

An Overview of Participatory Social Impact Assessment for Manwan Hydropower Station in Lancang River

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1. Introduction

1.1 Background of Dams home and abroad

Over 86,000 dams were built in China during 1949 to 1990. According to World Dams Committee's Criteria, China has 22,000 dams, accounting for 45% of the world total. Since later 1970's, when China stepped into its economic development period, energy construction was regarded as pioneer and pillar industry and developed rapidly. In two decades from 1978 to 1997, the installed capacity increase at the rate of 10,000 megawatt per year with total gross installed capacity of 254,000 megawatt, generating electricity by 1.1342 trillion kilowatt-hour and per capita installed capacity of 210 watt, per capita electricity 890 kilowatt-hour. Of the total, hydropower installed capacity amount to 59,730 megawatt generating 194.5 billion-kilowatt electricity. Starting from 1993, power generation increased at annual average rate of 6.2% to basically meet the needs of national economic growth. In order to adapt to the national economy growth at annual rate 8% ~9%, it was predicted that power industry has to keep an annual increase rate of 5%~6%, which means that annual increased installed capacity should be more than 10,000 megawatt and the gross installed capacity should be 290,000 megawatt by 2000; annual increased installed capacity should be 20,000 megawatt and gross installed capacity should hit 500,000 megawatt by 2010; annual increased installed capacity should be 30,000 megawatt and the gross installed capacity should be 700,000 ~ 800,000 megawatt by 2020. According the tentative planning of Chinese power specialists, China's dam industry will be greatly developed in the coming one or two decades. Hydropower industry in China provided powers for its industrialization and met the increasing needs of urban and rural residents to consume cheap electricity when improving constantly their living standard.

In contrary to this, since mid or later 1970's, dams construction in other counties decreased by about 60%. What are the reasons for the decline of international dam construction? An investigation conducted by the World Dam Committee during

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1998~2000 found two major reasons: first, the benefits of dam itself were not sound; second, many dams caused serious adverse impact on society and environment. Of course, dam impacts may be different in different regimes. In any case, to keep sustainable development of China's hydropower industry, it is worth looking at lessons and experiences learnt home and abroad to gradually develop a scientific and systematic hydropower development and management model, which is suitable for Chinese condition, helps to mitigate environmental impact, compensate fairly and reasonable to the affected communities and allow the affected population to participate in the decision making process.

1.2 Significance of Social Impact Assessment (SIA) for Manwan Hydropower Station

There are about 10 million resettled populations who were affected by dams construction. The net per capita income of the resettled populations who were from dam regions directly under central Government management was 441 yuan in 1992, 572 yuan in 1994, only account for 56% and 47% of that of averaged China's rural population respectively. In 1996, this percentage decreased to 40%. Some of the dams in China were constructed during the later 1950's ("great leap forward") or later 1960 till mid 1970's ("cultural revolution") period, the resettled populations at that time took the resettlement as their duty, received very little compensation and assistance. After 1980's, great attention has been taken by the Central Government on resettlement of dam-affected populations. The Central Government Leading Group for Poverty Alleviation pointed out that, of the 10.20 million resettled populations affected by dam construction, 7.0 million are living in poverty-stricken conditions and are waiting for assistance to get enough food and dresses. To deal with this issue, the Ministry of Water Resources resolutely allocated 1.9 billion RMB to 46 resettled project regions to help about 5 million poor resettled populations to alleviate their poverty. Meanwhile, the Ministry of Water Resource put forward "development resettlement", a new approach that enhance input in the economic foundation in dam region to adapt to China's market economy development.

In 1986, Mr. Tianfang and Mr. Lin Fangtang published a book on China's resettlement issue named by *China's Resettled Population*. It is pointed out in the book that there have been 86,000 dams constructed by the mid 1980's, which left behind a number of dam resettlement problems. The issues raised in the Book were

summarized by Government as “seven difficulties”, (difficult in using electricity, difficult in drinking water, difficult in going to school, difficult in getting food, difficult in going to hospital, difficult in accessing communication and transportation) and “four poor conditions”, (poor irrigation condition, poor housing condition, poor flooding control condition and poor dam maintenance condition). China’s dam social impact study should begin from this period.

In the past, there is very little social impact assessment on dam, it would be more difficult to conduct participatory social impact assessment. Insufficient attention was put on social impact assessment when developing environment impact assessment. The needs of resettled population were often ignored. Whenever the dam did cause impact, local governments are often unable to do what they hope to do. Local Governments found no ways, nor sufficient fund to help because initially the impact was underestimated and the funds allocated on resettlement falling short of the needs. In addition to that, the long-term development needs of the resettled populations were often overlooked. Because of these reasons, more and more left over problems was accumulated. Conflict between local government, the owner of the dam project and the people took place constantly that affected local stability.

