CHAPTER 3

THE GARLIC PRODUCTION VILLAGE

Trade liberalization is one form of global regulation by the state. When scholars study global regulation practices, they tend to focus on the structure of governance. However, another important perspective to study the impact of regulation is to understand what happens at the local level in the context of oppressive structures. Thus, taking an anthropological approach, this work pays attention to the local responses to the structural change of re-regulation imposed by the new market structure shows that the implementation of neoliberal practices at the local level is not so simple.

When I stayed at Dong Pa Sak village, the improved living standard of garlic producing farmers such as well-built houses in comparison with other more impoverished rural villages in Northern Thailand attracted my attention. In consideration of the high dependency of this village on garlic production, the better living standard of the village is believed to be a result of superior income through garlic production, although garlic may not be the only reason for this.

As an introduction to a local garlic-producing village, this chapter first traces the brief history of Dong Pa Sak Village of Chai Pra Kan District: since the time when it was a frontier for people in Chiang Mai Valley before 1950s until when it became one of the highest garlic producing regions in Thailand. Second, it illustrates the way garlic production and its labor process with a special mention to traditional femininity in terms of the labor used. Third, it introduces related local actors in this thesis, discusses diverse backgrounds of farmers, and leads to their multiple responses to trade liberalization even among the small-scale garlic producers. Lastly, as one of the reason why Si Dong Yen farmers persist in garlic production, it illustrates that garlic is a high-risk, high-return crop that farmers are reluctant to give up despite losses of some years in comparison to other alternative, popular crops in the region.

3.1 Chai Pra Kan District: From Agricultural Frontier to Garlic Production Village

Dong Pa Sak Village, Si Dong Yen Sub-district, Chai Pra Kan District, northern Chiang Mai Province, where I conducted my research, is about three hours or about 120 kilometers north of Chiang Mai City by car along the Route 107. When coming from the Chiang Mai City I pass through a mountainous area including famous mountain for tourists, Doi Chiang Dao, I instantly recognize that I entered the plains in Chai Pra Kan District. After about five hour drive on the Route 107 that goes straight for the north from the end of the mountain path, I turn left and enter a narrow street. Along the street is the main part of Dong Pa Sak Village, and the other side of the Route 107 is Si Dong Yen Village of Si Dong Yen Sub-district. There are 18 villages in Si Dong Yen Sub-district, and four sub-districts in Chai Pra Kan District as of 2008. There are 413 households in the Dong Pa Sak Village as of 2008[1], and the vast field spread southern part of the village[2], adjoining crop fields of Dong Village in the west and the south.

Today's Dong Pa Sak Village or any village of Si Dong Yen Sub-district appears as a well-developed village, but the elderly of the village say that the village scenery is not like it was 50 years ago. It is said that the area of today's Chai Pra Kan District was only vast, arable land with very small population before 1940s or 1950s. In the 1950s and 1960s, many people from Lamphun Province, the south of Chiang Mai City, from some parts of Chiang Mai Province, and from some other region immigrated for Chai Pra Kan and Fang District, or so called the frontier districts, looking for the new arable land and better livelihood (Anan, 1984: 67, 75, 218; Bowie, 1988). Immigrants from Lamphun said that agricultural condition was very bad in Lamphun at that time mainly because of hot weather and lack of water. Thus, not only landless people, but also some farmers with land also sold land in Lamphun and

[1] Source: The village headman of Dong Pa Sak Village in 2008.
[2] According to the village headman, there were about 2.56 square kilometers (about 1,600 *rai*) of crop field in Dong Pa Sak Village.

moved for Chai Pra Kan, because they heard that Chai Pra Kan or Fang held enough, good arable land and water. When people left their original place, not only one family but also their relatives and friends got together and migrated. Some people went to see the new place first and since it seemed good for agriculture the rest of the family followed. Landless people were still landless even after they immigrated if they did not have money to buy land, but since Chai Pra Kan seemed to have more labor opportunity in agriculture, they migrated as well.

Before the 1960s, there were small levels of garlic production in Si Dong Yen Sub-district. Farmers mainly grew rice for their own consumption. Many grew local corn for feed and tobacco. Others grew longan or litchi. Those who did not have land made charcoal, bamboo crafts for sale. Many interviewees told me that they did not buy any food except for pork at that time. They could pick up some vegetables or leaves from around house and field and could catch river crabs or fish from the stream near the village. Because of water pollution from agricultural chemicals fish are not available today. Even the pork, one person cherished a memory that she could buy enough pork for 12 family members at one baht, in comparison with 25 baht of fried pork which could be shared among four family members today.

The way I explained the region seem nearly self-sufficient community at that time. However, many people reported that they worked as agricultural wage laborers. For example, one person explained that as a side-work of rice production in dry season she and her family worked in cabbage, onion and potato fields. In Chiang Mai valley, agricultural wage labor is reported to have appeared after 1920s, and it increased gradually (Anan, 1984: 217). However, around in 1940s, the increase of wage labor form led to resistance among laborers who “found themselves in a precarious situation to live on the fluctuating wages alone” (Anan, 1984: 230). Although Anan (1984) suggests that this also resulted in a migration of landless people to the Fang and Chai Pra Kan Districts, it is important to note that many of migrant laborers who escaped from unstable wage labor systems in Chaing Mai valley again became wage laborers in their newly settled land. Thus, the wage labor has increased in Si Don Yen region in 1950s, and I confirmed its existence in 1960s,

where the amount of wage was about seven or eight baht for woman.

