

Table 6 District Inventory (Bolikhamsai)

Province	Districts	Unit	Bolikhamsai			
			Thaphabath	Bolikhham	Paksan	Pakkading
(1) Administrative area		km2	1,212	1,803	654	2,410
(2) Population						
a) Number of Zones		nos	4	4	8	4
b) Number of villages		nos	32	50	75	57
c) Number of house-hold		nos	3,640	2,582	5,913	5,215
d) Average family size		nos	5.3	6.2	6.2	6.2
e) Estimated population			19,424	16,625	34,693	31,440
f) Literacy rate		%		43.2		
g) Ethnic group						
i) Lao Loum		persons	18,941	13,340	33,896	25,342
ii) Lao Theung		persons	405	1,308	591	1,070
iii) Lao Soung		persons	44	1,970	35	1,110
iv) Others		persons	34	6	171	65
(3) Social infrastructure						
a) Water Supply Provision		%	84.0	67.0	82.0	34.0
b) Electricity Provision		%		25.0		
c) No. of Primary school		nos		42		
d) No. of Secondary school		nos		4		
e) No. of High school		nos		1		
f) No. of Hospital (No. of bed)		nos	1 (10)	1 (20)	1 (70)	1 (24)
g) No. of Dispensary (No. of bed)		nos	3 (8)	2 (10)	4 (18)	3 (12)
h) No. of Latrine		nos	661	414	2,042	361
(4) Agriculture						
a) Land Use						
i) Rainfed Paddy field		ha	3,850	1,384	6,789	5,568
ii) Irrigated Paddy field		ha	544	115	1,200	734
iii) Upland Paddy field		ha		1,005		388
iv) Cultivated Levee area		ha				330
v) Industrial Crop		ha	687	58	672	500
vi) Vegetable Crop		ha	145	34	123	195
vii) Fruit Crop		ha	8	5	6	5
b) Paddy cultivation						
i) Improved Variety (Area)		ha	2,100	809	5,322	1,786
ii) Improved Variety (Amount of seeds)		ton	126	49	319	107
iii) Local Variety (Area)		ha	1,400	1,214	2,281	3,276
iv) Local Variety (Amount of Seeds)		ton	84	73	137	197
c) Average holding size		ha				
d) Cropping schedule						
i) Rain season		from/to	e May - 1 Nov	e May - 1 Nov	e May - 1 Nov	1 May - m Nov
ii) Dry season		from/to	e Dec - 1 May	m Nov - 1 Apr	e Dec - 1 Apr	m Nov - 1 Apr
e) Yield						
i) Rain season		ton/ha	2.1	1.2	1.5	2.8
ii) Dry season		ton/ha	4.6	2.5	4.5	4.5
iii) Total		ton/ha				
f) Paddy farming information						
i) Labor input (Transplanting and Harvesting)		man-day	40.0	30.0	30.0	30.0
ii) Animal power input (Land Preparation)		animal-day	-	21	-	-
iii) Machine input (Land Preparation)		machine-day	9 - 10	4	4	2
g) Farming practice						
i) Planting System						
Rainfed		TP/DS	TP	TP	TP	TP
Irrigated		TP/DS	TP	TP	TP + DS	TP
ii) Fertilizer application						
Wet season		kg/ha	negligible	negligible	few (up to 100)	few (up to 150)
Dry season		kg/ha	150 - 200	150 - 200	350	150
iii) Mechanization						
Land Preparation		%	100%	ND	Machine Major	85%
Threshing		%	95%	ND	100%	ND
iv) Variety (G: glutinous, N: non-glutinous)						
Wet season		Imp/Loc	L:I=1:1	Local Major	Local and Improv.	L:I=60:40
Dry season		Imp/Loc	I=100%	I=100%	I=100%	I=100%
viii) Seedrate						
Wet season		kg/ha	150	36	40	80 - 100
Dry season		kg/ha	80 - 100	80 - 100	80 - 100	80
h) Flood affected area (Pady field)		%	55.0	6.0	28.0	
(5) Livestock and Fisheries						
a) No. of animals						
i) Buffalo		nos	4,733	4,116	4,533	7,550
ii) Cattle		nos	7,559	3,464	8,137	5,510
iii) Pig		nos	1,082	4,005	4,166	4,256
iv) Poultry		nos	51,332	42,135	101,260	56,932
b) Vaccination						
i) No. of buffalo vaccinated		nos				
ii) No. of cattle vaccinated		nos				
iii) No. of pig vaccinated		nos				
iv) No. of poultry vaccinated		nos				
c) Fishery activities						
i) Released fingerling		nos	50,600	82,785		
ii) Fish Pond (No. and area)		nos/ha	6	112	217	

Table 6 District Inventory (Bolikhamsai)

