

Analysis on the Driving Forces of Ecological Migration Urbanization Resettlement: A Case Study of Han Mountain Nature Reserve in Inner Mongolia, China

Shandan Wu, Pei Mao
School of Economics
Central University of Finance and Economics
Beijing 100081, China

Abstract

In this paper, Han Mountain Nature Reserve in Inner Mongolia as a case study and analysis on driving forces of ecological urbanization resettlement based on push-pull theory, it is found out that the realization of migrants' urban employment is the key to promote the urbanization of ecological migrant in ethnic areas. The article puts forward policy recommendations that the government should strengthen the employment guidance and vocational skills training to the migrants, optimize and upgrade urban industrial distribution.

Keywords: Ecological migration; Urbanization; Push and pull theory; Driving force

1. Introduction

The concept of "ecological migration" was first proposed by American ecologist Cowles (1899), referring to migration as a result of the destruction of the environment not suitable for human habitation or protecting the environment to reduce man-made damage to the environment (Liang, 2011; Li & Li, 2015). China's ecological migration project began in the late 1990s, and with the implementation of the sustainable development strategy in 1997, the western region has been carried out ecological migration projects successively. The purpose is to transfer population from fragile ecological environment to the better ecological environment carrying capacity area, to protect and restore the ecological environment of the migrants' original habitat, to achieve the dual purpose of ecological protection and economic growth.

Inner Mongolia Han Mountain Nature Reserve ecological resettlement project was implemented in 2008. The Han Mountain Nature Reserve has the characteristics of beautiful scenery, diverse ecosystems and abundant species of precious animals and plants, is an important water source in the Horqin area of Inner Mongolia. In order to prevent production activities of nearby farmers and herders from further destroying protected area's grasslands, forests and precious species, the local government transferred all of the 292 households with 963 residents from protected area to urban area in 2008, solved their housing and employment problems, thus achieving protected area of a comprehensive ban on grazing and cultivation.

Based on the push and pull theory, this paper discusses the driving force of the ecological migrant's urbanization in combination with the case of Han Mountain Nature Reserve, finds out that solving migrants' urban employment problem is key to ecological migration urbanization resettlement, and puts forward some policy suggestions about changing the migrant's employment concept, improving the training of vocational skills of migrants and promoting the reasonable development of urban industrial distribution. The remaining part of this paper is organized as follow, the second part is literature review, the third part analyzes the migration case of the Han Mountain Nature Reserve, the fourth part discusses the driving factors of the ecological migration urbanization resettlement based on the theory of push and pull, and the last part puts forward relevant policy suggestions.

2. Literature review

Ecological migration is closely related with natural disasters, environmental protection, ethnic conflict, poverty eradication and fair development and other social issues, so the study of ecological migration is of great concern by the World Bank and other international organizations. Ecological migrant is also known as environmental refugee, ecological refugee, climate refugee, environmental migrant, climate change-induced migrant, environmentally displacement person (Zhang & Liu, 2015).

Myers (2002) defines environmental refugees as people who are forced to leave their homes due to environmental reasons such as soil erosion, drought, desertification and excessive deforestation, and their living conditions are no longer safe living conditions. Swain (1996) argues that the appellation of environmental refugees is controversial, according to the law of the refugees, the population who migrates because of environmental problems cannot collectively be named as refugee, so "environmental migration" is more suitable to describe the environment-driven population migration. He argues that environmental migration is different from "economic migration", where environmental migrants have lost their living and life space due to environmental changes and have had to migrate temporarily or permanently to other places while economic migrants are based on push-pull factors migrating to economically affluent areas for the better future of themselves or their family members, in this sense, environmental migration is involuntary migration, and economic migration is voluntary migration. In recent years, the academic circles use "environmental resettlement" to emphasize the government-led relocation of ecological resettlement behavior, which is divided into two categories, one is ecological migration or ecological resettlement due to the protection of fragile ecosystems, such as migration in the western region of China under the ecological protection and poverty alleviation policies, and the other category is conservation resettlement, such as the ecological migration of the national park in central Africa, the resettlement of China's Heilongjiang Zhalong Nature Reserve (Rogers and Wang, 2006; Webber, 2007; Kai, 2010). Bates (2002) divides ecological migrants into three kinds based on the causes of ecological migration, which include migrants from disaster, migrants from expropriation of living place and migrants from environmental degradation.

