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Department of International Environment and
Development Studies (Noragric)

Master Thesis 2017
30 credits

Agroforestry Coffee Production in Northern Thailand: livelihood system transformation and institutional changes

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Coffee trees grown in the agroforestry farming system in Chiang Rai

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Declaration

I, Marina Sugiyama, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature..... Date.....

Acknowledgement

First of all, I would like to acknowledge my appreciation to my supervisor Ola Westengen for his continuous supports and encouragements. It was not easy for me to conduct my research from the scratch but thanks to his flexibility and openness, I was allowed to carry out this research.

I'm also very grateful to all those people in Chiang Rai who helped me by allowing me to interview them. Getting to know them while adapting myself in their lifestyle of rural coffee farms was definitely a motivative and precious experience for me. I would also like to note that it was not possible without those who helped me as interpreters during the interviews and my stay in the villages.

Lastly, I would like to thank all my friends and families!

Abstract

Coffee production in Northern Thailand is now growing. There is an interesting historical background of the hill tribe farmers, opium production, slash and burn practices, as well as the state effort to empower the hill tribe farmers. Being introduced as a cash income crop, arabica coffee production by the hill tribe farmers is now increasing its significance.

This paper tries to examine the resilience of the hill tribe coffee farmers' livelihood and analyse the transformation into coffee production with focus on institutional causes. The research applies the qualitative research approach in order to gain a thick description. The research data was collected during the field investigation in Chang Rai Province in July 2016. Semi-structured interviews and observation were conducted in five villages of Akha and Lahu tribes.

The findings showed a great diversity in how each community and each farmer has shifted to coffee farming. The study also reveals that the livelihood of the hill tribe farmers have greatly improved after having an agriculture system transformation into coffee farming. Key practices that make the livelihood resilient were agroforestry coffee farming, with application of intercropping, home gardening, and composting.

Findings from a series of interviews and observations suggest that institutional changes in the national land management has a significant impact on pushing the transformation to agroforestry coffee farming among the sample villages. However, this shift toward coffee had to be met with a demand in the domestic coffee market since the 2000s. This transformation also indicates the existence of powerful environmental discourses in Thailand behind the national land use policy which had greatly influenced farmers' perceptions on natural resource use.

Key words: livelihood, resilience, agroforestry, coffee, small-scale, system transformation, discourse

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List of abbreviations

DFID	Department for International Development
FAO	Food and Agriculture Organisation of the United Nations
Lao PDR	Lao People's Democratic Republic
NESDP	National Economic and Social Development Plan
NGO	Non Governmental Organisation
RFD	Royal Forest Department
RDF	Royal Development Foundation
RDP	Royal Development Project
SLF	Sustainable Livelihood Framework
UNFDAC	United Nations Fund for Drug Abuse Control

Chapter 1: Introduction

1.1. Introductory remarks

Just one cup of coffee could give you a lot of interesting insights to us. Coffee is a very interesting object to study because it is connected to the people of different parts of the world; from a coffee farmer many thousands of kilometres away in the tropics to a coffee consumer in Scandinavia like us. Even though a cup of coffee is made of such tiny beans, what's behind is always fascinating. Fair trade coffee, organic coffee, direct trade coffee, speciality coffee, single origin coffee, as such, today there are many fancy ways to describe your preferences on coffee today.

Coffee is changing and evolving both in production and consumption. Despite the fact that the land used for coffee production has shrunk by 8% compared to that of 1990, while it is reducing in Africa, coffee production in Asia is expanding followed by the increase in global coffee production and agricultural intensification worldwide (S. Jha et al., 2014). Since the early 2000s, Thailand has been experiencing an increasing domestic consumption of coffee (Consortium of Mi Cafeto Company Ltd. and IC Net Limited, 2014).

What one cup of arabica coffee from Thailand would tell us? Opium replacement, sustainable agricultural and land use policy, and hill tribe empowerment are the three key features that describes the beginning of arabica coffee production in Thailand. Arabica coffee production was promoted by the Royal Project Foundation since the 1970s mainly to replace opium production (Angkasith, 2002). Although the area used to have such an infamous and unclean image internationally due to opium cultivation, today, we can see totally different pictures of the hill tribe farmers growing coffee.



Coffee farmer and coffee trees (Photo: Marina Sugiyama)

Expansion of coffee farming in Northern Thailand may seem as a successful model of rural livelihood empowerment, however, transformation into or adaptation into a new crop system which requires institutional changes at local level shouldn't be oversimplified. Therefore, this paper tries to answer the following research questions described in the next section while explaining the livelihood status of the hill tribe coffee farmers in Chiang Rai Province, Thailand.

1.2. Research objectives and questions

This research tries to investigate and grasp the reality of growing coffee producing communities in Chiang Rai Province that has a fairly complex background of diversity in many different ways. It aims to illustrate the livelihood status of the farmers based on the sustainable livelihood framework, and to look at the farmers' motivation and perceptions while the hill tribe farmers have been shifting to coffee cultivation. By doing so, the research aims to identify what are the catalysts of expansion of coffee agroforestry coffee farming in Thailand.

Main research question

How have the small scale hill tribe communities changed through transformation into agroforestry coffee system?

Sub research questions

- (1) How is the agroforestry coffee production system practiced in Northern Thailand?
- (2) How resilient is the livelihood of agroforestry coffee communities in Northern Thailand?
- (3) What has enabled a system transformation to agroforestry coffee farming among the hill tribes in Northern Thailand?
- (4) How has the perception of the hill tribe coffee farmers changed?

1.3. Relevance of research

To make my standing point clear, I personally have a positive stance to the agroforestry coffee production rather than monocultural coffee production aimed at mass production as the ecosystem service the agroforestry coffee system would give is highly expected (refer to ex. Jose, 2009). However, the focus of this thesis is not to justify or prove the validity and benefits of agroforestry coffee production, but rather to evaluate and examine the transformation of the local coffee growers to agroforestry coffee farming system and their conceptions on natural resource management they have been experiencing. Also, arabica coffee production in Thailand is not studied widely compared to that of Latin America and Africa. Therefore, this research hopes to contribute to spotlight on relatively new but growing coffee producers in Thailand.

1.4. Outline of thesis

This thesis is divided into six parts. Following this chapter, Chapter 2 will present some of the central contextual background to this research for the better understanding of the theme. Chapter 3 will then explain the main theory instruments that are basic premises for the research; sustainable livelihood framework and critical institutionalism. Chapter 4 will discuss the research methods applied and explain more of the practical dimension of the research. Chapter 5 will be showing the main findings from the field investigation which give answer to Then in Chapter 6, the paper is divided in two parts; and the first part tries to answer the research question 1 by finding out the main causes of institutional change among the hill tribe coffee farmers; and the second part tries to argue some possibilities in the future of the hill tribe coffee communities in Northern Thailand.

Chapter 2: Contextual background

This section discusses important contextual background and explain key terms; coffee, coffee production in Thailand, Northern Thailand as a study area, and hill tribes who are the coffee producers. The purpose of this is to expand the image of contexts and provide richer understand on the coffee farming in Thailand.

2.1. Coffee as a “crop” and “commodity”

Coffee as a crop

Coffee is, indeed, a sensitive crop (Carr, 2001) which requires certain suitable conditions to grow successfully. Although optimum condition for each coffee variety varies one another, coffee is considered to be suitable for tropical climate (Carr, 2001). There are two main types of coffee varieties commonly produced and consumed in the world which are arabica coffee and robusta coffee. Arabica coffee¹ shares 60 percent of the total coffee production in the world, and robusta coffee² occupies 40 percent of the total (FAO, 2015). Important criteria for optimum arabica coffee farming are sufficient water availability, both shade and sunlight at a certain level, mild climate, and good soil condition. Also, it is considered that a combination of a dry season ideally for three months and constant rainfalls during the time when beans are growing is the best climate condition for coffee (Elebitch, 2015). Therefore, the coffee producing regions tend to be spread on so-called “coffee belt” that lies on the area between latitude 25 degree north and south from the equator. Most of the coffee producing countries are concentrated on so called the coffee belt. The fact that the half of world coffee is produced by the three countries, Brazil, Viet Nam and Indonesia, out of the 70 countries that are producing coffee today (FAO, 2015) indicates that coffee cultivation can only be successful in all those tropic countries. Moreover, for the reason that coffee trees prefer milder climate, coffee cultivation is usually found among mountainous areas because coffee trees do not have much tolerance to heat.

Coffee as a commodity

“In its journey from tree to cup, coffee passes through the hands —directly or indirectly — of several players in the commodity chain (Jha, et al., 2011, p.153).” As well as being sensitive, coffee is very ‘international’ because it is produced, processed, traded and consumed in different parts of the world. As one of the luxury commodity, it is widely enjoyed all over the

¹ Arabica coffee is known to be high-quality coffee, or speciality coffee that are rich in aroma and taste. They are often dealt as single origin beans in a niche market.

² Robusta coffee is mostly grown in the low land, needs more sunlight, suitable for producing instant coffee powders.

world now. Coffee is sometimes metaphysically called “black gold” because of its high market value. However, the price is not necessarily always stable. The values of arabica coffee were decreasing until 2013 mainly because robusta coffee, which is relatively cheaper than arabica coffee, was expanding its availability on the international market (FAO 2015). This shows a typical example of how the value of coffee fluctuates. When coffee gets oversupplied again and again in the market, international prices of coffee become low, which is a common recurrent problem for majority of commodities (Jha, et al., 2011).

According to FAO (2015), the growth rate of the coffee production value is 3.5 percent per year, and this is remarkable because it is faster than that of total agriculture, which is 2.5%. Although it is on a track of growth, there are still challenges left for making the coffee industry just. It is ironic that the growth of coffee industry in the last decades has not fully been reflected on some of those poor coffee farmers’ situation improvement or empowerment (FAO, 2015, Perfecto & Vandermeer, 2015). Geography of coffee shows the way in which typical luxury goods are produced in south and consumed in north. Since the time the Global North started to gain the power over the other parts of the world in the last five centuries, centralisation of both economical political significance in the Global North, and systemised a way in which the Global South provides luxury raw materials to the North (Perfecto & Vandermeer, 2015). Not only coffee, this can be applied to other kinds of luxury materials.

2.2. Coffee production in Thailand

Coffee is produced in both Northern and Southern Thailand. In the southern part, mostly robusta coffee beans are produced, whereas arabica coffee is commonly produced in the northern Thailand. Arabica coffee farming in Thailand, in general, is relatively newer compare to the robusta coffee production. Historically speaking, arabica coffee cultivation in Northern Thailand was started in order to replace opium production³ in the area around the borders to Burma and the Lao PDR. It was 1975 when the United Nation initiated a trial project of crop replacement in Northern Thailand introducing coffee farming in Northern Thailand in the first hand (Angkasith, 1991), which was a part of UN/Thai programme for

³ Opium has a smilier favourable condition as coffee, and it grows well under cold climate with high humidity, and sufficient water (Office of the Narcotics Control Board, NB). It requires sufficient sunlight thus the forest was cleared accordingly.

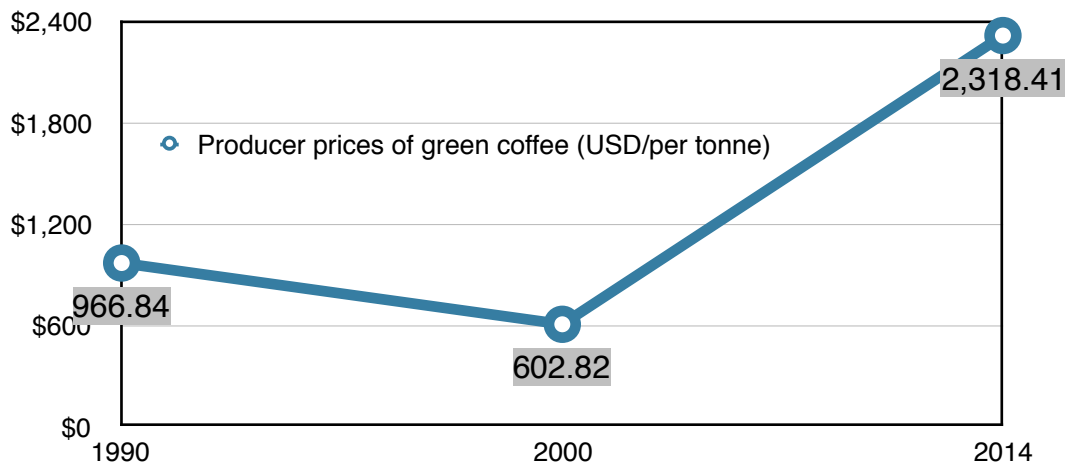
drug abuse control in Thailand. Not only UNFDAC and Thai government, there were foreign donors that were trying to eliminate opium by offering a coffee extension since then (Angkasith, 1991). At that time, the area was still widely known for its extensive production of opium poppy, which the government of Thailand as well as the international organisations tried to eliminate and introduce an alternative crop to the farmers in the upper land. There were not only coffee but various types of cash crops that were introduced and promoted to the hill tribes as well as some Thai people living in the highland area. As an alternative cash-income crop to replace opium poppy, it was expected that coffee arabica would have a high potential from the beginning of the replacement project in the 1970s (Angkasith, 1991). Since then, coffee has been introduced to hill tribe villages in Northern Thailand with efforts by the Royal Project Foundation.

