (1949–1977)

The founding of the PRC ended the prolonged state of war and created fundamental conditions for development to improve people's livelihood. At that time, due to the long war and exploitation, most people in rural China lived in extreme poverty. The initial key was to let farmers own their land to develop production and reverse this situation through land reform in 1950 (Dixon, 1982). Subsequently, although the Great Leap Forward and Cultural Revolution introduced great challenges, caused damages to rural development, and impeded the progress of poverty alleviation, the productivity of agriculture and the living standard of rural residents still improved somewhat through constant adjustments (Dixon, 1982). During this stage, because of the ubiquitous poverty and the limited antipoverty resources, the primary objective of poverty alleviation was to ensure basic survival of the farmers (Piazza and Liang, 1998). The main antipoverty measures were low-level social assistance together with mutual aid and cooperation since the country paid more attention to the class struggle. Statistics showed that the per capita net income of rural households was only 134.0 yuan in 1978 and the number of people living in extreme poverty was 250.0 million, accounting for 30.7% of the total population in rural China (NBS, 2017).

2.2. Structural reform promoted poverty relief (1978–1985)

The irrational institutional arrangements restricted poverty alleviation in the countryside. In this context, the household responsibility system (HRS) originated in rural areas opened the curtain of China's internal reform (Qu et al., 1995). This system gave farmers the contractual rights of land, transforming them from simple workers to producers and operators in collective economy (Lin, 1992; Lin et al., 1998). Meanwhile, the establishment of a fair and market-oriented agricultural trading system greatly stimulated farmers' enthusiasm for production. In addition, the government encouraged farmers to engage in non-agricultural industries and introduced policies to develop township-village enterprises (Ho, 1995), diverting the surplus rural labour force to non-agricultural industries. The central government encouraged governments at all levels to focus on poverty problems in old revolutionary base, minority autonomous, land border and less-developed areas and carried out a planned poverty alleviation programme in Xihaigu of Ningxia Province and Dingxi and Hexi of Gansu Province. During this period, poverty alleviation was seen as a major responsibility of governments (Yang and Wu, 2016). As a result, the problems of providing adequate food and clothing to most rural households had been basically solved, and the poor population decreased from 250.0 million in 1978 to 125.0 million in 1985, with the incidence of poverty dropping from 30.7% to 14.8% (NBS, 2017).

2.3. Development-oriented poverty relief drive (1986–1993)

China's institutional reform had significantly relieved the poverty in rural areas (World Bank, 2009; SCIO, 2016). In addition to the role played by institutional reforms, location factors in regional development became increasingly prominent. Thus, areas with obvious disadvantages in location, especially the rural areas in central and western China, were slow in reducing the poor and remained 'isolated island-type poverty areas' (Liu et al., 2017). To overcome this situation and promote the development of poor areas around the country, a new institution, the State Council Leading Group of Economic Development in Impoverished

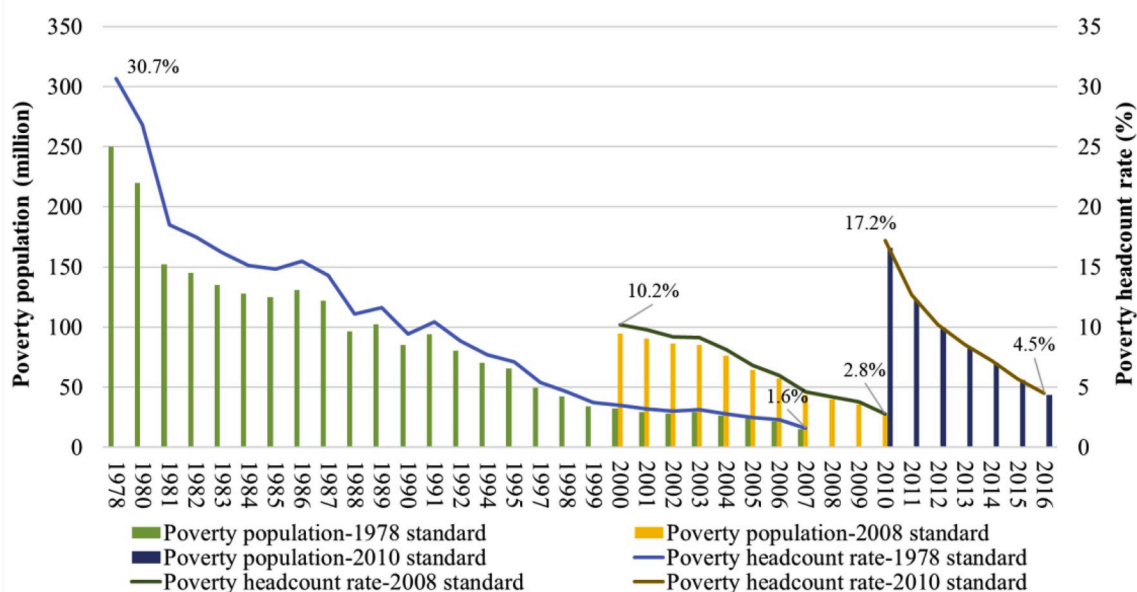


Fig. 1. Changes of the poverty-stricken population in rural China from 1978 to 2016 (Source: NBS, 2017). Notes: a) 1978 Standard is considered the rural poverty standard from 1978 to 1999 and the rural absolute poverty standard from 2000 to 2007; b) 2008 Standard is considered the rural low-income standard from 2000 to 2007 and the rural poverty standard from 2008 to 2010; c) 2010 Standard is considered the current rural poverty standard, which is 2300 yuan (in 2010 constant prices) per person per year.

Areas (renamed the State Council Leading Group Office of Poverty Alleviation and Development in 1993), was established (Yang and Wu, 2016; Liu et al., 2018). Led by this institution, 331 state-designated poor counties (SDPCs) were identified as antipoverty targets, and poverty alleviation and development were included in the seventh and eighth Five-Year Plan. At the same time, growing social forces, such as enterprises and NGOs, joined in the fight against poverty. Due to these efforts, infrastructure and industry developed rapidly, improving the self-development abilities of depressed areas (Démurger, 2001). According to NBS, the poverty-stricken population in rural China dropped from 125.0 million in 1985 to 80.0 million in 1993, with an average annual reduction of 5.6 million (NBS, 2017).

2.4. Tackling key problems in poverty relief (1994–2000)

With the development-oriented poverty relief drive, China had achieved great progress in reducing impoverishment. However, the poor were increasingly concentrated in old revolutionary base, minority autonomous, land border and less-developed areas, where the population was deprived, the infrastructure was poor, and the natural conditions were adverse (Liu et al., 2017). Marked by the Seven-Year Priority Poverty Alleviation Program (known as the 8–7 Plan), a programme aiming to lift 80.0 million rural residents out of absolute poverty from 1994 to 2000, the development-oriented poverty relief in rural China entered a crucial phase in tackling the key problems (Luo and Guo, 2013; Meng, 2013). In 1994, the number of SDPC was increased to 594, and they became the main battlefields of poverty alleviation. Meanwhile, antipoverty measures in central and western China were incorporated into the national economic and social development plan. During this period, more attention was paid to building a participatory poverty alleviation system that encouraged the poor to join in the decision-making. These measures greatly improved the endogenous development momentum of the poor areas, such that the total who had not solved the problem of food and clothing decreased to 32.0 million, and the headcount ratio dropped to 3.5% (NBS, 2017).

