CHAPTER I

INTRODUCTION

1.1. Background

Agriculture is a major sector in the Vietnamese economy. Viet Nam remains a predominantly rural society with the mass of its population dependent on agriculture and related activities. The Government is committed to the view that development is only meaningful if the rural masses can achieve higher incomes and a better life. Moreover, the urban population is largely dependent on national agricultural output for its food supplies. In agriculture, rice sector is expected to make a significant contribution to Viet Nam's foreign exchange earning. Success in either agriculture and rice sectors depends upon the efficient mobilization of the rural population in the development effort. This, in turn, depends on an efficient system of organization at the farm level, appropriate incentives of production, timely supply of inputs, provision of infrastructure and technology, and efficient activities from subsector and region level.

Red River Delta is situated in the North of Viet Nam, near the Gulf of Tonkin, within the Asian tropical monsoon region (APDI, 1990). It is comprised of seven provinces of Ha Noi, Ha Tay, Hai Hung, Hai Phong, Nam Ha, Ninh Binh and Thai Binh and some area of Vinh Phu and Ha Bac provinces with the total natural area of 1251 thousand hectare and arable land area of 801 thousand hectare. This region is also characterized as the highest population density area in Viet Nam. The average population density in the whole country is 214 people per square kilometer, while in the Red River Delta it is 1104 people per square kilometer. The Red River Delta is remarked as the second largest region of rice production in Viet Nam, after Mekong Delta. The rice sown area in the Delta

was 1025 thousand hectare in the year 1992, which was approximately equal to one sixth of the country's total rice sown area. Spring rice covered an area of 503 thousand hectare and 522 thousand hectare was recorded for Autumn rice crop. Rice is the most important food crop in the Red River Delta in terms of both cultivated land and food product supply (GSO, 1994).

1.2. Rationale

From the Green Revolution in 1960s to 1970s, the Agriculture Ministry had tried to introduce and encourage farmers to apply Modern High Yielding Rice Varieties (MHYV) in their production systems, and since then MHYV become popular in rice production in the Red River Delta. Labor is abundant in the region, and thus, rice production is very labor intensive. Farmers try to invest in rice production (especially from 1988) in order to improve rice yield. But the average cultivated land per capita was very low with 591 square meter (UNDP, 1990). This reality asks for new rice production technology for increase land productivity.

In the last few years, in Red River Delta, the Agricultural Extension Office of the Agricultural and Food Processing Ministry with joint organization and support of Japan has established a Rice Cultivation Technology Research Station (RCTRS) in My Van district of Hai Hung province. The main objective of RCTRS is to conduct the research and transfer to farmers' field a Modern Rice Cultivation Technique (MCT) from Japan: a technology with new and higher sophisticated cultivation methods used in rice production process, from tilling to harvesting. This MCT could be mainly applied in Spring rice crop for MHYV. It was mentioned that, application of MCT could bring about higher rice yield for the same MHYV. But it requires higher investment and equipment which is difficult for farmers to apply at present conditions. Therefore, Agricultural Extension Workers and farmers have been trying to modify the MCT into New Rice Cultivation Technique or Modified Modern Rice Cultivation Technique (MMCT) that is easier for farmers to adopt. However,

still not many farmers adopted the MMCT. This might be because of the returns to the MMCT and economic efficiency of this MMCT as compare to recent cultivation technique (RCT) is still uncleared.

For a long time, in the Red River Delta, a lot of area in Autumn rice crop was grown a very high quality traditional rice variety, which is called "Tam Thom". But since the agricultural development concentrated on output expansion, farmers paid more consideration to raise the rice production by using MHYV. MHYV have been increasing since 1970s. Now, the total rice production increases, and supply of rice is over domestic demand. Rice surplus and thus export increases in the recent years. The demand for domestic consumption of traditional high quality rice (THQR) is also increased. And more money could be earned from exports of THQR. This situation demanded to increase of THQR production. But now still only limited number of farmers produce this THQR. However, the economic efficiency of production of traditional rice as compared to modern rice is not yet known.

Thus, a study for analysis and compare of profitability and economic efficiency between production of traditional high quality rice variety (THQV) and MHYV, and between RCT and MMCT of rice production is necessary.

1.3. Literature Review

1.3.1. Government Policies

From 1960 up to now, the changing process of government policies in agriculture had strong impacts on rice production. This process could be divided into three periods (Central Secretary Committee, 1981 and Politburo, 1988):

The first period from 1960 to 1980: A period of central-planned mechanism. During this period, agricultural cooperatives were organized in every rural villages of the Red River Delta and agricultural production infrastructure and technology was established, such as, irrigation systems, modern rice variety application, etc. Consequently, agricultural and rice production improved and there were a large supply of food and man power to support anti-american war. After the war ended in 1975, farmers want to have more self-determination rights in production decision making. But the government policies were still not reformed, and it caused a stagnant status in agriculture production and rice production at the end of 1970s and beginning of 1980s.