Despite the expectation for new agricultural frontier many farmers often lost money on rice production in the area of current Dong Pa Sak Village[3], so they began to change from rice to vegetable fields including feed corn or litchi and orange orchards. However, vegetable productions were sometimes poor as well. Tobacco production was not good either. In the meantime, garlic and shallot production have appeared as good cash crops and increasingly gained in popularity. Knowledge of garlic production mostly comes with migrant farmers from Lamphun area, people known as Yong. Yong people used to cultivate garlic and shallot since they lived in Lamphun, where garlic yield is also high along with Chiang Mai Province today. Concerning garlic production in Lamphun area, Calvan (1977: 118, cited in Anan, 1984: 297) reports about high chemical use in garlic production during the 1969-1970 at San Sai Sub-district, Saraphi District of Chiang Mai Province, which is adjacent to Lamphun, but from this data, I know that garlic production was already popular in 1960s in the area. Furthermore, there are also reports that cultivation of four kinds of cash crops – soybeans, peanuts, garlic and tobacco – have increased as a second crop in rice field after rice harvest between 1960 to 1965 in the villages in the suburbs of the Chiang Mai City. Chai Pra Kan seems to have slowly followed the same trend of Chiang Mai valley.

"Si Dong Yen is the right place to do research for garlic." This was the first word of the village headman of Dong Pa Sak Village when I visited him and introduced myself as a student who was conducting a research of garlic production and farmers' livelihood. According to the several field interviews, garlic production became popular and enlarged in Dong Pa Sak Village or Si Dong Yen Sub-district since somewhere in 1970s or the beginning of 1980s. In 1970s, many farmers began to plant garlic, and yet, the level of its production was not the same as today. Most of them cultivated less than 1 *rai*. In the 1980s, through structural support farmers enlarged garlic planting acreage to more than 1 *rai*. Following this, the Bank of

[3] I heard about this directly from the current Dong Pa Sak villagers, but as long as I observe, the situation of other villages in Chai Pra Kan District would be similar.

Agriculture and Agricultural Cooperatives of Thailand or BAAC also came to support farmers mainly in terms of funding. The fund from the BAAC was important for garlic production at that time, because the cultivation of garlic already required the highest capital inputs, averaging 732.40 baht per rai, with high input of fertilizers and insecticides in comparison with other crops in the beginning of 1970s (Benchavan, 1975, cited in Anan, 1984: 276). In the meantime, Chai Pra Kan became one of the most garlic producing district in Thailand.

The process of physical feminization with respect to agricultural workers has taken place in many villages across Northern Thailand, partly because male villagers decide to work on construction sites in urban areas in pursuit of better wages (Ritchie, 1996), while the middle-aged women stay at home, working in the agricultural fields. I expected the same phenomenon in Dong Pa Sak Village, however, prior to trade liberalization, the feminization process within the garlic producing village was less pronounced, mainly due to the suitability of the region for farming activities; with plenty of water and with land suited to garlic production as well as other forms of farming, and with the male villagers able to make enough money to support their family through these activities.

The region's main crop cultivated in recent years is garlic, however farmers also grow crops such as chilies, shallots, litchi, potatoes, tomatoes, cabbages and other green vegetables. Tobacco used to be grown there to some extent in the past, but it is not seen today I observed. Rice was not cultivated either in the field of Dong Pa Sak Village, although some Dong Pa Sak villagers hold rice field on the west of Dong Pa Sak Village across the Route 107.

As a result of the prosperity in agriculture many male villagers engaged in farming activities, with women helping the men or working as co-workers, and with landless farmers working for them on a daily wage basis. Furthermore, garlic has been grown agricultural off-season in Northern Thailand (between November and March). Therefore, they did not have to find other off-farm work during that time, and this may be one reason why the Dong Pa Sak farmers were able to stay on the farm.

3.2 Labor Process in Garlic Production and Its Femininity

Garlic cultivation in Dong Pa Sak Village begins in September when female farmers begin to break garlic bulbs into cloves at each home to use as seeds for planting at the field in October. Most of the garlic bulbs for seeds are brought from Mae Hong Son Province, the neighbor province of Chiang Mai on the west, though some farmers might use their own garlic from last year to save costs. The reason Dong Pa Sak villagers buy Mae Hong Son garlic is according to Dong Pa Sak famers the quality is better. For example, from appearance the Mae Hong Son's garlic bulb is a little larger than in Dong Pa Sak. In addition, when it passed three to four months, the weight of dried garlic of Dong Pa Sak Village usually becomes one-third of the original, fresh one, while the weight of dried garlic of Mae Hong Son stays at half of the original weight. The more weight it keeps, the more juice it contains, and thus, it is regarded more delicious. When the Dong Pa Sak villagers use the Mae Hong Son garlic, their products are bigger and heavier than the case they used Dong Pa Sak garlic as seeds. Thus, the Dong Pa Sak farmers prefer buying Mae Hon Son seeds, even though they had to invest for it.

To break garlic bulb into cloves is mostly a female job, thus garlic-related work appears to be a feminine space. The garlic bulb seeds are prepared about 500 kilogram per *rai*, calculated that they become about 130 to 150 kilogram of cloves when they have been broken. It takes about several days to a week to break all garlic seeds for a few *rai*, depending on how many people working for breaking of garlic. To break garlic is normally done with family labor in the case of small-scale garlic farm family, while middle- to large-scale garlic farmers such as more than 6 *rai* often outsource the job to neighbor farmers who work for wages.

Preparation of land is done little by little for a week until garlic planting day. For example, the farm family of Mr. Mart and Mrs. Phin was planning to plant garlic on 13th October 2007. They rented two and half *rai* of land, the same plot with the former year. The chili trees have just pulled out from the land in August, after finishing bearing fruits. Since then, the land has been grubbed little by little by Mr.

Mart. He cultivated the land on a day before planting garlic, hiring a few male labors. Then, Mr. Mart carefully sprayed herbicide on each ridge, which is a male job. The garlic seeds, which were broken by women in advance, were kept at a cool place after being soaked in water about an hour.