Province	Districts	Unit	Bolikhamsai			
			Thaphabath	Bolikhham	Paksan	Pakkading
(6) Farm Input and Marketing						
a) Farm Input						
i)	Fertilizer used	ton	200	50	500	50
ii)	Farm Yard Manure used	ton				
iii)	Pesticide used	Kg	58	20	180	300
iv)	No. of Pump	nos			90	
v)	No. of 2 wheel tractor	nos	520		491	770
vi)	No. of 4 wheel tractor	nos	16		11	4
vii)	No. of harvesting machine	nos				
viii)	No. of hand sprayer	nos				385
b) Marketing						
i)	No. of threshing machine	nos	10		16	9
ii)	No. of pedestral threshing Machine	nos				
iii)	No. of mills	nos	3	60	62	53
c) Livestock Marketing						
i)	Domestic consumption of large animals	head/year	165	110	1,660	367
ii)	Sold to other area (large animals)	head/year	265	200	684	51
iii)	Domestic consumption of pig	head/year				
iv)	Sold to other area (pig)	head/year				
v)	Domestic consumption of poultry	head/year				
vi)	Sold to other area (poultry)	head/year				
(7) DAFSO						
a) Approximate Annual budget						
		Kip		1,000,000	1,200,000	1,000,000
b) Number of Staff (Division)						
i)	Crop Production	persons (%)	4 (21.1)	6 (22.2)	3 (13.6)	3 (17.6)
ii)	Irrigation	persons (%)	0 (0.0)	1 (3.7)	2 (9.1)	0 (0.0)
iii)	Livestock	persons (%)	4 (21.1)	4 (14.8)	5 (22.7)	4 (23.5)
iv)	Forestry	persons (%)	7 (36.8)	14 (51.9)	9 (40.9)	10 (58.3)
vi)	Administration	persons (%)	4 (21.1)	2 (7.4)	3 (13.6)	0 (0.0)
v)	Total	persons (%)	19 (100.0)	27 (100.0)	22 (100.0)	17 (100.0)
c) Number of Staff (Education level)						
i)	University Level	persons (%)	2 (10.5)	3 (27.3)	6 (27.3)	5 (29.4)
ii)	Technician Level	persons (%)	15 (78.9)	17 (63.0)	10 (45.5)	11 (64.7)
iii)	Vocational Level	persons (%)	2 (10.5)	7 (25.9)	6 (27.3)	1 (5.9)
iv)	Total	persons (%)	19 (100.0)	27 (100.0)	22 (100.0)	17 (100.0)
d) Number of Staff (Sex)						
i)	Male	persons (%)	14 (73.7)	24 (88.9)	11 (50.0)	16 (94.1)
ii)	Female	persons (%)	5 (26.3)	3 (11.1)	11 (50.0)	1 (5.9)
iii)	Total	persons (%)	19 (100.0)	27 (100.0)	22 (100.0)	17 (100.0)
e) Number of Modern farmers						
i)	Crop Production	families	7	3	3	14
ii)	Livestock	families	4	61	0	0
f) Facilities						
i)	Building structure (year established)	material(year)	wood (86)	wood (91)	wood (40)	wood (75)
ii)	Number of Rooms	nos	5	3	7	4
iii)	Number of Tables	nos	14	10	11	6
iv)	Number of Chairs	nos	18	14	22	14
v)	Number of Cupboard	nos	2	1	6	3
vi)	Electric supply	yes/no	yes	no	yes	no
vii)	Telephone line	lines	0	0	1	0
viii)	Fax Machine	nos	0	0	0	0
ix)	Computer	nos	0	0	0	0
x)	Type writter	nos	0	1	1 (old)	1 (old)
xi)	Copy machine	nos	0	0	0	0
xii)	Stencil Printer	nos	0	0	0	0
xiii)	Balance/Tape for Yield test	sets	1/0	0	1	0
xiv)	Vaccination Facility (Fridge, Ice box, etc.)	sets	1	1	1	1
xv)	Camera	nos	1	0	0	0
xvi)	Vehicles	nos	0	0	0	0
xvii)	Motor Cycle	nos	1	0	2 (out of order)	1
xviii)	Motor Boat	nos	1 (without motor)	0	0	2
xiv)	Bicycle	nos	3 (out of order)	0	0	1
(8) Environment						
a) NBCA						
		ha	100,000	0	0	109,000
b) Protected Forest						
		ha	600	60,800	0	0
c) Production Forest						
		ha	0	135,303	0	135,303
d) Conservation Forest						
		ha	0	7,684	6,273	11,484
e) Regeneration Forest						
		ha	0	0	0	10,200
f) Degraded Forest						
		ha	0	0	3,554	16,440

Table District Inventory (Khammouane)

Province	Districts	Unit	Khammouane			
			Hinboun	Thakhek	Nongbok	Sebangfai
(1) Administrative area		km2	3,011	918	321	966
(2) Population						
a) Number of Zones		nos	15	5	10	
b) Number of villages		nos	166	139	72	
c) Number of house-hold		nos	9,480	13,293	7,048	
d) Average family size		nos	5.7	5.2	6.1	
e) Estimated population		persons	53,829	70,364	38,949	21,142
f) Literacy rate		%	26.7			
g) Ethnic group						
i) Lao Loum		persons	53,062	67,120	37,777	17,000
ii) Lao Iheung		persons	328	2,520	1,172	4,142
iii) Lao Soung		persons	416	0	0	0
iv) Others		persons	24	724	0	0
(3) Social infrastructure						
a) Water Supply Provision		%	36.0	73.0	50.0	65.0
b) Electricity Provision		%				
c) No. of Primary school		nos				
d) No. of Secondary school		nos				
e) No. of High school		nos				
f) No. of Hospital (No. of bed)		nos	1 (15)	2 (162)	1 (20)	1 (15)
g) No. of Dispensary (No. of bed)		nos	11 (22)	13 (26)	11 (22)	5 (10)
h) No. of Latrine		nos	1,298	4,285	607	343
(4) Agriculture						
a) Land Use						
i) Rainfed Paddy field		ha	8,264	6,950	10,275	4,058
ii) Irrigated Paddy field		ha	593	756	1,303	595
iii) Upland Paddy field		ha	140	-	-	-
iv) Cultivated Levee area		ha	995 (home yard)			
v) Industrial Crop		ha	111	43	310	15
vi) Vegetable Crop		ha	522	397	557	173
vii) Fruit Crop		ha				
b) Paddy cultivation						
i) Improved Variety (Area)		ha	563	736	1,910	885
ii) Improved Variety (Amount of seeds)		ton	45	59	153	71
iii) Local Variety (Area)		ha	8,264	6,950	10,275	4,058
iv) Local Variety (Amount of Seeds)		ton	661	556	822	325
c) Average holding size		ha				
d) Cropping schedule						
i) Rain season		from/to	m May - e Dec	e May - e Nov	e May - l Nov	e May - e Dec
ii) Dry season		from/to	m Nov - m Apr	m Dec - e Apr	m Nov - e Apr	m Nov - l Mar
e) Yield						
i) Rain season		ton/ha	1.5	2.8	3.3	2.0
ii) Dry season		ton/ha	2.7	4.5	5.8	3.6
iii) Total		ton/ha				
f) Paddy farming information						
i) Labor input (Trans planting and Harvesting)		man-day	30.0	30.0	30.0	ND
ii) Animal power input (Land Preparation)		animal-day	15.0	15.0	ND	6.0
iii) Machine input (Land Preparation)		machine-day	5.0	4 - 5	4.0	2.0
g) Farming practice						
i) Planting System						
Rainfed		TP/DS	TP	TP	TP	TP
Irrigated		TP/DS	TP	TP	TP	TP
iii) Fertilizer application						
Wet season		kg/ha	negligible	some	few	negligible
Dry season		kg/ha	300	250 - 300	150	300
v) Mechanization						
Land Preparation		%	60%	Buffalo Major	Machine Major	Buffalo Major
Threshing		%	ND	50%	ND	ND
vii) Variety (G: glutinous, N: non-glutinous)						
Wet season		Imp/Loc	L:I=3:2	L:I=1:4	Local Major	L:I=1:4
Dry season		Imp/Loc	I=100	I=100	I=100	I=100
viii) Seedrate						
Wet season		kg/ha	60	40 - 45	ND	60 - 80
Dry season		kg/ha	80	70 - 80	ND	80 - 100
h) Flood affected area (Pady field)		%	28.0	15.0	28.0	7.0
(5) Livestock and Fisheries						
a) No. of animals						
i) Buffalo		nos	15,956	13,754	6,367	7,173
ii) Cattle		nos	10,997	13,115	8,835	6,132
iii) Pig		nos	5,351	18,730	4,155	3,390
v) Poultry		nos	67,089	114,583	85,731	45,634
b) Vaccination						
i) No. of buffalo vaccinated		nos	5,340	8,120	2,010	1,827
ii) No. of cattle vaccinated		nos	1,296	1,390	2,508	1,436
iii) No. of pig vaccinated		nos	545	974	1,050	752
iv) No. of poultry vaccinated		nos	8,000	19,170	20,050	818
c) Fishery activities						
i) Released fingerling (436,000 province total)		nos	475,092		10,000	
ii) Fish pond (No. and area)		nos/ha	125 (12)	396 (45)	511 (18)	162 (55)

