

Analysis of the Push and Pull Factors of Environmental Migration in Sanjiangyuan Area in China

Meng Xiangjing

Renmin University of China, P.R. China

Abstract: Environmental migration in Sangjiangyuan area has drawn a lot of attention in China. Though the migration in Sanjiangyuan area is organized by the government, we still want to know who migrated and what determined the migration. Based on the survey data and focus group discussion with government officials, migration village cadres and migrants in 5 counties in Sangjiangyuan area which conducted in July 2009, this paper used the push-pull model to analyze the push and pull factors in origin and destination, the intervening obstacles and the personal factors of the migrants. It shows that government policy is the driven factor for the migration, the push factor of origin is relative weak and the most attractive factor in destination is the better education condition. Several policy applications also were discussed in the paper.

KEY WORDS: Push-pull factors; environmental migration; migrants; Sanjiangyuan Area

INTRODUCTION

In last two decades, environmental induced migration and environmental refugees have emerged as important issues both globally and nationally. Many scholars in the world have put their attention in this field and contributed certain valuable literatures already (Myers,1995,1997, 2002; Bates, 2002; Hugo,1996; etc.).Myers estimated that “The total number of environmental refugees could well double by the year 2010, and increase steadily for a good while thereafter as growing numbers of impoverished people press ever harder on overloaded environments” and he also indicated that “the issue of environmental refugees promises to rank as one of the foremost human crises of our times” (Myers, 2002). Though there have some estimation of the number of environmental refugees and some definition discussion and type classification of the environmental migration and refugees (Myers, 2002; Bates, 2002; Hermsmeyer,2005), some scholars also pointed out that the detailed study and information about environmental migration is still lack(Hugo, 1996; Tan, 2004). What’s the dynamics between environmental change and migration? Who migrated, how and why? All these questions still need more detail and deep case studies to examine.

In China, environmental migration also arose as a hot issue since 1990s. Serious environmental disasters (such as the flood of Yangtze River in 1998, frequently happened sand storm in1990s, and

Please address correspondence to Meng Xiangjing, Institute of Population Research, Center for Population and Development Studies, Renmin University of China, No. 59 Zhongguancun Street, Haidian District, Beijing 100872, P.R.China

e-mail: mengxj@ruc.edu.cn.

Tel: 86-10-82502954, Fax:86-10-62515213

serious land desertification, water and soil erosion, land deforestation in Northern-western China etc) like a warning clock awoken the sense of environment protection to Chinese government and Chinese people. The government strongly realized the critical importance of protecting the environment. In October 2001, Chinese government officially issued a White Book on Poverty Alleviation and Development in Rural China (Office of Poverty Alleviation in China, 2001). In this document, we can read the national policy for poverty alleviation and environmental migration. The government will encourage and support the extremely poor rural households in badly living situations area to seek a new way to relieve their poverty and also decrease the population pressure on the environment in the original area by migrating to a new place. The central government urged the local governments to provide a set of measures and aids to the migrated households and make sure their living condition is above the poverty line and help them to develop a new life in the destination. The rules of the migration are “voluntary decision making, nearby arrangement, suitable size according to the ability of local government and adequate support.” After then, environmental migration (also called ecological migration in China) projects started in almost every province in China especially in Western China. It's estimated that total number of environmental migrants will be 10 million in Western area only (Hou, 2005). Many Chinese scholars have conducted some survey and research on environmental migration. Some of them discuss the definition, category and significance of the environmental migration (Bao, 2006; Chen, 2007; Fang and Peng, 2002; Li, 2009; Ni, 2007; Pi, 2008), some of them analyzed the detailed process of the migration, the integration of the migrants, the effects of the migration on the migrants and destination (Chen et al., 2007; Chu and Meng, 2005; Dong, 2006; Gegen and Wuyun, 2003; Jiao and Wang, 2008; Li, 2006; Liang, 2007; Shi, 2008). Though there are more and more studies on environmental migration, we still hardly find the detailed and deep analysis on the migration decision making, the relationship of the environment changing and migration, and the characteristics of the migrants. Environmental migration in Shangjiangyuan area is the biggest environmental migration project in China. This study will base on the survey conducted in 2009 summer to analysis the push and pull factors for the migrant's decision making in environmental migration project in Sanjiangyuan area in China. Hope it will contribute some fresh and detail findings to the study of environment induced migration.

BASIC INFORMATION

Where is Sanjiangyuan area?

Sanjiangyuan Area is located in the hinterland of Tibetan Plateau in south of Qinghai province in China. It is the source of Yangtze River, Huanghe (Yellow River) and Lancang River and plays a critical important role for the three great rivers' water security. The geographic location of Sanjiangyuan Area lies between 31⁰39'-36⁰16' North and 89⁰24'-102⁰23' East and the attitude is 3450-6621 m. It includes 16 counties under the 5 minority autonomous prefectures (Yushu, Guoluo, Hainan, Huangnan and Haixi) and one township (Tanggulashan township) under governing of Golmud City. If calculated by the administrative zoning, the area of Sanjiangyuan is 36.31x10⁴km² and the area is 31.81x10⁴km² if calculated by the area of basin of Yangtze River, Huanghen River and Lancang River (Chen, 2007).

