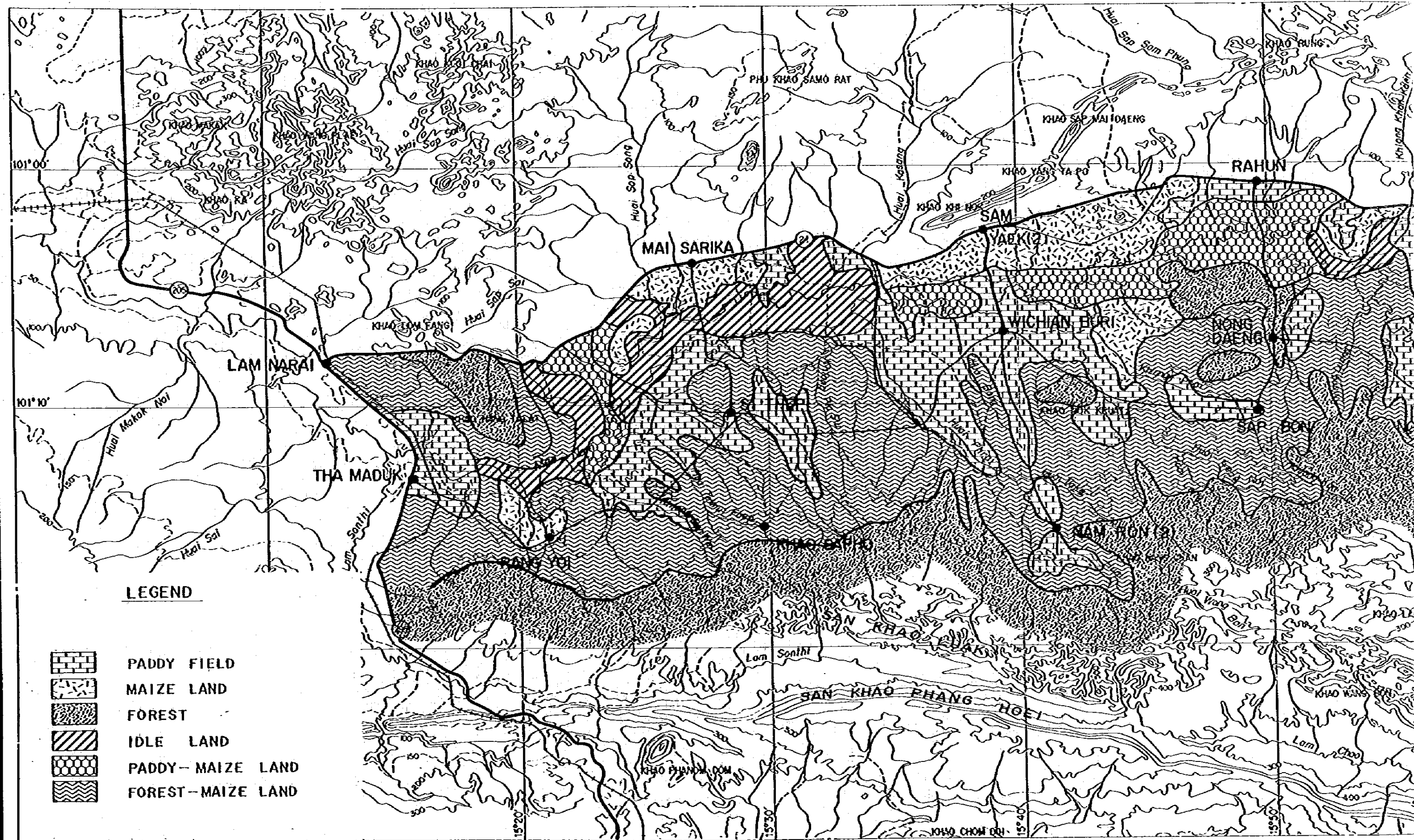


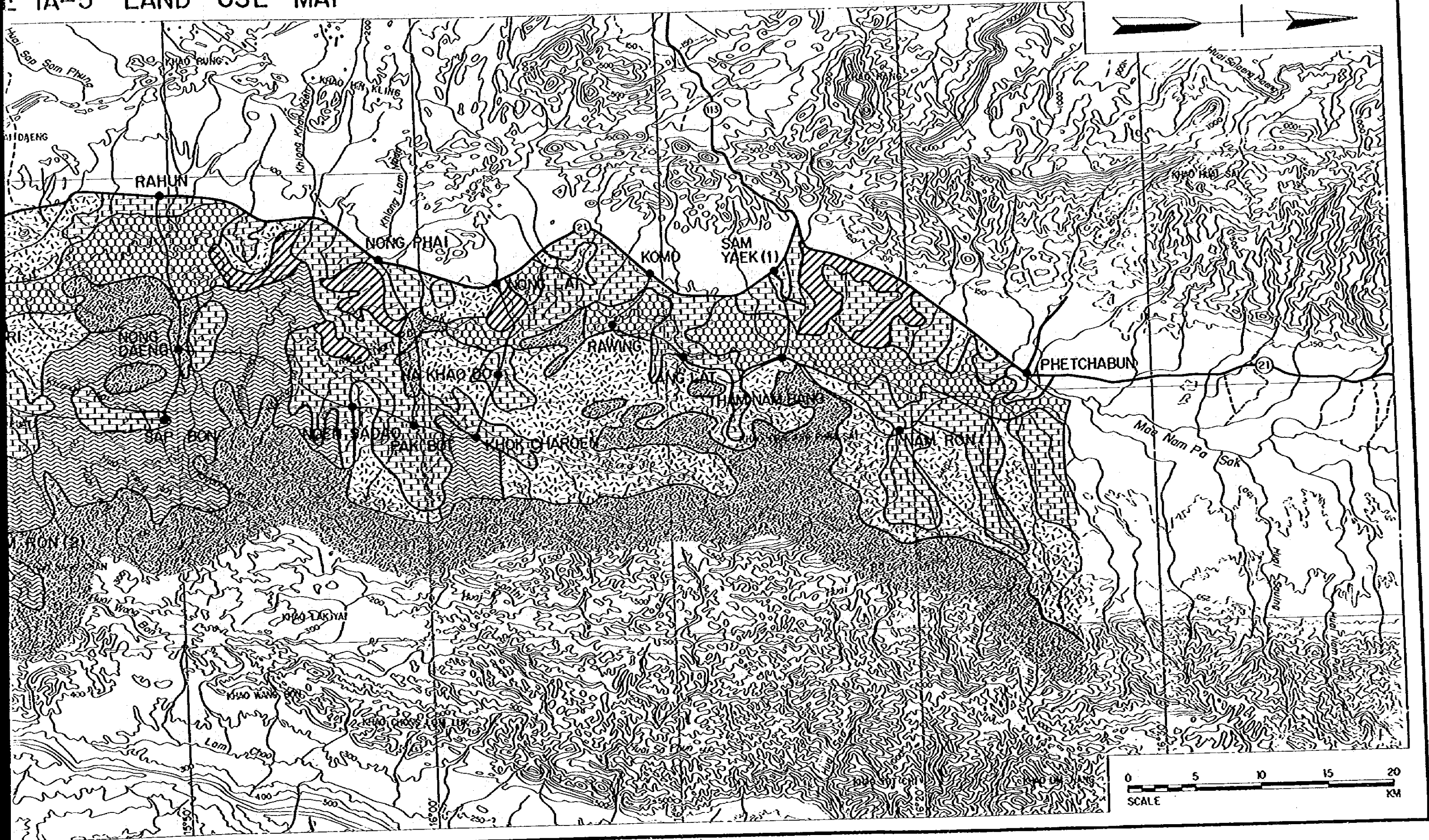
FIGURE IA-5 LAND USE M



LEGEND

-  PADDY FIELD
-  MAIZE LAND
-  FOREST
-  IDLE LAND
-  PADDY-MAIZE LAND
-  FOREST-MAIZE LAND

FIGURE IA-5 LAND USE MAP



調査対象地域の農業の現況

Appendix 2

調査対象地域の農業の現況

2-1 耕地面積および作物生産量

1976年における調査対象地域内の各関連郡の耕作面積およびその耕作比率をTable 2 A-1に示す。

1971年から1976年における、調査対象地域、全国およびプロジェクト・エリアの耕作面積、農業生産額及び単位当たり収量を、統計資料に基づいて、Table 2 A-2に示す如く算定した。ただし、調査対象地域のは、今回の現地調査で得た、1975～1977年の各関連県の総計を基にして作成したものである。

主要作物およびその他の作物の単位当たり平均収量の傾向はTable 2 A-3に示すとおりである。

2-2 農家経済の分析

2-2-1 基礎データ

プロジェクト・エリアに關係する6郡の内5郡までが、ベトナム県に属しており、面積的に見ても、プロジェクト・エリアの95%までがこの県に入っているため、一農家当りの平均保有耕地面積、現在の生産費、販売価格およびその他の基礎的数値は、この県で得たデータに基づいて算定した。

2-2-2 作物

農家収支の計算に当たっては、畑作地帯及び水田地帯双方の主要な元成作物であるメイズと稲、さらにこれら元成作物の主要な裏作物としての豆類とを対象作物とした。その他の二次的作物としては、ソルガム、綿花、なんきん豆、ごま等があるが、この内、綿花は新たに裏作物として栽培するのはその管理の複雑さや、作付期が上記元成作物と重なるため、今回の農家経済分析では、

裏作としては除外することにした。すなわち、綿花はその成長期に絶え間ない灌水が必要である一方、開花、結実期には雨水は禁物である上、病害虫防除も手間がかかる作物であるため、灌漑施設なしに天水だけで、経験の浅い農民が栽培することは奨励出来ないためである。

本文でも述べたように、現在政府は、メイズの品種として従来栽培してきている Guatemala 品種および在来種に加えて、"Hybrid Suwan 1" という耐虫品種を導入して、奨励している。この品種の単位当り収量は、政府の農業試験場¹の試験結果によると、Guatemala 品種や在来種より、比較的高いものになっている。またカセサリ (Kasetsart) 大学の農業経済学部の報告²によると、1977年におけるタイ国のメイズの新開地におけるこの新品種の普及率は次表のとおり、約20%に及んでおり、またその単位当り収量はrai当り410kgとなっている。

Planted Area and Average Yield of Maize by Each Variety
(1977)

	Local Variety	Guatemala	Suwan 1
<u>Planted Area (Rai)</u>			
Old Field	1,581,606 (33.8%)	1,968,450 (40.0%)	1,225,641 (26.2%)
Newly Opened Field	439,625 (26.9%)	855,620 (52.3%)	339,997 (20.8%)
Total	2,021,231 (32.0%)	2,725,070 (43.2%)	1,565,618 (24.8%)
<u>Average Yield (kg per Rai)</u>			
Old Field	292	337	411
Newly Operated Field	255	330	408
Total	282	335	410

註1 フアラプタバッド (Pharaputtabat) 農業試験場の試験結果によると、この品種のrai当り平均収量は450kgに達している。

2 Idea & Suggestion on District Extension Office for Suwan Corn Variety, by Dr. Junnean Burma, Agricultural Economic Department, 1978.

前表およびTable 2A-3に示した過去の傾向から判断して、プロジェクト・エリアにおけるメイズの各品種の平均単位当り収量を次のものとした。

Guatemalaおよび在来種	320 kg/rai
Suwan 1	400 kg/rai

2-2-3 生産費

典型的平均農家の農業生産費はTable 2A-4に示したとおりであるが、この生産費の計算根拠となる各項目の詳細は次のとおりである。

1) 耕作費

圃場整備やすき起しは通常トラクター又は牛耕(水牛)によってなされている。除草は2回以上で、通常牛力または人力でなされている場合が多い。

トラクターの賃材料及び牛耕料は次のとおりである。

トラクターの賃材料

すき起し (Ploughing)	50-60 パーツ/rai
砕土 (Harrowing)	40-50 パーツ/rai
代かき (Puddling)	40-50 パーツ/rai

畜力の賃材料

畦作り (Ditching)	60 パーツ/日, 5 rai/日
除草 (Weeding)	

2) 農業資材費

農業の生産資材には、肥料、病害虫防除用の農薬、農具、諸材料等がある。現状では、調査対象地域内の農民は、稲作や野菜栽培以外には、投下する資金が限られているため、ほとんど肥料や農薬を使用していない。

硫酸アンモニウムは、水田に使用される典型的な肥料であるが、この稔安の価格は1978年のバンコクの卸売価格でトン当り2,000パーツから3,000パーツであり、また市場小売価格はトン当り約3,400パーツまたはkg当り4~5パーツである。

農薬の価格は、それぞれの防除薬で価格が異なる。農民は主として防虫剤を使用しているが、一般に使用される防虫剤のバンコク送料CIF価格は次のとおりである。

Furadan 5%	リットル当り33パーツ(\$1.65)
Aldrin 5%	リットル当り12パーツ(\$0.60)

1回の散布に必要な農薬の量は、rai当り $\frac{1}{2}$ リットル(ヘクタール当り1リットル)であるので、一回の散布に要する農薬費はrai当り5ないし6パーツと見積られる。その他の農業用資材は、

耕作や収穫に使用される小農具、袋、かご類等である。

3) 労 賃

調査対象地域の普通の農業労賃は1日当り25バーツである。ただし、収穫作業に対しては、次のように出来高払いで行われている。

	Unit Cost per bag (B/bag)	Number of Bags per Man-day (Bag)	Man-day per rai (M/D)	Baht per rai (estimate)
Maize	5	5	1.8-2	45-50
Beans	14	3	3.3-3.5	140-150

Note: (1) One bag of corn cobs is equivalent to around 45 kg of shelled corn.
(2) One bag of bean pods is equivalent to around 15 kg of shelled bean.

4) 脱穀及び脱粒

現在ではメイズの粒から実をとる作業は、ほとんど賃貸しのトラクターに備え付けられた脱粒機または仲買人が持って来る脱粒機で行っており、また豆類のさや取りも徐々に機械化されつつある。

稲の脱穀はまだ牛力で行われており、調査対象地域内では脱穀機はほとんど使われていない状況である。この脱穀および脱粒の平均経費は次表のとおりである。

Threshing and Shelling Cost

Maize	by machine	B1 per 15 kg of shelled corn
Rice	by buffalo	B30 per rai (350-400 kg of paddy)
	by tractor	B42 per rai
Beans	by machine	B5 per 15 kg of shelled beans

2-2-4 農家の庭先価格

農産物の庭先価格は、FOB価格や地方の市場価格によって変動するものである。この価格は

通常園場から市場までの距離およびその連絡道路の状況に影響される。

特に調査対象地域においては、この価格は雨期および乾期の道路の状況に左右されることが多い。1977年の統計資料によると、ベトナムにおける主要農産物の庭先価格の変動状況は次表のとおりである。

Farmgate Prices in 1977

	(Bahts per kg)	
	Dry Season (Nov. - Apr.)	Wet Season (May - Oct.)
Maize	1.72 - 2.12	1.33 - 1.37
Rice	1.88 - 2.25	1.75 - 2.20
Mung bean	4.50 - 8.00	4.50 - 6.50
Soy bean	5.50 - 6.89	5.00 - 6.50

Source: Price Statistic 1967 - 1977
Agricultural Economic Division,
Ministry of Agriculture Cooperatives

現状においては、雨期の庭先価格は乾期の庭先価格より低い、この傾向は、全天候道路の建設により改善されると考えられる。

Table 2A-1に示した如く、メイズと籾の庭先価格は、1974年以来過去4年間ほとんど変わらないか、むしろ値下りの傾向があるが、一方豆類の価格は、同年間に急速な値上りを示している。ただし1977年における高値は、旱魃による品不足に起因する特別なケースである。

以上のような状況および過去の卸売価格の傾向から判断して、プロジェクト・エリア内における現在の平均庭先価格を次のように推定した。

Maize	B1,600 per ton
Paddy	B2,000 per ton
Beans	B5,400 per ton
Other second crops	B2,800 per ton ¹

なお、その他の英作物 (Other second crops) の庭先価格は1976年のベトナム共和国におけるソルガム、なんきん豆およびごまの加重平均で示してある。

