CHAPTER IV

ECONOMIC ANALYSIS OF RICE PRODUCTION IN STUDY AREA

4.1. Rice Yield

Evaluation of rice production is incomplete without the economic examination of rice yield, input use, production costs and profitability. In this section, the average yield of rice production in all studies areas as well as each location are determined with classification by crop seasons, cultivation techniques and varieties. The other components are perused in the following sections.

Table 4.1 presents the average rice yield of MHYV in Spring crop classified by cultivation techniques and locations, while Table 4.2 shows average rice yield of MHYV under RCT classified by crop seasons and locations. Among sample subdistricts, rice production of THQV is practiced only in Hai Phong subdistrict in Autumn rice crop under RCT. The average rice yield of THQV is presented in Table 4.3. It is observed that, in Spring rice crop for all areas, farmers received higher yield as compared to Autumn rice crop. In MHYV Spring crop, the average yield for MMCT is highest with number of 218 kg per sao, which is higher than for RCT of 25.1 kg. Under RCT, the average rice yield of MHYV in Spring and Autumn rice crop are not so much difference between each others. For all areas, average rice yield of MHYV under RCT in Autumn rice crop is 185.9 kg per sao, while average rice yield of THQV under RCT in Autumn rice crop in Hai Phong is lowest with 163.3 kg per sao.

The high productivity can be traced to several factors such as favorable soil and weather

conditions, intensive inputs utilization, methods of cultivation, technology supports, etc. By locations, farmers in Hai Phong subdistrict of Nam Ha province got highest rice yield of MHYV Spring crop for both RCT and MMCT. For Autumn crop under RCT, rice yield of MHYV in Hai Phong is observed as second highest level. The high production in Hai Phong may be because of its location in Red river new alluvial soil zone which is relatively fertile as well as intensive farming activities by Hai Phong farmers.

Table 4.1. Average Rice Yield of MHYV in Spring Crop Classified by Cultivation Techniques and Locations

Locations, Techniques	Rice yield (kg/sao)	Standard Deviation
Hai Phong		
RCT	229.9	37.08
MMCT	252.5	38.89
Minh Khai		
RCT	196.9	15.95
MMCT	223.2	27.37
An Hoa		
RCT	177.9	22.03
MMCT	226.6	12.29
Co Bi		
RCT	186.1	25.53
MMCT	220.4	7.25
Nghia Hiep		
RCT	173.5	19.59
MMCT	203.7	23.71
All Areas		
RCT	193.2	32.50
MMCT	218.3	26.11
Mean difference:	25.1	
T-ratio:	0.59	

Source: Survey.

Table 4.2.　Average Rice Yield of MHYV under RCT Classified by
　　　　　　Crop Seasons and Locations

Locations, Crop Seasons	Rice yield (kg/sao)	Standard Deviation
Hai Phong		
Spring Crop	229.9	37.08
Autumn Crop	199.4	55.49
Minh Khai		
Spring Crop	196.9	15.95
Autumn Crop	203.7	29.13
An Hoa		
Spring Crop	177.9	22.03
Autumn Crop	176.5	35.92
Co Bi		
Spring Crop	186.1	25.53
Autumn Crop	185.4	28.57
Nghia Hiep		
Spring Crop	173.5	19.59
Autumn Crop	167.7	23.85
All Areas		
Spring Crop	193.2	32.50
Autumn Crop	185.9	31.73
Mean difference:	7.3	
T-ratio:	−2.06	

Source:　　Survey.

Table 4.3.　Average Rice Yield of THQV in Autumn Crop under RCT
　　　　　　in Hai Phong subdistrict

Location	Rice yield (kg/sao)	Standard Deviation
Hai Phong	163.3	12.81

Source:　　Survey.

