

Index

Water Problems in Rural South China

Introduction	P.2 - P.3
Background	P.4 - P.10
Water trade between Heyuan City and Hong Kong	P.11- P.17
Visit place and target respondents	P.18- P.24
Xu-dong settlements (xin yuan community)	P.25- P.32
Settlement in Xia Lin village, Shuang Jiang Town	P.33- P.47
Summary	P.48- P.49

Introduction

China's most famous "dam immigrants" are surely the 1.4 million people displaced by the Three Gorges Dam, completed in 2006. This report, however, will tell the stories of less well-known dam immigrants in the Dongjiang river basin of Guangdong province. The area has a relative abundance of water resources, and local authorities generate substantial income by selling water to large cities such as Shenzhen, Guangzhou, Dongguan and Hong Kong. These water transfers are necessary to sustain the region's large industrial centres, but as this report outlines, reservoirs in the Dongjiang basin have been expanded three times since 1974, and as a result many villages have been displaced by reservoir expansions and efforts to protect water supplies from human pollution. Water is being transferred to industrial cities where it can generate the greatest profit, at the expense of people displaced from the reservoir area.

This report focuses on two resettlement sites for "dam immigrants" in Guangdong's Dongjiang basin: Xu-dong resettlement and Xia-lin resettlement. Researchers carried out interviews with residents of both sites, and documented how their quality of life and access to water have been negatively affected by resettlement.

In short, compensation for re-settled villagers was low. Those with access to extra funds bought homes in Xu-dong, close to a nearby city with relatively liveable infrastructure. Those without extra money bought homes in Xia-lin, a poor settlement

where they report that life is much harder than before relocation. In both towns, it is very hard for the villagers to maintain their agricultural livelihoods, because farm land is not available within reasonable distance from their home. The vast majority of young adults have migrated to urban centres to find work, leaving the elderly and young children at home. In Xia-lin, even young children have to migrate for education, because there are no schools nearby. The greatest irony, however, is that in the poor Xia-lin settlement villagers themselves do not even have access to clean water for drinking. Tap water is contaminated by sand and gravel, and so villagers travel great distances to fetch water in the mountains. These settlers have been made to sacrifice their former standard of living for the sake of providing water to wealthy cities.

Acute water shortages in China mean that water transfer and water management projects expand, and there will inevitably be more resettlements such as Xu-dong and Xia-lin. Chinese authorities must consider the rights and well-being of these "dam immigrants", and ensure that they are fairly compensated with sustainable livelihoods in their resettlement sites. Dam immigrants demand that their rights not be subordinated to the pursuit of profitable water sales, or subordinated to the need to fuel industrial development in China's thirsty coastal cities.



Water crisis

Water is the source of life, one of the main elements in the ecological circle. While there are more and more concerns about the oil crisis, the water crisis is constantly ignored. A lack of oil may cause many inconveniences in life, but we can still live. A water crisis, by contrast, is a direct threat to every organism ' s life, which should not be underestimated.

Looking at a picture of planet largely covered by blue color can create the illusion of an infinite supply of fresh water. But this assumption is false. 97.5% of water on Earth is sea water, and 2 percent of fresh water is inaccessible to us. In other words, less than one-half of one percent of all water on earth is available fresh water. The fact is, the Earth ' s water supply is finite.

Due to this false assumption, many of us have used water as if it would never run out. However, this unrestrained usage only happen in some countries. The United Nations pointed out that 2 in every 5 people are now affected by water shortage, and the number will continuously increase to 3 in every 5 by 2025 if we do nothing to control water use. The World Bank also reported: "By 2030 the water demand will greatly exceed 40% of the earth can supply!"



25% of the world's population lives in China, but China only has 6% of the total fresh water. China's per capita fresh water use is only 1/4 of the world average level. It is one of the top 13 countries with the most severe water shortage in the world. Out of a total 660 cities, 440 cities are facing water shortages, with more than 100 cities facing serious water shortages.

The causes of water crisis

The world population is expanding dramatically. In the 20th century, the world's population has increased three fold, and water consumption increased six fold. China's population is expected to increase by 200 million people by 2025. By 2050, there will be an extra 3 billion people contributed to the global population, and we will need 80% more than the existing water resources to meet the demand.

The United Nations estimates that by 2030, the total urban population will grow by up to 160%, double the rural population which is a huge pressure on the limited water supply system. The over-use of surface water and groundwater in cities are far beyond our natural water capacity.

One of the reasons that led to the rapid decline in water resources is the serious



Background of Water Problems in Rural South China

water pollution. In China, half of the urban groundwater is seriously polluted. 30% of the seven major rivers are undrinkable. Three hundred million people are drinking unclear water, that is, one in every four Chinese is not able to access clean water at all. More importantly, most the pollutants are chemical that do not degrade easily, thus making the fresh water undrinkable or costs a huge amount of money to fix it.