According to the different research subjects, the existing literature can be divided into two categories, one is the studies on the resettlement, follow-up livelihood and legal protection of ecological migrants, such as Cernea (1997), Downing (2002), Biermann et al (2010), Wilmsen and Webber (2015); the other is case study on the ecological migration, including studies on ecological migration in Africa, such as Milgroom and Spierenburg (2008), Kai (2010), as well as the study of ecological migration in western China, such as Rogers and Wang (2006), Webber (2007) and Wilmsen (2016).

The research of China on this issue mainly focuses on the definition and classification of ecological migration, the mode and effect of ecological resettlement, the problems and countermeasures of ecological migration process, such as Liang (2011), Tang et al. (2011), Wang et al. (2012), Zhang (2013), Shi and Yu (2013). Bai and Ma (2004) argue that the combination of ecological migration and urbanization is the result of the joint effects of society, the natural environment and the economic environment, which maximizes economic benefits. Zhou et al. (2009) argue that the key to the success or failure of the ecological resettlement project lies in the scientific nature of the resettlement area and the livelihood restoration and development of the migrants after the relocation. Hu et al. (2016) studied the ecological migration of Guangxi, China as an example, and it was found that the income level of migrant farmers was significantly higher than that before relocation. Based on the ecological migration of Ningxia, China, Li et al. (2017) found that the adaptability of ecological migrants was generally strong in terms of lifestyle and interpersonal relationship, and the ecological adaptability of 31-40 years old was the strongest in economic production. In addition, Du (2014) reviewed ecological migration studies, and systematically combed the research on ecological migration in the fields of environmental history, sociology, anthropology, ethnology and ecology.

It can be seen that the existing literatures are mainly concerned with the implementation of ecological migration policy and the society adaptation of migrants, and few literatures cover the feasibility study of ecological urbanization resettlement. Based on the theory of push and pull, this paper discusses the driving force of the ecological migration urbanization resettlement in combination with the case of Han Mountain Nature Reserve, and reveals the mutual influence of ecological migration with urbanization has an important theoretical and practical significance on the sustainable development, urbanization and precision poverty alleviation of ethnic minority areas.

3. Case Analysis of Han Mountain Nature Reserve

3.1 The ecological migration resettlement measures

Inner Mongolia Han Mountain Nature Reserve is a national level nature reserve, located in the southern end of Greater Khingan Mountains, within the jurisdiction of Jarud Banner, Tongliao City, Inner Mongolia Autonomous Region. The total area of 1.37 million mu of protected area, has the characteristics of dense forests, fertile grass, with diverse ecosystems, rich biology.

The Han Mountain Nature Reserve, as the birthplace of the rivers in the Horqin area of Inner Mongolia, protection of it not only contributes to the ecological protection, but also has the commercial value for developing tourism. In order to prevent the production activities of nearby farmers and herdsmen to further damage the protected area's ecosystem, the Zarut Banner government implemented the ecological resettlement project in 2008, so that 292 households 963 people of the protected area were converted into city-Hukou and replaced in the commodity residential buildings in the town of Lubei which is the government location of Zarud Banner, the original housing and ancillary buildings and other assets according to cost assessment to give financial compensation. Each household has a quota for a ranger, engaged in ecological protection of protected areas. After the relocation, for some economically disadvantaged families, the government has arranged a quota for garden workers for each household, engaged in urban landscaping work. Those ecological migrants who do not have work enjoy the minimum income security of 300 yuan a month. The ecological migrants enjoy the new rural cooperative medical insurance or the urban basic medical insurance, and continue to enjoy the forest subsidies, grassland subsidies, and subsidies for returning farmland to forests and subsidies for returning grazing to grassland.

3.2 The status of the ecological migrants

In January 2013, the study conducted in-depth survey and field interviews among Han Mountain ecological migrants households. Due to the limited number of samples, 32 families were randomly collected in this study. The questionnaire includes the objective problems of the respondents' gender, nationality, age, educational level, occupation, family members, family income, and main source of family income and so on, as well as the subjective issues including the satisfaction of urban life, difficulties, concerns and other.