42

The lowest average yield for MHYV Spring crop is observed in Nghia Hiep subdistrict of Hai Hung province, which are 173 and 204 kg per sao for RCT and MMCT, respectively. Similarly, in the same location for MHYV in RCT Autumn rice crop the lowest average yield (168 kg per sao) is observed. But for THQV in RCT Autumn rice crop, the production of THQV only in Hai Phong subdistrict got lowest yield of 163 kg per sao.

In sum, the average rice yields classified by crop seasons, locations, and for all study areas are varied across varieties as well as cultivation techniques. The highest average rice yield is observed from MMCT in MHYV Spring rice crop in Hai Phong and also the lowest average rice yield is observed from THQV under RCT in Autumn rice crop in Hai Phong subdistrict.

4.2. Material Input Utilization

In Red River Delta, farmers used seeds, manure, chemical fertilizers, pesticides and irrigated water as five material inputs for rice production. Table 4.4, 4.5 and 4.6 present the levels of material input use by sample farmers.

4.2.1. Seed

The amount of seed used per unit of land differs according to cultivation techniques and varieties. In MHYV Spring crop, seed rate used for MMCT is lowered than that for RCT in all locations. These indicators of MHYV for all study areas are 3.73 and 1.95 kg per sao for RCT and MMCT, respectively. In Autumn crop, seed rate is lowest for THQV with 1.13 kg per sao.

43

4.2.2. Fertilizer

Almost all the farmers in the study areas used manure as an important kind of fertilizers for rice production. This activity helps farmers to save their money in rice production as well as enhance soil properties. The amount of manure used for rice production varied across locations, crop seasons, varieties and cultivation techniques.

Table 4.4. Material Inputs for Rice Production of MHYV in Spring Crop Classified by Cultivation Techniques and Locations

Locations, Techniques	Seed (kg/sao)	Manure (ton/sao)	Chemical (kgNPK/sao)	Pesticide ('000D/sao)	Irrigation ('000D/sao)
Hai Phong					
RCT	3.658	0.392	7.268	5.230	9.600
MMCT	2.000	0.400	7.465	8.275	9.600
Minh Khai					
RCT	3.081	0.356	4.845	6.476	10.500
MMCT	1.620	0.396	5.572	8.145	10.500
An Hoa					
RCT	2.870	0.267	6.093	5.118	8.000
MMCT	1.380	0.470	6.697	5.698	8.000
Co Bi					
RCT	4.758	0.208	6.352	5.000	11.500
MMCT	2.463	0.245	6.587	6.211	11.500
Nghia Hiep					
RCT	4.289	0.312	4.899	4.824	8.000
MMCT	2.369	0.304	5.798	5.594	8.000
All Areas					
RCT	3.730	0.308	5.924	5.313	9.470
MMCT	1.951	0.358	5.964	6.852	9.462
Mean difference:	1.779	0.050	0.040	1.539	0.008
T-ratio:	7.91	0.78	2.03	-1.34	1.43

Source: Survey.

44

The application of manure is observed highest in An Hoa subdistrict for MHYV Spring crop in MMCT with 0.47 tons per sao. This rate for all areas are higher for Spring rice crop (0.3 and 0.35 tons for RCT and MMCT, respectively) than that for Autumn rice crop (0.28 tons for MHYV in all areas and 0.27 tons for THQV in Hai Phong subdistrict).

Table 4.5. Material Inputs for Rice Production of MHYV under RCT Classified by Crop Seasons and Locations

Locations, Crop Seasons	Seed (kg/sao)	Manure (ton/sao)	Chemical (kgNPK/sao)	Pesticide ('000D/sao)	Irrigation ('000D/sao)
Hai Phong					
Spring	3.658	0.392	7.268	5.230	9.600
Autumn	2.889	0.252	6.852	5.924	9.600
Minh Khai					
Spring	3.081	0.356	4.845	6.476	10.500
Autumn	2.827	0.360	4.518	5.965	10.500
An Hoa					
Spring	2.870	0.267	6.093	5.118	8.000
Autumn	2.468	0.230	5.821	4.567	8.000
Co Bi					
Spring	4.758	0.208	6.352	5.000	11.500
Autumn	4.413	0.279	5.405	5.554	11.500
Nghia Hiep					
Spring	4.289	0.312	4.899	4.824	8.000
Autumn	3.687	0.299	4.344	4.541	8.000
All Areas					
Spring	3.730	0.308	5.924	5.313	9.470
Autumn	3.267	0.286	5.300	5.277	9.498
Mean difference:	0.463	0.022	0.624	0.036	0.028
T-ratio:	−5.68	−1.17	−3.17	0.07	1.27

Source: Survey.

