

Tables

Table C1-1 Physical & Chemical Properties of the Major Soils Distributed in the Battambang River Basin

Soil Sub-unit/ (mapping symbol)	Pit No.	Depth (cm)	Particle Size Distribution (%)			Texture	pH		EC (1:5) ($\mu\text{s}/\text{cm}$)	Total Carbon Nitrogen (%)	C/N Ratio	Organic Matter (%)	Total P ₂ O ₅ (%)	Available P ₂ O ₅ (ppm)	CEC (meq /100g soil)	Exchangeable Cation (meq/100g soil)				Base Saturation (%)		
			Clay	Silt	Sand		(H ₂ O)	(KCl)								Ca	Mg	K	Na		Total	
Gleyic Luvisol (LVg)	P1	00 - 13	43.3	25.7	31.0	LiC	5.7	4.1	13.6	10.7	1.1	10.2	1.8	0.4	83.5	18.0	6.3	3.3	1.1	0.3	10.8	60
		13 - 27	44.9	24.8	30.3	LiC	6.2	4.8	10.1	8.8	0.8	10.4	1.5	0.4	85.0	19.0	9.3	2.8	1.4	0.3	13.7	72
		27 - 55	57.0	18.6	24.4	HC	6.6	4.6	10.2	7.8	0.7	11.1	1.3	0.4	47.5	24.0	11.5	9.3	2.4	0.4	23.5	98
Gleyic Acrisol (ACg)	P2	00 - 12	31.9	28.3	39.8	LiC	5.5	4.0	12.8	9.8	0.8	12.7	1.7	0.2	50.5	14.0	3.5	1.8	0.9	0.3	6.4	46
		12 - 25	32.6	28.4	39.0	LiC	5.6	4.0	33.1	9.8	0.7	13.9	1.7	0.3	35.0	12.5	3.5	2.8	0.8	0.3	7.3	58
		25 - 40	46.7	26.1	27.2	HC	6.3	4.0	29.8	6.8	0.6	10.8	1.2	0.2	26.0	14.5	2.5	3.3	1.5	0.2	7.5	51
Gleyic Luvisol (LVg)	P3	00 - 13	43.7	19.5	36.8	LiC	5.1	3.9	12.9	10.7	1.1	9.6	1.8	0.3	111.0	19.0	7.5	3.8	0.7	0.6	12.5	66
		13 - 33	54.5	13.7	31.8	HC	5.8	4.6	23.6	6.8	0.6	10.8	1.2	0.2	42.5	20.0	7.5	5.5	0.7	0.3	13.9	70
		33 - 80	57.6	9.5	32.9	HC	6.2	4.3	8.7	8.9	0.9	9.8	1.5	0.1	15.0	23.0	11.3	7.8	0.7	0.3	20.0	87
Dystric Gleysol (GLd)	P4	00 - 11	51.5	29.8	18.7	HC	5.2	4.0	23.6	11.7	0.9	12.9	2.9	0.6	303.0	22.0	7.0	5.8	0.9	0.9	14.5	66
		11 - 32	46.8	31.4	21.8	HC	6.1	4.4	11.4	5.9	0.5	11.9	0.4	0.2	67.5	22.0	9.5	8.8	1.1	0.4	19.7	90
		32 - 75	36.4	20.4	43.2	LiC	6.6	5.1	9.5	5.8	0.4	13.7	1.0	0.4	101.5	18.5	9.0	7.3	1.1	0.3	17.6	95
Dystric Leptosol (LPd)	P5	00 - 20	29.5	20.8	49.7	LiC	5.4	4.2	10.5	13.7	1.5	8.9	2.3	0.2	106.0	12.0	5.0	2.5	0.4	0.3	8.2	68
		20 - 50	55.1	18.2	26.7	HC	5.3	4.0	5.8	4.9	0.8	6.3	0.8	0.1	16.0	17.0	3.5	2.3	0.9	0.4	7.0	41
		50 - 100	27.2	17.9	54.9	LiC	5.8	4.5	13.2	3.9	0.6	6.2	0.7	0.1	12.5	14.0	7.0	3.5	1.0	0.3	11.7	84
Eutric Cambisol (CMe)	P6	00 - 25	49.5	24.2	26.3	HC	6.6	4.8	25.1	19.5	1.0	19.9	3.4	0.2	81.5	18.0	14.5	13.0	3.9	0.3	31.7	100
		25 - 65	57.2	23.9	18.9	HC	8.9	7.4	217.0	7.8	0.7	11.1	1.3	0.2	78.0	20.0	20.0	15.3	7.4	0.2	42.9	100
		65 - 100	54.5	26.4	19.1	HC	9.1	7.7	308.0	7.8	0.8	10.1	1.3	0.1	55.0	19.0	21.5	20.0	8.7	0.2	50.4	100

Methods of soil analysis:

Texture --- pipette method

Organic matter --- ignition loss

CEC --- 1M CaCl₂.2H₂O

Total C --- Black

Total P₂O₅ --- Murphy method

Exchangeable cations: 1M Ammonium Acetate pH 7

Total N --- Kjeldahl method

Available P₂O₅ --- Olsen method

Table C1-2 Criteria Applied for Preliminary Land Suitability Classification 1/

Factors for Classification	Land Characteristics for Classification	Suitability Class /1				Remarks
		S1	S2	S3	S4	
		Criteria				
Soil	Effective Soil Depth (e)	> 60 cm	40 - 60 cm	20 - 40 cm	-	< 20 cm
	Upper Soil Texture/0-60cm (t) 2/ CEC/0-30cm (c)	L, CL, LiC > 25 meq	SL, SCL, SiC, HC 25 - 10 meq	LS < 10 meq	S (existing paddy field)	S Criteria for water holding capacity & permeability