In addition to the water pollution problem, climate change is also a big threat to fresh water. Climate Change damages the natural water cycle, including melting glaciers, unpredictable rainfall, unstable rainfall schedule, and more frequent droughts. Climate experts pointed out that the severe drought China experienced in both 2010 and 2011 was mainly due to the marine monsoon which was caused by climate change.

There has been a large-scale extraction of groundwater in order to solve the surface water shortage problem. Groundwater accounts for 33% of the total water resources, and nearly 70% of the population 's drinking water. In fact the current use of groundwater in China has far exceeded the natural ability to make water. For example, Beijing has lost 106 billion cubic meters of groundwater, compared with the 1970s.

Our precious water supplies are being rapidly reduced, and if we do not immediately address the issue, we will soon face a serious water deficit - a permanent deficit. This water crisis is not only an environmental issue; it also has a serious impact on society. But the important question is, who owns water? And who should have access to water?



Water as a Human Right

While water has an irreplaceable position, the General Assembly of the United Nations (UN) finally declared that "safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights " on July 28th 2010⁽¹⁾ Admitting water as a human right clearly places certain responsibilities on each of the member states to ensure that its people have access to clean and affordable water without discrimination. Moreover, it also means that water "is a legal entitlement, rather than a commodity or service provided on a charitable basis"⁽²⁾ . Therefore, even though no legal obligation is derived from the resolution, those who abstained might be just too scared of these implications.

1. <http://www.un.org/apps/news/story.asp?NewsID=35456&Cr=sanitation&Cr1>
2. Erik B. Bluemel, " The Implications of Formulating a Human Right to Water " , Ecology Law Quarterly, Vol. 31, p. 957, 2004.



Water justice

Water justice means people have the right to access clean and affordable water that is enough to guarantee the basic living need without discrimination.

However, the current situation is not justice at all. Highly developed industry and modern agriculture cause a lot of pollution and excessive use of water resources. Non-industrialised countries mainly rely on agriculture for a living, using plenty of water for irrigation of crops. However, most of these crops are exported to developed regions, indirectly exporting the water that intensifies the current water shortage.

Industrializing countries like China have been facing serious water pollution. Half of the country's groundwater is polluted, and "cancer villages" have emerged in rural areas that threaten the life and health of the residents. Ironically, most of them are not the ones who enjoy the benefits of industrial development. Water resources nowadays are largely used for making money, and industrial and agricultural companies simply do not pay any environmental and social costs, resulting in water injustice.

Water is essential for social and economic development. Water shortage makes people vulnerable and makes it difficult for them to become self-reliant, as these people tend to spend time on dealing with their daily water needs, but not on developing their life potential.



The government is duty-bound to uphold people's right to water. Policies should be based on effectiveness, equality and justice as the basic principles of the management and allocation of water resources, to ensure the public's right to drinking water. In addition, during the implementation, governments should take everyone into account. No-one's needs should be ignored or forgotten.

Water allocation policy

Policy makers need to make saving and protecting the existing water resources an important policy consideration. However, the water crisis cannot be solved overnight. Apart from combating the water crisis, there is a larger social problem that need to be solved, namely who has water to drink? Water allocation policies play a main role in determining this.



Recommended water allocation policies

Existing water resources should be allocated in both a rational and effective way to fulfill the people basic need. Water pipes and other water facilities ought to be installed in each household, that delivery enough water. A proper sewage disposal system should be established, to avoid further water pollution. And every individual ' s rights to access water resources should be protected, to sustain their lives.

However, in the report of the 2010 World Economic Forum, it says: "Within two decades, water will become a mainstream theme for investors; for many, water is already a better "pick" than oil. "⁽³⁾ Yet, for those who view water as a public good, this is a somewhat alarming statement. Ironically the phrase also evokes the ambitions of the wealthiest businessmen, who treat water as the most profitable opportunities in the 21st Century. The trend of water commoditization, the way to make money the only condition for access to water, is a global crisis that directly and indirectly exploits the human rights of accessing clean water.





Study Purpose

The main purpose of the study is to investigate whether the mainland Chinese government has protected every citizen's water rights, especially those living in rural areas. By investigations we want to understand their capacity for accessing clean water.

We selected Heyuan City because this place has abundant water resources containing most of the Dongjiang River basin and the biggest reservoirs in Guangdong Province. Furthermore the municipal government has been selling plenty of drinking water to economically developed areas, for example Hong Kong and Shenzhen. This generates a very substantial income for the Heyuan government.

However, the impact of reservoirs construction and the 'water for sale' policy on the local and original resident is usually ignored. Even in Hong Kong, people have no idea how their consumption of water affects these people live in Heyuan rural area.

So we decided to go to these places and assess whether the Heyuan Government water allocation policy is comprehensive enough to ensure the people 's water right and basic needs in the implementation process.



