



Social Monitoring Report

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PRC: Yunnan Pu'er Regional Integrated Road Network Development Project

Prepared by Yunnan Academy of Scientific and Technical Information for the Yunnan Pu'er Municipal Government and the Asian Development Bank

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Asian Development Bank



ADB Loan

Yunnan Pu'er Regional Integrated Road Network

Development Project

(RRP PRC 46040)

**Ethnic Minority Development Plan
Baseline Monitoring Report**

Yunnan Academy of Scientific and Technical Information

October 2016

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1. Introduction

1.1 Project Overview

Yunnan Pu'er Regional Integrated Road Network Development Project is implemented with ADB loan, whose execution organization is Pu'er Municipal Government and implementation organization is Pu'er Municipal Transport Bureau. The project focuses on promoting regional cooperation and trade development of Pu'er and improving road net and transport condition of rural and border areas.

Table 1-1 Basic Information of the Project

| NO. | Project | Basic Information |
|------------|------------------------------|---|
| 1 | Country | PRC |
| 2 | Loan No. | LOAN 3217-PRC |
| 3 | Project Title | Pu'er Regional Integrated Road Network Development Project |
| 4 | Start of the Loan | October 20, 2015 |
| 5 | End of the Loan | June 30, 2021 |
| 6 | Borrower | Ministry of Finance, PRC |
| 7 | Execution Organization | Pu'er Municipal Government |
| 8 | Implementation Organization | Pu'er Municipal Transport Bureau |
| 9 | Sum | USD 200 million |
| 10 | Approval and Execution | ADB approved the \$200 million loan on December 8, 2014. The loan agreement was signed on June 25, 2015 |
| 11 | The Latest Inspection by ADB | November 30-December 7, 2016 |

The project consists of three sub-projects:

Output 1: Regional roads development. This output comprises: (i) upgrading and new construction for a total of 228.078 km of Class III highway between Ning'er-Jiangcheng-Longfu (hereinafter referred to as "NJL Road"); (ii) upgrading and new construction for the 44.739 km Menglian to Meng'a section of the existing Lancang-Menglian-Meng'a Class III / IV border road to a predominantly Class II road (hereinafter referred to as "Menglian-Meng'a Road"); (iii) the development of trade

facilities at the MTC; and (iv) improving the safety of the roads by introducing safety measures determined by the ChinaRAP road safety design decision making tool.

Output 2: Rural access improvements (hereinafter referred to as “Rural Roads”). This output comprises: (i) the upgrading of about 600 km of village earthen or gravel roads to concrete Class IV standard; (ii) spot improvements on up to 1,200 km (or CNY24 million investment) of connecting lower level village roads; (iii) introduction of five new village bus service routes on a pilot basis, and (iv) a gender focused rural road maintenance program. The primary objective of the roads is to provide all weather access to administrative villages or to link with higher level roads.

Output 3: Institutional development. This output will address the limited implementation capacity of PMG. A project management consultant will be recruited to assist the PMG to implement and monitor the project in accordance with ADB procedures. The project will finance a 3-year training program (\$400,000 for 40 person-months) for international and domestic training in financial and project management, road maintenance engineering, road maintenance practices, road safety, environmental management, social safeguards management, and wildlife trafficking and human and drugs trafficking enforcement.

Among the three outputs, only output 1 involves land acquisition and resettlement, output 2 involves land acquisition of small area, and output 3 involves no land acquisition.

According to the guideline of ethnic minority development project, 12 indicators are set around the four actions of “project benefits and improving measure”, “mitigation measures for social risks”, “complementary measure for poverty alleviation of local governments”, and “monitoring and evaluation”. Those indicators cover regional socioeconomic development, construction impact, transport improvement, livelihood recovery, the impact of land acquisition and resettlement.

1.2 Major Project Impacts and Action Plan

The project is expected to benefit a total population of 405,000^①, including 287,000 ethnic minority members (taking up 71% of total ethnic minority population) and 14,900 poor people (accounting for 36.7 % of the total). Among the three sub-projects, rural roads improvement will benefit 16,280 households of the nine districts and 110 administrative villages (287 village level organizations) of Pu'er city except Simao district. The total beneficiaries amount to 73,000 people, 80% of whom belong to ethnic minorities like Hani, Yi, Lahu, Wa, Dai, Yao, Bai, Hui and Miao. The sub-project of Ning'er-Jiangcheng-Longfu road and Menglian-Meng'a road will benefit 322,000 people, including 260,720 ethnic minority members (69%). The benefited ethnic minority groups are Yi, Hani, Dai, Lahu, Wa, Yao and Bai people. The affected project area is populated with impoverished and minority people, and all the nine counties involved are poverty-stricken and autonomous ones of minority groups.

The direct benefits brought by the project include: (1) shortening the transport distance between Ning'er, Jiangcheng and Longfu; (2) shortening the time spent on all the roads covered by the sub-projects; (3) improving the condition of highways and rural roads and making travel convenient; (4) achieving year-around transport by rebuilding and maintaining the 30 village roads; (5) lowering the rate of traffic accident; (6) strengthening rural transport services; (7) ensuring all weather road connection to all administrative villages and upper level highways; (8) creating jobs during road construction and operation.

The indirect benefits of the project are: (1) facilitating the transition from traditional agriculture to economic plants growing by attracting investors and removing transport constraints; (2) making it convenient for farmers to go to the market; (3) increasing farmers' income by engaging them in non-agricultural activities like cross-border trade; (4) increasing non-agricultural income; (5) improving the

^① From Yunnan Pu'er Regional Integrated Road Network Development Project-Ethnic Minority Development Plan

access to social services like schools, hospitals, markets and entertainment facilities.

The potential negative effects include land acquisition, house demolition construction disturbance, highway security caused by over speed or traffic jam, human trafficking, drug dealing and AIDS rate increasing after improved transport condition, and the holy trees that are worshiped by local communities and may be in the middle of the highways.

Ethnic Minority Development Plan is designed to bring equal benefits to every affected ethnic group and individual, mitigate negative effects and maximize the interest minority communities can share. Those measures include: (1) developing regional highways; (2) upgrading rural roads and improving transport services; (3) strengthening highway security; (4) creating employment and income opportunities; (5) capacity building like trainings on cash plant growing and working skills for non-agricultural activities. Mitigation measures include: (1) protecting the culture of ethnic minority groups and raising their awareness of such protection; (2) avoiding the adverse effect on holy trees and cultural relics; (3) reducing the indirect negative effect of tourism; (4) reducing the hazards of communicable diseases including AIDS; (5) lowering the risks of human trafficking and drug dealing; (6) reducing construction disturbances; (7) working with local government to make complementary measures for poverty alleviation and to maximize project benefit.

The Ethnic Minority Development Plan is to reduce the adverse impacts of Regional Integrated Road Network Development Project, and increase the benefit the minority groups share. Discussions were made with minority peoples around every aspect related to project outcomes, and they were involved in decision making and implementation phases.

The vulnerable groups involved in the project are: ethnic minorities, poverty stricken population and women. In response to land acquisition, house demolition and resettlement activities, mitigation measures have been developed for those who may lose land and houses, and have included them in the resettlement program so that they will receive corresponding compensation.

2. Monitoring Methods

2.1 Monitoring Objectives

To ensure the minority groups in the direct affected areas of Yunnan Pu'er Regional Integrated Road Network Development Project can share equal benefits, and to mitigate the negative impacts through a series of measures, Yunnan Academy of Scientific and Technical Information has conducted external monitoring for the project to ensure the affected minority groups have benefited from it. The external monitoring is mainly for Hani, Yi, Lahu, Wa and Dai people, who take up 71% of the total population in the directly affected area of the project.

The monitoring is a baseline one, where, according to the content and indicators in the monitoring framework investigations were made into the actual situation by the end of 2015 (the year when the loan agreement was signed), and the results will be used as references for following annual monitoring.

2.2 Monitoring Methods

Before the monitoring started, the monitoring group designed a systematic framework based on project characteristics, and according to project content and objectives set seven monitoring indicators, whose components, sources, investigation tools and data collection and analysis were specified.

Survey tools and methods are listed in table 2-1.

Table 2-1 Survey Methods Used in the Project Monitoring

| No. | Methods | Use |
|-----|---|---|
| 1 | Group Interview | The monitoring group chose key people (village cadres, the elderly, and the affected household representatives) as key information sources, and inquired through meetings and interviews relevant information for evaluation. |
| 2 | Semi-Structured Interviews | Key questions are identified for major monitoring aspects, and primary interviewees and secondary interviewees are specified and included into the monitoring process in order to explore critical information. |
| 3 | Question Tree | The focus is to explain/analyze whether the changes following the project are related to the project, what the relations are and how they are related. |
| 4 | Field Observation | The group collected materials from local authorities and checked the visible project outputs like houses and infrastructure facilities in order to review the feedback from group discussions and household interviews. |
| 5 | Household Survey | The group designed targeted questionnaire for evaluation subjects and selected certain number of samples to conduct surveys. |
| 6 | Material Collection and Analysis | The group collected statistical yearbooks and bulletin public released by the government, visited local authorities and collected information for project evaluation. |

2.3 Monitoring Framework Design

After careful study and identification of relevant data of *Ethnic Minority Development Plan, Resettlement Plan and Project Management Guideline*, the monitoring team designed the external monitoring framework for Ethnic Minority Development Plan according to its characteristics and content, and conducted monitoring^② from seven aspects: socioeconomic development of the project area, construction impact, transport situation, impact on farmer income, land acquisition and resettlement, other impact, and problems tracking. Specific monitoring indicators and content are in table 2-2.

^② Since the project had not been implemented when the monitoring was conducted, indicators/content related to construction impact, problem tracking and case study were not analyzed, but will be completed in following monitoring.

Table 2-2 Project Monitoring Framework

| Level I Indicators | Level II Indicators | Level III Indicators |
|---|---|--|
| Socioeconomic Development | Basic Data of the Project Area | The number of townships and administrative villages, land area, cultivated land area, total population, rural population, and ethnic minority population. |
| | Economic Development Indicators | GDP, fiscal revenue, per capita net income of rural population, and per capita retail sales of social consumer goods. |
| | Industry Development | Output of the three industries, and production of grains, oil crops, vegetables, main cash crops and characteristic crops |
| Construction Impact | Direct Economic Benefit | Income of hired farmers; Construction materials purchased locally; Whether it is clearly stated in tender documents and contracts that over 50% of non-technical work should be assigned to ethnic minorities, women, the poor and other people in the project affected area; The quantity of small machinery leased/purchased and the amount of money spent; The number of houses/sites rented and the amount of money spent; and Whether local women are organized to cater for construction workers. |
| | Construction and Other Services by Local People | How many days of employment are created (42,000 days); Total number of employed workers/income earned, including the number of local residents, women and minority members/income earned; and The number of people employed as non-technical workers, and the percentage of minority people/women and the income they get. |
| | Elimination of Adverse Impact | Whether the construction affects local production and life; Whether it damages local irrigation, drainage, roads, land and relevant equipment and facilities; Whether the construction pollutes local water sources, produces noises, dust and garbage to people living in surrounding areas and how to solve the problem; and Whether temporary land occupation is recovered. |
| Ethnic Minorities and Poverty Stricken population | Ethnic Minorities | The distribution, income and expenditure of ethnic minorities, the number of migrant workers, the number of agricultural products sold and purchased, and the amount of crop processed |
| | Poverty Stricken Population | Poverty rate; impoverished people in each district; per capita net income; number of poverty stricken villages; and average household income. |

| | | |
|-------------------------------------|---------------------------------------|--|
| Transport Condition | Direct Impact of Highway Construction | <p>The upgrading of Ning'er-Jiangcheng-Longfu road;</p> <p>The upgrading of Meng'lian-Meng'a road;</p> <p>What facilities have been built in Meng'a logistic center, annual trade volume/amount and the kinds of trade;</p> <p>the upgrading of 33 rural roads (total length of 600 km);</p> <p>the upgrading of roads connecting villages (total length 1,200 km);</p> <p>Total population benefiting from the road upgrading and the percentage of ethnic minority population</p> |
| | Degree of Transport Improvement | <p>The progress of opening five public bus routes;</p> <p>The number of road safety facilities installed (including traffic signs, speed bumps and crosswalk);</p> <p>The number of trainings on road safety;</p> <p>The number of handouts on road safety awareness to the public; the change of transport and freight cost;</p> <p>The volume of traffic flow and the number of passengers;</p> <p>The increase of money input for road maintenance, of financial subsidy and of the ratio of road maintenance expenditure;</p> <p>The number of traffic accidents;</p> <p>The number of passenger stations improved;</p> <p>Is road maintenance by spontaneous activities or organized ones;</p> <p>Has trainings on road maintenance been conducted;</p> <p>Has tools, safety equipment and construction materials been provided for road maintenance;</p> <p>How many job opportunities have been provided by road maintenance;</p> <p>The involvement of women and poor people;</p> <p>The increase of travel frequency of local people;</p> <p>How many rural and functional transport services been introduced;</p> <p>Transport service to school-age children;</p> <p>Is all-weather traffic available; and</p> <p>Pilot public bus service site at the level of townships and villages.</p> |
| | Case Study | <p>To analyze a case which transforms the travel methods and brings economic benefit (trade development) to farmers after road construction (improves transport connectivity and road safety)</p> |
| Impact on Rural Production and Life | Benefits | <p>The building of local schools, hospitals, banks and police station; the building of collecting station for coffee beans and tea leaves</p> |
| | Farmers' Skill | <p>Trainings on non-agricultural production skills;</p> <p>Trainings on women's employment skills/access to women's</p> |