45

Table 4.6. Material Inputs for Rice Production of THQV

in Autumn Crop under RCT in Hai Phong subdistrict

Location	Seed (kg/sao)	Manure (ton/sao)	Chemical (kgNPK/sao)	Pesticide ('000D/sao)	Irrigation ('000D/sao)
Hai Phong	1.131	0.278	6.396	8.644	9.600

Source: Survey.

All the chemical fertilizers used per sao are converted to NPK nutrient unit. From Table 4.4, 4.5 and 4.6, it is clear that farmers applied more chemical fertilizers in the Spring crop than the Autumn crop. Among sample subdistrict, farmers in Hai Phong most intensively used chemical fertilizers for rice production in Spring as well as Autumn rice crop.

4.2.3. Pesticide Use

Majority of the sample farmers in the study areas employed insecticides and fungicides for crop protection. Herbicide application is not observed from sample farmers because all the farmers practiced physical methods such as cultural, manual, mechanical and ecological means in weed control for rice production.

Pesticide application is comparatively highest level as more than 8000 VN Dong per sao for MMCT of MHYV in Spring crop in Hai Phong and Minh Khai subristricts. For THQV under RCT in Autumn crop in Hai Phong this rate is also high.

4.2.4. Irrigation

One advantage for Red River Delta farmers in rice production is irrigation service from public as well as cooperative irrigation systems. Amount of irrigation fee depends on the cost incurred to operate water pumps and irrigation systems. In Co Bi and Minh Khai, farmers paid highest irrigation fees i.e. 11,500 and 10,500 VN Dong per sao, respectively. An average irrigation fee came around 9,500 Dong per sao for all areas in cropping season 1993.

4.3. Labor Input

In Red River Delta, farmers practice their rice farming with intensive labor use. From sample farmers, labor use are determined as 8.7 and 10.5 mandays per sao in MHYV Spring crop with RCT and MMCT, respectively (Table 4.8) and as 8.4 mandays per sao in Autumn crop under RCT for MHYV. For THQV in Hai Phong this rate is 7.4 mandays per sao. Most intensive labor use is observed from MMCT of MHYV Spring rice crop in Hai Phong and Nghia Hiep subdistricts. Family labor is dominated in labor use in every locations.

Table 4.7.   Labor Inputs for Rice Production of THQV in Autumn Crop under RCT in Hai Phong subdistrict

Location	Total Labor	Family Labor	Exchange Labor	Hired Labor	F.Labor/ T.Labor	Labor/ton of paddy
	------------ (mandays/sao) ------------				(%)	(manday)
Hai Phong	7.425	6.713	0.359	0.352	90.4	45.4

Source: Survey.

Table 4.8. Labor Inputs for Rice Production of MHYV in Spring Crop
Classified by Cultivation Techniques and Locations