Table District Inventory (Khammouane)

Province	Districts	Unit	Khammouane			
			Himboun	Thakhek	Nongbok	Sebangfai
(6) Farm Input and Marketing						
a) Farm Input						
i)	Fertilizer used	ton	45	220	573	265
ii)	Farm Yard Manure used	ton				
iii)	Pesticide used	Kg	500	300	500	100
iv)	No. of Pump	nos	150			43
v)	No. of 2 wheel tractor	nos	476		581	140
vi)	No. of 4 wheel tractor	nos	5		9	3
vii)	No. of harvesting machine	nos				
viii)	No. of hand sprayer	nos				
b) Marketing						
i)	No. of threshing machine	nos				2
ii)	No. of pedestral threshing Machine	nos				
iii)	No. of mills	nos	340		211	131
c) Livestock Marketing						
i)	Domestic consumption of large animals	head/year				
ii)	Sold to other area (large animals)	head/year				
iii)	Domestic consumption of pig	head/year				
iv)	Sold to other area (pig)	head/year				
v)	Domestic consumption of poultry	head/year		1,268	178	
vi)	Sold to other area (poultry)	head/year				
(7) DAFSO						
a)	Approximate Annual budget	Kip		2,000,000	1,800,000	1,800,000
b) Number of Staff (Division)						
i)	Crop Production	persons (%)	7 (19.4)	12 (25.5)	10 (27.8)	7 (22.6)
ii)	Irrigation	persons (%)	4 (11.1)	6 (12.8)	4 (11.1)	2 (6.5)
iii)	Livestock	persons (%)	8 (22.2)	14 (29.8)	12 (33.3)	6 (19.4)
iv)	Forestry	persons (%)	11 (30.6)	13 (27.7)	3 (8.3)	9 (29.0)
vi)	Administration	persons (%)	6 (16.7)	2 (4.3)	7 (19.4)	7 (22.6)
v)	Total	persons	36 (100.0)	47 (100.0)	36 (100.0)	31 (100.0)
c) Number of Staff (Education level)						
i)	University Level	persons (%)	4 (11.1)	2 (4.3)	3 (8.3)	3 (9.7)
ii)	Technician Level	persons (%)	13 (36.1)	28 (59.6)	22 (61.1)	19 (61.3)
iii)	Vocational Level	persons (%)	19 (52.8)	17 (36.2)	11 (30.6)	9 (29.0)
iv)	Total	persons	36 (100.0)	47 (100.0)	36 (100.0)	31 (100.0)
d) Number of Staff (Sex)						
i)	Male	persons (%)	31 (86.1)	28 (59.6)	24 (66.7)	23 (74.2)
ii)	Femal	persons (%)	5 (13.9)	19 (40.4)	12 (33.3)	8 (25.8)
iii)	Total	persons	36 (100.0)	47 (100.0)	36 (100.0)	31 (100.0)
e) Number of Modern farmers						
i)	Crop Production	families		43	27	30
ii)	Livestock	families		63	1	
f) Facilities						
i)	Building structure (year established)	material/year	wood (93)	concrete (renewed 94)	concrete/wood (94)	concrete/wood (92)
ii)	Number of Rooms	nos	5	5	5	3
iii)	Number of Tables	nos	7	10	9	11
iv)	Number of Chairs	nos	15	30	18	30
v)	Number of Cupboard	nos	3	5	5	4
vi)	Electric supply	yes/no	yes	yes	yes	yes
vii)	Telephone line	lines	0	1	0	0
viii)	Fax Machine	nos	0	0	0	0
ix)	Computer	nos	0	0	0	0
x)	Type writer	nos	1	1	1 (old)	1 (old)
xi)	Copy machine	nos	0	0	0	0
xii)	Stencil Printer	nos	0	0	1	0
xiii)	Balance/Tape for Yield test	sets	0	0	1	0
xiv)	Vaccination Facility (Fridge, Ice box, etc.)	sets	1	1	1	1
xv)	Camera	nos	0	0	0	0
xvi)	Vehicles	nos	0	1	0	0
xvii)	Motor Cycle	nos	2	0	3	4 (2 out of order)
xviii)	Motor Boat	nos	2	0	0	2 (1 with engine)
xiv)	Bicycle	nos	1	1	0	3
(8) Environment						
a)	NBCA	ha	100,000	100,000	0	0
b)	Protected Forest	ha	0	0	0	0
c)	Production Forest	ha	0	0	0	96,000
d)	Conservation Forest	ha	2,333	1,918	90	0
e)	Regeneration Forest	ha	0	559	0	0
f)	Degraded Forest	ha		300		