October is the garlic planting season in Dong Pa Sak Village. When I go to the field, I come across farmers' planting garlic at several field plots (Figure 3.1). Garlic production requires intensive labor in planting and harvest. For harvest, if a farmer wants to harvest their crop in a day, most kinds of crops require intensive labor on that day, such as 10 to 20 per *rai*, depending on the time they can take. However, garlic needs intensive labor for planting as well, which is different from some green vegetables that simply sowing seeds from the above. It is said that about 12 farmers generally work together to sow 1 *rai* of land with garlic, which means four ridges are planted at one time. In other words, as there are eight to 10 ridges per *rai*, each group of a couple of farmers has to plant two to three ridges, and can finish one *rai* of land in three hours. The work that can be completed about in three or four hours is regarded 'a half day work' in Si Dong Yen region, and is paid 60 baht for women as of 2007. If the host hired 12 people for two *rai* of lands, it is regarded one-day work, and shall pay 120 baht per person.

In the case of Mr. Mart and Mrs. Phin's field on 13th October, 25 workers began to plant garlic before seven in the morning. Seventeen female laborers were planting garlic, while another six men were covering the ridge planted garlic with the straws, in addition to the two hosts. The scene of planting garlic is quite similar to rice planting. In this case, 17 laborers took about five hours (without rest) to finish 2.5 *rai* of land.

Figure 3.1 Garlic planting in Dong Pa Sak Village.

Today, the labor for both garlic planting and harvest is mostly covered by wage labor, although some of it is done by traditional exchange labor where relatives and some intimate neighbors help each others' work in the fields. The custom of hiring wage labor for garlic production began to be popular since the 1980s, around the time when garlic farmers began to enlarge his/her own garlic field to more than a few *rai* in Dong Pa Sak Village. Farmers say that they can cover works for garlic production by family and exchange labor if the field is 1 *rai* or so, but that they need

to hire wage labor if garlic field is larger. As another reason to hire labor, another person explains that if they try to cover the labor by exchange labor including relatives and close friends, they have to wait for many days until all people are available, and this takes too much time. It does not fit modern agricultural system, where farmers are also pressed for time every day. Thus, the utilization of wage labor by small-scale farmers would have also become prevalent these days.

The shortage of labor in planting and harvest season still remains even though garlic growers hire wage labor. It is because most of farmers in Dong Pa Sak Village or Si Dong Yen region are cultivating garlic, and all of them need to plant or harvest garlic in October and in the next February respectively. Even though Si Dong Yen region is the region that has a high population of wage laborers the demand of labor concentrated in a certain month can cause shortages. Thus, garlic farmers need to reserve their labor in advance for planting and harvest seasons. These days, if they could not find Thai local wage labor, they may hire migrant labor instead.

Soon after female farmers' planting garlic seeds in the soil, male farmers put straw on the soil and cover it completely. After all laborers left the field by a pickup truck, the garlic growers water the garlic. Over a four months period after planting till harvest, farmers usually water garlic twice a week, put fertilizers, and spray herbicide about once a week. These are male job, and in the case of Mr. Mart, since his work is specifically this garlic production in this season, and his field is only two and half *rai*, he did these activities alone without hiring any labor. However, if the field size is larger than this, or somebody grows various crops more than garlic at the same period, they often hire male wage labor to water garlic or spray chemicals. Weeding is female job. But due to the usage of chemicals, they only need to weed once a month or so. Four to five laborers are necessary even for the 2 *rai* of the land plot. Thus it is covered by hired labor or exchange labor.

The ways and processes to grow garlic in the past and today have changed slightly in the amount of agricultural chemicals used and the yield of the crop. In the past, fertilizer was applied only once. The bulb was small in comparison with today, yet it was strong. Today, herbicide is put every five to seven days, in addition to

several times of fertilizers. Because of the improvement of fertilizers, not only the bulb became bigger, but also yield increased from 1,500 kilogram per *rai* to 5,000 or even 7,000 kilogram per *rai* today. Increase of the yield means increase of the sale, although at the same time investment cost had naturally increased.

In the case of Mrs. Phin's and her husband they planted chili seedlings in line at the center of the each garlic ridge just one month after garlic plantation, as is often the case in Dong Pa Sak garlic farming. The chili trees grow gradually along with garlic, become 30 to 50 centimeter high upon garlic harvest, and began to bear fruits a few months after garlic harvest. Thus it goes well with garlic in terms of crop growth cycle.

February is the busiest month of a year in Dong Pa Sak Village. Mr. Mart and Mrs. Phin harvested their garlic on 6th of February 2008. The garlic growth period is basically four months. Farmers decide harvesting day, observing the color of garlic leaves. They harvest garlic after the leaves became yellow. After harvesting Mrs. Phin's field, on 12th was the harvest of Ms. Sri's field, a younger sister of Mr. Mart, and on 14th was the harvest of Mrs. Wan's field, another sister of Mr. Mart, all of whom were in the same 'exchange labor group.'

The garlic harvest on the 12th of February began about at eight o'clock. The laborers totaled 12 including relatives and close friends: five men and seven women (Figure 3.2). Usually people worked together as a group and not alone. People were enjoying talking about a wide range of topics from the price of garlic this year and increase price of chemicals and their children's school. In the meantime, a young man began to collect the garlic, which was left at random on the ridges. He put them in order on the ridge so that garlic would be able to get dry. Since garlic should not get sunshine directly on drying, it was covered by its own grass or straw. They would dry garlic for three to five days on the field and sell or carry it to storages. There are two ways to dry garlic after harvest. One is to dry at the field, another is to carry the harvested garlic to home or somewhere and dry there.

