

Size Efficiency in Rice Based Multiple Cropping Systems in the Chiang Mai Valley

CHAPTER 1 INTRODUCTION

Previous studies have shown that, in the primitive stage of economic development, small farms have higher land productivity than larger farms (Murdoch, 1980; Booth & Sundrum, 1985; Bechman & Christensen 1987; Stevens, 1977), and when new agricultural technology, such as irrigation, machines and fertilizers, becomes available as economic development progresses, the land productivity and farm size relation might be in reverse direction, as evidenced in Taiwan (Booth & Sundrum, 1985) and India (Dasgupta, 1977).

In Thailand, economic development has been advancing rapidly in recent years. Such fast development may lead to a restructuring of the agricultural sector in many ways including farm size. As rice is the most important crop in Thailand, size efficiency of rice based cropping systems deserves a special research focus. So far, different findings have been reported from different regions. Sriboonruang (1984) compared the economic efficiency of small (<5.3 rai)¹ and large (>5.3 rai) glutinous rice farmers in a rainfed land reform area of Lamphun. Results showed that the production of glutinous rice was characterized by constant returns to scale. Alam (1983) concluded by using the Cobb-Douglas production function that small farmers are more efficient in resource utilization. While Wiboonpongse (1983) found that, by using the random coefficient model in the rice-soybean cropping systems of

¹ 1 hectare = 6.25 rai

the Chiang Mai Valley, the average cost of rice and soybean could be reduced by increasing farm size.

All these suggest that the optimum farm size may differ across regions and also needs to be updated from time to time. The Chiang Mai Valley is chosen for this study because the region is one of the most intensively cropped areas and also is one of the smallest average farm size areas in the country.

The objectives of this study are,

1. To explore farm size efficiency (returns to scale and technical efficiency) in the rice based cropping systems in the Chiang Mai Valley. These cropping systems are rice-soybean, rice-potato, rice-tomato and rice-garlic and rice mono-cropping.
2. To identify factors affecting technical efficiencies of these cropping systems in the Chiang Mai Valley.

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