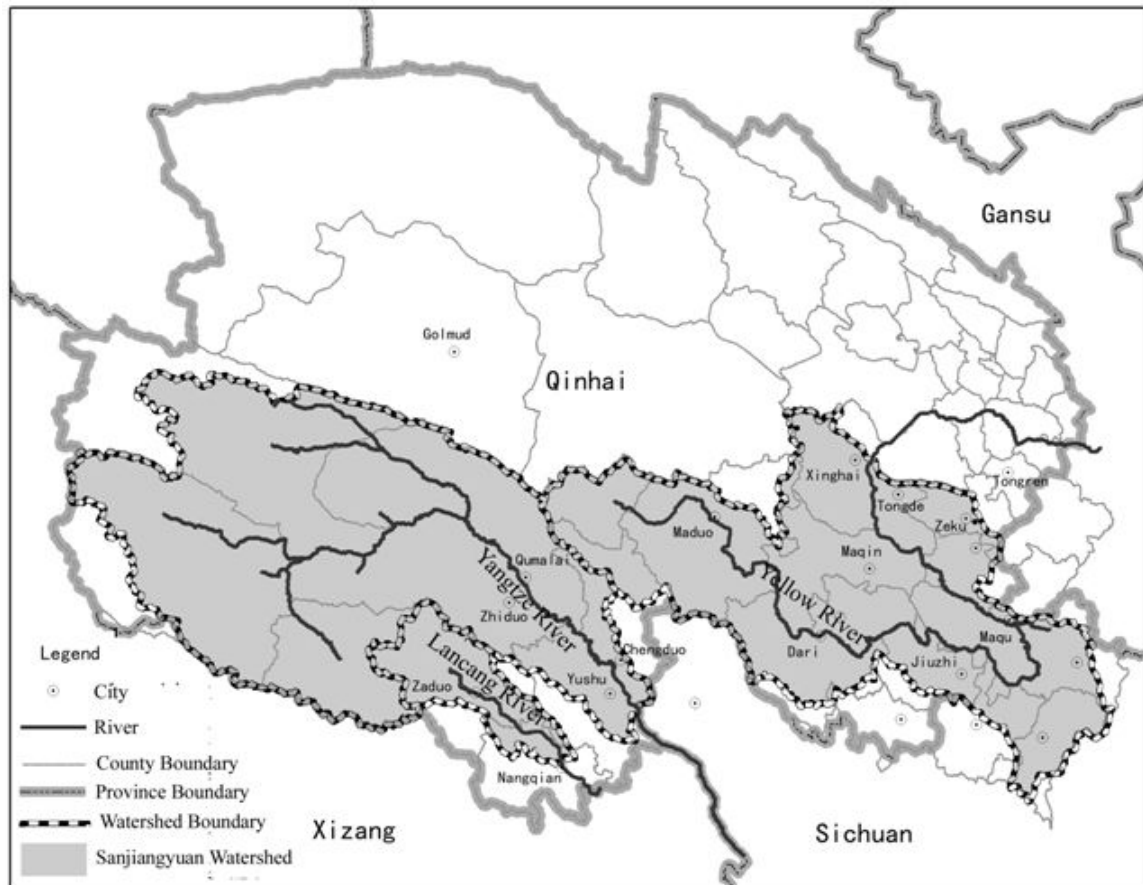


Figure 1. Map of Sangjiangyuan Area

There are totally 119 townships (22 towns) in Sanjiangyuan area with 153670 households. The total population is 650 thousand and 86% of the population is farmers and herdsmen. The ethnic minority population in this area is 544 thousand (84% of the total population). Most of them are Tibetan people. The per capita income of farmers and herdsmen in this area is 1359-2601 Yuan (about 200-400 dollars) in 2005 (Qinghai Statistic Bureau, 2006). It's the poorest area in Qinghai province and China. Nearly half of the population is among the poverty population.

Why environmental migration concerns?

Sanjiangyuan area is the most valuable treasure of nature and human Beings. The ecological environment situation in this area is very fragile. It is facing serious challenge and crisis in last several decades due to the interactivity of natural factors and humanity factors. As showed in following aspects(Chen, 2007):

1. Glacier and permafrost zone retreating
2. Grassland deteriorating and desertification worsening
3. Water and soil loss becoming more serious
4. Severe pasture rat disaster prevailing
5. Biological diversity damaged

The destruction of the ecological environment, led to the increase of environmental refugees. They couldn't find enough water for their life though they live in the source of three rivers. Deforestation

leads to the decrease of grass land. The herdsmen have to increase the number of their livestock in unit area to make their life. Thus, the grass land is over grazed and destroyed more seriously. This leads to a vicious cycle of “poverty → over grazing → destroy the environment → more poverty → environmental refugees”.

Due to the unique of the land scenery, the important role for the ecological security of whole Qinghai province even for whole China, and the critical situation of the environmental destruction, Chinese government started to build the Sangjiangyuan Reserve Area to protect the environment of Sangjiangyuan area. And as part of the planning, environmental migration projects started in 2004. The aim of the project is to decrease the population pressure on the environment and also to increase the migrants’ living standard and economic ability.

What is environmental migration project in Sanjiangyuan Area?