Table1 Demographical and social characteristics of the respondents of Han Mountain nature protected area

Item	Contents	Percentage
Gender	Male	31.3%
	Female	68.7%
Nationality	Mongolian	90.625%
	Han	9.375%
Age	≤40	15.625%
	41~50	46.875%
	51~60	25%
	>60	12.5%
Educational level	Primary school and below	21.875%
	Junior middle school	53.125%
	High school	18.75%
	College degree or above	6.25%
Family members	<3	6.25%
	3~4	78.125%
	4~6	15.635%
Family annual income (yuan)	<20000	3.125%
	20000~40000	9.375%
	>40000	87.5%
Main source of family income (multiple choice)	Ranger wages	87.5%
	garden worker wages	46.875%
	Minimum income security	100%
	Other works wage	41.67%
Housing area size (square meter)	<70	31.25%
	70~85	59.375%
	>85	9.375%

Table 1 reflects the basic situation of the respondents. The respondents accounted for 31.3% of men, women accounted for 68.7%, 90.625% of the respondents were Mongolian, and the rest of the Han nationality, 46.875% of the respondents aged 40 to 50. The respondents in the junior middle school education level accounted for 75%, most of the respondents the number of family members for 3 to 4 people.

The majority is of family income of 40 to 60 thousands a year, the main source of income for the ranger wages. Housing area size to 70 to 85 square meters, it is understood that most of the migrants living in government resettlement houses, some migrants had purchased improved housing and moved out of the resettlement area. Table 2 shows the subjective problems of ecological migrants on urbanization resettlement. 75% of the respondents expressed satisfaction with the placement of housing, the rest are not satisfied with the placement of housing due to the emergence of individual housing wall cracks, water percolation from window to indoor, problem of winter heating and so on. 50% of the respondents are not accustomed to urban life, and the main reason is the high cost of urban life, inconvenience on language communication, employment difficulties. Most of the migrants are Mongolians, less educated and will not be proficient in Chinese, leading to inconvenience to communicate with Han compatriots, and many jobs require proficiency in Chinese language. The study also found that people over the age of 60 are most accustomed to urban life, and they believe that urban life brings them a lot of convenience, especially in housing, public order, children's education and medical aspects, indicating that ecological urbanization resettlement improved welfare level of the aged.

Table2 Statistics on the subjective issues of respondents of Han Mountain ecological migrants

Subjective issues	Key index	Percentile
Satisfaction	Satisfied on housing replacement	27%
	Dissatisfied on housing replacement	75%
Accustoming degree	Accustomed to urban life	50%
	Not accustomed to urban life	50%
Difficulties (multiple choice)	High living cost	84.375%
	Inconvenience on language communication	75.00%
	Employment difficulty	65.625%
The issues concerned (multiple choice)	Household income	81.25%
	Living condition	56.25%
	Children's employment	53.13%
Economic issues concerned (multiple choice)	Lack of appropriate job due to low educational level and older age	90.63%
	lack of entrepreneurial funds and experience	81.25%
	Social welfare and security issues	53.13%

According to table 2, it can be seen that the respondents are most concerned about household income, followed by living conditions and children's employment. Most of the migrant's families basically make ends meet, but not enough to carry out saving and investment, and have insufficient preparation for family accidents. Some of the respondents proposed to strengthen the community security measures, with the construction of outdoor fitness equipment, additional motor vehicle parking spaces, to solve their children's employment problems and other issues.

Among the most concerned economic issues, 90.63% of the respondents believe that rangers and gardeners are low wages, but they are low in education, older, cannot find better job to raise their income. 81.25% of them think that they are lack of entrepreneurial funds and experience, and hope the government gives entrepreneurship support and vocational training on them; 53.13% of them hope to raise the proportion of medical insurance reimbursement of serious illness. In summary, there is coexistence of successes and difficulties on Han Mountain ecological migration urbanization resettlement. The detailed contents are seen at table 3.

