Investigation on the Development of Hani Livelihood Strategies: A Case Study of Mengsong Community in Xishuangbanna, Yunnan, the People's Republic of China *

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Abstract

The livelihood of ethnic minority in China is still heavy depended on natural resource rather than migration, which is the choice of the majority. This research studied the livelihood of Hani ethnic minority in Mengsong community of Xishuangbanna (XSBN) who joyed Pu'er tea booming to earn their main income from tea. Through random sampling and household survey by a quality tested questionnaire of 222 households, in-depth interview with 15 key informants, focus group discussion as well as participatory observation.

The researcher found that the livelihoods of Hani ethinc minority have been transformed by the intensification of tea production. Households have expanded all swidden lands and hired dense labors for their tea production. They also invested in kinds of tea equipment and built their social access to tea market. Except the tea income Hani households also gained non-farming and other farming incomes, which indicates a diversification strategy was also actively adopted by Hani households as the supplement. The Hani livelihoods showed an upward trend in tea intensification and active diversification. However, a new trend of

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passive diversification with the tea market fluctuation under the negative impact of COVID-19 has emerged. Hani households had to withdraw their labor input from tea and shift to other farming for risk release. To deal with this downward crisis, the researcher suggests government policy should put efforts on the improvement of tea value, promote cash crops, and attract labors to the tea area for further development. The researcher also highlights market entitlement in livelihood asset access, which has the high potential for future livelihood study in upland minorities of China.

Keywords: Hani minority; livelihood strategy; livelihood dynamics

1. Introduction

The ethnic population in Yunnan is 15.34 million, as almost one third of its total population (Chinese Statistics Bureau, 2019). Ethnic minorities are characterized as backward and highlighted as the most difficult part of China's anti-poverty task claimed by Chinese government. As a socialist country, China declared to search for well-off society for all members equal development including ethnic minorities. In 2014, rural household's income from migrant work was 45.5% of its total, as firstly exceed the share of household agricultural income (Yan & Chen, 2015). The income from migrant work came to be the main income of rural household induced by China urbanization. However, this is not the case of upland minorities in Yunnan. Wang & Wu (2014) found that the labor division in wage work by ethnic minorities in southwest of Yunnan is only 1.2% in 2002, and slowly increased to 5.4% in 2012, quite less than the majority of Han. The low rate in wage work of upland minorities has kept almost the same till to today. The culture of ethnic minorities, such as not speak mandarin, low educational background, and not comfortable with a factory discipline are the main factors which barrier them to work in the city. So cash crops

promotion was chosen as an appropriate choice of poverty alleviation for upland ethnic minorities. As indicated by Wu et al. (2015) that the pattern of livelihood change in Yunnan ethnic minorities is from subsistence farming to cash crop farming through poverty reduction by the government. There are many cases of Hani communities that adopted new livelihood of cash crops in XSBN, such as this research site of Mengsong community.

Mengsong community was used to be remarkable by its typical swidden agriculture in the past. It was a research site for many domestic and western scholars to study Hani traditional swidden. Government extension agent introduced a series of cash crop as the substitution of swidden to Mengsong during past decades. Almost all of these cash crop campaigns were failed largely because the extension workers had not been aware of crop varieties that are appropriate to local micro-climate (Sturgeon, 2010). In 2003 extension agent promoted tea plantation in Mengsong which got successful. Starting from 2007, the price for tea was skyrocketed since it enjoyed a huge market booming with the Pu'er tea. Tea production has brought greatly increased incomes to Hani households and made Mengsong community become one of eight typical tea production areas in XSBN prefecture (Sturgeon, 2012). Study on Hani livelihood in Mengsong community can be a typical case to display how upland minorities strategically make a living as response to their changing environment.

2. Research Objectives

The objective of this study is to analysis the development process of Hani livelihood strategies in Mengsong community with the external policy and market impacts.

3. Methods

1. Location of the Study

The research was conducted thoroughly in Mengsong Community. Administratively, this community is in Menglong Township, Jinhong Municipality, XSBN Prefecture, YN Province, P.R. China. (See Figure 1). Menglong township is border with Myanmar at its east and south. It is the biggest township in the municipality with an area of 1,216 square kilometers and a population of 107,0000 people, taking up about 17% of the total area and 21% of the total population of this municipality. Menglong Township governs twenty administrative villages, Mengsong is one of them. Mengsong is about 37 km away from Menglong town and 97 km away from Jinhong city. Mengsong, located at the southwester tip of Menglong township, has an area of 100 square kilometers, which altitudes range about 800-2000 m above sea level. Its population is 2883 with 623 households in 11 villages.

