CHAPTER I

INTRODUCTION

1.1 Statement of Problems

The majority of the people in Thailand were found to be in the agricultural sectors. They were farmers who faced problems in a land tenure system which caused inequitable distribution of income. They were poor, in debt and had to depend on high interest rate credit. In addition to situations of uncertain natural environments, price fluctuations of agricultural products and the low productivity of the lands caused a risen number of tenants and landless farmers. Along with the pressure of population growth and the limitation of land resource, these conditions caused large scale incursions of squatters to enter reserved forests and public lands.

In 1987, about 2.5 million households (or 12 million persons) were squatters or tenant farmers. One million of those households encroached on the national reserved forests. Another one and a half million households were tenants and landless farmers (Pittayaporn, 1991). If forest encroachment becomes widespread it will result in severe deterioration of forests, land and other resources. "The steady encroachment onto the tropical forests has caused a major destabilization of tropical ecosystems, causing disastrous consequences in soil erosion flooding, edaphic drought leading to desertification, salt-water intrusion in deltaic areas and loss of habitats for flora and fauna" (UNEP, 1988). Those

problems have brought about a social loss and an economic and political instability within the nation.

Land reform is named as one of the tools to alleviate these critical problems. In Thailand, the Agricultural Land Reform Program has been carried out by The Agricultural Land Reform Office (ALRO) and enacted under the Agricultural Land Reform Act B.E. 2518 since 1975. Up to now ALRO has allocated a total of 2.4 million rai comprising 0.36 and 2.06 million rai of private and state owned lands to 0.02 and 0.10 million farm households, respectively (ALRO, 1989). The average farm holding of private land in the North and the Central Plains were 21.14 and 29.02 rai/household. Those of state owned land were 9.42, 19.75 and 20.69 rai/household in the North, Central Plains and the Northeast, respectively (ALRO, 1986). In public land, the allotted farm sizes depended on the arable areas, the number of squatters in each project site and other criteria e.g. family size and the plot size of the neighbouring project, etc.

After the land reform (LR) program establishment, several types of problems appeared in some project areas during the past decade. For example, in some private land reform projects, plots were allocated to farmers which could be rented or leased in the form of a hire-purchasing scheme. Later some of those farmers renounced their hire-purchase contracts and returned to renting the land.

In some state land reform projects, farm plots were distributed to farmers who had to pay only an annual fee i.e. land tax. In other words, the farmers were actually the lessees of the state. After land allocation, farmers abandoned their lands and

some illegally transferred their lands to others despite the fact that they were aware that farm plots under LR program could not be sold, mortgaged or transferred.

Several studies attempted to find out the reasons behind these problems. In Nong Sua LR project, Pathum Thani province which was under a private land program, the modus size of the plots held by renouncers ranged from 25.01 to 30 rai, 52 households of the renouncers or 17% of the total sampled units (300 HH) had renounced and terminated their hire - purchasing contracts because of the major complains that too small land size to earn a living, the low land productivity and low market price of farm produces (Srisawaluck, 1988).

In the public land reform area (LRA), the beneficiaries were facing more inferior conditions than the ones on the private land i.e: smaller farm plot, severely degraded land, rainfed area, etc. That was apparently visible in the Chom Thong LRA, Chiang Mai province where it was formerly a reserved forest. Later it was encroached on and its fertility finally became depleted. Based on the limited size of the arable land and the large number of squatters, the allotted plot size was only 5 rai/household inspite of the low land productivity. During the past years, some farmers deserted their lands, for example, in 1988, about 440 farm plots were left idle during the season (Chiang Mai PLRO, 1988). Some farmers partially utilized their farm areas. Some illegally transferred their lands to others. Those incidences raised the questions of why they did not fully utilize their farms and why some of them abandoned their lands eventhough they owned very small farm holdings. Another question it raised was how they could earn

their living. It would be noteworthy to find out the facts of those issues.

