CHAPTER V

MIANG PRODUCTION SYSTEMS AT BAN PHADENG

5.1 Demographic Profile of Ban Phadeng

Ban Phadeng is located in Pa Pae sub-district, Mae Taeng district, Chiang Mai province. It is a village along Mae Malai to Pai district road. It was established approximately 100 years ago. From interview, *miang* has been the traditional crop plant where one can still find old *miang* tree in farmer plot. About 80% of the 115 households in Ban Phadeng engaged in *miang* production. Among the *miang* growing households 55% had their own land, 30% rented the land to produce *miang* and 15% was landless and worked as *miang* picker (Figure 5.1).

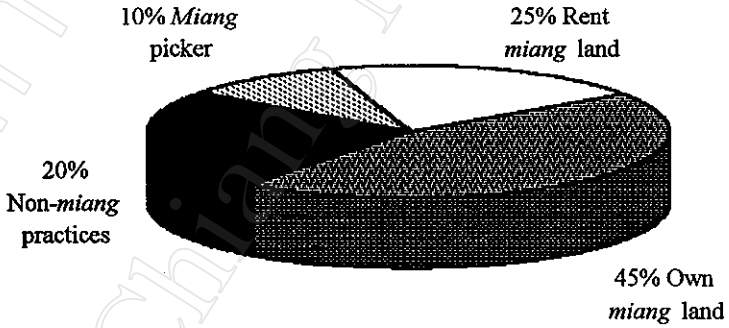

Figure 5.1 Percentage of *miang* and non-*miang* household at Ban Phadeng, Pa Pae sub-district, Mae Taeng district, Chiang Mai province.

5.1.1 Migration

About 37% of the sampled households were the migrants from the nearby districts such as Mae Rim and Doi Saket, only one household was from

Lamphun province. They moved to Ban Phadeng following their parents during 1940s to 1960s, or by marriage after 1970s. The village had already engaged in *miang* production.

5.1.2 Age

The majority of *miang* growers were of 41-50 years old (42%), followed by those 50-60 years old (32%) and those lower than 40 years old (21%). About 5% of the farmers were older than 60 years old and still based their living on *miang* cultivation.

The age of *miang* growers indicated that the people at Ban Phadeng had long accustomed to *miang* cultivation for over 20 years, and *miang* had provided equal opportunities for people of all ages to produce and trade.

5.1.3 Labour

The household members ranged from 2-5 peoples (3.58±0.96 people household^{-1}). The household which used all of members in *miang* production was 26% of the sample. However, the average of 69% (2.42±0.96 people household^{-1}) of household members engaged in *miang* production.

5.2 Structure of *Miang* Production at Ban Phadeng

5.2.1 History

Prior to 1982, *miang* production at Ban Phadeng was entirely controlled by the outside traders who set the price of *miang*, and provided loan in term of money, rice and the other goods to the *miang* growers. The traders handled all the marketing aspects. They bought *miang* from independent growers and

delivered to the shop in the city. The price at that time never exceeded 2 baht *kam*$^{-1}$. The borrowers, on verbal contract had to deliver processed *miang* to the traders. They received nominal price and could ask for advance in rice and other goods.

In 1982, the asphalt road was constructed to provide good communication and faster transportation. Many institutions were established such as Bank of Agriculture and Agricultural Co-operative (BAAC), co-operative in village, group of saving, etc. These institutions enable the *miang* growers to invest in vehicles for transportation and to seek their own market, thus increasing the process of independence from the outside traders.

5.2.2 Experience in *Miang* Production

Seventy eight per cent of the *miang* growers had engaged in *miang* business for over 20 years. All experienced growers began their career as *miang* picker. Those farmers who migrated from the lowland were mainly rice and field crop farmers. They gained their experience by working as *miang* picker. Since picking and processing has to be done in same day and the whole process is group working. The learning process did not take long time as the knowledge was passed from the experienced neighbours to the beginners.