Environmental migration project in Shanjiangyuan started in 2004. By May 2009, 86 resettle villages have been built and more than 10 thousand household and nearly 50 thousand migrants have moved into the new villages or communities (Xinhua net, 2009). The migration villages usually were built near towns, city outskirts. Every migration family will get a standard house (60 m²) with a yard and 6000 yuan (about 900 US dollars) subsidy per year for their living. The pension will pay to them for 10 years by the government. Some migrants get some heater pension in winter also. The government encouraged the herdsmen to move out but they will not force them to move. They will only move out the herdsmen that willing to move out. Besides the living arrangement and pension, government also provided some skill training to help the migrants to adapt the new life and help them settle down. The goal of the migration project is to make the migrants “moving out, settled down and becoming rich” (Liu and Wang, 2008). The government also issued some favorable policidx for the land use, job seeking and household transfer for the migrants. The plan and goal of the migration project showed in table 1.

Table 1. Plan and goal of Sanjiangyuan migration and livestock reduction

| Area (autonomous prefecture) | Number of villages concerns | Size of the migrants households | population | Area of grass land (10 ⁴ hm ²) | Livestock carrying capacity (10 ⁴ sheep unit) | Actual livestock number (10 ⁴ sheep unit) | Goal of Livestock reduction (10 ⁴ sheep unit) |
|------------------------------------|--------------------------------------|------------------------------------|------------|---|--|--|--|
| Yushu | 161 | 6018 | 31084 | 91.26 | 68.62 | 94.71 | 55.87 |
| Guoluo | 83 | 2299 | 10267 | 13.73 | 71.64 | 72.36 | 0.72 |
| Hainan | 60 | 1766 | 8894 | 8.49 | 5.73 | 26.13 | 20.41 |
| Huangnan | 21 | 1184 | 5001 | 5.02 | 7.13 | 15.5 | 8.37 |
| Tanggulashan Township | 6 | 128 | 528 | 28.67 | 3.58 | 3.87 | 0.28 |
| Total | 331 | 11395 | 55774 | 270.72 | 156.70 | 212.58 | 55.87 |

Source: Chen, 2007. P145

RESEARCH QUESTIONS AND METHODS

Research Questions

Environmental Migration Project in Western China has been a hot issue both in the field of policy making and social studies. Environmental Migration Project in Sanjiangyuan area also attracted great attention because it is the largest environmental migration project in current China and also because it is the most complex and special migration project in China. The migrants will not only change the place they live, they will also change their life style and production manners. For the Tibetan herdsmen who live in the high altitude grassland and make their living by grazing for all the generations, how will they make the decision to move out and will they adapt the new life in the destination and what are the difficulties they will face with the totally new life style and environment? Did they really volunteer to move out? Can they settle down and get rich as the project planning expected? Do the push-pull factors of environmental migration differ with other kinds of migration? Though there are certain literatures on the project achievements and migration policy analyzing, the detailed study on above questions is still insufficient. This paper will use the push and pull theory to analyze the decision making process and factors of migration in Sanjiangyuan area.

Research Methods and data

We went to Sanjiangyuan area in July 2009 and did two weeks survey there. We have visited 6 migration villages. They are Sanjiangyuan New Village in Tongren County, Hainan Autonomous Prefecture; Beibatan Migration Village and Nanbatan Migration village from Guoluo Autonomous Prefecture in Tongde County, Hainan Autonomous Prefecture; Jiajieniing Migration Village in Yushu County, Yushu Autonomous Prefecture; Tanggulashan Migration Village and Kunlun Migration Village in suburb Gulmod City. Three of the villages are intro-county migration, and three of them are across-county migration. We visited the provincial and local government branch responsible for the environmental migration, the cadres of the migration villages and migrants families. We did personal review, focus group discussion, and questionnaire investigation among governments officials, migrants, and cadres. So we got the valuable first hand information and data during the survey. The pity thing is that most of the migration family can only speak Tibetan language and can not speak Chinese Mandarin language. This limited the sample number of the questionnaire greatly. Though is very tough, with the help of local people, we still reviewed totally 68 migration families and did the questionnaire survey in Kunlun Migration Village. We will use these questionnaires and review records to figure out the push-pull factors of the Environmental Migration in Sanjiangyuan area.



Figure 2 Migration villages and families in Tongren County, Tongde County, Yushu County and Golmud Suburb

Analysis framework

“Push-pull” theory is the most common used theory in migration studies. Ernst Ravenstein first reported this theory in his famous paper “Laws of Migration” (Ravenstein, 1876, 1885, 1889). After then, several scholars have modified and developed this theory. Here I will use the push-pull model constructed by Lee. In his paper “ A Theory of Migration”, he summarized factors which enter into the decision of migration and the process of migration under four headings (Lee, 1966):

1. Factors associated with the area of origin.
2. Factors associated with the area of destination.
3. Intervening obstacles.
4. Personal factors.

He indicated schematically the first three factors in a Chart as below. The + signs in the chart stand for the pull factors of an area which act to hold people within the area or attract people to it, and – signs stand for the push factors in an area which tend to repel people. There are 0’s to which people are essentially indifferent. All these factors work with the personal factors together to determine the decision making of migration (Lee, 1966).