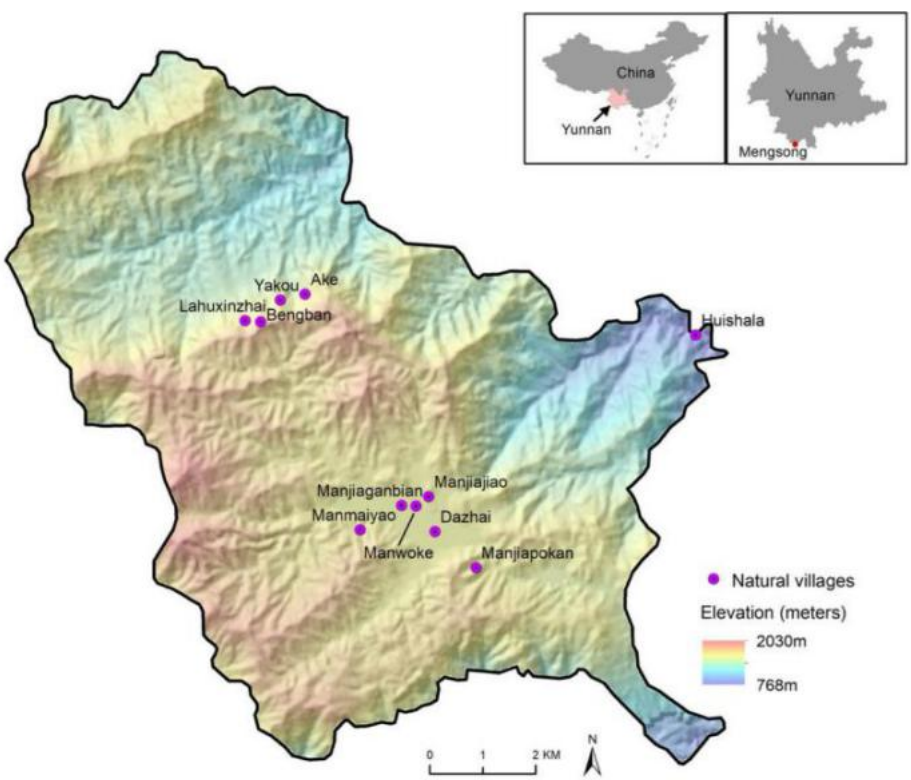


Figure 1. Map of the Mengsong in XSBN, Yunnan, China

2. Sustainable Livelihood Approach

Chambers & Conway (1992) gave a basic definition on livelihood as "a comprise of the capabilities, assets and activities for a means of living." For more comprehensive livelihood study, the "Sustainable Livelihood Approach (SLA)" was introduced in 1990s as an alternative to previous macro modernization theory. Scoones (1998) combined input (livelihood assets), output (livelihood strategies), and outcome (livelihood security and sustainability) together as economic metaphor in his SLA framework. Department for International Development (DFID) formulated a popular framework for SLA by following Scoones's structure. It defined five livelihood assets as physical, human, financial, natural, and social asset for livelihood input (Department for International Development, 2000). In SLA framework the livelihood strategies were identified by different kinds as intensification, extensification, diversification, and migration (Scoones 1998). Institution is in center of SLA framework. It bound livelihood assets, strategies, and outcomes together. The institutional process highlights the socio-cultural and political dimension of livelihood on how and why diverse assets has been accessed by households and input into their strategies and produce their livelihood outcomes. By applying SLA, this research focused on Hani livelihood asset, strategy, and outcome for data collection, and used SPSS program for the quantitative data analysis.

3. Data Collection

There are 6 Hani villages which located around the administration center of Mengsong. This research targeted these 6 villages as the representative of Mengsong community to do data collection. As total of 488 Hani households in these 6 Hani villages, the research random selected sample households for household survey. The household survey questionnaire was designed as related to 5 livelihood assets (natural, physical, human, social, and financial), livelihood strategic activities (farming, non-farming, off-farming), and livelihood outcome

(income, expense, and investment). Before put it into use, the questionnaire was revised by the feedback from local informants, the research advisory committee, and Hani scholars of Yunnan Academy of Social Sciences. Total 235 questionnaires were collected from the field and finally 222 were validated.