| | | |
|---|---|--|
| | Improvement | <p>employment, changes in income and employment; Technical trainings transport, border trade and tourism services; Trainings on growing techniques of cash crops; Trainings on economic development; Trainings on law, labor contracts and rights; The number of the above trainings and the involvement of villages, ethnic minorities and women; and Job opportunities of non-agricultural production.</p> |
| | Micro Loan Assistance | <p>The number of ethnic minority borrowers; and The purpose of the loans (case study).</p> |
| | Case study | 1-2 farmer trainees, or a case of changing income source |
| Land acquisition, house demolition and resettlement | Impact of land Acquisition and House Demolition | <p>The impact of land acquisition; Comparison between original plan for land acquisition and actual situation; Affected housing area; Protection of cultural heritage and other facilities of ethnic minorities; and Affected land area and affected households;</p> |
| | Resettlement and livelihood restoration | <p>Comparison between the actual expenditure of compensation and the budgetary estimate; The situation of land acquisition, house demolition and rebuilding; Measures, results and problems for livelihood recovery; special assistance to vulnerable groups (minimum living allowance, pension insurance and other)</p> |
| | Infrastructure Restoration | <p>The length of irrigation and drainage pipes, and the ratio of reconstruction; The number of power systems and other facilities, and the ratio of reconstruction; and New infrastructure.</p> |
| | Case Study | Cases where farmers' needs are satisfied through resettlement/housing are solved for the needy |
| Other Impacts | Cultural Protection, Tourism, and Foreign Trade Promotion | <p>Preventing damage to ancient trees and relics; Improving culture facilities in minority villages; Celebrating and restoring ethnic holidays; The number of approved projects for ethnic cultural relics protection/ the number of projected completed; Tourists sites in ethnic villages Improvement of village roads and other infrastructure facilities How may commercials are made for tourist destinations; The number of tourists/the amount of tourism income; How many jobs are created; and Foreign trade volume.</p> |

| | | |
|------------------|---|---|
| | Preventing HIV/AIDS Spread | How many propaganda materials are there and how many times are they handed out (posters/posters in the languages of ethnic minorities); How many condoms are handed out; How many trainings are organized by the Center for Disease Control and Prevention (how many trainings are for staff and management personnel and how many are for specialized organizations and villagers), and how many trainees are there (including women). |
| | Lowering the Risk of Infectious Diseases | Prevention and control of malaria and tuberculosis; the number of nets provided; How many mosquito nets are provided; How many times are workers tents sprayed; and How many workers are quarantined and treated for tuberculosis |
| | Combating the Trafficking of Human, Drug and Other Prohibited Items | The number of monitoring stations; Cases where women association organize awareness raising activities and information analysis; and The number of posters and brochures |
| Problem Tracking | Re-checking the Problems Identified in Previous Monitoring Report | Have the problems been solved? |

2.4 Data Collection

The data of this monitoring consist of statistic data and sample survey data, which complement and support each other.

Statistic data are from yearbooks, bulletins and work reports provided by statistic authorities and relevant departments in the nine counties of Pu'er city and involved in the project, and data can reflect the actual situation of the project affected area. Sample survey data are collected from questionnaires during household visits and thus show the impacts experienced by the subjects.

Sample villages were selected through PPS(Probability Proportionate to Size) sampling from the areas affected by Menglian-Meng'a Road, NJL Road and Rural

Roads, and household surveys were made at sample households chosen through simple random sampling in the selected sample villages. According to the principle of sample survey, the minimum sample size was 139,106 and 139 households, but 220,120 and 180 households, namely a total of 520 households, were investigated.

The subjects were chosen from the following areas: (1) the villages and townships directly or indirectly affected; (2) the habitat for ethnic minorities; (3) along the site of the highways; (4) poverty-stricken areas; and (5) households involved in land acquisition and house demolition.

The survey sample distribution is shown in the following table:

Table 2-3 Distribution of Survey Samples

| Project Involved | Counties/Districts | Townships | Administrative Villages | Samples |
|----------------------|--------------------|-----------|-------------------------|---------|
| Rural Roads | Zhenyuan | Zhentai | Chang'an | 40 |
| | | An'ban | Wenli | 40 |
| | Ximeng | Zhongke | Yongbuluo | 40 |
| | | | Galou | 40 |
| | Jiangcheng | Baozang | Shuicheng | 30 |
| | | Menglie | Jiangbian | 30 |
| | Total | | | |
| Menglian-Meng'a Road | Menglian | Mengma | Mengma | 40 |
| | | | Meng'a | 40 |
| | | Company | State-run Menglian Farm | 40 |
| | total | | | |
| NJL Road | Ning'er | Ning'er | Xinping | 30 |
| | | Mengxian | Heping | 30 |
| | | | Xuande | 30 |
| | | Liming | Wangjie | 30 |
| | Jiangcheng | Baozang | Shuicheng | 30 |
| | | Menglie | Jiangbian | 30 |
| | Total | | | |

In principle, the sampling areas will remain the same to ensure that the data collected are comparable over the time dimension.

3. Monitoring Process

3.1 Make Monitoring Plan

The monitor group made *Implementation Plan for the Monitoring Report of Ethnic Minority Development Plan* after the project was launched, identified the objectives, scope, investigation approaches and stakeholders, and specified monitoring methods, group members, framework and report outline. The group also further divided monitoring tasks and made field research plan, making full preparation for project monitoring and evaluation.

3.2 Confirm Indicators for Monitoring and Evaluation

A series of evaluation groups meetings were held to discuss and agree on the monitoring methods for the 24 indicators on Project Benefits and Improving Measures, Measures to Lower Social Risks, and Strengthening Measure (the local government is responsible for), and consulted experts and the project implementation organization in written form to optimize those indicators.

3.3 Collect Second-Hand Materials

The second-hand materials were collected from two sources, which were:

1. Statistic yearbooks and bulletins released by the government, like Statistic Yearbook of Yunnan Province (2016), Statistic Yearbook of Pu'er City (2016), Management Manual for Cadres of Yunnan Province (2016) and Economic Work Manual for Cadres of Pu'er City.

2. Existing materials from relevant authorities and departments, like work report of 2015 and work report of certain areas.

3.4 Collect First-Hand Materials

The first-hand materials were gained through questionnaires and field survey.

1. Questionnaires

Among the 520 questionnaires collected, 28.27% of the households were impoverished and 75.19% belonged to ethnic minorities. Demographic features of the interviewed households are listed in table 3-1.

Table 3-1 Demographic Features of the Interviewed Households

| Features | | Rural Roads | Menglian-Meng'a Road | NJL Road | Total |
|-----------------------------|---|-------------|----------------------|----------|--------|
| Poverty Level | Poor Households | 45.45% | 10% | 19.44% | 25.65% |
| | Non-Poor Households | 54.55% | 90% | 80.56% | 74.35% |
| Ethical Households | Han | 18.64% | 26.67% | 31.11% | 26.96% |
| | Yi | 22.27% | 4.17% | 11.67% | 15.43% |
| | Hani | 11.36% | 1.67% | 32.22% | 13.04% |
| | Dai | 10% | 64.17% | 12.22% | 21.74% |
| | Lahu | 6.36% | 1.67% | 2.22% | 4.13% |
| | Wa | 29.55% | 0.83% | | 14.35% |
| | Others | 1.81% | 0.83% | 10.56% | 4.35% |
| Education Level | Primary School and Below | 57.73% | 80% | 28.89% | 56.96% |
| | Junior High | 37.73% | 15% | 53.89% | 34.35% |
| | Senior High (Including Secondary Specialized Schools) | 4.55% | 5% | 15% | 7.83% |
| | College and above | 0% | 0% | 2.22% | 0.87% |
| Family Members | 1 | 2.73% | 2.5% | 2.22% | 2.61% |
| | 2 | 5.45% | 6.67% | 10% | 7.83% |
| | 3 | 28.18% | 30% | 17.22% | 24.35% |
| | 4 | 35.45% | 15% | 27.22% | 26.52% |
| | Over 5 | 28.18% | 45.83% | 43.33% | 38.7% |
| Gender of House Head | Male | 95.91% | 89.17% | 87.22% | 91.09% |
| | Female | 4.09% | 10.83% | 12.78% | 8.91% |

The questionnaires were divided into two categories: one for individuals and the other for villages. Individual questionnaires covered living standard, living needs, economic options, travel options, travel scope, transport means and travel safety. The monitoring group evaluated the positive and negative impacts of the project on local people, and the subjects were mostly women, poor people, ethnic minorities and other vulnerable groups. The village questionnaire was to investigate from village cadres such the basic situation of the sample villages like income, road and transport, production and life. Through the questionnaires, the monitoring group has developed a preliminary understanding of the residents' views on production and life and of their perception on the NJL Road, Menglian-Meng'a Road and Rural Roads projects.

2. Field Survey

According to the work plan, on September 6 to 10, 2016, the monitoring group visited and discussed with the relevant departments of Pu'er city. Two field survey teams formed by the monitoring group and ADB project members met with the officials of Ning'er and Jiangcheng counties involved in NJL Road and Menglian country in Menglian-Meng'a Road, and visited key townships and villages along the highways. The main content of the meetings was:

(1) Government departments: following up on the tasks set in the Ethnic Minority Development Plan and finding out whether and how the tasks were implemented.

(2) Statistic departments: statistic materials on national economic development.

(3) Transport departments: progress of regional road network, creating enabling environment for transport development, toll collecting, and road safety trainings of involved highways.

(4) Public security departments: regional traffic safety, trafficking of human, drug and other illicit materials in the region, implementation of control measures and propaganda activities.

(5) Poverty alleviation departments: poverty situation and data change, and trainings and other poverty alleviation activities.

(6) Ethnic and religion departments: materials on ethnic minorities, ethnic

culture protection and awareness raising, sensitive issues along the project highways and suggestions to address them.

(7) Human resources and social security departments, and agricultural science and technology departments: employment and social security of minority people and women, trainings on production safety, workers' rights and interests, cash crop growing skills and professional skills.

(8) Health departments: situation and development of AIDS and other communicable diseases, popularization, training and monitoring activities.

(9) Commerce and tourism departments: trade volume, value and major commodities of ports and of the region, ports building and tourism development.

(10) Project headquarter: progress of project implementation, resettlement, employment and construction materials.

(11) Village Committees: general situation of households, overall income, progress of the project, existing problems and suggestions for solution.

Meanwhile, the monitoring group visited the areas seriously affected by land acquisition and house demolition (large area of permanent land use) and interviewed local farmers to learn about their attitudes, needs and major concerns regarding the project.

After the field survey, the monitoring group developed better understanding on the socioeconomic development, work progress and preparation, collected preliminary materials for evaluation, and communicated with relevant departments around follow-up data collection. A cooperation and exchange platform has been set up, which will ensure smooth implementation of the monitoring work.

3.5 Write Monitoring Report

Based on collected materials and survey results, the group will monitor the project according to the monitoring framework and Action Plan of Ethnic Minority Development Plan. During the monitoring process, the team will interview the insiders, have panel discussions and consult stakeholders to further understand project progress, analyze project implementation and form the monitoring report.

4. Socioeconomic Development in the Project Area

4.1 Overview of the Project Area

Pu'er is located in south Yunnan and has large mountainous areas. The total area of Pu'er is 45,485 km², accounting for 12% of Yunnan, and shares border with Vietnam, Laos and Myanmar. The project affected area covers the nine ethnic minority autonomous counties of Pu'er. By the end of 2015, the total population of the nine counties was 2.292 million (taking up 87.98% of the total population of Pu'er City), including 1.5022 million rural population (94.31% of the total rural population of Pu'er), which shows there are more rural populations in the project area. The total land area is 41,292 km². As shown in Table 4-1:

Table 4- 1 Overview of the Project Area (2015)

| Project | Ning'er | Mojiang | Jingdong | Jinggu | Zhenyuan |
|---|---------|---------|----------|---------|----------|
| Township/Town | 6/3 | 10/3 | 10/3 | 6/4 | 9/1 |
| Village Committee/ Sub-District Office | 85 | 163 | 166 | 132 | 109 |
| Land Area (km ²) | 3,670 | 5,459 | 4,532 | 7,777 | 4,223 |
| Arable Land (ha) | 19,987 | 45,242 | 33,333 | 34,740 | 28,157 |
| Per Capita Arable Land (ha ¹) | 0.10 | 0.12 | 0.09 | 0.14 | 0.13 |
| Total Population | 192,300 | 367,200 | 365,800 | 297,000 | 211,400 |
| Rural Population | 118,500 | 249,500 | 235,900 | 168,400 | 144,800 |
| Percentage of Rural Population | 61.62% | 67.95% | 64.49% | 56.70% | 68.50% |

(Continue) Table 4- 2 Overview of the Project Area (2015)

| Project | Jiangcheng | Menglian | Langcang | Ximeng | Total (Nine Counties) |
|---|------------|----------|----------|--------|-----------------------|
| Township/Town | 5/2 | 4/2 | 5/15 | 5/2 | 60/35 |
| Village Committee/ Sub-District Office | 48 | 39 | 157 | 36 | 935 |
| Land Area (km ²) | 3,476 | 1,957 | 8,807 | 1,391 | 41,292 |
| Arable Land (ha) | 19,412 | 19,877 | 75,865 | 12,983 | 289,596 |
| Per Capita Arable Land (ha ¹) | 0.15 | 0.14 | 0.15 | 0.18 | 1.22 |

| | | | | | |
|--------------------------------|---------|---------|---------|--------|-----------|
| Total Population | 126,400 | 139,400 | 498,200 | 94,300 | 2,292,000 |
| Rural Population | 75,500 | 74,900 | 367,100 | 67,600 | 1,502,200 |
| Percentage of Rural Population | 59.73% | 53.73% | 73.69% | 71.69% | 65.54% |

Note: The data are from Management Manual for Cadres of Yunnan Province (2016).