Table 3 Successes and difficulties on Han Mountain ecological migration urbanization resettlement

	Contents	Example
Success	Effective protection on the ecological system of protected area	The Han Mountain Nature Reserve was identified as national level nature reserve in December 2013; The Han Mountain forest ecological positioning research station and forest ecological museum had been established and put into operation; The local government is actively planning the folk tourism product.
	Significant increase of the ecological migrants' income	According the investigation, the ecological migrants' per capita disposable income was 11295 yuan in 2012, while the average net income of local famers and herders was 8460 yuan. ¹
	3. Further improvement of the public service as medical service, children's education	Before the relocation, herders' ailment could not get treatment in time, serious illness need to be healed in Lubei town which is 100 kilometers away, and the children had to study in accommodation school. After the resettlement in Lubei Town, the ecological migrants are facilitated on the medical treatment and their children's education.
	4. Advancement of the local urbanization	Urbanization settlement let the herders leave remote pastoral areas to the relatively developed cities, not only to enable them to broaden their horizons, but also through the interaction with their friends and relatives who did not relocate so as to further promote other famers and herders' urbanization.
	5. Accumulation of the experience on ecological migration urbanization resettlement	The experiences and lessons of the urbanization resettlement provide reference for the implementation of ecological migration project in the future.
Difficulties	The ecological migrants are difficult to get employed in town.	The majority of respondents said they are unable to engage in higher income work due to language communication barrier.
	The details of resettlement and follow-up service need to be improved.	Such as the quality supervision of housing construction, the construction of residential facilities.
	Some ecological migrants are difficult to integrate into urban life.	The fact that the older ecological migrants only socialize with acquaintances led to their restricted social circle and boring amateur life.

4. Analysis of driving force based on the push-pull theory

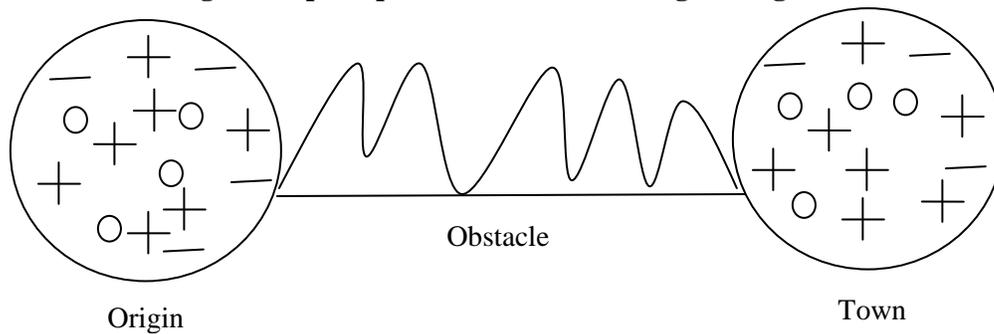
The push-pull theory was first proposed by the British sociologist, E. G. Ravenstein, who proposed the preliminary framework of the theory of push-pull in the book "The Law of Population Migration" published in 1885. The systematic push-pull theory was proposed by D. J. Bogue in the late 1950s, who defined migration behavior as a result of the joint interactions of various social factors, including economic factors. "Push" factor refers to some factors in the area of origin, which is detrimental to the survival and development, has repelling effect on the migrants. "Pull" factor refers to the attraction of the destination area to the migrants, to move to show more opportunities for survival and development (Zhang & Bao, 2017).

E. S. Lee (1966) further improved the theory of push and pull based on migration law of Ravenstein, put forward four factors that affect the migration behavior, including factors associated with the area of origin, factors associated with the area of destination, intervening obstacle and personal factors. According to the push and pull theory, the mechanism of ecological migration urbanization resettlement includes the driving factors such as the factors of the original area, the relevant factors of the town, the intervening obstacle and the personal factors. Figure 1 shows the push-pull mechanism of the ecological migration urbanization resettlement.

¹ Data sources: the 2013 government work report of Jarud Banner.

For ecological migrants, the backward production mode and hard living conditions of the original residence may strengthen the push of the original residence, represented with "+". Low cost of living may weaken the push of the original place of residence, represented with "-" and other unrelated factors are represented with "0". Urban stable work and comfortable living conditions may strengthen the pull of the town, represented with "+". The city noise may weaken the city's pull force, represented with "-" and other unrelated pull factors represented with "0". Intervening obstacles include distance, institutional factors, etc., and personal factors include age, intelligence levels, education level of the migrants and so on. Thus, the push, the pull, intervening obstacles and personal factors together to form a push - pull power mechanism to promote the ecological migration urbanization resettlement process.