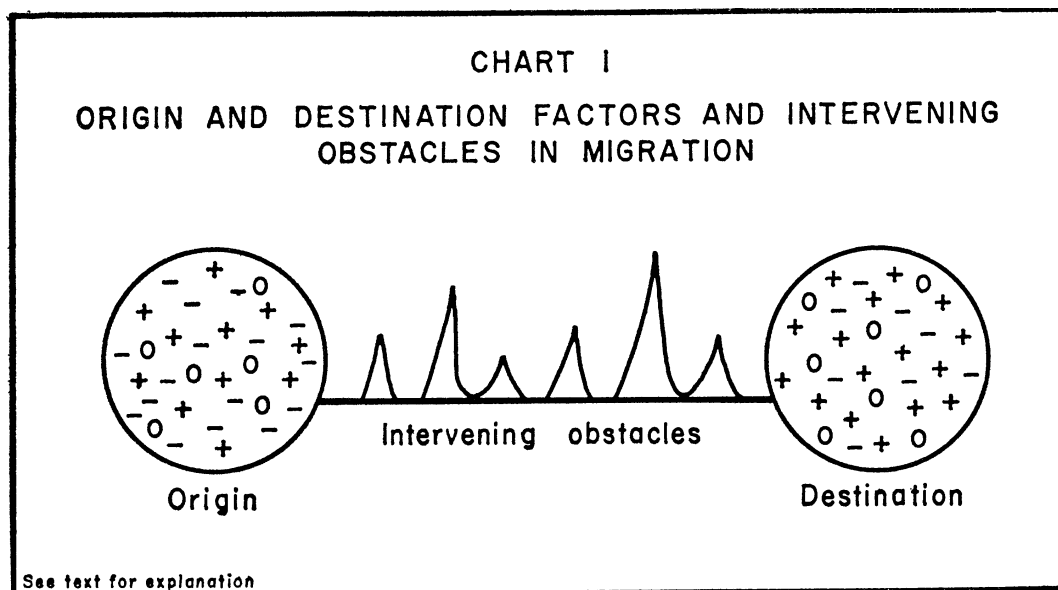


Figure 3 Lee's migration factors chart (Lee, 1966)

We will use the factors listed in this model as our analysis framework to analyze the push-pull factors in both place of origin and destination and will also check the intervening obstacles and migrants' personal factors for the decision making. Environmental migration is organized by the government, so besides the four category factors above, we will not neglect the policy factors.

There will be many factors both in the place of origin and destination, we will group the factors into two main category as geographic environmental factors and social and economic factors. With environmental factors we will mainly discuss the climate, attitude, land resources, water resources and location. For economic and social situations we will compare the situation of living standard, income, employment situation, education facilities, medical services and transportation. For intervening obstacles, we will discuss the distance and the great changing of the migrants' life, the change of life style, change of productive activities, language obstacles, and lose of traditional living skills. For personal factors, we will mainly focus on the migrant's age, sex, education, occupation, income, number of livestock and area of grass land.

ANALYSIS

Government's migration policy—the driven push and pull factors

The environmental migration in Sanjiangyuan area is under the advocacy and organizing by the government. So it's not the voluntary migration from its basic layer. The root purpose of the project is to protect the environment of Sanjiangyuan area and also to increase the environmental security of the downstream regions of the three rivers.

Government polices served both as a push role and pull role. The push role is that the migration is planned and the local government must carry out the project and certain people must be moved out according to the planned time table and migration volume. Every county got their quota (see table 1).

For accomplishing the goal of resettlement, government also provided many favorable polices to attract the migrants. The government will provide the migrants families the basic living conditions, every household will get a standard (60 sqm²) house with a yard and other facilities like running water,

electricity, road, school, etc. The government pays every migrants household 6000 Yuan subsidy per year for 10 years. Government also provides some job or skill training after the migration to help the migrants to settle down and to find their job. So the project is a government guided migration project and involuntary migration for the migrants from the basic view. From the reason of migration we can see that more than half of the migrants migrate for responding to government's project (Figure 4) .

Weak Push factors in the place of origin

Sanjiangyuan area has its very unique scenery and geographic/ecological characteristics. Every one has been there will be shocked by its beautiful and natural landscapes, clean rivers and lakes, clear blue sky and low white clouds, the variety of rare wild animals and the Tibetan people who live there for generations from far ancient time. The Tibetan herdsmen still live in a natural and traditional way there. They have their own view of life and own way to protect their land and to make their living harmonious with the environment. Sure if view them by the eye of modern society, the living condition is backward and they are not modernized. Some of the Tibetan people still live in far away pasture area and it's hard for them to obtain the modern facilities such as the electricity, the public services such as medical care and school education. But for themselves, they don't think they live in miserable life and they also enjoy their life and have their judgment and belief about life. Even the government realized the environmental changing of the Sanjiangyuan area and they want to protect the environment and also to help the Tibetan herdsmen to get rid of the traditional life style and to achieve the economic development and modern life in the new places, most of the Tibetan people don't have this kind of awareness. Even some government officials also couldn't understand the migration project. They think the environment is good and the environmental problems of Sanjiangyuan area is very comple and not only because of the overgrazing of the herdsmen.

So the push factors of origin can be the high altitude, the overgrazing from government view, the low income, lack of modern infrastructure and development opportunity. But the push power is not so strong yet. Most of the herdsmen there love their homeland and enjoy their life greatly. We can see this from figure 4, that only 17.6% migrants owe their migration to protecting the environment and only 8.9% migrants think that they migrated because their living condition in origin is too hard.

The pull factors in origin are that they are familiar with their land and people, they earn their living by grazing and achieve their life value through their productive activity and routine life.

