TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
ABSTRACT	v
THAI ABSTRACT	vii
TABLE OF CONTENTS	ix
LIST OF TABLES	xii
CHAPTER I: INTRODUCTION	1
1.1. Background	1
1.2. Rationale	2
1.3. Literature Review	3
1.3.1. Government Policies	3
1.3.2. Measuring Methods	6
1.3.3. Economic Study of Rice Production in Red River Delta of Viet Nam	7
1.4. Objectives of the Study	7
1.5. Usefulness of the Study	8
CHAPTER II: METHODOLOGY	9
2.1. Scope and Limitation of the Study	9
2.2. Sampling Methods	9
2.3. Data Collection	11
2.4. Theoretical Model	11
2.5. Translog Profit Function and Variable Input Share Equations	13
2.6. Variable Input Demand Elasticities	14
2.6.1. Own-Price Elasticity of Demand	15
2.6.2. Cross-Price Elasticity of Demand	15
2.6.3. Elasticity of Demand with Respect to Output Price	15
2.6.4. Elasticity of Demand with Respect to Fixed Factors	16
2.7. Elasticities of Output Supply	16
2.7.1. Output Supply Elasticity with Respect to Variable Input Price	17
2.7.2. Own-Price Elasticity of Supply	17
2.7.3. Elasticity of Output Supply with Respect to Fixed Inputs	17
2.8. Budgeting Analysis	18

	Page
CHAPTER III: RICE PRODUCTION IN THE RED RIVER DELTA	20
3.1. Rice Production Environment	20
3.1.1. Arable and Paddy Land	2.0
3.1.2. Cropping Systems	22
3.2. Rice Production Operation	23
3.3. Incidence of New Cultivation Technique	26
3.4. Incidence for Kinds of Rice Varieties	28
3.5. General Socio-Economic Conditions	29
3.5.1. Farm Household Size and Demographic Characteristics	29
3.5.2. Land Ownership	30
3.5.3. Farming Experience	30
3.5.4. Education Level	30
3.5.5. Farm Household Assets and Equipment	32
3.6. Input Market	33
3.7. Rice Marketing Practices and Constraints	34
3.8. Credit Operations	37
CHAPTER IV: ECONOMIC ANALYSIS OF RICE PRODUCTION	
IN STUDY AREA	40
4.1. Rice Yield	40
4.2. Material Input Utilization	43
4.2.1. Seed	43
4.2.2. Fertilizer	44
4.2.3. Pesticide Use	46
4.2.4. Irrigation	47
4.3. Labor Input	47
4.4. Production Cost and Profitability	50
4.5. Economic Efficiency of Input Utilization	54
4.6. Comparison of Rice Production among Selected Regions	
and Asian Countries	57
CHAPTER V: ESTIMATION OF VARIABLE INPUT DEMANDS	
AND OUTPUT SUPPLY	60
5.1. Model Specification	60

	Page
5.2. Joint Estimation of the Normalized Restricted Translog Profit Function	
and Variable Input Share Equations	62
5.3. Elasticities of Output Supply and Variable Input Demands	70
5.3.1. Elasticities of Variables Input Demands	71
5.3.2. Elasticities of Rice Supply	73
CHAPTER VI: PRICE-SUBSIDY POLICY ANALYSIS	74
6.1. Effects of Price-Subsidy Policy Instruments	
on Input Utilization and Output Supply	. 74
6.2. Costs, Benefits and Cost-Effectiveness of Price-Subsidy Policy Instruments	77
6.2.1. Costs and Benefits of Price-Subsidy Policy Instruments	77
6.2.2. Cost-Effectiveness of Price-Subsidy Policy Instruments	84
CHAPTER VII: CONCLUSION AND RECOMMENDATION	86
7.1. Summary and Conclusion	86
7.2. Recommendations	89
7.3. Further Areas of Research	90
REFERENCES	91
APPENDIX	94
CURRICULUM VITAE	97

LIST OF TABLES

		Page
Table 1.1.	Rice Production in Viet Nam, 1985-1993	5
Table 1.2.	Rice Production in Red River Delta, 1985-1993	5
Table 3.1.	Area of Main Soil Groups	21
Table 3.2.	Red River Delta Arable and Paddy Land	21
Table 3.3.	Arable and Paddy Land in the Study Area	22
Table 3.4.	Farmers' Practices in Land Preparation and Seedling Establishment	25
Table 3.5.	Briefly Description of Cultivation Techniques in Spring Rice Crop	26
Table 3.6.	Sample Farmers' Adaptation of Rice Cultivation Techniques	28
Table 3.7.	Farmers' Application of Rice Varieties in Autumn Crop	29
Table 3.8.	General Socio-economic Information	31
Table 3.9.	Farm Household Assets and Equipments	32
Table 3.10.	Input Prices in the Study Areas	33
Table 3.11.	Evaluation of Farmers on Input Prices	34
Table 3.12.	Rice Marketing Practices of Sample Farmers	35
Table 3.13.	Observed Time of Rice Selling Activities	36
Table 3.14.	Farmers' Evaluation on Current Rice Price	36
Table 3.15.	Farmers' Indebtedness in the Study Area	37
Table 3.16.	Sample Farmers in Role of Money Lender	38
Table 3.17.	Farmers' Requirement of Credit for Future Investment	39
Table 4.1.	Average Rice Yield of MHYV Spring Crop	
	Classified by Cultivation Techniques and Locations	41
Table 4.2.	Average Rice Yield of MHYV under RCT	
	Classified by Crop Seasons and Locations	. 42
Table 4.3.	Average Rice Yield of THQV in Autumn Crop under RCT	
	in Hai Phong subdistrict	42
Table 4.4.	Material Inputs for Rice Production in MHYV Spring Crop	
	Classified by Cultivation Techniques and Locations	44
Table 4.5.	Material Inputs for Rice Production of MHYV under RCT	
	Classified by Crop Seasons and Locations	45
Table 4.6.	Material Inputs for Rice Production of THQV in Autumn Crop	
	under RCT in Hai Phong subdistrict	46