According to the statistics by FAO (2015), the trend of the exports and imports of coffee in Thailand are growing significantly (Table 1-1). The imports of coffee in 2014 shows a dramatical increase, all together green beans, roasted beans and extracts⁴, which was nearly four times more than that of 1990. Accordingly, the producer price of green coffee in Thailand has also increased since the 1990 to 2014 (Figure 1-1). Interestingly, the import of coffee had also grown significantly, which indicates an increasing demand and consumption of coffee within Thailand. The statistics tell us that the consumption of coffee in so-called industrialising nations due to the increasing middle classes within those countries although the consumers of coffee used to be only “rich” industrialised countries (FAO 2015). Thailand is not an exception. There has been a notable increase in coffee consumption as well as

Year	1990	2000	2014
Export of coffee (Green beans)	49,690,000	41,550,000	5,168,000
Export of coffee (Roasted beans)	1,000	191,000	1,081,000
Export of coffee (Extracts)	991,000	4,914,000	184,712,000
Sub Total	50,682,000	46,655,000	190,961,000
Import of coffee (Green beans)	0	77,000	63,362,000
Import of coffee (Roasted beans)	0	404,000	5,490,000
Import of coffee (Extracts)	1,598,000	4,480,000	99,645,000
Sub Total	1,598,000	4,961,000	168,497,000

Table 1-1. Export and import of coffee in Thailand from 1990 to 2014 (FAO, 2015)

Figure 1-1. Producer price of green coffee in Thailand from 1990 to 2014 (FAO, 2015)



change in coffee culture in Thailand. Traditionally, coffee in Thailand refers to a coffee drink with a quite a lot amount of sugar and milk but nowadays people, especially young people in the big cities, enjoy straight coffee from specific origins. Following the international trend of coffee movement, which is commonly called the third wave coffee movement⁵ started in the US, coffee consumption is increasing in Thailand. These facts suggest that coffee in Thailand has a potential to further grow domestically and internationally as coffee remains stably consumed.

2.4. Study area: Northern Thailand

The focused area of this study is spread in Chiang Rai Province, Northern Thailand (Figure. 1-2). It is the North-most province in Thailand, bordered by Chiang Mai province, which is the second largest province in Thailand. This research is targeted in Northern Thailand since it is the area where the most arabica coffee in Thailand is produced. Not just the northern part but Thailand itself is one of the most popular countries among tourists in Southeast Asia. Whereas the southern Thailand has a rich and beautiful ocean and beaches as tourist attractions, the northern Thailand has an authentic cultural diversity of different ethnic groups and rich forest resources. Not just a rich and diverse nature, Northern Thailand is interesting in political and historical sense. First, it was not a long ago when the northern region got full integration into the central administration which is based in the capital, Bangkok in the

⁵ The third wave coffee movement is alternatively known as artisanal coffee or

twentieth century, as well as the region was known to be a place where you can get access to the communist zones attached to China through the deeply forested area (Forsyth & Walker, 2008). Northern Thailand has a historical background of political complexity. Northern Thailand was called “pink-zones” and functioned an asylum for the people who were against the communist regime, where the anti-communist groups and the state force had violence-involved conflicts during the 70s and 80s (Forsyth & Walker, 2008). Not only Chinese people fled from the communist regime, mountainous area of Northern Thailand is populated by a diversity of hill tribes. Another important historical background is that it used to be a worldly famous place for opium production in ‘Golden Triangle’. Golden triangle is an area bordered by Thailand, Burma, and the Lao People's Democratic Republic (PDR), which shares common four features; 1) resided by many hill tribe population, 2) hilly mountain areas where slash-and-burn farming was dominant practice for living, 3) opium poppy was produced and 4) higher poverty level than other parts of each country (Consortium of Mi Cafeto Company Ltd. and IC Net Limited, 2014).

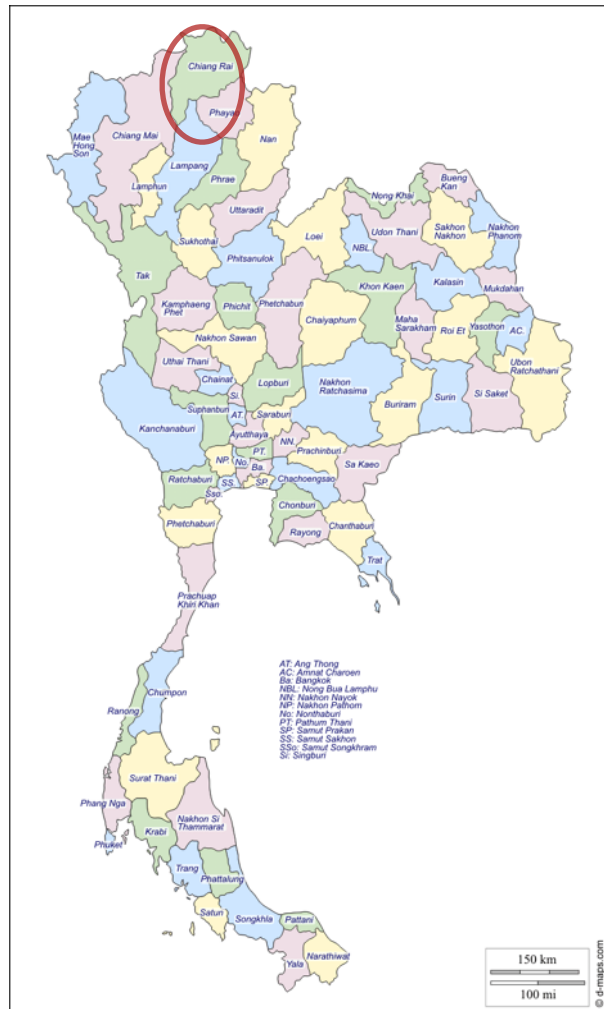


Figure 1-2. Map of Thailand (d-maps.com 2016)

Climatic characteristics of Northern Thailand

Northern Thailand is geographically mountainous touching the border to Burma and the Lao PDR. Along side with Chiang Mai, Lampang and Nan provinces, Chiang Rai province forms north-south headed hilly watersheds which is spread parallel from west to east as well as getting crossed with a number of main valleys (Climatological Group, 2015). As on the table

below, temperature fractures almost ten degrees from night time to day time throughout a year, and this is even more noticeable in hilly sides where the majority of coffee farmers are residing. The area relieves dry winter caused by the Northeast monsoon controlling the climate of the area (Climatological Group, 2015).

Table 2-2. Seasonal temperature in Northern Thailand (Climatological Group, 2015)

Temperature	Winter (Mid October to Mid February)	Summer (Mid February to Mid May)	Rainy (Mid May to Mid October)
Mean	23.4 °C	28.1 °C	27.3 °C
Mean Maximum	31.1 °C	36.1 °C	32.4 °C
Mean Minimum	17.5 °C	21.8 °C	23.8 °C

[Data is based on the period between 1981 to 2010]

2.5. Hill tribes in Thailand

Coffee is produced mostly by hill tribe farmers in Northern Thailand. As is well known, Thailand has a rich diversity of ethnicity as well as a rich ecological diversity. The country is composed by ethnic Thai, as a dominant ethnic group, followed by Chinese Thai, Burmese, and groups of hill tribes. Each ethnic group has its own culture, customs, traditions, religious beliefs, languages, and uniqueness. The population of the hill tribes is spread across from China to Southeast Asia. In Thailand, they are considered as minorities. The fact that it is fairly recent when the mountain tribes got to be regally legislated as Thai citizen reveals that the transformation to coffee farming was paralleled with regal recognition of those minority people in a wide scale. The research focuses on six different Lahu and Akha villages in Chiang Rai where they grow coffee. Both ethnic groups are ethnically in the same group, sino tibetan, however each of them has their distinctive cultures and traditions.

Lahu tribe

It would be too simplified to call them “Lahu” because there are a subdivided groups among the Lafu tribe that are black Lahu, red Lahu, Lahu Shehleleh, white Lahu, yellow Lahu and such. In Thailand, the majority of them live in the Northern part, mostly Chiang Rai and Chiang Mai. During the field work, I have visited one black Lahu village and one Lahu Shehleleh village. Agriculture is the main economic activity for Lahu people. According to

Komatsu (1998) who has been long involved in agricultural development of Lahu people, in the past, Lahu people were traditionally dealing more in hunting and grazing of animals while moving from one place to another rather than settling at one place and make a living on agriculture in order to escape from oppressions. In fact, those Lahu villages I have visited still keep a tradition of hunting, which some other mountain tribes do not practice.

Akha tribe

As well as the Lahu people, the people of the Akha tribe also dwell in the northern counties of Thailand. Akha tribe forms one of the dominant coffee growing communities among hill tribes, for example, namely known as Doi Chaang coffee company which is a pioneer of arabica coffee business in Northern Thailand. According to the United Nations (UN) report in 2000, the population of Akha people marked 54,241, within that, 639 people, only approximately 2% of the total Akha population, live in urban area and the rest of 54,241 Akha people are living in the rural areas.

2.6. Agricultural policies in Thailand

Today, the agricultural policies in Thailand put a strong emphasis on sustainable development. However, historically speaking, it used to prioritise the economic growth in the first hand and was growth-oriented until the beginning of the 1990s when the government of Thailand began to draw attention more on sustainable development (Kasem & Thapa, 2012). Although it used to focus on maximisation and intensification of agriculture with applications of inorganic inputs, since the 7th National Economic and Social Development Plan (NESDP) during 1992 to 1996 while largely influenced by the international movement towards sustainable agricultural development notably represented by Agenda 21 (Kasem & Thapa, 2012). According to the analytical study of the agricultural policies in Thailand by Kasem and Thapa (2012, p.103), some of the major characteristics of agricultural development policies found in the 10th NESDP from 2007 to 2011 are;

- *Promotion of organic agriculture;*
- *Emphasis on food safety; and*
- *Promotion of farmers' knowledge through the community learning centre.*

These are based on three main strategies that are ‘strengthening farmers,’ ‘community empowerment’ and ‘increasing competitiveness of the national agricultural industry in the world market (Kasem & Thapa, 2012).’ This shift towards sustainable agricultural development is also reflecting the significance of the former King Bhumibol Adulyadej of Thailand. According to Kasem and Thapa (2012), the idea of ‘sufficient economy’ was introduced publicly by the former king, first in 1974 and again in 1997 when the country experienced the economic crisis. ‘Sufficiency economy’ is defined as ;

“Sufficiency Economy is a philosophy that stresses the middle path as an overriding principle for appropriate conduct by the populace at all levels. This applies to conduct starting from the level of families to communities and to the nation in terms of development and administration, so as to modernize in line with the forces of globalization. ‘Sufficiency’ means moderation, reasonableness, and the need for self-immunity to protect from impacts arising from internal and external change. To achieve sufficiency, an application of knowledge with due consideration and prudence is essential. In particular, great care is needed in the utilization of theories and methodologies for planning and implementation in every step. At the same time, it is essential to strengthen the moral fiber of the nation, so that everyone, particularly public officials, academics, and business people at all levels, adhere first and foremost to the principles of honesty and integrity. In addition, a way of life based on patience, perseverance, diligence, wisdom and prudence is indispensable in creating balance and in coping appropriately with critical challenges arising from extensive and rapid socioeconomic, environmental, and cultural changes in the world. (Mongsawad, 2010, pp. 127-128)”

Though this conceptualisation may seem little ambiguous, yet, as the Thai citizens have a very high level of respect to the former King, this is not just a model economy the country shall pursue but rather a powerful propaganda. This respected king’s image across the country is based on the recognition of the royal family’s efforts to support hill tribe farmers (Walker & Farrelly, 2008).

Chapter 3: Conceptual Framework

In this section, I will be introducing the key framework and concepts to navigate this research. The conceptual framework would help to better comprehend the development of the hill coffee farming communities and its livelihood transformation. The chapter provides two main conceptual keys for the research: sustainable livelihood framework and critical institutionalism. The livelihood framework will be a key instrument for chapter 5; results of findings and critical institutionalism plays an important role in chapter 6; discussion.