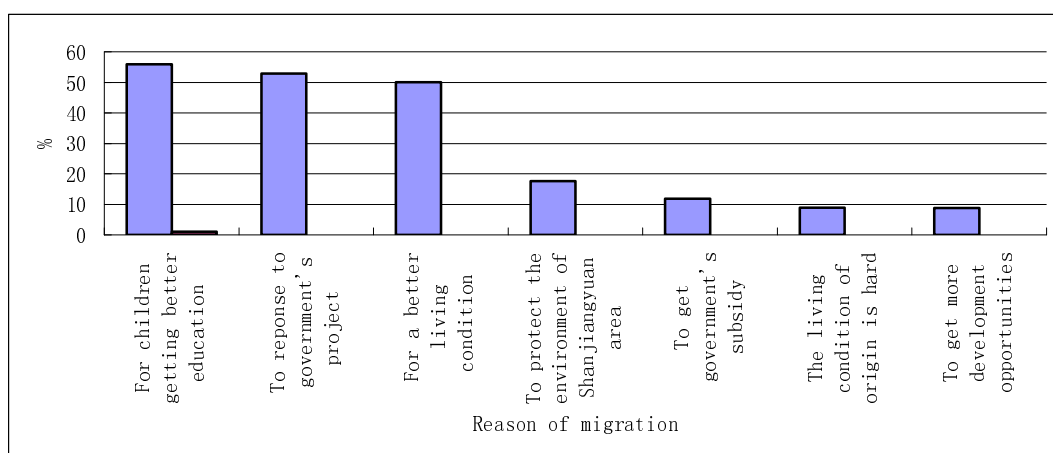


Figure 4 Reasons of migration in Shangjiangyuan area

Push and pull factors in destination

The migration villages usually were built near township, county capital or city. The altitude is relative lower than origin and the transportation is more convenient. The living standard in destination is relative higher than origin (See table 2). Migrants can get more infrastructures and public services there. Migrant children will get better education than in origin. Before the migration, more than half the family (51.9%) has school age children that didn't attend school. After migration, the enrollment rate of school age children is above 90%. Migrants will get better medical care and hospital treatment also after migration.

Table 2 Change of family facilities before and after migration

| Facilities | Before migration (%) | After migration(%) |
|---------------|----------------------|--------------------|
| Running water | 2.9 | 79.4 |
| Toilet | 2.9 | 76.5 |
| Kitchen | 8.8 | 52.9 |
| Television | 32.4 | 82.4 |
| Telephone | 5.9 | 47.1 |
| Radio | 48.5 | 66.7 |
| Cell phone | 15.2 | 87.9 |

It's easy to explain that the top reason of migration is for children to get better education and also, half of the family wants to get higher living conditions than before (Figure 4). Most of the migrants considered that migration is most favorable for the children and elderly.



Figure 5 Kunlun Migration Village in Golmud Suburb Gobi

Push factors are also there in the place of destination. Michael M. Cernea (2000) indicated that the

risks of displacement from development projects are: (a) landlessness; (b) joblessness; (c) homelessness; (d) marginalisation; (e) food insecurity; (f) increased morbidity; (g) loss of access to common property resources; and (h) community disarticulation. In the case of the resettlement in Sanjiangyjan area, the striking risks are landlessness, joblessness, marginalisation and increased morbidity. The migrants have no grassland or cultivated land in resettlement destination. They are hard to get a job there. Our survey data shows that nearly half of the family income in 2008 is not more than 6000 Yuan. Government subsidy is the mainly income source for the migrants family.

Table 3 Structure of Source of Income of Migrants Family in 2008

| Source of income | Husbandry | Agriculture | Local labor | Floating labor | Wage | Government subsidy |
|------------------|-----------|-------------|-------------|----------------|------|--------------------|
| Percent | 21.20 | 6.10 | 18.20 | 20.60 | 3.00 | 88.20 |

Though migrants were resettled near township, county town or cities, the migration village is still isolated from the host community. For example, Kunlun Migration Willage and Tanggulashan Migration Village are located in suburb of Golmud City (Figure 5). It is Gobi area and no people live there before. The two villages are just like the isolated islands in the desert Gobi. The residents in Golmud City look the migrants strange due to the big differences of their clothing, manner of behavior and different languages and way of thinking. So when we asked the question about the identify, more than half of the migrants (53%) still consider themselves as herdsmen though they have no grassland and do not graze at all; 5% consider themselves as farmers, actually they have no cultivated land also; only 16% migrants consider themselves as local residents; and one quarter of them think themselves as no category can belong to or don't know who they really are (Figure 6). It is hard for them to identify themselves as local residents.