4.2 Economic Development Indicators

All the nine counties in the project area are poverty-stricken ones, which are supported by the state. By the end of 2015, the GDP per capita in the project area was 17,770.44 yuan (average of the nine counties), which was approximately 61.24% of the average in Yunnan Province; per capita retail sales of social consumer goods was 4,444 yuan (average of the nine counties), 41.29% of the average of Yunnan Province. It can be seen that the main per capita economic development indicators of the project area were lower than the average ones of Yunnan Province, which indicates a high degree of poverty in the project area.

Table 4-2 Main Economic Development Indicators of the Project Area

| Country/ City/ District | GDP (million yuan) | GDP Per Capita (yuan) | Fiscal Revenue (million yuan) | Per Capita Disposable Income of Rural Residents (yuan) | Per Capita Retail Sales of Social Consumer Goods (yuan) |
|-------------------------------|-----------------------|--------------------------|----------------------------------|---|--|
| Ning'er | 4,267 | 22,245 | 499 | 8125 | 5715 |
| Mojiang | 5,014 | 13,677 | 649 | 7780 | 2832 |
| Jingdong | 5,789 | 15,856 | 678 | 8120 | 3876 |
| Jinggu | 8,710 | 29,375 | 804 | 8348 | 6290 |
| Zhenyuan | 4,129 | 19,551 | 461 | 8177 | 4806 |
| Jiangcheng | 2,445 | 19,406 | 259 | 7530 | 4541 |
| Menglian | 2,356 | 16,936 | 214 | 7482 | 6098 |
| Lancang | 5,648 | 11,346 | 954 | 7335 | 3250 |
| Ximeng | 1,084 | 11,542 | 112 | 7341 | 2588 |
| Average | | 17,770.44 | | 7804.22 | 4444 |
| Yunnan | 1,371,788 | 29,015 | 315,673 | 8,242 | 10,762 |

Note: The data are from Statistic Yearbook of Yunnan Province (2016) and Management Manual for Cadres of Yunnan Province (2016).

Meanwhile, the economic situation of the directly affected project area is shown in the table below:

Table 4-3 Overview of the Directly Affected Project Area (Townships/Towns)

| City/ County | Township/ Town | Per Capita Arable Land (ha/person) | Population | Minority Population | Poverty Population | Poverty Minority Population | Total Rural Income (million yuan) | Per Capita Rural Net Income (yuan/person) |
|-----------------|-------------------|---------------------------------------|------------|------------------------|-----------------------|--------------------------------|--------------------------------------|--|
| Ning'er | Ning'er | 0.793 | 70,928 | 32,991 | 1,931 | 958 | 673.47 | 9,111 |
| | Mengian | 0.083 | 22,354 | 13,020 | 1,059 | 640 | 229.70 | 6,690 |
| | Liming | 0.157 | 11,629 | 7,035 | 708 | 411 | 108.43 | 6,837 |
| Mojiang | Yayi | 0.125 | 21,991 | 19,719 | | | | |
| | Sinanjiang | 0.146 | 22,076 | 17,754 | | | | |
| | Xin'an | 0.189 | 18,755 | 17,377 | | | | |
| Jingdong | Wenlong | 0.098 | 18,445 | 8,664 | 2,535 | 1,265 | 247.90 | 10,041 |
| | Longjie | 0.124 | 20,725 | 12,143 | 3,006 | 2,104 | 212.70 | 7,624 |
| Jinggu | Jinggu | 0.067 | 17,594 | | | | | 3,140 |
| | Fengshan | 0.107 | 22,050 | | | | | 2,896 |
| | Minle | 0.192 | 25,122 | | | | | 3,089 |
| Zhenyuan | Zhentai | 0.133 | 36,069 | 12,941 | 5,482 | 1,928 | 284.08 | 8,345 |
| | Anban | 0.153 | 19,493 | 14,204 | 4,400 | 3,325 | 195.44 | 8,768 |
| Jiangcheng | Baozang | 0.319 | 9,455 | 7,540 | 3,184 | 3,184 | 97.00 | 6,187 |
| | Menglie | 0.061 | 31,849 | 26,154 | 926 | 926 | 124.68 | 7,389 |
| | Qushui | 0.091 | 19,139 | 15,537 | 7,962 | 7,962 | 47.43 | 6,043 |
| | Jiahe | 0.208 | 15,472 | 13,915 | 2,395 | 2,395 | 120.00 | 6,066 |
| Menglian | Nayun | | 49,670 | | | | | 7,482 |
| | Mengma | | 30,367 | | | | | 7,482 |
| Lancang | Fudong | 0.139 | 18,453 | 10,481 | 4,874 | 2,753 | | |
| | Laba | 0.231 | 14,713 | 13,515 | 4,281 | 3,898 | | |
| | Zhutang | 0.187 | 33,439 | 31,882 | 10,590 | 10,166 | | |

| | | | | | | | | |
|--------|----------|-------|--------|--------|-------|-------|-------|-------|
| | Wendong | 0.175 | 17,427 | 11,945 | 4,538 | 3,073 | | |
| Ximeng | Lisuo | 0.213 | 11,901 | 11,550 | 3,669 | 3,669 | 54.51 | 6,195 |
| | Zhongke | 0.147 | 11,136 | 10,908 | 2,657 | 2,657 | 69.04 | 6,011 |
| | Wenggake | 0.14 | 11,534 | 11,264 | 2,790 | 2,790 | 48.34 | 5,658 |
| | Mengka | 0.18 | 16,152 | 15,155 | 3,923 | 3,923 | 66.93 | 5,891 |

4.3 Industry Development

As shown in the table below, the growth rates of the second and the third industry are higher than those of Pu'er and Yunnan, showing promising prospects of development.

Table 4-4 Industry Development

| Country/ City/ District | Growth of the First Industry | | Growth of the Second Industry | | Growth of the Third Industry | |
|--|-----------------------------------|------------------------------|-----------------------------------|------------------------------|-----------------------------------|------------------------------|
| | Current Year (Million yuan) | Year-on-Year Increase (%) | Current Year (Million yuan) | Year-on-Year Increase (%) | Current Year (Million yuan) | Year-on-Year Increase (%) |
| Ning'er | 1,033 | 6.7 | 1,622 | 10.7 | 1,612 | 11.2 |
| Mojiang | 1,427 | 5.8 | 1,621 | 11.5 | 1,966 | 8.9 |
| Jingdong | 2,241 | 5.9 | 1,730 | 8.4 | 1,818 | 11.2 |
| Jinggu | 2,867 | 6.9 | 3,387 | 9.9 | 2,456 | 10.7 |
| Zhenyuan | 1,773 | 6.5 | 1,181 | 13.7 | 1,175 | 14.1 |
| Jiangcheng | 845 | 5.1 | 887 | 10.7 | 713 | 12.0 |
| Menglian | 939 | 5.9 | 478 | 14.4 | 939 | 11.7 |
| Lancang | 1,634 | 6.7 | 2,107 | 8.9 | 1,907 | 9.5 |
| Ximeng | 262 | 6.1 | 233 | 12.5 | 589 | 13.0 |
| Average Growth Rate | | 6.17 | | 11.18 | | 11.36 |
| Average Growth Rate of Pu'er | | 6.3 | | 11.0 | | 10.5 |
| Average Growth Rate of Yunnan | | 5.9 | | 8.6 | | 9.6 |

Note: The data are from Economic Work Manual for Cadres of Pu'er City (2016).

Except grain, the per capita yield of the main crops in the project area is lower than that of Yunnan, such as oil crops, pork/beef/mutton, vegetables and fruits (except Jiangcheng). That is to say, grain is still the dominate crop for local farming, which limits the growing of local income.

Table 4-5 Crop Production in the Project Area

| Country/ City/ District | Grain | | Oil Crop | | Pork/Beef/Mutton | | Vegetables | | Fruits | |
|-------------------------------|----------------------|--------------------------|---------------------|--------------------------|---------------------|--------------------------|---------------------|--------------------------|---------------------|--------------------------|
| | Total Yield (ton) | Per Capita Yield (kg) | Total Yield(ton) | Per Capita Yield (kg) | Total Yield(ton) | Per Capita Yield (kg) | Total Yield(ton) | Per Capita Yield (kg) | Total Yield(ton) | Per Capita Yield (kg) |
| Ning'er | 94,100 | 490 | 2,500 | 13.2 | 24,200 | 126 | 69,700 | 310 | 2,000 | 10 |
| Mojiang | 156,500 | 426 | 3,300 | 9.0 | 23,300 | 63 | 38,600 | 105 | 7,900 | 21 |
| Jingdong | 185,000 | 506 | 2,100 | 5.6 | 28,500 | 78 | 49,400 | 135 | 11,800 | 32 |
| Jinggu | 184,900 | 622 | 4,000 | 13.5 | 17,100 | 58 | 112,500 | 379 | 46,500 | 157 |
| Zhenyuan | 121,200 | 573 | 4,000 | 18.8 | 21,500 | 102 | 77,900 | 368 | 7,200 | 34 |
| Jiangcheng | 45,100 | 357 | 500 | 4.0 | 6,700 | 53 | 25,400 | 201 | 140,500 | 1112 |
| Menglian | 60,900 | 437 | 2,200 | 15.6 | 7,100 | 51 | 22,400 | 161 | 21,700 | 156 |
| Lancang | 251,200 | 504 | 2,400 | 4.7 | 26,200 | 53 | 47,000 | 94 | 34,300 | 69 |
| Ximeng | 43,600 | 463 | 200 | 1.9 | 3,800 | 40 | 17,600 | 187 | 500 | 5 |
| Average | | 486.44 | | 9.58 | | 69.33 | | 215.56 | | 177 |
| Pu'er | 1,200,300 | 461 | 21,800 | 8.4 | 17,300 | 66 | 484,000 | 180 | 285,900 | 110 |
| Yunnan | 18,764,000 | 396 | 659,200 | 13.9 | 3,379,000 | 71 | 18,739,000 | 395 | 7,265,400 | 153 |

Note: The data are from Economic Work Manual for Cadres of Pu'er City (2016).

As the main cash crops, tobacco and sugarcane production in the project area did not increase from 2014 to 2015 but decreased in some counties. The main reason for this decrease was the impact of macro-policy, which also affected local economy and farmers' income to some extent.

Table 4-6 Tobacco and Sugarcane Production in the Project Area

| County | Total Tobacco Production (ton) | | | Total Sugarcane production (ton) | | |
|--------------|--------------------------------|---------------|----------------|----------------------------------|------------------|--------------|
| | 2014 | 2015 | Increase by | 2014 | 2015 | Increase by |
| Ning'er | 5,900 | 4,900 | -16.95% | 800 | 800 | 0.00% |
| Mojiang | 11,000 | 8,200 | -25.45% | 64,600 | 57,400 | -11.15% |
| Jingdong | 15,300 | 13,400 | -12.42% | 271,400 | 271,500 | 0.04% |
| Jinggu | 9,000 | 9,000 | 0.00% | 512,000 | 51,700 | 0.98% |
| Zhenyuan | 16,000 | 15,400 | | 37,600 | 3,900 | -89.63% |
| Jiangcheng | | | | 69,800 | 41,900 | -39.97% |
| Menglian | | | | 317,400 | 335,500 | 5.70% |
| Lancang | 900 | 700 | -22.22% | 763,600 | 938,800 | 22.94% |
| Ximeng | | | | 90,100 | 86,000 | -4.55% |
| Total | 58,100 | 51,600 | -11.19% | 2,127,300 | 2,252,800 | 5.90% |

Note: The data are from Economic Work Manual for Cadres of Pu'er City (2016).

As typical cash crops of Pu'er City, tea and coffee growing has seen certain growth, but the increase rate of tea is not noticeable. If it attaches importance to trainings on the growing techniques of the two crops, the project will help local farmers to increase their income.