3.1. Sustainable livelihood framework (SLF)

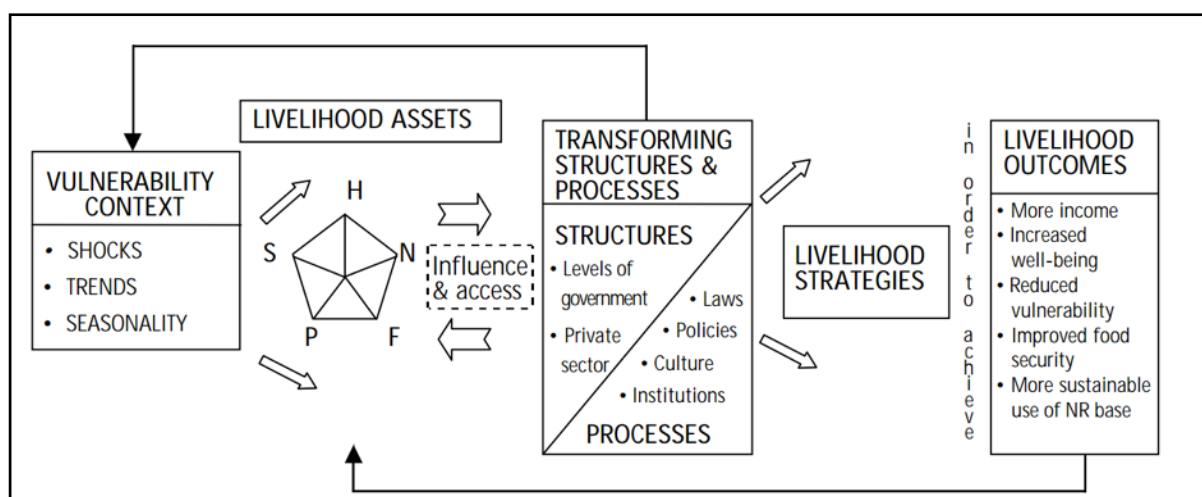


Figure 3-1. Sustainable Livelihood Framework (Source: DFID, 1999)

A people centred sustainable livelihood approach is a key framework to describe the current status of hill tribe coffee farmers in Northern Thailand. By following the framework as a guideline (Figure.3-1), I would like to describe the livelihood of the hill tribe coffee communities. The concept of sustainable livelihood approach is used in many development studies and environmental studies. It was primarily developed by the British Department for International Development (DFID) in the 1990s (Glopp, 2008). ‘Livelihood’ is a way in which one makes a living and supplies him/herself what is needed for the life. Chambers and Conway (1991) define sustainable livelihoods as;

“a livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable

which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (p. 6).”

The main purpose of this framework is to give a check points of central matters and depict the interactions, as well as to highlight key influences and processes and to denote interrelations of a series of factors influencing livelihoods (DFID, 1999). It conceptualises the way in which the coffee farmers handle with vulnerability factors, and the way they build livelihood assets (Glopp, 2008). The idea of sustainable livelihood framework functions as a guideline to examine the livelihood status of research units, which in this case are hill tribe coffee farmers in Thailand, and evaluate their level of resilience.

The livelihood perspective recognises the importance of multi-functionality and defines the idea of agricultural sustainability as ‘the ability of relevant agricultural multi-functionality to improve or maintain small-scale farmers’ livelihood (Amekawa, 2011). Multi-functionality is certainly the key for sustainable livelihood management. Amekawa (2011) claims that the livelihood perspective is related not only to popular production indicators such as food security, farm income, yields but also to key subjective assessment such as identity of farmers and their quality of life.

3.1.1. Livelihood assets

A sustainable livelihood is consisted of five different types of assets that form a foundation of resilience which is indicated as a pentagonal form in the figure 3-1. Those five assets are human capital, natural capital, financial capital, social capital and physical capital.

Human capital can be represented in one’s abilities, richness in knowledge, capability to work and healthy condition which all together makes him/her to apply strategies to achieve him/her livelihood goals (DFID, 1999; Scoones, 1998).

Natural capital is natural resources and its ecosystem services one might have such as “*land, forests, marine/wild resources, water, air quality, erosion protection, waste assimilation, storm protection, biodiversity degree and rate to*

change (DFID, 1999, p.11),” which are useful for one’s livelihood management (Scoones, 1998).

Financial capital is economic resources one has such as cash, credits, and savings, that are critical to pursue livelihood strategies (Scoones, 1998).

Social capital refers to one’s network and connectedness to improve one’s reliance and cooperate with other groups in different levels, membership of formal groups or organisations, and relationships of trust, reciprocity and exchanges for facilitating cooperation, reduction of transaction costs (DFID, 1999).

Physical capital indicates a basic infrastructure including “*affordable transport; secure shelter and buildings; adequate water supply and sanitation; clean, affordable energy; and access to information (communications)* (DFID, 1999, p. 13)” that physically helps people to satisfy their basic needs and goals, and to increase productivities, as well as any tools such as machineries and equipments for better and effective production.

All the five assets are critical when coping with shocks, trends, and seasonalities in the vulnerability context. In the Chapter 5, the livelihood assets of the hill tribe coffee farmers found as a result of the field investigation will be presented.

3.1.2. Vulnerability and resilience

In the study of sustainable livelihood, the term ‘vulnerability’ and ‘resilience’ are highly important. Understanding those two concepts gives a richer understanding on how each components in the SLF interacts each other.

Vulnerability

One becomes vulnerable when he/she cannot manage adjust him/herself when encountering a change, nor transform oneself when facing a dramatical change; and it is likely that those ones cannot achieve sustainable livelihood (Scoones, 1998). There are different types of vulnerability factors that can be classified into three categories; trends (population trends, resource trends, national/international economic trends, trends in governance/politics, and

technological trends), shocks (human health shocks, natural shocks, economic shocks, conflicts, crop/livestock health shocks, climate change), and seasonability (of prices, production, health, and of employment opportunities) (DFID, 1999, p.3). Vulnerability factors could be threats to achieve sustainable livelihoods, however, at the same times, those threats could strengthen a community. Depending on how resilient one community is, vulnerability factors have different impacts. Also, it is important to understand those vulnerability factors are not necessarily negative in all case (DFID, 1999), for instance a population increase in a poorly populated town may benefit from a population increase whereas a town which is overpopulated may worsen air pollution from a population increase. In that way, vulnerability factors have different meanings to different situation.

Resilience

“Assessing resilience and the ability to positively adapt or successfully cope requires an analysis of a range of factors, including an evaluation of historical experiences of responses to various shocks and stresses (Scoones, 1998, p.6).”

Resilience is nowadays widely used in the study of development and environment studies as well as in the field of psychology, in which the term was originally used to refer to the ability to recover from mental shocks. According to the definition by the scholars of resilience studies, the term resilience refers to the capability which could buffer and minimise or eliminate uncertainties, as well as the system capacity to absorb disruptions without changing the system structure itself but rather by minor changes in behaviours (Holling, Schindler, Walker, & Roughgarden, 1995). Folke, Colding and Berkes (2002) argue there are four crucial components to build resilience to deal with dynamic socioecological system are *“learning to live with change and uncertainty; nurturing diversity for reorganisation and renewal; combining different types of knowledge for learning; and creating opportunity for self-organisation towards social-ecological sustainability (p.354-355).”* Resilience is a necessary ability in order maintain a sustainable livelihood for small scale farmers. The following arguments is a central interpretation of reliance concept for this research.

“Successful ecosystem management for social-ecological sustainability requires institutional capacity to respond to environmental feedback to learn and store understanding and be prepared and adaptive to allow for change.

The challenge is to anticipate change and shape it for sustainability in a manner that does not lead to loss of future options. It involves enhancing the capacity for self-organisation (Folke, Colding, & Berkes, 2002, p. 354)."

Resilience can be improved as a community increases up livelihood assets and strengthens adaptability to new situation when facing changes.

3.1.3. Livelihood outcomes

Livelihood outcomes are the achieved as a result of application of various livelihood strategies (DFDI, 1999). So, what are the potential and ideal achievements for sustainable livelihoods? According to DFDI (1999), increased income, improved well-being, reduced vulnerability, better food security, and more sustainable usage of natural resources. By understanding the livelihood outcomes, a researcher can capture important elements such as their motivations of behaviour, their priorities, their possible response to new chances, important assessments for their livelihoods (DFID, 1999). Learning from participatory observation and interviews, those key indicators are to be investigated.

However, there is a limitation of assessing livelihood outcomes as a research method. Critical insight to livelihood outcome is that ideal outcomes or favourable conditions can be different from one another. What I value most and what a hill tribe coffee farmer could not be exactly the same. Therefore it has to be evaluated through careful participatory investigation (DFDI, 1999).

3.1.4. Transforming structure and processes

Lastly, transforming structure and processes are the key to this study as this research focuses on transformation. Institutions, culture, organisations, policies, laws and legislations which shape livelihoods are the transforming structures and processes in the SLF (DFID, 1999). The reason why they are significant is because they deter accesses (to capitals, strategies, determination of interests), trade-off of capitals, and economic results of livelihood (DFID, 1999). Therefore, both formal and informal institutions including legal legislations, customs, habits, and traditions are encouraged to be examined. In the following section, the concepts on institutions will be explained more in details.

3.2. Institutionalism

This thesis puts a particular emphasis transformation. This section will introduce some of the main references to institutional theories; what institutions are, my conceptualisation of system change as institutional change, and critical institutionalism.

3.2.1. Institutions

Institutions are critical elements to examine a phenomenon and look at what's behind. Typically, formal regulations, norms, and conventions are the three central components of institutions that shape people's behaviour and values (Vatn, 2005). Formal regulations are a set of formally sanctioned rules that clearly prohibit people from taking certain actions and give certain sanctions in case of violations, such as the state law and property rights (Vatn, 2005). Norms are a set of internalised rules that tell whether or not you should do x regarding certain situation for example "you should not hurt someone" (Vatn, 2005). Lastly, conventions are a set of rules of customs and traditions commonly agreed among people in a society that tells how you should behave when facing a certain situation (Vatn, 2005). Norms and conventions are often confusing as they are unwritten forms of rules. However, while conventions are telling a specific way in which you should behave such as a way of greeting when you meet someone that lead to solutions and avoid conflict, norms tell whether or not you should greet someone when you meet (Vatn, 2005).

Berkes and Folke (1998) define institutions and state; "*institutions are defined as 'humanly devised constraints' that structure human interaction (p.5).*" Cleaver (2012) describes institutions similarly and simply stating institutions are "*socially located, shaped in the interplay between deliberate design, everyday practices and relationships and social processes (p.171).*"

In the analysis of the institutions, it is also necessary to include the questions on administration, the roles of local organisations and government authorities (Berkes & Folke, 1998). It is because they have a significant power over people. Institutional analysis of a small scale coffee farming community needs a holistic view including all the stakeholders from local government, national government and international actors. Although this thesis is mostly focused on the hill tribe farmers, it tries to see the political aspects from their perspective. Complicated network of macro-micro linkage and evolutionary changes in norms,

rules, and organisations that have influence on how farmers increase and decrease their assets are all results of interaction of institutions and the way in which these institutions are related one another (Amekawa, 2011)

3.2.2. System transformation

This thesis is focusing particularly on a system transformation. Systems are built by the set of institutions, including norms, conventions, and formal rules which “*play in every part of our live*” and tell us “*how we are affected by government policies and regulations[...]how people get access to environmental resources, how much they can extract, when and how* (Nunan, 2015).” This research is based on the idea that a system change as a result of institutional changes. Therefore, system transformation is just not a matter of technological modification like changing farming system but a matter of adaptations to changing society (O'Brien & Selboe, 2015). When institutions are re-shaped to adapt to an expected event or condition, systems change a shape accordingly. It is true that a use and selection of technology may provide clues to identify characteristics of user communities and perhaps sustainability of its practice (Berkes & Folke, 1998), however, I would like to highlight thee institutional aspects and background of its choice rather than focusing on technical aspects of the choice because system transformation is adaptation which could be different depending on one’s values and priorities.

3.2.3. Critical institutionalism

Critical institutionalism is another important element to interpret the complexity of the system. As one of the theoretical approaches to institutions, critical institutionalism examines institutions coordinate interrelations of human beings, environmental resources, and society, which highlights and illustrate complex institutional formations in our dairy life including power relations, traditional/modern and formal/informal arrangements, therefore, all the rules, boundaries and processes are not explicit but rather fuzzy (Cleaver, 2012; Cleaver & De Koning, 2015).