Women pull out garlic.

Men tie up and carry garlic.

Figure 3.2 Garlic harvest in Dong Pa Sak Village.

At 11 a.m. all farmers took a rest and had lunch at the hut. Lunch is usually provided by the host, garlic growers in the case of hiring labor in this case, but the workers of that day were exchange laborers, and thus the lunch was prepared by each person, and they shared their food. For the afternoon work, about 30 wage laborers also came. So the number of laborers became 43 people in total for 2 *rai* of land. Mrs. Sri said that they actually wanted to hire labor since morning, but since she could not find available labor, she hired labor only afternoon as a half-day work and hired more people than average. Harvesting garlic takes more time than planting garlic. At three p.m. they finished the harvest completely, and all hired workers went home by a pickup truck soon after they finished. I was surprised to see that people left the field without talking or greeting each other. On the left field were there the harvested garlic lying down under the grasses and trees of chili that were planted between garlic. When wind blew, it smelled garlic.

Garlic is usually dried on the soil for three to four days after harvest. Thus, the harvested garlic on 12th February was planned to be collected on 16th, four days after harvest. However, the weather forecast on 13th said that it might rain on 15th. So Ms. Sri and her relatives suddenly decided to collect garlic and bundle it in the morning of 15th. According to them, the garlic was pulled out and has been put on the soil already for three days. So it already became dry. Then, it is not good if garlic gets wet at this stage. Usually, farmers want about 10 workers to tie up garlic from 1 *rai* of field in half a day, but since Ms. Sri changed the date of work, she could not find any worker except for 11 people (six women and five men) from her exchange group.

Farmers use a thin bamboo string to make a bundle of garlic. When a certain number of garlic bundles were made, men began to collect bundles of garlic, carry, and load them on the pickup truck while women continued bundling. Starting at 7.30 in the morning women finished tying the garlic into bundles at 14.30, helping the men to carry garlic to the truck. The small truck made three round trips in total after all, carrying about 3,000 kilogram of garlic at one time, from the field to Ms. Sri's warehouse in her house plot.

Bounded garlic is usually sold directly to the garlic traders in the field on the

day of binding. But since the price of the garlic was extraordinary low in February 2008, Ms. Sri decided to take time by hanging and storing garlic at her home like that. After all, she sold her garlic in May 2008 at a price that does not bear any profit.

Lastly, I would like to summarize the gender division of labor within garlic production (Table 3.1), garlic production activities traditionally represents a largely feminine sphere with women actively involved in pre-cultivation activities of preparation of the land and seeds, planting the seeds or seedlings, watering the plants and harvesting, while male co-workers helps in terms of preparing the land in advance and also with carrying the seeds or seedlings on the day of planting. Spraying

agricultural chemicals onto the crops is exclusively a man's job, because according to the farmers, it is heavy work which women cannot do, however, the subsequent weeding activities are carried out by the women. The harvesting of the garlic is also a women's work, though men play a role in carrying the harvested crops to pick-up trucks – as this is also a heavier job physically. The information on the gender division of labor was taken from interviews with the farmers and from

	Women	Men
Preparation	To break garlic into pieces to use as seeds (It takes 3-4 women for 3-7days, working 2-3 hours per day).	To prepare field, cultivate land (1 man).
	To look for labor	To look for labor
Planting (October)	To plant garlic (12 women).	To cover field with straw (3-4 men).
Watering	To open water tap (1 woman)	To water to the plants. (1 man)
Chemicals and fertilizers input	-	To spray chemicals and fertilizers (1 man).
Weeding	To weed (3-4 women).	-
Harvest (February)	To harvest garlic. (10-20 women. Male wage labor may join this.)	To harvest garlic (A few men from garlic growing family, no wage labor).
	To bundle the garlic (5-8 women).	To carry garlic bundles to the truck (4 or 5 men).
Wage	US $3.8 per day. Women's wages are lower because women's work is regarded as lighter.	US $4.5 or 4.8 per day.

Notes: Number of workers is for one *rai* of garlic field if not otherwise specified.

Table 3.1 Gender division of labor in garlic production.

observations in the field. However, the fact that this gender division of labor had hardly changed since the 1980s is confirmed by the research report of Benchaphun *et al.* (1987: 43-50).

Looking at the garlic farming process in this way, male and female farmers tend to work together on all of the processes - in an egalitarian way. In fact, activities within the farming system in Thailand have traditionally been quite egalitarian in nature (see Earth, 2008). However, when I view the garlic production process in terms of the number of workers used, women outnumbers men, with the use of female labor particularly prominent during the post-harvest processing activities. As a result, it can be said that the garlic production process as a whole has been quite "feminine" in nature, though, as I explained before, men continued to carry out agricultural work in Dong Pa Sak Village to a greater degree than in other regions, partly due to the prosperity brought in by garlic.

3.3 Diverse Actors in Small-scale Garlic Production

According to my household survey in April 2008 (Table 3.4), among 242 households (about a half of Dong Pa Sak Village), a primary wage earner of 103 households or 48 percent were engaged in farming. Among them, 83 farm families engage in garlic production, only 17 farm families are non-garlic farm families, as well as three dairy farm families. In addition, the number of people who are a main provider of a family and mainly work as agricultural wage labor is 67 people or 28 percent of total households, which occupies a significant proportion. In regard to non-farm families, 12 households or five percent of income earners engage in construction work, 37 households or 15 percent gain an income from various other works such as school teacher, running a grocery store and 23 households or 10 percent are composed only of elderly and retired.