The total sample size: $n = N / (1+Ne^2) = 488 / (1+488(0.05)^2) = 219.8198$ (as 220) (Yamane, 1967).

Table 1 Random Sample Household in 6 Villages

Village Name	Total Household Number	Sample Size
Dazhai	146	64
Manjiapokan	70	32
Manmaiyao	84	45
Manjiaganbian	66	30
Manwoke	46	20
Manjiajiao	76	31
Total	**488**	**222**

This study also applied qualitative data collection methods, such as participatory observation, in-depth interview with 15 key informants, and focus group discussion with villager representatives, village leaders, and tea agents in the 6 Hani villages as well as the whole Mengsong administration.

4. Results

1. Policy and Market as External Drivers

Chinese government has implemented many of projects in Mengsong to boost up its social and economic development. The projects improved physic infrastructure as well as online facility of TV, mobile, and internet which cultivated easily access of Hani household to outside world in these years. Early from 1980's as all households were distributed of paddy lands by Household Responsibility

System (HRS), Hani shifted their grain production from swidden to paddy field as paddy rice is higher productivity. To improve the grain productivity, government policy invested million budgets in irrigation system which extended the arable rate to 113.1% in 2012 (Zhang, 2015). Household received official certificate of paddy land in 2008 and swidden land in 2018. These certificates allowed households to easily join land market by transacting their land management right. Recently, projects in education and medical service were all introduced in which made Hani improved its human capital in one hand and also increased annual expense in the other. In 2021, on an average level household spent RMB85,150.30 mainly in daily living (27.5%), production (24.6%), education and health (22.1%), transportation & communication (15.0%), and entertainment (10.8%). All these expenses are cash based which driven Hani to earn more money for their life.

After living conditions have improved with a dramatic economic growth, more and more Chinese care about their health. Pu'er tea, which had been proved as its good for health, has motivated more people to join Pu'er tea consumption and created huge market needs. A Pu’er tea booming has happened after 2003 which driven the tea prices raised to its peak in 2007 and kept the wave in the next years. The booming of tea also effected Mengsong as its tea price quickly raised to RMB300 per kg in 2007. A famous tea company of China Tea Group came into Mengsong in 2018 and built a high-standard tea factory. Other big Pu'er tea companies, such as Rain-forest, Douji, Chensheng, also arrived in the community for tea raw materials. These companies either set tea collecting sites or built processing plants in Mengsong. Today, Mengsong tea has two market channels. Generally, tea traders directly contacted the owners of the ancient tea garden to buy fresh spring tea leaf on the price of RMB150-200 per kg, which is called “on-tree sale”. Another market channel is to sell fresh tea at companies’ collection sites on the price of RMB15-30 per kg, or at RMB60-120 per kg for dry tea, which is called “outdoor sale”.

The Land Conversion policy was implemented in 2003 which not only promoted Hani to extend tea plantation in their swidden but also covered other non-arable lands as reforested areas. With this policy, Hani got compensation for 5-8 years cash or grain for their reforestation areas (Wang, 2009). In 2009, Bulong Natural Reserve has been set up within two nearby townships of Bulangshan and Menglong. All natural forests in Mengsong were mapped as the natural reserve area. Also, the mapped area included some households' swidden lands. This reservation map has prevented Hani to further extend their tea plantation by a strict forest protection policy. In addition, China border policy paid subsidy for border citizen in Mengsong (RMB1000 per capital in 2017 and raised to RMB2500 in 2021). This always came to be a stable income of Hani households.

2. Hani Livelihood Strategies as Response to the Changing Environment

2.1 Tea Intensification

Income source is an indicator to justify livelihood strategy (Ellis, 1998). Sample household data indicates tea income occupied 76.2% of Hani household's total income in 2021. Beside the tea, household got 13.2% income from non-farming, 7.7% from government subsidy, and 2.6% from other farming. Xu (1990) investigated the Hani household income of Mengsong in 1989. At that time, 68% income was from rice, 16% was from livestock, 16% was from fruit and forest products. All incomes (100%) were from regular farming at that time. The income sources of Mengsong had been changed from regular farming to cash crop of tea, that indicates a tea livelihood was adopted by Hani.