Table District Inventory (Savanakhet)

Province	Districts	Unit	Savanakhet			
			Xaibouri	Khanthabouri	Songkhaon	Xaiphouthong
(1) Administrative area		km ²	1,110	521	1,373	512
(2) Population						
a) Number of Zones				10	29	5
b) Number of villages			89	94	142	63
c) Number of house-hold		nos				
d) Average family size		nos				
e) Estimated population			48,355	101,953	79,938	40,169
f) Literacy rate		%				
g) Ethnic group						
i) Lao Loum		persons	48,195	101,316	79,813	39,995
ii) Lao Theung		persons	160	464	125	174
iii) Lao Soung		persons	0	0	0	0
iv) Others		persons	0	173	0	0
(3) Social infrastructure						
a) Water Supply Provision		%	89	-	-	-
b) Electricity Provision		%				
c) No. of Primary school		nos				
d) No. of Secondary school		nos				
e) No. of High school		nos				
f) No. of Hospital (No. of bed)		nos	1 (20)	2 (10)	1 (30)	1 (10)
g) No. of Dispensary (No. of bed)		nos	10 (120)	11 (22)	10 (20)	5 (10)
h) No. of Latrine		nos	117	-	-	-
(4) Agriculture						
a) Land Use						
i) Rainfed Paddy field		ha	8,567	5,930	18,617	8,215
ii) Irrigated Paddy field		ha	6,630	634	3,083	1,485
iii) Upland Paddy field		ha				
iv) Cultivated Levee area		ha			408	629
v) Industrial Crop		ha	495	114	752	702
vi) Vegetable Crop		ha	442	220	485	129
vii) Fruit Crop		ha	381	42	616	108
b) Paddy cultivation						
i) Improved Variety (Area)		ha				
ii) Improved Variety (Amount of seeds)		ton				
iii) Local Variety (Area)		ha				
iv) Local Variety (Amount of Seeds)		ton				
c) Average holding size		ha				
d) Cropping schedule						
i) Rain season	from/to		m May - 1 Dec	e Jun - 1 Nov	m May - 1 Nov	1 May - 1 Nov
ii) Dry season	from/to		e Dec - m May	m Nov - m May	m Nov - e May	m Dec - 1 Apr
e) Yield						
i) Rain season	ton/ha		3.5	3.3	3.6	3.5
ii) Dry season	ton/ha		5.0	4.3	4.8	4.5
iii) Total	ton/ha		4.3	3.8	4.2	4.0
f) Paddy farming information						
i) Labor input (Trans planting and Harvesting)	man-day		40.0	35.0	25 - 30	30.0
ii) Animal power input (Land Preparation)	animal-day		34.0	20.0	9.0	42.0
iii) Machine input (Land Preparation)	machine-day		8.0	2.0	2.0	4.0
g) Farming practice						
i) Planting System						
Rainfed	TP/DS		TP	TP	TP	TP
Irrigated	TP/DS		TP	TP	TP	TP
ii) Fertilizer application						
Wet season	kg/ha		some	some (250)	negligible	some
Dry season	kg/ha		150 - 300	250 - 300	150 - 200	200
iii) Mechanization						
Land Preparation	%		70%	20%-40%	50%	50%
Threshing	%		90%	10%	ND	10%
iv) Variety (G: glutinous, N: non-glutinous)						
Wet season	Imp/Loc		I=95%	I=80%	I=95%	I=95%
Dry season	Imp/Loc		I=100%	I=100%	I=100%	I=100%
v) Seedrate						
Wet season	kg/ha		60	60	40	50
Dry season	kg/ha		80	80	60	80
h) Flood affected area (Paddy field)	%		24.0	15.0	11.0	-
(5) Livestock and Fisheries						
a) No. of animals						
i) Buffalo	nos		17,922	14,357	36,711	11,164
ii) Cattle	nos		27,650	21,763	49,114	13,954
iii) Pig	nos		15,287	17,263	20,076	3,965
iv) Poultry	nos		76,622	169,461	121,615	43,851
b) Vaccination						
i) No. of buffalo vaccinated	nos		1,643	4,111	13,434	1,700
ii) No. of cattle vaccinated	nos		2,531	3,892	14,681	1,067
iii) No. of pig vaccinated	nos		473	420	80	53
iv) No. of poultry vaccinated	nos		76,622	169,461	121,615	43,851
c) Fishery activities						
i) Released fingerling	nos		575,500	1,161,400	2,507,411	
ii) Fish pond (No. and area)	nos/ha		655 (32)	1,386 (163)	2,268	

Table District Inventory (Savanakhet)