Table 4.7.	Labor Inputs for Rice Production of THQV in Autumn Crop	
	under RCT in Hai Phong subdistrict	47
Γable 4.8.	Labor Inputs for Rice Production in MHYV Spring Crop	
	Classified by Cultivation Techniques and Locations	4 8
Table 4.9.	Labor Inputs for Rice Production of MHYV under RCT	
	Classified by Crop Seasons and Locations	49
Table 4.10.	Production Cost and Profitability of MHYV in Spring Rice Crop under RCT	50
Table 4.11.	Production Cost and Profitability of MHYV in Spring Rice Crop under RCT	51
Table 4.12.	Production Cost and Profitability of MHYV in Autumn Rice Crop under RCT	52
Table 4.13.	Production Cost and Profitability of THQV in Autumn Rice Crop under RCT	
	in Hai Phong subdistrict	53
Table 4.14.	Economic Efficiency of Input Utilization	
	for MHYV in Spring Rice Crop under RCT	55
Table 4.15.	Economic Efficiency of Input Utilization	
	for MHYV in Spring Rice Crop under MMCT	56
Table 4.16.	Economic Efficiency of Input Utilization	
	for MHYV in Autumn Rice Crop under RCT	56
Table 4.17.	Economic Efficiency of Input Utilization	1,
	for THQV in Autumn Rice Crop under RCT	57
Table 4.18.	Comparison of Material Inputs and Yield of Rice Production	
	among Different Selected Region and Asian Countries	58
Table 5.1.	Estimation of the Normalized Restricted Translog Profit Function and	
	Variable Input Share Equations for RCT in MHYV Spring Rice Crop	65
Table 5.2.	Estimation of the Normalized Restricted Translog Profit Function and	
	Variable Input Share Equations for MMCT in MHYV Spring Rice Crop	66
Table 5.3.	Estimation of the Normalized Restricted Translog Profit Function and	
	Variable Input Share Equations for MHYV in RCT Autumn Rice Crop	67
Table 5.4.	Estimation of the Normalized Restricted Translog Profit Function and	
	Variable Input Share Equations for THQV in RCT Autumn Rice Crop	6 8
Table 5.5.	Elasticities of Output Supply and Variable Input Demands	
	for RCT and MMCT in MHYV Spring Rice Crop	70
Table 5.6.	Elasticities of Output Supply and Variable Input Demands	
	for MHYV and THQV in RCT Autumn Rice Crop	71
Table 6.1.	Effect of Alternative Price Policy Instruments	
-	in Rice Production of RCT in MHYV Spring Rice Crop	75

Table 6.2.	Effect of Alternative Price Policy Instruments	
	in Rice Production of MMCT in MHYV Spring Rice Crop	75
Table 6.3.	Effect of Alternative Price Policy Instruments	
	in Rice Production of MHYV in RCT Autumn Rice Crop	76
Table 6.4.	Effect of Alternative Price Policy Instruments	
	in Rice Production of THQV in RCT Autumn Rice Crop	76
Table 6.5.	Base-line Data Used for Calculating Costs, Benefits and Cost-Effectiveness	
	of Price-Subsidy Policy Instruments in MHYV Spring Rice Crop	78
Table 6.6.	Base-line Data Used for Calculating Costs, Benefits and Cost-Effectiveness	
* * .	of Price-Subsidy Policy Instruments in Autumn Rice Crop under RCT	78
Table 6.7.	Estimated Costs, Benefits and Cost-Effectiveness of Price-Subsidy Policy	
	Instruments for Rice Production of RCT in MHYV Spring Rice Crop	79
Table 6.8.	Estimated Costs, Benefits and Cost-Effectiveness of Price-Subsidy Policy	
	Instruments for Rice Production of MMCT in MHYV Spring Rice Crop	80
Table 6.9.	Estimated Costs, Benefits and Cost-Effectiveness of Price-Price Policy	
	Instruments for Rice Production of MHYV in RCT Autumn Rice Crop	81
Table 6.10.	Estimated Costs, Benefits and Cost-Effectiveness of Price-Subsidy Policy	
	Instruments for Rice Production of THOV in RCT Autumn Rice Crop	82