Locations, Techniques	Total Labor	Family Labor	Exchange Labor	Hired Labor	F.Labor/ T.Labor	Labor/ton of paddy
	----------- (mandays/sao) -----------				(%)	(manday)
Hai Phong						
RCT	7.245	6.049	0.763	0.428	83.4	31.5
MMCT	11.625	11.625	0.000	0.000	100.0	45.5
Minh Khai						
RCT	9.226	8.793	0.432	0.000	95.3	46.8
MMCT	10.532	9.944	0.296	0.291	94.4	47.1
An Hoa						
RCT	9.262	8.999	0.121	0.134	97.1	52.0
MMCT	9.490	9.490	0.000	0.000	100.0	41.8
Co Bi						
RCT	8.206	8.016	0.000	0.190	97.6	44.0
MMCT	7.558	7.558	0.000	0.000	100.0	34.3
Nghia Hiep						
RCT	9.715	9.715	0.000	0.000	100.0	55.9
MMCT	11.599	10.927	0.385	0.288	94.2	56.9
All Areas						
RCT	8.717	8.292	0.267	0.155	95.1	45.1
MMCT	10.530	10.070	0.249	0.216	95.6	48.2
Mean difference:	1.813	1.778	0.018	0.061	--	--
T-ratio:	- 7.29	- 7.56	2.52	0.55		

Source: Survey.

Table 4.9. Labor Inputs for Rice Production of MHYV under RCT

Classified by Crop Seasons and Locations

Locations, Crop Seasons	Total Labor	Family Labor	Exchange Labor	Hired Labor	F.Labor/ T.Labor	Labor/ton of paddy
	———————— (mandays/sao) ————————				(%)	(manday)
Hai Phong						
Spring	7.245	6.049	0.763	0.428	83.4	31.5
Autumn	6.745	5.809	0.598	0.338	86.1	33.8
Minh Khai						
Spring	9.226	8.793	0.432	0.000	95.3	46.8
Autumn	8.532	8.532	0.000	0.000	100.0	41.8
An Hoa						
Spring	9.262	8.999	0.121	0.134	97.1	52.0
Autumn	8.356	8.072	0.094	0.190	96.6	47.3
Co Bi						
Spring	8.206	8.016	0.000	0.190	97.6	44.0
Autumn	8.051	7.926	0.000	0.125	98.4	43.4
Nghia Hiep						
Spring	9.715	9.715	0.000	0.000	100.0	55.9
Autumn	10.182	10.126	0.000	0.056	99.4	60.7
All Areas						
Spring	8.717	8.292	0.267	0.155	95.1	45.1
Autumn	8.472	8.227	0.114	0.130	97.1	45.5
Mean difference:	0.245	0.065	0.153	0.025	–	–
T-ratio:	-1.39	-0.44	-2.28	-0.33		

Source: Survey.

49

4.4. Production Cost and Profitability

Rice production cost is calculated by amount of inputs used multiplied to their specific prices and gross return from rice production is ascertained as rice production output and its actual price faced by farmers-producers. From gross return and production costs, every indicators of profitability are estimated. Table 4.10, 4.11, 4.12, and 4.13 illustrated gross return, costs and profitability of rice production in the study areas.

Table 4.10. Production Cost and Profitability of MHYV in Spring Rice Crop under RCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Yield(kg/sao)	229.9	196.9	177.9	186.1	173.5	193.2
Rice price ('000D/kg)	1.218	1.194	1.184	1.163	1.171	1.187
			(Thousand Dong/sao)			
Gross return	280.8	235.2	210.5	216.1	203.3	229.6
Total costs	144.3	136.5	130.2	121.3	120.5	130.7
Material cost	74.1	62.1	58.0	58.2	55.3	61.7
Labor cost	45.9	54.9	53.3	44.8	52.1	50.2
Purchased cost	69.4	51.6	52.1	54.5	40.9	53.9
Net return	136.4	98.7	80.3	94.8	82.8	98.9
Gross margin	199.3	171.5	146.3	149.0	150.5	163.6
Value added	206.6	173.1	152.5	157.8	147.9	167.9

Source: Survey.