At present, China is intensively implementing dam-construction-dominated energy development strategy. The dams to be newly built will involve new resettlement issues. It become more obvious and imperative to study on hydropower development related resettlement issue. Yunnan, as one of the key provinces for China’s west-east power transmission, is developing the cascade hydropower stations along Lancang River. Apart from Manwan hydropower station, another 4 hydropower stations along the main course of Lancang River are under construction or being planned. It would provide the useful reference for the future development of cascade hydropower stations if we summarize the experiences on social impact of Manwan hydropower station. It will also play the positive role in finding sound solutions to resettlement issue, safeguarding stability of Yunnan border region, and promoting sustainable electric power development and local economic development.

This study provides many case studies of different types of typical villages and communities in Manwan Dam region as the result of in-depth participatory social impact assessment to comprehensively reflect the dam impact on resettled populations. The authors of the paper tried for the first time to combine social impact

assessment with participatory approach although they have some experiences on assessing large project and participatory rural appraisal. This study is to offer a few commonplace by way of introduction with hopes that more social specialists could go into the communities to do better participatory social impact assessment to contribute to the development of China's hydropower industry and the improvement of living standard of the resettled populations.

1.3 Methodology

1.3.1 Definition, Objectives SIA and Its Tendency

The term “**Social Impact**” means all social and cultural consequences, including changes of people's life, production, social relations and organization pattern, brought about by any private or public activities, as well as cultural impacts, including changes of people's behavior, the view of value and religion.

The term “**Social Impact Assessment (SIA)**” is an assessment and estimation process. In general, the social consequences are assessed and predicted before the impacts are to be brought about by implementing the policy or development the project. This assessment will provide the basis for project decision-making, project programming and mitigation measures to be incorporated in the project design and execution. It is a type of prediction to the social changes. It may also be a post assessment, for example, for a series of cascade hydropower stations along the same river, the assessment of one frontal dam could be used to predict the impacts of rear dams.

The objective of SIA is to predict the possible social impacts that may be brought about by a development policy and project, to understand, manage and control changes, to formulate, implement mitigation measures to minimize adverse social impacts or prevent from extension. The assessment of the social impact brought about by past development activities or government policies could provide reference to future activities or policies. In the assessment, the most important key is to carry out social intervention to settle, mitigate and eliminate the adverse impacts and manage the social impacts rationally.

In practice, social impact assessment focuses on certain human society, e.g. village or affected people. Under the pressure of the impact, local people's social, economic, cultural, psychological status may subject to larger or small, reversible or irreversible

changes.

The deficiencies in the past are that the social impact assessment was only an accessory of environmental impact assessment. When developing social impact assessment or/and environmental impact assessment, some pressures often made the consultants fell difficult to present their independent viewpoints. When selecting consultants for a project, it was quite often that those consultants who hold the principles were excluded. Moreover, the process of the assessment was not transparent and the assessment report was not publicized. There is a lack of democratic supervision.

The present trends is that social impact assessment, become a social participation process and public influenced decision-making method, in stead of a consultants' finding. Participatory social impact assessment acknowledges the rights of the affected people and their experiences of being impact could be assessed. Their participation could enhance the reliability and persuasion of the assessment; participatory assessment could also surmount the external consultants' limited understanding of local conditions. The assessment report will publicize at least to the assessed communities. It is the most important that the implementation of the measures, programs proposed after the assessment relies on the involvement of the affected people, the participatory assessment conducted the best social mobilization to the communities.

1.3.2 Processes and Methods used in this Research

First, the objectives of the participatory social impact assessment were defined to provide basis for Governments and the project owners to solve the resettled populations problems that are left over because of the hydropower development, and to provide a channel for the affected people or communities to participate in decision-making process as well.

Second, the types of resettled populations in the dam region were screened. There are hundreds of villages inundated by the reservoir, which could be classified into 5 types. These 5 types are the populations resettled in remote alien land, the populations resettled locally at backside of the reservoir, rural populations turned to be non-agricultural ones, the populations stayed at original places with reallocated land resources, the populations stayed at original place without reallocated land resources.

Five typical villages representing the 5 types were identified to be involved in the participatory field survey. These 5 villages are:

1. Hongyan and Anyuan Villages of Mendi Village Committee in Xinfu Township, Yun county, which representing the populations resettled in remote alien land;
2. Jiangbian Natural Village in Jingdong County, which representing the populations resettled locally at backside of the reservoir;
3. Tianba Village in Manwan Town, Yunnan County, which representing rural populations turned to be non-agricultural ones;
4. Malutian Natural Village of Wuli Village Committee in Manwan Town, Jingdong County, which representing populations stayed at original places with reallocated land resources after dramatic reduction of available land resources;
5. Pingzhang Natural Village in Manwan Town, Yun County, which representing populations stayed at original places without reallocation of land resource after a dramatic reduction of available land resources.