The categories of the people who engage in garlic production in Table 3.2 are those in the 'farming (garlic and others)' sector and in 'wage labor.' They are actors as farmers or laborers in garlic production, and it accounts for 62 percent of the total

	Number of People	Ratio (%)	Additional off-farm work
Farming (garlic and others)	83	34.3	17(6)**
Farming (except garlic)	17	7.0	0 (0)
Dairying	3	1.2	
Wage labor	67	27.7	
Off-farm work (exclude construction)	37	15.3	
Construction	12	5.0	
Retired	23	9.5	
Total	242*	100.0	

Notes *: 242 households who live along village main street were selected from total of about 400 households in the Dong Pa Sak Village.
Notes **: The number provided in parentheses is the one of farmers' partners who engage in off-farm work. It is already included in the number outside parentheses.
Table 3.2 Occupation of a main supporter of each household in Dong Pa Sak Village.

households. Since the category of garlic farmers includes all scale of farmers, I would like to bring another data about garlic production size of farmers (Table 3.3).

Table 3.3 shows the number of farmers who cultivated garlic in Dong Pa Sak Village in 2007/8[4] and their garlic production size. It bases on the one that Dong Pa Sak farmers reported at the village headman office as a part of new systems started after trade liberalization. In this work, I defined small-scale garlic farmers as those who cultivate less than 5 *rai* of land. Therefore in the table, I divided farmers by their garlic planting area size, and named a group of farmers who cultivate less than 5 *rai* is a small-scale garlic farmer; those who cultivate from 5.1 *rai* to 20 *rai* is a middle-scale garlic farmer; and those who cultivate more than 20.1 *rai* is a large-scale garlic farmers.

[4] I put the year of a certain garlic production in this way (e.g. 2007/8) because the garlic cultivation season is from October or November to February or March of the next year (Production period is approximately 4 months). Thus, the garlic of the year 2007/8 indicates the one planted in October or November 2007, harvested February or March 2008, and basically sold in 2008.

	Planted area size (rai)	Number of farmers	(%)
Small-scale garlic farmer	0.1-5	73	62%
Middle-scale garlic farmer	5.1-10	33	28%
	10.1-15	6	5%
	15.1-20	3	2%
Large-scale garlic farmer	20.1-25	2	2%
	25.1-31	1	1%
Total		118	100

Source: Village headman in Dong Pa Sak Village.

Table3.3 Number of garlic producers and their planted area size in 2007/8.

The total number of garlic farmers who registered at the village headman's office in 2007/8 is 118 people in Table 3.3. Among them, I can notice that the small-scale garlic farmers' category is a largest one, occupying 62 percent of the total. If I add the smallest cultivators in the middle-scale groups, that is those who cultivate between 5.1 *rai* to 10 *rai*, to the above rate, it occupies as much as 90 percent. This means that garlic production scale in Dong Pa Sak Village is mostly small one. This small size of the scale in garlic production stems from high investment cost and necessity of intensive labor, and its feature is traditional and is common in the whole Thailand. Therefore, it can be said that the small-scale garlic farmers are important producers of garlic in Thailand.

Although this work calls farmers who cultivate less than 5 *rai* of land for garlic as small-scale garlic farmers, this size of garlic cultivation are not equal to their landholding size. It is because some of them plant garlic only a part of their land plots while growing other vegetables for the rest of plots; or on the other way around some grows garlic more plots than their own landholdings by renting fields. However, what is often the case is that when a farmer's garlic production level is small, his/her total landholding is also comparatively small. Furthermore, there are also farmers who do

not own their field but cultivate garlic on the rented land. These landless farmers are also included as small-scale garlic farmers in this work if their scale of cultivating garlic is less than 5 *rai*. One reason that land ownership does not necessarily reflect their garlic production scale or eventually farmer's livelihood status is in easiness to access to land in today's Si Dong Yen region. Since the nature of soil is also related to the outcome of garlic production, it is also important the place where farmers own field. Furthermore, it is usually important to consider off-farm income as a deciding factor that makes possible to continue farming (Kearney, 1997). From the data in Table 3.3, one quarter of the farm families are associated with off-farm work. Therefore, the small-scale garlic farmers reveal not a homogeneous but a diverse nature.

While the small-scale garlic farmers are diverse, their reactions to the market structural change also vary. After trade liberalization, there are landless farmers both who gave up garlic production by their own and became wage labor, and who continued cultivating garlic. Some landless farmers even make enough money through garlic production to newly buy farm land. Among smallholders there are also those who stopped garlic production completely, changed to other crops or became wage labor; those who decreased garlic production level, added some new crops such as potatoes with a contract form, while enlarged their work into off-farm ones; and those who persisted in garlic production as usual. As is the case with popular understanding of garlic farmers' destruction in Thailand, I have also expected many of their disappearance before I enter the village. However, the cases that farmers completely ceased garlic production were not observed much in Dong Pa Sak Village as of 2007 and 2008, but each farmer has reduced their cultivation size, which led to decrease of level of production as a whole village. The garlic farmers' various responses toward trade liberalization are discussed in detail in the following chapters of this thesis with analysis of the reasons of their actions.

In addition to garlic growers, agricultural wage laborers are also crucial actors in garlic production. Farming in Northern Thailand today, especially garlic production which requires the intensive use of labor, is mostly covered by daily wage laborers,

comprised of poor, landless farmers who work everyday, of women farmers who work on neighboring farms or for agricultural processing establishments whenever they have time – as a second source of income after taking care of their own fields, and of migrant workers from Myanmar. In addition to this, there are also voluntary, unpaid women who help with work on the family farm, plus other unpaid laborers such as children, who help their parents when they have free time from school or other jobs.