50

Table 4.11. Production Cost and Profitability of MHYV

in Spring Rice Crop under MMCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Yield(kg/sao)	252.5	223.2	226.6	220.4	203.7	218.3
Rice price ('000D/kg)	1.200	1.153	1.175	1.163	1.173	1.165
			(Thousand Dong/sao)			
Gross return	303.0	256.5	266.4	255.9	238.8	253.9
Total costs	141.2	140.6	143.9	123.4	126.5	134.5
Material cost	61.1	63.8	68.0	54.9	52.1	59.3
Labor cost	62.2	58.3	55.1	44.8	61.6	57.9
Purchased cost	47.1	50.4	53.9	54.3	38.0	46.9
Net return	161.8	115.9	122.4	132.6	112.3	119.4
Gross margin	243.9	194.1	200.9	189.7	189.1	195.3
Value added	241.9	192.7	198.4	201.1	186.7	194.7

Source: Survey.

51

Table 4.12. Production Cost and Profitability of MHYV

in Autumn Rice Crop under RCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Yield(kg/sao)	199.4	203.7	176.5	185.4	167.7	185.9
Rice price ('000D/kg)	1.252	1.227	1.262	1.219	1.240	1.239
			(Thousand Dong/sao)			
Gross return	249.4	250.2	222.9	225.9	207.3	230.2
Total costs	130.1	130.9	122.1	122.2	119.7	124.8
Material cost	62.4	58.9	53.8	58.2	50.7	56.5
Labor cost	42.7	52.9	48.9	43.8	55.5	49.2
Purchased cost	64.9	47.8	50.7	52.4	37.6	49.9
Net return	119.3	119.2	100.8	103.7	87.6	105.5
Gross margin	172.6	190.1	160.1	160.9	157.8	168.2
Value added	187.0	191.2	169.2	167.8	156.6	173.8

Source: Survey.

52

Table 4.13. Production Cost and Profitability of THQV

in Autumn Rice Crop under RCT in Hai Phong subdistrict

Items	Unit	Volume
Yield	kg/sao	163.3
Rice price	'000D/kg	2.721
Gross return	'000D/sao	444.2
Total costs	'000D/sao	134.1
Material cost	'000D/sao	62.9
Labor cost	'000D/sao	45.9
Purchased cost	'000D/sao	64.4
Net return	'000D/sao	310.1
Gross margin	'000D/sao	367.7
Value added	'000D/sao	381.2

Source: Survey.

In MHYV Spring rice crop, total costs for production in Hai Phong is relative larger than in other subdistricts, but the gross returns are observed highest with 280,800 and 303,000 Dong per sao for RCT and MMCT, respectively. It made the net return in Hai Phong as greatest as 136,400 and 161,800 Dong per sao for RCT and MMCT, respectively. In An Hoa and Nghia Hiep, depend on total costs used and gross return obtained, the net return for RCT is lowest among all sample subdistricts. Comparison between two cultivation techniques in Spring rice crop, rice production under MMCT spend more production costs than that under RCT. But MMCT generated higher gross return than RCT, so that MMCT got higher net return than RCT.

In Autumn rice crop, farmers who enjoyed in production of MHYV in Hai Phong and Minh Khai subdistricts generated the same highest value of gross return and net return per sao (250 thousand and 119 thousand Dong). In Hai Phong, farmers produced THQV in Autumn rice crop got highest gross return and net return (444,200 and 310,100 Dong per sao) as compare to MHYV in the same Autumn rice crop and to MHYV in Spring rice crop in every locations.

4.5. Economic Efficiency of Input Utilization

The examination of economic efficiency of input utilization is an important aspect of economic analysis for rice production. It can help to evaluate the success level of producers in management of input allocation and production conduction. The indicators used for economic efficiency of rice production are return to material input, return to labor, return / cost ratio, and net return / gross return ratio.