Cleaver (2012) argues that “*constant institutional and livelihood adaptation is seen as a desirable response to climatic, political, economic and social change* (p. 33).” This indicate that institutions are continuously changing and evolving in accordance to changes in

environmental, social, economical, and political dimensions that effects one's life. Critical institutionalism understands that institutions are not always a result of a purposeful design but rather a result of adaptation and adjustments of dairy arrangements which are related to people's motivations influenced by financial, emotional, normative, social rationalities based on distinct logics and world-views (Cleaver & De Koning, 2015). Institutions are not inevitably designed for a specific purpose, they are properly borrowed by other worker, and what motivates people to work in collective arrangements is mixed information, economic, emotional, moral and social rationality by different logic and view of the world (Cleaver & De Koning, 2015).

The critical institutional perspective puts a question to the dominant institutional theory that assumes rational choice in institutional arrangement, and rather highlights a complexity of institutions found in society (Cleaver, 2012; Cleaver & Koning, 2015). It is not to deny rationalities each one of us has yet it is critical to see that people are always rationally maximising their benefits.

Chapter 4: Methodology

This research is aiming to find out and examine the situation of coffee producing communities in Northern Thailand based on qualitative research approach. Qualitative research employs strategies to obtain in-depth and descriptive facts rather than focusing on numerical facts and fining out universal facts from generalisations. Therefore this research applies inductive approaches to investigate the way in which agroforestry coffee production has been developed in Northern Thailand.

4.1. Case study

Case study is a research design approach to examine details of a phenomenon, and it allows a researcher to go into depth. A case study is simply defined as “*a research design that entails the detailed and intensive analysis of a single case* (Bryman, 2012, p. 709).” As in the definition, it is one of the methods of scientific inquiry to explore a specific phenomenon which is comprehensively and thoroughly in a reality context particularly in case

phenomenon, and context are not clearly distinguished (Yin, 2014). Agricultural transformation is not just a technical transformation, it has to be integrated to a series of changes in different scales. Hence, this study picks up a system transformation to coffee agroforestry and change on their livelihood and institutions as a case. Yin (2014) points out “(t)he case study’s unique strength is its ability to deal with a full variety of evidence—documents, artefacts, interviews, and observations—beyond what might be available in a conventional historical study (p.12).” The case study design requires flexibility and possibly adjusted as new information and discovery arise while collecting data (Yin, 2014). Therefore, this research has been reshaped and adjusted repeatedly in order to fit in a condition of sample units and findings along with my field stay.

4.1.1. Sampling of research unit

For the selection of sampling units, I used both purposive sampling and convenience samplings. Purposive sampling, in other words non-probability sampling, is a method mostly applied for qualitative method research based on the idea to “*sample case/participants in a strategic way, so that those sampled are relevant to the research questions that are being posed* (Bryman, 2012, p. 714).” It is not allowed to generalise to a population by using purposive sampling approach as the purposive selection of research units is chosen because they are relevant to its research questions (Bryman, 2012). While purposive sampling chooses sampling units for its relevance, convenience sampling is a method which a reserver selects samples for its availability (Bryman, 2012).

Before conducting my field research, I had very limited contacts with the local personals. One of the local contacts has been involved in the development of coffee cultivation mostly for hill tribe farmers in Northern Thailand for many years. He runs an experimental agricultural extension centre in Mea Suai District, Chiang Rai, which was established for the development of agricultural activities among the mountain tribes. Through his network, I was introduced to three different villages including his home village where I had a chance to interview the coffee producers and observe the villages. This selection of informants was purposive as I have requested him to introduce me other hill tribe coffee farmers in the nearby area. At the same time, it was by its convenience in a way that the informants were all

selected by the contact person as I had a limited access to local producers. I also stayed one Lahu village as a volunteer worker with a permission to visit for research purposes. Another informant, whom I got to know while visiting local coffee shops in Chiang Rai and asking for any relevant information and possible informants who were willing to allow me to interview, was an owner of one local coffee shop. This selection was also both purposive, as I only looked for relevant informants, and by its convenience as they were available for me at that time. A convenience sampling may contain some limitations as it is mostly by its accessibility rather than its relevance, however, it is acceptable in case that particular opportunity itself is “*too good to miss*” for a greater collection data (Bryman, 2012).

4.2. Data collection

There could be different ways to investigate a phenomenon. In particular, this research sets a research target on ‘agroforestry coffee production in Northern Thailand’ with a focus on the local people. This research data was collected in three different ways which are interviews, observations and secondary literature. The field research was conducted in July 2016. Interviews and observations were conducted during the field research. According to the classification of Meteorological department of Thailand, July would have been a rainy season but it was not that rainy throughout my stay in the villages. The villages I have collected data are located in Wiang Pa Pao District (four villages), and Mae Suai District (1 village).

4.2.1. Interviews

Most of the raw data was accumulated through the interviews during the field work. Conducting interviews individually and collectively was the main methodology for the data collection of this research.

As a practical method, the interviews were conducted in a *semi-structured* form. While structured interview is a fixed form of asking interviewees, which does not allow a researcher, an interviewer, to change a set of prepared questions and its order, semi-structured interview is in a flexible and open form, which allows an interviewer to change a sequence of questions and elaborate to further questions in accordance to responses from interviewees (Bryman, 2012). The reason why this research applies semi-structured interview is that the

purpose of the research is to obtain a detailed description of coffee farming communities to understand the transformation into coffee farming.

The interviews were conducted in four villages in Chiang Rai with local coffee producers, and one interview was in the downtown Chiang Rai with an owner of one local coffee shop where they use coffee beans produced in their home village. Informants were all selectively chosen for its convenience and purpose of this research. All the interviews were recorded with the agreements and permissions from the interviewees.

4.2.2. Observation

Another important component of data collection methods was observation. By embedding him/herself in local communities and its context, a researcher is able to observe what is going on, how things work there, how people are behaving in reality and any raw data. This research applied participant observation which is widely used in social science research and defined as a way “*in which the researcher immerses him- or herself in a social setting for an extended period of time, observing behaviour, listening to what is said in conversations both between others and with the fieldworker and asking questions (Bryman, 2012, p. 714).*” It was a great experience to actually stay overnights in some of the villages (not all the villages due to limited availability), I was able to observe people’s everyday life.

Simple observation is an observation method in which “*an observer has no influence over the situation being observed (Bryman, 2012, p. 273).*” While an interview is an interactive process of collecting data, a simple observation is rather passive and one-way approach of data gathering. Compared to observations, interviews were conducted in a more formal setting although I tried to avoid such uncomfortable atmosphere in order to make respondents freely talk and explain whatever they had in their mind. In this sense, information from observation can be expression and exposure of their honesty. The critical weakness of observation is that it is through observer’s eyes, which means it could be heavily influenced by the way in which the observer sees the world and understand things.

4.2.3. Secondary literature

Secondary literatures have helped greatly to study the key subjects. Since this research focuses on understanding a transformation into coffee farming, secondary literature has a lot

of contribution to understand history and transformation over a period of time. Although there is a limited secondary sources particularly on the hill tribe coffee communities, literature such as *'Forest Guardians, Forest Destroyers – The politics of environmental knowledge in Northern Thailand'* written by Forsyth and Walker (2008) has a great help to comprehend the political and social relationships of environmental resource management in Thailand with putting spotlights on particularly hill tribe farmers.

4.3. Ethical consideration

Since the research data was collected through interviews and observation during the field investigation that deal with some sensitive and private matters, ethical aspect was always concerned. The interview questions handle some private issues and ask for some private information of the respondents, hence I always tried to clarify the purpose of my interview and my intention to conduct it before starting the interviews. I also explained to the respondents that I would keep all respondents names anonymous, and would not reveal their private information. Since there was always a language barrier, rather than showing the written form of my statement to promise of protecting their privacy, I tried to orally explain it to the interpreters to interpret to the respondents' language. Minimising a risk of violating their privacy is on the first priority. And by doing so, I would think the respondents could freely answer questions and express their opinions without any hesitation.

4.4. Limitation of research

Even though I was trying to do my best for the validity of this research while doing field investigation and interviews in Thailand, unfortunately there were some shortcomings that cannot be denied in my research. They are mostly due to language barriers, world view barriers and limited time.

Language barriers

One of the cores of the raw materials for this research was collected through interviews with local farmers face to face. However, I, myself as an interviewer, lack the knowledge in local languages, including Thai, Lahu, Lahu Sheleh, and Akha. Although some interviewee have a knowledge in English and the interview was conducted in English without interpreters, there

was undoubtedly difficulties in communication. Some interviews were conducted in Japanese, which is the mother tongue of the researcher, myself, since the local person who helped me as an interpreter and guide/coordinator in that particular village feel more comfortable in Japanese than English. So, all the interview questions which were prepared in English was once translated into Japanese, and then to Lahu by the coordinator. I would admit there was always a difficulty to make ourselves understood between interviewer, interviewees, and interpreters. Sometimes I had a hard time explaining terms that are not so common for both respondents and interpreters. Sufficient knowledge in languages or a financial capital to hire professional interpreter would have improved a quality of data.

Worldview barriers

It is barely possible to deny a casualty of some biased observation and interpretations of data. Since I was raised up in Japan and having all my education in Japan and being a master student in Norway with a strong influence from the Western academia, the way in which I see the world is undoubtedly different from the way in which the informants would see the world because of cultural differences and things which we are exposed to. Although I have previously visited Thailand several times and been exposed to local culture and values to some extent, some of my questions needed to be clarified for interviewees to be understood. Some informants seemed not to get my point while they tried their best to answer my questions. This could have unintentionally generated some inaccurate interpretation although any negative impacts of my subjective interpretation and any stereotypes were attempted to be minimised.

Limited time

Lastly, the time constraints were also causing some difficulties to make this research more in depth. Case study field work was to explore and understand a local context of totally different from that of the researcher. And this would require a certain period of time to understand the context well. However, this might also bring about a risk of lacking an objectivity at the same time. As for this thesis research, I had about four weeks in Thailand and had to expand local contacts there as I had a little contacts before arriving at the site. Therefore, it was hard to observe or investigate a system change over a long time. For a richer understanding and

better quality of the research, I acknowledge that a field investigation over a longer period of time was needed.

Chapter 5: Result of Findings

This chapter attempts to answer the main research question; How have the small scale hill tribe communities changed through transformation into agroforestry coffee system? In addition it covers the sub research questions (2) and (4); How resilient is the livelihood of agroforestry coffee communities in Northern Thailand? and; How has the perception of the hill tribe coffee farmers changed?

This serves as a thick description of the five hill tribe coffee communities in Chiang Rai. This section is divided into six parts. The first part introduces a brief history of how the hill tribe farmers started to grow coffee. The second part presents findings on farmers' livelihood. The third part describes some of the important agricultural practices that increase farmers' resilience. The fourth part examines the major vulnerability factors that were concerned by the farmers. The fifth part describes the key areas for increased resilience. Lastly, the sixth part explains farmers' perceptions on nature which will be leading to further discussion in the next chapter.

5.1. Historical development of coffee production

All the sample farmers grow coffee arabica, yet the stories of how they started the production varies from one place to another. Each village and each farmer has a different story of how they began to grow coffee. In the following sub sections, historical summaries of each village is presented.

5.1.1. Summary of the villages

Village A

The village A is located in Wiang Pa Pao District in Chiang Rai. According to informants, the village was established by a group of Lahu people moved from China through Burma during

the 1950s to 60s. The majority of villagers are ethnically black Lahu while there are some ethnic Chinese living the village due to marriage and family relations, and all together 88 families reside in the village A today, and all the families are involved in coffee farming.

Coffee farming was first introduced to the village in the 1980s when the Royal Project, which will be explained later, came to the village. However, since the coffee farming didn't go well in the beginning, people didn't continue to grow coffee. Then in 2010, a project to revive agroforestry coffee in the village was started by the supports from one Rotary Club in Japan. As a result, coffee production has been expanded greatly in the village.

Village B

The village B is dominated by Akha, and located about 15 minutes away from the closest village by car. The village is located up on the hill, and gets relatively colder climate compared to its neighbouring villages down in the hill. The village is resided by 35 Akha families and all are engaged in coffee farming. This village also started coffee production when the people from the agricultural ministry of Thailand came to the village and introduced coffee farming as a part of the RP. Before the coffee came into, the village was dependent on rice, corn and opium production (back in the days) as well as some animal husbandry. Today, the coffee produced in this village is sold both domestically and internationally in the US, Hong Kong, and South Korea. The village receives many visitors from abroad as their coffee is marketed as a single origin coffee⁶. The coffee production in this village seems to be quite successful. One of the farmers received an achievement award from the Speciality Coffee Association of Thailand in 2016.