Background information of water trade between Heyuan City and Hong Kong

Heyuan, Guangdong Province, has rich water resources. 87.5% of the city area is covered by the Dongjiang River basin, which is one of three major rivers in Guangdong's Pearl River. In this area are two of the province's largest reservoirs - Xinfengjiang reservoir and Maple reservoir. In addition to ensuring drinking water supply, these reservoirs are also used for flood and salinity control, shipping, power generation.

Dongjiang River Fountainhead: originally from Jiangxi, water flow from northeast to southwest into the Heyuan. 279 km of 562 km whole length is located at Heyuan City, accounted for 50% of the East River basin

Source:

(Ming Pao Daily News on 23 November, 2008)

Dongjiang River Fountainhead





Xinfengjiang Reservoir is the largest tributary of Dongjiang River. Build in 1950s.

Due to the construction of Xinfengjiang reservoirs, 28,333 hectares forest and paddy 12,000 hectares have been flooded. 100 thousand residents lose their field, and 200 thousand people live along the reservoir have to migrant outside. These affected residents accounted for 65% of the total province population. As Heyuan City has the obligation to protect the water quality, the surrounding industrial, forestry and tourism development is strictly limited.

Photo Source: <http://www.flickr.com/photos/10603642@N07/927659876/>



Hong Kong faced a serious water crisis in the 1960's, due to lack of adequate water, unstable rainfall, the absence of lakes and rivers and immaturity mechanisms by which to achieve self-sufficiency. The situation was made even worse by the rapid development of industry. It was difficult to met both the 3.5 million populations' needs and ensure stable economic and social development.

To ensure Hong Kong's economic development and social stability, the Hong Kong and Guangdong governments signed an agreement to divert water from the Dongjiang River to Hong Kong to solve the water shortage problem, started from the 1965.

The accumulation of water supply to Hong Kong since 1965 to the present has reached nearly a billion cubic meters, representing about three per cent of the annual average of the Dongjiang River runoff. The Hong Kong government has earmarked 2.4 billion in the annual budget for the purchase of Dongjiang water, amounting to an annual average of seven billion cubic meters of Dongjiang water. This accounted for more than 70% of total Hong Kong water consumption. Dongjiang water has been playing an important role in Hong Kong ' s economic development, as well as the maintenance of social stability.



To protect the water rights of Hong Kong residents, the first 12 cubic meters of water used per household per month is free of charge. Over 99.9% of the population have access to tap water. The right of accessing clean water is well protected and will not be undermined by any economic conditions. In addition to Hong Kong, Dongjiang water is currently supplied to Guangzhou, Shenzhen and Dongguan and other regions to meet extra water needs brought about by rapid economic development. In 2010, the Heyuan Mayor revealed that a total of 400 million cubic meters of Dongjiang water will be allocated to Shenzhen and Dongguan per year.

A total of three pipe expansions and a transformation project were carried out in 30 years to ensure the water supply for Hong Kong. Three expansions were completed in 16 years and cost 2 billion RMB. The initial water supply of around 6 million tons per year increased to 1.743 billion tons per year.



The relationship between expansion projects and water supply to Hong Kong:

The first phase of expansion:	1974 -1978, 168 million cubic meters of water supplied to Hong Kong / year.
Phase II Expansion:	1981 -1987, 620 million cubic meters of water supplied to Hong Kong / year.
Phase III Expansion:	1990 -1994, the water supply increased to 1.743 billion cubic meters / year, of which 1.1 billion cubic meters supplied to Hong Kong / year.

In fact Hong Kong does not need this much water from Heyuan City. The Hong Kong Government overestimated the annual population growth rate and many industries were relocating to mainland China. Hong Kong's water demand is actually less than that agreed in the contract. However, based on the contract conditions, Hong Kong still has to purchase a minimum of about 800 million cubic meters of Dongjiang water. As a result, 30 billion Hong Kong dollars (US382 million) worth of Dongjiang fresh water went directly into



the sea from 1998 to 2003. Under public pressure the two governments finally negotiated a flexible supply agreement in 2004 to avoid the waste of water. Under this agreement, water supply from Dongjiang will be based on the actual water use of Hong Kong, but the total price will not be changed.

Various information keeps showing that the Hong Kong government does not treasure water resources. The Hong Kong Water Sector Department in 2009 revealed that, "every year about two hundred million cubic meters of fresh water is lost because of the disrepair of pipes." Ironically, according to the provisions specified in the contract, Heyuan City water should make Hong Kong a priority of its water supply list. In 2009 June, eastern areas of China were experiencing drought. Xinfengjiang reservoir water level has been significantly lower to 99.8 meters. But Hong Kong residents were not affected at all by these drought problems.

Sacrifices are made by those who live in the upper reaches of the Dongjiang river in Heyuan in order to protect the people of Hong Kong people's enjoyment of water for economic development and society. Apart from the massive dam immigrants in 1950s due to the construction of Xinfengjiang reservoir. Government continues to reduce the population along the reservoir in order to protect the Dongjiang River water quality, because of the increasing water supply for Hong Kong during these two decades.