1.2 Rationale

In the North, most of the land reform project areas especially in the state land were deteriorated and degraded forests. The areas were draughty, swiddened, unfertile and certainly in a low productive state. Low returns and land degradation eventually induced the farmers to cultivate larger holdings to obtain the same productivity as before deterioration. Chomchan and Panichpong (1980) compared the yields of upland rice and maize on newly cleared and long used land in the North and found that they produced at 221 and 114 kg/rai for the former crop and at 262 and 166 kg/rai for the latter crop, respectively. If farm land expansion was impossible, abandonment of the land occurred. Attawirot (1977) estimated that in the Northern region one-seventh of 1.4 million rai was annually encroached on and used to substitute for those seriously eroded or degraded lands.

It was hard to stop deforestation and meanwhile it was impossible to reclaim those depleted land resources for the new generations. In addition, the specific topography of the North as characterized by small inter-montane basins surrounded by a series of steep-sidedridges limited the area of lowland agriculture. This had been increasingly unable to offer viable economic bases for the growing rural population which confirmed the necessity to implement a research in the land of the North. Therefore, the Chom Thong LRA was selected as the study site.

The research was conducted to investigate the efficiency of the resource utilization of Chom Thong LRA with the underlying hypotheses that 5 rai was too small to generate sufficient farm income for their families and they might have off-farm employment to supplement their living. The study also investigated the opportunities to increase farm income.

The research findings will provide a direct benefit to the Chom Thong LR farmers in the form of farm income increment. Besides this, the results could be the ALRO's guidelines for the adjustment of its development planning and policy.

Finally, the benefits could affect the economy of the country in terms of resource allocation for optimum returns and the equitability in the Thai society.

1.3 Objectives

The specific objectives of this research are to :

1) investigate natural and socio-economic environments of Chom Thong land reform area;

2) investigate the overall resource availability and utilization of the farmers in Chom Thong land reform area and especially in some selected sub-systems;

3) analyze costs of production of the selected sub-systems and returns to major resources;

4) analyze the efficiency of resource utilization of the selected sub-systems;

5) identify constraints to and supporting factors for increasing efficiency of resource utilization; and

6) provide recommendations for policy planning.

1.4 Literature Review

Sidhu (1974) studied "Relative Efficiency in Wheat Production in the Indian Punjab". The profit function of Lau and Yotopoulos was applied in the study. This study was conducted to compare the economic efficiency of new varieties of wheat with the old ones. The 1967/1968 data were used for this purpose. The results revealed that the new varieties were economically more efficient than the old ones by 48.50 percent. The study also compared the relative economic efficiency and the relative price efficiency with respect to labor demand of small farms (less than 10 acres) and large farms and tractor and non-tractor wheat farms. The findings suggested that small and large wheat farms performed equally well in terms of relative economic efficiency and relative price efficiency as did the tractor-operated and non-tractor-operated wheat farms. Additionally, both small and large producers on the average could maximize their profits (that is to equate the marginal value product of labor to its opportunity cost).

Yodsien (1974) studied "Economic Production of Kenaf in Manjakiri District, Khonkaen in 1972". The Cobb-Douglas production function was employed. He found out that to produce kenaf for maximized profit, it required a large amount of resources:22.08 rai of land, 7.36 mandays of labor, 7.90 kg. of seed and 49.44 kg. of farm manure. The prices of other resources were also considered.

Halitpanichakul (1976) studied "Resource productivity of rice farming in Chiang Mai province 1972/1973" by using the Cobb-Douglas production function. He reported that the optimal amount of resource utilization for dry season rice production was as follow : 9.23 rai of land, 56.45 mandays of labor, and 816.70 baht of cash for other inputs expense. The prices of other resources were also taken into consideration.