Table 4-7 Tea and coffee Production in the Project Area

| County | Tea Output (ton) | | | Coffee Output (ton) | | | Fruits Output (ton) | Oil Crop Yield (ton) |
|--------------|------------------|---------------|--------------|---------------------|---------------|---------------|---------------------|----------------------|
| | 2014 | 2015 | Increase | 2014 | 2015 | Increase | 2015 | 2015 |
| Ning'er | 9,121 | 9,220 | 1.09% | 9,034 | 9,790 | 8.37% | 1,300 | 2,500 |
| Mojiang | 11,068 | 12,102 | 9.34% | 3,780 | 5,231 | 38.39% | 7,500 | 3,300 |
| Jingdong | 11,422 | 11,745 | 2.83% | 481 | 534 | 11.02% | 7,500 | 2,100 |
| Jinggu | 8,896 | 9,743 | 9.52% | 2,701 | 4,002 | 48.17% | 32,200 | 4,000 |
| Zhenyuan | 3,981 | 4,219 | 5.98% | 742 | 936 | 26.15% | 4,700 | 4,000 |
| Jiangcheng | 13,722 | 13,937 | 1.57% | 5,776 | 7,908 | 36.91% | 138,900 | 500 |
| Menglian | 4,200 | 4,360 | 3.81% | 5,031 | 6,220 | 23.63% | 17,100 | 2,200 |
| Lancang | 13,837 | 16,362 | 18.25% | 3,315 | 4,979 | 50.20% | 29,200 | 2,400 |
| Ximen | 2,607 | 2,746 | 5.33% | 784 | 967 | 23.34% | 200 | 200 |
| Total | 78,854 | 84,434 | 7.08% | 31,644 | 40,567 | 28.20% | 238,600 | 21,200 |

Note: The data are from Statistic Yearbook of Yunnan Province (2016) and Management Manual for Cadres of Yunnan Province (2016).

Besides investigating cash crops growing through macroeconomic data, the team also collected data through the village questionnaires. It can be seen from the questionnaires that rubber, banana and tea are major cash crops in the area.

Table 4-8 Crops Growing of the Surveyed Households (Unit: ha)

| Crops | Vegetables | Coffee | Rubber | Tobacco | Tea | Banana | Silk tree | Other |
|--------------|-------------------|---------------|---------------|----------------|------------|---------------|------------------|--------------|
| Area | 624.07 | 627.8 | 3295.8 | 276.2 | 1316.4 | 1524.33 | 16.93 | 80.67 |

Note: The data are from survey and statistics of village carders.

5. Monitoring on the Impact of Ethnic Minority Development Plan

5.1 Ethnic Minorities and Impoverished Population

5.1.1 Overview of the Ethnic Minorities in the Project Area

5.1.1.1 Ethnic Minority Population

All the nine counties in the project area are autonomous counties of ethnic minorities. By the end of 2015, there were 1,524,184 ethnic minority members in the area, taking up 66.09% of the total population. As shown in table 5-1:

Table 5-1 Ethnic Minority Overview in the Project Area

| Project | Ning'er | Mojiang | Jingdong | Jinggu | Zhenyuan |
|-----------------------------------|---------|----------------|----------|---------|----------|
| Minorities Townships | | 1 ^③ | | | |
| Minority Population | 107,014 | 285,082 | 184,395 | 148,294 | 119,470 |
| Percentage of Minority Population | 55.65% | 77.64% | 50.41% | 47.65% | 56.51% |

Note: The data are from Management Manual for Cadres of Yunnan Province (2016) and Statistic Yearbook of Yunnan Province (2016).

(Continue)Table 5-1 Ethnic Minority Overview in the Project Area

| Project | Jiangcheng | Menglian | Lancang | Ximeng | Total (Nine Counties) |
|-----------------------------------|------------|----------|----------------|----------------|-----------------------|
| Minorities Townships | | | 6 ^④ | 1 ^⑤ | / |
| Minority Population | 102,594 | 109,047 | 378,952 | 89,336 | 1,524,184 |
| Percentage of Minority Population | 81.17% | 78.23% | 76.06% | 94.74% | 66.09% |

Note: The data are from Management Manual for Cadres of Yunnan Province (2016) and Statistic Yearbook of Yunnan Province (2016).

Hani is the largest ethnic minority group in the project area, with a total population of 449,000 (19.49% of that of the project area), followed by Yi (17.69%), Lahu (12.82%), Wa (6.75%), Dai (6.29%), Bulang (0.65%), Hui (0.52%), Yao (0.5%) and Bai (0.39%). Most minority groups live with other groups.

^③ Mengnong Autonomous Township of Yi People.

^④ Qianliu Autonomous Township of Yi People, Jiujin Autonomous Township of Hani People, Ankang Autonomous Township of Wa People, Wendong Autonomous Township of Wa People, Xuelin Autonomous Township of Wa People, and Fazhanhe Autonomous Township of Hani People.

^⑤ Lisuola Autonomous Township of Lahu People.

Table 5-2 Distribution of Ethnic Minorities in the Project Area (Person)

| County/City | Han | Minorities | Hani | Yi | Lahu | Wa | Dai | Other |
|--------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Ning'er | 85,286 | 107,014 | 50,769 | 38,962 | 2,084 | 370 | 7,178 | 7,651 |
| Mojiang | 82,118 | 285,082 | 231,551 | 36,800 | 4,884 | 197 | 5,516 | 6,134 |
| Jingdong | 181,405 | 184,395 | 13,886 | 155,902 | 1,665 | 192 | 3,300 | 8,821 |
| Jinggu | 162,906 | 148,294 | 3,427 | 63,733 | 12,354 | 135 | 61,739 | 6,906 |
| Zhenyuan | 91,930 | 119,470 | 26,911 | 59,227 | 18,904 | 143 | 9,279 | 4,621 |
| Jiangcheng | 23,806 | 102,594 | 62,854 | 17,352 | 1,985 | 112 | 9,293 | 10,998 |
| Menglian | 30,353 | 109,047 | 9,115 | 3,430 | 28,273 | 30,733 | 26,162 | 1,088 |
| Langcang | 119,248 | 378,952 | 50,225 | 31,548 | 209,668 | 56,211 | 18,908 | 12,392 |
| Ximeng | 4,964 | 89,336 | 738 | 1,021 | 15,858 | 67,519 | 3,639 | 561 |
| Total | 782,016 | 1,524,184 | 449,476 | 407,975 | 295,675 | 155,612 | 145,014 | 59,172 |
| Percentage | 33.91% | 66.09% | 19.49% | 17.69% | 12.82% | 6.75% | 6.29% | 2.57% |

Note: The data are from Economic Work Manual for Cadres of Pu'er City (2016).

The sub-project of rural roads improvement will benefit around 73,000 people, 80% of whom are minority members, such as Hani, Yi, Lahu, Wa, Dai, Yao, Bai, Hui and Miao. The sub-project of Ning'er-Jiangcheng-Longfu Highway and Meng'lian-Meng'a road will benefit 332,000 people, including 260,000 minority members (69%). The major ones are Yi, Hani, Dai, Lahu, Wa, Yao and Bai.

5.1.1.2 Income and Expenditure of Minority People

In ethnic minority area, land is the essential source of livelihood. In recent years, cash crops/trees have gradually replaced traditional crops to become the common income sources in the project area. At the same time, in order to earn more money, more and more families have engaged in non-agricultural activities such as shipping, processing and trade, or moved to cities. Relatively speaking, the closer a village to the town, the higher its percentage of non-agricultural activities. In General, the income of ethnic minority families is slightly lower than that of non-minority ones, and the earnings of women is lower than that of men.

Table 5-3 Income of Ethnic Minority Families in the Project Area (yuan)

| Ethnicity | Rural Roads | NJL Road | Menglian-Meng'a Road |
|----------------------|-------------|----------|----------------------|
| 1. Han | 39,166 | 45,074 | 32,938 |
| 2. Minorities | | | |
| Hani | 22,008 | 34,676 | 33,000 |
| Yi | 28,878 | 156,905 | 24,400 |
| Lahu | 8,571 | 32,000 | 20,500 |
| Wa | 11,175 | | 26,000 |
| Dai | 30,314 | 31,364 | 27,182 |
| Bai | | 36,736 | |
| Yao | 20,000 | 20,000 | |
| Other | 21,000 | 51,286 | 30,000 |

Note: The data are from field survey.

Table 5-4 Family Income in the Project Area (yuan)

| Gender | Family Income (2015) | Minority Families (2015) | | | | |
|--------|----------------------|--------------------------|--------|--------|--------|----------|
| | | Han | Hani | Yi | Dai | Wa |
| Male | 21,131 | 24,479 | 22,434 | 36,894 | 15,535 | 7,227. 2 |
| Female | 14,231 | 13,772 | 18,816 | 24,408 | 12,974 | 4,271. 1 |

Note: The data are from field survey (Only the samples of over 50 minority households are included).

The family income in the project area is mainly from crop growing. The percentage of non-agriculture activities and paid work is still low.

Table 5-5 Main Income Sources of Minority Families (%)

| Income Sources | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|---------------------------------|-------------------|------------|-------------------|------------|----------------------|------------|
| | % of Total Income | | % of Total Income | | % of Total Income | |
| | Han | Minorities | Han | Minorities | Han | Minorities |
| Cash Crops | 43. 29 | 34. 36 | 26. 29 | 33. 23 | 3. 13 | 42. 11 |
| Traditional Crops | 15. 24 | 12. 09 | 4. 79 | 8. 28 | 0 | 13. 63 |
| Cattle Farming | 9. 39 | 16. 2 | 11. 34 | 8. 4 | 1. 41 | 0. 06 |
| Non-Agricultural Activities | 8. 54 | 8. 27 | 26. 29 | 14. 99 | 10. 78 | 19. 43 |
| Paid Work | 7. 07 | 4. 22 | 13. 48 | 12. 78 | 57. 63 | 9. 2 |
| Poverty Alleviation and Subsidy | 7. 93 | 14. 02 | 3. 3 | 4. 7 | 0. 31 | 0. 51 |
| Other | 7. 68 | 10. 62 | 14. 52 | 14. 53 | 26. 75 | 13. 92 |

Note: the data are from field survey.

Income of migrant workers is an important source of rural households and can effectively improve family income. The field survey shows the proportion of migrant workers of Han people is higher than those of the minorities, and the percentage of migrant workers along the Menglian-Meng'a Road is low.

Table 5-6 The Proportion of Long Term Migrant Workers (%)

| Families Members as Migrant Workers (%) | Rural Roads | NJL Road | Menglian-Meng'a Road |
|--|--------------------|-----------------|-----------------------------|
| 1. Han | 39.02 | 44.64 | 40.63 |
| 2. Minorities | | | |
| Hani | 32 | 36.21 | 0 |
| Yi | 38.78 | 28.57 | 60 |
| Lahu | 35.71 | 25 | 0 |
| Wa | 53.85 | / | 0 |
| Dai | 59.09 | 54.55 | 5.19 |
| Bai | / | 54.55 | / |
| Yao | 100 | 100 | / |
| Other | 33.33 | 42.86 | 100 |

Note: The data are from field survey.

The majority of the migrant workers find jobs within the county or neighboring areas. With the implementation of the project and improvement of the traffic conditions, it is convenient for the farmers to find jobs in other places and earn more money.

Table 5-7 Destinations of Minority Migrant Workers

| Family Income | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|--|--------------------------------------|-------------------|--------------------------------------|-------------------|--------------------------------------|-------------------|
| | Percentage of Migrant Workers | | Percentage of Migrant Workers | | Percentage of Migrant Workers | |
| | Han | Minorities | Han | Minorities | Han | Minorities |
| Within the County or Neighboring Areas | 37.5 | 29.27 | 56 | 54 | 61.54 | 50 |
| Other Counties or Pu'er City | 25 | 17.07 | 16 | 22 | 7.69 | |
| Other Prefectures/Cities of Yunnan | 25 | 20.73 | 8 | 10 | | |
| Kunming | | 1.22 | 8 | 4 | 15.38 | 37.5 |
| Other Provinces | 12.5 | 31.71 | 12 | 10 | 15.38 | 12.5 |

Note: The data are from field survey.

In the project area, the main family expenditure is on food, clothing, agricultural production and investment in other aspects. In the affected area of Menglian-Meng'a Road, for both Han and ethnic minorities, 50% of the expenditure is for such basic living necessities like food and clothing. At the same time, since there is no surplus crop to sell (in the sample only Dai people sell the crops), nor the habit of processing the crops, the living condition is more difficult than that of residents along other roads.

Table 5-8 Major Expense of Minority Families

| Expense on | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|--|-----------------------------|------------|-----------------------------|------------|-----------------------------|------------|
| | Proportion in Total Expense | | Proportion in Total Expense | | Proportion in Total Expense | |
| | Han Nationality | Minorities | Han Nationality | Minorities | Han Nationality | Minorities |
| Food and Clothes | 24.51 | 26.34 | 39.75 | 35.48 | 50.16 | 46.82 |
| Agricultural Production and other Investment | 33.78 | 25.58 | 21.52 | 26.23 | 1.56 | 11.08 |
| Medical Treatment and Education | 21.1 | 15.67 | 16.07 | 16.73 | 24.53 | 18.88 |
| House Construction/Rebuilt | 4.27 | 15.31 | 3.66 | 3.15 | 0 | 0.51 |
| Fuel, Outgoing and Freight Transport | 11.83 | 11.55 | 10.88 | 11.95 | 18.47 | 16.08 |
| Others | 4.51 | 4.84 | 7.46 | 6.19 | 4.97 | 6.3 |

Note: The data are from field survey.

Table 5-9 Yield and Income of Crops in Minority Families in Project Area

| Yield and Income | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|---|-----------------|------------|-----------------|------------|----------------------|------------|
| | Han Nationality | Minorities | Han Nationality | Minorities | Han Nationality | Minorities |
| Crops Sold/Year (ton) | 1.34 | 1.86 | 0.51 | 2.29 | 0 | 0.92 |
| Crop Income/Year (yuan) | 18,283 | 6,208.4 | 3,080.4 | 6,350.8 | 0 | 2,725.9 |
| Crops Bought/Year (ton) | 0.64 | 0.51 | 1.26 | 5.19 | 0.55 | 0.26 |
| Money Spending on Buying Crops/Year (yuan) | 4,858.5 | 1,553.6 | 1,798.7 | 1,1291 | 2,124.4 | 924.55 |
| Crops Sent to Processing Factory/Year (ton) | 0.01 | 0.03 | 0.26 | 0.09 | 0 | 0 |

Note: The data are from field survey.