Water trade between Heyuan City and Hong Kong

These immigrants are scheduled to move to different settlements, and because of the lack of appropriate policies, they are facing a lot of livelihood problems. The government's compensation is not even sufficient to meet their basic needs, let alone development.

To ensure water quality and water supply, the Heyuan city government not only controls the use of river water, but has also put stringent restrictions on agriculture, forestry and industry development. The domestic production value of Heyuan city has long been ranked the last four in Guangdong Province. Government pay dam immigrants paid only fifty dollars RMB as resettlement subsidies per person per month, twenty dollars of which is withheld by village authorities for official reserves. These subsidies do not provide adequately for life security.

The greatest irony is that most of the people who are facing water problems, are not drinking Dongjiang water. For example, women in remote villages have to spend few hours each day on fetching and carrying water from the mountains.

Some of the relatively rich immigrants will move to those settlements near the city center. Those who cannot afford to pay for these settlements will move to the settlement next to the original living place. However, these residents are being geographically,



interpersonally and economically isolated, plagued by problems concerning food and clothing, medical care, education and traffic.

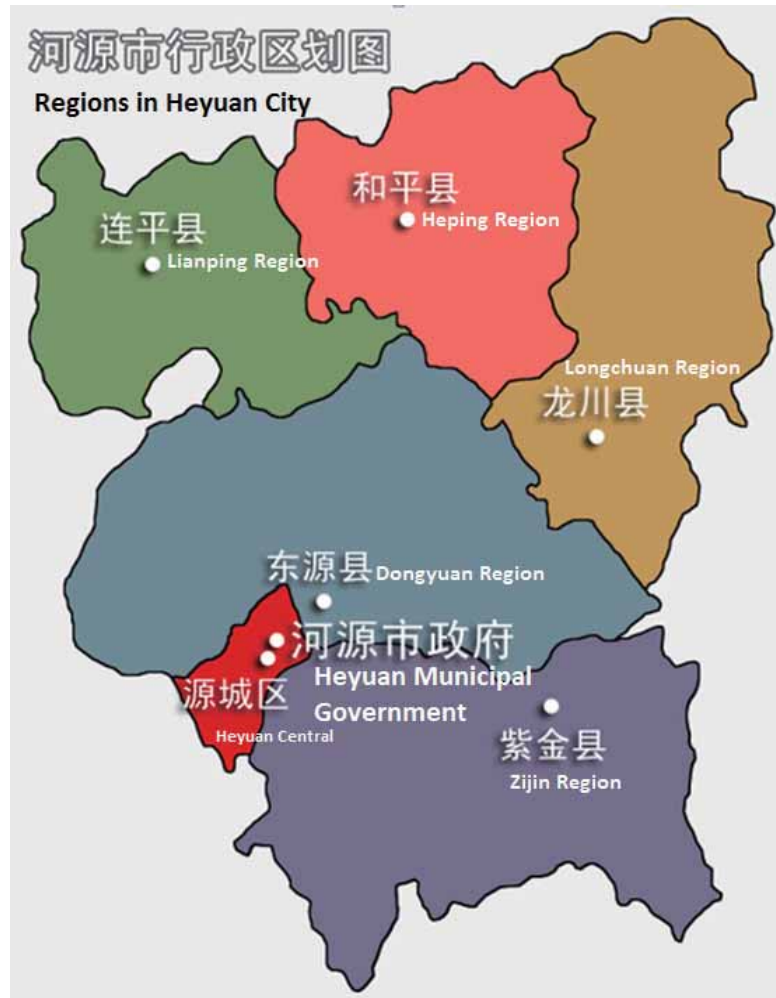
But whether living in the settlements that near to city center or in remote areas, they often face the problem that "workers are not workers, farmers do not farm". This means they lack employment opportunities or cannot farm in the dry conditions, and are limited in their options to maintain their livelihoods.

They are facing different kind of problems in accessing clean water. Some of the villagers have to spend several hours a day carrying water from the mountain. Some places have running water but the quality is compromised, containing sand and gravel. Some may be fortunate enough to enjoy Dongjiang water, but the cost are considerable high.





Visit place and target respondents



Five regions in Heyuan City: the region circled in red is the research site – Dongyuan Region.

Most villagers in Dongyuan region live below the poverty line. The city government launched the "One Village One policy" measures to encourage the village government to implement poverty reduction measures based on village specified needs and background. In fact, we recognize that the village mayor usually does not live in the village most of the time, and even then he does not reside close to most villagers. It may not be realistic to expect the village mayor and committee to think in villagers' shoes. This policy also deters communication between villagers and government. For example, if the villagers are not satisfied with the village committee's performance, it is hard for them to appeal or even seek help.



For most people relocated because of the dam, they usually held hope for a better life before the relocation. These two decades of hard life keep telling them that the income earned by the government from selling Dongjiang water holds no benefit for them, but rather makes their life harder and harder, and they are being forgotten.