Province	Districts	Unit	Savanakhet			
			Xaibouri	Khanthabouri	Songkhaon	Xaiphouthong
(6) Farm Input and Marketing						
a) Farm Input						
i)	Fertilizer used	ton	376	237	944	620
ii)	Farm Yard Manure used	ton		3,271	15,938	4,871
iii)	Pesticide used	Kg				
iv)	No. of Pump	nos	272	501	459	501
v)	No. of 2 wheel tractor	nos	1,076	327	1,455	816
vi)	No. of 4 wheel tractor	nos	16	4	9	1
vii)	No. of harvesting machine	nos			3	
viii)	No. of hand sprayer	nos		112	73	47
b) Marketing						
i)	No. of threshing machine	nos	15	15	13	
ii)	No. of pedestral threshing Machine	nos				234
iii)	No. of mills	nos		207	206	189
c) Livestock Marketing						
i)	Domestic consumption of large animals	head/year	536			
ii)	Sold to other area (large animals)	head/year	1,261			
iii)	Domestic consumption of pig	head/year				
iv)	Sold to other area (pig)	head/year				
v)	Domestic consumption of poultry	head/year				
vi)	Sold to other area (poultry)	head/year				
(7) DAFSO						
a) Approximate Annual budget						
b) Number of Staff (Division)						
i)	Crop Production	persons (%)	6 (14.6)	8 (15.4)	14 (21.9)	5 (17.9)
ii)	Irrigation	persons (%)	3 (7.3)	2 (3.8)	7 (10.9)	2 (7.1)
iii)	Livestock	persons (%)	9 (22.0)	12 (23.1)	11 (17.2)	3 (10.7)
iv)	Forestry	persons (%)	16 (39.0)	25 (48.1)	21 (32.8)	12 (42.9)
vi)	Administration	persons (%)	7 (17.1)	5 (9.6)	11 (17.2)	6 (21.4)
v)	Total	persons (%)	41 (100.0)	52 (100.0)	64 (100.0)	28 (100.0)
c) Number of Staff (Education level)						
i)	University Level	persons (%)	2 (4.9)	2 (3.8)	3 (4.7)	2 (7.1)
ii)	Technician Level	persons (%)	28 (68.3)	39 (75.0)	37 (57.8)	17 (60.7)
iii)	Vocational Level	persons (%)	11 (26.8)	11 (21.2)	24 (37.5)	9 (32.1)
iv)	Total	persons (%)	41 (100.0)	52 (100.0)	64 (100.0)	28 (100.0)
d) Number of Staff (Sex)						
i)	Male	persons (%)	26 (63.4)	31 (59.6)	42 (65.6)	22 (78.6)
ii)	Female	persons (%)	15 (36.6)	21 (40.4)	22 (34.4)	6 (21.4)
iii)	Total	persons (%)	41 (100.0)	52 (100.0)	64 (100.0)	28 (100.0)
e) Number of Modern farmers						
i)	Crop Production	families	71	161	150	55
ii)	Livestock	families	4	53	15	34
g) Facilities						
i)	Building structure (year established)	material(year)	concrete ('92)	concrete ('45)	concrete/wood ('84)	concrete ('98)
ii)	Number of Rooms	nos	3	5	11 (2 buildings)	5
iii)	Number of Tables	nos	14	24	11	8
iv)	Number of Chairs	nos	15	34	20	18
v)	Number of Cupboard	nos	7	12	2	5
vi)	Electric supply	yes/no	yes	yes	yes	yes
vii)	Telephone line	lines	0	1	1	0
viii)	Fax Machine	nos	0	0	0	0
ix)	Computer	nos	0	0	0	0
x)	Type writer	nos	1 (old)	1	1	1 (old)
xi)	Copy machine	nos	0	0	0	0
xii)	Stencil Printer	nos	0	1	0	0
xiii)	Balance/Tape for Yield test	sets	0	1	0	0
xiv)	Vaccination Facility (Fridge, Ice box, etc.)	sets	1	1	1	1
xv)	Camera	nos	0	1 (out of order)	0	0
xvi)	Vehicles	nos	0	1	0	0
xvii)	Motor Cycle	nos	5 (1 out of order)	3	5 (3 out of order)	2
xviii)	Motor Boat	nos	0	0	0	0
xiv)	Bicycle	nos	1	0	1	0
(8) Environment						
a) NBCA						
b)	Protected Forest	ha	0	0	100,000	0
c) Production Forest						
d)	Conservation Forest	ha	0	0	212,000	0
e) Regeneration Forest						
f)	Degraded Forest (forest in laterite soil)	ha	0	0	0	0
				34,762		

Table 7 Resistace Levels of Paddy

Pest and Diseases Varieties	Pests			Diseases	
	BPH	GLH	Gall midge	Blast	Leaf blight
Lao Improved Varieties					
TDK-1	MR	S	S	MR	MR
TDK-2	S	S	S	MR	S
TDK-3	S	S	S	MR	R
TDK-4	MS	S	S	R	R
PNG-1	S	R	S	R	MR
PNG-2	S	S	S	S	S
TSN-1	S	S	S	MR	MR
NTN-1	S	S	S	MR	S
Introduced					
RD6	S	S	S	MR	S
RD8	S	S	S	MR	S
RD10	S	S	S	S	S
KDM105	S	S	S	S	S
Hang-yi 71	S	S	S	R	S
NSG 19	S	S	S	S	S
RD23	R	S	S	S	S
IR66	R	R	U	S	MR
CR203	R	R	U	MR	MR
Traditional					
Muang-nga	S	S	MS	R	S
Dok-mai	S	S	S	S	S
Doc-tiaw	S	S	S	S	S
Mak-hing	S	S	S	S	S
Mak-yom	U	U	U	U	U
Ta-khiat	S	S	S	R	S
Nang-nuan	S	S	S	S	S
Hom Nang-nuan	S	S	S	S	S
Lay-keaw	S	S	S	S	S

Source: Lao-IRRI

R: Resistant, MR: Moderately Resistant, MS: Moderately Susceptive, S: Susceptive, U: Unknown

Table 8 Estimated farm inputs for paddy production under the Present Condition in the Wet Season

No	Particulars	Unit	Vangkong	Tonghab	Nakhua	Phontan
	Yield	kg	1,000 - 2,400	1,500 - 2,500	1,500 - 2,500	2,800 - 3,000
	Total income	kip				
	Total costs	kip				
	Profit	kip				
1	Input costs	kip				
	Seed	kg	60	72	72	50
	Fertilizer (16:20:0)	kg	6	0	0	0
	Fertilizer (15:15:15)	kg	0	0	0	100
	Urea	kg	6	0	0	0
	Urea	kg	0	0	0	100
	Animal manure*	kg	0	210	100	120
	Pesticides (Poridor)	cc	0	0	0	0
	Furadan 3%	kg	0	0	0	0
2	Labor costs	kip				
	Nursery Bed Preparation (WB), Tractor	Persons	8	15	15	1
	Land Preparation*2					
	- Tractor 1st Ploughing	Persons	3	3	3	2
	- Tractor 2nd Ploughing and Hallowing	Persons	2	1	2	2
	- Buffalo 1st Ploughing	Persons	4	0	0	4
	- Buffalo 2nd Ploughing and Hallowing	Persons	3	0	0	3
	Manual Weeding	Persons	0	5	5	5
	Seedling Removing (less than 30days)	Persons	0	0	0	0
	Transplanting		30	30	40	40
	Chemical Fertilizer Application	Persons	0	0	0	2
	Manure Application	Persons	9	0	0	0
	Harvesting	Persons	38	30	38	30
	Threshing Manual	Persons	10	0	0	0
	Threshing Machine (100%)	Machine	0	0	0	0
	Transportation (inc Packing)	Persons	10	8	5	20
	Water Keeper	Persons	0	0	0	0
	Total Manday		117	92	108	109
3	Other costs	kip				
	Water Charge	mxm	0	0	0	0
	Material (Tightening)		0	0	0	0
	Fuel (Diesel for Tractor)	lit	26	32	40	20
	Total Expenses	kip				