Village C

The village C is located about 20 minutes away from the village B. It is also in Wiang Pa Pao District. The village is also dominated by the Akha families of 65 households altogether about 360 residents. The village was established as a result of a group of Christian believers who left and separated from their home village of traditional animism in the 1980s. It was the early 2000s when the coffee farming in the village started. Coffee cultivation was brought by

⁶ Single origin coffee: coffee from a specific farm or produced by a specific farmer that are categorised by coffee variety and processing methods. This is a typical characteristic of the third wave coffee movement. This leads to traceability of the coffee.

the missionary couple. They brought coffee seedlings, told them to start to grow coffee and taught the villagers how to grow coffee and practical knowledge. Before coffee became their dominant cash crop, rice and ginger were the common agricultural commodities they produced.

Village D

The village D is situated in Doi Nang Non, in Mae Suai District. I didn't have a chance to visit the place but I was able to interview one person who is from this village. The village was established at the current location in between the 1930s to 40s. The population gradually became larger as people moved into the village across the border. The village is 100% Akha. The coffee production in the village D started in the 2000s. According to the informant, the village started coffee farming because the farmers were motivated by the expansion of coffee production in Doi Tung, which the RP has been successfully introducing alternative cash crop for eradication of opium poppy cultivation and slash and burn cultivation. The staff from the RP has taught the basic instruction of how to grow coffee to the villagers. Before the coffee production began in the village, the villagers were making living on pineapple production. And pineapples still remain as a dominant cash income crop which makes up about 80% of their agricultural activities. So, coffee, on the other hand, accounts only for 20% of the agricultural production of the village D.

Village E

The village E is situated in Wiang Pa Pao District, Chiang Rai, about one and a half hours from the central of Chiang Mai. The village is habited by 37 households of Lahu Sheleh. A group of Lahu Sheleh people started to settle in at the current location in the 1950s. Historically, the village was growing corn, rice and other vegetable for their dietary need only. Gradually the people started to sell their products to the market. Originally, the coffee was introduced by the RP in order to combat opium production. Other crops were introduced parallel to coffee, such as flower, fruits, and vegetables. They have traditionally both a shaman and a village leader under democratic decision making. All the households are engaged in coffee farming. There is a set of processing machineries in the village but not everyone has access to use it.

5.1.2. Foundation builders

The brief historical review has shown that the majority of the sample villages had a historical background of coffee farming introduced by the Royal Project (RP) since the 1980s. The Royal Project Foundation (RPF) was initially established by the initiatives of the late King Bhumibol Adulyadej of Thailand, in the late 1960s. He was one of the most respected and admired kings in Thailand, sadly passed away on 13 October 2016. According to the website of the RPF (2012), the aims of the foundation are four;

1. Humanitarian work for hill tribes;
2. Stop the destruction of natural resources by the people in the forest and watershed;
3. Elimination of opium cultivation
4. Maintaining the soil quality and forest replantations

This reflects a concept of ‘sufficient economy’ presented by the former king. Similarly, as in the village D, Doi Tung Royal Project under Mae Fah Laung Foundation has been particularly significant in the area around Doi Tung in Mae Sai (Doi Tung Development Project, Mae Fah Luang Foundation, NB). Not only those official development projects, but coffee seemed to be introduced by some private initiatives like in the village C. Similar project found in Integrated Tribal Development Program in Chaing Mai Province (ITDP, NB). There were a variety of projects aiming at empowerment of the hill tribe farmers by the Thai government, NGOs, international aid agencies and such since the 1960s (Forsyth & Walker, 2008). For many coffee producing communities among hill tribes, the RP and other similar projects aimed at the hill tribe empowerment by replacing opium cultivation and slash and burn cultivation formed a historical foundation of coffee farming.

5.1.3. Coffee trend in Thailand since the 2000s

Another turning point for a growth of hill tribe coffee communities was the current coffee movement in Thailand. As a result of international coffee movement that particularly focuses on artisanal coffee, single origin coffee, speciality coffee and such, the consumption of coffee has increased in Thailand (as explained in Chapter 2). There is indeed a significant influence on the hill tribe coffee farmers.

The years of experience in coffee of the interviewed coffee farmers range from two to seventeen years. And this also parallels with the increasing domestic coffee consumption in Thailand. The interviewees who have begun to grow coffee fairly recent told that they have begun coffee as they saw some other farmers in the same village who began coffee earlier were doing successful with coffee. Successful examples since the early 2000s in the villages seemed to motivate other fellow farmers to start coffee again.

5.1.4. Former crop production

The common crops the informants used to grow before starting coffee include corn, rice, ginger, and other plant vegetables. Some of those were in combination of slash and burn practices. According to the informants, while they were dependent on the previous crop production, they never had enough income to meet the basic needs. 60 year-old veteran farmer said that back in the days slash and burn practices were too common to doubt and people were doing it for life. As slash and burn practice has been strictly regulated by the state, and the state intervention of promoting agroforestry coffee farming, the use of natural resources have changed more towards conservation oriented. According to the informants, it was still common to do slash and burn up until 1980s and 90s. It was a common practice since the time they were moving from China through Burma in the 1950 to 70s.

Some informants have completely stopped to grow these crops which require unshaded open cultivated land such as corns and rice when the coffee became a stable income source for them.

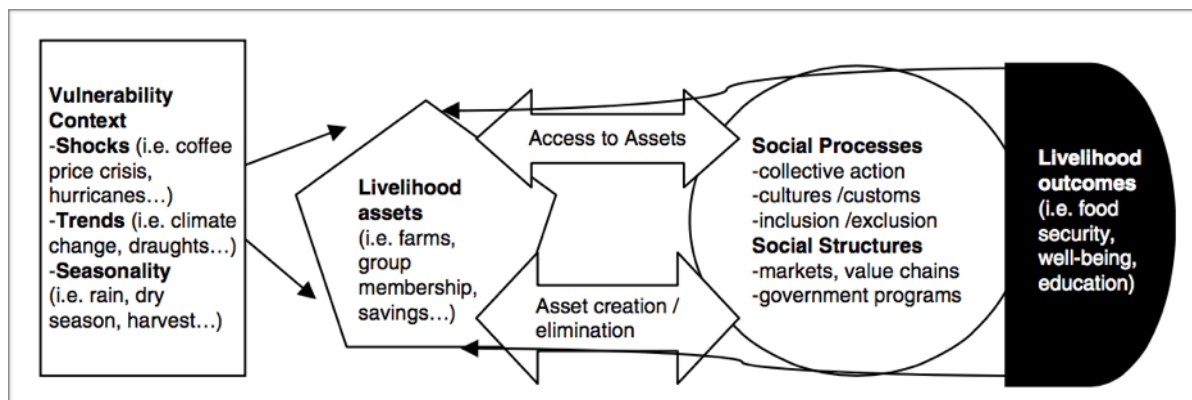


Figure 5-1. Livelihoods change framework for coffee smallholders framework (Source: Jha, et al., 2011. p.182)

5.2. Livelihood status of hill tribe coffee communities

The sustainable livelihood framework applied to coffee smallholder, which developed by Jha, et al. (2011) helps to depict a livelihood of small scale coffee farmers (Figure 5-1). This figure shows one livelihood framework example of typical small scale coffee farmers. As explained in Chapter 3: Conceptual framework, the livelihood of coffee farmers are built on assets they have. Disturbed and benefited by a series of changes in vulnerability factors and transforming social processes and structures, so generated livelihood outcomes as a result. This section will be describing the livelihood assets the hill tribe coffee farmers in Chiang Rai commonly have, as well as the livelihood outcomes.

5.2.1. Livelihood assets

The section below describes the main findings on the livelihood assets that the hill tribe coffee farmers have. This is all based on the interview data and observations in the five villages. The aim of this research is not to generalise findings, therefore this section tries to explain and illustrate some of the notable characteristics.

Human capital

Knowledge is an important indicator of human capital. Both formal and traditional knowledge are equally valuable. The age of the informants varies from 26 years old to 71 years old. And the educational background of interviewed farmers is at a great diversity. All have different educational background from no formal education (totally illiterate) to a bachelor degree at university. According to my field investigation, those who are above 60 years old tend to have no formal education at all because they were born under the condition when the hill tribes didn't have formal citizenship in Thailand. They didn't have opportunities or their families were lacking economical assets to send children to schools at that time. And remote villages usually have a bad access to schools.

In terms of experiences, the informants have an extensive agricultural experience and knowledge as agriculture sector is almost the only and dominant industry due to its distanced locations from the cities. Experience in coffee differs as mentioned earlier among the

informants, from 2 to 17 years. Local knowledge in everyday life was also seemed to exist. According to 60 year-old informants, natural medicine can be a treatment for small injuries, headache, and such. In case of severe injuries and sickness, one has to go to the town for treatment.

All the informants, I have talked to, are self employed farmers, and none of them are tenant farmers who are employed or working for a landlord but rather have their land to cultivate. Since there is no retirement age for agriculture worker, one works until one loses physical ability to work. The oldest farmer I have interviewed was 71, and he said he would continue until he turns 80 years old. The young labour force is vital for small scale farms run by families consisted of old couples or widows. Yet, the school children seem to be not counted as a labour force in the villages. Although they seem to help their parents with a small house chores, not so much in agricultural activities. This may be because some villages have no schools thus children have to live away from their parents for schooling.

The hill tribe people in Thailand are legally considered as Thai citizens today and their legal rights are though to be protected equally in the society. However, it is not a long ago when the hill tribe people begun to be encouraged to obtain a citizenship, and their legal status as a Thai citizen started to be officially recognised in a wider scale.

Natural capital

Land is always a critical matter for farmers. Issues regarding land ownership tend to be critical for farmers who are relatively weak in a society such as minority groups or women. In many cases, the forested area they use for coffee cultivation are state property. Some of them have answered that the land is their own but in many cases they have no official paper to claim their property rights⁷ on it. This may need



Wild mushrooms picked up in the agroforestry forest (Photo: Marina Sugiyama)

⁷ There are four types of property rights; private property, common property, state property, and open access (Vatn, 2005).

some further clarification as their claims may not be legally correct. The informants answered that they have land including both forested land and cleared land under use, which is in range between 10 rai and 300 rai⁸. The one who had 300rai is the former village head of the village A who is a significant figure in the community. While the one who had 10rai was a young coffee farmer in his thirties.

Usually the forest area they use as coffee farms are divided, and each plot is used by individuals or households. According to the informants, the land division is based on the earlier decision in the community. Therefore, in case one wants to expand your land, he/she has to buy the right to use the land from someone else but not the ownership because the forests belong to the state.

As the farmers are growing coffee in the forest, they receive several benefits from the forest. As direct assets, the forest are the source of cash crops, food, and medicine. The forest system provides the farmers coffee and other cash income crops such as tea, nuts, and avocados, although not all the villages have equally diverse variety, The forest also gives farmers edible wild plants and mushrooms for their dietary needs.

There seems to be no critical water shortage among the sample areas. Coffee and other crops under agroforestry system are all rain-fed thus there is no need for watering. For the household use, people use water from the forest and rain water. Rain water is collected in a tank and mostly used for laundry, dish washing, and bathing. In the village A, it has installed a water treatment tank for drinking water as a communal asset. The water is lead through pipes from the forest and treated. For the operation, one household pays 300 baht a year. It is also common to buy bottled waters for drinking water, while in the village B, the informants told that they use the pure water from the mountain directly without any treatments because the quality of water is high.



Wild tea bushes in the forest (Photo: Marina Sugiyama)

⁸ Rai is a land measurement unit used in Thailand. 1rai is 0.16 hectares.

Financial capital

Economic status of hill tribe farmers seems to be improved greatly as they have successfully introduced a new system with coffee cultivation. Since it is a very much sensitive topic, I did not dare to ask specific questions about their economic status such as amounts of saving. However, according to the informants, the biggest change after starting coffee was the increase in income.

Diversification of income source is one of the strategies to build livelihood asset. By combining off-farm work and on-farm work to diverse income source, income of the small scale farmers can be simultaneously secured (Amekawa, 2011). Off farm work has been found among some of the farmers while visiting coffee farmers. One of the interviewed farmers works as a part-time teacher while he grows coffee and raises pigs together with two other people. This is a resilient way of combining different ways to secure income. As working at a school, he gets a monthly salary, and at the same time earns out of agricultural activities. Also, having a collective management of pig farming, he manages to combine different economic activities.

According to informants, it is usually difficult to borrow money from banks. However, there is a certain amount of money that one can borrow from a community credit. In the village C, for instance, the community has two million baht as an available credit for the villagers. In the village A, they have one million baht credit pool and the village committee consisted of eight people examines applications for credit taking. The 57 year-old informant in the village A told that he borrowed 30,000 baht from the community credit.

Some informants have mentioned that their children working in the cities had helped financially when they needed investment for starting coffee.