The report will focus on the situation in resettlements in Dongyuan, Heyuan.

- 1) Xu-dong settlements, Xin-yuan community
 - 2) Resettlement in Xia-lin village, Shuang-jiang Town
- Residents in these resettlements are being reallocated by the government in the name of reservoir construction or water protection.



Xu-dong settlement is made up of different rural migrants who could afford 6,000 RMB to buy a house in the resettlement near to the city centre.

Residents in Xia-lin village's resettlements are comparatively poor and have been relocated to the resettlement near to their origin living places.

Although these immigrants settle in different areas, having different lives and different difficulties, one thing in common is that they have given up their original live to protect the Dongjiang water, to ensure the water quality for the rich city and meet their economic needs. On the contrary, their water rights and other basic needs are being ignored, which equates to water and environmental injustice.

The overview of two resettlements' situation

	Xu-dong settlements	Resettlement in Xia-lin village
Family structure	The whole family still living together	Mainly the elderly and children. People of working age usually leave for work.
Access to tap water	Yes (Dongjiang water, quality guaranteed)	Yes (water from mountain, quality not guaranteed)
Water for daily use	Using Dongjiang water from 2009	Will occasionally carry water from the mountain
Water Quality	Good	Not good, water contains sand and mud
Water Bill	12RMB per person/per month	N/A
Transportation	Public transportation 10 mins bus from city centre.	No public transportation Two hours to city centre.
Transportation fee to City Centre	Around 2RMB for public transportation	Around 25RMB for motorcycle and bus
Resettlement subsidies	Net 30RMB per person/per month	Net 30RMB per person/per month
Income source	Work in nearby industries	Work in industries located in the city centre.
Land for farm	Not provided	Not provided, but they can walk 30mins to their origin land to farm secretly.
Job opportunity	Hard to find jobs, high competition with immigrant workers.	Extreme hard to find jobs.
Health Care	Clinic nearby	No clinic in village
School	School nearby	No school in village



Travelling from Hong Kong to He Yuan takes 3-4 hours.



The maps of He Yuan city central: reservoir and the Dong Jiang River cover almost half of the land area..



The view of the Xinfengjiang Reservoir, the most important reservoir in Guangdong, which has 13.9 billion cubic meters total capacity and receives 6 billion cubic meter of water in average annually.

New Feng River Reservoir is also opened for tourism to increase the income of the He Yuan government. People can take a boat tour and stay overnight in the hotel along with the reservoir.





Taking a boat tour costs around 100RMB and the people living there generally receive around 1,500 to 2,000RMB income a month.



Because of drought in recent years, large reservoirs such as New Feng River Reservoir are also affected. The water level decreased from 115 meters to less than 100 meters.



Xinfengjiang Hydropower Station: one of the five biggest hydropower stations in China, generates more than 1 billion kW•h in average annually.



Plants such as Seaweeds are planted for water purification.



Introduction

The Xu-dong settlements are located about ten minutes drive from the Heyuan city center, near to the industrial zone. There are about a thousand residents who come from different rural areas affected by the construction of reservoirs. Before moving to the settlement, most all of them were self-sufficient farmers. There seems to be no reason for them to move out. However, due to the continued expansion of reservoirs, their village or fields were flooded. Nevertheless, the government urged them to move because their living will pollute the water sources. Most of them have been moved in these past twenty years. Although the removals are non-voluntary, they also have to pay six thousand RMB to buy a house in this settlement, and those who cannot afford to buy a house will probably stay in the village or placement in other remote areas.

At the time they moved to settlements, no specified policies were designed to help them adjust to their new life, there was no land redistribution arrangement, employment training or even water supply system, not to mention the recreational facilities.

Xu-dong settlements did not provide agricultural land for residents to continue to earn their living by farming. Every inch of land is used to grow vegetables but obviously is not enough for self-sufficiency. For some families a lack of labor makes life more



difficult. Most of the residents' income is earned from working at factories. However, the opportunity of employment is very low, because the municipal governments strictly limit the development and number of factories, and furthermore these former farmers do not have the skills for factories work. During the interviews, many residents used the phrase "workers are not workers; farmers do not farm" to describe their situation. As a result, they have nothing to do but stay in the settlement, and find it hard to develop their own talent.

The resident living standard is varied in the settlements, some people have made more money because their families have more young people and their children have graduated from school and become competitive in the labor market. Some are experiencing long periods of poverty due to lack of labor in their family, or unemployment.

Residents are not used to drinking Dongjiang water, but to drinking water from other parts of city, where the quality varies. Until late 2009, their drinking water was polluted by factories. The municipal government then connected Dongjiang water to their settlement. Residents have to pay for every drop of water – in contrast to the Hong Kong policy whereby people can enjoy a certain amount of free water consumption. The price is also expensive: 1.5 RMB per cubic meter, per person, which accounts for half of total immigration subsidies, but is affordable for all people.