ここで注意すべきことは、これら市場価格としての価格は、あくまで農家経済の観点からみた財務分析上の価格であり、第1巻第5章で論じた国民経済の観点からみた経済分析上の価格とは異なるものである。

2-2-5 農家収入

以上に述べた生産費と価格を基として、典型的平均農家の収入をTable 2A-5の如く推定した。

Table 2A-1 CULTIVATED AREA IN RELATED AMPHOB (1976)

(Unit 1,000 rai)

	Changwat Phetchabun /1						Changwat Lop Buri /2		Total		
	Petchabun	Nong Phai	Bung Sam Phan	Wichian Buri	Si Thep	Total	% of Total Cultivated Land	Chai Badan	% of Total Cultivated Land	Cultivated Land	% of Total Cultivated Land
(1) Rice	159.8	108.3	57.5	107.4	53.6	486.6	20.1	23.5	3.0	510.1	15.9
(2) Maize	174.6	332.2	218.9	455.3	74.3	1,255.5	51.8	580.8	74.4	1,836.3	57.3
(3) Total = (1) + (2)	<u>334.4</u>	<u>440.5</u>	<u>276.4</u>	<u>562.9</u>	<u>127.9</u>	<u>1,742.1</u>	<u>71.9</u>	<u>604.3</u>	<u>77.4</u>	<u>2,346.4</u>	<u>73.2</u>
(4) Mung beans	28.7	61.3	36.7	109.8	31.3	267.8	11.1	48.0	6.2	315.8	9.9
(5) Soy beans	4.3	4.8	36.4	144.6	23.6	213.5	8.8	32.4	4.2	245.9	7.7
(6) Total = (4) + (5)	<u>33.0</u>	<u>66.1</u>	<u>73.1</u>	<u>254.4</u>	<u>54.9</u>	<u>481.3</u>	<u>19.9</u>	<u>80.4</u>	<u>10.4</u>	<u>561.7</u>	<u>17.6</u>
(7) = (6)/(3) (%)	<u>9.9</u>	<u>15.0</u>	<u>26.4</u>	<u>45.2</u>	<u>42.9</u>	<u>27.6</u>		<u>13.3</u>		<u>23.9</u>	
(8) Total of other crops	<u>16.4</u>	<u>45.9</u>	<u>32.7</u>	<u>55.2</u>	<u>14.5</u>	<u>164.7</u>	<u>6.8</u>	<u>87.7</u>	<u>11.2</u>	<u>252.4</u>	<u>7.9</u>
Sorghum	1.3	20.2	9.8	34.0	1.2	66.5	2.7	61.4	7.0	127.0	4.0
Cotton	4.7	12.5	12.9	5.5	0.5	36.1	1.5	4.8	0.6	40.9	1.3
Groundnut	3.7	2.5	6.6	4.2	4.7	21.7	0.9	19.1	2.4	40.8	1.3
Sesame	3.5	3.9	1.1	3.5	7.5	19.5	0.8	-	-	19.5	0.6
Other upland crops	3.2	6.8	2.3	8.0	0.6	20.9	0.9	2.4	0.3	23.3	0.7
(9) Vegetables	<u>2.8</u>	<u>0.7</u>	<u>0.5</u>	<u>1.2</u>	<u>0.2</u>	<u>5.4</u>	<u>0.2</u>	<u>0.6</u>	<u>0.1</u>	<u>6.0</u>	<u>0.2</u>
(10) Fruit trees	<u>15.1</u>	<u>8.7</u>	<u>0.8</u>	<u>1.0</u>	<u>2.5</u>	<u>28.1</u>	<u>1.2</u>	<u>7.4</u>	<u>0.9</u>	<u>35.5</u>	<u>1.1</u>
(11) Total cultivated land = (3)+(6)+(8)+(9)+(10)	401.7	561.9	383.5	874.7	200.0	2,421.6	100.0	780.4	100.0	3,202.0	100.0

Sources: /1 "Agricultural and Related Information of Changwat Phetchabun",
Agricultural Extension Office, Nov. 1977

/2 "Agricultural Information of Amphoe Chai Badan, 1977",
Agricultural Office

Table 2A-2 CROP PRODUCTION AREA, YIELD AND FARMGATE PRICE (2)

	1975				1976				1977				1971 - 1977
	Planted Area (1,000rai)	Production (1,000ton)	Average Yield (kg/rai)	Average Price (B/kg)	Planted Area (1,000rai)	Production (1,000ton)	Average Yield (kg/rai)	Average Price (B/kg)	Planted Area (1,000rai)	Production (1,000ton)	Average Yield (kg/rai)	Average Price (B/kg)	Average Yield (kg/rai)
Paddy													
Petchabun	727.4	344.1	473	2.15	808.7	339.6	420	1.94	810.2	316.2	390	1.90	439
Lop Buri	653.4	188.5	288	2.35	644.6	257.6	400	2.24	653.0	189.3	290	2.11	271
Thailand	55,602.0	15,300.0	275	2.21	53,595.0	15,068.0	281	2.00	-	-	-	2.05	279
Project Area	252.0	94.7	376		277.2	117.9	425		304.9	70.7	232		344
Maize													
Petchabun	1,515.0	591.4	390	2.13	1,710.0	623.7	365	1.64	1,640.0	317.9	194	1.36	315
Lop Buri	1,184.0	333.8	282	1.88	1,315.0	407.6	310	1.68	791.0	118.7	150	1.69	260
Thailand	8,200.0	2,863.0	349	1.90	8,029.0	2,675.0	333	1.72	-	-	-	1.65	317
Project Area	579.6	235.0	405		587.7	204.7	348	-	604.2	127.0	210		321
Mung Bean													
Petchabun	226.1	25.1	111	3.90	360.2	49.7	138	5.88	360.8	28.9	80	6.55	140
Lop Buri	199.2	22.9	115	3.50	76.8	11.5	150	5.14	625.5	86.5	138	5.89	151
Thailand	1,022.0	120.6	118	3.32	1,392.0	124.8	90	5.61	-	-	-	6.09	131
Project Area	149.6	20.0	134	-	189.2	26.7	141	-	217.5	26.9	124	-	133
Soy Bean													
Petchabun	272.2	49.3	181	3.91	216.3	38.7	179	6.00	209.9	35.1	167	6.00	184
Lop Buri	-	-	-	-	36.3	4.4	120	4.50	171.6	25.7	150	6.13	131
Thailand	738.0	113.9	154	4.36	635.0	113.6	179	4.67	-	-	-	6.78	149
Project Area	(Data is not available)												-

Sources: - Planted area, Production and Average yield of Petchabun, Lop Buri, and Thailand are from "Statistical Reports of Changwat" by National Statistical Office, and "Agricultural Statistics of Thailand, Crop Year 1976/77" by Division of Agricultural Economics, Ministry of Agriculture & Cooperatives.

- Data of Project Area are from field survey information.

- Average prices are from "Price of Agricultural Crops" by Division of Agricultural Economics, Ministry of Agriculture & Cooperatives.

Table 2A-4 CURRENT PRODUCTION COSTS
(Baht per rai)

- MAIZE -

	Guatemala & Local Varieties			Suwan I Variety		
	Materials & Equipment	Labor ^{/1}	Total Cost	Materials & Equipment	Labor ^{/1}	Total Cost
Variable Costs						
Cultivation ^{/2}	102	20	122	102	20	122
Seeds and Sowing ^{/3}	20	20	40	30	20	50
Agro-chemicals	6	-	6	-	-	-
Weeding & Management	20	75	95	20	75	95
Harvesting & Drying ^{/5}	-	75	75	-	85	85
Threshing & Shelling ^{/6}	22	30	52	27	40	67
Others ^{/7}	10	-	10	11	-	11
Sub-total	180	220	400	190	240	430
Fixed Cost^{/8}	40	-	40	40	-	40
Total	220	220	440	230	240	470

Remarks:

- ^{/1} Hired labor and family labor (includes food expenses)
^{/2} Tractor ploughing B50/rai, Harrowing B40/rai; Ditching Buffalo B60/5rai/day
^{/3} Guatemala & local variety B2/kg, Suwan I B3/kg
^{/4} Insecticide, 0.17//1 time/rai, B6/rai
^{/5} Harvesting by labour B5/bag (80kg corn cob or 45 kg shelled corn), 5 bags/man/day
^{/6} By mechanized threshing B1/15kg shelled corn
^{/7} Cost of agricultural tools and materials
^{/8} Land rent and public imposts
^{/9} Ammonium Sulphate 5kg and Nitrogen 1kg, B5/kg
^{/10} Insecticide, 1/6//1 time/rai, B6/time
^{/11} Mainly by buffalo, 2-2.5 rai/day
^{/12} 3 bags (45kg)/man/day, B14/bag
^{/13} Mechanized threshing, B5/15kg

- PADDY -

	Materials & Equipment	Labor ^{/1}	Total Cost
Variable Costs			
Nursery Bed	-	10	10
Seeds & Sowing	15	10	25
Nursery Management	-	25	25
Cultivation ^{/2}	70	10	80
Transplanting	-	75	75
Fertilizer ^{/9}	30	-	30
Agro-chemicals ^{/10}	6	-	6
Weeding & Management	-	30	30
Harvesting & Drying	-	100	100
Threshing ^{/11}	30	10	40
Others ^{/7}	14	-	14
Sub-total	165	270	435
Fixed Cost^{/8}	50	-	50
Total	215	270	485

- BEANS -

	Materials & Equipment	Labor ^{/1}	Total Cost
Variable Costs			
Cultivation ^{/2}	62	20	82
Seeds & Sowing	48	20	68
Weeding & Management	-	90	90
Harvesting & Drying ^{/12}	-	175	175
Threshing & Shelling ^{/13}	45	30	75
Others ^{/7}	10	-	10
Sub-total	165	335	500
Fixed Cost^{/8}	40	-	40
Total	205	335	540

Table 2A-5 CURRENT FARM INCOME

(1) UNIT CROP INCOME FOR FARMERS

	Farmgate ^{/1} Price (B/kg)	Unit ^{/1} Yield (kg/rai)	Gross Crop Income (B/rai)	Production ^{/2} Cost (B/rai)	Net Crop ^{/3} Income (B/rai)
Maize					
Guatemala & Local	1.6	320	512	440	72
Suwan I	1.6	400	640	470	170
Paddy	2.0	350	700	485	215
Beans ^{/4}	5.4	135	729	540	189
Others ^{/5}	2.8 ^{/6}	240 ^{/6}	672	490	182

- Remarks:
- ^{/1} Based on the field survey information adjusted by statistical data of the related Chengvats.
 - ^{/2} Based on the field survey information adjusted by the data in "Production Cost of Important Crops", Chengvat Phetchabun, 1977.
 - ^{/3} After deducting costs of family labors which correspond to a part of living expenditures.
 - ^{/4} Mung beans and soy beans.
 - ^{/5} Sorghum, groundnuts and sesame.
 - ^{/6} Weighted average of three crops in Changvat Phetchabun in 1976.

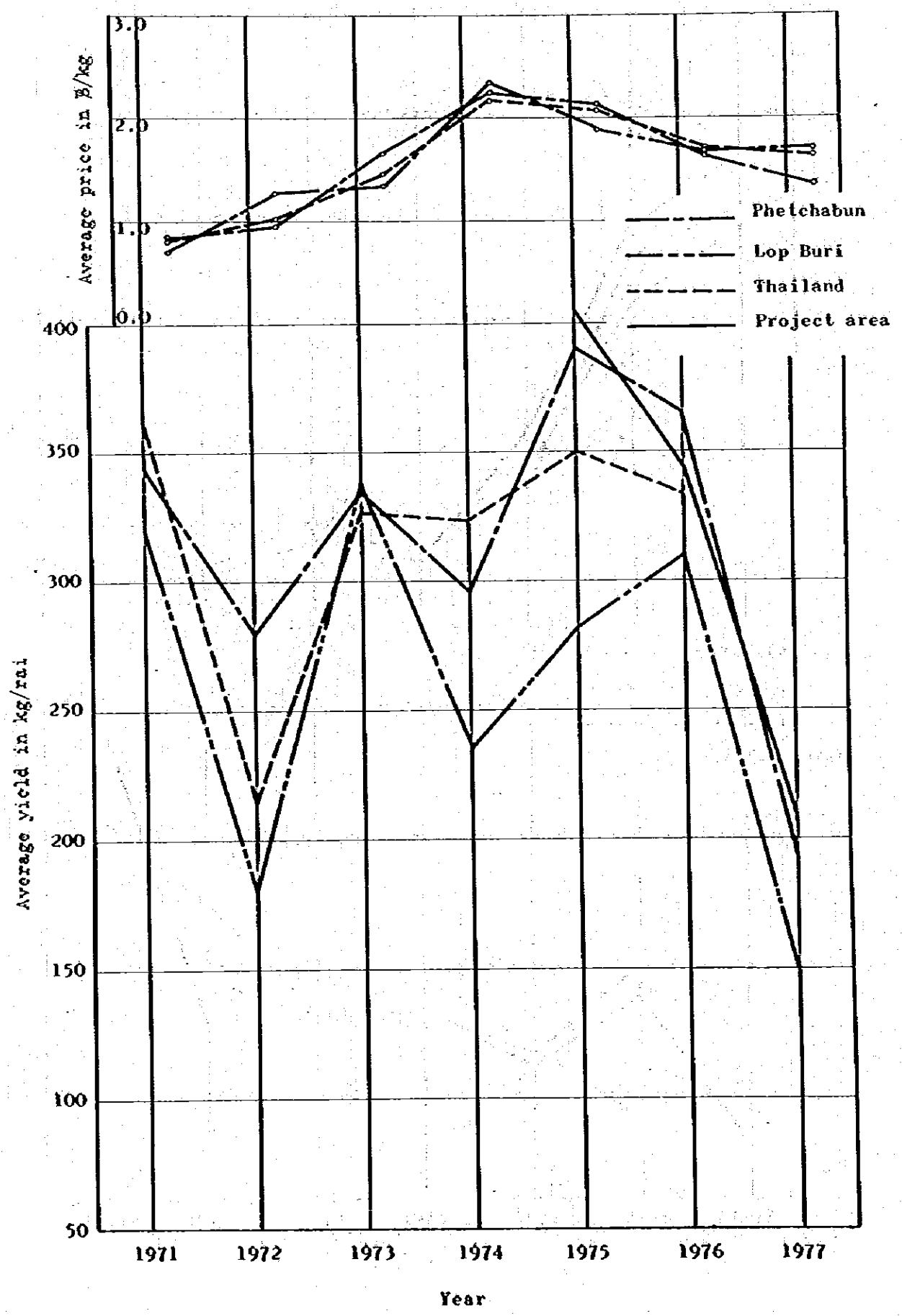
(2) FARM INCOME OF TYPICAL FARM

	Cultivated Area (rai)	Net Farm Income (B)
<u>Maize Farm</u>		<u>4,159</u>
Maize		
Guatemala & Local	20	1,440
Suwan I	5	850
Second Crops		
Beans	7	1,323
Others	3	546
<u>Paddy Farm</u>		<u>5,935</u>
Paddy	25	5,375
Second Crops		
Beans	2	378
Others	1	182