5.1.2 Poverty Population

In 2015, 382,968 people in Pu'er City lived under the poverty line, which occupied 14.7% of the total population. Except Simao District, other 9 counties in Pu'er City were national level poverty-stricken counties.

The highways in the project locate in the areas with concentrated poverty and there are 371,875 needy people, covering 16.22% of the population in project area. The poverty incidence along the involved highways is 18.18% which is higher than 12.71%, the average of Yunnan Province .

Table 5-10 Poverty Population in Project Area

| | Poverty Population | | Poverty Incidence (%) | |
|------------------------|--------------------|------------------|-----------------------|--------------|
| | 2014 | 2015 | 2014 | 2015 |
| Ning'er | 11,509 | 9,394 | 7.26 | 5.93 |
| Mojiang | 72,966 | 60,749 | 24.12 | 20.08 |
| Jingdong | 47,127 | 38,270 | 14.00 | 11.37 |
| Jinggu | 43,760 | 36,445 | 15.57 | 12.97 |
| Zhenyuan | 27,522 | 22,216 | 13.89 | 11.21 |
| Jiangcheng | 29,393 | 24,127 | 28.84 | 23.68 |
| Menglian | 24,997 | 20,739 | 20.91 | 17.34 |
| Lancang | 166,727 | 139,317 | 41.17 | 34.40 |
| Ximeng | 25,191 | 20,618 | 32.57 | 26.66 |
| Total/Average | 449,192 | 371,875 | 22.03 | 18.18 |
| Pu'er City | 462,619 | 382,968 | 22.05 | 18.26 |
| Yunnan Province | 5,740,000 | 4,710,000 | 15.49 | 12.71 |

Note: The data are from *Economic Work Manual for Cadres of Pu'er City (2016)*.

The poverty in Pu'er City is closely related to the poor transport that has limited the trading of local agricultural products and worsens the vulnerability of poverty population.

Statistics from field survey showed that the Annual income of poverty-stricken families were much lower than that of non-poverty-stricken families.

Table 5-11 Annual Income of Poverty-Stricken Families in Project Area**(Unit: yuan)**

| Type of Family | Rural Roads | NJL Road | Menglian-Meng'a Road |
|-----------------------------|-------------|----------|----------------------|
| Non-Poverty-Stricken Family | 28,969 | 59,766 | 30,667 |
| Poverty-Stricken Family | 16,910 | 21,870 | 10,000 |

Note: The data are from field survey.

Classified by the rural poverty line of China, namely yearly income of 2,300 yuan, 13.04% of the interviewed families belonged to poverty-stricken family; classified by 2,300-5,000 yuan, 29.96% were middle-income families; classified by 5,000-10,000 yuan, 39.78% were higher-income families; classified by more than 10,000 yuan, 20.21% were well-off families.

Table 5-12 Annual Income of Families in Project Area

| Family Income Per Capita (yuan) | Rural Roads | | NJL Road | | Menglian-Meng'a Road | | Total | |
|---------------------------------|-------------|---------------|------------|---------------|----------------------|---------------|------------|---------------|
| | House hold | Proportion(%) | House hold | Proportion(%) | House hold | Proportion(%) | House hold | Proportion(%) |
| < 2,300 | 50 | 22.73 | 20 | 11.11 | 5 | 4.17 | 60 | 13.04 |
| 2,300-5,000 | 69 | 31.36 | 22 | 12.22 | 41 | 34.17 | 124 | 26.96 |
| 5,001-10,000 | 77 | 35 | 75 | 41.67 | 53 | 44.17 | 183 | 39.78 |
| 10,001-20,000 | 22 | 10 | 48 | 26.67 | 19 | 15.83 | 75 | 16.3 |
| > 20,000 | 2 | 0.91 | 15 | 8.33 | 2 | 1.67 | 18 | 3.91 |
| Total | 220 | 100 | 180 | 100 | 120 | 100 | 460 | 100 |

Note: The data are from field survey.

5.2 Transport in the Project Area

5.2.1 Transport in Pu'er City

Road transport which is the primary way for passenger transport and freight transport in Pu'er City is closely related to the economic development and poverty alleviation. In 2015, the traffic mileage in Pu'er was 20,373 miles, in which the national highways and provincial highways covered 2,504 miles (12.29% of the total mileage); county roads, village roads and special roads, 16,291 miles (79.96%). In

2015, the classified highway in Pu'er City was 16,002 miles which held 78.55% of the total mileage in Pu'er; substandard highway, 4,371 miles, 21.45%. Overall, classified highway rate in Pu'er was lower than the average of Yunnan Province.

Table 5-13 The Length of Road Transport in Pu'er City

| Item | Traffic Mileage | Classified Highway | Expressway | First-Class Highway | Second-Class Highway | Third-Class Highway | Fourth-Class Highway | Substandard Highway |
|--------------------------|-----------------|--------------------|------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| Pu'er City | 20,373 | 16,002 | 200 | 5 | 897 | 544 | 14,357 | 4,371 |
| Ratio to Traffic Mileage | | 78.55% | 0.98% | 0.02% | 4.40% | 2.67% | 70.47% | 21.45% |
| Yunnan Province | 236,007 | 197,071 | 4,006 | 1,152 | 10,860 | 8,286 | 172,768 | 38,936 |
| Ratio to Traffic Mileage | | 83.50% | 1.70% | 0.49% | 4.60% | 3.51% | 73.20% | 16.50% |

Note: The data are from *Statistic Yearbook of Yunnan Province (2016)*

From 2014 to 2015, the freight amount of Pu'er City has increased to 46.67 million tons by 7.0% ; the freight turnover, 5,769.1 million ton kilometers, 8.5%; the passenger transportation volume, 35.07 million, 0.9%; the passenger transportation turnover, 3,219.38 million passenger kilometers, 8.9%^⑥.

By the end of 2015, the number of civilian vehicles in Pu'er City has reached 945,100, among which 186,800 were cars, 702,900 were motorcycles, 5,520 were tractors and 200 were trailers. Meanwhile, 696,900 people were drivers with motor vehicle driving licenses, among which 31,200 were drivers with car driving license. Among the 186,800 cars, 133,600 were passenger buses (including 6,300 sedans), 5,100 were trucks. What's more, there were 31 operation households of road passenger transport, 27,243 operation households of road freight transport, 3,387 operation households of related business. Relevant passenger transport in Pu'er City is showed in the table below.

^⑥ The data are from *National Economic and Social Development Statistical Bulletin of Pu'er City (2015)*

Table 5-14 Passenger Transport in Pu'er City

| Passenger Transport Lines | Interprovincial Lines | Intercity Lines | Intercounty Lines | Rural Lines | Rural Passenger cars | Rural Passenger Cars to Counties | Rural Passenger Cars to Administrative Villages |
|---------------------------|-----------------------|-----------------|-------------------|-------------|----------------------|----------------------------------|---|
| 508 | 4 | 85 | 83 | 336 | 1,131 | 103 | 738 |

Note: The data are from Project Office.

In 2015, the rural road mileage was 17,897.6 miles. In the 1,031 administrative villages, 859 administrative villages which occupy 83.31% of the total administrative villages^⑦ had asphalt roads and stone roads.

In 2015, 12,219 traffic accidents took place in Pu'er City and caused 325 death and economic loss of 24.04 million yuan. Among these accidents, 9,871 accidents took place in project areas and caused 271 death and economic loss of 20.68 million yuan^⑧.

Table 5-15 Traffic Safety in Project Affected Area (2015)

| Area | Road Transportation Accidents | Death in the Accidents | Injuries in Accidents | Economic Losses (yuan) |
|-----------------------------|-------------------------------|------------------------|-----------------------|------------------------|
| Ning'er | 1,038 | 40 | 315 | 1,972,800 |
| Mojiang | 1,511 | 37 | 574 | 3,515,600 |
| Jingdong | 1,134 | 17 | 676 | 2,142,400 |
| Jinggu | 1,999 | 34 | 742 | 2,847,400 |
| Zhenyuan | 955 | 17 | 365 | 1,561,800 |
| Jiangcheng | 537 | 14 | 266 | 1,489,100 |
| Menglian | 503 | 19 | 294 | 681,200 |
| Lancang | 1,757 | 74 | 601 | 5,244,800 |
| Ximeng | 437 | 19 | 182 | 1,225,000 |
| Total | 9,871 | 271 | 4,015 | 20,680,100 |
| Simao | 2,348 | 54 | 936 | 3,360,400 |
| Pu'er City | 12,219 | 325 | 4,951 | 24,040,600 |
| NJL Road | 5 | 0 | 6 | 12,000 |
| Menglian-Meng'a Road | 3 | 3 | 2 | 9,000 |

Note: The data are from Traffic Police Division of Pu'er City.

^⑦ The data are from Project Office.

^⑧ The data are from Traffic Police Division of Pu'er City.

It is showed in Table 5-16 that the accident rate per 100 cars, death rate per 100 cars and injury rate per 100 cars and economic loss rate per 100 cars in project areas were all higher than the average values in Pu'er City.

Table 5-16 Traffic Safety in Project Affected Area (2015)

| Area | Accident Rate Per 100 Cars | Death Rate Per 100 Cars | Injury Rate Per 100 Cars | Economic Loss Rate Per 100 Cars (yuan) |
|------------|----------------------------|-------------------------|--------------------------|---|
| Ning'er | 1.89 | 0.07 | 0.57 | 3,600 |
| Mojiang | 2.36 | 0.06 | 0.9 | 5,500 |
| Jingdong | 1.15 | 0.017 | 0.69 | 2,200 |
| Jinggu | 2.52 | 0.042 | 0.94 | 3,600 |
| Zhenyuan | 1.67 | 0.03 | 0.64 | 2,700 |
| Jiangcheng | 1.78 | 0.02 | 0.88 | 4,900 |
| Menglian | 1.02 | 0.04 | 0.6 | 1,400 |
| Lancang | 1.46 | 0.06 | 0.5 | 4,400 |
| Ximeng | 2.48 | 0.11 | 1.03 | 6,900 |
| Average | 1.73 | 0.05 | 0.7 | 3,600 |
| Simao | 1.75 | 0.04 | 0.7 | 2,500 |
| Pu'er City | 1.37 | 0.036 | 0.556 | 2,700 |

Note: The data are from Traffic Police Division of Pu'er City.

5.2.2 The Traffic Use of Farmers in Pu'er City

According to household survey, although farmers in project areas can get some fundamental services in community and nearby places, most services can only be meet in the town, for example, market, hospital, primary and secondary schools, bank, police station, coffee collection station and tea processing station etc. As for some special service, the farmers can get them only in the county, for instance, big market, hospital and high school etc. The farmers are in great demand of transportation service.

Table 5-17 Analysis on Trip Destinations of Farmers in Project Affected Area

| Trip Destination | Rural Roads | | | NJL Road | | | Menglian-Meng'a Road | | |
|--------------------------------|-----------------------|--------------------|----------------------------|-----------------------|--------------------|----------------------------|-----------------------|--------------------|----------------------------|
| | Round Trips per Month | Time Needed (mins) | Cost per Round Trip (yuan) | Round Trips per Month | Time Needed (mins) | Cost per Round Trip (yuan) | Round Trips per Month | Time Needed (mins) | Cost per Round Trip (yuan) |
| Round Trips to Nearby Villages | 11.78 | 97.3 | 16.01 | 5.68 | 29.43 | 12.41 | 19.93 | 11.53 | 3.29 |
| Round Trips to Villages | 6.24 | 149.22 | 57.19 | 5.78 | 55.53 | 18.64 | 6.46 | 33.08 | 9.05 |
| Round Trips to Counties | 2.7 | 239.19 | 102.48 | 6.02 | 159.77 | 33.36 | 1.43 | 106.67 | 23.01 |
| Round Trips to Pu'er City | 0.21 | 672.4 | 270.67 | 0.6 | 379.43 | 73.49 | 0.04 | 720 | 400 |

Note: The data are from filed survey.

Table 5-18 The Farthest Destination of the Villagers in Project Area

(Unit: Percent)

| Trip Destinations | Rural Roads | NJL Road | Menglian-Meng'a Road |
|----------------------|-------------|----------|----------------------|
| Nearby Villages | 2.27 | 2.78 | 0.83 |
| Villages | 2.27 | | |
| Counties | 14.55 | 1.67 | 8.33 |
| Pu'er City | 21.36 | 20.56 | 71.67 |
| In the Province | 45.45 | 54.44 | 17.5 |
| Outside the Province | 14.09 | 20.56 | 1.67 |

Note: The data are from filed survey.

From the aspect of transportation vehicles in family, more than 90% families own vehicles. Classified by economic condition, needy families own bicycles, tricycles, and motor cars instead of sedans, minicars and trucks. Non-needy families own motor cars, farm vehicles, sedans and trucks.