Physical capital

Infrastructure is a key physical capital. Since all the villages I have different conditions are different yet the overall infrastructure has been improved greatly compared to before. Yet, all the coffee farms are located in the mountainous forests, some farms have a worse access from the villages than others. Because of the nature of favourable area for coffee farming, the villages are quite remote from the city central of Chaing Rai or Chiang Mai, at least one and a

half hours for one way. Amongst the villages I have been, the village A had the least infrastructure in terms of access.

Although roads connecting villages with the main road have greatly improved with pavements, the road inside the village is usually not paved so as the roads to their coffee farms. The picture above is one example of the village A, a way to the farm in the forest. Back in the days, people in the village A used to walk on foot to the farm but nowadays they use a vehicle or motorbike and drive up to the farm. Some of the farms still do not have an access even by 4WD cars because they were located on steep hills and there were no pavements, in those cases, coffee producers have to walk to those remote forest farms by foot.



Unpaved road to one of the farms in Chiang Rai (Photo: Marina Sugiyama)

In terms of technical equipments, a set of coffee processing machinery up to the roasting machinery were found in two of the visited villages. It was common to process coffee cherries to parchment as it can be stored long time. Processing capacity benefits farmers in increasing the value of coffee beans as the processed green beans are traded at higher values. All the villages have electricity, and it seems not rare to own major domestic appliances such as TV, laundry machine, radios, refrigerator, mobiles, smartphones and water heater in the villages although it doesn't necessarily mean everyone has all.

Social capital

Social capitals are measured by connectedness. Concerning this regard, the hill tribe coffee farmers are not isolated from the outside society although they are physically remoted. They have a certain level of social exchange within the village, with other villages and with outsiders including tourist visitors and brokers as well as the government officials.

Interrelated to human capital, knowledge in language has greatly increased their social connectedness to the outside world. 31 years old farmer with a high educational profile seemed to have a greater network with the coffee market and utilising the internet for promoting their coffee. He gets visits from coffee buyers and tourists who come to see their farms. The younger farmers commonly takes advantage of the internet and marketing skills with knowledge they have had outside of village society. Relatively older farmers seem to have less network vertically as they rarely go to the towns and have a limited capacity to expand their connectedness to coffee brokers from cities and abroad. The village leaders are often relatively young, mostly in their thirties. Since the younger generation have a literacy in Thai and sometimes in English as well as knowledge in information accumulation through the Internet, they are functioning as a pipe that connects villages with a Thai society.

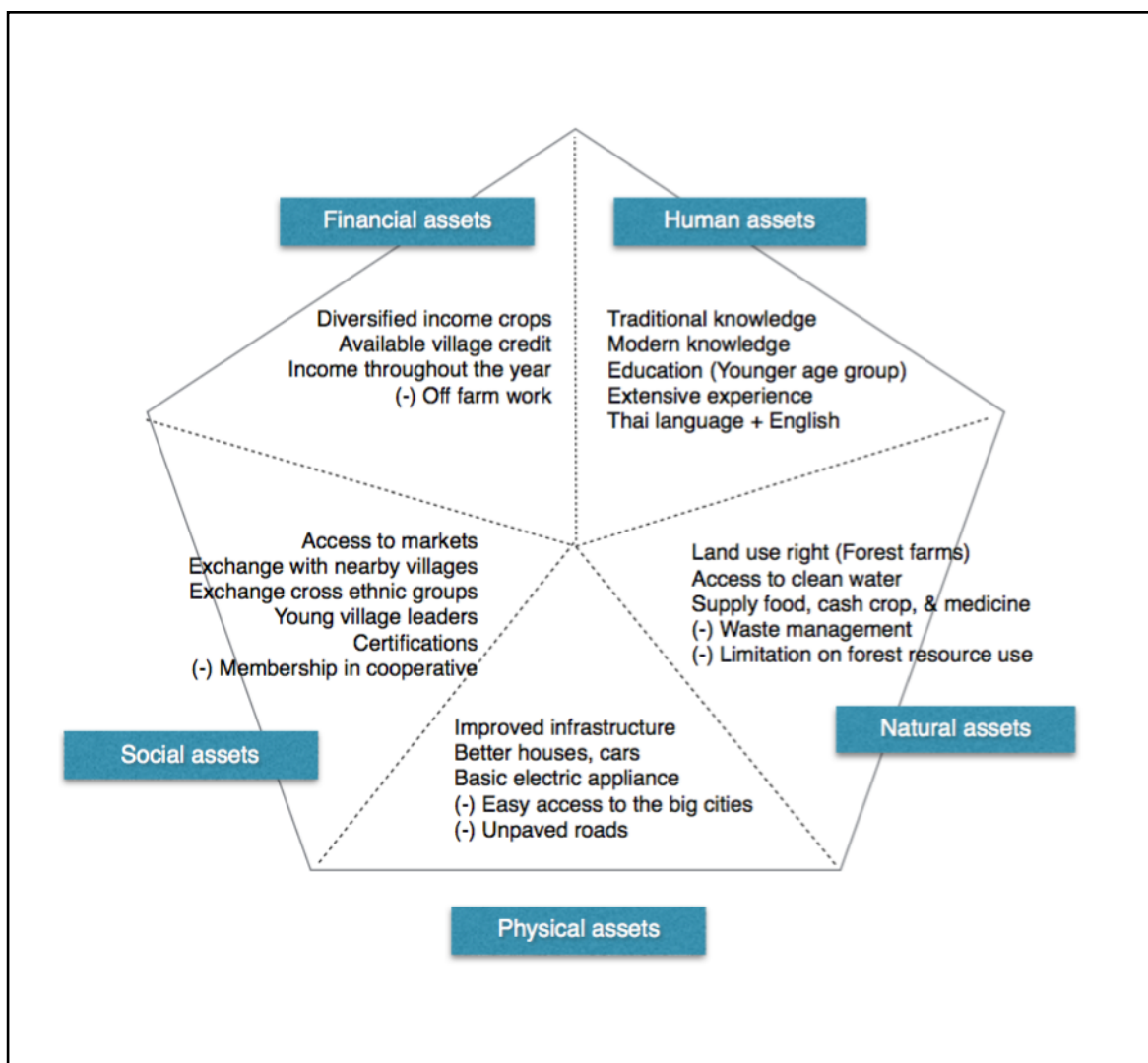


Figure. 5-2. Livelihood assets of the sample coffee farmers
 *(-) indicates points to be improved or addressed

5.2.2. Livelihood outcomes

As well as the process, outcome is also the critical measures to evaluate the resilience of the community. In here, this section presents the key findings on the livelihood outcomes as a result of the field investigation.

Increased income

The income increase is a clear livelihood outcome. As mentioned earlier, the informants whose main crop is coffee, have answered coffee has contributed to increase their income. There was an exception like the village D, where pineapple is a dominant income crop. The village A where coffee farming got expanded in the 2000s has increased income dramatically since then. According to the key informant from the village A, a rough estimation of annual earnings was about 7,000THB before 2010. At the point of 2010, the coffee became a lot more significant and income from coffee became up to around 50,000THB. The increase was quite remarkable compared to the average income in 2010.

Improved well being

The well-being status of coffee farmers has greatly increased in accordance with their increased economic stability. Not only materially but also non-materially, the well-being status of coffee farmers have improved. The informants have a self-esteem as a coffee producer and a forest guardian who contributes to ecosystem. They often have a passion for coffee, especially those who are directly connected brokers or coffee shops distributing their coffee. 39 year-old coffee farmer who has successfully marketing his coffee with his international partners have told that he and his friends are proudly grow coffee and satisfied with what he is doing.

As a consequence of increased financial capital, it is also reflected in education. As described earlier, although those who are older than 60 years old tend to have no education, the younger generation born after the 1970s tend to have education up to university.

“Because of coffee, my children were able to go to high school and then to universities. And I’m very proud and happy about that.”

— 60 years old coffee farmers

This cheerful informant himself didn't have a chance to have any formal education, however, he sent his four children to higher education because of the success in coffee. Overall, the farmers are more or less satisfied with their life after the coffee farming became a significant income generator in the region.

Improved food security

Coffee is not a food crop however it plays an important role as a cash crop to generate income for households. As they have shifted from rice, corn, fruits and vegetable cultivation to the integrated agroforestry coffee farming, they have changed their food supply. The people used to eat what they grow in the field and had high level of self-sufficiency. In accordance with a gradual integration into the market society⁹, people started to buy staple food like rice instead of growing them because of conversion of the rice field into a coffee forest. There are still farmers growing the food crop including rice and vegetable and almost self sufficient besides seasonings, fish and things not available in the village. Though, the informants have a certain level of dependency on food supply from the market.



Typical Lahu dishes with rice, vegetables, and eggs (Photo: Marina Sugiyama)

5.3. Significance of agroforestry coffee farming

According to Angkasith (2002), today, three different coffee production systems among highland coffee growers can be found, a “*pure-stand or unshaded coffee system*,” which was brought from Brazil to Thailand, “*home garden or mixed cultivation*,” which is to combine with a backyard gardens besides farmers’ residence, and lastly “*agroforestry system*,” which integrate coffee, fruits, tea, and other crops grown together under the shaded tree system. During the field investigation, both home garden/mixed cultivation and agroforestry system

⁹ Karl Polanyi, in his book ‘The Great Transformation’ in 1944,

are observed. Nair (1993) summarises an essence of agroforestry as “*the purposeful growing or deliberate retention of trees with crops and/or animals in interacting combinations for multiple products or benefits from the same management unit* (p.16).” The research on agroforestry has revealed that coffee is a suitable to combine with agroforestry system for the purpose of sustainable agricultural ecosystem (Perfecto & Vandermeer, 2015).

5.3.1. Diversification of crops

One of key characteristics of agroforestry coffee farming in Northern Thailand is that the farmers are combining coffee with other crop production. Notably, coffee, tea, a variety of fruits, rice, and so on. The farmers are commonly producing at least one or more crops other than coffee. As it is common to grow a variety of crops throughout the year, it provides a constant income to livelihood. The figure below shows one example of the harvesting calendar in the village A. Harvest can be effected by external factors like an unexpected weather or a change in climate patterns each year, yet, this diversity increases the resilience for the livelihood. Some of the informants are in favour of increasing further diversity of crop varieties. However, there was a great difference of to what extent each farmer diversify their crop variety.

Item	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
coffee												
tea												
avocado												
pear												
peach												
plum												
persimmon												
rice												

Table. 5-1. Harvesting time calendar in the village A (Source: interview)

5.3.2. *Interplanting*

Interplanting of different crops is commonly found among hill tribe coffee farmers. Small scale coffee farming landscape is in many case combines other cropping system because the small scale coffee famers need to make out of a limited land and labour they have (S Jha et al., 2011). By planting shade trees above coffee, famers can utilise the land and ecosystem function favourable for coffee trees. Although not every farmer interplant coffee with other crop trees in the forest but rather using original forest vegetation and trees as a shade trees, interplanting with other cash crops is applied among the hill tribe farmers. The common crops that are grown in their agroforestry systems are avocados, persimmons, macadamia nuts, apricots, peaches, plums, tea, and bananas (bananas for pig feed).

For example, avocados were ready to be harvested when the time of the field investigation in the village E (July 2016). Avocados are planted close to the village, not in deeper in the forest and they are planted as they cover coffee trees as shade trees. The picture below to the right shows another example of persimmons interplanted as shade trees. By combining different types and heights of trees, coffee and other shade tree crops are interplanted.



Avocado harvesting above coffee trees (Photo: Marina Sugiyama)



Coffee grown under persimmon trees (Photo: Marina Sugiyama)

5.3.3. Livestock practices

Animal husbandry is also quite often combined with coffee farming in the study area. Pig and poultry are the most common livestock for hill tribe coffee farmers. According to the informants, cows and buffaloes were also common in the past for the purpose of transport and agricultural labour such as ploughing but they are now replaced by cars and machines. Also, keeping buffaloes and horses requires a larger land and feeds, which discourages farmers to keep them. There are several reasons poultry and pigs are commonly practiced beside crop



Pigs for food and manure
(Photo: Marina Sugiyama)



Free grazed chicken in the agroforestry coffee farm, a dog as a guard (Photo: Marina Sugiyama)

production. First, they are kept for manure production. Faecal matters from the pigs are used as a manure and applied to the farms. The farmers also keep dogs as a guard around the farm and home gardens they have. Second is to sell for their cash income. Pig meat, when a farmer slaughters one, is often sold within the village and consumed inside, not sold to the markets. According to the informant in the village A, pigs is usually sold at 120 baht/kg in the village. Third and foremost is for their dietary needs. Poultry provides the farmers meat and eggs which is one of their important protein sources.