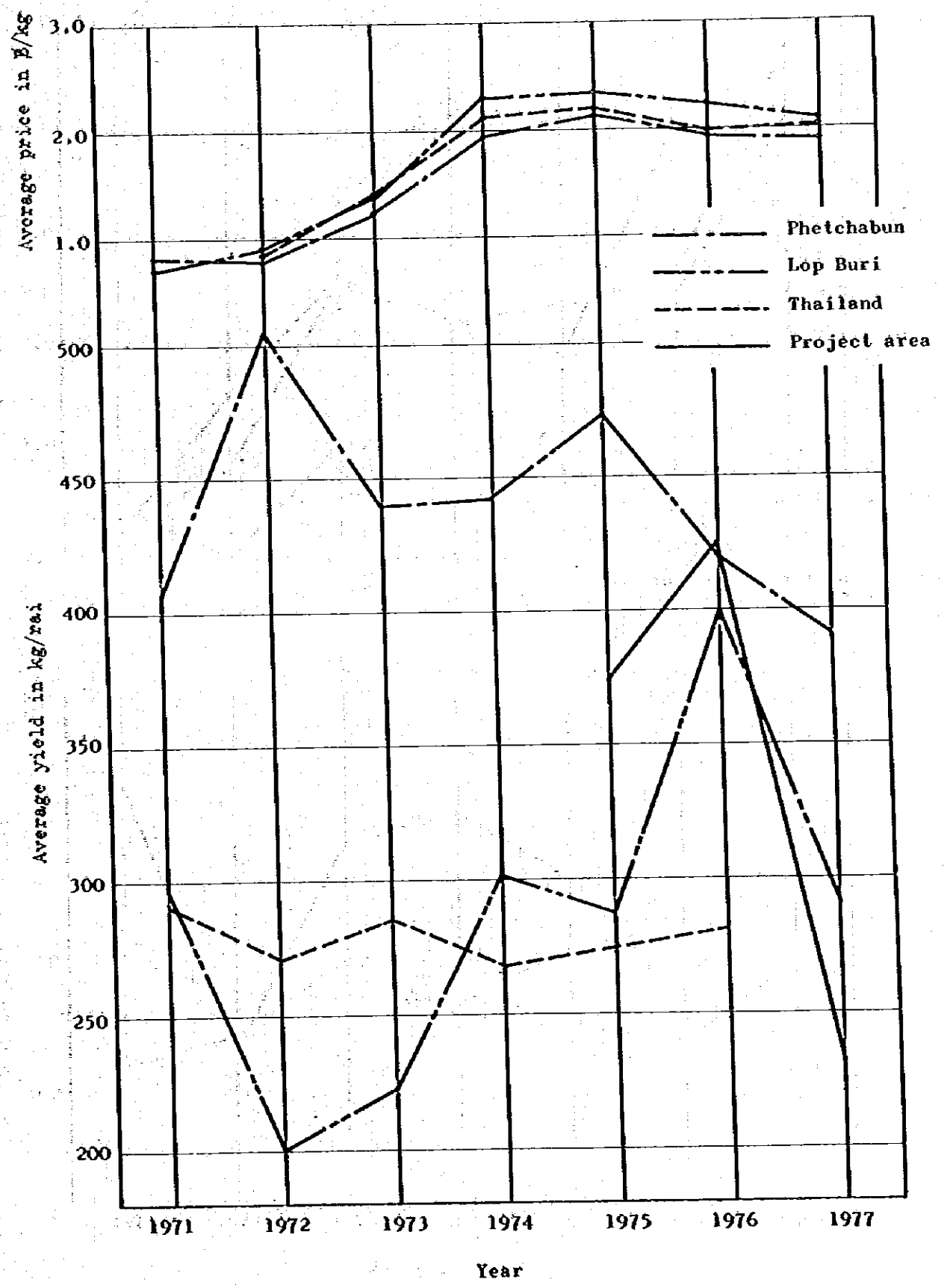
Figure 2A-1 AVERAGE YIELD AND PRICE (1)

FIGURE 2A-1
1 of 2

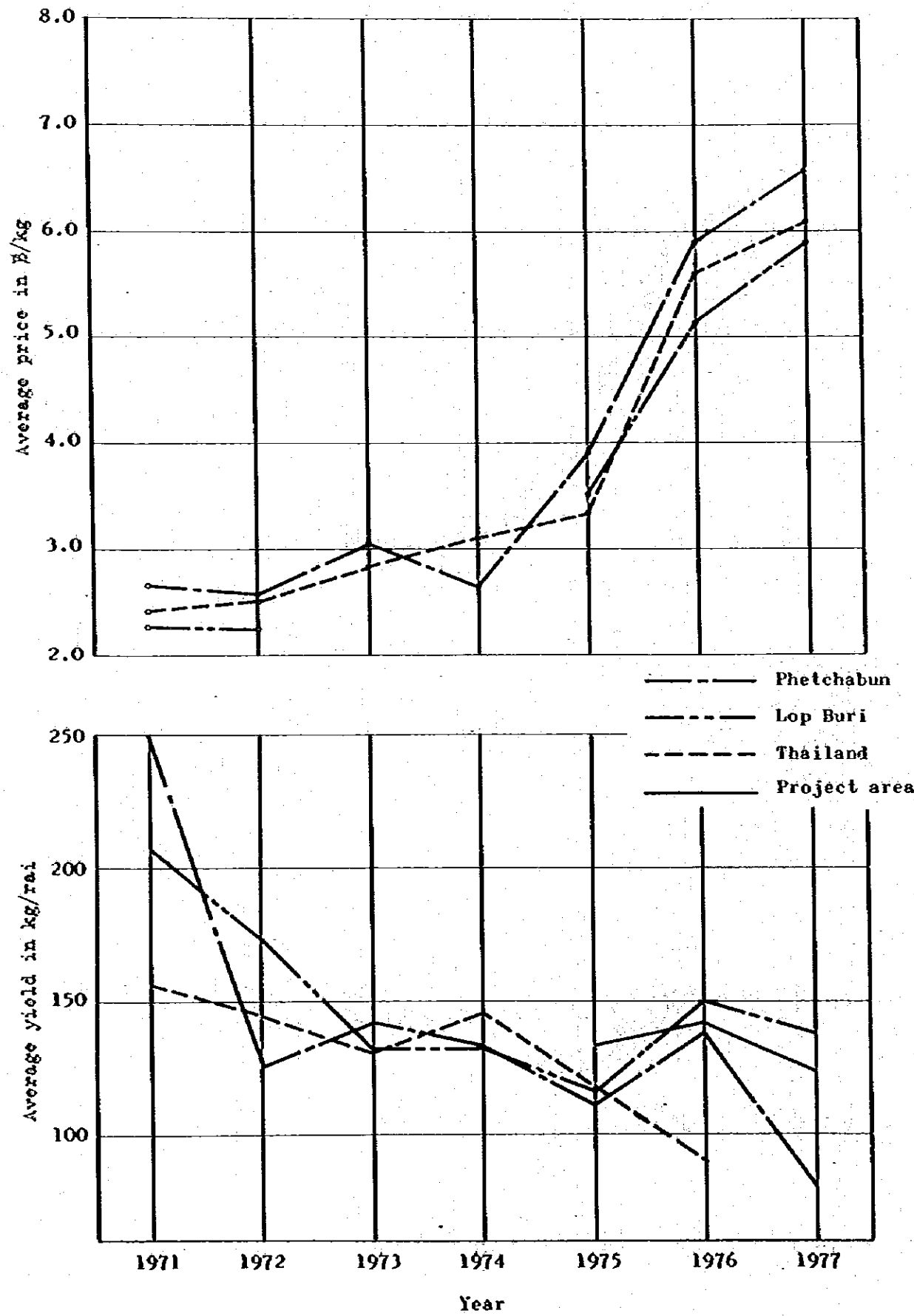
MAIZE



RICE



MUNG BEANS



SOY BEANS

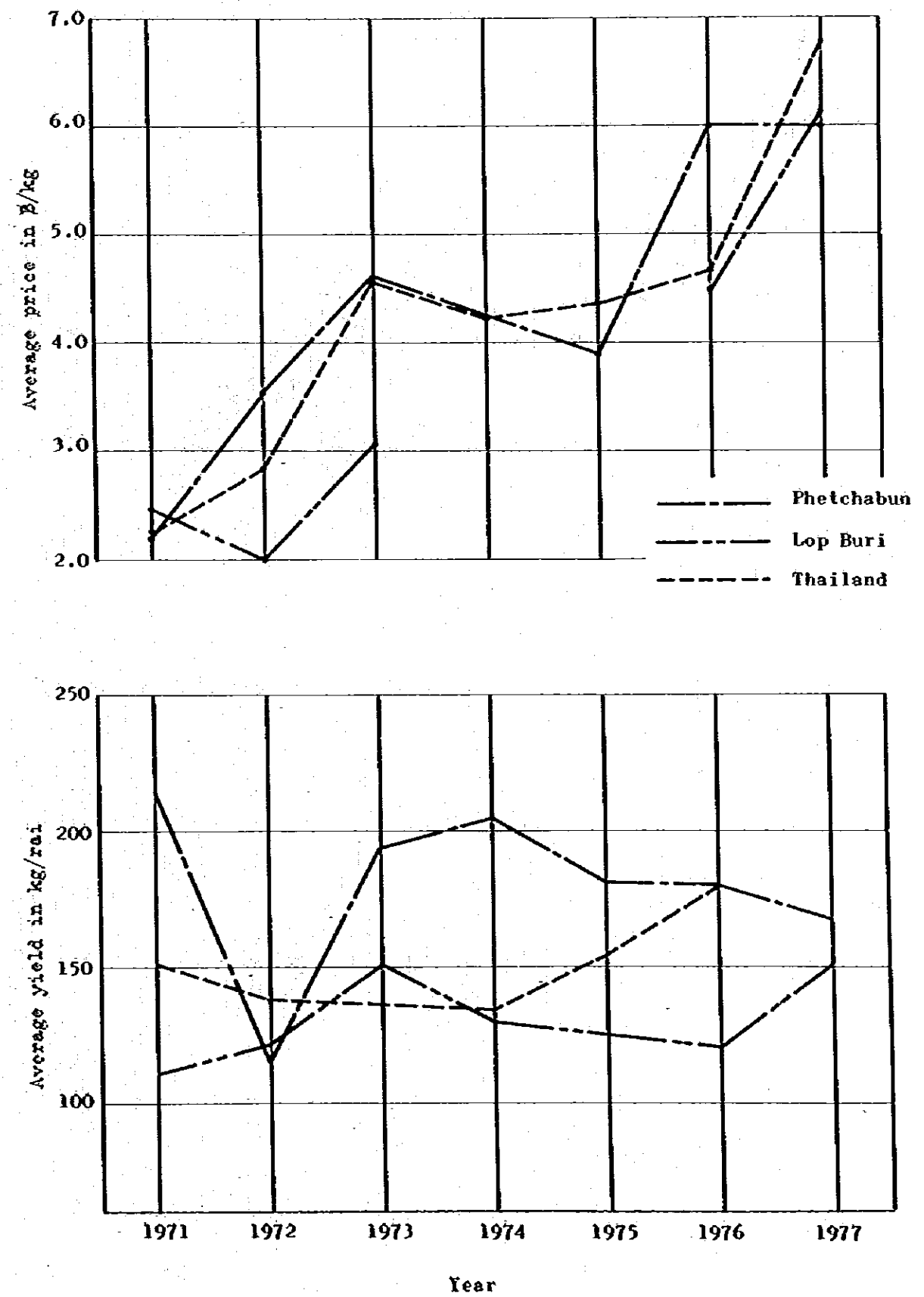


Table 3A-1 PRODUCTION COSTS WITH AND WITHOUT PROJECT
(Baht/rai, 1978 constant price)

Cost Item	Maize		Paddy		Beans	
	Guatemala ^{/1} & Local	Suvan I ^{/1}	Without Project	With Project	Without Project	With Project
Variable Cost						
Nursery Bed	-	-	10	10	-	-
Nursery Management	-	-	25	25	-	-
Cultivation	122	122	80	80	82	82
Seeds & Sowing	40	50	25	25	68	68
Transplanting	-	-	75	75	-	-
Fertilizer	-	-	30	56	-	-
Agro-chemicals	6	-	6	10	-	5
Weeding & Management	95	95	30	30	90	90
Harvesting & Drying	75	85	100	100	175	180
Threshing & Shelling	52	67	40	45	75	75
Others	10	11	14	14	10	10
Sub-total	400	430	435	470	500	510
Fixed Cost	40	40	50	50	40	40
Total	440	470	485	520	540	550

Remarks: /1

	7th yr.		15th yr.	
	v	v	v	v
Guatemala	40%	68%	20%	20%
Suvan I	60%	32%	80%	80%

Table 3A-2 FARM INCOME WITH AND WITHOUT PROJECT

(1) UNIT CROP INCOME FOR FARMERS

	Without Project					With Project				
	Unit Price (B/kg)	Unit Yield (kg/rai)	Gross Crop Income(B/rai)	Prod'n Cost(B/rai)	Net Crop Income(B/rai)	Unit Price (B/kg)	Unit Yield (kg/rai)	Gross Crop Income(B/rai)	Prod'n Cost(B/rai)	Net Crop Income(B/rai)
Maize										
Guatemala & Local	1.6	320	512	440	72	1.7	320	544	440	104
Suvan I	1.6	400	640	470	170	1.7	400	680	470	210
Paddy	2.0	350	700	485	215	2.1	370	777	520	257
Beans	5.4	135	729	540	189	5.5	140	770	550	220
Other Crops	2.8	240	672	490	182	2.9	240	696	490	206

(2) FARM INCOME OF TYPICAL FARM (25 rai)

Planted Crops	1st Year (1983)				15th Year (1997)			
	With Project		Without Project		With Project		Without Project	
	Cultivated Area(Rai)	Net Crop Income(B)	Cultivated Area(Rai)	Net Crop Income(B)	Cultivated Area(Rai)	Net Crop Income(B)	Cultivated Area(Rai)	Net Crop Income(B)
Maize Farm		<u>5,500</u>		<u>4,355</u>		<u>7,098</u>		<u>5,629</u>
Maize								
Guatemala & Local	(70%) 18	1,872	(70%) 18	1,296	(20%) 5	520	(20%) 5	360
Suvan I	(30%) 7	1,470	(30%) 7	1,190	(80%) 20	4,200	(80%) 20	3,400
Second Crops								
Beans	7	1,540	7	1,323	8	1,760	7	1,323
Other Crops	3	618	3	546	3	618	3	546
Rice Farm		<u>7,071</u>		<u>5,935</u>		<u>7,291</u>		<u>5,935</u>
Paddy	25	6,425	25	5,375	25	6,425	25	5,375
Second Crops								
Beans	2	440	2	378	3	660	2	370
Other Crops	1	206	1	182	1	206	1	182

Table 4A-1 PERSON TRIP RATE (TRIPS WITHOUT FIXED DESTINATION)

(trips per 1,000 inhabitants)

Origin \ Destination	26	25	23.25	23	22.23	18	17	15	13.14	13	11	9.11	10	9	6.9	6	4.6	4	2
	Yang Khong	Nam Ron 1	Tun Hin Poon	Tham Nam Bang	Kham Muat	Na Khao Do	Khok Charoen	Pak Bot	Ta Sao	Nong Daeng	Sap Bon	Khok Prong	Nam Ron 2	Wichian Buri	Na Se Noon	Si Thep	Non Yai Toy	Rang Yoi	Tha Maduk
27 Phetchabun	29.2	36.0	30.9	51.3	20.5	0.6	3.4	1.4			3.1	2.5	0.3	1.9	0.1				
26 Yang Khong																			
25 Nam Ron 1					0.7														
24 Sam Yaek 1	0.1			10.2	1.5														
23 Tham Nam Bang				4.0															
21 Koro																			
18 Na Khao Do							0.4												
19 Nong Lai						17.3	4.0	1.4											
17 Khok Charoen	0.7					0.1		1.0											
16 Nong Phai	0.5					15.8	52.7	28.1	31.7										
15 Pak Bot							14.3												
12 Rahun		0.4							20.1	68.9	45.7	0.5	1.0						
13 Nong Daeng								0.1											
11 Sap Bon									4.4	16.3		14.3		13.3					
10 Nam Ron 2											20.4			31.3					
9 Wichian Buri						0.1		1.2	2.2	2.0	12.8	83.0	58.4		26.5	26.3			
8 Sam Yaek 2												2.3		0.9	1.8				
7 Khao Sapho																			
6 Si Thep														16.8	0.1		35.3	0.4	
5 Mai Sarika												0.5				16.3			
3 Ding Daeng																			
4 Rang Yoi																			7.1
2 Tha Maduk																			
1 Lam Narai						0.1							5.4	5.5	0.9	14.8	55.6	40.3	101.9
Total	30.5	36.4	30.9	65.6	22.7	34.0	74.8	33.2	58.4	87.2	82.0	103.1	65.1	69.7	29.4	57.4	90.9	40.7	109.0

Remarks: Figures ahead of the names of origins and destinations show the node numbers.