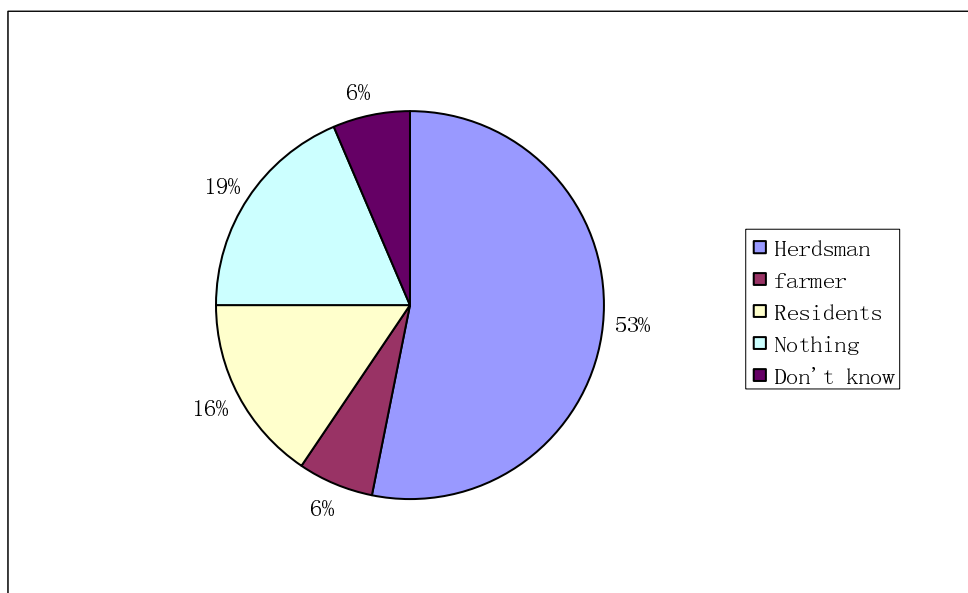


Figure 6. Migrants identify after migration

From the policy aspect, the migrant's household state didn't change after the migration. They are still administrated by the origin government. For the intro-county resettlement, it's relative simple.

They are still under the governing of the same local government. But for the cross-county migration, it's a big problem for the migration village's management and administration. In Nanbatan Migration village from Guoluo Autonomous Prefecture in Tongde County, we noticed that the village administrators are all from their origin place and the destination government will be not in charge of the affairs of the village. Jia Lou, one of the government official of Tongde county told us that the migrants from Guoluo will not find job here. They will be recognized by the local people since there are still some difference between them though they are both Tibetan. He told us that the majority of the migrants in this village returned back to their origin place to earn their living. So marginalisation and increased morbidity is also the big problem that the migrants have been facing. Even in intro-county migration, the migrants also face the same problem for finding job and get their dignity. Some conflicts happened between the migrants and host people.

Great Intervening Obstacles

The most mentioned and studied of the obstacles is distance (Lee, 1966). For the migration in Sanjiangyuan area, the distance here not only indicates the geographical distance, but also the distance from one world to another world. The challenge the migrants faced is just huge. They are herdsmen and only know how to graze in grassland and have no any other skills for living. They live in the peaceful and remote world far away from noisy cities and have their traditional living way and style. Most of them are illiterate and never get education. The majority of them can only speak Tibetan language and don't know Chinese Mandarin language at all. They have their own custom, culture and religion. The obstacles they should conquer and the difficulties they need to overcome are much more than the voluntary migrations and migrations between same or similar communities. Though the destination is also in Suanjiangyuan area, the change is just great. So, even the government helped them to overcome some obstacles and resettled them in the new villages, some of them still couldn't conquer the differences and returned back to their origin or migrated to other places finally. We saw many empty houses in almost every migration villages. Some of the family only left children, elderly or housewife there and most of the labors went out or returned back to seek their living.

Personal factors of the migrants

Though government made the decision for conducting environmental migration project, they do not want to force people to migrate. They will only move the one out that they are willing to move out. So at this decision making process, the target migrants can have their own choice. At this point, it is voluntary migration. The question is what kind of person will migrate? What are their personal characters? Are there any special characteristics of the migrants comparing with voluntary migrants or other development migration projects?

We asked these questions when we conducted our survey and interview with project executors. They said that most of the migrants are poor people with less grassland and livestock. They couldn't earn much money by the grazing, so they take the migration as a opportunity to change their life. At least they get a house and subsidy from the government and they may have more development opportunity in the new place. If more people wanted to migrate, usually they will decide by vote the poor or lot the quota. One government official works in husbandry department in Yushu Autonomous Prefecture said that they will not allow the families with many cattles and large area of grassland to move out because it will be affluence their husbandry production. The families own many livestock and

grassland will not willing to move out too, because they will be rich enough by their husbandry productivity. For the poor people, the most attractive factors are the government's subsidy and free house and also their poor living conditions in the origin which served as a pull factor. On the other hand, another kind of people who are also willing to move out is the businessman or the families that do not depend on the land. They have no much land to lose in the origin and they would like to move to the place near county town and cities. The convenient transportation, the potential market there will benefit for their business and also easy for them to find new job. There is another kind of family that willing to move out because they want their children to get better education. This kind of family has long run sight and consider more for their next generation's education and development. For this kind of migrant family, the pull factor in the destination is stronger than the pull factor in origin and they usually have the ability to overcome the difficulties they will face and can adopt themselves into the new environment more easily. For both the poor family with no much land and livestock and business person also have no much land, the efficiency of the project goal of protect the environment will be greatly affected.

Lee (1966) indicated that "the characteristics of migrants tend to be intermediate between the characteristics of the population at origin and the population at destination." Many studies on voluntary migration such as rural-urban migration also support this point. But for the environmental migration in Sanjiangyuan area, this is not the case. The characteristic of migrants is much more like the origin because it is family migration. Some characteristics are even lower than the origin since most of the migrants are poor and low educated. We can take the characteristics of education in Kunlun Migration Village as example (Table 4). Totally 85.4% migrants (18+) are illiterate or half illiterate. Only 2.4% migrants get the middle school education above. This is not only much lower than the average education level of Golmud City, but also lower than the average education level of origin. Fortunately, school age student enrollment rate is 100% in Kunlun Migration Village now. We can expect a bright future of the migrant children and their family will benefit greatly from it sooner or later.