2.5. Consolidation-oriented comprehensive poverty alleviation (2001–2012)

Entering the 21st century, poverty alleviation in rural China faced new challenges and opportunities (Du and Cai, 2005). To further eradicate poverty, the Outline for Development-Oriented Poverty Alleviation in Rural China was issued (Yang and Wu, 2016). 148 thousand poor villages, covering 80% of the total poor population, were identified as objects of the antipoverty policies (Wang et al., 2007). Their spatial distribution was characterized as dispersion at the national level and agglomeration at the local level (Liu et al., 2016). Several adjustments were also made in assessing the priorities and targets of poverty alleviation to allow the low-income population to be well included in antipoverty policies. Moreover, the agricultural tax was abolished in 2006, and the rural minimum living standard guarantee system (RMLSGS) was established in 2007, both of which played important roles in poverty reduction. In addition, the new rural cooperative medical scheme (NRCMS) and new rural social pension insurance (NRSPI) were launched to improve arrangements for the poor. Overall, Entire Village Advancement, which took poor villages as the targets of antipoverty, was the main practice of antipoverty during this stage, and a development-oriented antipoverty mechanism was formed in rural China through the collaboration among governments, markets and society and the combination of poverty alleviation and socioeconomic development (Liu et al., 2017). According to the 2010 standard, the poor population in rural China decreased from 462.2 million in 2000 to 99.0 million in 2012, and the incidence of poverty decreased from 49.8% to 10.2% (NBS, 2017).

2.6. Targeted poverty alleviation (since 2013)

Progresses in industrialization, urbanization and rural reforms significantly promoted rural development and laid a solid foundation for poverty alleviation (Liu et al., 2017). However, the deep-rooted restrictions hindering economic and social development in poor areas still

remained, and some remote areas where poverty alleviation was successful were in danger of returning to poverty. In the broader context of economic development, China had entered a stage of New Normal², as designated by Xi Jinping (Hu, 2015). The traditional antipoverty measures faced unprecedented challenges (Liu et al., 2016, 2017). In this context, China initiated the strategy of TPA in 2013, which was important for innovating the mechanism of poverty alleviation and development. Furthermore, in the Fifth Plenary Session of the 18th CPC Central Committee, which was held in 2015, the CPC planned that all poor residents living below the current poverty line should be lifted out of poverty, thus eliminating it in all poor counties and regions by 2020. TPA was carried out as a grasper for eliminating poverty. Following the implementation of the TPA, the total rural population no longer in poverty had reached 39.1 million by the end of 2016, and the headcount ratio decreased to 4.5% (NBS, 2017).

3. Connotation of targeted poverty alleviation

After nearly 40 years of economic reform and opening-up, development in China enters a period of transition (Long et al., 2010; Long and Liu, 2016; Liu and Li, 2017). The traditional modes of poverty alleviation and development cannot wholly eradicate poverty because of the islanding effect of the distribution of the poor and the marginal diminishing effect of antipoverty resources. Hence, TPA is proposed and the central government formulates a detailed top-level design to promote policy implementation. The TPA has become the guiding ideology of China's poverty alleviation and development in the current and near future period.

TPA is a concept related to extensive poverty alleviation. It suggests that local governments should concentrate antipoverty resources to improve efficiency and implement targeted measures to ensure that assistance accurately reaches poverty-stricken villages and households; thus, its essence is to help those who truly need it and deliver genuine outcomes (Wang and Guo, 2015; Wang et al., 2016). Regarding its contents, TPA emphasizes accuracy in identification, assistance, management and assessment. Specifically, accurate identification is the premise of TPA, referring to the identification of poor households and individuals through the procedures of application, appraisal, publicity, etc., followed by the establishment of archives of the poor to determine the causes of poverty and their demands. Accurate assistance, which is key to TPA, aims at taking countermeasures for the poor in relation to the causes of poverty. Accurate management is the guarantee for the implementation of TPA and is designated to improve the efficiency of poverty alleviation resources via targeted and dynamic management of projects, capital, measures and persons in charge. Accurate assessment is important for strengthening the effectiveness of policies through quantitative assessments of antipoverty work and establishing a dynamic mechanism of recognizing and tackling impoverished population and poverty-stricken counties based on the effect of poverty relief. These four components constitute the overall framework of TPA, which shapes antipoverty policies in China.

To win the battle against poverty, the specific methods including six accurate measures and five batches have been employed (Liu et al., 2018), all of which are the basic requirements and principal pathways of TPA. The former emphasizes the accurate identification of objects, accurate arrangement of projects, accurate use of funds, accurate implementation of aiding measures, accurate dispatching of persons in charge, and accurate effects of poverty reduction (Wang et al., 2016). The latter, which is also known as the five major approaches to poverty alleviation, refers to eliminating poverty through industrial development, resettlement, ecological compensation, strengthened education and social

security (Wang et al., 2016). Briefly, TPA tackles the problems of poor people who need support by focusing on the unsolved issues existing in previous poverty alleviation systems (Liu et al., 2018), such as the identification of those who should be assisted, the determination of the best usage of antipoverty resources and the determination of the effect of the assistance measures. Moreover, a series of flexible and targeted measures have been incorporated into practices in relation to local conditions, transforming the traditional modes of combating poverty and motivating endogenous development in poor areas.

4. Data and study area

4.1. Data sources

The data used in this study are both national level and county level, that of Fuping in Hebei Province. The former includes information about the impoverished population and socioeconomic development of China, which are derived from the China Statistical Yearbook (2017) and the Yearbook of China's Poverty Alleviation and Development (2015). While the data of Fuping are obtained from the people's government of Fuping County.

4.2. Study area

Fuping, a county in Hebei Province, is located in the south of the Yanshan-Taihang Mountain area, which is one of the fourteen concentrated poor areas with special difficulties (CPASDs) in China (Fig. 2). With an area of 2496 km², Fuping is divided into 13 townships, and further subdivided into 209 administrative villages and 1208 smaller settlements; in 2015, 230.4 thousand people were living there. Fuping is a typical densely mountainous county where the mountainous area accounts for 87% of the total area and 146 km² of the area is cultivated land, meaning that the per capita level is only 640 m². Fuping was the centre of the Shanxi-Chahar-Hebei border area during the Anti-Japanese War and the War of Liberation, which greatly contributed to the founding of the PRC. Furthermore, Fuping has been SDPC since 1994, and its social and economic development level has always been low. Statistics show that the gross domestic product (GDP) in Fuping was 3.1 billion yuan in 2013, and the per capita GDP and net income of rural households were 14.4 thousand yuan and 4.5 thousand yuan, only 34.4% and 50.3% of the national average, respectively.

Despite great efforts have been exerted, Fuping remains in a state of poverty due to the weak foundations for development, and the poverty there is large in amount, wide in distribution and deep in degree. According to the statistics of the county government, there were 164 poor villages and 10.8 thousand poor individuals in 2014, accounting for 48.0% of the total population and 54.0% of the rural population. Illness (28.9%) ranked first among the causes of poverty, followed by lack of skills (24.9%) and shortage of funds (19.5%), while shortage of labour and cultivated land accounted for a relatively small proportion. In 2013, a new chapter of antipoverty in Fuping began when it was identified as the pilot area for regional development and poverty alleviation in the Yanshan-Taihang Mountain area. Through a series of targeted measures, the per capita net income of rural households increased to 6.5 thousand yuan by the end of 2016, leading to a decrease in the rural poor population to 28.8 thousand, and the headcount ratio had decreased to 14.8%.