Table 4A-2 PERSON TRIP RATE (TRIPS WITH FIXED DESTINATION)

(trips per 1,000 inhabitants)

Origin \ Destination	Wang Khong	Nam Ron 1	Tun Hin Poon	Tham Nam Bang	Kham Muat	Na Khao Do	Khok Charoen	Pak Bot	Ta Sao	Nong Daeng	Sap Bon	Khok Prong	Nam Ron 2	Wichian Buri	Na Sa Noon	Si Thep	Non Yai Toy	Rang Yoi	The Maduk
Destination	26	25	23.25	23	22.23	18	17	15	13.14	13	11	9.11	10	9	6.9	6	4.6	4	2
27 Phetchabun	45.5	31.9		0.5			0.4	1.9	0.6	0.1			0.9	23.2					0.2
26 Wang Khong																			
25 Nam Ron 1	0.6			3.0															
24 Sam Yaek 1	0.7			12.6				0.5			0.1		0.1	3.5					
23 Tham Nam Bang																			
21 Komo																			
18 Na Khao Do							4.9												
19 Nong Lai							0.6							0.2					
17 Khok Charoen						0.1		0.2											
16 Nong Phai				0.5			1.8							0.9					
15 Pak Bot												2.9							
12 Rahun								0.6											
13 Nong Daeng									11.0										
11 Sap Bon									6.6	0.6		0.1		0.4					
10 Nam Ron 2														0.2					
9 Wichian Buri							0.1				5.8				0.4	13.8		3.4	
8 Sam Yaek 2											6.5	1.5			0.5				
7 Khao Sapho																			
6 Si Thep														6.1	0.1			0.6	
5 Mai Sarika													0.1			1.1			
3 Ding Daeng																			
4 Rang Yoi																			0.1
2 Tha Maduk																0.4			
1 Lam Narai				0.1			0.3	0.1	0.2		1.6	2.0	0.1	75.3	0.1	10.8		1.4	15.9
Total	46.8	31.9		16.7		0.1	8.1	3.3	18.4	0.7	14.0	6.5	1.2	109.8	1.1	26.1		5.8	16.3

Remarks: Figures ahead of the name of origins and destinations show the node numbers.

Table 4A-3 LINK CHARACTERISTICS

ROAD LINK NO.	LENGTH (km)	FOR FREIGHT (Transportation Cost per Bag)						FOR PASSENGER (Transportation Cost per Person)								
		WITHOUT PROJECT CASE			WITH PROJECT CASE			WITHOUT PROJECT CASE			WITH PROJECT CASE					
		RAINY SEASON		Cost (B)	DRY SEASON		Cost (B)	THROUGH A YEAR			THROUGH A YEAR					
		Grade	Speed (km/h)		Grade	Speed (km/h)		Grade	Speed (km/h)	Cost (B)	Grade	Speed (km/h)	Cost (B)			
1	11.0	2	78	0.44	2	78	0.44				2	78	1.76			
2	26.3	1	86	0.81	1	86	0.81				1	86	3.05			
3	12.5	9	4	17.25	5	42	4.38	4	54	3.75	7	29	6.88	4	54	3.00
4	10.0	1	86	0.40	1	86	0.40				1	86	1.50			
5	17.0	9	4	23.46	7	20	7.82				7	15	11.73			
6	18.0	7	20	8.28	5	42	6.30	4	54	5.40	6	35	6.12	4	54	4.32
7	17.0	-	-	-	-	-	-	5	42	5.95	-	-	-	5	42	5.44
8	13.2	9	3	18.22	7	25	6.07	4	54	3.96	7	18	8.45	4	54	3.17
9	23.5	1	86	0.94	1	86	0.94				1	86	3.53			
10	10.0	8	5	6.90	8	10	6.90	5	42	3.50	8	9	8.80	5	42	3.20
11	24.0	9	3	33.12	5	42	8.40	4	54	7.20	7	29	13.20	4	54	5.76
12	20.5	-	-	-	-	-	-	5	42	7.18	-	-	-	5	42	6.56
13	7.9	2	78	0.32	2	78	0.32				2	78	1.26			
14	21.3	1	86	0.85	1	86	0.85				1	86	3.20			
15	15.7	8	8	10.83	7	20	7.22	4	54	4.71	7	16	10.52	4	54	3.77
16	21.0	8	6	14.49	7	25	9.66	4	54	6.30	7	19	13.23	4	54	5.04
17	18.0	-	-	-	-	-	-	5	42	6.30	-	-	-	5	42	5.76
18	5.3	7	20	2.44	7	25	2.44	4	54	1.59	7	24	3.07	4	54	1.27
19	14.2	-	-	-	-	-	-	5	42	4.97	-	-	-	5	42	4.54
20	12.8	9	3	17.66	7	20	5.89	5	42	4.48	7	15	8.83	5	42	4.10
21	19.1	1	86	0.76	1	86	0.76				1	86	2.87			
22	14.0	8	6	9.66	7	25	6.44	4	54	4.20	7	19	8.82	4	54	3.36
23	4.4	7	19	2.02	7	25	2.02	4	54	1.32	7	23	2.60	4	54	1.41
24	12.5	8	5	8.63	7	20	5.75				7	15	8.63			
25	6.0	7	20	2.76	7	25	2.76	4	54	1.80	7	24	3.48	4	54	1.44
26	8.0	1	86	0.32	1	86	0.32				1	86	1.20			
27	4.5	7	20	2.07	7	25	2.07	4	54	1.35	7	24	2.61	4	54	1.08
28	15.5	-	-	-	-	-	-	5	42	5.43	-	-	-	5	42	4.96
29	9.0	8	6	6.21	7	25	4.14	4	54	2.70	7	19	5.67	4	54	2.16
30	10.0	-	-	-	-	-	-	5	42	3.50	-	-	-	5	42	3.20
31	14.5	1	86	0.58	1	86	0.58				1	86	2.18			
32	5.5	9	4	7.59	7	25	2.53				7	18	3.52			
33	6.5	7	15	2.99	7	25	2.99	5	42	2.28	7	22	3.90	5	42	2.08
34	11.5	1	86	0.46	1	86	0.46				1	86	1.73			
35	8.5	7	15	3.91	7	25	3.91	5	42	2.98	7	22	5.10	5	42	2.72
36	8.0	9	2	11.04	7	23	3.68	4	54	2.40	7	16	5.36	4	54	1.92
37	11.7	7	15	5.38	7	25	5.38	5	42	4.10	7	22	7.02	5	42	3.74
38	24.0	1	86	0.96	1	86	0.96				1	86	3.60			
39	4.5	8	5	3.11	7	25	2.07				7	19	2.84			
40	11.0	9	2	15.18	7	21	5.06	4	54	3.30	7	15	7.59	4	54	2.64
41	12.0	9	3	16.56	7	26	5.52				7	19	7.56			

Note: Passenger transportation cost includes time cost

Table 4A-4 CULTIVATION AREA BY LINK
(WITHOUT PROJECT)

LINK NO.	(1,000 rai)															
	MAIZE				RICE				BEANS				OTHERS			
	1978	1983	1989	1997	1978	1983	1989	1997	1978	1983	1998	1997	1978	1983	1998	1997
3	18.4	22.1	26.6	32.7	6.4	7.1	7.8	8.8	3.2	3.8	5.5	6.6	3.0	3.5	4.1	5.0
5	1.0	1.1	1.2	1.3	16.0	16.0	16.1	16.1	7.3	7.4	7.4	7.5	2.0	2.1	2.1	2.1
6	7.5	21.5	38.3	60.7	16.1	17.9	20.2	23.4	10.1	16.9	25.2	36.2	2.8	4.7	7.0	10.1
8	4.3	5.1	6.1	7.5	13.5	13.7	13.9	14.3	7.7	8.1	8.6	9.4	2.1	2.3	2.4	2.6
11	22.7	37.3	55.0	78.5	40.6	42.8	45.7	49.5	28.3	36.1	46.3	58.9	7.6	9.6	12.1	15.2
15	58.5	66.0	75.5	88.1	13.3	15.8	18.4	21.9	32.3	36.8	43.2	50.6	8.6	9.8	11.3	13.2
16	72.9	78.2	85.2	94.4	24.6	27.2	29.9	33.4	44.0	47.5	52.8	58.7	11.7	12.6	13.8	15.4
18	4.4	5.9	7.7	10.2	0.0	0.5	1.1	1.9	0.9	1.3	1.9	2.7	0.5	0.8	1.1	1.5
20	6.0	8.2	10.8	14.4	12.8	13.4	14.5	15.6	3.8	4.3	5.6	6.6	2.3	2.6	3.0	3.6
22	22.3	27.4	33.7	42.1	4.0	6.0	8.3	11.4	5.3	6.7	9.2	11.8	3.2	4.0	5.0	6.4
23	16.9	16.7	16.6	16.5	10.6	11.1	11.5	12.1	5.5	5.6	6.2	6.3	3.3	3.3	3.4	3.4
24	7.5	7.7	8.1	8.5	3.9	4.2	4.5	4.9	2.3	2.4	2.8	2.9	1.4	1.4	1.5	1.6
25	10.2	10.9	11.8	13.0	6.2	6.7	7.2	7.9	3.3	3.5	4.2	4.6	2.0	2.1	2.3	2.5
27	53.8	52.8	51.8	50.5	3.2	4.6	5.8	7.4	11.4	11.4	12.7	12.7	6.8	6.9	6.9	7.0
29	14.2	13.8	13.5	13.2	3.0	3.4	3.7	4.0	3.4	3.4	3.8	3.8	2.1	2.1	2.1	2.1
33	30.1	29.3	28.7	27.9	6.7	7.5	8.1	8.9	3.7	3.7	5.5	5.5	4.4	4.4	4.4	4.4
35	14.6	14.2	13.9	13.5	3.5	3.9	4.2	4.6	1.8	1.8	2.7	2.7	2.2	2.2	2.2	2.2
37	27.2	26.5	26.0	25.2	3.9	4.6	5.1	5.9	3.1	3.1	4.7	4.7	3.7	3.7	3.7	3.7
39	7.4	7.2	7.1	6.9	7.8	8.0	8.1	8.3	1.5	1.5	2.3	2.3	1.8	1.8	1.8	1.8
40	9.0	8.8	8.6	8.3	4.9	5.1	5.3	5.6	1.4	1.4	2.1	2.1	1.7	1.7	1.7	1.7
41	29.0	28.3	27.7	26.9	15.1	15.8	16.4	17.2	4.4	4.4	6.6	6.6	5.3	5.3	5.3	5.3
TOTAL	437.9	489.0	553.9	640.3	216.1	235.3	255.8	283.1	184.7	211.1	259.3	303.2	78.5	86.9	97.2	110.8

Table 4A-5 CULTIVATION AREA BY LINK
(ROUTE ALTERNATIVE - 1)

LINK NO.	MAIZE			RICE			BEANS			OTHERS		
	1983	1989	1997	1983	1989	1997	1983	1989	1997	1983	1989	1997
3	22.1	31.2	37.5	7.1	8.6	9.1	3.8	6.4	7.5	3.5	4.8	5.6
5	1.1	1.2	1.3	16.0	16.1	16.1	7.4	7.4	7.5	2.1	2.1	2.1
6	21.5	49.6	71.5	17.9	21.9	24.6	16.9	30.7	41.3	4.7	8.6	11.5
8	5.1	7.0	8.4	13.7	14.2	14.4	8.1	9.1	9.8	2.3	2.5	2.7
11	37.3	65.4	88.9	42.8	47.6	50.7	36.1	52.0	64.1	9.6	13.6	16.8
15	66.0	75.0	88.2	15.8	19.0	21.9	36.8	43.2	50.7	9.8	11.3	13.2
16	78.2	90.7	101.2	27.2	32.1	34.2	47.5	56.5	62.1	12.6	14.7	16.2
18	5.9	9.8	12.3	0.5	1.8	2.5	1.3	2.6	3.2	0.8	1.4	1.8
20	8.2	13.1	16.5	13.4	15.1	16.1	4.3	6.2	7.2	2.6	3.4	3.9
22	27.4	39.8	48.4	6.0	10.6	12.9	6.7	11.1	13.5	4.0	6.0	7.4
23	16.7	16.9	17.2	11.1	12.1	12.2	5.6	6.4	6.5	3.3	3.5	3.5
24	7.7	9.1	9.6	4.2	5.0	5.2	2.4	3.1	3.3	1.4	1.7	1.8
25	10.9	13.0	14.4	6.7	7.9	8.2	3.5	4.6	5.0	2.1	2.5	2.7
27	52.8	51.8	51.1	4.6	6.6	7.5	11.4	12.8	12.9	6.9	7.0	7.0
29	13.7	13.3	13.2	3.3	3.9	4.0	3.4	3.8	3.8	2.1	2.1	2.1
30	10.3	9.8	9.8	1.6	2.0	2.0	1.2	1.8	1.8	1.4	1.4	1.4
33	19.1	18.2	18.2	6.0	6.9	6.9	2.5	3.8	3.8	3.0	3.0	3.0
35	14.2	13.5	13.5	3.9	4.6	4.6	1.8	2.7	2.7	2.2	2.2	2.2
37	26.5	25.2	25.2	4.6	5.9	5.9	3.1	4.7	4.7	3.7	3.7	3.7
39	7.2	6.9	6.9	8.0	8.3	8.3	1.5	2.3	2.3	1.8	1.8	1.8
40	8.8	8.3	8.3	5.1	5.6	5.6	1.4	2.1	2.1	1.7	1.7	1.7
41	28.3	27.3	26.9	15.8	16.8	17.2	4.4	6.6	6.6	5.3	5.3	5.3
TOTAL	489.0	596.1	688.5	235.3	272.6	290.1	211.1	279.9	322.4	86.9	104.3	117.4

Table 4A-6 CULTIVATION AREA BY LINK
(ROUTE ALTERNATIVE - II)

LINK NO.	MAIZE			RICE			BEANS			OTHERS		
	1983	1989	1997	1983	1989	1997	1983	1989	1997	1983	1989	1997
3	22.3	34.5	40.5	7.0	8.7	9.1	3.8	6.9	7.9	3.5	5.2	6.0
5	1.0	1.1	1.2	15.7	15.8	15.8	7.2	7.2	7.3	2.0	2.0	2.0
6	8.7	19.3	23.7	17.1	18.2	18.5	11.1	16.1	18.1	3.1	4.5	5.1
7	12.7	60.5	77.5	1.3	3.9	4.9	5.7	27.7	35.4	1.6	7.7	9.9
8	5.1	6.1	7.5	13.5	13.7	14.1	8.0	8.6	9.3	2.2	2.4	2.6
11	25.7	39.4	50.6	42.8	43.8	45.7	30.9	38.3	44.3	8.3	10.0	11.6
12	27.0	84.3	104.2	1.6	6.1	7.2	13.3	41.6	51.3	3.6	10.8	13.4
15	34.4	33.8	33.3	11.9	13.0	13.6	20.8	21.5	21.6	5.5	5.6	5.6
16	54.1	63.3	67.8	26.8	29.0	30.7	36.4	42.4	45.3	9.7	11.1	11.7
17	38.3	61.3	71.4	2.6	5.9	6.7	18.9	30.9	35.9	5.0	8.0	9.4
18	2.4	5.5	7.0	0.3	0.8	1.1	0.7	1.4	1.8	0.3	0.8	1.0
19	14.8	28.2	32.9	2.8	5.0	5.5	3.5	7.3	8.5	2.1	4.0	4.6
20	7.9	11.8	16.1	13.6	14.8	16.0	4.3	5.8	7.1	2.6	3.2	3.8
22	15.5	21.9	26.1	1.9	3.5	4.6	3.5	5.6	6.7	2.1	3.1	3.7
23	16.8	17.2	17.4	11.0	11.8	12.0	5.6	6.4	6.5	3.3	3.5	3.5
24	7.9	9.5	10.1	4.1	4.7	4.8	2.4	3.1	3.3	1.4	1.7	1.8
25	9.0	11.7	13.3	7.0	7.7	8.2	3.2	4.3	4.7	1.9	2.3	2.6
27	6.7	6.4	6.5	2.8	3.0	3.0	1.9	2.1	2.1	1.1	1.1	1.1
28	49.8	48.9	49.3	3.5	5.6	5.8	10.7	12.0	12.1	6.4	6.5	6.6
29	13.5	13.0	12.8	3.1	3.6	3.8	3.4	3.7	3.7	2.0	2.0	2.0
33	29.6	28.6	28.2	7.5	8.3	8.7	3.7	5.5	5.5	4.4	4.4	4.4
35	14.4	13.7	13.7	3.9	4.5	4.5	1.8	2.7	2.7	2.2	2.2	2.2
37	26.7	25.4	25.4	4.6	5.9	5.9	3.1	4.7	4.7	3.8	3.8	3.8
39	7.2	6.9	6.9	8.0	8.1	8.1	1.5	2.3	2.3	1.8	1.8	1.8
40	8.9	8.4	8.4	5.1	5.5	5.5	1.4	2.1	2.1	1.7	1.7	1.7
41	28.6	27.6	27.1	15.8	16.6	17.1	4.4	6.6	6.6	5.3	5.3	5.3
TOTAL	489.0	688.3	778.9	235.3	267.5	280.9	211.1	316.8	356.8	86.9	114.7	127.2