Third, the framework and the indicators system for participatory assessment were established. The impacts of dam were assessed in terms of resources, social life, social culture, ecological transition, and social participation by taking one village as a complete system.

Fourth, a six-day pre-study in the dam region is conducted to validate the framework and indicator system of participatory assessment.

Fifth, formal individual case investigations on participatory social impact assessment were conducted. The participatory SIA involve 4~5 day of activities in each of the village participated by villager representatives including households with higher, medium and lower income, males and females at the day time. Meanwhile, other villagers could also participate in freely the assessment activities if they are willing to. In the evening, the consultants visited individual families, particularly focus on the disadvantaged people.

Sixth, methods used in the participatory SIA in these villages could be summarized as: the history or memorabilia ecological transition, the comparison of the changes of resources, drawing maps of resources, the root analysis of the impact, SWOT analysis, gender issue analysis, individual household case study, institutional analysis

(shown in table below).

Table 1 Investigation of Directly Affected Villages/Communities: the Assessment Items, Indicators, Methods and the Expected Objectives

Research Item	Indicator	Method	Objective
<p>1. Economic impact and poverty</p> <ul style="list-style-type: none"> ● Essential element for Production ● Products and income 	<ol style="list-style-type: none"> 1. gross resources in terms of agriculture, forestry, animal husbandry, and per capita of the resources 2. quantity of labor forces 3. means of production (structure and technology) 4. whether above essential elements for production are fairly accessible 5. gross production in terms of agriculture, forestry, animal husbandry, and per capita of gross production 6. income changes of typical households 	<p>Participatory appraisal approach (PRA) resources mapping, statistics data, typical household interview, farming calendar, resources accession and control chart, root analysis chart, community mapping</p>	<p>These indicators can demonstrate the changes of economic development and poverty conditions before and after resettlement, which is helpful to understand the impact of hydropower station construction on communities' economic development and poverty</p>
<p>2. Gender issues</p> <ul style="list-style-type: none"> ● distribution of social assignment, role and responsibility between male and female ● resources accession and control ● interests distribution ● gender equality 	<ol style="list-style-type: none"> 1. Housework distribution between male and female 2. Triple role and responsibility of women 3. Resources utilization and control of women 4. Different in family consumption between male and female 5. The position of women in decision-making in both family and community 	<p>Typical farmers' household interview, farming calendar, changes of gender issue awareness chart, resources accession and control, frangibility/ability chart</p>	<p>These indicators can demonstrate the changes of position and right & interests of female, the disadvantaged people, before and after resettlement, which helps to understand the impact of hydropower station construction on women</p>
<p>2. Social participation</p> <p>3.</p>	<ol style="list-style-type: none"> 1. scope of social participation 2. the approach, problem and effect of social participation in the course of resettlement 3. participation of disadvantaged people (the poor and female) 	<p>Key person interview, resettlement memorabilia</p>	<p>These indicators can demonstrate the participation of residents in the community and different stakeholders during, before and after the resettlement, which helps to</p>

Research Item	Indicator	Method	Objective
			understand the influence of hydropower station construction on social participation and its effects
<p>4.Social culture impact</p> <ul style="list-style-type: none"> ● Public services ● Community life ● Social relations 	<p>1.Transportation condition, market and goods circulation</p> <p>2.Education condition: distance of schools, enrollment rate of children of school age, enrollment of girls, discontinuation of school,</p> <p>3.Medical care condition: various endemic, infectious disease, malnutrition, psychological disease, woman's child-bearing health, infant mortality rate, rural medical treatment, ethnic traditional medical treatment, services provided by medical care organizations</p> <p>4.Water supply for human and livestock in term of quality and quantity</p> <p>5.Energy: the types, sources, utilization and management of rural community energy</p> <p>6.Problems, difficulties that the resettled population faced in the new living conditions</p> <p>7.Changes of community resident in terms of clothing, eating, housing and traveling</p> <p>8.Internal and external intercourse villagers</p> <p>9.The lose of social relation network of the resettled population and weak resettled population</p> <p>10. Relations among different</p>	Statistic data, group interview, community mapping, farmers' household interview, cake diagram, root analysis chart, farming calendar,	These indicator helps to understand deeply the possible adverse impact on social culture that may be brought about by hydropower station construction, and put forward measures and strategies to improve