Table 2 Hani Household Income Sources Comparison between 1989 and 2021

Year 1989 (Xu, 1990)		**Year 2021**	
Income Sources	**%**	**Income Sources**	**%**
Tea	0	Tea	76.2
Non-farming	0	Non-farming	13.2
Government subsidy	0	Government subsidy	7.7
Rice	68	Farming	2.6
Livestock	16		
Fruit & Forest Products	16		
Others	0	Others	0.3
Total	100	Total	100

It was found that household's tea income order is consistently correlated to the household's ancient tea holding of each village. Therefore, ancient tea is the most important natural asset for Hani tea livelihood (Table 3). Ancient tea was distributed by Household Responsibility System in 1984 and couldn't be changed in each household's holding thereafter. With that reason, households can only try their best to manage their ancient tea for high productivity. As the result, 69.7% of the households have managed their ancient tea very well, 24.9% managed as good, and only 5.4% households thought their ancient tea gardens are bad in disease.

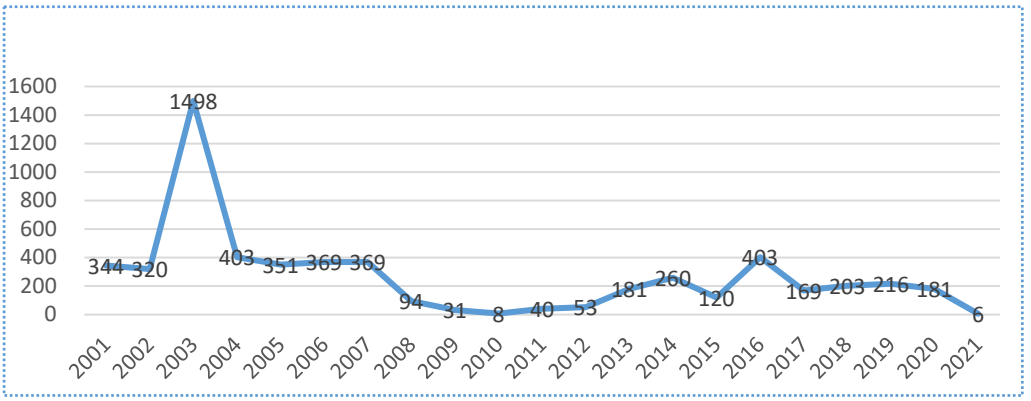
Table 3 Household's Tea Income by Different Tea Sources

Income Order	Village Name	Tea Income (RMB)	Ancient Tea (Mu)	Old Tea (Mu)	Young Tea (Mu)
1	Manwoke	140,000.00	10.9	20.0	10.0
2	Manjiaganbian	123,000.00	5.4	19.5	9.0
3	Manjiapokan	115,000.00	4.3	30.0	10.0
4	Manjiajiao	67,000.00	4.3	10.0	10.0
5	Manmaiyao	56,000.00	1.3	18.0	16.0
6	Dazai	48,400.00	1.2	20.0	8.5

(Note: ancient tea is more than 100 years old, old tea is 20-50 years old, young tea is less than 20 years)

To extend their tea areas, households also have planted 9,160 Mu tea as their new assets (as old tea and young tea). Only 31% tea plantations were happened before 2000, the big plantations (69% as 6323 Mu) were after 2000. Tea plantation curve (Table 4) indicates the tea plantation has a peak in 2003, the year which is land conversion program had implemented. After that, the plantation trend is well match to the tea price wave. The tea plantation areas are much more than household' s swidden lands, which indicates household extended their tea plantation even into public areas. There are 68% households who have an average of 10.1 Mu new tea in public areas, either in collective wasteland & forest or national wasteland & forest. Tea extension was officially banned by forest protection law after 2018.

Table 4 Tea Plantation Curve in 2001-2021 (unit: Mu)



On average level, Hani per household labor is 2.98, which is not enough for the work of a big tea area of the household. With this result, before 2019 Hani has hired imported labors from Myanmar. After the border strictly control policy, they had to hire lowland Dai labor in Menglong town. In 2020 a daily labor hiring wage was up to RMB150. Compare to RMB60 in 2019, the labor wage is dramatically up which reflect serious labor shortage. The labor shortage induced the wage pricing calculation from per day to per kg in which a hired labor had more efficient in tea work. There are 85.1% households in Mengsong that hired labors on an average cost of RMB20,851.60 in 2021.

Hani households have invested in all kinds of tea equipment as their physical asset. Details in table 5 shown categories of equipment chosen by more than half of Hani households. On average, each Hani household spent about RMB51,375.59 in tea equipment in the last 10 years.