Table 4A-7 CULTIVATION LAND BY LINK
(ROUTE ALTERNATIVE - III)

LINK NO.	(1,000 rai)											
	MAIZE			RICE			BEANS			OTHERS		
	1983	1989	1997	1983	1989	1997	1983	1989	1997	1983	1989	1997
3	22.3	26.8	32.9	6.8	7.5	8.5	3.8	5.5	6.6	3.5	4.1	5.0
5	1.0	1.2	1.3	15.9	16.0	16.0	7.3	7.4	7.5	2.0	2.1	2.1
6	9.8	19.0	27.3	16.9	18.0	19.0	11.5	15.9	19.9	3.2	4.4	5.6
8	5.1	7.1	8.5	13.8	14.2	14.3	8.1	9.2	9.8	2.3	2.6	2.7
10	11.1	31.1	44.8	1.5	3.3	4.9	5.6	14.8	21.4	1.5	4.1	5.9
11	37.3	57.1	80.8	42.8	46.2	49.7	36.0	47.5	60.0	9.6	12.4	15.7
15	66.1	80.2	93.9	15.8	20.6	22.5	36.8	46.3	53.6	9.8	12.1	14.0
16	78.3	88.8	98.3	27.1	30.6	33.7	47.4	54.9	60.7	12.7	14.3	15.8
18	5.9	9.8	12.3	0.5	1.8	2.5	1.3	2.6	3.2	0.8	1.4	1.8
20	8.2	15.0	18.4	13.5	15.7	16.6	4.3	6.7	7.7	2.6	3.7	4.2
22	27.4	33.7	42.1	6.0	8.3	11.4	6.7	9.2	11.8	4.0	5.0	6.4
23	16.7	17.2	17.2	11.1	11.8	12.3	5.6	6.4	6.5	3.3	3.5	3.5
24	7.7	8.1	8.7	4.2	4.6	4.9	2.4	2.8	3.0	1.4	1.5	1.6
25	10.9	13.0	14.4	6.7	7.9	8.2	3.5	4.6	5.0	2.1	2.5	2.7
27	52.7	51.4	50.9	4.6	6.6	7.4	11.5	12.8	12.8	6.9	7.0	7.0
29	13.9	13.2	13.2	3.3	4.0	4.0	3.4	3.8	3.8	2.1	2.1	2.1
33	29.4	28.8	28.0	7.5	8.1	8.9	3.7	5.5	5.5	4.4	4.4	4.4
35	14.2	13.5	13.5	3.9	4.6	4.6	1.8	2.7	2.7	2.2	2.2	2.2
37	26.5	25.4	25.2	4.6	5.7	5.9	3.1	4.7	4.7	3.7	3.7	3.7
39	7.2	6.9	6.9	7.9	8.2	8.2	1.5	2.3	2.3	1.8	1.8	1.8
40	8.9	8.4	8.4	5.1	5.6	5.6	1.4	2.1	2.1	1.7	1.7	1.7
41	28.4	27.4	27.0	15.8	16.8	17.2	4.4	6.6	6.6	5.3	5.3	5.3
TOTAL	489.0	583.1	674.0	235.3	266.1	286.3	211.1	274.3	317.2	86.9	101.9	115.2

TABLE 4A-8

Table 4A-8 PRODUCTION BY DESTINATION
(WITHOUT PROJECT)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3	7.75	0.01	0.17	2.46	0.11	0.64	9.91	0.02	0.21	2.82	0.12	0.73	12.79	0.02	0.26	3.29	0.15	0.84
5	0.73	0.02	0.07	4.79	0.20	1.11	0.79	0.02	0.07	4.81	0.20	1.11	0.86	0.02	0.07	4.83	0.20	1.12
6	8.10	0.03	0.23	6.36	0.27	1.42	15.20	0.04	0.37	7.91	0.33	1.73	24.65	0.07	0.56	9.98	0.42	2.15
8	2.13	0.02	0.09	4.31	0.18	0.99	2.63	0.02	0.10	4.43	0.19	1.01	3.30	0.02	0.11	4.59	0.19	1.04
11	14.37	0.07	0.44	14.68	0.62	3.28	22.12	0.08	0.59	16.49	0.69	3.63	32.44	0.12	0.80	18.91	0.79	4.11
15	24.08	0.07	0.54	8.12	0.34	1.68	29.05	0.07	0.64	9.44	0.39	1.95	35.67	0.10	0.77	11.19	0.46	2.30
16	28.72	0.10	0.68	12.16	0.51	2.57	32.91	0.10	0.76	13.36	0.56	2.82	38.48	0.12	0.86	14.95	0.62	3.15
18	2.07	0.00	0.04	0.32	0.01	0.08	2.90	0.01	0.06	0.56	0.02	0.14	3.99	0.01	0.08	0.87	0.04	0.21
20	3.04	0.01	0.10	3.99	0.17	0.98	4.24	0.02	0.13	4.33	0.19	1.06	5.82	0.02	0.16	4.80	0.21	1.17
22	9.68	0.02	0.21	2.49	0.11	0.62	12.64	0.03	0.27	3.36	0.15	0.83	16.58	0.03	0.34	4.52	0.20	1.10
23	6.00	0.02	0.15	3.57	0.16	0.88	6.26	0.02	0.16	3.71	0.16	0.91	6.61	0.02	0.16	3.89	0.17	0.95
24	2.76	0.01	0.07	1.39	0.06	0.34	3.03	0.01	0.07	1.49	0.06	0.37	3.38	0.01	0.08	1.63	0.07	0.40
25	3.90	0.01	0.10	2.18	0.09	0.54	4.46	0.01	0.11	2.37	0.10	0.58	5.20	0.01	0.12	2.62	0.11	0.64
27	18.51	0.03	0.37	2.89	0.13	0.72	19.08	0.04	0.38	3.23	0.14	0.80	19.83	0.04	0.39	3.69	0.16	0.90
29	4.89	0.01	0.11	1.35	0.06	0.34	5.02	0.01	0.11	1.44	0.06	0.35	5.19	0.01	0.11	1.55	0.07	0.38
33	10.25	0.02	0.22	2.65	0.12	0.72	10.53	0.02	0.22	2.87	0.13	0.76	10.91	0.02	0.23	3.16	0.14	0.81
35	4.97	0.01	0.11	1.35	0.06	0.36	5.11	0.01	0.11	1.46	0.07	0.38	5.30	0.01	0.11	1.60	0.07	0.41
37	9.24	0.01	0.19	1.82	0.08	0.50	9.49	0.02	0.19	2.01	0.09	0.54	9.84	0.02	0.20	2.27	0.10	0.59
39	2.58	0.01	0.07	2.30	0.10	0.59	2.65	0.01	0.07	2.36	0.10	0.60	2.75	0.01	0.08	2.45	0.11	0.61
40	3.09	0.01	0.07	1.57	0.07	0.41	3.18	0.01	0.08	1.64	0.07	0.42	3.30	0.01	0.08	1.73	0.08	0.44
41	9.95	0.02	0.24	4.86	0.22	1.27	10.24	0.02	0.24	5.09	0.22	1.31	10.61	0.02	0.25	5.40	0.24	1.36
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	211.44	0.59	4.94	95.18	4.04	22.03	257.50	0.71	5.82	107.92	4.60	24.68

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

TABLE 4A-9

Table 4A-9 PRODUCTION BY DESTINATION (NORMAL)
(ROUTE ALTERNATIVE - 1)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3	7.75	0.01	0.17	2.46	0.11	0.64	9.91	0.02	0.21	2.82	0.12	0.73	12.79	0.02	0.26	3.29	0.15	0.84
5	0.73	0.02	0.07	4.79	0.20	1.11	0.79	0.02	0.07	4.81	0.20	1.11	0.86	0.02	0.07	4.82	0.20	1.11
6	8.10	0.03	0.23	6.36	0.27	1.42	15.20	0.04	0.37	7.91	0.33	1.73	24.65	0.07	0.56	9.98	0.42	2.15
8	2.13	0.02	0.09	4.31	0.18	0.98	2.63	0.02	0.10	4.43	0.19	1.01	3.30	0.02	0.11	4.59	0.19	1.04
11	14.37	0.07	0.44	14.68	0.62	3.28	22.12	0.08	0.59	16.49	0.69	3.63	32.44	0.12	0.80	18.91	0.79	4.11
15	24.08	0.07	0.54	8.12	0.34	1.68	29.05	0.07	0.64	9.44	0.39	1.95	35.67	0.10	0.77	11.19	0.46	2.30
16	28.72	0.10	0.68	12.16	0.51	2.57	32.91	0.10	0.76	13.36	0.56	2.82	38.48	0.12	0.86	14.95	0.62	3.15
18	2.07	0.00	0.04	0.32	0.01	0.08	2.90	0.01	0.06	0.56	0.02	0.14	3.99	0.01	0.08	0.87	0.04	0.21
20	3.04	0.01	0.10	3.99	0.17	0.98	4.24	0.02	0.13	4.33	0.19	1.06	5.82	0.02	0.16	4.80	0.21	1.17
22	9.68	0.02	0.21	2.49	0.11	0.62	12.64	0.03	0.27	3.36	0.15	0.83	16.58	0.03	0.34	4.52	0.20	1.10
23	6.00	0.02	0.15	3.57	0.16	0.88	6.26	0.02	0.16	3.71	0.16	0.91	6.61	0.02	0.16	3.89	0.17	0.95
24	2.76	0.01	0.07	1.39	0.06	0.34	3.03	0.01	0.07	1.49	0.06	0.37	3.38	0.01	0.08	1.63	0.07	0.40
25	3.90	0.01	0.10	2.18	0.09	0.54	4.46	0.01	0.11	2.37	0.10	0.58	5.20	0.01	0.12	2.62	0.11	0.64
27	18.51	0.03	0.37	2.89	0.13	0.72	19.08	0.04	0.38	3.23	0.14	0.80	19.83	0.04	0.39	3.69	0.16	0.90
29	4.89	0.01	0.11	1.35	0.06	0.34	5.02	0.01	0.11	1.44	0.06	0.35	5.19	0.01	0.11	1.55	0.07	0.38
30	3.57	0.01	0.07	0.62	0.03	0.17	3.66	0.01	0.07	0.70	0.03	0.19	3.81	0.01	0.08	0.80	0.04	0.22
33	6.68	0.01	0.15	2.03	0.09	0.55	6.87	0.01	0.15	2.17	0.10	0.57	7.10	0.01	0.15	2.37	0.10	0.60
35	4.97	0.01	0.11	1.35	0.06	0.36	5.11	0.01	0.11	1.46	0.07	0.38	5.30	0.01	0.11	1.60	0.07	0.41
37	9.24	0.01	0.19	1.82	0.08	0.50	9.49	0.02	0.19	2.01	0.09	0.54	9.84	0.02	0.20	2.27	0.10	0.59
39	2.58	0.01	0.07	2.30	0.10	0.59	2.65	0.01	0.07	2.36	0.10	0.60	2.75	0.01	0.08	2.45	0.11	0.61
40	3.09	0.01	0.07	1.57	0.07	0.41	3.18	0.01	0.08	1.64	0.07	0.42	3.30	0.01	0.08	1.73	0.08	0.44
41	9.95	0.02	0.24	4.86	0.22	1.27	10.24	0.02	0.24	5.09	0.22	1.31	10.61	0.02	0.25	5.40	0.24	1.36
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	211.44	0.59	4.94	95.18	4.04	22.03	257.50	0.71	5.82	107.92	4.60	24.68

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-10 PRODUCTION BY DESTINATION (NORMAL + DEVELOPMENT)
(ROUTE ALTERNATIVE - I)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3							11.93	0.02	0.25	3.34	0.15	0.85	14.68	0.03	0.30	3.63	0.16	0.93
5							0.82	0.02	0.07	4.97	0.21	1.15	0.89	0.02	0.07	4.98	0.21	1.15
6							19.75	0.06	0.46	9.29	0.39	2.01	29.03	0.09	0.65	11.23	0.47	2.40
8							3.03	0.02	0.11	4.70	0.20	1.07	3.67	0.02	0.12	4.83	0.20	1.09
11							26.58	0.10	9.69	18.35	0.77	4.01	36.69	0.13	0.88	20.51	0.86	4.43
15							29.15	0.09	0.64	9.75	0.41	2.01	35.72	0.10	0.77	11.34	0.47	2.34
16							35.84	0.11	0.81	14.93	0.62	3.14	41.18	0.12	0.91	16.07	0.68	3.37
18							3.77	0.01	0.08	0.85	0.04	0.21	4.83	0.01	0.10	1.12	0.05	0.27
20			SAME AS "NORMAL"				5.14	0.02	0.14	4.69	0.20	1.14	6.68	0.02	0.18	5.11	0.22	1.23
22			(See TABLE 6A-6)				15.28	0.03	0.32	4.40	0.17	1.07	19.08	0.03	0.39	5.33	0.23	1.29
23							6.58	0.02	0.16	4.10	0.17	0.98	6.88	0.02	0.17	4.15	0.18	1.00
24							3.52	0.01	0.08	1.76	0.08	0.43	3.84	0.01	0.09	1.83	0.08	0.44
25							5.05	0.01	0.12	2.73	0.12	0.66	5.74	0.01	0.13	2.88	0.12	0.70
27							19.37	0.04	0.39	3.57	0.16	0.86	20.07	0.04	0.40	3.84	0.17	0.93
29							5.05	0.01	0.11	1.56	0.07	0.38	5.19	0.01	0.11	1.60	0.07	0.39
30							3.73	0.01	0.08	0.82	0.04	0.21	3.83	0.01	0.08	0.83	0.04	0.22
33							6.94	0.01	0.15	2.48	0.11	0.63	7.12	0.01	0.15	2.48	0.11	0.63
35							5.17	0.01	0.11	1.67	0.07	0.43	5.30	0.01	0.11	1.68	0.07	0.43
37							9.59	0.02	0.20	2.37	0.11	0.61	9.84	0.02	0.20	2.37	0.11	0.61
39							2.68	0.01	0.08	2.55	0.11	0.64	2.75	0.01	0.08	2.56	0.11	0.64
40							3.22	0.01	0.08	1.81	0.08	0.46	3.30	0.01	0.08	1.82	0.08	0.46
41							10.29	0.02	0.24	5.38	0.24	1.37	10.61	0.02	0.25	5.55	0.24	1.40
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	232.48	0.66	5.37	106.07	4.52	24.32	276.92	0.75	6.22	115.74	4.93	26.35