*1: some farmers

*2:Mechanization ratio

Vangkong: Tractor=35%

Tonghab: Tractor=100%

Nakhua: Tractor=100%

Phonthan: Tractor=60%

Unit: 1 ha

Table 9 Estimated farm inputs for paddy production under the Present Condition in the Dy Season

No	Particulars	Unit	Tonghab	Phontan
	Yield	kg	2,500 - 3,000	3,000 - 4,000
	Total income	kip		
	Total costs	kip		
	Profit	kip		
1	Input costs	kip		
	Seed	kg	60	80
	Fertilizer (16:20:0)	kg	0	0
	Fertilizer (15:15:15)	kg	200	100
	Urea	kg	5	0
	Urea	kg	100	100
	Animal manure*1	kg	0	120
	Pesticides (Poridor)	cc	300	0
	Furadan 3%	kg	0	0
2	Labor costs	kip		
	Nursery Bed Preparation (WB), Tractor	Persons	1	1
	Land Preparation (Tractor 100%)		0	0
	- Tractor 1st Ploughing	Persons	0	0
	- Tractor 2nd Ploughing and Hallowing	Persons	2	2
	- Buffalo 1st Ploughing	Persons	0	0
	- Buffalo 2nd Ploughing and Hallowing	Persons	0	0
	Manual Weeding	Persons	5	5
	Seedling Removing (less than 30days)	Persons	0	0
	Transplanting		40	30
	Chemical Fertilizer Application	Persons	3	3
	Manure Application	Persons	0	0
	Harvesting	Persons	30	40
	Threshing Manual	Persons	0	0
	Threshing Machine (100%)	Machine	0	0
	Transportation (inc Packing)	Persons	20	20
	Water Keeper	Persons	0	0
	Total Manday		101	101
3	Other costs	kip		
	Water Charge	mxm		
	Material (Tightening)			
	Fuel (Diesel for Tractor)	lit	16	10
	Total Expenses	kip		

*1: some farmers apply.

Unit: 1 ha

under the Irrigation Condition

Table 10 Estimated farm inputs for paddy production under the with Project condition

No	Particulars	Unit	Dry	Wet (Supplem)	Wet (Rain)
	Yield	kg	5,000	5,000	3,500
	Total income	kip			
	Total costs	kip			
	Profit	kip			
1	Input costs	kip			
	Seed	kg	75	60	60
	Fertilizer (16:20:0)	kg	70	70	60
	Fertilizer (15:15:15)	kg	130	130	120
	Urea	kg			
	Urea	kg	130	130	70
	Animal manure*1	kg	1,000	1,000	1,000
	Pesticides (Poridor)	cc	0	0	0
	Furadan 3%	kg	0	0	0
2	Labor costs	kip			
	Nursery Bed Preparation (WB), Tractor	Persons	3	3	3
	Land Preparation (Tractor 100%)				
	- Tractor 1st Ploughing	Persons	3	3	3
	- Tractor 2nd Ploughing and Hallowing	Persons	2	2	2
	- Buffalo 1st Ploughing	Persons	0	0	0
	- Buffalo 2nd Ploughing and Hallowing	Persons	0	0	0
	Manual Weeding	Persons	5	5	5
	Seedling Removing (less than 30days)	Persons	5	5	5
	Transplanting		30	30	30
	Chemical Fertilizer Application	Persons	3	3	2
	Manure Application	Persons	0	0	0
	Harvesting	Persons	30	30	30
	Threshing Manual	Persons	0	0	0
	Threshing Machine (100%)	Machine	0	0	0
	Transportation (inc Packing)	Persons	10	10	10
	Water Keeper	Persons	8	8	0
	Total Manday		99	99	90
3	Other costs	kip			
	Water Charge	mxm	Yes	Yes	0
	Material (5% of Total Input excl. labor)				
	Fuel (Diesel for Tractor)	lit	25	25	25
	Total Expenses	kip			

*1: Recommendation

Table 11 Estimated Paddy and Production under without and with Project Condition

Model Areas	Without Condition			With Condition			Estimated Total Production
	Wet Season	Dry Season	Estimated Total	Wet Season	Dry Season	Estimated Total	
Farming System	Planted harvested Area (ha)			Planted harvested Area (ha)			
	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	
1. Tongharb-Nakhua							
Paddy	467						
Rainfed	467	233		467	233		
Irrigated		73	73		83.5	167	167
Estimated Yield (ton/ha)	2.0	2.8		3.5	5.0		1,401
Estimated Production (ton)	466	201	667	816	1,253		2,068
					improvement		310%
2. Vangkhang							86
Paddy	52						
Rainfed	52	10		52	10		
Irrigated					60	60	
Estimated Yield (ton/ha)	1.7			3.5	5.0		317
	18		18	35	300		335
					improvement		1895%
3. Phonthan							859
Paddy	520						
Rainfed	520	520		520	520		
Irrigation		55	55		90	90	
Estimated Yield (ton/ha)	2.9	3.6		3.5	5.0		
	(2.8 - 3.0)	(3.0 - 4.1)		(3.0 - 3.5)	(4.5 - 5.0)		567
	1,508	195	1,703	1,820	450		2,270
					improvement		133%

Planted area is consist of flood area and non flood area.

Harvested area means non-flood area.