In conclusionm these immigrants encounter a huge change because of the protection of water sources: large-scale migration, disconnection with villagers, the loss of their original ability to survive and basic needs like water are still not satisfied. After twenty years, they are still facing different kinds of problems and all these can certainly be avoided by a comprehensive immigration policy.



The story of Xu-dong settlements



Xu-dong settlements ' buildings iare comparatively sturdy, but the environment is not satisfactory, for instance, in terms of hygiene.



Xu-dong settlements (xin yuan community)

Villagers said: “ We come from different villages, we feel sad to lose our linkage with the original community. There are far fewer job opportunities and not to mention entertainments. Well, we do nothing here. “



There is less economically activity. There were some small businesses inside the village, but even these were closed for lack of customers.

Xu-dong settlements (xin yuan community)



Villagers grow vegetables on the space where houses have not been built yet.



Xu-dong settlements (xin yuan community)



Every single space is used for farming, but the sanitation in this space is not good at all.

These rubbishes may contain toxins which penetrate into the land and then goes into human body through crops.



The room is too narrow and lacks of a ventilation system, so some villagers choose to cook outside.



' Recruitment ' and ' room for rent ' notices posted on the wall. A villager explained, those villagers who have some money would usually move out, and their house will be kept and rented to immigrant workers.



Xu-dong settlements (xin yuan community)



Xu-Dong Settlement is near to an industrial area, but the villagers still find it hard to find a job there, as immigrant workers ask for less salary than they do.



Some women earn money by packing plastic gloves. For 250 gloves, they are paid 2.5RMB, so generally they can earn 7RMB for one day.



The noise of Mahjong can be heard around the settlement. It is the most common way for residents to spend their time.



Introduction

Xia Lin village is one of the poorest villages in Shuang Jiang Town. The villagers used to be farmers. About twenty years ago, the village was relocated to nearby settlements because the government said their origin living place was too close to the reservoir, where it would obstruct some construction projects and pollute the water. The villagers had to pay over one thousand yuan to buy a house in settlements, but the houses are of poor quality. The villagers are desperate.

Also, the government have not reassigned agricultural land for them. Farmers have lost their livelihoods, because large agricultural lands in origin place were flooded due to the rising water level in the dams.

Furthermore, living in rural area means economic isolation for them. There are basically zero employment opportunities in the vicinity of the settlements. Villagers need to earn money in the city center, but it is not easy for them who have no experience and skill to find a job. For those who successfully find a job in the city center, they stay there to save time and money on transport. The elderly and children are left in the village, making "left-behind children" and "elderly in empty nests" common phenomena. The elderly are burdened by household work and their grandchildren. Because many children lack parental care and education, some children of school age still do not understand words or even speak properly, and their future prospects are compromised.



Meanwhile, village men have difficulty finding marriage partners. Women put off because of the hardship life and immigration benefits like, 50RMB subsidies, do not include women who married into the settlements.

Unsatisfied water need: Villagers in the past had to spend several hours to carry water from the mountain for daily needs and consumption. In recent years, they started to have tap water which comes from the nearby mountains. However, the tap water contains sand and mud, and residents they have no idea if there is any water treatment and have no system for registering complaints when there are problems with the water quality.

Xia Lin village has the highest proportion of poor households in the five poorest villages in Shuang Jiang Town, the main reason being the lack of arable land and employment opportunities. However, the village's poverty reduction initiatives encourage the villagers to farm with no concrete policy. In fact Xia Lin village is facing a complex dilemmas, related to geography and economic isolation, unbalance family development and drinking water problems. They need long-term and human-centre policies. In particular, their life has been made more difficult because of the authorities prioritise protecting the water that its sell to developed cities, to earn considerable revenue. The villagers ' fundamental rights should be respected.



The Story of Xia Lin village:



“ I am willing to move out for the sake of protecting the quality of Dongjiang water, but we never imagined such a hard life after moving. Sometimes I really have no idea how to keep going. ” This kind of voice comes from most of the dam immigrants, they did not expect to be rich after moving out, but they just wish to maintain a reasonable standard of living. However, they know from their experience over the last two decades, that their voice will be still ignored.

Settlement in Xia Lin village, Shuang Jiang Town



"Here, in the new living place, we do not have fields for farming and raising domestic animals" one villager said when she was about to take the 30 minute walk to her farm with her little child.



Because of the poor quality of tap water, some women choose to spend several hours to collect fresh water from the mountain.



Settlement in Xia Lin village, Shuang Jiang Town



It not easy to carry over 10 kilograms of water to walk down the hill.



Villagers keep plastic bottles as water containers. But they do not know that some of the plastic bottles are not made for reuse, and may release noxious chemicals in long term.



The elderly people cannot carry water from the mountain, so they can only use the tap water with sand inside.