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Ruá in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-11 PRODUCTION BY DESTINATION (NORMAL)
(ROUTE ALTERNATIVE - II)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3	7.82	0.02	0.17	2.44	0.11	0.64	9.98	0.02	0.21	2.80	0.12	0.72	12.86	0.02	0.26	3.29	0.14	0.84
5	0.69	0.01	0.07	4.70	0.20	1.09	0.74	0.02	0.07	4.71	0.20	1.09	0.82	0.02	0.07	4.73	0.20	1.09
6	3.49	0.02	0.13	5.50	0.23	1.25	4.97	0.02	0.16	5.84	0.25	1.32	6.96	0.03	0.20	6.29	0.27	1.41
7	4.56	0.01	0.09	0.84	0.03	0.16	10.16	0.02	0.21	2.15	0.08	0.40	17.63	0.04	0.36	3.66	0.15	0.73
8	2.13	0.02	0.09	4.25	0.18	0.97	2.63	0.02	0.10	4.37	0.19	1.00	3.29	0.02	0.11	4.53	0.19	1.03
11	10.54	0.06	0.36	13.98	0.59	3.22	14.40	0.07	0.44	15.25	0.66	3.36	19.49	0.08	0.53	16.18	0.68	3.60
12	9.36	0.02	0.21	2.39	0.10	0.34	16.16	0.04	0.34	3.49	0.14	0.77	25.23	0.08	0.52	5.86	0.25	1.16
15	12.61	0.04	0.30	5.32	0.22	1.13	12.98	0.04	0.30	5.53	0.23	1.17	13.47	0.04	0.31	5.81	0.24	1.24
16	20.06	0.07	0.50	10.79	0.45	2.33	22.36	0.08	0.54	11.49	0.48	2.47	25.43	0.08	0.60	12.43	0.52	2.67
17	14.13	0.04	0.30	2.81	0.12	0.59	17.75	0.04	0.37	3.74	0.15	0.72	22.48	0.06	0.45	5.10	0.20	0.97
18	0.83	0.00	0.02	0.15	0.01	0.04	1.29	0.00	0.03	0.28	0.01	0.07	1.90	0.00	0.04	0.45	0.02	0.11
19	5.23	0.01	0.11	1.22	0.05	0.30	6.78	0.01	0.14	1.68	0.07	0.41	8.84	0.02	0.18	2.28	0.10	0.56
20	2.94	0.01	0.10	3.99	0.17	0.98	4.34	0.02	0.13	4.39	0.19	1.07	6.21	0.02	0.17	4.93	0.21	1.20
22	5.46	0.01	0.11	1.00	0.04	0.25	6.90	0.01	0.14	1.43	0.06	0.35	8.82	0.02	0.18	2.00	0.09	0.49
23	6.04	0.02	0.15	3.54	0.15	0.87	6.31	0.02	0.16	3.68	0.16	0.90	6.66	0.02	0.16	3.86	0.17	0.94
24	2.81	0.01	0.07	1.39	0.06	0.34	3.08	0.01	0.07	1.49	0.06	0.36	3.44	0.01	0.08	1.62	0.07	0.39
25	3.25	0.01	0.09	2.21	0.10	0.54	3.84	0.01	0.10	2.40	0.10	0.59	4.62	0.01	0.11	2.65	0.11	0.65
27	2.37	0.01	0.05	0.94	0.04	0.23	2.44	0.01	0.06	0.99	0.04	0.24	2.54	0.01	0.06	1.05	0.05	0.25
28	17.48	0.03	0.35	2.39	0.11	0.60	18.08	0.03	0.36	2.73	0.12	0.68	18.88	0.03	0.37	3.18	0.14	0.78
29	4.76	0.01	0.10	1.28	0.06	0.32	4.88	0.01	0.10	1.37	0.06	0.34	5.04	0.01	0.11	1.48	0.06	0.36
33	10.35	0.02	0.22	2.60	0.12	0.71	10.63	0.02	0.22	2.83	0.13	0.75	11.02	0.02	0.23	3.12	0.14	0.80
35	5.04	0.01	0.11	1.33	0.06	0.36	5.18	0.01	0.11	1.44	0.06	0.38	5.37	0.01	0.11	1.58	0.07	0.41
37	9.24	0.01	0.19	1.82	0.08	0.50	9.49	0.02	0.19	2.01	0.09	0.54	9.84	0.02	0.20	2.27	0.10	0.59
39	2.58	0.01	0.07	2.30	0.10	0.59	2.65	0.01	0.07	2.36	0.10	0.60	2.75	0.01	0.08	2.45	0.11	0.61
40	3.09	0.01	0.07	1.57	0.07	0.41	3.18	0.01	0.08	1.64	0.07	0.42	3.30	0.01	0.08	1.73	0.08	0.44
41	9.95	0.02	0.24	4.86	0.22	1.27	10.24	0.02	0.24	5.09	0.22	1.31	10.61	0.02	0.25	5.40	0.24	1.36
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	211.44	0.59	4.94	95.18	4.04	22.03	257.50	0.71	5.82	107.92	4.60	24.68

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-12 PRODUCTION BY DESTINATION (NORMAL + DEVELOPMENT)
(ROUTE ALTERNATIVE - II)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3							11.13	0.02	0.27	3.46	0.15	0.88	15.85	0.03	0.32	3.74	0.17	0.95
5							0.74	0.02	0.07	4.71	0.20	1.09	0.82	0.02	0.07	4.73	0.20	1.09
6							7.90	0.03	0.22	6.51	0.27	1.45	9.85	0.04	0.25	6.84	0.29	1.51
7							23.60	0.06	0.48	4.34	0.18	0.83	30.97	0.07	0.62	5.52	0.23	1.05
8							2.63	0.02	0.10	4.37	0.19	1.00	3.29	0.02	0.11	4.53	0.19	1.03
11							16.12	0.08	0.47	15.31	0.65	3.41	21.25	0.09	0.57	16.50	0.69	3.64
12							33.00	0.08	0.67	6.49	0.26	1.21	41.84	0.10	0.84	7.93	0.32	1.48
15							13.16	0.04	0.31	5.76	0.24	1.22	13.62	0.04	0.31	5.94	0.25	1.26
16							24.77	0.08	0.59	12.14	0.51	2.60	27.79	0.09	0.65	12.93	0.54	2.76
17							23.98	0.06	0.49	5.16	0.21	0.98	28.68	0.07	0.58	5.95	0.24	1.13
18							2.12	0.00	0.04	0.42	0.02	0.10	2.74	0.01	0.05	0.53	0.02	1.13
19							10.81	0.02	0.22	2.41	0.11	0.58	12.93	0.02	0.26	2.73	0.12	0.66
20			SAME AS "NORMAL"				4.63	0.02	0.13	4.51	0.19	1.10	6.51	0.02	0.17	5.02	0.22	1.22
22			(See TABLE 6A-8)				8.32	0.02	0.17	1.73	0.08	0.42	10.25	0.02	0.21	2.16	0.09	0.52
23							6.67	0.02	0.16	4.03	0.17	0.98	6.98	0.02	0.17	4.07	0.18	0.99
24							3.52	0.01	0.08	1.76	0.08	0.43	3.84	0.01	0.09	1.83	0.08	0.44
25							4.50	0.01	0.11	2.63	0.11	0.64	5.29	0.01	0.12	2.82	0.12	0.68
27							2.49	0.01	0.06	1.09	0.05	0.27	2.57	0.01	0.06	1.10	0.05	0.27
28							18.65	0.03	0.37	3.27	0.14	0.79	19.33	0.03	0.38	3.33	0.15	0.81
29							4.90	0.01	0.10	1.45	0.06	0.35	5.04	0.01	0.11	1.51	0.07	0.37
33							10.69	0.02	0.22	3.08	0.14	0.80	11.02	0.02	0.23	3.23	0.14	0.83
35							5.24	0.01	0.11	1.65	0.07	0.42	5.37	0.01	0.11	1.66	0.07	0.42
37							9.59	0.02	0.20	2.37	0.11	0.61	9.84	0.02	0.20	2.37	0.11	0.61
39							2.68	0.01	0.08	2.55	0.11	0.64	2.75	0.01	0.08	2.56	0.11	0.64
40							3.22	0.01	0.08	1.81	0.08	0.46	3.30	0.01	0.08	1.82	0.08	0.46
41							10.29	0.02	0.24	5.38	0.24	1.37	10.61	0.02	0.25	5.55	0.24	1.40
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	265.35	0.73	6.04	108.39	4.62	24.63	312.33	0.82	6.89	116.90	4.97	27.35

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-13 PRODUCTION BY DESTINATION (NORMAL)
(ROUTE ALTERNATIVE - III)

ORIGIN LINK NO.	(1,000 Ton)																	
	1983						1989						1997					
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON		
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL
3	7.75	0.01	0.17	2.46	0.11	0.64	9.91	0.02	0.21	2.82	0.12	0.73	12.79	0.02	0.26	3.29	0.15	0.84
5	0.73	0.02	0.07	4.79	0.20	1.11	0.79	0.02	0.07	4.81	0.20	1.11	0.86	0.02	0.07	4.83	0.20	1.12
6	3.88	0.02	0.14	5.47	0.23	1.24	6.57	0.03	0.19	6.07	0.26	1.36	10.16	0.04	0.26	6.86	0.29	1.52
8	2.13	0.02	0.09	4.31	0.18	0.98	2.63	0.02	0.10	4.43	0.19	1.01	3.30	0.02	0.11	4.59	0.19	1.04
10	4.22	0.01	0.09	1.00	0.04	0.20	8.63	0.01	0.18	1.95	0.08	0.39	14.49	0.04	0.30	3.16	0.13	0.64
11	14.37	0.07	0.44	14.57	0.62	3.26	22.12	0.08	0.59	16.38	0.68	3.61	32.44	0.11	0.80	18.87	0.79	4.10
15	24.08	0.07	0.54	8.12	0.34	1.68	29.05	0.07	0.64	9.44	0.39	1.95	35.67	0.10	0.77	11.19	0.46	2.30
16	28.72	0.10	0.68	12.16	0.51	2.57	32.91	0.10	0.76	13.36	0.56	2.82	38.48	0.12	0.86	14.95	0.62	3.15
18	2.07	0.00	0.04	0.32	0.01	0.08	2.90	0.01	0.06	0.56	0.02	0.14	3.99	0.01	0.08	0.87	0.04	0.21
20	3.04	0.01	0.10	3.99	0.17	0.98	4.24	0.02	0.13	4.33	0.19	1.06	5.82	0.02	0.16	4.80	0.21	1.17
22	9.68	0.02	0.21	2.49	0.11	0.62	12.64	0.03	0.27	3.36	0.15	0.83	16.58	0.03	0.34	4.52	0.20	1.10
23	6.00	0.02	0.15	3.57	0.16	0.88	6.26	0.02	0.16	3.71	0.16	0.91	6.61	0.02	0.16	3.89	0.17	0.95
24	2.76	0.01	0.07	1.39	0.06	0.34	3.03	0.01	0.07	1.49	0.06	0.37	3.38	0.01	0.08	1.63	0.07	0.40
25	3.90	0.01	0.10	2.18	0.09	0.54	4.46	0.01	0.11	2.37	0.10	0.58	5.20	0.01	0.12	2.62	0.11	0.64
27	18.51	0.03	0.37	2.89	0.13	0.72	19.08	0.04	0.38	3.23	0.14	0.80	19.83	0.04	0.39	3.69	0.16	0.90
29	4.89	0.01	0.11	1.35	0.06	0.34	5.02	0.01	0.11	1.44	0.06	0.35	5.19	0.01	0.11	1.55	0.07	0.38
33	10.25	0.02	0.22	2.65	0.12	0.72	10.53	0.02	0.22	2.87	0.13	0.76	10.91	0.02	0.23	3.16	0.14	0.81
35	4.97	0.01	0.11	1.35	0.06	0.36	5.11	0.01	0.11	1.46	0.07	0.38	5.30	0.01	0.11	1.60	0.07	0.41
37	9.24	0.01	0.19	1.82	0.08	0.50	9.49	0.02	0.19	2.01	0.09	0.54	9.84	0.02	0.20	2.27	0.10	0.59
39	2.58	0.01	0.07	2.30	0.10	0.59	2.65	0.01	0.07	2.36	0.10	0.60	2.75	0.01	0.08	2.45	0.11	0.61
40	3.09	0.01	0.07	1.57	0.07	0.41	3.18	0.01	0.08	1.64	0.07	0.42	3.30	0.01	0.08	1.73	0.08	0.44
41	9.95	0.02	0.24	4.86	0.22	1.27	10.24	0.02	0.24	5.09	0.22	1.31	10.61	0.02	0.25	5.40	0.24	1.36
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	211.44	0.59	4.94	95.18	4.04	22.03	257.50	0.71	5.82	107.92	4.60	24.68

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of Maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-14 PRODUCTION BY DESTINATION (NORMAL + DEVELOPMENT)
(ROUTE ALTERNATIVE - III)

ORIGIN LINK NO.	(1,000 Ton)																		
	1983						1989						1997						
	RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			RAINY SEASON			DRY SEASON			
	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	TO L.N.	TO R-21	I'NAL	
3							9.91	0.02	0.21	2.82	0.12	0.73	12.79	0.02	0.26	3.29	0.15	0.84	
5							0.81	0.02	0.07	4.99	0.21	1.15	0.88	0.02	0.07	5.00	0.21	1.15	
6							7.72	0.03	0.21	6.32	0.27	1.41	11.30	0.04	0.28	7.06	0.30	1.56	
8							3.07	0.02	0.11	4.77	0.20	1.08	3.72	0.02	0.12	4.89	0.21	1.11	
10							12.24	0.03	0.24	2.61	0.10	0.52	18.08	0.04	0.36	3.69	0.15	0.72	
11							23.13	0.09	0.62	17.08	0.71	3.73	33.38	0.12	0.82	19.44	0.82	4.22	
15							31.62	0.08	0.69	10.73	0.45	2.21	38.03	0.11	0.82	12.06	0.50	2.47	
16							34.53	0.11	0.79	14.08	0.59	2.97	40.02	0.12	0.89	15.54	0.65	3.27	
18							3.77	0.01	0.08	0.85	0.04	0.21	4.83	0.01	0.10	1.12	0.05	0.27	
20		SAME AS "NORMAL"						5.92	0.02	0.16	5.08	0.22	1.23	7.43	0.02	0.19	5.45	0.24	1.32
22		(See TABLE 6A-10)						12.64	0.03	0.27	3.36	0.15	0.83	16.58	0.03	0.34	4.52	0.20	1.10
23							6.57	0.02	0.16	3.87	0.17	0.94	6.90	0.02	0.17	4.01	0.17	0.97	
24							3.11	0.01	0.07	1.55	0.07	0.38	3.45	0.01	0.08	1.65	0.07	0.40	
25							5.05	0.01	0.12	2.73	0.12	0.66	5.74	0.01	0.13	2.88	0.12	0.70	
27							19.30	0.04	0.39	3.58	0.16	0.87	19.99	0.04	0.40	3.82	0.17	0.93	
29							5.10	0.01	0.11	1.60	0.07	0.39	5.23	0.01	0.11	1.60	0.07	0.39	
33							10.57	0.02	0.22	2.87	0.13	0.76	10.95	0.02	0.23	3.17	0.14	0.81	
35							5.17	0.01	0.11	1.67	0.07	0.43	5.30	0.01	0.11	1.68	0.07	0.43	
37							9.58	0.02	0.20	2.31	0.10	0.60	9.84	0.02	0.20	2.36	0.10	0.61	
39							2.68	0.01	0.08	2.52	0.11	0.63	2.75	0.01	0.08	2.54	0.11	0.63	
40							3.22	0.01	0.08	1.81	0.08	0.46	3.30	0.01	0.08	1.82	0.08	0.46	
41							10.29	0.02	0.24	5.38	0.24	1.37	10.61	0.02	0.25	5.55	0.24	1.40	
TOTAL	176.81	0.51	4.27	85.61	3.67	20.03	226.00	0.64	5.23	102.58	4.38	23.56	271.11	0.73	6.09	113.14	4.82	25.76	

Remarks: L.N. : Lam Narai and southward (Bangkok or Tha Rua in case of maize)
R-21 : Towns along Route-21
I'NAL : Consumed within Project Area