**Table 5-19 Vehicle Owing Rate in Project Affected Area
(Unit: Percentage)**

| With Vehicles | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|---------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|
| | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families |
| Yes | 90 | 96.67 | 100 | 90.66 | 83.33 | 96.3 |
| No | 10 | 3.33 | | 9.34 | 16.67 | 3.7 |

Note: The data are from filed survey.

Table 5-20 Vehicles in Families in Project Area

| Vehicles | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|----------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|
| | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families |
| Bicycle/Tricycle | 1 | 1 | 1 | 5 | 2 | 2 |
| Scooter | 0 | 0 | 0 | 10 | 2 | 27 |
| Cart | 0 | 0 | 0 | 0 | 0 | 0 |
| Motor Tricycle | 6 | 14 | 1 | 10 | 1 | 15 |
| Motorcycle | 103 | 133 | 36 | 162 | 13 | 155 |
| Farm Vehicle/Tractor | 24 | 32 | 19 | 33 | 1 | 16 |
| car/Mini-car | 0 | 16 | 0 | 38 | 0 | 19 |
| Truck | 0 | 8 | 0 | 19 | 0 | 1 |

Note: The data are from filed survey.

**Table 5-21 Driving License Owing Rate in Families in Project Area
(Unit: Percent)**

| With Driving License | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|----------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|
| | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families | Poverty-Stricken Families | Non-Poverty-Stricken Families |
| Yes | 80 | 94.17 | 100 | 88.97 | 75 | 97.22 |
| No | 20 | 5.83 | | 11.03 | 25 | 2.78 |

Note: The data are from filed survey.

From the perspective of trip mode and trip purpose, more people chose to go out for shopping by driving and passenger cars.

Table 5-22 Trip Modes of Farmers in Project Area**(Unit: Percent)**

| Trip Mode | Rural Roads | NJL Road | Menglian-Meng'a Road |
|------------------------------|--------------------|-----------------|-----------------------------|
| Driving | 58.18 | 43.33 | 79.17 |
| Public Transportation | 1.36 | 6.11 | 0 |
| Passenger Cars | 19.55 | 51.11 | 75 |
| Walking | 20.91 | 30.56 | 36.67 |
| Cars of Relatives or Friends | 36.82 | 12.78 | 3.33 |
| Others | 13.18 | 16.67 | 3.33 |

Note: The data are from field survey.**Table 5-23 Trip Purposes of Farmers in Project Area****(Unit: Percent)**

| Trip Purpose | Rural Roads | NJL Road | Menglian-Meng'a Road |
|-----------------------------|--------------------|-----------------|-----------------------------|
| Job-hunting | 5.08 | 8.64 | 0 |
| Taking the child to school | 10.66 | 9.83 | 17.58 |
| Trade | 27.73 | 26.17 | 13.26 |
| Shopping | 32.52 | 32.67 | 37.42 |
| Keeping Social Relationship | 11.3 | 11.66 | 14.9 |
| Seeing a doctor | 12.54 | 10.48 | 16.44 |

Note: The data are from field survey.

Habitants along the local highway usually used cars of their own or relatives or friends to transport and sell the agricultural products. A large proportion of product transportation was undertaken by buyers who go to the habitants along the local highway and NJL Road. However, few buyers going to habitants along the Menglian-Meng'a Road negatively influenced the selling of local agricultural products.

Table 5-24 Modes of Transporting Agricultural Products

(Unit: Percent)

| Mode of Transporting Agricultural Products | Rural Roads | NJL Road | Menglian-Meng'a Road |
|--|--------------------|-----------------|-----------------------------|
| Driving | 33.64 | 24.44 | 32.5 |
| Cars of Relatives or Friends | 25 | 7.78 | 9.17 |
| Buyers' Coming to the Farmers' and be Responsible for Product Transportation | 33.64 | 30 | 6.67 |
| Regular Bus | 0 | 2.22 | 0.83 |
| Others | 8.18 | 35.56 | 52.5 |

Note: The data are from field survey.

Meanwhile, the monitoring group found that from the perspectives of farmers' trip modes and agricultural product selling, passenger cars and regular buses were in low use ratio and the public transportation in project areas were not well built.

5.2.3 Transport Need

The village-level investigation showed that 64.28% of the investigated villages had cement roads and only 21.42% had hardened roads between villages. Villagers in 71.42% of the investigated villages said that there were traffic signs on the roads; however, the average of the warning signs, deceleration strips, and pedestrian crossings in villages were respectively 1.71, 1.71 and 0.57 which were far from meeting their needs. What's more, only 28.57% of the roads in the investigated villages were passable under all weather conditions.

From household survey, most peasant households thought the road condition could not meet their need for going out. The problems mainly lied in low safety, poor pavement and no crossing etc..

Table 5-25 Road Evaluation from Farmers in Project Area**(Unit: Percent)**

| Item | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|---|-------------|-------|----------|-------|----------------------|-------|
| | Yes | No | Yes | No | Yes | No |
| Can the roads you usually use meet your outgoing needs? | 17.27 | 82.83 | 27.78 | 72.22 | 10.83 | 89.17 |
| Do you think the roads you usually use are safe? | 15 | 85 | 20.56 | 79.44 | 10.83 | 89.17 |
| Do you think the traffic signals are enough and work? | 15.91 | 84.09 | 41.11 | 58.89 | 15 | 85 |

Note: The data are from field survey.**Table 5-26 The Most Inconvenient Roads Considered by the Farmers in Project Area****(Unit: Percent)**

| Destination | Rural Roads | NJL Road | Menglian-Meng'a Road |
|--------------------------|-------------|----------|----------------------|
| Roads to Nearby Villages | 46.36 | 33.89 | 4.17 |
| Roads to the Village | 42.73 | 20.56 | 11.67 |
| Roads to County | 10.91 | 43.89 | 58.33 |
| Roads to Pu'er City | | 0.56 | 25.83 |

Note: The data are from field survey.**Table 5-27 Reasons for Inconvenience Given by Farmers in Project Area****(Unit: Percent)**

| Reasons | Rural Roads | NJL Road | Menglian-Meng'a Road |
|-------------------------------|-------------|----------|----------------------|
| No Crossing/Need Detouring | 9.55 | 2.22 | 26.67 |
| Poor Pavement Quality | 76.82 | 95 | 70.83 |
| Impassibility in Bad Weather | 12.73 | 0.56 | 0.83 |
| Be Prone to Traffic Accidents | 0.45 | 0.56 | 1.67 |

Note: The data are from field survey.

The peasant households eagerly hoped that the pavement of the roads could be improved and also worried about the inconvenience in production and outgoing might be brought about by road construction.

Table 5-28 Farmers' Consideration on Problems to be Solved in Road Construction
(Unit: Percent)

| Item | Rural Roads | NJL Road | Menglian-Meng'a Road |
|-----------------------------|-------------|----------|----------------------|
| To be Safer | 24.09 | 28.89 | 45 |
| To Improve the Pavement | 44.55 | 57.22 | 45 |
| To create Job Opportunities | 15 | 16.11 | 1.67 |
| To Facilitate Trade | 16.82 | 26.11 | 13.33 |

Note: The data are from field survey.

Table 5-29 Problems Farmers in Project Areas Worry About Most
(Unit: Percent)

| Problems | Rural Roads | NJL Road | Menglian-Meng'a Road |
|---|-------------|----------|----------------------|
| Illegal Land Acquisition | 28.64 | 24.44 | 59.17 |
| Roads, channels etc. to be Destroyed | 25 | 36.67 | 26.67 |
| House Damage (Not Demolition) | 10.91 | 15.56 | 36.67 |
| Crop Yield or Crop Quality to be affected | 21.82 | 13.33 | 33.33 |
| Environmental Pollution | 15.91 | 33.89 | 24.17 |
| Noise/Construction at Night | 14.09 | 34.44 | 36.67 |
| Traffic/Inconvenience in Outgoing | 41.36 | 40 | 74.17 |
| Others | 19.09 | 10.56 | 0 |

Note: The data are from field survey.

At present, the rural road maintenance fund of Pu'er City comes from allocated capital from the governments of the prefecture and the County as well as provincial subsidies. Prefecture capital are generally used for maintenance station in each counties, equipment, and merit pay to each county Road Transportation Bureau. The amount of capital varies according to different kinds of roads but most of the capital are spent on the construction, maintenance and equipment of maintenance station and retirement pay. In fact, only 25% of the fund is spent on road maintenance.

In some places, because of lacking a comprehensive road maintenance mechanism and problems in using the maintenance fund, the county and village road maintenance were not formally organized but undertaken by villager volunteers who did some simple maintenance work. Because of no payment and technical training to the maintainers, the road maintenance was not well timed and conducted.

It can be seen from field investigation that 71.42% of the village roads were protected by the villagers voluntarily and only 14.28% of the villages has arranged special maintenance personnel and no villager is paid from maintaining the roads.

5.3 Influence on Farmers’ Production and Life

5.3.1 Employment

Owing to the limitation in transport, people in Pu’er City had less communication with developed areas, which have caused low employment opportunity and weak sense of getting employment service from the government. All of these have decreased the chance to migrate to cities and raise their income. In 2015, the number of employed people in Pu’er City was 1,616,200, including 325,300 in urban areas and 1,290,900 in rural areas^⑨.

5.3.2 Living Environment and Condition

Based on the interviews with village-level cadres, the main infrastructure in the sample village are listed in the following table:

Table 5-30 Main Infrastructure in the Sample Village

| School | | Medical Institution | | Financing Institution | | | Local Police Station | Market | | | Home-stay Tourist Spot | |
|----------------|------------------|---------------------|-----------------------------------|-----------------------|-----|--------------------|----------------------|----------------|---------------------------|------------------------|------------------------|-------------------------------|
| Primary School | Secondary School | Health Center | Clinic, Health Center, Dispensary | Banking Outlets | ATM | Rural Loan Society | | Trading Market | Coffee Collection Station | Tea Processing Station | Number | Yearly Income (thousand yuan) |
| 12 | 5 | 5 | 13 | 8 | 3 | 5 | 6 | 7 | 1 | 18 | 1 | 150 |

Note: The data are from field survey.

^⑨ The data are from *Statistic Yearbook of Yunnan Province (2016)*.

Family durable goods consumption are showed in the following table, in which the mobile and television own rates are relatively higher that everyone owns more than one.

Table 5-31 Family Durable Goods Consumption in Project Area

| Main Durable Goods | Rural Roads | NJL Road | Menglian-Meng'a Road |
|----------------------|-------------|----------|----------------------|
| TV (Color) | 1 | 1.12 | 1.1 |
| Fridge | 0.89 | 1.24 | 0.98 |
| Solar Water Heater | 0.92 | 0.99 | 0.94 |
| Washing Machine | 0.76 | 0.8 | 0.89 |
| Fixed-line Telephone | 0.01 | 0.14 | 0.03 |
| Mobile Phone | 2.47 | 3.04 | 2.49 |

Note: The data are from field survey.

5.3.3 Medical Treatment

By the end of 2015, there were 509 medical and sanitation institutions of different levels, among which there were 36 hospitals (including 18 state-owned hospitals, 1 enterprise-run hospital and 17 private hospitals), 103 township health centers, 4 community health centers (stations), 291 clinics (dispensaries), 11 Centers for Disease Control, 11 Health Supervision Institutions (centers). The number of sick beds in 2015 has increased by 294 to 9,710. The number of medical personnel has also increased by 652 to 10,295 among which 2,908 were medical practitioners, 650 were assistant medical practitioners, 3,861 were registered nurses, 468 were pharmacists, and 471 were inspection personnel. There were 988 village clinics, 2,059 country doctors and 61 medical orderlies till the end of 2015[®].

5.3.4 Social Security

According to *National Economic and Social Development Statistical Bulletin of Pu'er City (2015)*, 165,200 people has joined the Urban Employees' Basic Endowment Insurance, to which have increase by 6,100 people. Among the insured personnel, 125,000 were enterprise employees, to which have increased by 4,400; 129,650 were insured inhabitants , by 14,800.

[®] The data are from *National Economic and Social Development Statistical Bulletin of Pu'er City (2015)*

Table 5-32 Medical and Sanitation Facilities in Project Area

| Index | | Pu'er | City | Ning'er | Jiangcheng | Meng'lian |
|---------------------------------|--|-------|--------|---------|------------|-----------|
| | | 2014 | 2015 | 2015 | | |
| Numbers of Medical Institutions | Hospital | 32 | 36 | 5 | 2 | 2 |
| | Community Health Center | 1 | 4 | | | |
| | Health Center | 103 | 103 | 9 | 7 | 6 |
| | Clinic, Health Center, Dispensary | 247 | 291 | 119 | 54 | 54 |
| | Emergency Center (Station) | 1 | | | | |
| | Blood Bank | 1 | | | | 1 |
| | Maternal and Child Care Service Center (Station) | 11 | | 1 | 1 | |
| | The Center for Disease Control | 11 | 11 | 1 | 1 | 1 |
| | Health Supervision Institution | 11 | 11 | 1 | 1 | |
| | Medical Science Research Center | 2 | | | | |
| Subtotal | | 524 | 509 | 136 | 66 | 64 |
| Number of Sickbeds | | 9,416 | 9,710 | 800 | 470 | 421 |
| Number of Medical Personnel | | 9,643 | 10,295 | 950 | 522 | 478 |

Notes: The data are from *Statistic Yearbook of Yunnan Province (2016)* and County government.