According to value of material cost, labor cost, total cost, gross return and net return as mentioned above, most of major indicators of economic efficiency of rice production in the study area are derived. In MHYV Spring crop, return/cost ratio is highest in Hai Phong for RCT and MMCT of 1.95 and 2.14, respectively, as compare to other locations. It signifies that one Dong investment could accumulate the return of 1.95 and 2.14 Dong, respectively. (Table 4.14 and 4.15). In Autumn crop for MHYV, return/cost ratio is largest in Hai Phong and Minh Khai of 1.93 and 1.92, respectively. Overall, Spring rice crop of MHYV under MMCT got higher return/cost ratio (1.91) than that under RCT (1.76). Highest return/cost ratio (3.36) was arisen in THQV production in Hai Phong as compare to MHYV in the same RCT Autumn rice crop and to MHYV in RCT and MMCT Spring rice crop from every locations (Table 4.14, 4.15, 4.16 and 4.17). Production of THQV in Hai

Phong created a net return/gross return ratio of 0.69, which is the highest ration in the sample locations.

Return to material input, in all areas, is highest (6.56) in production of THQV under RCT in Autumn rice crop in Hai Phong (Table 4.17) and followed by MMCT (3.44) in MHYV Spring rice crop (Table 4.15). This indicator is lowest (2.96) for RCT in MHYV Spring rice crop (Table 4.14). By location, largest return to material input (6.56) is got by Hai Phong farmers from THQV in RCT Autumn rice crop and smallest one (2.79) by An Hoa farmers from RCT in MHYV Spring crop. It means that with one Dong investment of material inputs farmers in Hai Phong received 6.56 Dong from THQV in RCT Autumn rice crop, while in Nghia Hiep farmers received only 2.79 Dong from RCT in MHYV Spring rice crop.

Table 4.14. Economic Efficiency of Input Utilization for MHYV in Spring Rice Crop under RCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Return to Material input	3.20	2.93	2.83	3.02	2.79	2.96
Return to labor	4.11	2.86	2.57	3.25	2.66	3.10
Return/cost ratio	1.95	1.73	1.63	1.79	1.70	1.76
Net return/ Gross return ratio	0.47	0.42	0.37	0.43	0.40	0.42

Source: Survey.

In labor investment, in RCT Autumn rice crop, farmers in Hai Phong obtained highest return to labor from THQV of 8.15 Dong. In MHYV Spring rice crop under RCT, Hai Phong farmers got highest return to labor of 4.03 Dong, while farmers in An Hoa secured

55

as smallest as 2.57 Dong. For all study areas, return to labor is observed as first rank (8.15) for production of THQV in RCT Autumn rice crop in Hai Phong subdistrict, second one (3.28) of MHYV in RCT Autumn rice crop. In Spring rice crop, production of MHYV under MMCT got higher return to labor (3.13) than that under RCT (3.10).

Table 4.15. Economic Efficiency of Input Utilization for MHYV in Spring Rice Crop under MMCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Return to Material input	3.93	3.19	3.27	3.99	3.55	3.44
Return to labor	3.60	3.07	3.21	3.97	2.85	3.13
Return/Cost ratio	2.14	1.84	1.88	2.09	1.89	1.91
Net return/ Gross return ratio	0.53	0.44	0.46	0.52	0.47	0.46

Source: Survey.

Table 4.16. Economic Efficiency of Input Utilization for MHYV in Autumn Rice Crop under RCT

Items	Hai Phong	Minh Khai	An Hoa	Co Bi	Nghia Hiep	All Areas
Return to Material input	3.37	3.39	3.29	3.26	3.07	3.27
Return to labor	3.99	3.32	3.09	3.48	2.68	3.28
Return/Cost ratio	1.93	1.92	1.82	1.87	1.76	1.86
Net return/ Gross return ratio	0.47	0.47	0.44	0.45	0.42	0.45

Source: Survey.

56

Table 4.17.   Economic Efficiency of Input Utilization for THQV
in Autumn Rice Crop under RCT in Hai Phong subdistrict

Items	Ratio
Return to Material input	6.56
Return to labor	8.15
Return/Cost ratio	3.36
Net return/Gross return ratio	0.69

Source: Survey.

In short, in all the study areas, in MHYV Spring crop, rice production with MMCT could get higher benefit than with RCT and in RCT Autumn crop, rice production of THQV could receive larger efficiency than MHYV.