5. Main measures of targeted poverty alleviation in Fuping

Under the guidance of TPA, poverty alleviation in Fuping was combined with county economic development by the government to stimulate the vitality of society and economy. Overall, the targeted measures mainly involved industrial development, resettlement assistance, financial development, education security, health safeguard and land consolidation. As a result of these efforts, the poverty in Fuping has been

² According to Hu (2015), the New Normal refers to 'a crucial rebalancing, one in which the country diversifies its economy, embraces a more sustainable level of growth, and distributes benefits more evenly'.

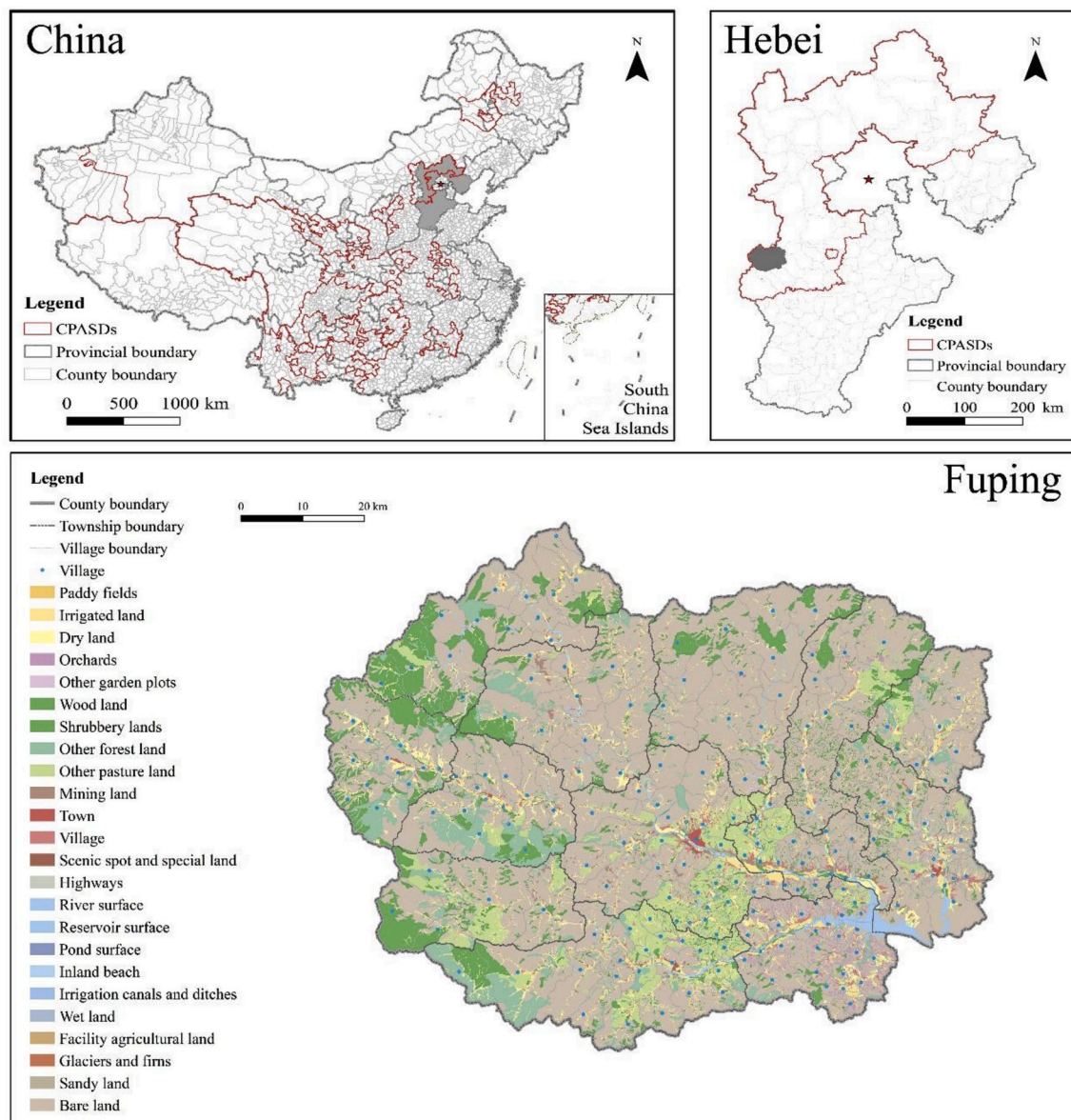


Fig. 2. Location of Fuping county and its land use (Modified from Zhou et al., 2019).

greatly alleviated, and the goal of poverty elimination will be achieved as scheduled.

5.1. Poverty alleviation through industrial development

Industrial development, especially agriculture, is an important contributor to poverty reduction (Otsuka and Yamano, 2006; Christiaensen et al., 2011). Regarding resource endowment, Fuping is a typical mountainous agricultural county with great potential for the forest and fruit industry. However, the structure of agricultural production in Fuping is simple, and the rate of commercialization is low, essentially belonging to small-scale family farming. Farmers' incomes increase slowly, and poverty remains a serious problem. To improve this situation, Fuping has actively adjusted the structure of agricultural production to promote the development of diverse industries in countryside and developed e-commerce to connect farmers with the market since the implementation of TPA, thus improving the income of farmers, especially those in poverty, on the basis of adequate employment.

The combination of local environment and market demands makes the mushroom industry and its spin-offs become an important way to

eliminate poverty and enrich the poor. After a period of development focusing on the cultivation of edible fungi, the division of labour in the mushroom industry has been constantly optimized, and upstream-downstream cooperation has been constantly strengthened, forming an industrial system of production, processing and sales and integrating the development of primary, secondary and tertiary industry (Fig. 3). Meanwhile, focusing on the foundations of industrial development, Fuping, on the one hand, upgrades traditional local products, such as jujube and walnut, on the other hand, develops new special products, including apple and late-maturing peach. In addition, Fuping actively establishes cooperation with Alibaba, JD.COM and other e-commerce platforms to promote rural e-commerce development, and the county has been promoted as the national comprehensive demonstration county for e-commerce entering countryside.

To encourage the poor to participate in industrial development, the county government does a good job in top-level design. Using the mushroom industry as example, three patterns, i.e., cooperative operation, independent operation and shared dividends, have been explored and promoted. Cooperative operation refers to households rent greenhouses that are built by enterprises, and both parties share the cost of the

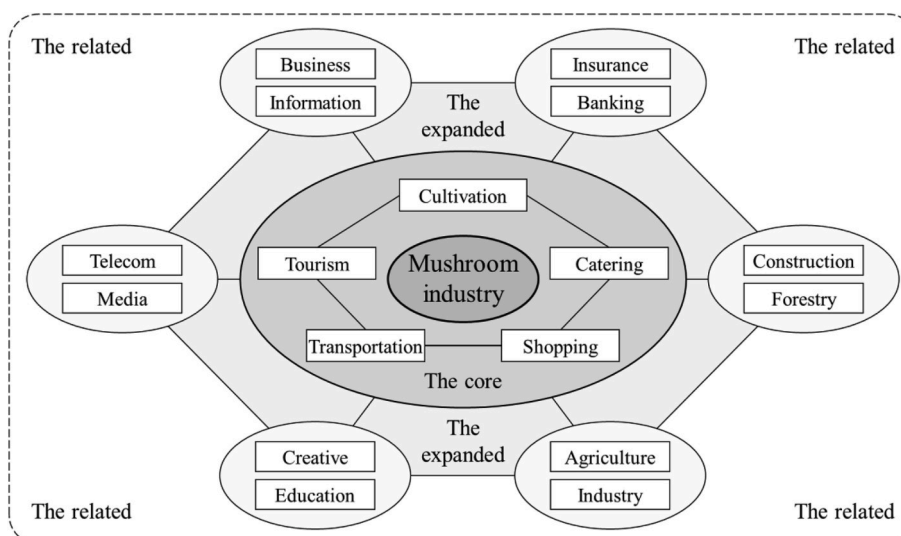


Fig. 3. Comprehensive mushroom industrial system.