The number of people who have joined Urban Employees' Basic Medical Insurance has increased by 4,100 to 206,000. And that of Urban Resident Essential Medical Insurance has increased by 1,400 to 130,000. The number of people who have joined New Rural Co-operative Medical System decreased 18,300 to 1,980,900 and the joining rate has dropped 0.1% to 98.1%. However, the raised fund has increased by 22.6% to 931,030,000 yuan. Totally, 5,231,200 has gotten medical compensation from New Rural Co-operative Medical System, which has increased by 1.1% and the medical expenditure of the System has increased by 10.1% to 861,020,000 yuan.

In Pu'er, the number of people who have been insured for unemployment increased by 2,500 to 102,000. Those who have been insured for employment injury increased by 10,000 to 152,600. Those who have been insured for maternity increased

by 4,900 to 132,700.

There were 67 different adopting social welfare institutions, which has increased by 6. In these institutions, 5,880 beds were offered, which has increased by 2,349. The number of the adopted dropped by 725 to 1,529.

5.3.5 Education and Culture

According to *National Economic and Social Development Statistical Bulletin of Pu'er City in 2015*, 3,262 students were enrolled by the general institutes of higher education and 10,559 were at school, including 2,164 graduates. 4,483 students were enrolled by different technical secondary schools and 13,424 were at school, including 2,919 graduates. 3,546 students were enrolled by vocational middle schools and 8,473 were at school, including 3,130 graduates. 38,724 students were enrolled by ordinary secondary schools and 113,455 were at school, including 35,494 graduates. 31,856 students were enrolled by ordinary primary schools and 176,010 were at school, including 29,329 graduates. Besides, 50,975 children were in kindergartens. The enrollment rate of school age children was 99.77%; that of primary school graduates, 98.02%; gross enrollment rate of secondary school, 107%; that of secondary school graduates, 68.05%; gross enrollment rate of high school, 70.26%.

Table 5-33 Educational Statistics of Pu'er City in the Past Three Years

| Index | 2013 | 2014 | 2015 |
|--|----------|----------|----------|
| Dormitory Floorage in Secondary Schools (thousand m ²) | 1,265.8 | 1,307.49 | 1,361.95 |
| Dormitory Floorage in Primary Schools (thousand m ²) | 1,123.96 | 1,199.3 | 1,267.6 |
| Enrollment Rate of School Age Children (%) | 99.68 | 99.73 | 99.77 |
| Enrollment Rate of Primary School Graduates (%) | 98.74 | 98.13 | 98.02 |
| Gross Enrollment Rate of Secondary School (%) | 105.94 | 107.06 | 107 |
| Enrollment Rate of Secondary School Graduates (%) | 67.8 | 69.15 | 68.05 |
| Gross Enrollment Rate of High School (%) | 64.5 | 69.54 | 70.26 |

Note: The data are from Education Bureau of Pu'er City

Table 5-34 Schools in Project Center Areas in the Past Three Years

| Index | | Number of Schools | | | Number of Teachers | | | Number of Teachers | | |
|-----------------------------|---------------------------|-------------------|------------|----------|--------------------|------------|----------|--------------------|------------|----------|
| | | Ning'er | Jiangcheng | Menglian | Ning'er | Jiangcheng | Menglian | Ning'er | Jiangcheng | Menglian |
| Number of Different Schools | Preschool Education | 5 | 11 | 4 | 153 | 116 | 129 | 4010 | 2838 | 2851 |
| | Primary School | 38 | 22 | 29 | 1136 | 554 | 743 | 10790 | 9168 | 11615 |
| | Ordinary Secondary School | | 7 | 5 | | 344 | | | 4419 | 5838 |
| | Secondary School | 10 | 7 | 4 | 530 | 246 | 338 | 5409 | 3164 | 4924 |
| | High School | 1 | 1 | 1 | 152 | 98 | 62 | 1946 | 1255 | 914 |
| | Vocational High School | 1 | 1 | 1 | 52 | 90 | 42 | 604 | 481 | 404 |

In Pu'er City, there were in total 11 cultural centers, 105 cultural stations, 11 public libraries and 7 museums. The population coverage rates of broadcast and television were 97.0% and 99.0% respectively.

5.4 Land Requisition, House Demolition and Resettlement

This project is classified into category A of involuntary resettlement, which includes land requisition and house demolition caused by Menglian-Meng'a road and NJL Road construction. It is no less likely to cause involuntary resettlement in rural road construction.

5.4.1 Menglian-Meng'a Road

Menglian-Meng'a Road construction (including Meng'a Logistics Center) will affect 2 townships, 6 villages, 22 village groups and 4 enterprises, totally 2,118 people of 471 households.

During Menglian-Meng'a Road construction, the land of 121.38 ha will be requisitioned, including paddy field for 15.81 ha, dry land for 15.18 ha, forest land for 21.99 ha, orchard land for 21.31 ha, fish pond for 1.21 ha, homestead for 3.2 ha, collective building land for 6.06 ha and other land for 36.63 ha.

In the secondary road construction of Menglian-Meng'a Road, 567 people of 166 households will be influenced and houses for 27,960 m² will be demolished, including frame structure for 10,340 m², brick-concrete structure for 4,606 m², post and panel structure for 8,928 m², stilted structure for 1,008 m², soil-based structure for 132 m², makeshift structure for 1,620 m², and shingle structure for 1.326 m².

In the 718 households affected by land requisition and house demolition, 20 are with the disabled, 3 are female labor oriented, and 129 are the disadvantaged.

Table 5-35 Area Affected by Land Requisition and House Demolition in Menglian-Meng'a Road Project

| Prefecture(City) | County(City) | Village (Township) | Affected Administrative Village | Affected Population | | Perpetual Land Requisition (hectare) | Temporary Land Requisition (hectare) | Population affected by House Demolition | | Demolition Area (m ²) |
|------------------|-----------------|--------------------|---------------------------------|---------------------|------------|--------------------------------------|--------------------------------------|---|------------|-----------------------------------|
| | | | | Household | Population | | | Household | Population | |
| Puli City | Menglian County | Nayun | Mangzhang Village | 29 | 106 | 1.13 | | 3 | 12 | 252 |
| | | | Dengzhang Village | | | | 5.27 | | | |
| | | Mengma | Paliang Village | 85 | 366 | 39.62 | 10.18 | 47 | 189 | 4,858 |
| | | | Mengma Village | 71 | 378 | 21.84 | 9.09 | 18 | 53 | 2,046 |
| | | | He'an Village | 11 | 61 | 2.36 | 2.36 | | | |
| | | | Manghai Village | 72 | 353 | 17 | 9.47 | 9 | 30 | 588 |
| | | | Meng'a Village | 166 | 750 | 19.51 | 12.08 | 70 | 242 | 13,788 |
| | | Enterprise | Mengma Tea Company | | | | | | | |
| | | | Menglia | 36 | 99 | 7.19 | | 18 | 36 | 828 |

| | | | | | | | | | | |
|-------|--|--|-----------------------------------|-----|-------|---------|-------|-----|-----|--------|
| | | | n State-run Farm | | | | | | | |
| | | | Luo Xiaohai Glue Factory | 1 | 5 | 4.64 | | 1 | 5 | 5,600 |
| | | | Mengma Rubber Compan y | - | - | 1.42 | | | | |
| Total | | | | 471 | 2,118 | 121.384 | 48.45 | 166 | 567 | 27,960 |

By June 30, 2016, the two contractors of Menglian-Meng'a Road construction has come to the project area and started subgrade construction while the pavement engineering is expected to start on the fourth quarter of 2017.

4 of the 6 affected villages of Nayun Town and Meng'ma Town involved in the project has launched land requisition and house demolition with households being compensated. Meanwhile, the construction of the 3 resettlement sites has started and some sites has already finished the major structure construction.

5.4.2 NJL Road

The land requisition and resettlement in the subproject of NJL Road will influence 2 counties, 6 towns, 23 villages, 1620 households and 8,720 people.

NJL Road construction will perpetually requisition rural collective land for 147.95 ha, including paddy field for 4.78 ha, dry land for 26.51 ha, forest land for 75.25 ha, tea plantation for 2.04 ha, fruit orchard for 37.47 ha and other land (homestead) for 1.91 ha. And it will perpetually requisition state-owned land for 64.72 ha, including state-owned forest land for 21.02 ha, state-owned construction land for 43.65 ha and other land for 0.06 ha. The temporarily requisitioned land in the project are mainly for burrow areas, living areas and construction roads during the construction. It is preliminarily estimated that the temporarily requisitioned land during NJL Road construction will be 10 ha.

Among the 23 affected villages, 1,178 people from 315 households will be

influenced by house demolition and the house demolition acreage will be 25,069.38 m², including brick-concrete structure for 15,245.02m² and civil engineering structure for 6,923.02m².

Among the 3,835 households, 38 enjoy the five guarantees (totally 38 people), 139 are with the disabled, 58 are female labor oriented and 502 are disadvantaged.

Table 5-36 Area Affected by Land Requisition and House Demolition in NJL Road Project

| Prefecture(City) | County(City) | Village (Township) | Affected Administrative Village | Affected Population | | Perpetual Land Requisition (hectare) | Temporary Land Requisition (hectare) | Population affected by House Demolition | | Demolition Area (m ²) |
|------------------|----------------|--------------------|---------------------------------|---------------------|------------|--------------------------------------|--------------------------------------|---|------------|-----------------------------------|
| | | | | Household | Population | | | Household | Population | |
| Pu'er City | Ning'er County | Ning'er Town | Minzheng Village | 12 | 49 | 1.57 | | 5 | 17 | 344 |
| | | | Banhai Village | 27 | 114 | 3.24 | | | | |
| | | | Manlian Village | 53 | 145 | 4.09 | | 8 | 27 | 560 |
| | | | Xinping Village | 105 | 474 | 5.38 | | 12 | 57 | 4,900 |
| | | | Taida Village | 4 | 21 | 0.26 | | | | |
| | | | Xishitou Village | 18 | 72 | 1.38 | | | | |
| | | | Wenquan Village | 63 | 240 | 11.00 | | | | |
| | | | Yuhe Village | 12 | 60 | 1.24 | | | | |
| | | Mengxian Town | Heping Village | 154 | 654 | 11.07 | | | | |
| | | | Qianle Village | 25 | 101 | 0.70 | | 3 | 8 | 229 |

| | | | | | | | | | |
|-------------------|-----------------|-------------------|-----|------|-------|--|----|-----|----------|
| | | Anning Village | 112 | 420 | 1.49 | | 17 | 59 | 550 |
| | | Xuande Village | 66 | 237 | 3.91 | | 12 | 45 | 1,200 |
| | | Yalu Village | 48 | 166 | 6.41 | | 1 | 4 | 170 |
| | Liming Village | Xianren Village | 116 | 465 | 11.57 | | 12 | 64 | 836 |
| | | Wangjie Village | 79 | 304 | 6.62 | | 6 | 25 | 458 |
| | | Tuanshuan Village | 109 | 409 | 5.40 | | 9 | 31 | 441 |
| Jiangcheng County | Baozang Village | Shuicheng Village | 93 | 784 | 8.64 | | 55 | 190 | 4,655.36 |
| | | Banhe Village | 76 | 660 | 5.80 | | 43 | 148 | 1,200 |
| | Mengli Town | Hebian Village | 194 | 1612 | 17.30 | | 42 | 151 | 3,447.32 |
| | | Niuluohe Village | 7 | 54 | 12.72 | | 44 | 186 | 3,544 |
| | | Dazai Village | 87 | 696 | 18.98 | | 25 | 92 | 1,024.4 |
| | Qushui Village | Basan Village | 44 | 363 | 5.36 | | 17 | 59 | 810.28 |
| | | Nuna Village | 37 | 328 | 3.80 | | 4 | 15 | 700.02 |

By June 30, 2016, NJL Road construction hasn't started yet and all sections are still undertaking lining, piling, land requisition or house demolition. For the reasons of heavy rainfall and no signal for leveling again, the work progress of some sections were lagged behind.