Table 4 Education situation of the migrants in Kunlun Migration Village

| Education level | Population (18 Above) | Percent |
|-----------------|-----------------------|---------|
| illiterate | 611 | 72.3 |
| half-illiterate | 111 | 13.1 |
| primary school | 103 | 12.2 |
| middle school | 12 | 1.4 |
| high school | 5 | 0.6 |
| college | 3 | 0.4 |
| Total | 845 | 100.0 |

POLICY IMPLICATION

The purpose of the Environmental Migration Project conducted in Sanjiangyuan Area by Qinghai government is to decrease the overgrazing and the population pressure on the grassland and to protect the ecological environment in Sanjiangyuan area. The government also planed to improve the living conditions of the migrants and help them to gain a better life in destination. The project did achieve its goal as planned and about 50 thousand herdsmen moved out from the pasture area and were resettled in 86 new migration villages built by the government. They got the subsidy from the government and also

got some favorable policies and technological and economic help from the government. But has the goal of the project really accomplished? The conclusion is just not so simple to draw. There are still several issues need to be considered by the government.

1. Migrants' involvement is critical important

Resettlement is a very complex process especially in this very special area. The target migrants will face great challenge and change of life. So they have the right to know what will happen to them in the very beginning and every stage of the process. But it's a pity in this project that most of the migrants didn't be involved in at all. Majority of the migrants don't know how their new home like and what kind of life they will face. Even many local government leaders and village cadres couldn't understand the significance of the project.

2. Necessary of building the ecological compensation system

The subsidy provided by the government is not sufficient for the migrants' living. That's the reason that some migrants returned back to the grassland to make their living. The amount of the subsidy is estimated by the price of several years ago when the government planned for the project. After several years, the price is increasing and the subsidy is still fixed. It's not sufficient for the migrant family to maintain their living especially for the big size family because the subsidy is same for every household now matter how many family members. The migrant can eat lot of meat when they lived in grassland, now they have no enough money to buy meat. Many scholars in China have called to build the ecological compensation system for the migrants since they are contributing for the environment recovery and improving. They have the right to get the compensation (Chen et al, 2007).

3. Administration of the migrants

It is good for the migrants to have their local government's help in the beginning period of migration. But after migrated, if they didn't change their registered permanent residence and still belong to their origin government, they can not really settle in the destination. There are much troubles also for the original government to manage the migration village in far distance, especially for the cross-county resettlement. The host government will neglect the migrants in their area since they do not belong to them. After settled down in the destination, it's better to transfer the migrants into the resident of host area. They will have their new identify then and be received by the host government too.

4. Selection of the migrants

For achieving the goal of protecting the environment, the government is better to move the herdsman with large area of grassland and large number of livestock out. The real situation is contrary. The majority of the migrants are poor people with small or even no grassland and livestock. The efficiency of the migration will be affected then.

5. Environment maintaining and protect in both origin and destination

After the migrants moved out, if the non-migrants in origin couldn't protect the grassland well, the environment will not sustain still. The destination of migrants moved in is also located in Sanjiangyuan area. The construction of the migration village and the settlement of the migrants will also increase the population pressure on the environment of destination. The loss and gain should be carefully calculated.

6. Culture and ethnic minority protection

Though from the view of outside world, the traditional life style of Tibetan herdsman is backward and hard, the special life style and productive manner still have their own value and need to be protected and treasured. Their culture, religion, custom are the most valuable human heritage. They do need very much to develop and improve their living conditions, but they have the right to keep their

own pace and choice.

Above all, the environmental migration project in Sanjiangyuan area needs to be planned and carried out more scientifically, humanely and efficiently.

CONCLUSION

Environmental migration project in Sanjiangyuan area is the biggest and most complex migration project in China in 21st century. The project is organized by Qinghai government and the goal of the project is to protect the environment of Sanjiangyuan area and also to help the migrants to improve their living condition. So the migration is involuntary migration from the root. But the government will not force the migrants to move out. They just encourage people to move out and they also provide some finance support and construct the villages to attract the migrants. Migrants will make their own decision for moving or not. At this layer, the push-pull factors in origin and destination, the intervening obstacles and migrant's personal characteristics will work together to determine the migrants mind. As we analyzed above, the push factors in origin is relative weak. The strongest pull factors in destination for the migrants is the better condition of education and second one is better living conditions. Migrants owned more modern staffs and facilities after their migration. The obstacles for the migrants to face and overcome are much more than other kind of migrations. This is because the great change of the migrant's life from geographical environment to life style and skill, productive manners, language difference, habit, culture, custom and so on. It's different with other kinds of migration. The characteristic of migrant is not between the origin and destination. It is similar with the characteristics of origin and it's even lower than the average level of origin in some aspects. Most of the migrants are poor and illiterate, they can not understand and speak Mandarin language. The ability of melting in the new society is low. Though government has worked many ways to try to help the migrants to find job in destination and settle them down there, many of them still could not find job and returned back to origin or moved out to some other places to earn their living.

The efficiency of the project, the effect of the migration on migrants, place of origin and place of destination should be well evaluated. There are still great space for the government to improve their policy and concern more for the migrants.

ACKNOWLEDGEMENT

This research was funded by the project of Chinese Ministry of Education on "The effects of ecological migration in Sanjiangyuan area on migrants" (Project issued number: 08JA840024) , "Evaluation of the ecological migration in Sanjiangyuan area" and "211" project on " The following up survey of ecological migration in Western China" .