5.3.4. Home garden

The farmers are also commonly grow vegetables and fruits as well as keeping poultries and pigs in their home gardens for meeting dairy food need in the backyard or nearby their

houses. Home gardening is one of the traditional practice that can be found in many tropic countries (Nair, 1993). What are commonly grown are vegetables like tomatoes, chillies, beans, garlic, herbs and green vegetables; as well as fruits such as bananas, peaches, and papayas. Some of them are purely for household consumption and some of them are sold at the market. As there is a difficulty in expanding their land in the forest, the land around their residents are utilised as home gardens. Coffee trees are also planted in the home gardens.



Example of home garden in the village A
(Photo: Marina Sugiyama)

5.3.5. Composting

Composting was also found among some of the farmers. One of the interviewed farmers, who purposefully applying organic and natural methods to his farming, has told that composting is not yet so popular in his village whereas he occasionally tries to introduce and encourage his friends to start composting and they give positive reactions to him but he complains that no one has started to follow him. He understands spreading ecological methods isn't easy.

5.4. Vulnerability

Through interviewing farmers, there are some of the shared concerns they have in common. These obstacles and challenges may increase the farmers vulnerability. Yet, not all the vulnerability factors are impacting livelihoods negatively. This section will be presenting some of the major findings on vulnerability factors.

5.4.1. Shocks

The unusual weather events and wildfire were mentioned by the informants as natural shocks. Both have a direct impact on their agricultural activities. Moreover, the concern on the drug

issues was also brought up by some informants. This kind of social unrest would influence people's well-being and harmony in the village.

Unusual weather events

According to the informants they have experienced ice falls as hailstones, which were unusual in Northern Thailand. This has a direct effect on farmers' livelihood. The informants mentioned that they got direct damages on coffee flowers due to hailstones.

Wildfire

According to several informants, there is always a threat of wildfire. This is especially serious during the dry seasons. One farmer, in the village A, has lost the 1/3 of her coffee trees due to the wildfire a few years ago, which was a relatively dry year, and she had to replant coffee seedlings. This is an enormous damage for a small scale coffee farmer because unlike vegetable crops, coffee takes at least three or four years to bear cherries. Forest fire can be both caused by human error and naturally. According to the official report, wildfires are caused due of uncontrolled and unmanaged fire practices hence burning of ground vegetation is one of the prevention methods of bigger fires (International Forestry Cooperation Office, NB.).

Drug related issues

Social instability or crimes can increase vulnerability of the farmers. Some of the farmers shared their anxiety over the recent drug related problems which are increasing a tension. Drug issues are very serious social problem in Thailand. According to the informants, there has been a series of investigation by the police in the hill tribe villages, and some villagers were found to be involved in drug dealings as a courier. According to their testimony, those young villagers were carrying the illegal drug across the border between Burma where there are hill tribe villages producing illegal drugs. Originally opium poppies were grown among hill tribe minorities over a long period of time mostly in order to use for medical reasons

(Bendiksen, 2002). But as mentioned earlier, the government of Thailand has been working on eliminating the issue within the territory of Thailand.^{10 11}

For example, in the village A, there were some young villagers, including school children, who were caught by the police for dealing illegal drugs. The village head was worrying about the issue and hoping the police and military would take a strong action to intervene on this matter. Of course there were villages where they don't have such issues at all. Yet, such social unrest or social disorder in small communities could lead to destruction of peace in a village.

5.4.2. Trends

Market trends

Market trends is critical to farmers as it directly impacts their income. According to FAO (2015), the producer price of green beans were much lower in 1990 (\$966.84/ton) and 2000 (\$602.82/ton). This has directly influenced the farmers who had already grown coffee and pushed them to stop coffee. It was at the same time when the price of coffee in the market went down in 1990 to 92 and the support from the Highland Development Project declined (Angkasith, 2002). Both incidents had caused a difficult situation for coffee growers and led some farmers to stop growing coffee. This kind of event could easily discourage coffee producers. However, the market trend would also benefit the producers as the producer price has increased up to \$2,318.41 per ton in 2014 (FAO, 2015). The FAO statistics includes robusta coffee production in Southern Thailand thus much cheaper than the price the informants have answered (from about \$2.8 to \$4.7 per kilo). By and large, coffee producers seem to be satisfied with the current situation of coffee price in the market and believes that a demand of coffee would continue to grow.

Market trends affect all agricultural products the farmers produce. The village D, where they grow pineapples as a main cash crop, has experienced a dramatic increase of the pineapple

¹⁰ It seems to be eradicated thanks to continuous efforts by Thai government, international organisations, as well as both local and international NGOs, however, surprisingly enough the recent report from the Office of the Narcotics Control Board (NB) has unveiled that the research in 2011 to 2012 had found out 208.59 ha of the land was used for opium production in Thailand. Although they note that the number of total opium cultivation areas is decreasing, it hasn't reached a complete eradication.

¹¹ According to their study, the biggest factor that pushes hill tribe farmers to continue with opium cultivation is its high price, followed by its use in villages as opiates, investors and organised criminal groups hiring farmers to grow opium (Office of the Narcotics Control Board. NB.).

price in the market. According to the informant, about five years ago, the price of pineapple was significantly low, about \$0.11 per kilo was the best price at that time. But today it has increased up to around \$0.423 to \$0.479 per kilo. Hence, market trends can both threaten and benefit the farmers.

Population trends

The younger generations are actively exposed to cities and modern lifestyles as they move to the cities for education or work. This may be a pulling factor for younger villagers to move to the cities, however, it seems like the hill tribe farmers commonly have a strong sense of belonging to their villages, and in many cases they gradually come back to their home village and build their own family. A 31 year-old farmer used to study in Bangkok but he



Burmese side of the forest from the borderline (Photo: Marina Sugiyama)

returned to the village after his bachelor degree to start coffee with his family because he didn't like the life in the city. Some informants claimed that living in a big city is expensive due to the higher living cost whereas living in a village and dealing with farming is cheaper because you have a place to live and people who can support you around.

There are also migration of hill tribe people mostly from Burma where the society and economy is unstable compared to Thailand. This research doesn't have a capacity to access the migration issues but since both Lahu and Akha as well as other hill tribes are spread across Thailand, the Lao PDR and Burma, are still family kinship or social connection across the border. Hence there is always a potential of population



Parchment coffee beans (Photo: Marina Sugiyama)

inflow from Burma especially the villages beside the national border line although the Thai governments enforce a strict border control along the bordered road is just open landscape with no physical fences.

5.4.3. Seasonality

Seasonality of prices, production, health, and employment opportunity may increase vulnerability of small scale farmers (DFDI, 1999). In case of the hill tribe coffee farmers, many of them have diversified their crop varieties and make a constant income throughout the year as described in the section 5.3.1. Moreover, one of the advantages of having coffee as well as tea is that coffee and tea can be their constant cash income backup because coffee can be stored for a period of time as parchment beans¹², as well as dried tea leaves. Several farmers have mentioned that coffee strengthens household income because it can be stored for several months as parchment coffee. Then after having done with washing and drying, beans are kept in a storage. However, not all the informants have a capacity to process coffee cherries into roasted coffee beans, and some of them sell coffee cherries to buyers or other farmers in the same village who have a capacity to process cherries into coffee parchment beans. In those case, they need to secure their Another option is to borrow processing facilities from other fellow farmers who have bigger assets. The sample coffee farmers are resilient against seasonality as they are balancing cash income throughout the year with an application of agroforestry system.

5.5. For the increased resilience

The section describes the four points that would increase the resilience of the hill tribe coffee farmers. Certifications and farmers' cooperative were not yet that common, thus they may serve to build resilience capacity. Diversification of crops and scales are seen commonly already. but maintaining them could also increase or keep resilience.

¹² Parchment coffee refers to the coffee beans which are not hulled but kept dried and stored.

5.5.1. Organic and fair-trade coffee market

Organic coffee certificate and fair-trade coffee certificate were not popular among the farmer I have interviewed, even not positively considered among some of them. However, since coffee is an internationally traded and consumed commodity always subjected to price fluctuations in the international market, looking for certifications such as fair trade certificate, organic certificate, or agroforestry certificate at national, regional, and international level would strengthen livelihood of the small scale coffee farmers (S Jha et al., 2011). The movements, of which are led by the initiatives in the so-called economically developed countries and supported by international NGOs, are aimed at bringing small scale producers in the global south and consumers in the global north who are conscious to social and environmental justice connected in order to implement alternative production and market mechanism (Amekawa, 2011). Jha et al. (2011) argue that the coffee crisis in the late 1990s, which had significant impact especially on the coffee farmers in the Latin America, has shown that the farmers were given higher prices thanks to certifications, however, the amount of coffee were small which didn't turn out to be a large income increase when confronted crisis.

There were some farmers who actually have the organic coffee certificate, and market their coffee as organic coffee. The informant in the village E who has an organic certificate said that the biggest motivation for organic farming is for the health of producers and consumers. As a safety guideline such as minimising the use of chemical pest, organic certificate may increase the farmers' resilience.

The Thai government launched the national policy of organic product promotion in 2001, aiming to develop Thailand as a hub for organic products in Asia, and since that time, the state has been working hard for the research and development as well as raising awareness of organic products among consumers (Kasem & Thapa, 2012). Both organic and fair-trade certificates are commonly recognised among the coffee growers I have interviewed but not positively implemented as a strategy.

Jha et al. (2011) state that such small scale coffee farmers whose practice is based on maintaining natural ecosystem (ex. biodiverse shade tree maintenance, low inputs to coffee system, water resource conservation) for necessity reasons such as little income for inputs and necessary investments for other intercropped products can be more competitive in their

community, or even at greater scale (national and global arenas) if they would connect to a local organisation which certifies coffee at international standard. This could be true but this is depending on the capacity one farmer may have. Since the coffee market in Thailand is already good, which is about three times more than that of average price in the Central America (Consortium of Mi Cafeto Company Ltd. and IC Net Limited, 2014).

Therefore, rather than utilising certifications for a purpose of marketing, from sustainable livelihood perspective, by following organic coffee certification and decreasing the potential health risks due to the use of chemical pesticides causing cancer, reproductive problems, irregular fatality (Amekawa, 2011), farmers could possibly strengthen their human capital.

5.5.2. Farmers cooperative

Another possible strategy to build more resilient community is to form a farmers' cooperative. The village itself may function as a collective entity that have similar functions as farmers' cooperative. The empirical research has proven that participating in farmers' cooperative unions leads to better access to markets, credits and development projects (Méndez, Bacon, Olson, Morris, & Shattuck, 2010). Also, what can be expected by forming a coffee cooperative is that it would encourage collective action and strengthen their rights on the land they use together in a group of a great number of people at local level (Jha et al., 2011). Today, each village seems to have some of the functions that farmers cooperatives have, yet, the interviewed farmers have answered that they would participate if there were such a local organisation.

However, from the critical institutional point of view; *“people’s motivations to cooperate in collective arrangements are a mix of economic, emotional, moral and social rationalities informed by differing logics and world-views (Cleaver & De Koning, 2015).”* Therefore, participating in such a collective organisation may not necessarily be favourable and beneficial for all. It will be highly depending on one's priorities, values, and such.

5.5.3. Diversification of crops

One way of optimising the agroforestry coffee system is to diversify crop varieties. As found in the field research, some of the interviewed farmers already have diversified crop varieties to a great extent. Diversification includes the development of a wide range of income portfolios to jointly cover all types of shocks and stress, or to deal with specific types of

common shocks and stresses through a well-developed countermeasure mechanism focused on the development of measures (Scoones, 1998). Therefore maintaining or increasing this crop diversity would be a great assets to avoid a risk of dependence on single crop system. Some informants seem to be preparing to further increase their crop diversity while those who have already made a great success in coffee or have physically limited land condition for intercropping seem not to be so positive to change it.

5.5.4. Maintaining diversity of scales

Indeed you find a diverse form of coffee producing entities, from a relatively small scale coffee producer to a medium scale family owned coffee company, a large scale coffee company with a fully equipped factory. Not only producers, this diversity holds coffee dealers, coffee shops and corporations both international and national. I would argue this diversity of different scales are highly significant because this diversity generates a circulation and enable the coffee cultivation in Thailand to function.

I think therefore there is no one fixed form of successful coffee producing strategy or model. Rather, for example because there is a huge coffee company that buys cherries from a farmer whose main cash crop is something other than coffee like in the village D, that farmer could make a supplementary income from utilising their forested areas for a coffee cultivation. Maintaining this diversity of different scales could be a key for future successes of coffee production in northern Thailand. According to the informants, there is a day labour job during the high seasons. In the village A, for instance, one may get paid around 300 baht per day for helping harvest of some other farmers who have a larger cultivation area. This is also thanks to a diversity of farm size within one village.

5.6. Farmers' perceptions

People's identity and evaluation on their life is a necessary element for livelihood approach (Amekawa, 2011). This gives a deeper understanding on their values and norms which are important for their natural resource management.