Table 5 Tea Equipment Invested by Hani Household in Last 10 Years

Equipment Category	Household Buy-rate (%)	Equipment Category	Household Buy-rate (%)
Green-removing stove	89.2	Dry Machine	68.0
Solar House	86.5	Green-removing Machine	53.6
Rolling Machine	82.4	Fermentation Table	53.6

Hani households also manipulated all their social assets to support their market access. They have shared market information in daily communication and exchanged labor, equipment and tea land among closed relatives and friends to smooth market needs. A tea agent model was set up as the linkage between villager producer with tea trader in the community. Tea agent require high trust with both sides to deal with payment schedule, quality checking and price negotiation.

Under the impact of government policies and Pu'er tea booming trend, Hani households have tried all efforts in tea plantation (natural asset), labors hiring (human asset), equipment purchases (physical asset), and social relations mobilization (social asset) for their tea intensification strategy. At the end Hani household income (financial asset) has surpassed the average level of Yunnan province and was able to catch up the national standard of the whole China by a Per-capital Annual Disposable Income (PADI) of RMB18,911 in 2021.

2.2 Active Diversification & Passive Diversification

Hani has the income of RMB110,992.7 from tea by all households. Beside the main income from tea, some households found other opportunities to earn their additional incomes (Table 6). The seasonal labor sell and land rent are popular choices which were adopted by 20-30% of households. Business, migrant and salary which can earn a big amount of money but were only owned by 5%-10% households. There were also 17.1% households got the income from livestock. All these diversified options were paralleled with their tea as non-conflict in household's land and labor utilization. It is an active diversification as household worked more effectively and efficiently by all members to earn these extra-incomes.

Table 6 Diversified Income Sources of Hani Household in 2021

Source of the Income	Own Rate (%) by Households	Amount of the Income (RMB)
Tea	100.0	110,992.7
Policy Subsidy	100.0	11,245.5
Seasonal Labor Sell	34.2	9,426.2
Land Rent	20.3	9,070.4
Livestock	17.1	13,292.1
Business	12.2	64,770.4
Salary	10.4	28,373.9
Agricultural Crop	9.9	2,668.2
Fruit & Forest Products	8.1	2,627.8
Migrant Work	5.4	47,350.0

China strictly controls the pandemic of COVID-19 has blocked import labors and outside traders to entry the community after 2020. With the result, labor wage was escalated and tea price was stagnated. The price of new planted tea was RMB10-15 per kg in the summer and autumn of 2021. Comparing the labor price of RMB10 per kg at same time, the prices' ratio almost reaches a break-even point. So, some households chose to pause their tea harvest in the summer & autumn of 2021. Thus, household income from new planted tea of summer and autumn was only 31.6% of spring in 2021. Households had to move their labors from tea harvest to other cases, like honey-bee raising and chicken raising in their tea gardens, which can be able to get income of RMB1,000-2,000 yearly. Different with previous diversifying of income sources, the shifting to other options was passively as Hani faced a market fluctuation of tea.

5. Discussion

There are 3 dynamics of Hani livelihood development. The first livelihood dynamics (LD1) is to a tea intensification. The second livelihood dynamics (LD2) is to an active diversification. The third livelihood dynamics (LD3) is new emerging dynamics of a passive diversification as response to recent market fluctuation.

Livelihood dynamics is Hani's rational response under a market economy, no matter they adopt intensification or diversification. Since tea market was good in past years, Hani therefore concentrated all their productive assets on tea farming. Beside the tea, there are other marketable choices which were identified by households for their income supplement. It can be said that livelihood dynamics is the Hani's strategic action by their cost-benefit calculation. They assembled and reassembled their productive assets to balance maximizing income with minimizing risk.