Table 5-37 Minorities Affected by Land Requisition and House Demolition in Menglian-Meng'a Road Project

| County | Township | Village | Household | Population | Male | Female | Han Nationality | Subtotal of Minority Population | Dai Nationality | Lahu Nationality | Wa Nationality |
|-----------------|----------|-------------------|-----------|------------|-------|--------|-----------------|---------------------------------|-----------------|------------------|----------------|
| Menglian County | Nayun | Mangzhang Village | 29 | 106 | 102 | 98 | 0 | 200 | 200 | 0 | 0 |
| | Mengma | Paliang Village | q85 | 366 | 230 | 221 | 0 | 450 | 0 | 204 | 246 |
| | | Mengma Village | 71 | 378 | 184 | 176 | 80 | 280 | 280 | 0 | 0 |
| | | He'an Village | 11 | 61 | 21 | 20 | 0 | 41 | 0 | 41 | 0 |
| | | Manghai Village | 72 | 353 | 623 | 598 | 56 | 1,165 | 1,165 | 0 | 0 |
| | | Meng'a Village | 166 | 750 | 573 | 550 | 9 | 1,114 | 1,114 | 0 | 0 |
| Total | | | | | 1,743 | 1,663 | 145 | 3,250 | 2,759 | 245 | 246 |
| Percentage | | | / | 100.00% | 51.3 | 49 | 4.3 | 95.7 | 81.3 | 7.2 | 7.2 |

Table 5-38 Minorities Affected by Land Requisition and House Demolition in Ning'jiang Highway Project

| County | Township | Village | Household | Population | Male | Female | Han Nationality | Hani Nationality | Yi Nationality | Dai Nationality | Yao Nationality | Lahu Nationality | Wa Nationality | Hui Nationality |
|----------------|--------------|------------------|-----------|------------|------|--------|-----------------|------------------|----------------|-----------------|-----------------|------------------|----------------|-----------------|
| Ning'er County | Ning'er Town | Minzheng Village | 12 | 49 | 27 | 22 | 21 | 14 | 12 | 1 | 0 | 1 | 0 | 0 |
| | | Banhai Village | 27 | 114 | 59 | 55 | 49 | 37 | 27 | 1 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | |
|----------------|------------------|-----|------|-----|-----|-----|-----|-----|---|---|---|----|----|
| | Manlian Village | 54 | 148 | 31 | 117 | 64 | 49 | 36 | 0 | 0 | 0 | 0 | 0 |
| | Xinping Village | 110 | 498 | 62 | 436 | 214 | 158 | 120 | 6 | 0 | 0 | 0 | 0 |
| | Taida Village | 4 | 21 | 11 | 10 | 9 | 7 | 5 | 0 | 0 | 0 | 0 | 0 |
| | Xishitou Village | 18 | 72 | 47 | 25 | 31 | 24 | 17 | 0 | 0 | 0 | 0 | 0 |
| | Wenquan Village | 63 | 240 | 135 | 105 | 103 | 79 | 58 | 0 | 0 | 0 | 0 | 0 |
| | Yuhe Village | 12 | 60 | 34 | 26 | 26 | 20 | 14 | 0 | 0 | 0 | 0 | 0 |
| | Subtotal | 300 | 1202 | 406 | 796 | 517 | 397 | 288 | 0 | 0 | 0 | 0 | 0 |
| Liming Village | Xianren Village | 117 | 470 | 265 | 205 | 202 | 151 | 113 | 4 | 0 | 0 | 0 | 0 |
| | Wangjie Village | 79 | 304 | 167 | 137 | 131 | 97 | 73 | 3 | 0 | 0 | 0 | 0 |
| | Tuanshan Village | 109 | 409 | 235 | 174 | 176 | 129 | 98 | 0 | 6 | 0 | 0 | 0 |
| | Subtotal | 305 | 1183 | 667 | 516 | 509 | 390 | 284 | 0 | 0 | 0 | 0 | 0 |
| Mengxian Town | Heping Village | 154 | 654 | 351 | 303 | 281 | 188 | 157 | 0 | 0 | 0 | 11 | 17 |
| | Qianle Vilalge | 25 | 101 | 56 | 45 | 43 | 33 | 24 | 0 | 0 | 0 | 0 | 0 |
| | Anning Village | 114 | 432 | 233 | 199 | 186 | 143 | 104 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | |
|-------------------|--------------|-------------------|-------|---------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| | | Xuande Village | 69 | 243 | 131 | 112 | 104 | 62 | 58 | 14 | 0 | 4 | 0 | 0 |
| | | Yalu Village | 48 | 166 | 89 | 77 | 71 | 55 | 40 | 0 | 0 | 0 | 0 | 0 |
| | | Subtotal | 410 | 1596 | 860 | 736 | 686 | 527 | 383 | 0 | 0 | 0 | 0 | 0 |
| | | Subtotal | 1,015 | 3,981 | 1,933 | 2,048 | 1,712 | 1,314 | 955 | 0 | 0 | 0 | 0 | 0 |
| Jiangcheng County | Baozang Town | Shuicheng Village | 102 | 825 | 431 | 394 | 355 | 215 | 198 | 57 | 0 | 0 | 0 | 0 |
| | | Banhe Village | 88 | 703 | 367 | 336 | 302 | 147 | 169 | 0 | 0 | 85 | 0 | 0 |
| | | Subtotal | 190 | 1,528 | 798 | 730 | 657 | 504 | 367 | 0 | 0 | 0 | 0 | 0 |
| | Menglie Town | Jiangbian Village | 199 | 1,629 | 924 | 705 | 700 | 538 | 391 | 0 | 0 | 0 | 0 | 0 |
| | | Niuluohu Village | 44 | 186 | 98 | 88 | 80 | 61 | 45 | 0 | 0 | 0 | 0 | 0 |
| | | Dazhai Village | 91 | 714 | 356 | 358 | 307 | 236 | 171 | 0 | 0 | 0 | 0 | 0 |
| | | Subtotal | 334 | 2,529 | 1,378 | 1,151 | 1,087 | 835 | 607 | 0 | 0 | 0 | 0 | 0 |
| | Qushui Town | Basan Village | 44 | 363 | 197 | 166 | 156 | 120 | 87 | 0 | 0 | 0 | 0 | 0 |
| | | Nuna Village | 37 | 328 | 175 | 153 | 141 | 108 | 79 | 0 | 0 | 0 | 0 | 0 |
| | | Subtotal | 81 | 691 | 372 | 319 | 297 | 228 | 166 | 0 | 0 | 0 | 0 | 0 |
| | | Subtotal | 605 | 4,748 | 2,548 | 2,200 | 2,042 | 1,567 | 1,140 | 0 | 0 | 0 | 0 | 0 |
| | Total | | | 1,620 | 8,729 | 4,481 | 4,248 | 3,753 | 2,671 | 2,095 | 86 | 6 | 90 | 11 |
| Percentage | | | / | 100.00% | 51.30% | 48.70% | 43.00% | 30.60% | 24.00% | 1.00% | 0.10% | 1.00% | 0.10% | 0.20% |

5.5 Other Influences

5.5.1. Cultural Protection and Promotion on Tourism and Foreign Trade

Most minorities in the project area, like Dai, Ha'ni, La'hu, and Wa Nationality, have their own religious believes, for example, worshiping divine tree or relics. Taking this issue into consideration, the primary design of the project had marked that no divine trees and cultural relics would be affected. If there is any dispute on divine trees or cultural relics during the construction, the Culture Protection and Management Committee will confirm the authenticity and then the project will protect or resettle them according to local culture and religious rites.

As a city with minority characteristics, Pu'er City enjoys its rich tourist resources and great potential. The statistics from Tourism Development Committee of Pu'er City showed that the number of domestic tourists from 2013 to 2015 has increased from 11,285,000 to 15,230,600. The survey group has also noticed that from 2014 to 2015, the number of foreigners making one-day trip through this border port of Pu'er has decreased to 110,700 by 19% and the foreign currency earnings about one-day trip has dropped to 800 yuan by 15.55%. It is clear that Pu'er has great potential compared with other border ports in China. This project will provide better pavement and traffic facilities to help the tourism development in project areas.

Table 5-39 Tourism in Project Center Area (Cities)

| City/County/District | Tourists | Overseas Tourists | Domestic Tourists | Total Tourist Income (million yuan) | Tourist Foreign Currency Earnings (million Dollars) | Domestic Tourist Income (million yuan) |
|----------------------|-----------|-------------------|-------------------|-------------------------------------|---|--|
| Ning'er | 1,234,790 | 790 | 1,234,000 | 867 | | |
| Mojiang | 2,487,090 | 0.890 | 2,486,200 | 1,484 | | |
| Jingdong | 883,240 | 240 | 883,000 | 529 | | |
| Jinggu | 1,098,300 | 300 | 1,098,000 | 874 | | |
| Zhenyuan | 530,500 | 100 | 530,400 | 347 | | |
| Jiangcheng | 833,600 | 7,500 | 826,100 | 624 | | |
| Menglian | 1,687,000 | 24,900 | 1,662,100 | 1,191 | | |

| | | | | | | |
|-----------------|-------------------|---------------|-------------------|--------------|---------------|--------------|
| Lancang | 1,544,730 | 9,330 | 1,535,400 | 1,194 | | |
| Ximeng | 472,530 | 2,330 | 470,200 | 327 | | |
| Total | 10,771,800 | 46,400 | 10,725,400 | 7,437 | 24.062 | 7,289 |
| Simao | 4,519,000 | 13,800 | 4,505,200 | 3,315 | 5.6534 | 3,280 |
| Pu'er City | 15,290,700 | 60,100 | 15,230,600 | 107.52 | 29.7154 | 10,568 |
| Growth Rate (%) | 14.8 | 4.51 | 16.04 | 19.9 | 9.6 | 20,100 |

Note: The data are from Tourism Development Committee of Pu'er City.

Yunnan Province plays an important role in the communication between the countries in Greater Mekong Region. However, the foreign trade turnover of the only one city neighboring Cambodia, Laos and Vietnam in Yunnan, Pu'er City is only 100 million dollars which is less than 1% of Yunnan Province. There is only 3 first grade ports in the 20 border crossings in Pu'er. It is hoped that this Highway project would help to upgrade longfu port in Jiangcheng County to the fourth first grade port to meet the trading need between Vietnam and China.

**Table 5-40 Port Trading between Pu'er and Neighboring Countries
(Myanmar and Vietnam)**

| Year | | 2013 | 2014 | 2015 |
|------------------------------|--------------------------|-----------|-----------|-----------|
| Cross-border Trade in Meng'a | Amount (Million dollars) | 340.42 | 566.56 | 501.64 |
| Transit Vehicle in Meng'a | Amount | 219,714 | 248,638 | 274,699 |
| Transit Passengers in Meng'a | Amount | 1,012,154 | 1,199,892 | 1,341,026 |
| Cross-border Trade in Longfu | Amount (Million yuan) | 0.904 | 0.97 | 1.08 |
| Transit Vehicle in Longfu | Amount | 16 | 21 | 12 |
| Transit Passengers in Longfu | Amount | 102,000 | 123,000 | 156,000 |

Note: source from data summrization of Prject Office

5.5.2 HIV/AIDS Prevention

Comparing with new highway construction, road upgrading bring less negative influence on HIV/AIDS prevention. However, the migrant workers and the mobility caused by convenient transportation increase the risk of HIV/AIDS transmission. Now, the local governments in project areas have built an anti-HIV/AIDS-and-drug mechanism. During the construction, posters, materials, publicity and education will also help to strengthen the awareness of HIV/AIDS prevention among local farmers.

Table 5-41 HIV/AIDS Knowledge Popularization Among Project Area Families

| Item | Rural Roads | | NJL Road | | Menglian-Meng'a Road | |
|---|-----------------|------------|-----------------|------------|----------------------|------------|
| | Han Nationality | Minorities | Han Nationality | Minorities | Han Nationality | Minorities |
| Families who have ever heard about HIV/AIDS (%) | 95.12 | 96.09 | 100 | 100 | 92.86 | 93.55 |
| Families who know HIV/AIDS Prevention and related knowledge (%) | 90.24 | 94.41 | 100 | 100 | 80.36 | 84.68 |

Note: The data are from filed survey.

5.5.3 Lowering Infection Risk

In 2015, 6,448 people in Pu'er City were infected with notifiable infectious diseases of category A and category B and 87 patients were reported dead. The morbidity of notifiable infectious diseases was 246.8/100000 people and the death rate, 3.32/100000 people. The statistics from the company, there was no infection of contagious disease during the project period of 2015 in this area.

5.6 Monitoring Result

5.6.1 Suggestions on Project Implementation

Based on the survey on the baseline plans of minorities, the monitoring group suggests that to achieve the development targets of minorities, the following should be taken seriously during the construction:

(1) Coordinate and communicate more with all the organizations. *The Ethnic Minority Development Plan* is not only based on this project, but also on the joint efforts of all the organizations involved such as local government, contractors, Labor Bureau, Transportation Bureau, Minority and Religion Bureau, Labor and Social Security Bureau, Tourist Bureau, Women Association, Human Resources etc.. Considering the complexity and difficulties in implementation, coordination and communication with other organizations can definitely facilitates the completion of the project.

(2) Pay much attention to the negative influence caused by construction.

Feedback from by villagers during the field investigation and experiences in previous projects suggested that highway construction usually brings negative influence on local people's life. For example, their outgoing will be directly influenced. The destroyed producing and living facilities like ditches and pipe network, raised dust and noise bring inconvenience and trouble to people's life. The newly built resettlement sites didn't supply water and electricity and those temporarily requisitioned land could not be restored in time etc.. This project oversees these potential problems and will supervise the construction to minimize the above negative influences and solve new problems in time.

(3) Keep monitoring the project and collecting statistics. Monitoring on the project involves large amount of data collection and it would be difficult to trail after the dynamic data during the construction. The project office should pay special attention to the date collection of highway construction progress, local labor force, local materials, training, and solutions to negative influence on villagers etc.

5.6.2 Conclusion

The work of this baseline project monitoring mainly include three aspects. What's in the first place is to design monitoring framework, specify the monitoring indexes, making monitoring plan according to *The Ethnic Minority Development Plan* and *External Monitoring Outline*, and provide methodology and reference for baseline monitoring and follow-up monitoring in the coming years. The second step is to communicate with the executing agency, implementation agency, and the functional agencies of cities and counties involved in the project to build an effective channel for information record, collection and report, which will be a support for future monitoring. Thirdly, considering the contract-signing year of the loan agreement of the project as baseline, the monitoring group will make investigation and record on all construction work by 2015, which will become reference for future yearly monitoring. For this is an external monitoring for the first time, it is unavoidable that there may be carelessness in index design and data collection which will be improved in the following monitoring to show roundly the implementation, effect and influence of *The Ethnic Minority Development Plan*.