5.3 Land Ownership and Land Tenure

The '*So Kho 1* (the right of possession)' is a formal certificate of land occupancy which is issued by Department of Land, Ministry of Interior. Although the land can not be sold legally, but it can be inherited. However, 5 of

sampled farmers bought from the neighbours illegally for *miang* production. The rest (8 farmers) inherited it from their parents.

Ban Phadeng is located within the forest area. Farming area is integrated in the forest on the hill slopes. Land holding varied a great deal, ranging from 0.32 to 11.20 ha household^{-1}, with average of 3.76 ha household^{-1} (Figure 5.2). Nearly all the land occupied by each household was used to produce *miang* averaging 3.54 ha of area per household.

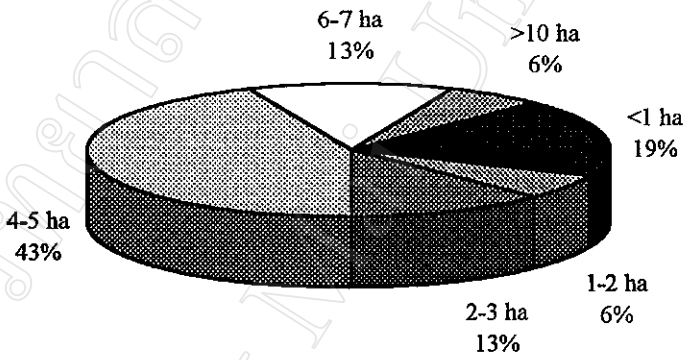

Figure 5.2 Percentage of household with land holding size at Ban Phadeng

Those who were large land owners would lent their land to the neighbours for *miang* production. The period of tenancy usually ran for several years. The rental rate depended on *miang* population, with higher plant density, the higher rental rate. Two types of rate were operating. The fixed rate ranged from 3,000-4,000 baht yr^{-1} for area of 2.4 to 11.2 ha. The floating rate varies according to productivity on the shared cropping basis, ranging from 30-50% between owner and operator.

5.4 Land Use

Most the of the *miang* land classified as slopping area, half is steep slope (>45% approximately) and the rest is less than 45%. *Miang*, fruit trees and forest trees were intermingled, the average density big forest tree in *miang* orchard was 58±38 trees ha^{-1} covering the 27 species (Table 5.1). The average density of *miang* plant was 1,132±1,228 plants ha^{-1}.

Table 5.1 List of tree species in *miang* orchard obtained from interviewing with 19 households at Ban Phadeng.

Species	Local Name	Frequency
Schima wallichii	Thalo	15
Castanopsis inermis	Ko Tamu	12
Chisocheton siamensis	Yom	11
Talauma hadgosonii	Champi Pa	10
Ehretia laevis	Kom	2
Dipterocarpus alatus	Yang Na	3
Shorea floribunda	Phayom	2
Alstonia scholaris	Tin Pet	3
Ficus altissima	Sai	2
Ficus spp.	Ma Dua	2
Duabanga grandiflora	Tum	4
Hopea odorata	Takien	3
Broussonetia papyrifera	Sa	1
Alstonia spathulata	Thie	1
Eugenia cumini	Wa	1
Mangifera spp	Ma Muang Pa	1
Maclura cochinchinensis	Kae	2
Pterocarpus macrocarpus	Pradu	1
Gmelia arborea	So	3
Glochidian daltonii	Khrai	1
Leea angulata	Mon	1
Michelia champaca	Champa	1
Homolium tomentosum	Puei	1
Litsea glutinosa	Mi	1
Elaeocarpus madopetalus	Makok	1
Lelanorrhoea glabra	Rak Nam	1
Melia azadirach	Lian	1

The regression analysis of yield of *miang* with density of forest tree in the orchard showed non significant relationship, but yield of *miang* and density of *miang* showed highly significant (Table b.1 in Appendix B). Therefore, tree density did not affect the *miang*'s yield but density of *miang* did so (Figure 5.3).