raw materials; the households receive a fixed revenue of 22.0 thousand yuan per greenhouse through hard work and another 50.0% of any additional profits exceeding the predetermined value. Independent operation is driven by enterprises that build standard greenhouses, sell the greenhouses to households at cost-price and guide the households in production. If the households wish to participate in mushroom cultivation, they can obtain a loan up to 150.0 thousand yuan under the guarantee from the county government. Shared dividends mainly apply to households lacking labour force identified by the county government. These households can directly and indirectly obtain a loan up to 100.0 thousand yuan and are encouraged to become shareholders of the enterprises. Thus, each poor household can obtain a bonus of 5.0 thousand yuan per year, and the principal and interest are returned by the enterprises. Statistics show that Fuping had built more than 3.3 thousand greenhouses for planting mushrooms and developed ten leading enterprises by the end of 2016. The total output value of the county's mushroom industry in 2016 reached 113.0 million yuan, and more than 3.3 thousand poor households were involved in the mushroom industrial system via land circulation, self-management, labour output or being shareholders. As a result, the average income per household increased by more than 20.0 thousand yuan.

5.2. Poverty alleviation resettlement

China is still in the stage of industrialization and urbanization, and many people are moving from rural to urban areas (Long et al., 2009). This situation is also occurring in Fuping. In this process, most of those with the will and abilities to change gradually leave, while those who remain in the villages are probably old, weak, ill and/or disabled. Meanwhile, the remaining poverty villages are mainly located in areas with fragile environment, backward infrastructure and frequent disasters, strengthening the islanding effect of the distribution of the poor and posing great challenges to poverty alleviation and development in Fuping. Data from the county government show that there were 435 settlements with a population less than 50 people, 161 of which by the end of 2015 were uninhabited or virtually so. Most of these areas are far from the towns and lack industries and infrastructures.

Targeting at these settlements, the county has implemented a measure of village relocation and integration along with strategies for rural revitalization and urban-rural integrated development. Specifically, the county government adopts housing and monetary resettlement to solve the problems of living and development in reference to fully respecting the wishes of rural households. The housing solution is that the county

government builds standardized housing for rural households who have signed an agreement to relinquish their rural homesteads. In general, simply equipped housing with a standard of 25 m² per person is provided, while five-guarantee households³ and old persons living alone are mainly settled in nursing homes. If conditions allow, a vegetable garden of 67 m² per capita and unified planning aquaculture areas are provided to the people who resettle in the rural communities. With regard to the solution of monetary resettlement, after their housing and land has been evaluated by professional institutions, rural households must provide proof of having purchased housing in order to receive corresponding monetary compensation from the county government. According to the housing usage, residential and industrial buildings are compensated at a standard of 10 yuan/m² and 15 yuan/m², respectively. Those individuals who need temporary residences until their new houses are completed can obtain subsidies up to 100 yuan per day. In addition, all relocated households can enjoy a settling-in allowance of 8.0 thousand yuan per person and endowment insurance allowance.

In 2016, Fuping carried out 53 construction projects of 'beautiful countryside', involving 598 settlements and a population of 87.0 thousand, among which the number of rural relocation and integration project was 33. Of these, 22 projects met the requirements for occupancy by the end of 2016. As a result, the basic housing needs of the poverty-stricken population had been effectively satisfied, improving their living conditions. Furthermore, the population decline in the ecologically vulnerable areas relieved the pressure on the environment, which helped to restore the ecosystem and achieve the goal of poverty alleviation.

5.3. Poverty alleviation through financial development

Generally, the essence of capital is profit-seeking; thus, the poor are excluded from the credit market, forming a blank area of financial development (Leyshon and Thrift, 1995). Fuping is a county of deep poverty, the incidence of which in rural areas exceeded 18% in 2014; the people's abilities to gain capital are weak. This makes capital become an important factor restricting regional development and poverty alleviation. Under the promotion of establishing a demonstration county for poverty alleviation through financial development, a model, involving the county government, insurances, banking, farmers and enterprise, has been explored and promoted since the implementation of TPA in

³ Five-guarantee refers to a type of rural social welfare that covers eating, clothing, medical, housing and burial needs.

2013.

First, a three-level financial service network covering 209 administrative villages throughout the county has been set up to solve the information asymmetry between financial institutions and rural households and build bridges allowing financial capital to enter rural areas. Then, two tailored mechanisms, i.e., joint co-guarantee of agricultural insurance (Fig. 4) and risk sharing of poverty alleviation loans (Fig. 5), were established to support industrial development in rural areas and strengthen the poor against risks. The former realizes the full coverage of main agricultural products by the insurances against natural disasters, sub-standard products and low prices, avoiding agricultural risks and stimulating rural residents' enthusiasm for industrial development; while the latter refers to the poor applying for loans with joint mortgages of three households and guarantees provided by specialized guarantee corporations. Thus, the financing channel has been expanded to support economic development in Fuping, further promoting anti-poverty in rural areas via the poverty-reduction effect of economic development. In addition, to optimize the rural financial environment, the county government has not only established farmers' electronic credit information files, but also developed a mechanism encouraging trustworthiness and punishing dishonesty.

Financial development has optimized conditions for rural development, improving the accuracy of poverty alleviation through industrial development. By August 2017, the poverty alleviation loans obtained through guarantee in Fuping had reached 886 million yuan, of which a total of 324.0 million yuan were allocated to 3870 poor households, driving 12.7 thousand poor people out of poverty. Additionally, capital flows to the countryside had promoted the development of modern agriculture. According to the statistics from Fuping government, 82 agricultural leading enterprises, including four provincial-level, had started up in the county, forming a poverty alleviation model led by enterprises.

5.4. Poverty alleviation through education

Education, which is mainly provided by the government, is fundamental in citizens' development (Schultz, 1961; Arnesen and Lundahl, 2006). Generally, education helps to promote the development of poor areas and blocks the intergenerational transmission of poverty by improving population quality (Bird et al., 2010). Studies performed by UNESCO (2015) show that the labour productivity of people who have completed university education is three times higher than that of those who have completed secondary education and seven times greater than that of those who have completed primary education. Another study

indicates that the correlation coefficient between per capita GDP and educational attainment is 0.56 (UNESCO, 2015). The backward economy and inadequate investment in education have aggravated the vicious cycle of poverty in Fuping. Thus, the county government combines poverty alleviation with educational development to protect the right to education of children in poverty-stricken households. To achieve this goal, 13 boarding schools have been built in rural areas to solve children's difficulties in attending school, and cooperation with high-quality schools in Hebei Province has also been promoted to improve the teaching quality. Meanwhile, the county government established an automobile training base with well-known automakers in China to actively develop vocational education. By August 2017, 740 indigent graduate trainees were employed by these automobile manufacturers at annual incomes between 30.0 thousand and 50.0 thousand yuan. Moreover, aid policies for poor students have been issued, and a special annual budget of 13.0 million is allocated as aid funds for poor students since 2015, building a full-cover aid system from kindergarten to university. By August 2017, the county government had cumulatively helped 6186 poor students and spent 18.6 million yuan, which effectively solved poverty problems related to education.