4.6. Comparison of Rice Production among Selected Regions and Asian Countries

In order to see more clearly the efficiency of rice production in Red River Delta, a comparison of rice production among different farming environment should be taken. Table 34 presents rice yield, amount of fertilizer use and labor use per hectare and per one ton of paddy through out some selected regions and Asian countries.

Table 34 shows that Indonesian farmers produced highest rice yield (6336 kg per ha) with highest level of fertilizer used (176 kg NPK per ha) and middle level of man power (106 manday per ha). Smallest yield levels could be noticed in Cambodia and Nepal. In the Philippines and Mekong Delta of Viet Nam, farmers produced nearly the same second level

57

of rice yield per ha with 6175 and 6163 kg, respectively. But labor used to produce one ton of paddy in the Philippines is lowest (11,9 manday). The fertilizer quantity used for one ton of paddy in the Philippines and Mekong Delta are not so much different with 24.1 and 26.6 kg NPK, respectively.

Table 4.18. Comparison of Material Inputs and Yield of Rice Production among Different Selected Region and Asian Countries

Countries	Yield (kg/ha)	Fertilizer Used (kg/ha.)				Labor use per ha (manday)	For one ton of paddy	
		Total	N	P	K		Fert. (kg NPK)	Labor (manday)
Bangladesh	3500	126	70	43	13	159	36.0	45.4
Cambodia	2721	46	40	6	–	123	16.9	45.2
China	5000	171	114	43	14	194	34.2	38.8
Indonesia	6336	176	95	76	5	106	27.8	16.7
Nepal	2880	42	30	11	1	128	14.6	44.4
Pakistan	3330	88	70	18	–	68	26.4	20.4
Philippines	6175	149	97	40	12	74	24.1	11.9
Thailand	4200	77	77	–	–	58	18.3	13.8
Vietnam: – MD	6163	164	110	49	5	88	26.6	14.3
– RRD	5365	165	104	57	4	242	30.7	45.1

Source: World Rice Statistics, 1990.

Note: MD = Mekong Delta.
RRD = Red River Delta.
Bangladesh: Based on interviewed farmers from 62 villages in 1987.
Cambodia: Provinces of Takeo, Kompong Speu and S. Rieng, dry season, 1988.
China: Anxiang county, Human province, 1988.
Indonesia: Villages of Sukadama, Anjatan, Bojungtengah and Tambakdahan, West Java, 1988.

Nepal: Anandban village in Western Tarai region, dry season, 1987.
Pakistan: Rice Zone of Sind, 1988.
Philippines: Moragol village, Nueva Ecija, dry season, 1989.
Thailand: Wang Yang village in Suphan Buri, Central Plain, 1987.
Vietnam:
 – MD: Six subdistricts in Mekong Delta, dry season, 1992.
 – RRD: Recent study from five subdistricts in Red River Delta, Spring crop,
                1993.

Farmers in Red River Delta produced paddy with the yield as fourth class in the region, but the fertilizer and labor invested per hectare is third and first standing, respectively. For one ton of paddy, Red River Delta farmers applied 30.7 kg NPK and 45.1 mandays. The highest fertilizer rate for one ton of paddy is transpired in Bangladesh and second one in China. The rate of fertilizer use for one ton of paddy by Red River Delta farmers is came in third position after Bangladesh and China. The proportion of labor donated to produce one ton of paddy is highest in Bangladesh, and followed in Cambodia. The rate of labor use for one ton of paddy by Red River Delta farmers is got up third place after Bangladesh and Cambodia.

In sum, farmers in Red River Delta invested largest amount of labor and third level of fertilizer per unit of area in rice production as compare to neighbor countries. The rice yield they received was standing as fourth class. In order to produce one ton of paddy, Red River Delta farmers invested fertilizer and labor both as third largest level among the selected regions and Asian countries.