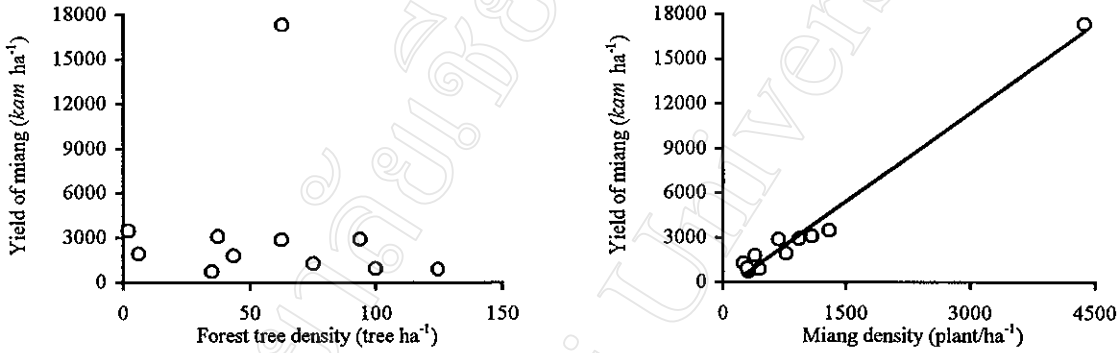

Figure 5.3 The relationship between yield of *miang* and density of forest tree and *miang*.

The farmer used some forest trees as fuelwood for steaming *miang*. The species that farmers always use were *Schima wallichii*, *Ehretia laevis* and *Castanopsis inermis*. They pointed out that these species had better coppicing ability. Moreover, there were many shrubs in orchard that could be used as fuelwood. However, availability of fuelwood was still a problems, particularly for those who rented the land.

5.5 Income and Cost of *Miang* Production

5.5.1 Income

At the time of study, the introduced fruit trees integrated with *miang* were not at the productive stage, the main income of *miang* grower, therefore,

came from selling *miang*. Besides selling *miang*, some farmers also worked as waged labourers as *miang* pickers and off farm activities (Table 5.2).

Table 5.2 Sources of income expressed in percentage and contributed households (n = 19).

Production	Percentage	Number of Households
Miang production	65.25	16
Rhetsa production	8.18	9
Green tea production	2.07	1
Fruit trees production	1.42	4
Labour in *miang* picking	4.12	4
Leasing land	0.63	2
Off farm income	18.34	14

The mean household income was about 68,679 baht yr^{-1}, of which two thirds was from *miang* production. The mean household incomes of *miang* growers and *miang* pickers were about 75,963 and 29,833 baht yr^{-1} respectively. Income of *miang* picker was only 40% of *miang* grower. However, *miang* picker had no investment cost.

5.5.2 Cost

The mean total household production cost for *miang* practice was 21,349 baht yr^{-1} which was around 30% of the mean annual income. The main cost (62% of the total cost) was labour (Table 5.3). The waged rate of picking *miang* in 1996 was 3-3.5 baht kam^{-1} Nine of sixteen households hired the labour besides family labour approximately 2-3 labourers $year^{-1}$. The second main cost were weeding and the land rent (7%) with 10 in 16 households hired the labour for weeding and 4 in 16 households rent the land.

Table 5.3 Annual investment of *miang* in 1995 (n = 16)

Production	Percentage	Number of Household
Wage for picking *miang*	61.72	9
Wage for picking rhetsa	0.47	1
Wage for picking fruits of fruit trees	2.47	1
Weeding	7.26	10
Wage for green tea production	2.47	1
Fuel wood	5.91	9
Bamboo lath	3.20	10
Banana leaf	2.42	6
Plastic bag	1.17	16
Basket	4.97	16
Other wages	0.45	2
The land rent	7.49	4

5.6 Constraints in *Miang* Production

The *miang* growers at Ban Phadeng stated 7 problems in *miang* production systems, i.e., labour, fuelwood, production cost, *miang*'s price, marketing, transportation and water (Table 5.4). Labour was ranked first as the most serious problem in the area, 12 of 16 *miang* growers faced with lack of labour, even when wage rate was increasing. *Miang* growers pointed out that the production loss due to inability to harvest as a consequence of lack of labour was about 30%.