Table 12 Labour Balance for a Typical Farmer (With Project) - Thongharb-Nakhua

Farm Works	A (m-d/ha)	B (m-d/ha)	C (m-d/ha)	D (m-d/ha)	E (m-d/ha)	May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr								
						I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II			
						Daily Peak Labour Requirement per Half Month Interval (m-d/day)																														
Paddy																																				
- Nursery	3	1,151	251	251	251	30		38	38																											
- Land Preparation	5	1,918	418	418	418	30			64	64																										
- Seeding	5	1,918	418	418	418	30																														
- Transplanting	30	11,505	2,505	2,505	2,505	30			384	384																										
- Basal Application	1	384	84	84	84	30			13	13																										
- 1st Top Dressing	1	384	84	84	84	30																														
- 2nd Top Dressing	1	384	84	84	84	30																														
- Weeding	5	1,918	418	418	418	90																														
- Irrigating	8	3,068	668	668	668	130																														
- Harvesting	30	11,505	2,505	2,505	2,505	30			24	24																										
- Others	10	3,835	835	835	835	30																														
Total	99	37,967	8,267	8,267	8,267	490																														
Paddy																																				
- Nursery	3	1,151	251	251	251	30																														
- Land Preparation	5	1,918	418	418	418	30																														
- Seeding	5	1,918	418	418	418	30																														
- Transplanting	30	11,505	2,505	2,505	2,505	30																														
- Basal Application	1	384	84	84	84	30																														
- 1st Top Dressing	1	384	84	84	84	30																														
- 2nd Top Dressing	1	384	84	84	84	30																														
- Weeding	5	1,918	418	418	418	90																														
- Irrigating	8	3,068	668	668	668	130																														
- Harvesting	30	11,505	2,505	2,505	2,505	30																														
- Others	10	3,835	835	835	835	30																														
Total	99	37,967	8,267	8,267	8,267	490																														
Total Peak Labor Requirement						(m-d/day)																														
Available Labor Force per Household						(m-d/day)																														
Labor Balance						(m-d/day)																														
							623	511	102	102	484	518	71	80	67	155	158	527	524	10	32	156	239	223	128	28	22	20	20	121						
							1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310
							687	799	1,208	1,208	826	792	1,240	1,230	1,243	1,155	1,152	783	786	1,300	1,278	1,154	1,071	1,087	1,182	1,282	1,288	1,290	1,290	1,290	1,290	1,290	1,290	1,290	1,290	

A = Labour requirement per ha (m-d/ha) B = Total labor requirement in the area (Wet) C = Total labor requirement in the area (Dry) F = Work days for each farm work
 D = Total labor requirement in the area (Dry AF) E = Total labor requirement in the area (Dry Late)

Area
 Paddy Wet (B) 383.5 ha
 Dry (C) 83.5 ha
 Dry AF (D) 83.5 ha
 Dry Late (E) 83.5 ha

Table 12 Labour Balance for a Typical Farmer (With Project) - Vangkhong

Farm Works	A (m-d/ha)	B (m-d/ha)	C (m-d/ha)	D (day)	May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
					I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Paddy																														
- Nursery	3	156	180	30		5	5																							
- Land Preparation	5	260	300	30		9	9															10	10							
- Seeding	5	260	300	30		9	9															10	10							
- Transplanting	30	1,560	1,800	30		52	52															60	60							
- Basal Application	1	52	60	30		2	2															2	2							
- 1st Top Dressing	1	52	60	30																		2	2							
- 2nd Top Dressing	1	52	60	30																		2	2							
- Weeding	5	260	300	90																										
- Irrigating	8	416	480	130		3	3															4	4							
- Harvesting	30	1,560	1,800	30		60	60																						60	
- Others	10	520	600	30		20	20																						20	
Total	99	5,148	5,940	490																										
Total Peak Labor Requirement					(m-d/day)	80	0	14	14	66	70	10	2	6	6	6	69	69	0	16	16	76	81	11	9	7	7	7	80	
Available Labor Force per Household					(m-d/day)	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	
Labor Balance					(m-d/day)	12	92	78	78	26	21	82	89	86	86	86	22	22	92	76	76	16	11	81	83	85	85	85	12	

A = Labour requirement per ha (m-d/ha) B = Total labor requirement in the area (Wet) B = Total labor requirement in the area (Dry) D = Work days for each farm work

Area
Paddy Wet (B) 52 ha
Dry (C) 60 ha

Table 12 Labour Balance for a Typical Farmer (With Project) - Phonthan

Farm Works	A (m-d/ha)	B (m-d/ha)	C (m-d/ha)	D (m-d/ha)	May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
					I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Paddy																														
- Nursery	3	1,560	270	30			52	52																						
- Land Preparation	5	2,600	450	30			87	87														15	15							
- Seeding	5	2,600	450	30			87	87														15	15							
- Transplanting	30	15,600	2,700	30					520	520												90	90							
- Basal Application	1	520	90	30					17	17												3	3							
- 1st Top Dressing	1	520	90	30					17	17												3	3							
- 2nd Top Dressing	1	520	90	30					17	17												3	3							
- Weeding	5	2,600	450	90					29	29	29	29										5	5	5	5	5	5	5	5	
- Irrigating	8	4,160	720	130					32	32	32	32	32	32	32							6	6	6	6	6	6	6	6	
- Harvesting	30	15,600	2,700	30												520	520												90	
- Others	10	5,200	900	30												173	173												30	
Total	99	51,480	8,910	490																										
Total Peak Labor Requirement																														
Available Labor Force per Household																														
Labor Balance																														

A = Labour requirement per ha (m-d/ha) B = Total labor requirement in the area (Wet) B = Total labor requirement in the area (Dry) D = Work days for each farm work

Area
Paddy Wet (B) 520 ha
 Dry (C) 90 ha

Table 13 Demand and Supply Forecast of Paddy

Import of Rice

Items	Unit	1990	1991	1992	1993	1994	1995	1996
Rice								
1 Import Amount	(ton)	30,000	26,100	6,190	8,410	16,450	26,900	23,800
2 Import Value	(US\$1,000)	7,200	5,900	2,956	2,944	6,600	11,000	10,305

Source: FAO Trade Year Book, 1992-96, Ministry of Agriculture and Irrigation

Per capita Consumption (kg/year/person)		350	350	325	300	275	250
Year		1995	2000	2005	2010	2015	2020
Population forecast	Case-1	4,600,000	5,200,000	5,900,000	6,800,000	7,700,000	8,700,000
	Case-2	4,600,000	5,100,000	5,800,000	6,400,000	7,100,000	7,700,000

(Unit: ton)

Case-1 (kg)							
Per capita consumption	350	1,610,000	1,820,000	1,917,500	2,040,000	2,117,500	2,175,000
Buffer stock		483,000	546,000	575,250	612,000	635,250	652,500
Total		2,093,000	2,366,000	2,492,750	2,652,000	2,752,750	2,827,500