Thani (1976) studied "Effects of Land Tenure on Productivity, Saving and Income Distribution of Farmers in Kabinburi District, Prachinburi Province, 1974". In this study, the Cobb-Douglas function was used to analyzed technical efficiency and economic efficiency. The study was designed to compare the findings of three groups of farmers : owner-cultivators, part-tenants and tenants. The result was that when comparing the technical efficiency of each input factor among the three groups of farmers, the owner-cultivators obtained the highest marginal productivity of land and labor. The results were as follows : the marginal productivities of land of owner-cultivators, of part-tenants and of tenants were 24.54, 18.99 and 15.39, respectively while the marginal productivities of labor of owner-cultivators, of part-tenants and of tenants were 4.10, 1.72 and 3.59, respectively. The summation of marginal productivities of two factors illustrated that the owner-cultivators had the highest technical efficiency, followed by the part-tenants and tenants. The tenants exhibited the lowest technical efficiency. When the economic efficiency was considered, none of the three groups met the equilibrium point where the highest economic efficiency existed. The study , therefore, considered the comparative

economic efficiency among them instead. The results showed that the tenants had higher economic efficiency of land than the others, while the part-tenants held the economic efficiency of labor higher than the others. And the owner-cultivators showed the least economic efficiency of both factors. However, the owner-cultivators claimed to have the most savings and claimed to be the best income distribution groups.

Alam (1983) conducted the study of "Farm Resource Productivity under Alternative Management Practices". He attempted to compare productivities of farm resources between two groups of farmers under similar production technology. These farmers were : farms associated with cooperative joint farming activities; and farms pursuing individual farm production activities. The production function model was adopted for this study to measure several efficiency criteria (i.e. return to land, return to labor and farm business income). A Cobb-Douglas production function was used to estimate the marginal and total factor productivities and to measure production elasticities of the factor inputs. It was found that smaller farmers, who were predominantly in the second group, used their resources more intensively (or more efficiently than the larger farmers). Moreover, marginal productivities and total factor returns were high in the case of the traditional management of the second group.

Sriboonruang (1984) analyzed the economic efficiency of farmers in rainfed land reform area in Lamphun. Two groups of glutinous rice farms (small and large) were compared. Both were in rainfed areas under different farm management practices. The small farms cultivated land equal to or less than 5.3 rai with family

labor intensive management, the large farms worked on more than 5.3
rai with hired-labor-intensive management. The Cobb-Douglas profit
function model of Lau and Yotopoulos (1971, 1973) was employed.
The results revealed that the production of glutinous rice was
characterized by constant returns to scale. The long run average
costs were constant at any amount of output and the average costs
per unit of output were equal for the two groups. Besides, there
were no differences in the relative price efficiency and the
absolute price efficiency of those two groups. It could be
concluded that by expanding the average farm size under the
existing farm production conditions, there would be no benefits
from economics of scale. The farmers in both groups could maximize
their profits by equating the values of marginal product of
variable inputs to their opportunity prices.

Kiratikarnkul (1989) studied "Production Efficiency Analysis
of Highland Agriculture : A Case Study of Ang Khang and Intanon
Royal Projects, Chiang Mai Province" to evaluate the technical
efficiencies of agricultural productions so as to assess the
potential of crop replacement for opium. The Farrell approach
using the linear programming (LP) to estimate the production
frontier of cross-sectional data was applied. The findings showed
that gladiolus had the greatest potential for replacing opium in
both stations in terms of net return. Cabbage, kidney beans and
gladiolus had high technical efficiency in Ang Khang station.
While upland rice, tomatoes, strawberry and zucchini had very high
technical efficiency in Intanon station.

These studies provide both methodology for the analysis and
the empirical evidences regarding economic efficiency in

agricultural production. In terms of methodology, three approaches were employed. They were (1) Lau and Yotopoulos profit function; (2) Conventional production function of Cobb-Douglas form; and (3) Farrell's frontier function. All the cited studies aimed to identify efficiency with respect to size of farm and other major resources. Sriboonruang's study site, the rainfed area, is the most similar to the thesis study area. This study showed the interesting result that paddy farm size had a constant return to scale. It is the goal of this thesis study to find out whether this is true for other crops in the LRA.