Table 4A-15 POPULATION PROJECTION

NODE NO.	LOCATION	WITHOUT PROJECT				ALTERNATIVE - I		ALTERNATIVE - II		ALTERNATIVE - III	
		1978	1983	1989	1997	1989	1997	1989	1997	1989	1997
2	THA MADUK	2,000	2,200	2,400	2,700	2,700	2,900	2,800	3,200	2,400	2,700
4	RANG YOI	5,700	6,200	6,900	7,800	9,500	10,600	13,800	15,100	6,900	7,800
6	SI THEP	23,700	25,800	28,600	32,500	32,300	36,400	30,200	34,200	30,500	34,500
7	KHAO SAPO	1,700	1,900	2,100	2,400	2,100	2,400	11,500	12,400	4,300	4,800
9	YICHIAN BURI	29,600	32,400	35,800	40,600	37,200	42,100	37,100	42,000	36,000	40,800
10	NAM RON (2)	7,200	7,900	8,700	9,900	8,800	10,000	16,200	17,800	10,100	11,400
11	SAP BON	17,000	18,600	20,600	23,400	22,800	25,700	24,800	27,900	22,200	25,100
13	KON DAENG	11,400	12,500	13,800	15,700	16,500	18,700	14,900	16,900	14,900	16,800
14	KOEN SADA0	1,700	1,900	2,100	2,400	2,400	2,700	3,600	4,000	2,400	2,700
15	PAK BOT	15,200	16,600	18,400	20,900	18,900	21,500	19,000	21,600	18,800	21,400
17	KHOK CHAROEN	7,600	8,200	9,100	10,300	9,500	10,800	9,700	11,000	9,500	10,800
18	NO KHAO DO	2,000	2,200	2,400	2,700	2,400	2,700	2,400	2,700	2,400	2,700
20	RAVING	2,000	2,200	2,400	2,700	2,400	2,700	2,400	2,700	2,400	2,700
22	YANG LAT	600	700	800	900	800	900	800	900	800	900
23	THAM NAM BANG	3,500	3,800	4,200	4,800	4,200	4,800	4,200	4,800	4,200	4,800
25	NAM RON (1)	11,600	12,700	14,100	16,000	14,100	16,000	14,100	16,000	14,100	16,000
26	WANG KHONG	11,000	12,000	13,300	15,100	13,300	15,100	13,300	15,100	13,300	15,100
	TOTAL	153,500	167,800	185,700	210,800	199,900	226,000	220,800	248,300	195,200	221,000

Table 4A-16 VEHICLE OPERATING COST
(Economic Cost, Mid 1978)

Benchmark Speed (km/h)	(Bahts per kilometer)																	
	Passenger Car			Light Bus			Heavy Bus			Light Truck			Medium Truck			Heavy Truck		
	Bitumen	Gravel	Earth	Bitumen	Gravel	Earth	Bitumen	Gravel	Earth	Bitumen	Gravel	Earth	Bitumen	Gravel	Earth	Bitumen	Gravel	Earth
10	1.28	1.47	1.94	1.94	2.36	3.05	7.43	9.03	11.50	2.05	2.50	3.23	4.71	5.73	7.36	5.46	6.64	8.56
16	1.22	1.42	1.85	1.63	1.87	2.45	6.97	7.28	9.50	1.71	1.97	2.57	3.77	4.65	6.11	4.38	5.39	7.12
24	1.18	1.37	1.77	1.33	1.57	2.07	4.64	5.77	7.60	1.39	1.65	2.16	2.95	3.71	4.92	3.43	4.32	5.75
32	1.15	1.33	1.71	1.16	1.36	1.79	3.95	4.98	6.50	1.21	1.42	1.87	2.53	3.22	4.23	2.95	3.76	4.96
40	1.13	1.32	1.66	1.07	1.28	1.64	3.53	4.46	5.87	1.12	1.32	1.70	2.28	2.90	3.84	2.66	3.41	4.52
48	1.14	1.31	1.62	1.02	1.23	1.54	3.27	4.19	5.28	1.06	1.27	1.59	2.12	2.74	3.47	2.50	3.22	4.09
56	1.15	1.33	1.60	0.99	1.20	1.47	3.09	4.00	4.94	1.03	1.23	1.51	2.02	2.63	3.27	2.39	3.11	3.87
64	1.18	1.36	-	0.98	1.20	-	3.07	3.94	-	1.01	1.23	-	2.02	2.62	-	2.38	3.09	-
72	1.20	1.39	-	1.00	1.22	-	3.05	3.99	-	1.02	1.25	-	2.03	2.66	-	2.38	3.16	-
80	1.24	1.44	-	1.02	1.27	-	3.09	4.07	-	1.06	1.29	-	2.06	2.75	-	2.44	3.26	-
88	1.27	-	-	1.08	-	-	3.15	-	-	1.10	-	-	2.13	-	-	2.51	-	-

ROAD INVENTORY

Route No.	Route Name	Length (km)	Surface	Remarks
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Appendix 5

5 道路インヴェントリー

Table 5A-1	Road Inventory, Link 3 (Tha Maduk - Rang Yoi)
Table 5A-2	Road Inventory, Link 6 (Rang Yoi - Si Thép)
Table 5A-3	Road Inventory, Link 8 (Mai Sarika - Si Thép)
Table 5A-4	Road Inventory, Link 11 (Si Thép - Wichian Buri)
Table 5A-5	Road Inventory, Link 13 (Sam Yaek - Wichian Buri)
Table 5A-6	Road Inventory, Link 15 (Wichian Buri - Nam Ron (2))
Table 5A-7	Road Inventory, Link 16 (Wichian Buri - Sap Bon) and Link 18 (Sap Bon - Nong Daeng)
Table 5A-8	Road Inventory, Link 20 (Rahun - Nong Daeng)
Table 5A-9	Road Inventory, Link 22 (Nong Daeng - Noen Sadao)
Table 5A-10	Road Inventory, Link 23 (Noen Sadao - Pak Bot)
Table 5A-11	Road Inventory, Link 25 (Pak Bot - Khok Charoen)
Table 5A-12	Road Inventory, Link 29 (Nong Lai - Na Khao Do) and Link 27 (Na Khao Do - Khok Charoen)
Table 5A-13	Road Inventory, Link 36 (Sam Yaek (1) - Tham Nam Bang)
Table 5A-14	Road Inventory, Link 40 (Nam Ron (1) - Phetchabun)

ABBREVIATION

C-P-n(ϕ)-L	: PIPE CULVERT
C-B-n(AxB)-L	: BOX CULVERT
	n : Number of rows
	ϕ : Diameter (cm)
	A : Width (m)
	B : Height (m)
	L : Length (m)
Br-C(WxL)(n)	: CONCRETE BRIDGE
Br-T(WxL)(n)	: TIMBER BRIDGE
	W : Carriageway width (m)
	L : Bridge length (m)
	n : Number of span
S.A.P.	: SOIL AGGREGATE PAVEMENT
S.B.S.T.	: SINGLE BITUMINOUS SURFACE TREATMENT
D.B.S.T.	: DOUBLE BITUMINOUS SURFACE TREATMENT

TABLE 5A-1

Table 5A-1

ROAD INVENTORY

LINK 3 (THA MADUK - RANG YOI, 12.5 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	12.5
NAME OF VILLAGE		THA MADUK	Nong Bong		Ko Rang							Sub Lung Ga		RANG YOI	
TERRAIN		P L A T													
ROAD SURFACE	TYPE	S.A.P.													
	CONDITION	BAD (under maintenance of surface corrugation & pothole)											FAIR		
ROAD WIDTH (m)	CARRIAGE-WAY	6.0	8.0	8.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	6.0	
	SHOULDER														
ALIGNMENT	HORIZONTAL	GOOD													
	VERTICAL	GOOD											BAD	GOOD	
OVERFLOW SECTION	LENGTH (km)	1.7	1.2												
	FLOOD HEIGHT (m)	0.50	0.50												
BRIDGE AND DRAINAGE STRUCTURES		C-P(100)-16.0 C-P(100)-16.0	C-P(60)-14.5 C-P(80)-14.0 C-P(60)-20.5	C-P(60)-14.5	C-P(100)-17.0 C-P(100)-16.5	C-B-4(2.4x2.4-7.8) C-P-2(100)-18.5 C-P-2(100)-14.5 C-P(100)-14.0 C-P-2(100)-14.5		C-P(60)-14.5	C-P(60)-12.5	C-P-2(80)-16.0	C-P(80)-15.2 C-P-2(100)-22.5	C-B-3(3.6x3.3-10.0)	C-P-2(80)-18.4	C-B-3(3.3x3.3-8.0) Br-C(7.0x36.0)(5) Br-C(7.0x41.0)(5)	
LAND USE	LEFT	MAIZE			RICE			RICE		MAIZE	BUSH	FOREST			
	RIGHT				RICE					MAIZE		FOREST			

Table 5A-2

ROAD INVENTORY

LINK 6 (RANG YOI - SI THEP, 18.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
NAME OF VILLAGE		RANG YOI		Nang Yang Thoi														
TERRAIN		FLAT, ROLLING																
ROAD SURFACE	TYPE	S.A.P.																
	CONDITION	FAIR																
ROAD WIDTH (m)	CARRIAGE-WAY		6.0	6.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		
	SHOULDER																	
ALIGNMENT	HORIZONTAL	GOOD																
	VERTICAL	GOOD	BAD										GOOD					
OVERFLOW SECTION	LENGTH (km)																	
	FLOOD HEIGHT (m)																	
BRIDGE AND DRAINAGE STRUCTURES			C-P-2(100)-20.0	C-P(100)-18.5	C-P-2(60)-18.0 C-P-2(100)-21.0	C-P(80)-21.0 C-P(100)-18.5	C-P(60)-11.5	C-P-2(80)-21.0 C-P(80)-16.0	C-B-3(2.40x2.40)-7.0	C-P(60)-16.0	C-P(80)-20.5 C-P-2(60)-19.0	C-B-3(3.00x2.40)-7.6 C-P(80)-18.5	C-P-2(100)-22.0	C-P(60)-14.5	C-B-4(3.30x3.00)-8.0	C-B-3(3.20x3.00)-10.2	C-P(80)-17.5 C-P-2(80)-16.0 C-P(60)-17.0 C-P(60)-12.5	C-P(60)-12.5 C-P(60)-14.5
LAND USE	LEFT	MAIZE			FOREST			MAIZE		FOREST		MAIZE	FOREST	FOREST (RICE & MAIZE)				
	RIGHT	MAIZE			FOREST		WASTE LAND	MAIZE		FOREST	WASTE LAND	FOREST	FOREST (RICE & MAIZE)					

Table 5A-2 ROAD INVENTORY

LINK 6 (RANG YOI - SI THEP, 18.0 km) (Continued)

STATION (km)		14	15	16	17	18															
NAME OF VILLAGE								SI THEP													
TERRAIN		FLAT, ROLLING																			
ROAD SURFACE	TYPE	S.A.P.																			
	CONDITION	FAIR																			
ROAD WIDTH (m)	CARRIAGE-WAY	6.0	6.0	6.0	7.0	6.0															
	SHOULDER																				
ALIGNMENT	HORIZONTAL	GOOD																			
	VERTICAL	GOOD																			
OVERFLOW SECTION	LENGTH (km)																				
	FLOOD HEIGHT (m)																				
BRIDGE AND DRAINAGE STRUCTURES		<div style="display: flex; justify-content: space-around; text-align: center;"> <div style="width: 15%;">Bx-(C)-(7.0x22.5)(3)</div> <div style="width: 15%;">C-P(60)-16.0</div> <div style="width: 15%;">C-P(60)-15.5</div> <div style="width: 15%;">C-P-2(100)-16.5</div> <div style="width: 15%;">C-P(60)-15.5</div> <div style="width: 15%;">C-B-3(2.1x2.1)-7.0</div> <div style="width: 15%;">C-P(60)-14.5</div> </div>																			
LAND USE	LEFT	FOREST (RICE & MAIZE)																			
	RIGHT	FOREST (RICE & MAIZE)																			

Table 5A-3 ROAD INVENTORY

LINK 8 (MAI SARIKA - SI THEP, 13.2 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13 13.2								
NAME OF VILLAGE		MAI SARIKA			Bung Na Chan										SI THEP								
TERRAIN		FLAT																					
ROAD SURFACE	TYPE	S.B.S.T.		S.A.P.						S.B.S.T.		S.A.P.											
	CONDITION	FAIR		BAD		FAIR, BAD				FAIR													
ROAD WIDTH (m)	CARRIAGE-WAY	6.5			6.0			7.0			7.5												
	SHOULDER																						
ALIGNMENT	HORIZONTAL	GOOD																					
	VERTICAL	GOOD																					
OVERFLOW SECTION	LENGTH (km)					4.0						0.5		0.5									
	FLOOD HEIGHT (m)					1.0						1.0		0									
BRIDGE AND DRAINAGE STRUCTURES		C-P(60)-8.0		C-P-2(80)-9.0		C-P(60)-8.5		SUBMERGED BRIDGE		C-P(100)-12.0		C-P(60)-17.0		NO BRIDGE		SUBMERGED BRIDGE		C-P(40)-10.0		C-P(100)-12.5		C-P(40)-12.0	
LAND USE	LEFT	RICE			WASTELAND						RICE	VILLAGE	RICE	FOREST			RICE						
	RIGHT	RICE			WASTELAND						RICE	VILLAGE	RICE	FOREST			RICE						

TABLE 5A-4
1 of 2

Table 5A-4

ROAD INVENTORY

LINK 11 (SI THEP - WICHIAN BURI, 24.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
NAME OF VILLAGE		SI THEP				Takhop	Na Sanun									Bo Rang	
TERRAIN		FLAT															
ROAD SURFACE	TYPE	S.A.P.					S.B.S.T.			S.A.P.					S.B.S.T.		
	CONDITION	GOOD															
ROAD WIDTH (m)	CARRIAGE-WAY	6.0	6.0	6.0	8.0	6.0	9.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	
	SHOULDER																
ALIGNMENT	HORIZONTAL	GOOD		BAD		GOOD											
	VERTICAL	GOOD															
OVERFLOW SECTION	LENGTH (km)				0.5	0.8				0.5							
	FLOOD HEIGHT (m)				0	0.2				0							
BRIDGE AND DRAINAGE STRUCTURES		C-P(60)-12.0			C-P(100)-12.0	C-P(80)-12.0	C-P-2(100)-12.0			C-P(100)-12.5	C-P(60)-11.0	C-P-3(100)-12.0	C-P-2(100)-12.5	C-P-3(100)-12.5	C-P(100)-10.0	C-P(60)-12.0	
LAND USE	LEFT	RICE	FOREST		RICE		FOREST										
	RIGHT	RICE	FOREST		RICE		FOREST										

Table 5A-4 ROAD INVENTORY

LINK 11 (SI THEP - VICHIAN BURI, 24.0 km (Continued))

STATION (km)		14	15	16	17	18	19	20	21	22	23	24	
NAME OF VILLAGE		Thung Yai							VICHIAN BURI				
TERRAIN		P L A T											
ROAD SURFACE	TYPE	S.A.P.					S.B.S.T.		S.A.P.				
	CONDITION	GOOD		BAD			PAIR						
ROAD WIDTH (m)	CARRIAGE-WAY	6.0	7.0	7.0	7.0	6.0	7.0	7.0	7.0	7.0	7.0		
	SHOULDER												
ALIGNMENT	HORIZONTAL	GOOD					BAD		GOOD		PAIR		
	VERTICAL	GOOD								BAD		GOOD	
OVERFLOW SECTION	LENGTH (km)	4.3							1.0		0.3		
	FLOOD HEIGHT (m)	0.3-0.5							0		0		
BRIDGE AND DRAINAGE STRUCTURES		<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p>C-P-2(60)-10.0 C-P(100)-10.0 C-P(100)-10.0 C-P-2(60)-10.0</p> </div> <div style="width: 20%;"> <p>Br-T(5.6x15.5)(4) C-P(60)-11.0 C-P(80)-10.5</p> </div> <div style="width: 20%;"> <p>C-P-2(100)-20.0 C-P(100)-10.5 C-P(60)-11.5 C-P(60)-11.5 C-P(60)-10.0 C-P(100)-10.0 C-P(60)-11.0</p> </div> <div style="width: 20%;"> <p>C-P(60)-10.5 C-P(100)-17.5 Br-T(4.2x15.5)(3) C-P(60)-12.0</p> </div> <div style="width: 20%;"> <p>C-P-2(100)-11.0 C-P(100)-11.0 C-P(100)-11.0 C-P-2(80)-11.0</p> </div> <div style="width: 20%;"> <p>C-P(80)-9.0 C-P(80)-11.0</p> </div> </div>											
LAND USE	LEFT	RICE							MAIZE WASTELAND		RICE		
	RIGHT	RICE							MAIZE WASTELAND		RICE		