The way to find labor is systematic in Dong Pa Sak Village. Instead of going to find labor by his/herself, the farmer simply contacts a so-called 'labor leader'. Then, the leader tells them that the labor is not available this day because this person will plant garlic, or not that day because that person will plant it. They tell the leader how many laborers they need on what day; such as 20 women and six men on next Tuesday. Then, the leader finds people for them and the farmers need to pay two baht per laborer (as of 2007), which was up from one baht a few years ago. There are a couple of labor leaders in Dong Pa Sak Village, and also are a couple of labor leaders in Si Dong Yen Village, next to Dong Pa Sak.

All labor leaders whom I met are women. They are young to middle aged women, who are living in the local village. They are not a leader with authority, but rather a person who is popular among neighbors because they work actively. Each leader has 40, 50 or more laborers who know of, and can go to ask about the will to work for the particular job of the particular day. Their role is to coordinate laborers, and sometimes needs to use mobile phone or motorcycle to contact labor or the employers.

Although the effective system of wage laborers indicates the importance of them in garlic production, yet their position is vulnerable and deteriorating more after trade liberalization. The detail of this is discussed in Chapter 5.

To conclude, even though the garlic production in Northern Thailand is mostly conducted on small a scale, the actors who are related to it are diverse, and their reactions toward trade liberalization in practice are also various. This shows "multiple trajectories" of agrarian change not only by the region (Hart, 1997), but also even within the single village.

3.4 Garlic: High Risk, High Return

Many of small-scale farmers in Dong Pa Sak Village continue or come back to and continue garlic production despite unfavorable trend in the market. In this section, I would like to show how garlic is an attractive crop for farmers in terms of economic interest despite its risk.

Besides the suitability of the climates and soil for growing garlic in Dong Pa Sak Village, the reason why the farmers stick to garlic production is the large profit at one time when its production condition is good, in comparison with other vegetables or fruits. The average cost of garlic production is around 20,000 baht to 25,000 baht per *rai* although this has been increasing to even 30,000 baht in 2009 and 2010 due to the rising price of agricultural fertilizers and chemicals. The breakout of the costs of a certain farm family in 2006/7 is shown on Table 3.4, although the cost differs individually, because some farmers may need to rent a watering machine, to hire labor for preparing land, weeding, spraying chemicals, and to buy more

Item	Detail	Cost
Garlic seed	13B./kg X 500 kg/*rai* (buy garlic bulb of Dong Pa Sak Village)	6,500
Fertilizer	600B./sack X 4 sacks/*rai* (about one sack a month)	2,400
Agricultural chemicals	500B./tank X 5 times (about one tank a month)	2,500
Gasoline for watering machine	15B./time X 8 times/month X 4 months	480
Labor (planting)	12 women X 120B. + 5 men X 150B.	2,190
Labor (harvest)	20 women X 120B. + 4 men X 150B.	3,000
Fee for finding labor	2B. X 41 laborers	82
Land rent	1 *rai*	3,000
Rent car to carry labor	250B. X 4 times	1,000
Rent car to carry harvested garlic	300B. X 1 car (Use a car of relatives for free)	300
Total		21,452

Table 3.4 Garlic investment cost of one farmer in 2006.

expensive garlic seeds.

The sale of garlic also differs depending on the year and the individuals. In the case of above farm family, their garlic sales of the years from 2005/6 to 2009/10[5] is shown in Table 3.5. According to the Table, in the worst year of 2007/8, their

Year	Sales per *rai*	Cost per rai	Profit per *rai*
2005/6	60,000 baht	20,000 baht	40,000 baht
2006/7	40,000 baht	21,000 baht	19,000 baht
2007/8	20,000 baht	25,000 baht	- 5,000 baht
2008/9	40,000 baht	25,000 baht	15,000 baht
2009/10	60,000 baht	28,000 baht	32,000 baht

Table 3.5 One farmer's garlic profit.

production cost was 5,000 baht more than their sale, and they lost. But for the best years of 2005/6 and 2009/10, they could make a profit of 30,000 baht to 40,000 baht per *rai*. In fact, many other farmers could make a better profit in 2006/7, but for this year, according to the farmer, she bought a garlic seed of Dong Pa Sak Village, which was cheaper, not the Mae Hong Son's variety, where most of Dong Pa Sak farmers including her usually purchase good seeds. Thus her yield was only 3,000 kilogram per *rai*, 2,000 kilogram less than average yield of 5,000 kilogram in recent years. They were a small-scale farmer and grew garlic only on a two-*rai* field. If that is the case, for other farmers who grew more than 10 *rai* of garlic, they could earn as much as 400,000 baht in one season. In fact, one farmer, who I had an opportunity to talk with, told me in his face beaming with smiles that he newly bought a used car in February of 2007. When I asked about the garlic sale, he told:

> The sale of the last year (2006/7) was high. It was about 60,000 baht per *rai* while investment was about 25,000 baht. The cost includes seeds, fertilizers, chemicals, etc. The last year was very good. Thanks to it, I bought a car last

[5] For the way of writing the year (e.g. 2006/7), see the notes 4 of this chapter.

year. But this year, I have to return this car to the company.
(A garlic farmer in his early 50s of Dong Pa Sak Village, 14 November 2007)

He cultivated garlic on 6 *rai* of the land. He told the last sentence because they already estimated that the next years' price of garlic would be low, and he would not be able to make a profit. When he said this, he was smiling despairingly.