5.5. Health poverty alleviation

Due to long-term unbalanced development strategies, there are significant differences in social and economic development across eastern, central and western China. Regarding health resources, there are problems related to the insufficient quantity, low quality and unreasonable structure in central and western China, especially in rural impoverished areas (Fang et al., 2010). Poor medical and health conditions have caused many poor households to fall into a vicious circle of poverty and disease. According to an investigation performed by the State Council Leading Group Office of Poverty Alleviation and Development, poverty caused by disease accounted for 42.0% of the total poverty-stricken population in 2015 (Editorial board, 2015).

Statistics show that illness is also a dominant factor causing poverty in Fuping. The county has increased investment in health care and improved the medical security level from health facilities, medical skills and safeguard mechanisms. Regarding health facilities, the county government has rebuilt traditional Chinese medical hospital, centres for maternal and child care services and disease control and prevention, and existing medical institutions have upgraded their hardwares. Additionally, public hospitals in Fuping are collaborating in medical training with famous hospitals in developed areas. Furthermore, as well as basic medical insurance and critical illness insurance for urban-rural

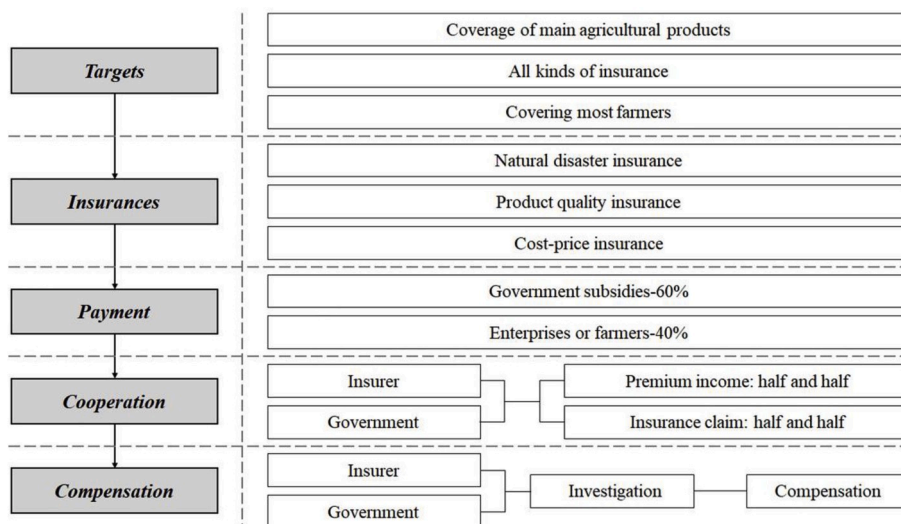


Fig. 4. Joint co-guarantee mechanism of agricultural insurance.

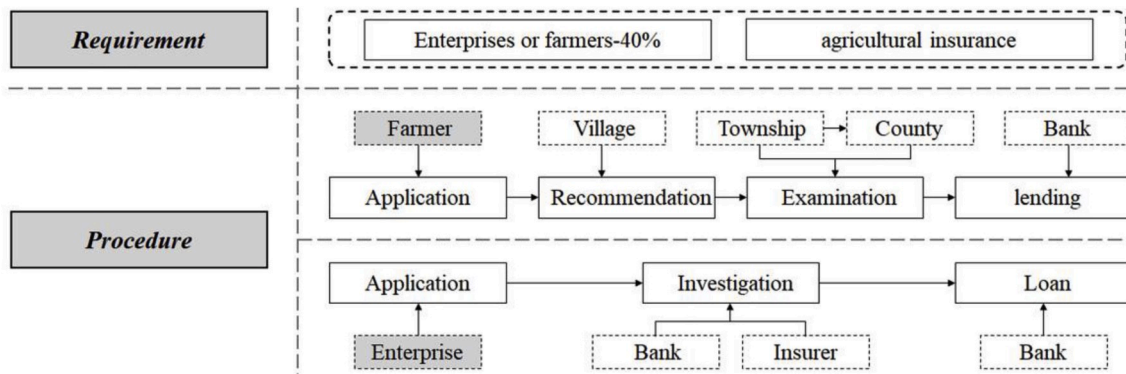


Fig. 5. Risk sharing mechanism of poverty alleviation loans.

residents, the county government also has established a special annual budget of 18.0 million to build a re-compensation mechanism for rural patients with critical diseases (CDs) and specific chronic diseases (SCDs). Since its implementation in 2015, a total of 2474 people suffering from CDs or SCDs have benefited, with a total re-compensation of 19.4 million yuan. Furthermore, the government has established a special fund of 10.0 billion yuan to help the poor who are suffering from CDs but unable to afford treatment. These measurements effectively solved poverty related to diseases.

5.6. Poverty alleviation through land consolidation

Land is the material basis and spatial carrier for human activities (Kupkanchanakul et al., 2015; Guo et al., 2018). However, cultivated land in Fuping covers an area of only 146 km². The limited farmland has greatly restricted agricultural development (Zhou et al., 2018b). Statistics show that Fuping has 1700 km² of unused land, including 347 km² of which with a slope less than 25°, and most unused land is distributed in eight townships in central and eastern Fuping, involving more than 70.0 thousand people.

To promote poverty alleviation and economic development, the county has explored a comprehensive development and operation framework in mountainous areas that involves the government, enterprises, village committees and farmers. Under this framework, the government’s responsibilities mainly include planning-making, project promotion and approval, investment promotion and business regulation; enterprises are mainly responsible for marketing, land consolidation, agricultural development and farmers’ right protection; village committees promote land transfer, coordinate mass work and dock enterprises; and farmers increase their income by transferring the management rights of barren mountains, becoming shareholders and outputting labour. According to the plan proposed by Fuping County government, the land consolidation of an area of the 347 km² will be completed in 2018, and the newly increased cultivated land is 133 km², equalling the current total cultivated land area countywide. The increased land is mainly used for the intensive agricultural production of

apples, pears and grapes (Fig. 6). As a result, the farmers are liberated from inefficient land production, promoting the new-type urbanization. Moreover, the forest coverage also increases by 5.3%, improving the ecology and reducing people’s risk exposure.

By August 2017, the county had completed 62 km² of the total newly additional cultivated land, 14 km² of which were evaluated by professional institutions, benefiting 26 administrative villages and more than 15.0 thousand people. Meanwhile, these practices had paid dividends of more than 80.0 million yuan altogether to the people in the project areas, or more than 1.8 thousand yuan per person.

6. Discussion

Since the reform and opening-up, poverty in China has been greatly alleviated due to the development-oriented policies (Yang and Wu, 2016; Liu et al., 2017), and has transformed from absolute to relative, universal to local and persistent to transient (Jalan and Ravallion, 1998; Ravallion and Chen, 2007a). Developed regions get rid of poverty quickly, while remote regions still have a large number of people living in poverty (Liu et al., 2016). In this context, the islanding and marginal diminishing effects are increasingly prominent, and TPA, which emphasizes targeted measures according to the causes of poverty, has become the guiding antipoverty strategy in rural China since 2013. Led by TPA, the poverty situation in China’s rural area has been further ameliorated, and the goal of poverty reduction will be achieved by 2020 as scheduled, laying a solid foundation for the implementation of rural revitalization and making a remarkable contribution to global poverty reduction (Guo et al., 2018).