Research Item	Indicator	Method	Objective
● Cultural impact	ethnic groups in the resettled community 11. Preservation and development of the traditional culture (e.g. ethnic festivals) of resettled population		
5.Changes of ecological environment	1. area deforested for arable land 2. agricultural ecology: irrigation system, soil fertility, diversity of crops, plants diseases and insect pests, pasture management 3. changes of knowledge on environment and resources management	Statistics date, resources mapping, trends analysis,	These indicator helps to understand deeply the social environment, agriculture ecology and sustainable development problems that may be brought about by hydropower station construction, and put forward measures and strategies to improve

Seventh, table of assessment prepared to assess quantitatively the participatory social impact: the seriousness of the impacts, the distribution and scope of the impacts, the links of the impacts, the time that the impacts last were scored.

Eighth, strategies were proposed and actions were taken. Finally, the problems that villagers hope to solve were prioritized, countermeasures were proposed and actions are taken.

Ninth, the dam's social impact on the community was summarized, and recommendations on ways to eliminate the social impacts were proposed.

Tenth, initiated by policies, the influence of the assessment was enlarged. The result of the assessment was feed back to local government where the affected communities affiliated, the owners of the dam project and more communities, a hearing conference participated by stakeholders was organized to seek more comments and optimize the solution to the social problems left over by dam project.

Eleventh, in the participatory assessment, the relations between coadjutants and participating people were assessed. The villagers were informed of the assessment procedures and take initiatives to participate in the discussion to minimize the role of coadjutants, who became the recorders, assistants or order-keepers to allow everyone

to have chance to speak with little subjectivity. When documentation, the coadjutants pay attention to sorting out and summarize information collected during the participatory assessment process. When composing the case analysis, the author paid attention to give prominence to participatory assessment approach and results that the effected populations find by themselves. The process and the results of participatory social impact assessment aims to display the effected people who understand and experience the social impact of the dam and therefore has the right to express and analysis the problem that they faced with. It is also desired that latecomers clearly understand the context of the participatory social impact assessment and easily learn to use the approach. It also aims to allow external consultants to monitor step by step and understand the close relationships between the assessment results and the participatory assessment process.

2. Results and Findings of the Assessment

2.1 The Assessment Results

There are hundreds of villages directly affected by the construction of Manwan hydropower station. Resettlement policy towards these villages is classified into 5 types: 1) the populations resettled in remote alien land, 2) the populations resettled locally at backside of the reservoir, 3) rural populations turned to be non-agricultural ones, 4) the populations stayed at original places with reallocated land resource, 5) the populations stayed at original place without reallocated land resources. Though each type has its special problems, the 5 types faced some common problems. The assessment results for each type has be briefly summarized as follows:

2.1.1 Hongyan Village of Mengdi Village Committee in Xinfu Township, Yun County – Representing the Populations Resettled in Remote Alien Land

There are 50 households, involving 257 populations from No.4 village, No.5 production team resettled in a Hongyan Village, which is more than 100 km away, where several ethnic people, including Bai, Han, Naxi, Hui jointly inhabit. Compared with the old residential place, the newly resettled residential place has advantages of better conditions in terms of transportation, market, education, and medical

care/treatment. However, the new place has disadvantage of water shortage for irrigation, water supply shortage for human and livestock, energy shortage and villagers are unable to self-support grain crops. Although farming crops were restructured and more sugar cane were planted to increase farmers' income, sugar cane production need intensive and longer labor force input and it face with greater market risk. The new residential houses, stricken by white ants due to lack of indigenous knowledge became unsafe ones. Because of these disadvantages, the resettled populations suffered from debt burden. Being resettled in the remote place, the resettled populations' original social capital and social relations gradually weakened, stood off, even lost. The previous jamboree those villagers enjoyed to celebrate the traditional ethnic festival became matter-of-fact daily life and activities. The strong homesick emotion made the resettled populations feel upset in the new living conditions, resulting in their difficulties in getting used to psychologically the changes of social culture. The high cost for education and medical care/treatment influenced the health of the resettled populations and the improvement of their culture competence. The new, severe living condition posed pressure on both males and females, which force females to accept the traditional advantage position of males. In general, the implementation of resettlement in the remote alien land policy under the traditional scope of agriculture is a one of the resettlement way that enables the resettled populations to easily resume and develop their economic activities. Resettlement in the remote alien land enables the resettled populations to get out of the indigenous confined space and select their suitable settlement place in a wider space. However, the largest and most difficult problem of implementing the policy of resettlement in remote alien land is psychological adaptability of the resettled populations to the society and culture in the new environment (refer to the individual case study on Hongyan village).