The mountain of Xia Lin Village was full of eucalyptus. Even though villagers do not have much knowledge about eucalyptus, they can still tell how these destroy their river:

After raining, the water that comes from the mountain is black. We do not dare to drink this water.

Before planting those trees, even in drought weather, some streams still came out, but now nothing.

The pond is smelly, just like dead water. We cannot use it for showering nor irrigation.





Settlement in Xia Lin village, Shuang Jiang Town



After moving to the resettlement, those villagers who have not found jobs try to farm in the very limited space. However, they do not own the land. They only grow for their own use because there are no potential consumers around.

Fields in front of their house. Villagers were living on agriculture for generations. They were not rich, but self-sufficient.

Settlement in Xia Lin village, Shuang Jiang Town



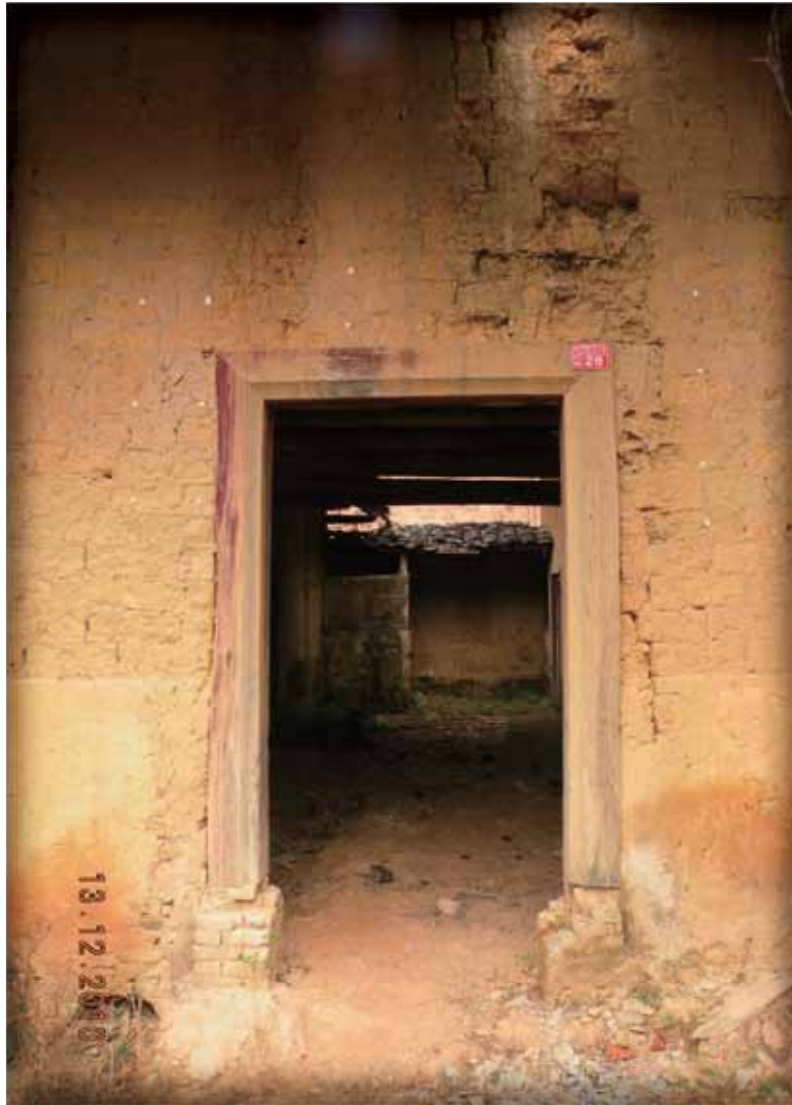
Abandoned land. Villagers are too far away from this agricultural land or lack of usufruct.

The rainfall has decreased since last year. Drought increases the burden of villagers.





Settlement in Xia Lin village, Shuang Jiang Town



However, few villagers found it hard to adapt to new conditions in the resettlement. They moved back to their old house, where they have more fields to cultivate.

It takes 40 minutes to walk from the old village to the resettlement. Abandoned houses here show that most of the villagers have moved out from this old living place.

Settlement in Xia Lin village, Shuang Jiang Town



This used to be a large good agricultural land. It was flooded because of the rise of water level due to the reservoir. Although the government prohibits fishing to protect the water quality, some villagers still take the risk to build small fishing sheds for fishing (photo taken in 2009).



However, a part of the dam broke two years ago, and the water level decreased significantly. Now it formed a situation whereby it cannot be used for cultivating nor fishing.





Settlement in Xia Lin village, Shuang Jiang Town

The young people of working age have to go out to find jobs, and so children and the elderly are left in the village. Some children still cannot speak probably until 5 yeears old.



A study in 2009 reported that there is no primary school in six of the nine administrative regions. Pupils usually have to spend at least a hour taking transport to school, or walking across the mountain. Children have to leave to local area for study, but they need someone else to take care of them. The annual income for one family is about several thousand RMB, so it is hard to afford these costs.