The case of Fuping shows that the ‘islanding effect’ is not only the geographical characteristics of China’s national rural poverty by county (Liu et al., 2017), but also the spatial pattern of Fuping’s rural poverty by village. Poverty alleviation is a systematic project (Sadeq, 2002). The measures implemented in Fuping promote poverty alleviation through joint efforts by the government, society and individuals, achieving progress in county economic development. Land engineering provides financial supports for the implementation of other measures through



Fig. 6. Comparison before and after the land consolidation (Modified from Zhou et al., 2019).

such policies as linking the decrease in rural construction land with the increase in urban construction land and cultivated land balance. However, we should pay attention to disaster risks and its negative effects on ecosystem (Yu et al., 2010). Industrial development is the foundation for poverty alleviation and rural sustainable development by enhancing the endogenous power of the poor, while industries must be market-oriented and avoid homogeneous competition. The construction of a financial system satisfies the diversified fund demands of farmers and promotes industrial development in rural areas. However, due to the vulnerability of agriculture, financial risks and risk prevention mechanisms need to be noted (von Braun, 2008). As for public service facilities, especially education and medical treatment, adequate supply lays a foundation for improving the rural population quality and providing qualified labour for regional development. Nevertheless, more attention should be paid to coordinate the problems of quantity and quality of public service facilities since below-replacement fertility, population ageing and population decline in rural areas are becoming increasingly serious (Cai, 2010; Harrell et al., 2011; Feng et al., 2012). Resettlement solves the islanding effect through the concentration of the population in remote areas and helps remarkably in eliminate poverty, but more attention should be paid to the sustainable livelihoods of the relocated population (McDowell and de Haan, 1997). Obviously, to promote poverty alleviation and development, Fuping has invested a variety of resources, both physical and intangible. Due to regional differences, these practices are not suitable for other poverty-stricken areas, but policymakers and poverty-stricken areas can make full use of the TPA policy by applying targeted measures and building a localized industrial system to promote poverty alleviation and development.

The global antipoverty shows that development is a fundamental way to alleviate poverty (Hayami and Godo, 2005). Undoubtedly, poverty in rural China will be eradicated as scheduled under the guidance of development-oriented poverty alleviation. However, it is the absolute poverty that will be eliminated in 2020, relative poverty, which is mainly characterized by inequality in access to public services and regional/urban-rural income disparities, will continue to exist for a long time (Guo et al., 2018; Ravallion and Chen, 2007b). Compared with previous antipoverty strategies, TPA aims to implement targeted measures according to the differences among the poor (Liu et al., 2017) and will remain the guiding strategy for poverty alleviation in the stage of relative poverty. Therefore, further attention needs to be paid to TPA. In addition, the impoverished population is found not only in poor areas, but also in relatively developed areas (Liu et al., 2017). This study focused on the practices of the TPA in a typical poverty-stricken county rather than a developed area. And we discussed the effects of TPA practices shortly after the start of this strategy rather than the long-term overall effects. In future studies, the effectiveness of TPA practices in different areas should be compared, and the final results of the strategy should be investigated. The participation mechanism of the poor also deserves further attention.

7. Conclusions

Poverty is an inevitable phenomenon of imbalanced regional development (Fan, 1995). To achieve sustainable development, eradicating poverty in all forms is a formidable task faced by developing countries worldwide. After nearly seventy years of poverty alleviation and development, China is currently at the decisive stage of antipoverty (Wang and Guo, 2015; Liu et al., 2017). In this study, we reviewed the history of poverty alleviation in rural China, discussed the connotation of TPA, and investigated the mechanisms and outcomes of TPA practices in Fuping county of Hebei Province. Results indicate that the six-stage poverty alleviation, i.e., relief-type poverty relief, structural reform-promoted poverty relief, development-oriented poverty relief drive, tackling key problems in poverty relief, consolidation-oriented comprehensive poverty alleviation and targeted poverty alleviation, have led to substantial progress in rural China. TPA, which is the current

and future guiding antipoverty strategy, aims to apply targeted measures tailored to local conditions to help those who truly need help. Guided by TPA, the current poverty alleviation in Fuping was mainly promoted through industrial development, resettlement, financial system construction, together with public services and land engineering. Poverty is a comprehensive phenomenon caused by several factors (Alkire, 2011; Guo et al., 2018; Panagariya and Mukim, 2014; Ravallion, 2011), thus integrated measures should be employed to build a long-term and flexible mechanism for regional development and overcome poverty. Fuping's practices suggest that antipoverty strategies should focus on poor people and households and that the key to success is encouraging the people to move out of poverty by providing a series of training, work opportunities, financial aids, and social welfares in line with their actual differences and causes of poverty.

To some degrees, the history of human development is a process of antipoverty (Wang, 2017). Development-oriented poverty alleviation pays more attention to regional social and economic development than the differences in poverty, while individual-oriented approaches fail to construct a policy environment for promoting regional development. TPA has overcome these disadvantages, which not only promotes economic development in poverty-stricken areas but also emphasizes differences in the poor. Measures and strategies are carried out under its overall framework rather than individually. TPA practices in Fuping suggest that TPA is an innovative strategy that successfully forms a framework of government guidance, society promotion and farmer participation and effectively uses social investment and industrial, financial, housing and public policies in long-term planning. International experiences show that antipoverty will enter an extremely difficult stage once the incidence of poverty in a region is below 10% (Zeng, 2017). It is necessary to learn from the history of poverty alleviation and continue to take TPA as the guiding strategy for antipoverty because TPA calls for adjustments based on the changes in poverty. Therefore, a deep understanding of the connotations of TPA strategy and the mechanism behind its practices could help achieve China's goal of eliminating poverty by 2020 and promote rural revitalization.

Acknowledgments

This study was supported by the National Key Research and Development Program of China (Grant 2017YFC0504700), the National Natural Science Foundation of China (Grants 41601172, 41871183), the Certificate of China Postdoctoral Science Foundation Grant (Grant No. 2016M591105), and the Global Rural Project-China Rural Revitalization.