2.1.2 Jiangbian Village, Anle Village Committee, Manwan Town, Jingdong County—Representing Populations Resettled Locally at the Backside of Reservoir

The construction of dam inundated the entire paddy rice field, arid land, rotation land, the sites of houses, public facilities and the most of mountain forest and meadows of Jianbian Village. With coordination of the government, all the villagers resettled

locally in Bingzai at the backside of reservoir. The original Jianbian Village, an affluent and ease village with abundant land, mountain forest, meadow and water resources, diversified ways of livelihood, turned into a poverty village. The Village is very difficult to access drinking water, suffers from land shortage, confined mountain forest with no meadow, and limited way of livelihood, difficult to keep dress warmly and ear their fill. Because of economic difficulties, many of them rely on feneration, some middle school students unable to go to school, some villagers has no money to go to hospital. Because of taking up neighbor village's land, the traditional neighbor interdependent relation between villagers become tensioned. The gap between the richer and poorer became larger. Women's position in the poor family became lower. The land reclamation and cottage development resulted in soil erosion and ecological deterioration. In general, compared with other types of resettlement, the implementation of the policy of resettlement locally at the backside of reservoir within the scope of traditional agriculture, on the one hand, the resettled populations are easily acclimatized to this type of resettlement because their ways of livelihood, after the resettlement, remained in the traditional agriculture scope. The traditional means of agricultural production and life kept unchanged. Therefore, the production and life adaptability problems dose not exist. Also the social culture adaptability problem dose not exist because the traditional social resources, social relations (e.g. ethnic group, villages, neighbor, relatives relations) kept unchanged. On the other hand, the most difficult issue related to the resettlement locally at the backside policy is the rigid restriction of natural resources. The location of village, as the settlement place, was final choice of the ancestors of the resettled populations after hundred and thousand years of production practices. Limited by the policy of resettlement locally at the backside of reservoir, the resettlement places have to be in a confined space in the original region, which predetermined that it was difficult to find a new resettlement place that are comparable to the old settlement place. Therewith, the new resettlement place is by all means no better than the old place. The rigid restriction of natural resources (water, land, forest, meadow etc.) would lead the resettled populations to take longer time before renewing their original living standard. Therefore, resettlement locally at the backside of reservoir within the scope of traditional agriculture is an easily adaptable resettlement mode, but it is very difficult to renew the original live standard.

2.1.3 Tianba Village of Manguang Village Committee, Manwan Town, Yun County –Representing Rural Populations Turned to be Non-Agricultural Ones

Before the dam construction, Tianba village was the wealthiest natural village because the village has more arable land with fertile soil, wider pasture, more mountain forest and it was near the national highway No 214. When the dam was constructed, the village was not included in the resettlement program because it was located at lower reaches of the dam and was deemed to be outside the dam region. There was no clear resettlement policy towards this village. During the dam construction, the land was acquired at the same time the land was used and resettlement issue raised. It was not until 1988 when larger part of village's arid land and forest were inundated and the entire paddy rice field, partially arid land and the sites for houses were acquired by Power Plant, the villagers lost both subject of labor and residential place, did the policy of rural populations turned to be non-agricultural population confirmed. At that time, China was at transitional period from planed economy to market economy. The main elements of the policy include: all the villagers rebuild houses locally at the backside and turned to be non-agricultural populations with par commercial grain crops supplied by the Government. The payment for land acquisition to the village collective could be used to establish the economic development company. The resettled populations' economic income could be ensured by developing secondary and tertiary industries. However, with the further market economic reform, the grain crops' prices were gradually opened to the market. The policy of government provision of par commercial grain naturally vanished. The resettled populations who had long been used to engage in traditional farming activities for generations were not seasoned with running secondary and tertiary industries and failed to run their development company. The desire to gain economic income from market went by the board. As the result, the Tianba villagers were deeply embarrassed for losing subject of labor and becoming jobless townfolk. To be survivil, some Tianba villagers were reduced to the status of beggars and went to reclaim land from forest. A few of them, who are brightness with batter economic basis and more social relations, borrowed money to purchase vehicles and ran transportation business to keep or increase living standard. But the majority of them were stricken to poverty status. Being poor and unable to season with the great changes brought about by hydropower station construction, some of the resettled villagers suffered from psychosis and rheumatism.

The traditional community organizations, cohesion within the community and traditional morality became weakened. Such social problems as freak-out, pilfer, scrap occurred frequently. Tianba villagers stopped electing people's deputies and appealed to higher authorities for help for several times. In general, Tianba Village was a victim of misplaying groping resettlement policy during China's planned economy transit to market economy. It remained the largest number of problems in the five types of resettlement policies.