Figure1. The schematic diagram of push-pull mechanism of ecological migration urbanization resettlement



Combined with the above driving factors, the problems existing in Han Mountain ecological resettlement are as follows: First, the pull force of town on the ecological migrant is declining. The reason of increase in the living pressure of migrants is that their wage cannot meet the growing consumer demand of ecological migrants. In addition, the poor communication and employment difficulties, urban air pollution and noise pollution and other negative factors are reduced the pull of town to migrants.

Second, the push of original place is reducing. Many migrants said that in the pastoral living costs are low, and even picking bracken can earn pocket money, which reflects their nostalgia for homeland, reducing the push of original habitat to ecological migrants. In addition, in recent years, the urban-rural income gap has narrowed further. With the increase of income level of farmers and herdsman, the per capita income gap between urban and rural residents has been further reduced, and the thrust of rural population transfer to urban areas has declined. According to the above reasons, raising the income level of ecological migrants is the key to solve the problem of ecological migration, and realizing the migrants' urban reemployment can not only improve the income of migrants, but also solve the problem of high cost of living. According to the statement of migrants, most of the jobs in the city require higher practitioners, for example, catering industry required the attendants less than 35 years of age, to speak Chinese fluently. Most of the migrants are more than 40 years old, not proficient in using Chinese, and for the old concept of employment, they do not want to engage in food service industry. Therefore, to solve the problem of ecological migrant urban employment, it is necessary to start from the following three aspects: First, the transformation of the migrant's employment concept; the second is the promotion of vocational ability of migrants; the third is to strengthen the rationalization of urban industrial structure, thereby enhancing the labor capacity of the secondary and tertiary industry.

5. Policy suggestion

In the background of China's urbanization, ecological migration and urbanization are the mutual promotion and development process. The ecological migration urbanization resettlement does not only solve the problem of ecological protection, but also allows migrants to successfully realize the transfer of industrial employment, achieving the improvement of their income and social welfare, not only to resolve the resettlement problem, but also to transport labor for the city.

Promotes the urbanization development, in turn, attracts more ecological migrants into the city, to further promote urbanization and environmental sustainable development. Based on the theory of push and pull, this paper analyzes the driving factors of ecological urbanization resettlement and finds out that urban employment is the key to solve the urban resettlement of ecological migrants in ethnic areas, and puts forward the following suggestions for improving the urban employment of ecological migrants.

5.1 The government strengthens the employment guidance to migrants

The government is the organizer of ecological resettlement, has the responsibility and obligation to improve the relocation work mechanism, to strengthen the guidance, management and service work on the ecological migrants. The government should fully understand the importance of carrying out ecological resettlement and follow-up security work, and actively play the government's subjective initiative, always pay attention to the life, working status and actual needs of the migrants, effectively prevent the emergence of migration issues, strengthen the organization, coordination and guidance on migrants, change the migrant's employment concept, and enhance the confidence of the migrants to get rid of poverty and build a better life.

5.2 Strengthening the vocational skills training to migrants

The majority of the migrants are Mongolian, they cannot use Chinese skillfully that leads to inconveniences on them during the daily life and work. In this way, local training institutions can set up Chinese language training courses to improve the Chinese level of the migrants. The government should strengthen the cooperation with vocational training institutions, talent exchange centers, enterprises and employing units, through vocational skills training to the ecological migrants meet demand of the employer, and encourage the employer to hire them for a long time. Through the development skills (such as entrepreneurial skills) training to migrants, the government cultures entrepreneur and bellwether of becoming rich, let them drive other migrant workers to transfer employment.

5.3 Optimizing and upgrading urban industrial distribution

The irrational industrial structure and lagging industrial development of town is one of the reasons for the structural unemployment of ecological migrants, so the government should promote the rational distribution of regional economy, encourage and guide the industrial industry and service industry to accelerate development, optimize and upgrade the layout of urban industries in order to expand employment channel for ecological migrants, and properly solve the problem of structural unemployment. At the same time, in view of the employment difficulties of ethnic minorities, the government should guide the employing units to provide employment for ethnic minority migrants and safeguard and guarantee the interests of ethnic minorities under the premise of protecting and carrying forward the culture of ethnic minorities.

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