Settlement in Xia Lin village, Shuang Jiang Town



Parents visit their children once a month on average.



A villager jokes that this is a male village: no woman is willing to marry with the men there. What's more, it is harder to men to find a job than women outside, so some of them only can stay at home and doing nothing.



表1 下林村贫困情况统计表

全村总计	户数	238
其中：贫困户、人口数	141	59%
贫困户、人口比例	64.6%	59%
对口帮扶5个贫困村	均比例	41.4% 42.7%

(2) 该村贫困人口数达 864 人，占全村总人口比例为 59%，在对口帮扶双江镇 5 个贫困村中排第一（见图一）

图一 贫困数及占村比例示意图

造成下林村贫困现状的主要原因有：

(1) 人多地少，耕地严重不足，全村耕地面积为 551 亩，人均耕地面积仅为 0.38 亩；

13.12.2010

表2 “一户一法”扶助项目一览表

序号	帮扶档次	贫困户数	计划资金	合计 (元)
1	第一档	51	1100	56100
2	第二档	50	1300	65000
3	第三档	40	1400	56000
合计		141		177100

(四) 其他扶助项目

按照省、市扶贫开发“双到”工作要求，开展其他帮扶项目，如对符合条件的贫困户家庭纳入最低生活保障、推动贫困户家庭参与当地农村合作医疗保障、帮助贫困户子女顺利完成义务教育不辍学、资助考上大中专院校的贫困家庭学生完成学业、对贫困户开展劳动力输出及职业技能培训，培养提高贫困户劳动技能等，充分发动社会参与等多种形式予以帮扶。

六、加强监督管理

严格执行省、市的有关项目资金管理规定，不向村集体和个人发放现金，保证帮扶资金专款专用。按照《松岗双“双到”工作方案》，强化督促考核，落实工作组、村支部、挂点领导及干部、相关职能部门责任，确保帮扶项目有效实施，全面完成目标任务。

13.12.2010

Xia Lin village is in the top five poorest villages in Shuang-Jiang town. This is outlined in an official announcement on a public wall.



The comparison of water use in Hong Kong, Xu-dong settlements and Xia-lin village

	Hong Kong	Xu-dong settlements	Xia-lin village
Tap Water	Yes	Yes	Yes
Water source	Dongjiang river	Dongjiang river	River from nearby mountain
Started year in using Dongjiang	1965	2009	N/A
Quality controlled by the government	Meets the international standard	Meets the international standard	No control system
Water Bill	-The first 12 Cubic meters: FREE - Progressive rate from 4.16 to 9.05HKD per cubic meter.	\$2HKD per cubic meter.	Free
Water consumption Per day/capita	130 Litres	75 Litres	30 Litres
*Global average 170Liter			



Summary



Heyuan has the most fresh water in Guangdong, and selling water has become a major source of revenue for the Heyuan government. Generally report that protect Hong Kong water use is their political responsibility of Heyuan government. It may be true to some extent that the mainland government has increased their control of Hong Kong by supplying water resources. Other water-buyer cities like Guangzhou, Shenzhen and Dongguan are not the only places that lack water, but they are the main economic cities that the authorities have to be protect. These policies obviously making water a commodity, access to which is determined by economic means.

While people general appreciate the Heyuan government efforts in protecting the water supply the impact on local residents have been ignored or deliberately played down.

This visit reveals that many local residents had to leave their home and past way of life because of the construction of extension projects and water protection policy, and move



into government resettlement sites. However, resettlement policy makers ignore their basic needs, namely a stable water supply, individuals' basic welfare, and the sustainability of the entire region. In these villages, the women tend to have larger burden, as some of them have to spend a few hours walk to carry the water from the mountain, and some have to leave the settlements to look for a job. All these make them more difficult to take care of their children and the elderly.

They key question is, is protecting dam immigrants' basic right at odds with the goal of ensuring water supply to rich cities? The Heyuan government will subsidise or compensate the industries that are affected by the water protection policy, why these immigrant cannot enjoy the same arrangement? Resettled residents lack bargaining power in the whole process, and as a result have been the victims of environmental injustice

If the government regards the distribution of water as an economic activity but not a social welfare matter, in the foreseeable future, water will continue to be sold to the places that where it can reap a profit, and the water rights of people in remote areas would be ignored or their inability to afford the water price. The story of the residents of settlements in this study are good examples. To solve the problem, governments need to embed the concept of water as human rights in water allocation policies, to protect the water right of every individual person, no matter their social status and economic conditions. In addition, especially for those who already made sacrifices for the water allocation policy, the government needs to minimize the negative impact on their life, to provide basic economic security and self-reliance opportunities - in short, make their living sustainable.

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Hong Kong Water Sector Department
website: <http://www.wsd.gov.hk/>
《关于从东江取水供给香港九龙的协定》

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