2.1.4 Malutian Village of Wuli Village Committee in Manwan Town, Jindong County –representing populations stayed at original places with reallocated land resources after dramatic reduction of available land resource

Before the dam construction, Malutian Village had 84 mu of paddy rice field (per capita 0.47 mu), 138 mu of arid land (per capita 0.78 mu), 300 mu of meadow, 310 mu of woodland, and 7 mu of vaclusian spring. The Village was rich in water resources. After the dam construction, the entire meadow and vaclusian spring, as well as larger part of paddy rice field, arid land and woodland were inundated. The resettlement commitment of payment to land acquisition was delayed. The Village collective combined the remaining paddy rice field and arid land and re-allocated them to the villagers. Per capita paddy rice field and arid land reduced to 0.18 mu and 0.45 mu respectively, which were too small to keep the pot boiling. Although the limitation of resources shortage did not enlarge the gap between the poor and the wealthy, the whole villagers generally suffered from poverty and the majority of the villagers' income decreased and ran short of grains.

After the collective took the consequences of losing resources, most the villagers lost self-employment and local employment opportunities and even can't self-reliance. To be survival, all the strong male manpower went out to do manual work for living, and even the three generations in a family did so. Some child labors could be found. The high education and medical care/treatment cost made the effected people suffered one disaster after another. Most of the villagers ran into debt. The inundated road lowered the villagers' accessibility to middle school education, medical care/treatment and market. Some villagers lost affordability to access to electricity. The collective had no income and there were no public construction activities because the collective

tile kiln, gristmill, public activities sites were inundated. No funds and no sites to support public activities that added by the outflow of main manpower, social organizations became weakened without a strong community leadership. As the result, the community became more closed, more backward and weaker than before. The disadvantaged people in the village, including the poor, women, the aged, patients and disables, became more frailty and marginalized. In stead of enjoyment, these disadvantaged people have to take more adverse impact than others. The hydropower station construction also brought about such serious impacts as deforestation, water quality pollution, and fishery ecology degradation, human and livestock diseases to Tianba Village. Some local folk-custom for water environment protection, the legend and the village rule vanished with the vaucclusian spring. The Government did try a lot of efforts, such as the maintenance of primary school, improving teaching conditions, building up earth road between Wuli Village and Manwan Town, assisting part of household to installed bio-gas tanks, introducing turmeric species to help increase farmers' income. But these efforts are insufficient. For instance, the inundated land has not yet be compensated, some buckpassing and hold off phenomenon in dealing with resettlement issues resulted in people's misunderstanding, and relations between Government Resettlement Office and the people became loose.

2.1.5 Pingzhang Village in Manwan Town, Yun County – representing population stayed at original places without reallocation of land resource after a dramatic reduction of available land resources

Before the hydropower station construction, Pingzhang, a village dominated by Yi people, was a well know far and near granary and well-to-do village because it has plenty of paddy rice fields, water resources, forest and meadow. After the hydropower station construction, its meadow, the large parts of its paddy rice field, part of arid land and forest were inundated. The Government implemented the resettlement policy of staying at original places and committed to pay what and as much as what were inundated. The Government Resettlement Office assigned the contractor to reclaim land to pay to the inundated households. According to the principle of “keep unchanged generally with minor adjustment”, the land in Pingzhang Village were not re-packed and re-allocated. However, the quality of land

reclaimed by the contractor were too poor that the inundated households refused to accept. Therefore, only a few of those households whose land was not inundated could keep normal development, a large number of households became poor.

The most of the villagers lost their livelihood and are unable to self-reliance. In the words of the villagers, they are unable to till, to herd, to plant trees, to fish. To be survival, young villagers have to go out to work to earn living, but are often exploited by the heads of contractors and became wanderers, even be made use of by traffickers. In addition, such infrastructures as roads, markets, schools and small hydropower were inundated, the villagers has lower accessibility to modern civilization. The community became more closed and dropped behind. The outgoing villagers brought some bad habits (including gambling, intemperance and bustup) back to the village. Some women and children were abducted and sold. Stricken by poverty, members of Communist Party and cadres were full of complaint and community management became weakened. The entire village ran into unsustainable poverty status. The gap between the poor and rich villagers became enlarged. Most of the villagers are poorer than before. Villagers are strongly down in spirits. The construction of hydropower station also brought about such serious problems as forest reduction, water quality pollution, increased human and livestock diseases, collapse of embankment to Pingzhang Village, the entire village was endangered with landslide.

The Government Resettlement Office had provided respectable assistant with good original intention. For example, it assisted to reclaim land to compensate the inundated land, repair water channel, plant orange, returned farmland to woodland, etc. The staff of Government Resettlement Office often went into village to find out villagers' difficulties in production and life. But without the participation of the affected villagers when making decisions on projects or activities, the resettlement work were carried out passively and failed to reach the optimal effects.