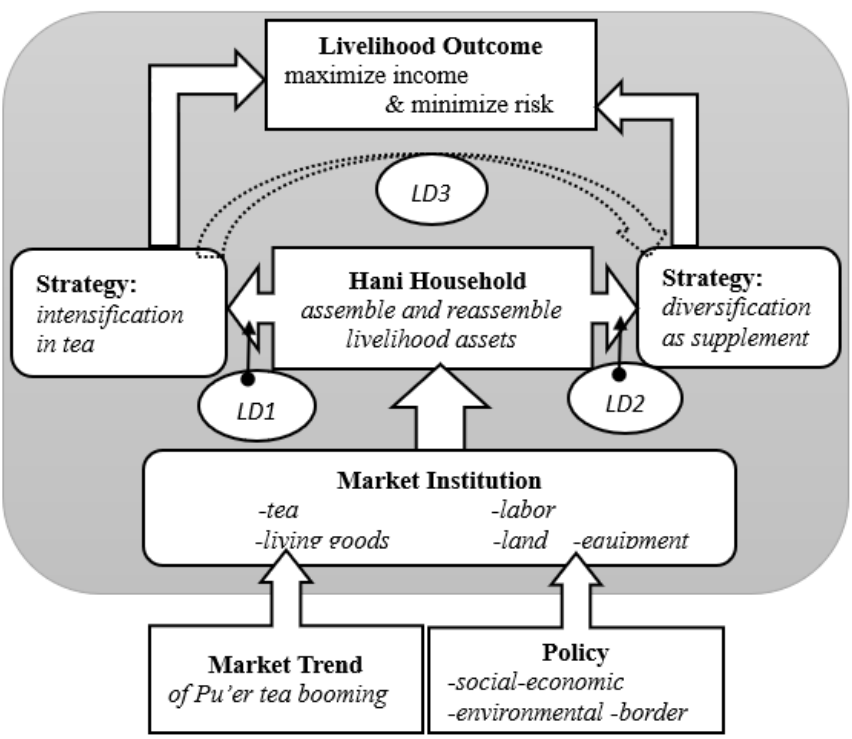


Figure 2. The Framework of Livelihood Dynamics

Similar scenario had been found by Li et al. (2022) in a Yao ethnic village. When faced the tourist declination because of the COVID-19 pandemic, Yao households shifted their labors input to farming as the compensation to their tourist income loss. Jin et al. (2021) also found rubber farmers kept their rubber trees but stopping latex to minimize additional sunk costs during the declination in rubber prices.

In additions, if the product's price fluctuation is temporary, the households will firstly move out their labor as that is the easier way to do so. If the product's price declined dramatically for a long period, the households would decide to give up by change their land utilization to other crops. So, the downward dynamics normally start from labor withdraw and then to the land use changing.

6. Knowledge of the Research

Hani livelihood dynamics reminded us that upland minorities could be completely involved in a market economy by cash cropping. Their livelihood strategies are dynamics by market-driven. Quantitative livelihood study may face a methodological challenge in market-well-work community. The study aims to prove the household's asset holdings, as the independent variable, have significant impacts on household's decision for its livelihood strategy. Actually, the assets of livelihood are not only household's holdings by endowment but also the accesses by entitlement through local market. How to support market function in local productive asset access will be high potential for future livelihood research in upland minorities of China.

7. Suggestion

The Chinese government policies had put several efforts in local infrastructure, health, education, and environment protection. The continuing support from the policy has established the strong foundation for Hani households

to join in the market. However, Hani who faced the market crisis still need further supports from the government policy. This study would like to have following recommendations.

1. To improve the quality of new tea: Hani households have paused tea harvest in parts of new tea since the low price by poor quality. Forest policy strictly forbids any tree cutting which caused villagers clean every tree seedling in their new tea areas as afraid to cut it after growing up. That is main reason of low quality of new planted tea. Therefore, policy should encourage villagers to apply agro-forestry in their new tea areas, as their traditional practice in ancient tea management. Organic certification is a popular requirement in the future market, a further policy should support local villagers to unite together as a farmer cooperative for organic certificate application. By doing so, villagers will perceive high value on their new tea as a success organic product in the market.

2. To promote profitable cash cropping: The paddy fields were usually rent out after tea booming. As calculated by a community leader, household cannot get a better profit than a renting if they only plant grain in the field. Taking the opportunity of land renting, a policy should promote cash cropping for rent fields. According to a villager leader, there are some villagers who would like to grow cash crops. They need certain support from the government such as technical, financial, and marketing. A government policy should encourage those villagers to become new entities in cash cropping.

3. To attract labor from nearby area or from Myanmar: seasonal labor shortage is a problematic issue in Mengsong. Labor needs are seasonal demand especially in tea germinating period. To alleviate the labor shortage problem, the government should formulate a specific policy to attract labors from nearby regions. These can be implemented by announcing labor needs through its public websites, organize labors through official channel, and/or pay the transportation subsidy for the importing labors. The government can also cooperate with capable

agencies to recruit labors from Myanmar and organize the process of labor crossing through a diplomatic procedure.

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