The second period from 1981 to 1987: A transition stage period. Facing the agricultural production situation at that time, in 1981 the Central Secretary Committee issued the Directive No.100 CT/TW where some more authority was given for farmer to self-determine their production decision. As a result, production was increased slightly in this period.

The third period from 1988 up to now: A market-oriented mechanism period. In order to promote and develop on agricultural and rice production, in April 1987, the Politburo promulgated the Resolution No.10 NQ/TU for renovation of management in agriculture. The main contents are give cultivation land in the cooperatives for farmers to use and manage, farmers have all right to self-determination in their production decision making and farm households are considered as the main agricultural production units. The changes in government policies have greater impact in the development of agriculture and rice production. It not only encourages farmers in production investment but also stimulates for the better successes in these sectors. From 1985 - middle stage of transition period - to 1993, rice production in the whole country and especially in the Red River Delta is sharply increased (Table 1 and 2).

Table 1.1. Rice Production in Viet Nam, 1985–1993

Year	Sown Area		Total Rice Production	
	('000 ha)	(%)	('000 ton)	(%)
1985	5703.9	100.00	15874.8	100.00
1986	5688.6	99.73	16002.9	100.81
1987	5588.5	97.98	15102.6	95.14
1988	5726.4	100.39	17000.0	107.09
1989	5895.8	103.36	18996.3	119.66
1990	6027.7	105.68	19225.1	121.10
1991	6302.7	110.49	19621.9	123.60
1992	6475.4	113.53	21590.3	136.00
1993	6386.8	111.97	21900.0	137.95

Source: DAFF, 1994.

Table 1.2. Rice Production in Red River Delta, 1985–1993

Rice Production	Unit	1985	1990	1993
1. Total Sown Area	'000 ha	1051.8	1057.6	1027.0
– Spring crop	'000 ha	502.9	513.0	505.2
– Autumn crop	'000 ha	548.9	544.6	521.8
2. Total Production	'000 ton	3091.9	3618.1	4513.0
– Spring crop	'000 ton	1912.1	1844.5	2387.1
– Autumn crop	'000 ton	1179.8	1773.6	2125.9

Source: DAFF, 1994.

1.3.2. Measuring Methods

Lau and Yotopoulos (1971) studied farm level factor demand and output supply functions in India. After that (1972) they employed normalized restricted Cobb-Douglas profit function for cross sectional study of farm in India. The results suggested that, the indirect elasticity estimates obtained for labor and land were more efficient than the direct estimation production function due to the existence of simultaneous equations in the production.

Yotopoulos et al. (1976) used the model to study cross-sectional farm household data in Taiwan. The study suggested that profit function was more reasonable and less problematic approach in farm level studies.

Sidhu and Baanante (1981) studied in Indian Punjab Agriculture with translog profit functions in order to generate policy relevant estimates for farm level input demand and output supply.

Sriboonchitta (1983) analyzed the relative share of labor and estimate input demand elasticities, elasticities of substitution in Chiang Mai Valley by single product translog cost function. The study showed that demands for inputs are inelastic and mixed relationships exist between inputs across two farming techniques, the animal power farming and the tractor power farming technique.

Factor share is a fundamental concept in economics that plays a critical role in research concerning production structure, costs and returns analysis, income distribution. In his study, Kikuchi (1991) defined factor shares, gave procedures for using farm survey data to estimate factor shares in agriculture, and showed how estimates of factor shares are used in economic analyses.

Shimizu (1993) used production function to study cross-sectional data from two areas in the Philippines. The results suggested that the technology of rice production is very important to keep and increase rice yield and it is very important to establish the technology of rice production to improve the efficiency of input use.

1.3.3. Economic Study of Rice Production in Red River Delta of Viet Nam

There are some studies on economic efficiency of rice production in the Red River Delta (Cuc, 1991). But the comparing of economic efficiency and profitability between traditional high quality and modern high yielding rice varieties and between recent cultivation technique and new cultivation technique of rice production are not still mentioned, which is the main focus of this study.

1.4. Objectives of the Study

The study aims at comparative analysis of two rice varieties (THQV and MHYV) in RCT Autumn rice crop, and two rice cultivation techniques (RCT and MMCT) in MHYV Spring rice crop in the Red River Delta, Viet Nam. The comparison will be made in three specific aspects or objectives:

1. to evaluate cost, return and profitability of rice production in the Red River Delta, Viet Nam.

2. to analyze economic efficiency of input utilization.

3. to estimate elasticities of variable input demands and output supply elasticities.

1.5. Usefulness of the Study

Today, rice production in Viet Nam has been improved, but development of rice production sector in order to maintain food security and increase earning from rice export is still important task. This study would provide policy makers as well as researchers a quantitative analysis of recent situation of rice production in Red River Delta – second large rice production region in Viet Nam. From that, positive incentive policies and further economic studies for rice production could hope be made to improve rice production in Viet Nam.