2.2 General Assessment

According to the study framework that was designed initially and revised after the pre-study, based on the in-depth investigation and study of above 5 types of typical villages that representing the implementation of 5 categories of resettlement policies and the data collected by interviewing County Governments of Jingdong, Yun and Nanjian, resettlement management departments and Manwan hydropower plant, we

came to the following general social impact assessment.

2.2.1 In terms economy The construction of Manwan hydropower station unveiled the development of hydropower stations along Lancang River, which contributed energetically to the construction of Yunnan Province as the national key hydropower base and promote Yunnan's socio-economic development. Its tremendous positive impact should be affirmed. However, the economic losses brought about by the hydropower construction to the resettled populations should not be neglected.

First the compensation in the prophase was fall short of the needs. The People's Government of Yunnana Province made great efforts to get early approval of Manwan hydropower station project by National authorities. The Government decided to 1) input huge amount of investment funds, and construct the project jointly with the Ministry of Power Industry; 2) follow the principle of "committing to the national level to be responsible for the entire resettlement assignment including its additional cost and committing to the lower levels to be practical and realistic to the lower levels", even knowing that the budget for resettlement and the property loss of resettled population estimated by the preliminary design were on the low sides (estimated resettlement population was 3052, actual number was 7260; estimated property loss amounted to 17.60 million RMB, but actual expenditure hit 55.0 million RMB). However, the commitment to the lower levels was not fulfilled. Although the actual expenditure for resettlement overran several times of the estimated budget, per capita resettlement fund was less than 8000 RMB, which is far short of the need, and compensation to the property losses of the resettled population could not be reasonably compensated.

Second, after the resettlement, the affected people faced with the restriction of limited resources. Compared with their old places, land, forest, meadow, fishery and water resources in the new resettled places were generally less than before. The ways of livelihoods became narrow and risky, resulting in deterioration of production condition and decreased living standard.

Third, the distribution of profit was unreasonable. Manwen hydropower plant contribute to national and provincial financial revenues by about 100 million RMB and 50 million RMB or more respectively, Manwan Hydropower Plant and Yunnan Provincial Power Company gained more than 120 million RMB. while, the four

counties, Yun, Jingdong, Nanjian and Fengqing, all together, only gained 50 million RMB. In contrary to the huge contribution of the Power Plant to the Nation, the support of the Power Plant to the resettled populations seems to be very small. In order to assist the resettled populations to redevelop production, National Government promulgated two follow-up support policies. 1) Deducting 0.001 yuan/kwh RMB from the electricity tariff as dam region maintenance fund, from which 30%, 70% of the of them could be shared by the Power Plant and localities; 2) Deducting no more than 0.005 yuan/kwh or 400 yuan/(resettled people) from the electricity tariff revenue as follow-up development assistant fund. Manwan Hydropower Plant generates more than 5 billion kwh electricity each year. The implementation of the first support policy could deduct 5 million RBM as dam region maintenance fund, from which, localities got 3.5 million RMB. To implement the second support policy, Guangxi, Fujian, Hunan, Hubei, Sichuan Provinces deduct 0.005 yuan/kwh, while Yunnan deduct 400 yuan/(resettled people). There were 7260 resettled population involved in Manwan project, which could get 2.90 million RMB each year as assistant fund. The two policies enable the localities get only 6.40 million RMB. There is a great contrast between the tremendous contribution to the Nation and fractional assistant to the resettled populations.

2.2.2 In terms of Social Gender Women played leading role in agricultural production because men in the dam region went out to do manual work for living. Such farming activity as furrowing used to the symbol of man's authority, were then done by a number of women. A few of male villager who stayed in the village learnt to make clothes and shoes without being laughed at. These are in contrary with the traditional rule for gender issue. Thought the involvement of deals and appealing to higher authorities for help, the women in Tianba Village increased their participation in social issue. There were even no objection public voices towards 11 young girls going outside to do manual works for living. However, some facts indicated that women's position were not promising. The dam impact increased the working burden to women, who stayed in the villages. It was the women who bared the major production and living pressures. Women owed a lot of helpers' manpower during the harvest season. Being more difficult, poor households' women are in short of grain, and have to rely on congee and coarse cereals. After procreating, they became more undernourishment with lower health level and higher gynaecologic diseases. Women