References

- Alkire, S., 2011. *Multidimensional Poverty and its Discontents*. OPHI Working Paper, p. 46.
- Alkire, S., Chatterje, M., Conconi, S., Seth, S., Vaz, A., 2014. *Global Multidimensional Poverty Index 2014*. OPHI Briefing 21. University of Oxford, Oxford.
- Alkire, S., Foster, J., 2011. Counting and multidimensional poverty measurement. *J. Publ. Econ.* 95 (7–8), 476–487.
- Arnesen, A.L., Lundahl, L., 2006. Still social and democratic? Inclusive education policies in the nordic welfare states. *Scand. J. Educ. Res.* 50 (3), 285–300.
- Ayala, L., Jurado, A., Pérez-Mayo, J., 2011. Income poverty and multidimensional deprivation: lessons from cross-regional analysis. *Rev. Income Wealth* 57 (1), 40–60.
- Bird, K., Higgins, K., McKay, A., 2010. Conflict, education and the intergenerational transmission of poverty in Northern Uganda. *J. Int. Dev.* 22 (8), 1183–1196.
- Cai, F., 2010. Demographic transition, demographic dividend, and Lewis turning point in China. *China Econ. J.* 3 (2), 107–119.
- Chen, J., Wang, Y., Wen, J., Fang, F., Song, M., 2016. The influences of aging population and economic growth on Chinese rural poverty. *J. Rural Stud.* 47 (B), 665–676.
- Chen, Y., Wang, Y., Zhao, W., Hu, Z., Duan, F., 2017. Contributing factors and classification of poor villages in China. *Acta Geograph. Sin.* 72 (10), 1827–1844.
- Christiaensen, L., Demery, L., Kuhl, J., 2011. The (evolving) role of agriculture in poverty reduction—An empirical perspective. *J. Dev. Econ.* 96 (2), 239–254.
- Démurger, S., 2001. Infrastructure development and economic growth: an explanation for regional disparities in China? *J. Comp. Econ.* 29 (1), 95–117.
- Dixon, J., 1982. The community-based rural welfare system in the people's Republic of China: 1949–1979. *Community Dev. J.* 17 (1), 2–12.