Case-2							
Per capita consumption	350	1,610,000	1,785,000	1,885,000	1,920,000	1,952,500	1,925,000
Buffer stock		483,000	535,500	565,500	576,000	585,750	577,500
Total		2,093,000	2,320,500	2,450,500	2,496,000	2,538,250	2,502,500

in Paddy

Paddy Production Forecast

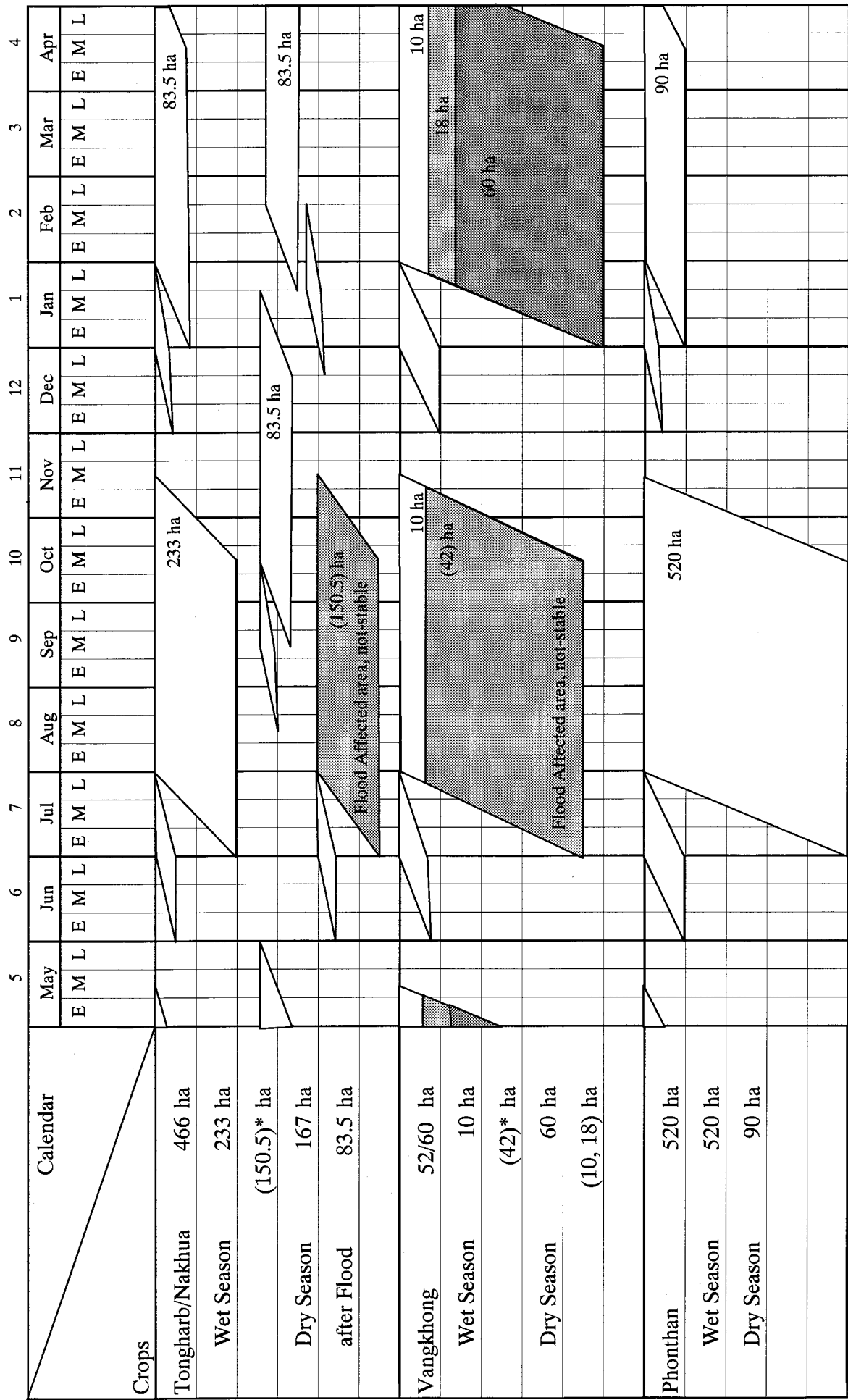
The Wet Season	2.9 (ha)	450,000	562,500	712,500	862,500	900,000
	(ton)	1,305,000	1,631,250	2,066,250	2,501,250	2,610,000
The Dry Season	3.9 (ha)	55,000	141,250	227,500	313,750	400,000
	(ton)	214,500	550,875	887,250	1,223,625	1,560,000
Total Planted Area	(ha)	505,000	703,750	940,000	1,176,250	1,300,000
Production	ton	1,519,500	2,182,125	2,953,500	3,724,875	4,170,000
Production after reduct of Loss	ton	1,367,550	1,963,913	2,658,150	3,352,388	3,753,000

Seeds	30,300	42,225	56,400	70,575	78,000
Emergency	9,090	12,668	16,920	21,173	23,400
Total	39,390	54,893	73,320	91,748	101,400

	2000	2005	2010	2015	2020
Demand (Case-1)	2,405,390	2,547,643	2,725,320	2,844,498	2,928,900
Demand (Case-2)	2,359,890	2,505,393	2,569,320	2,629,998	2,603,900
Supply	1,367,550	1,963,913	2,658,150	3,352,388	3,753,000

		2000	2005	2010	2015	2020
Demand Case-1	Consumption	1,820,000	1,917,500	2,040,000	2,117,500	2,175,000
Demand Case-1	Emergency	546,000	575,250	612,000	635,250	652,500
Demand Case-1	Seed	30,300	42,225	56,400	70,575	78,000
Demand Case-1	Buffer stock	9,090	12,668	16,920	21,173	23,400
Demand Case-2	Consumption	1,785,000	1,885,000	1,920,000	1,952,500	1,925,000
Demand Case-2	Emergency	535,500	565,500	576,000	585,750	577,500
Demand Case-2	Seed	30,300	42,225	56,400	70,575	78,000
Demand Case-2	Buffer stock	9,090	12,668	16,920	21,173	23,400

Figure 1 Proposed Crop Calendar for Paddy



* Flooded affected area (not stable paddy field)