Potatoes and other crops

Profit from other cash crops per *rai* were often much smaller except for potatoes among popular vegetables in Dong Pa Sak Village. Examples of profit by other crops are shown in Table 3.6, which I made based on the data I collected from Dong Pa Sak villagers in 2007 and 2008. In Dong Pa Sak Village, as I showed in Chapter 2, potatoes became especially popular among Dong Pa Sak farmers after garlic acreage reduction as a result of trade liberalization. It became quickly popular introduced by the government and the contract company, and its yield and profit was also mostly acceptable for them, although there were also those who tried its production for a few years, who lost money, and gave up. Many farmers, who came to regularly produce potatoes, not only produce potatoes, but also produce garlic whether in the same field or different one. Garlic is a crop that needed a lot of

	Sales per *rai*	Cost per *rai*	Profit per *rai*	Average profit per *rai*
Potato	33,750 baht*	19,000 baht	14,750 baht*	15,000 - 20,000 baht per year
Sweet corn	6,900 baht per time*	1,000 - 1,500 baht per time*	5,500 - 6,000 baht per year*	5,000 - 7,000 baht per year
Popular green vegetables	n/a	300 baht of seeds per time and 3,500 baht of land rent fee per year	n/a	5,000 - 10,000 baht per time

* These are data from Mr. Kiat. Others are average from the data of several farmers.

Table 3.6 Cost and profit of other crops.

investment, but its returns are also big when successful, and potato is also similar.

Concerning labor in potato production, for the planting, only four to five laborers, mostly women, are required for 1 *rai* of plot. Thus, the number of labor is smaller than garlic, which needs 12 to 15 women, in general. However, for harvest, potato also required intensive labor. For today's potato production, the potato growers mostly use a car to dig up potato. After that, women collect the potatoes, sort them by size and put into the sack or baskets. Men carry them to the track, which is much heavier than garlic. Since they need about 10 workers to harvest potato per *rai*, the number of labor did not exceed garlic harvest, yet it can be also said that they needed a lot of labor in comparison with other cash crops. Since its production is covered by wage labor, the cost for labor is expensive. In addition, potato required more fertilizers and chemicals than garlic. Thus, the investment cost of potato is as high as garlic.

Although potato production needs a lot of investment, it also brings satisfactory profit, though not necessarily for all. According to Mr. Kiat, who actively produces various kinds of crops in Dong Pa Sak Village, the yield of potato in 2007 was 2,700 kilogram per *rai*, which brought sale of 33,750 baht per *rai*. Since the investment cost of that year was about 19,000 baht, the profit was about 14,750 baht per *rai* (Table 3.3). Even in comparison with other crops, he was satisfied with the profit of potato, partly due to the price guarantee at 12.5 baht.

However, as I mentioned in Chapter 2, there are various kind of contract, and Mr. Kiat's case is only guaranteed the purchase price and he has to pay most of necessary cost by himself. This means that if there is no support for the investment, even under contract farming, those who can cultivate potatoes are also only the farmers who have certain amount of funds, just like garlic. A farmer told me that those who did not have money could not grow either potatoes or garlic. These two crops hold high thresholds of capital needed to start production.

After all, when I compare potato production with garlic production in Dong Pa Sak Village, both are equally profitable, although both have advantages and disadvantages respectively. They are equally high-risk, high-return crops as farmers

say. Garlic can make more money than potatoes when its price is good, but the sale by potatoes is stable because its price is guaranteed as long as its yield is good.

Besides potatoes various other crops are planted in Dong Pa Sak Village. I showed profit of other popular crops in Dong Pa Sak Village per *rai* in Table 3.3. Sweet corn production is also popular in Dong Pa Sak Village, and is mostly done at contract bases these days, particularly after trade liberalization. Sweet corn is cultivatable any season of the year, and it takes 67 days or 75 days to grow depending on the seeds. Mr. Kiat told me that a parent company of the contract let farmers rent seeds, fertilizers, and chemicals by credit at first, let farmers cultivated, and when farmers bring the harvested crops, it subtracts the cost from the sale, and pays money. The guaranteed price was about three baht per kilo in 2007 and 2008. But since the original investment cost of sweet corn is very small in comparison with garlic or potato, it is not subtracted much. In 2007, Mr. Kiat's yield per *rai* of sweet corn was 2,300 kilogram, and his sale was 6,900 baht. When the debt to the company including land rent fee, and wage for labor is subtracted, the profit is about 5,500 to 6,000 baht per *rai*.

The profit from other popular green vegetables such as kale or *phak khana*, tomato, cabbage, or chili, is also about 5,000 to 10,000 baht per *rai*. Most green vegetables or others are planted individually, not through contract farming like potato or sweet corn. They are cultivated based on each farmer's taste, on their experience, or on their friends' advice. Like sweet corn, most of vegetables do not require much investment cost including only 300 baht of seeds per *rai*, but the sale is also small. A farmer told me that those who did not have so much fund, could not grow potato or garlic, but that grew vegetables.

Profit from chili is not high either, but it was popular in Dong Pa Sak Village, because it can be planted between the garlic of the garlic field one month after garlic planting. Farmers begin to pick up chili a few months later of garlic harvest, and continue for a few months. In other words, garlic farmers can utilize empty space of the garlic field in a better way.

Rice production is not seen much in Dong Pa Sak Village today. Most farmers

said that their parents used to grow rice. However, since the yield is not good, they changed from rice to other vegetables, and then to garlic. Although the rice production is not recognized in the garlic fields of Dong Pa Sak Village today, there are a few Dong Pa Sak farmers who cultivate rice. For those farmers, they hold rice fields on the east side of Route 107 of the Dong Pa Sak Village or other village in Si Dong Yen Sub-district. One farmer, with whom I talked, said that she cultivated rice for self-consumption, not for selling.

When comparing the work in garlic field and rice field, I guessed that the workload must be similar, based on my observation. However, one farmer told me that work for garlic was better:

> To grow rice is more tiring. Its work has more stages. After planting, we have to weed. After weeding, we have to ---. Several stages. --- For garlic today, after planted seeds, we wait for watering and sprinkling fertilizers. We don't have to do anything. But for rice planting, we have to do weed, put fertilizers… A lot of work. In addition, for rice field, we have to wade in the water field. So I don't like it. I feel lazy.
>
> (Mrs. Phin, a woman in her late 40s of Dong Pa Sak Village, 13 Feb 2008)

In terms of profit, garlic farmers of Fang District, the next district of Chai Pra Kan District, said that some of them grow rice as well and it was profitable in 2007. But I could not find any farmers who cultivated rice for selling in Dong Pa Sak Village.