- Du, Y., 2012. Taking the road of poverty alleviation and development with Chinese characteristics. *China Venture Capital* 17, 5–6.
- Du, Y., Cai, F., 2005. The transition of the stages of poverty reduction in rural China. *China Rural Survey* 5, 2–9.
- Editorial board, 2015. *Yearbook of China's Poverty Alleviation and Alleviation*. Unity Press (China), Beijing.
- Fan, C.C., 1995. Of belts and ladders: state policy and uneven regional development in Post-Mao China. *Ann. Assoc. Am. Geogr.* 85 (3), 421–449.
- Fan, S., Chan-Kang, C., 2008. Regional road development, rural and urban poverty: evidence from China. *Transport Pol.* 15 (5), 305–314.
- Fang, P., Dong, S., Xiao, J., Liu, C., Feng, X., Wang, Y., 2010. Regional inequality in health and its determinants: evidence from China. *Health Policy* 94 (1), 14–25.
- Feng, Z., Liu, C., Guan, X., Mor, V., 2012. China's rapidly aging population creates policy challenges in shaping a viable long-term care system. *Health Aff.* 31 (12), 2764–2773.
- Glauben, T., Herzfeld, T., Rozelle, S., Wang, X., 2012. Persistent poverty in rural China: where, why, and how to escape? *World Dev.* 40 (4), 784–795.
- Guo, Y., Zhou, Y., Cao, Z., 2018. Geographical patterns and anti-poverty targeting post-2020 in China. *J. Geogr. Sci.* 28 (12), 1810–1824.
- Hagenaars, A.J.M., van Praag, B.M.S., 1985. A synthesis of poverty line definitions. *Rev. Income Wealth* 31 (2), 139–154.
- Harrell, S., Wang, Y., Han, H., Santos, G.D., Zhou, Y., 2011. Fertility decline in rural China: a comparative analysis. *J. Fam. Hist.* 36 (1), 15–36.
- Haushofer, J., Fehr, E., 2014. On the psychology of poverty. *Science* 344 (6186), 862–867.
- Hayami, Y., Godo, Y., 2005. *Development Economics: from the Poverty to the Wealth of Nations*. Oxford University Press.
- Ho, S.P.S., 1995. Rural non-agricultural development in post-reform China: growth, development patterns, and issues. *Pac. Aff.* 68 (3), 360–391.
- Hu, A., 2015. Embracing China's new normal. *Foreign Aff.* 94 (3), 8–12.
- Jalan, J., Ravallion, M., 1998. Determinants of Transient and Chronic Poverty: Evidence from Rural China. World Bank Policy Research Working Paper No.1936.
- Jalan, J., Ravallion, M., 2002. Geographic poverty traps? a micro model of consumption growth in rural China. *J. Appl. Econom.* 17 (4), 329–346.
- Kupkanchanakul, W., Kwonpongagoon, S., Bader, H.P., Scheidegger, R., 2015. Integrating spatial land use analysis and mathematical material flow analysis for nutrient management: a case study of the Bang Pakong River Basin in Thailand. *Environ. Manag.* 55 (5), 1022–1035.
- Leyshon, A., Thrift, N., 1995. Geographies of financial exclusion: financial abandonment in Britain and the United States. *T. I. Brit. Geogr.* 20 (3), 312–341.
- Li, X., Tang, L., Xu, H., 2015. Poverty alleviation and governance in China: analysis of targeting and transfer of anti-poverty resources. *Jilin Univ. J. Soc. Sci. Ed.* 55 (4), 90–98.
- Lin, J.Y., 1992. Rural reforms and agricultural growth in China. *Am. Econ. Rev.* 82 (1), 34–51.
- Lin, J.Y., Cai, F., Li, Z., 1998. Competition, policy burdens, and state-owned enterprise reform. *Am. Econ. Rev.* 88 (2), 422–427.
- Liu, J., 2003. A study of the method for determining poverty line. *J. Shanxi Financ. Econ. Univ.* 25 (4), 60–62.
- Liu, Y., Cao, Z., 2017. Supply-side structural reform and its strategy for targeted poverty alleviation in China. *Bull. Chin. Acad. Sci.* 32 (10), 1066–1073.
- Liu, Y., Guo, Y., Zhou, Y., 2018. Poverty alleviation in rural China: policy changes, future challenges and policy implications. *China Agr. Econ. Rev.* 10 (2), 241–259.
- Liu, Y., Li, Y., 2017. Revitalize the world's countryside. *Nature* 548 (7667), 275–277.
- Liu, Y., Liu, J., Zhou, Y., 2017. Spatio-temporal patterns of rural poverty in China and targeted poverty alleviation strategies. *J. Rural Stud.* 52, 66–75.
- Liu, Y., Xu, Y., 2016. A geographic identification of multidimensional poverty in rural China under the framework of sustainable livelihoods analysis. *Appl. Geogr.* 73, 62–76.
- Liu, Y., Zhou, Y., Liu, J., 2016. Regional differentiation characteristics of rural poverty and targeted poverty alleviation strategy in China. *Bull. Chin. Acad. Sci.* 31 (3), 269–278.
- Long, H., Liu, Y., 2016. Rural restructuring in China. *J. Rural Stud.* 47, 387–391.
- Long, H., Liu, Y., Li, X., Chen, Y., 2010. Building new countryside in China: a geographical perspective. *Land Use Pol.* 27 (2), 457–470.
- Long, H., Zou, J., Liu, Y., 2009. Differentiation of rural development driven by industrialization and urbanization in eastern coastal China. *Habitat Int.* 33 (4), 454–462.
- Luo, G., Guo, Y., 2013. Rural electrification in China: a policy and institutional analysis. *Renew. Sustain. Energy Rev.* 23, 320–329.
- Luong, H.V., Unger, J., 1998. Wealth, power, and poverty in the transition to market economies: the process of socio-economic differentiation in rural China and northern Vietnam. *China J.* 40, 61–93.
- McDowell, C., de Haan, A., 1997. *Migration and Sustainable Livelihoods: A Critical Review of the Literature*. Institute of Development Studies, Brighton. IDS Working Paper 65.
- Meng, L., 2013. Evaluating China's poverty alleviation program: a regression discontinuity approach. *J. Publ. Econ.* 101, 1–11.
- Meng, X., Gregory, R., Wang, Y., 2005. Poverty, inequality, and growth in urban China, 1986–2000. *J. Comp. Econ.* 33 (4), 710–729.
- Montalvo, J.G., Ravallion, M., 2010. The pattern of growth and poverty reduction in China. *J. Comp. Econ.* 38 (1), 2–16.
- National Bureau of Statistics (NBS), 2017. *China Statistical Yearbook 2017*. China Statistics Press, Beijing.
- Olivia, S., Gibson, J., Rozelle, S., Huang, J.K., Deng, X.Z., 2011. Mapping poverty in rural China: how much does the environment matter? *Environ. Dev. Econ.* 16 (2), 129–153.
- Otsuka, K., Yamano, T., 2006. Introduction to the special issue on the role of nonfarm income in poverty reduction: evidence from Asia and East Africa. *Agr. Econ-Blackwell* 35 (s3), 393–397.
- Panagariya, A., Mukim, M., 2014. A comprehensive analysis of poverty in India. *Asian Dev. Rev.* 31 (1), 1–52.
- Park, A., Wang, S., Wu, G., 2002. Regional poverty targeting in China. *J. Publ. Econ.* 86 (1), 123–153.
- Piazza, A., Liang, E.H., 1998. Reducing absolute poverty in China: current status and issues. *J. Int. Aff.* 52 (1), 253–273.
- Qi, D., Wu, Y., 2014. Child poverty in China—a multidimensional deprivation approach. *Child Indic. Res.* 7, 89–118.
- Qu, F., Heerink, N., Wang, W., 1995. Land administration reform in China: its impact on land allocation and economic development. *Land Use Pol.* 12 (3), 193–203.
- Ravallion, M., 2009. Are there lessons for Africa from China's success against poverty? *World Dev.* 37 (2), 303–313.
- Ravallion, M., 2011. A Comparative Perspective on Poverty Reduction in Brazil, China and India. Policy Research Working Paper 5080.
- Ravallion, M., Chen, S., 2007a. China's (uneven) progress against poverty. *J. Dev. Econ.* 82 (1), 1–42.
- Ravallion, M., Chen, S., 2007b. Weakly relative poverty. *Rev. Econ. Stat.* 93 (4), 1251–1261.
- Ravallion, M., Datt, G., van de Walle, D., 1991. Quantifying absolute poverty in the developing world. *Rev. Income Wealth* 37 (4), 345–361.
- Rozelle, S., Park, A., Benziger, V., Ren, C., 1998. Targeted poverty investments and economic growth in China. *World Dev.* 26 (12), 2137–2151.
- Sadeq, A.H.M., 2002. Waqf, perpetual charity and poverty alleviation. *Int. J. Soc. Econ.* 29 (1/2), 135–151.
- Schultz, T.W., 1961. Investment in human capital. *Econ. J.* 51 (1), 1–17.
- State Council Information Office of the People's Republic of China (SCIO), 2001. *The development-oriented poverty reduction program for rural China, 2001*. http://www.gov.cn/english/official/2005-07/27/content_17712.htm.
- State Council Information Office of the People's Republic of China (SCIO), 2016. *China's Progress in Poverty Reduction and Human Rights*. http://english.gov.cn/policies/latest_releases/2016/10/17/content_28147546853275.htm.
- Sen, A., 1976. Poverty: an ordinal approach to measurement. *Econometrica* 44 (2), 219–231.
- Tong, X., Lin, M., 1994. Study on the standard line of rural poverty in China. *Soc. Sci. China* 3, 86–98.
- UNESCO, 2015. *UNESCO Science Report: towards 2030*. <https://en.unesco.org/unesco-science-report>.
- United Nations (UN), 2015a. *The Millennium Development Goals Report 2015* (New York).
- United Nations (UN), 2015b. *Transforming Our World: the 2030 Agenda for Sustainable Development* (Working Papers).
- United Nations Development Programme (UNDP), 2010. *Human Development Report 2010*. Palgrave Macmillan 25 (5), 631–638.
- von Braun, J., 2008. *Food and Financial Crises: Implications for Agriculture and the Poor*. IFPRI, Food Policy Report No. 20 (Washington, DC).
- Wang, J., Chen, Y., Yan, M., 2016. Research on the targeted measures of poverty alleviation and its innovative ways in China. *Bull. Chin. Acad. Sci.* 31 (3), 289–295.
- Wang, S., Guo, Z., 2015. Comment on China's targeted poverty alleviation. *Guizhou Soc. Sci.* 5, 147–150.
- Wang, S., Park, A., Chaudhuri, S., Datt, G., 2007. Rural poverty alleviation and village poverty targeting in the new period of China. *Manag. World* 1, 56–64.
- Wang, X., 2017. *The Measurement of Poverty: Theories and Methods*, second ed. Social Sciences Academic Press (China), Beijing.
- Wang, Y., Chen, Y., 2017. Using VPI to measure poverty-stricken villages in China. *Soc. Indic. Res.* 133, 1–25.
- Wang, Y., Wang, B., 2016. Multidimensional poverty measure and analysis: a case study from Hechi City, China. *SpringerPlus* 5, 642.
- Wang, Y., Wang, S., 2015. Clustering analysis of the rural poverty population and poverty reduction strategies. *China Agr. Univ. J. Soc. Sci. Edit.* 32 (2), 98–109.
- World Bank, 2009. *China from Poor Areas to Poor People: China's Evolving Poverty Reduction Agenda—An Assessment of Poverty and Inequality in China*. Report No. 47349-CN.
- Yang, Y., Wu, X., 2016. The past, present and future of China's poverty alleviation. *Chin. J. Popul. Sci.* 5, 2–12.
- Yao, S., Zhang, Z., Hanmer, L., 2004. Growing inequality and poverty in China. *China Econ. Rev.* 15 (2), 145–163.
- Yao, S.J., 2000. Economic development and poverty reduction in China over 20 years of reforms. *Econ. Dev. Cult. Change* 48 (3), 447–474.
- Yu, G., Feng, J., Che, Y., Lin, X., Hu, L., Yang, S., 2010. The identification and assessment of ecological risks for land consolidation based on the anticipation of ecosystem stabilization: a case study in Hubei Province, China. *Land Use Pol.* 27 (2), 293–303.
- Yu, J., 2013. Multidimensional poverty in China: findings based on the CHNS. *Soc. Indic. Res.* 112 (2), 315–336.
- Zeng, X., 2017. *The Way of Poverty Alleviation after the Half*. People's Daily, 2017-11-03.
- Zhang, Q., Zhang, J., 2010. The dynamics of China's rural poverty: 1981–2005—Based on alternative poverty lines and indices. *Stat. Res.* 27 (2), 28–35.
- Zhang, Y., Wan, G., 2006. The impact of growth and inequality on rural poverty in China. *J. Comp. Econ.* 34 (4), 694–712.

Zhou, Y., Guo, Y., Liu, Y., 2018a. Comprehensive measurement of county poverty and anti-poverty targeting after 2020 in China. *Acta Geograph. Sin.* 73 (8), 1478–1493.

Zhou, Y., Guo, Y., Liu, Y., Li, Y., 2018b. Targeted poverty alleviation and land policy innovation: some practice and policy implications from China. *Land Use Pol.* 74, 53–65.

Zhou, Y., Guo, L., Liu, Y., 2019. Land consolidation boosting poverty alleviation in China: theory and practice. *Land Use Pol.* 82, 339–348.