Fuelwood became the second problem, five of them confirmed that. Generally, *miang* growers who owned *miang* land area could gather fuelwood from their own orchard, but those who rented the land could not do so, since the

land owner did not allow. Nevertheless, 44% of *miang* growers collected fuelwood from their orchard and had to buy from the neighbours (Figure 5.4).

Table 5.4 Ranking of problems of *miang* growers (n = 16) at Ban Phadeng

Problems	Number of Households	Ranking
Labour in picking *miang*	12	1
Fuelwood	5	2
Cost (basket, plastic bag, etc.)	2	3
Price of *miang*	2	4
Marketing	1	4
Transportation	1	4
Lack of water in dry season	1	4

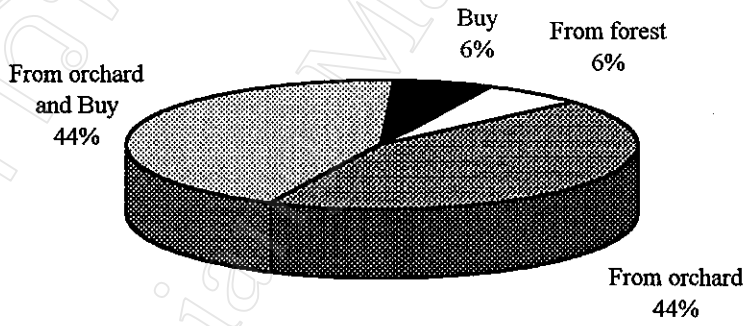

Figure 5.4 Sources of fuelwood for *miang* production at Ban Phadeng

The third problem was the cost for basket and plastic bag. These items were non-renewable, and formed part of containers.

A few *miang* growers (12.5%) suffered from *miang*' s price, more than 80% of them satisfied with the current price (6-7 baht kam^{-1}).

5.7 *Miang* in Transition

5.7.1 Future of *Miang*

As high as 88% of *miang* growers wanted to continue with *miang* production. It was just only 12% did not want to continue. The incentives as recognised by those who determined to continue were as follows:

(a) easy to operate by young and old age,
(b) they already acquired good skill, and
(c) *miang* still produced high and stable income for them.

The additional reasons were that they did not have enough knowledge and did not want to take risk to invest in other commodities. Furthermore, they learned that some crops such as fruit trees requires more water than *miang* during early establishment period, which would incur higher cost to set up watering system on the hill slopes.

Only 27% of the present *miang* growers indicated that they would encourage their children to continue *miang* production, because they considered *miang* as an easy activity and their children did not have to leave the village to work elsewhere. In the long run, life quality would be much better. About 70% of the growers indicated that such occupation was time consuming, once the *miang* picking season started, the process of picking and processing was a whole day work. To them, the economic benefit would not be better than working in the city. Meanwhile, they were not certain whether their children would take up such farming activities.

5.7.2 Incorporation of New Crops as Land Use Strategy

Although *miang* plants could produce at least two products, i.e., *miang* and green tea, but only one out of sixteen *miang* growers produced green tea. The majority of them preferred *miang*, since *miang* gave higher income than green tea per unit area.

Among *miang* growers, there were those who owned the land and those who lent the land. All the *miang* land owners were going to adopt integrated land use practice with fruit trees and rhetsa, which some of them had already changed. However, those who lent the land did not want to invest on other people land, they depended solely on *miang*.

Within the group of *miang* land owner, 7 households (63%) had integrated rhetsa and fruit trees in their orchard. Only one household had the integrated system ran for over 10 years, the rest was less than 5 years.