From these examples, I can understand that the profit of garlic goes beyond the average profit of other agricultural crops. When Mr. San told us that his son had graduated from Chiang Mai University, we told him jokingly that he could send his child to the university by producing garlic. He replied:

> Yes, that's right. If I had grown sweet corn, I could not do that. For sweet corn, profit is only 6,000 baht per *rai*. But if garlic, the profit is 30,000 to 40,000 baht per *rai*. That is why garlic is our main crops. We can make a profit a lot.
>
> (Mr. San, a man in his early 50s, Dong Pa Sak Village, 14 Nov 2007)

This economic aspect is one important reason why Dong Pa Sak farmers persist with garlic production. To put it another way, it turns out that production of other crops besides garlic is not attractive for Dong Pa Sak farmers due to small profit.

In addition, being in a period of economic downturn for Thai farmers, it is also true that any other vegetables lack attractiveness for them today. For example, when some NGO staffs and I were interviewing garlic COOP in Chai Pra Kan District, somebody asked what farmers would grow instead of garlic. A representative of COOP answered:

> That is the problem. It's a big problem. When we gave up producing garlic, what should we produce? There are already farmers who grow potato, corn, peanuts, or everything. --- But everything has a problem when we send them to market. The price drops when we send to the market.
>
> (A representative of Garlic COOP of Chai Pra Kan District, 14 Nov 2007)

A female farmer, Mrs. Phin, who was a key informant for me during my field research, often complained that chili, litchi, or everything was cheap recently. After all, not only garlic but also the prices of other crops are somehow not good either. Thus, garlic farmers thought that even if they changed to other crops, there was no guarantee that they could make more profit. With an air of resignation, the farmers stayed with garlic as before.

Lastly, I would like to mention the situation of off-farm work in Chai Pra Kan District. Different from suburb of the Chiang Mai City, there are only three factories in Chai Pra Kan District: A factory of canned fruits in Si Dong Yen Sub-district, and other two factories in other sub-district including the one, what local people call, cold room. However, these factories are small-scale that hire less than 50 workers in comparison with a large-scale factory such as in next Fang District, that hires as much as 300-700 people in a peak season. I surveyed a half of village households in 2008, there was no one working at factories from Dong Pa Sak Village, but most of villagers are working in an agricultural field.

Being a high profit product, garlic is attractive crop for farmers. When cheap Chinese garlic came into Thai garlic market, the garlic farmers protested more strongly than those growing other crops, but the higher dependency on the garlic production of garlic growers without potentially reducing their labor opportunity in off-farm sectors may be one reason for it. But, since garlic production goes with high risk caused by its price fluctuation somehow, it is not easy for farmers, especially small-scale farmers with little savings, to depend their livelihood only on garlic production.

3.5 Conclusion

With the intent of understanding the local context of garlic production, this chapter described a brief history of Dong Pa Sak Village of Chai Pra Kan District that used to be an agricultural frontier up until mid-twentieth century. Although the knowledge of garlic production had been brought with pioneer farmers from Chiang Mai Valley and Lamphun region, yet it took a few decades until garlic is recognized as the best crop for the climates and soil of the region and its production as commercial crops became popular among farmers.

The main garlic season is only four or five months of the year from October or November to February or March. However, partly due to the high level of income dependency on garlic, the whole year activities of garlic farm family, including the kinds of off-season crops, are decided and carried out according to the work for garlic production. In addition, since one third of the village households produce garlic and all of them hang garlic under the shade in the yard of each house after harvest the whole village smells garlic in the harvest season. That fit to call the village the ‘garlic village.’

The labor process in garlic production traditionally reveals quite feminine sphere with the number of female labor exceeding the one of male labor in most of the process, in particular during the post-harvest processing activities. As a result of prosperity through garlic production, a ratio of full-time male farmer in the village has

appeared to be comparatively higher than other Northern Thai villages. However, presence of women in various stages of garlic production often wins a glance from people. The changing situation of the traditional femininity in garlic production will be demonstrated in detail in Chapter 6.

Even though this research focuses on small-scale garlic production who account for two thirds of total garlic production in the village, farmers or workers in the production are not homogeneous but diverse: landless farmers, small-scale landholders, those who engage in off-farm work in addition to agricultural wage laborers. Since actors are varied, their reactions to trade liberalization are also different with each other: with giving up garlic production completely, decreasing its production level, persisting in it, or being exploited as wage labor and so on. Garlic farmers' multiple ways of responses to trade liberalization are discussed in the following chapters.

As one major factor for Si Dong Yen farmers persisted in garlic production despite steep price drop after trade liberalization is in the nature of garlic production of high-risk and high-return. Garlic is a high-risk crop because it requires high investment cost to cover both intensive labor and intensive agricultural chemicals, while its market price tends to fluctuate. Yet, it is an attractive crop for farmers because it brings the best profit among all crops in Si Dong Yen region, if the price is good. As a result, farmers who adhered to garlic production until 2000s are better off than other villagers or other average farmers in Northern Thailand.

The Dong Pa Sak Village in Si Dong Yen Sub-district has prospered through garlic production within a couple of decades to such an extent that I can distinguish its comparatively better living standard. In view of their efforts to reach this stage, it is understandable that farmers of Si Dong Yen region would not easily give up garlic production, although their reaction depends on individual context. Garlic farmers' negotiation against trade liberalization is explored in the next chapter.