were unable to get into act of investing buying boats, fishing and shipping, which were men's businesses, but when the family was unable to repay the loan, all the member of the family have to be in debt. Most the women in Tianba village appeared personally to glean and collect scraps, or to bargain the deal. The increase of women's position in the family was at the cost of losing their faces. It was the male villagers that were more involved in the occurrence of some social problems, such as intemperance, bustup, freak-out, traffic in narcotics, pilfering, which broken the village rules and strongly hurt women who are mother or wife in the family. Some women and children in the dam region were abducted and sold. The hard live of those populations resettled in the remote villages challenged strongly to the position of male villagers. Male villagers are endowed with playing the role of making money, going out to do manual working for living, borrowing money, and building up a family fortune. The key decision-making in the family was depend on man, while woman 's ten sentences were not as good as one man's sentence. In general, for those populations resettled in the remote villages, the males' position became strong while females' position became weak. Under tough condition, women voluntarily accepted the advantage position of men. For those populations stayed in the dam region, there were some changes of women's position because most of male villagers went out to de manual working for living. But these changes were reflected by harder works and life at the cost of losing their faces and mentally injury. Women's development was severely restricted and the differences of capacity and knowledge between male and female became larger because men went out to seek development opportunities and women stayed at home to do all the farming and house care activities. It was the women who endured the development restriction and adverse impact brought about by the dam.

2.2.3 In terms of social participation The government took the traditional ways of publicity, mobilization to organize villagers to pay the field visit to the resettlement places, or sending work teams to the villages to convey the series resettlement policies to villagers. Although villagers could reflect their different opinions to the government, it was difficult to change the decision. For Manwan hydropower station project, the decisions were made from top to the bottom. The resettled populations have no right to participate in making decisions on the resettlement policies, ways of resettlement, selection of resettlement places, the follow-up support policies and the

selection of support projects and the implementation of the policies or projects.

2.2.4 In terms of social culture The most of transportation, medical care, education and market conditions of the resettled villages were improved because of the needs of hydropower station construction and development of the resettled populations. Every resettled village was accessible to electricity. The inflow of a mass of dam and hydropower station erectors and the resettlement of local villagers brought in the concussion of new idea, new concept to the resettled populations who had long been living in a closed environment. This was the positive impact of the project to social culture of the resettled populations. However its adverse impact could not be neglected. First, the discrepancy of the resettled populations to be able to access to the transportation and market facilities enlarged internal gap and unjust among the resettled populations, which force the disadvantaged people marginalized. Second, conflicts between the resettled villages and neighbor villages for resources increased, social organization and management and social cohesion weakened. Third, the traditional social capital and social relations of those populations resettled in remote villages became weak and estrangement. Ethnic traditional culture and indigenous knowledge became weak or even disappeared. The strong homesick emotion made the resettled populations difficult to disburden in the new environment. Forth, psychologically, all the resettled populations felt difficult to acclimatize themselves to the great changes brought about by uncontrollable external forces, the hydropower station construction. No choice for the present life and facing risk for the future life increased psychological pressure to them, resulting in the increase of psychopaths.

2.2.5 In terms of ecology The impact of hydropower station construction on ecology are almost adverse. The construction of access roads, the resettlement before the reservoir start to store water and the development of the new houses for resettled populations have destroyed a lot of forest. Rebuilding one village need to destroy at least thousands mu of forest. Consequently, soil erosion, land collapse, mud and rock flow, and landslide exacerbated water pollution, fish ecological deterioration and increased human and livestock diseases.

2.2.6 In the face of these adverse impact Governments at various levels and the

Hydropower Plant took series measures to mitigate and eliminate the impact. The funds for dam region maintenance and supportive resettlement follow-up development and relevant policies were established and promulgated. Local government used these funds to have provided a lot of practical assistance to the resettled villages, for example, improving education facility, extension science and technology, rehabilitating dangerous houses, building water canals and roads, greening the dam region and subsidy to the poor villagers, etc. Some special policies towards the resettled populations were adopted in some areas. For instance, priority was given to the resettled populations by Xinfu Sugar Mill in Yunxian Township to accept and pay sugar cane. The resettled villages in Jingdong County were given priority to install bio-gas tanks. The poor people of Tianba Village in Manwan Town, Yun County were treated as citizens receiving the government lowest life safeguard subsidy. Even though, the resettlement support funds were too small to meet the needs to practical resettlement population development. On the other hand, failure to make decisions on development projects reduced the funds utilization efficiency. For example, in order to enable Hongyan Village to access to drinking and irrigation water, the government has invested 3 million RMB successively, but the problem is still exist. In Jiangbian Village of Manwan Town, Jingdong County, in order to provide the newly reclaimed field with irrigation water, the government subjectively invested 280,000 RMB regardless the objection of villagers to construct a lifting irrigation facility. As the result, the irrigation facility became useless because the input was too high compared with the benefit. Such kind of mistakes lowered the benefit provided by government assistance.