5.6.1. Perception on livelihood changes

As presented in the last section, the hill tribe farmers have experienced significant changes of their livelihood while shifting to coffee agroforestry. As a consequence the quality of life has been improved. However, some farmers were worried about too materialised society which is different from the past. One farmer said;

“The difference is that people didn't need so much money. But now people need money. Why? Because before we planted rice, we planted vegetable, we planted corn for pig. We had own seedlings. We didn't need to buy it from the city or the market. We collected seedling every year and planted every year. But now people don't collect the seedling. And people go to the market to buy and plant. And you must buy it every year. Before we didn't need to buy every year, we just collect every year...[snip]...Something is good but something is bad. People must think.”

— 42 year-old Lahu coffee farmer

This remark from one farmer summarises and reflect a core message from the ones who have experienced the fundamental change that happened to a community of self-sufficiency with a little cash dependency in the past gradually integrated to a monetary society.

Some informants were worried about their children or children in the villages who are losing interests in traditions. Local knowledge and traditions as well as hill tribe identity are still handed over to younger generations such as language, however, it is changing and some of the traditions are fading out to some extent.

5.6.2. Perception on environment

One's perception on the environment would be critical for one's understanding as well as natural resource management. As I was expected from before conducting data gathering, all the coffee farmers I have interviewed or observed say that the environment is necessary for their life.

“Forest is important for our living. Forest gives everything. If there is a nature and forest, you can make a pig hut or hen house with bamboo. You also receive food like mushroom. Forest and nature are given by God. The government

officials taught us how to but it is a blessing from God. I have a responsibility to hand over this rich nature to next generation. ”

Both Akha and Lahu originally have their beliefs in nature and animistic divine being, yet Christianity and Buddhist beliefs became more and more common today. The reason why religions could be important is because religious teaching are closely related one’s world views and then local institutions. The majority of the interviewed farmers said that the forest is something that they are given from God.

“People think about more nature. Now people think more about water and land. Before we didn't care about the water, we had a lot. We had rain every year but now it changed like this year, not so much rain and not so much water. Like this, people think that we have to keep the forest.”

— 42 year-old Lahu coffee farmer

The perceptions on nature seemed to reflect their beliefs and the dominant narrative that underlays in the national land management policy. This will be further elaborated in the next chapter.

Chapter 6: Discussion

The previous chapter was aimed at giving a thick description of the livelihood status of the growing coffee farming hill tribe communities in Northern Thailand with the sustainable livelihood framework as a guideline. This chapter then focuses on ‘transformation’ and ‘institutions’ then examines (3) What has enabled a system transformation to agroforestry coffee farming among the hill tribes in Northern Thailand? and (4) How has the perception of the hill tribe coffee farmers changed?

6.1. What has enabled a system transformation?

First of all, before conducting my field investigation, I was hypothesising that the adaptation to agroforestry coffee farming was caused not only by the authoritative effort for the crop replacement but also farmers’ perceptual changes on the environment. The findings suggest that indeed a series of the hill tribe empowerment projects to introduce coffee agroforestry that provided technical assistant and farmers’ perceptual change on the environment were important. However, there was another important contributor for the transformation which was a favourable market trend.

The field investigation has found that some of the sample villages once started coffee production around the 1970s and 80s but then stopped because demand for coffee was not high, thus coffee farming didn’t really help their livelihood. Angkasith (1991) also points out that there were little technical support provided to the farmers, and insufficient market promotion. If the farmers have no where to sell their coffee and make cash income, there is no reason to grow coffee that was a new crop for them at that time. However, in the last decade, Thailand has been experiencing a dramatic increase in domestic coffee consumption (Consortium of Mi Cafeto Company Ltd. and IC Net Limited, 2014). Following the domestic market trend, the demand for coffee has increased. The findings also have shown that the majority of the sample farmers gradually begun growing coffee mostly since the early the 2000s. Hence, the transformation and development of arabica coffee production in Chiang Rai was happened thanks to a series of crop replacement projects, farmers’ perceptual changes and a favourable market trend since the 2000s.

6.2. What's behind of farmers' perceptional changes?

As important as the market trend since the 2000, the study suggests that farmers' perception on environment has greatly contributed to the system transformation. The result of findings on farmers' perception on nature suggest that the current land management policy in Thailand is well reflected on their perception. This section argues the change in land management policy in Thailand and the dominant environmental discourse behind it.

6.2.1. Changes in land management policy

An extensive secondary literature have studied the development of forestry and land management policies in Thailand. Indeed, in the last decades, Thailand has gone through shifts in its policy orientation. It was in the 1980s when the deforestation issues became a benchmark for environmental activism and development approach on sensational global environmental changes (Adger, Benjaminsen, Brown, & Svarstad, 2001). The following five legal regulations are particularly important which structure a general framework for the protection and conservation oriented policies in Thailand today;

“**Forest Act**, B.E. 2484 (1941) concerns logging operations and non-wood forest product (NWFP) collection, transportation of timber and non-timber products and sawn wood production as well as forest clearing.

National Park Act, B.E. 2504 (1961) covers the determination of National Park land, the National Park Committee, as well as protection and maintenance of National Parks.

National Forest Reserve Act, B.E. 2507 (1964) includes the determination of National Reserved Forest, control and maintenance of the National Reserved Forest

Wildlife Conservation and Protection Act, B.E. 2535 (1992) establishes provisions for national wildlife preservation, establishment of a Protection Committee and identification of 15 species of reserved wildlife.

Forest Plantation Act, B.E. 2535 (1992) covers the determination of reforestation and land registration of private reforestation rights, ownership and exemption from royalty on forest products from reforested areas.

(Regional Office for Asia and the Pacific of FAO, 2009, p.10)”

The informants repeatedly said; “it’s not allowed to cut trees because it’s decided by the national laws.” There is a clearly recognition among the farmers that the forest protection is a legally sanctioning matter which they have to follow.

The dominant environmental narratives in Thailand play an important role. Here again, I would like to draw attention how critical institutionalism sees institutional formation. In the eyes of critical institutionalism, “*Institutions so formed are therefore a patchwork of the new and second hand and they include: habitual ways of doing things; well-worn practices adapted to new conditions; organisational arrangements invented or borrowed from elsewhere* (Cleaver & De Koning, 2015, p.5).”

6.2.2. Environmental discourses

“*Narratives perform important functions for the Thai state* (Forsyth & Walker, 2008, p. 231).” Narratives are the stories which has a beginning, middle and end in a chronological order (Adger et al., 2001). Narratives form a particular discourse, and often used as a means to promote ideology. Discourses are the knowledge regimes that influence policies, and they are hegemonic when they are dominant in people’s thinking and translated into institutional arrangements (Adger et al., 2001). So, what are the discourses that dominate institutional arrangements in Thailand? There is a widely accepted imagination of water as a key resource from the forest (Forsyth & Walker, 2008). The linkage between forests and water and its importance seems to be highlighted greatly in Thailand. Forsyth and Walker (2008) raise examples of signs that appeal the conservation propaganda.¹³ Similarly, a public illustrative sign explaining how the water system is related throughout forested mountains to the city was found in the downtown of Chiang Mai during while my stay in Thailand. Hence, people in Thailand, including the hill tribe coffee farmers are exposed to this dominant environmental discourse.

The informants argued that the forest gives water to them and there is nothing good in cutting trees because the forest protect the life for hill tribe farmers. This perception is closely associated with the dominant discourse in Thailand. The majority of coffee producers interviewed told that they grow coffee while protecting their mountains because it gives clean

¹³ They take example of this signs saying “if you love the country you have to love forests.” “if the forest is destroyed the soil is dry—the forest is the source of water.” (Forsyth & Walker, 2008, p. 87)



Public visual sign on a street in downtown Chiang Mai appealing the water system connection between upper and lower Pin river basin

water and fresh air. They have a shared norm of ‘you should not cut trees for water.’

"If you maintain the forest, you will receive pure and clean water all the time. If you destroy the forest and make it into a field, there will be less and less water. Then the village will suffer from the water shortage."

— 60 years old female farmer

"In the past, I never thought that it is possible to grow coffee under the forest trees. At that time, I was

considering the forest trees as disturbance for rice cultivation. But now I know the importance of the forest."

—57 years old coffee farmer

"People think about more natural resources. Now people think more about water and land. Before we didn't care about the water, we had a lot. We had rain every year but now it changed like this year, not so much rain and not so much water. Like this, people think that we have to keep the forest."

—42 years old coffee farmer

The informants, especially who used to practice slash and burn, answered that coffee was a significant contributor to make them change their attitude toward the forest resources. In deed, this dominant discourse in the land management policy as well as in the Thai society is well translated in the hill tribe coffee farmers institutions. Hence, the farmers are innovating in the range that is recognised as their resources, social situation, and justification when they change existing institutional arrangement (Clever and De Koning, 2015), and resulted in shifting to agroforestry coffee farming.

Chapter 7: Conclusion

This case study research was aimed to display the current livelihood status of the hill tribe coffee farmers in Chiang Rai Province, Northern Thailand, and consider the system transformation into coffee cultivation under agroforestry system. Based on the qualitative research method, the thesis attempted to collect raw data through interviews and observations. For better understanding the present situation of the sample coffee communities, the sustainable livelihood framework was used as a theoretical guideline. Critical institutional theory was also a key conceptual instrument for understanding the change on farmers' institutional arrangement.

The study showed that the hill tribe coffee communities are well coexisting with the forest while applying several agroforestry methods, diversification of crops, intercropping, livelihood practices, and home gardening, which are both based on their traditional practice and newly introduced practices. As a result, the livelihood of the hill tribe coffee farmers among the five sample villages has been improved, reflected in increased income, improved well being, and improved food security. There are certainly common concerns among the farmers such as shocks, seasonality, and trends. However, these may be overcome by building up further resilience with organising farmers' cooperatives, certifications, and diversification /maintenance of crop variety as well as that of scales. In relation to their livelihood improvements, the study attempt to understand their perceptions on their livelihood changes and nature.

As well as aimed to describe the present situation of the hill tribe coffee communities, the research tried to understand the causes of this transformation into coffee agroforestry. The research findings have indicated that there had been three components; a series of the crop replacement and hill tribe empowerment projects provided a technical solutions which formed a historical foundation of coffee farming in Northern Thailand, farmers' perceptual changes, and lastly a growing demand of coffee in domestic market since the 2000s.

Another conclusion is that the perceptual shift among the hill tribe coffee farmers towards more conservation oriented view was highly influenced by the national land management policies. Furthermore, behind this jurisdictional policy institutions were based on the dominant environmental narratives in Thailand, which dominates people's thinking. Based a conservationist approach, the discourse tell importance of the forest conservation for water resources. The hill tribe farmers are concisely and unconsciously affected by the powerful discourses through a set of socially sanctioned rules of the national land management policies.

Although there are a lot of limitation in doing this research which attempted to focus on the area which has not been systemically studied earlier, the thesis attempted to spotlight the emerging coffee producer in Northern Thailand with a growing potential. It was hoped to contribute to give a picture of the transformation toward coffee agroforestry happened among the hill tribe coffee farmers in Chiang Rai province, Northern Thailand. Further research in the area is expected to elaborate more in depth.

End.

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Appendices

1. List of informants

		Ethnic group	Age	Gender
1	Manager of extension centre	Lahu	52	M
2	Coffee farmer (former village leader)	Chinese*	62	M
3	Coffee farmer	Chinese	71	M
4	Coffee farmer	Chinese	—	M
5	Coffee farmer	Lahu	60	F
6	Coffee farmer	Lahu	57	M
7	Coffee farmer (Village leader)	Lahu	39	M
8	Coffee farmer	Akha	31	M
9	Coffee farmer	Akha	39	M
10	Coffee farmer	Akha	60	M
11	Coffee shop owner	Akha	26	F
12	Coffee farmer	Lahu	42	M
13	Coffee farmer (Village leader)	Lahu	32	M

2. Interview guide

1. Brief introduction of yourself
2. Brief history of the village (When and how this was formed)
3. Number of villagers
4. Decision making rules
5. Land property rules and regulations
6. When/how did the community start agroforestry coffee?
7. Why it has been growing in your community?
8. What do you think after reflecting back last few decades since the coffee farming started?
9. What are the significant changes in the community both social and economic?
10. Current situation of coffee farming in the community has something related to external factors?
11. Any side effects on people's behaviour after introducing agroforestry
12. What are the challenges the community have in terms of keeping agroforestry coffee farming?
13. How do you manage resources?
Water
Waste
Wastewater
14. When any issues happen, how would the community solve it?
15. How do you think is the community after 10 years? 15 years?
16. Do you think agroforestry is the key for the community to be resilient?
17. How would the community be better? What is needed?



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