Table 5A-5 ROAD INVENTORY

LINK 13 (SAM YAEK (2) - WICHIAN BURI, 7.9 km)

STATION (km)		0	1	2	3	4	5	6	7	7.9		
NAME OF VILLAGE		SAM YAEK				WICHIAN BURI						
TERRAIN		FLAT										
ROAD SURFACE	TYPE	D.B.S.T.										
	CONDITION	PAIR										
ROAD WIDTH (m)	CARRIAGE-WAY	6.0										
	SHOULDER	3.0										
ALIGNMENT	HORIZONTAL	GOOD										
	VERTICAL	GOOD										
OVERFLOW SECTION	LENGTH (km)											
	FLOOD HEIGHT (m)											
BRIDGE AND DRAINAGE STRUCTURES		— Br-C (7.0x50.0) (5) — Br-C (7.0x32.0) (4) — Br-C (7.0x40.0) (4) — Br-C (7.0x40.0) (5) — Br-C (7.0x160.0) (11) — Br-C (7.7x10.1)										
LAND USE	LEFT	MAIZE		RICE								
	RIGHT	MAIZE		RICE								

TABLE 5A-6

1 of 2

Table 5A-6 ROAD INVENTORY

LINK 15 (WICHIAN BURI - NAM RON (2), 15.7 km)


STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
NAME OF VILLAGE		 WICHIAN BURI															
TERRAIN		FLAT, ROLLING															
ROAD SURFACE	TYPE	S.B.S.T.				S.A.P.											
	CONDITION	BAD															
ROAD WIDTH (m)	CARRIAGE-WAY	8.5															
	SHOULDER																
ALIGNMENT	HORIZONTAL	GOOD															
	VERTICAL	GOOD															
OVERFLOW SECTION	LENGTH (km)			1.0					4.0					1.0		1.0	
	FLOOD HEIGHT (m)			0					0					0		0	
BRIDGE AND DRAINAGE STRUCTURES		—C-P-2(100)-15.0 —C-P-2(100)-13.0 —C-P(100)-11.0 Br-T(4.2x24.3)(4) —C-P(40)-11.0															
LAND USE	LEFT		VASTELAND	RICE	MAIZE FOREST				RICE				FOREST			RICE	
	RIGHT		VASTELAND	RICE	MAIZE FOREST				RICE				FOREST			RICE	

Table 5A-6 ROAD INVENTORY

LINK 15 (VICHIAN BURI - NAM RON (2), 15.7 km) (Continued)

STATION (km)		14	15	15.7
NAME OF VILLAGE		NAM RON (2)		
TERRAIN		FLAT, ROLLING		
ROAD SURFACE	TYPE	S.A.P.		
	CONDITION	BAD		
ROAD WIDTH (m)	CARRIAGE-WAY	8.5		
	SHOULDER			
ALIGNMENT	HORIZONTAL	GOOD		
	VERTICAL	GOOD		
OVERFLOW SECTION	LENGTH (km)	1.0		
	FLOOD HEIGHT (m)	0		
BRIDGE AND DRAINAGE STRUCTURES				
LAND USE	LEFT	RICE	MAIZE	
	RIGHT	RICE	MAIZE	

Table 5A-7

ROAD INVENTORY

LINK 16 (VICHIAN BURI - SAP BON, 21.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
NAME OF VILLAGE		VICHIAN BURI			Bu Makrut						Khok Prong						
TERRAIN		FLAT				ROLLING			FLAT		ROLLING						
ROAD SURFACE	TYPE	S.B.S.T.			S.A.P.												
	CONDITION	FAIR															
ROAD WIDTH (m)	CARRIAGE-WAY	9.0	9.0	9.0	8.0	8.0	8.0	9.0	8.0	8.0	8.0	8.0	6.5	6.5	6.5	8.0	
	SHOULDER																
ALIGNMENT	HORIZONTAL									GOOD							
	VERTICAL									GOOD							
OVERFLOW SECTION	LENGTH (km)				1.8		1.0					1.8					
	FLOOD HEIGHT (m)				0.05		0.5					0.05					
BRIDGE AND DRAINAGE STRUCTURES					C-P(80)-14.0		C-P(80)-13.0		C-P(80)-13.0		C-P-2(80)-16.0		Br-T(4.0x69.7)(16) Br-T(4.6x6.9)(2)		C-P(80)-13.0		C-P-2(100)-15.0
LAND USE	LEFT				RICE				MAIZE		RICE						
	RIGHT				RICE				MAIZE		RICE						

Table 5A-7 ROAD INVENTORY

LINK 16 (WICHIAN BURI - SAP BÓN, 21.0 km) (Continued)
AND LINK 18 (SAP BÓN - NONG DAENG, 5.3 km)

STATION (km)		14	15	16	17	18	19	20	21	22	23	24	25	26	26.3
NAME OF VILLAGE									LINK 16 SAP BÓN	LINK 18					NONG DAENG
TERRAIN						FLAT									
ROAD SURFACE	TYPE					S.A.P.									
	CONDITION					FAIR									
ROAD WIDTH (m)	CARRIAGE-WAY	8.0	8.0	7.0	8.5	8.0	7.0	8.0	8.0	8.0	9.0	8.0	8.0	9.0	
	SHOULDER														
ALIGNMENT	HORIZONTAL					GOOD									
	VERTICAL					GOOD									
OVERFLOW SECTION	LENGTH (km)								1.65						
	FLOOD HEIGHT (m)								0						
BRIDGE AND DRAINAGE STRUCTURES			C-P(200)-13.5	Br-T(4.2x11.3)(3)				Br-T(4.2x11.5)(3)		C-P(60)-11.0				Br-T(4.2x15.0)(3.0)	
LAND USE	LEFT					RICE								WASTELAND (MAIZE)	
	RIGHT			RICE				MAIZE						WASTELAND (MAIZE)	

TABLE 5A-8

Table 5A-8 ROAD INVENTORY

LINK 20 (RAHUN - NONG DAENG, 12.8 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	12.8					
NAME OF VILLAGE		RAHUN										NONG DAENG								
TERRAIN		FLAT							ROLLING				FLAT							
ROAD SURFACE	TYPE	S.A.P.										SOIL		S.A.P.						
	CONDITION	FAIR							FAIR, BAD				BAD		FAIR					
ROAD WIDTH (m)	CARRIAGE-WAY	7.0							6.0				10.0							
	SHOULDER																			
ALIGNMENT	HORIZONTAL	GOOD																		
	VERTICAL	GOOD							BAD				GOOD							
OVERFLOW SECTION	LENGTH (km)	4.0							0.4	0.1	0.1	1.0								
	FLOOD HEIGHT (m)	0.5							0.5	0.5	0.5	0.5								
BRIDGE AND DRAINAGE STRUCTURES		C-P-2(80)-15.0 C-P-2(80)-14.0 C-P(100)-20.0 C-P(80)-16.5 Br-T(4.3x18.3)(3) Br-T(4.4x25.0)(5) Br-T(4.4x15.5)(3) C-P-2(100)-16.0 Br-C(7.0x75.0)(7) C-P(100)-15.5 Br-T(4.2x5.0) C-P(100)-16.0 C-P-2(80)-14.0																		
LAND USE	LEFT	RICE			WASTELAND				MAIZE	R	M	R	M	R	MAIZE	RICE	MAIZE	RICE	MAIZE	RICE
	RIGHT	RICE			WASTELAND				MAIZE	R	M	R	M	R	MAIZE	RICE	MAIZE	RICE	MAIZE	

Table 5A-9 ROAD INVENTORY

LINK 22 (NONG DAENG - NOEN SADA0, 14.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
NAME OF VILLAGE		NONG DAENG											Noen Khontha		NOEN SADA0		
TERRAIN		FLAT ROLLING															
ROAD SURFACE	TYPE	S.A.P.															
	CONDITION	FAIR															
ROAD WIDTH (m)	CARRIAGE-WAY	8.0															
	SHOULDER																
ALIGNMENT	HORIZONTAL	GOOD															
	VERTICAL	GOOD															
OVERFLOW SECTION	LENGTH (km)														2.0		
	FLOOD HEIGHT (m)														0.5		
BRIDGE AND DRAINAGE STRUCTURES			Br-T (4.2x14.9) Br-T (4.2x11.2) C-P-2 (100)-15.0 Br-T (4.2x22.5)	C-P (100)-11.0 C-P (100)-12.0 C-P (60)-13.0			C-P (100)-13.5	Br-T (4.2x11.5)	C-P (80)-11.5 C-P (60)-12.0		C-P (60)-12.0 C-P (80)-11.0	C-P (100)-13.0 C-P (80)-17.0	C-P (60)-13.5 Br-T (4.2x11.2) (3)	C-P (60)-15.0 C-P-2 (100)-19.0	Br-T (4.2x15.0) (3) C-P (80)-17.0		C-P (80)-15.0
LAND USE	LEFT	MAIZE RICE	FOREST (WASTELAND)	RICE	FOREST (WASTELAND)	MAIZE					RICE				MAIZE	RICE	
	RIGHT	MAIZE RICE	FOREST (WASTELAND)	RICE	FOREST (WASTELAND)		MAIZE					RICE			MAIZE	RICE	

Table 5A-10

ROAD INVENTORY

LINK 23 (NOEN SADA0 - PAK BOT, 4.4 km)

STATION (km)		0	1	2	3	4	4.4
NAME OF VILLAGE		NOEN SADA0			PAK BOT		
TERRAIN		FLAT, ROLLING					
ROAD SURFACE	TYPE	S.A.P.					
	CONDITION	FAIR					
ROAD WIDTH (m)	CARRIAGE-WAY	8.0					
	SHOULDER						
ALIGNMENT	HORIZONTAL	GOOD					
	VERTICAL	GOOD					
OVERFLOW SECTION	LENGTH (km)						0.1
	FLOOD HEIGHT (m)						0
BRIDGE AND DRAINAGE STRUCTURES		 C-P(300)-12.0 C-P(100)-15.0 Br-T(4.4x15.4)(3)		 C-P(100)-17.0 C-P(100)-10.0 Br-T(4.2x18.4)(3)		 Br-T(4.5x24.3)(4)	
LAND USE	LEFT	MAIZE		RICE			
	RIGHT	FOREST, MAIZE		RICE			
		C-P(80)-20.5					

Table 5A-11 ROAD INVENTORY

LINK 25 (PAK BOT - KHOK CHAROEN, 6.0 km)

STATION (km)		0	1	2	3	4	5	6															
NAME OF VILLAGE		PAK BOT															KHOK CHAROEN						
TERRAIN		FLAT																					
ROAD SURFACE	TYPE	S.A.P.																					
	CONDITION	FAIR																					
ROAD WIDTH (m)	CARRIAGE-WAY	8.0	11.0	10.0	9.0	3.0	8.0	8.0															
	SHOULDER																						
ALIGNMENT	HORIZONTAL	GOOD																					
	VERTICAL	GOOD																					
OVERFLOW SECTION	LENGTH (km)																						
	FLOOD HEIGHT (m)																						
BRIDGE AND DRAINAGE STRUCTURES		Br-T(4.5x23.7)(4) C-P(60)-14.0		Br-T(4.4x23.6)(4) Br-T(4.4x18.4)(3)		C-P(60)-15.0 C-P(60)-15.0		C-P-2(80)-15.0 C-P(80)-15.0 C-P-2(80)-15.0 C-P(60)-15.0															
LAND USE	LEFT	MAIZE	RICE	FOREST, WASTELAND				RICE (MAIZE)															
	RIGHT	MAIZE	RICE	FOREST, WASTELAND				RICE (MAIZE)															

Table 5A-12 ROAD INVENTORY

LINK 29 (NONG LAI - NA KHAO DO, 9.0 km)
AND LINK 27 (NA KHAO DO - KHOK CHAROEN, 4.5 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11	12	13	13.5			
NAME OF VILLAGE		NONG LAI										LINK 29 NA KHAO DO		LINK 27		KHOK CHAROEN			
TERRAIN		ROLLING				FIAT				ROLLING				FLAT TO ROLLING					
ROAD SURFACE	TYPE	S.A.P.																	
	CONDITION	FAIR																	
ROAD WIDTH (m)	CARRIAGE-WAY	9.0				8.0		7.0		10.5				8.7					
	SHOULDER																		
ALIGNMENT	HORIZONTAL	GOOD																	
	VERTICAL	GOOD																	
OVERFLOW SECTION	LENGTH (km)					2.6													
	FLOOD HEIGHT (m)					0.50													
BRIDGE AND DRAINAGE STRUCTURES		<div style="display: flex; justify-content: space-around; text-align: center;"> <div>— Br-T-4.1x30.3(5)</div> <div>— C-P(80)-16.0</div> <div>— Br-C-7.0x50.0(5)</div> <div>— Br-T-4.2x32.5 (Broken)</div> <div>— Br-T-4.1x18.0 (3)</div> <div>— C-P(80)-16.0</div> <div>— C-P(60)-16.0</div> <div>— Br-T(4.0x14.5)(3)</div> <div>— Br-T(4.3x15.0)(3)</div> <div>— Br-T(4.3x18.2)(3)</div> <div>— Br-T(4.2x15.2)(3)</div> </div>																	
LAND USE	LEFT	MAIZE		RICE				RICE				RICE & MAIZE				RICE		MAIZE	
	RIGHT	RICE		MAIZE				RICE				MAIZE				RICE			

Table 5A-13 ROAD INVENTORY

LINK 36 (SAM YAEK (1) - THAM NAM BANG, 8.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	
NAME OF VILLAGE		SAM YAEK		Ban Na Yom				THAM NAM BANG			
TERRAIN		FLAT									
ROAD SURFACE	TYPE	D.B.S.T.				S.A.P.			SOIL		
	CONDITION	PAIR				BAD					
ROAD WIDTH (m)	CARRIAGE-WAY	5.5				5.0					
	SHOULDER	3.0									
ALIGNMENT	HORIZONTAL					GOOD			BAD		
	VERTICAL					GOOD			BAD		
OVERFLOW SECTION	LENGTH (km)					4.0					
	FLOOD HEIGHT (m)					1.0					
BRIDGE AND DRAINAGE STRUCTURES		C-P-2(60)-13.5 C-P(40)-12.0 C-P(50)-16.0 Br-C(7.0x50)(5) Br-T(3.7x28.4)(8) Br-T(3.6x7.7)(3) C-P(60)-11.0 C-P(60)-10.5 C-P(60)-8.0 NO BRIDGE									
LAND USE	LEFT					MAIZE			RICE		
	RIGHT					RICE			RICE MAIZE		

Table 5A-14 ROAD INVENTORY

LINK 40 (NAM RON (1) - PHETCHABUN, 11.0 km)

STATION (km)		0	1	2	3	4	5	6	7	8	9	10	11				
NAME OF VILLAGE		NAM RON (1)		Sak Haeng					Pak Nam			PHETCHABUN					
TERRAIN		FLAT															
ROAD SURFACE	TYPE	S.A.P.															
	CONDITION	FAIR		BAD					FAIR		FAIR		SBST				
ROAD WIDTH (m)	CARRIAGE-WAY	6.0					8.0			7.0		6.5					
	SHOULDER	2.0															
ALIGNMENT	HORIZONTAL	BAD		GOOD													
	VERTICAL	GOOD															
OVERFLOW SECTION	LENGTH (km)	6.7								2.3							
	FLOOD HEIGHT (m)	1.00								0.50							
BRIDGE AND DRAINAGE STRUCTURES		Br-T (2.6x18.5)		Br-T (4.0x27.8)		Br-T (3.5x12.0)		Br-T (3.3x14.5)		Br-T (3.6x10.3)		Br-C (7.0x90.0) (7)		C-P-2 (60)-8.0		Br-C (8.0x42.0) (6)	
LAND USE	LEFT	MAIZE		RICE			MAIZE		FOREST			RICE					
	RIGHT	MAIZE		RICE			MAIZE		FOREST			RICE					