5.8 Contribution of *Miang* to Village Livelihood

As mentioned earlier, 80% of people at Ban Phadeng had engaged in *miang* production. The industry had provided a shared crop basis of benefit between the *miang* owner and the wages labourers. Thus, this was one of a few system that provided equal benefit between the owner operator and labourers.

The *miang* system also provided job opportunity to the old age who would not be accepted if working in the other profession. In the interview, one of the *miang* operators was over 60 years old couple.

The *miang* system offered at least 8 months employment from April to December, creating employment opportunity for landless farmers and helping to prevent out migration to the urban areas. Those who chose to work at Ban Phadeng pointed out that the working environment in the forest-*miang* landscape was more healthy than that in the city.

5.9 Harmonising *Miang* Production and Resource Conservation

Miang growers at Ban Phadeng had realised the dependency of *miang* cultivation on forest conservation and utilisation. They would keep forest tree species in the *miang* plantation even fruit trees and rhetsa were introduced. The forest tree species provided sources of fuelwood, natural shading for *miang*, litter fall as nutrient supplies to the system, and they helped to reduce soil erosion and retain soil moisture. However, only 50% of growers have planned to plant selected forest trees in their *miang* plantations.

5.10 Contributing Factors to Economic Potential of *Miang*

Besides the production stability and quality of *miang* at Ban Phadeng, the recent increase in *miang* price and new market outlets also provides supportive evidence that *miang* still had economic potential for at least another decade.

5.10.1 Price Trend

The price of *miang* had been increased slowly after 1982, but rapidly during 1993 to 1997 (Figure 5.5). Prior to 1982, from 1967 to 1982 the price was 1.5 to 1.8 baht kam^{-1} when the *miang* growers sold their products to the outside traders who controlled the transportation and marketing. With the set up

of Bank of Agriculture and Agricultural Co-operatives and other communal saving funds, as well as open up the new road, opportunity was provided for the growers to seek credit support for vehicles to deliver *miang* by themselves to other potential buyers. Thus price was steadily increased during the last five years.

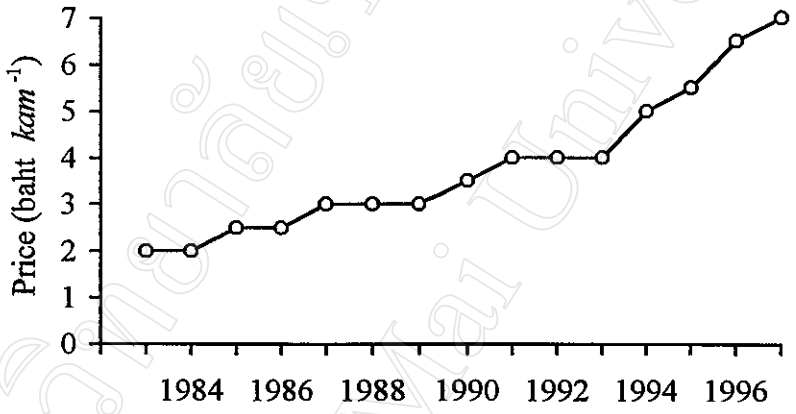

Figure 5.5 Price of *miang* at Ban Phadeng, Pa Pae sub-district from 1983 to 1997 (from interview with farmer).

5.10.2 Marketing Opportunity

At present trading of *miang* at Ban Phadeng had taken at least three forms. First the *miang* growers sold their products to the village traders at market price. Second the *miang* growers who had direct contact with the outside buyers at nearby districts would deliver their own product. Third the *miang* growers who had developed market in other provinces such as Lamphun, Lampang, Tak and Sukhothai would deliver their own products as well as buying the *miang* from neighbours to fulfill the order.

The first, second and third groups constituted about 80%, 15% and 5% respectively of the *miang* growers at Ban Phadeng.

The growers were concerned about the *miang* quality and all claimed that Ban Phadeng had produced one of the best quality *miang* in Chiang Mai province. The price was determined by the quality. So with such quality, the *miang* growers at Ban Phadeng felt confident about future of *miang* for the next 10 years.