The author thanks to Jia Shaofeng, Li Runjie, Wu Jianhai, Gao Zhiyong, Jia Luo, Guoqing, Tong Xiaoli and many other Tibetan migrants families to help us to accomplish our survey and interview.

REFERENCES

Bao, Z. M.. (2006). On the definition, classification and other problems of eco-migration. Journal of Central Nationality University (Philosophy and social sciences edition), 2006(1).

- Bates, D. (2002). Environmental Refugees? Classifying Human Migrations Caused by Environmental Change. *Population and Environment*, Vol. 23, No. 5, pp. 465-477
- Cernea, M. (2000). Risks, Safeguards and Reconstruction: A Model for Population Displacement and Resettlement *Economic and Political Weekly*, Vol. 35, No. 41, pp. 3659-3678
- Chen, G. (2007). Environmental Protection and Construction of Sanjiangyuan Reserve Area. Qinghai People's Press, Xining.
- Chen, Y.L., Liu W.Z., Kuang, T. C., & Rehemangjiang, J. (2007). Study on the mode and policy of eco-migration in Xinjiang minority area. *Modern Agricultural Sciences and Technology*, 2007(22).
- Chen.G.J. (2007). Strategic thoughts and suggestions of eco-migration in China. *Decision and Consulting Letter*, 2007(5).
- Chu, C.X. & Meng, H.J. (2005). Thoughts about the problems and countermeasures of eco-migration in Inner Mongolia. *North Economy*, 2005(6).
- Dong, M. (2006). Eco-migration and peasant income: case analysis of Hongsipu Resettlement Development Zone of Ningxia. *Rural economy of China*, 2006(3).
- Fang, B. & Peng, Z. (2002). Eco-migration: a new thought of poverty reduction and eco-environmental protection in West China. Nanning: Guangxi People's Press. P72.
- Gegengaowa, & Wu, Y.(2003). The concept, problems and countermeasures of eco-migration in pasture area of Inner Mongolia. *Inner Mongolia Social Sciences*, 2003(2).
- Hermesmeyer, H.(2005). Environmental Refugees: A Denial of Rights. *CONTEMPORARY TOPICS IN FORCED MIGRATION*, Working Paper No. 2
- Hou, D. (2002) . The sustaining growth trends and solution of grassland population ecological pressure: feasibility analysis of economy induced eco-migration engineering. *Chinese population sciences*, 2002(4).
- Hugo, G. (1996). Environmental concerns and international migration. *International Migration Review*, 30, 105-131. Information Office of the State
- Jiao, K. & Wang, R. (2008). Analysis of the effect of eco-migration in minority area. *Inner Mongolia Social Sciences (Chinese Edition)*, 2008(5).
- Lee, E. (1966). A Theory of Migration. *Demography*, Vol. 3, No. 1, pp. 47-57
- Li, D. (2009). Study on eco-migration of China: literature review. *Northwest Population*, 2009(1).
- Li, J., Shi, G., & Zhou, J. (2006). Ethnic psychological identity within eco-migration: taking case of eco-migration in Talim Basin in Xinjiang. *Journal of Xinjiang Normal University*, 2006(3).
- Liang, F.. (2007). Study on eco-migration in reservoir area of Three Gorge Engineering. *Science and Technology Forum of China*, 2007(10).
- Liu, X.Q. & Wang, L. Q. (2008). Domestic literature review of eco-migration. *Ecological economy (Academy edition)*, 2008(1).
- Myers, N. (1995). *Environmental Exodus: An Emergent Crisis in the Global Arena*. Washington DC: Climate Institute.
- Myers, N. (1997). Environmental refugees. *Population and Environment: A Journal of Interdisciplinary Studies* 19, 167-182.
- Myers, N. (2002). Environmental Refugees: A Growing Phenomenon of the 21st Century. *Philosophical Transactions: Biological Sciences*, Vol. 357, No. 1420, Reviews and a Special Collection of Papers on Human Migration (Apr. 29, 2002), pp. 609-613

- Ni, Y. (2007) Poverty, ecological fragility and eco-migration: theoretic and practice analysis of west regions. *Ecological economy* (Academy edition), 2007(2).
- Office of Poverty Aids in China (2001), *White Book on Poverty Aids and Development in Rural China*, Beijing
- Pi, H.F. & Wu, Z. Y. (2008). Comments on eco-migration study in recent years. *Journal of Sanxia University* (Humanity and Social Science edition), 2008(1).
- Qinghai Statistic Bureau. (2006). *Qinghai Statistic Yearbook*. Qinghai Statistic Bureau Press. Xining
- Ravenstein, E. (1876). The birthplaces of the people and the laws of migration. *The geographical Magazine* III: 173-77, 201-6, 229-33.
- Ravenstein, E. (1885). The laws of migration. *Journal of the Statistical Society* 48:167-235.
- Ravenstein, E. (1889). The laws of migration: second paper. *Journal of the Royal Statistical Society* 52:241-305
- Shi, D.S. (2008). Living condition and social adaptation of Sanjiangyuan eco-migration: taking case of eco-migration in Golmud city from Changjiang source. 2008(4).
- Tan, Y. (2007). Environmental Concerns and Population Displacement in West China. Paper presented at the 8th APMRN Conference, 26-29 May, 2007, Fuzhou, China
- Xinhua Net (2009), Nearly 50 thousand environmental migrants have settled in the new places in Shanjiangyuan Area. http://news.xinhuanet.com/newscenter/2009-04/15/content_11191063.htm