Factors for Classification	Land Characteristics for Classification	Suitability Class /1				Remarks
		S1	S2	S3	S4	
		present				
Soil	Effective Soil Depth (e)	> 80 cm	50 - 80 cm	20 - 50 cm	-	< 20 cm
	Top Soil Texture/0-30cm (t) 2/ CEC/0-30cm (c) pH/0-30cm (p)	L, CL > 25 meq 6.0 - 7.0	SL, SCL 25 - 10 meq 5.0 - 6.0; 7.0 - 8.0	LS, LiC, SiC, HC < 10 meq 4.5 - 5.0; 8.0 - 8.5	S (existing upland/paddy field)	S Criteria for moisture holding capacity

1/: S1: Highly Suitable Subject soil or land characteristics present no significant limitations for a given use

S2: Moderately Suitable Subject soil or land characteristics present moderately severe limitations for a given use

S3: Marginally Suitable Subject soil or land characteristics present substantially severe limitations for a given use

S4: Conditionally Suitable Suitability class categorized for farm land (rice fields & upland fields) distributed with sandy soils;

Existing rice & upland fields distributed with sandy soils are classified into S4 because land use conversion to other more productive agricultural use is not conceived.

N: Not Suitable Subject soil or land characteristics present limitations so severe as to preclude successful sustained use of the land in the given manner.

2/: Prevailing soil texture within the defined depth

3/: Occurrence of flood in major cropping season (May to October)

4/: Inundation in the wet season due to rainfall or drainage from neighboring land; assuming all rice fields will suffer from seasonal inundation due to bound formed around fields.

TableC1-3 Properties and Suitability Classification of Soils: Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	-	S1/S2	S3	-	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	-	S1/S2	S3	-	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	-	S2	S3	-	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	Suitability Class	S1	-	S1/S2	S3		S3c
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACH-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	-	N	S3	-	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	-	N	S3	-	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-			N	S3	-	N
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S2tc
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	-	S2	S2	-	
	Dystric Fluvisol (FLd)						
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2c/S2tc
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	-	S1/S2	S2	-	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S2tc
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2tc/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	-	S2/S3	S2	-	
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S2tc/S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	-	S2/S3	S2	-	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S2tc
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-			S2/S3	S2	-	S2~N
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-			S2	S2		S2~N

Table C1-4 Properties and Suitability Classification of Soils: Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture (t)		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c/S3tc
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	S2/S3	-	S3	S2	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c/S3tc
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	S1-S3	-	S3	S2	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	S2	-	S3	S2	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	-						S3c/S3tc
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	N	-	S1		
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	N	-	S2		
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						S1/S2
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S3t
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2tcp/S3t
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	S2/S3	-	S2	S2	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S3t
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2cp/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	S1/S3	-	S2	S2	
Eutric Leptosol (LPe)	-	shallow - deep					S2-N
Dystric Cambisol (CMD)	PP6	deep (>80cm)	HC	HC	25	6.4	S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	S3	-	S1	S1	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S3t
	Suitability Class	S1	S3	-	S2	S1	
Dystric Leptosol/Dystric Cambisol (LPd/CMD)	-						S2-N
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2-N
	Suitability Class	S1 ~ N	S2/S3	-	S2	S2	

Table C1-5 Land Suitability Classification of Soils Distributed in the Battambang River Basin

1. Suitability Classification for Rice Production

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (60cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
	ha	%					
Gleyic Acrisol (ACg)	68,230	11	S1	S1/S2	S3	-	S3c
Gleyic Luvisol (LVg)	120,710	20	S1	S2	S2	-	S2tc
Eutric Fluvisol (FLe)	7,010	1	S1	-	-	-	S2
Dystric Gleysol (GLd)	149,420	25	S1	S2	S2	-	S2tc
Dystric Cambisol (CMd)	11,920	2	S1	S2/S3	S2	-	S2tc/S3t
Eutric Cambisol (CMe)	49,840	8	S1	S2	S2	-	S2tc
Dystric Leptosol (LPd)	60,770	10	S1 ~ N	S2/S3	S2	-	S2tc/S3t/N
Eutric Leptosol (LPe)	39,420	7	S1 ~ S2	-	-	-	S2~N
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	600	-	S1 ~ N	S2/S3	S2	-	S2~N
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	97,380	16	S1 ~ N	S2	S2	-	S2~N
Basin Total	605,300	100					

2. Suitability Classification for Upland Crops Production

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (30cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
	ha	%					
Gleyic Acrisol (ACg)	68,230	11	S1	S2/S3	S3	S2	S3c/S3tc
Gleyic Luvisol (LVg)	120,710	20	S1	S3	S2	S2	S3t
Eutric Fluvisol (FLe)	7,010	1	S1	-	-	-	S2
Dystric Gleysol (GLd)	149,420	25	S1	S3	S2	S2	S3t
Dystric Cambisol (CMd)	11,920	2	S1	S3	S1	S1	S3t
Eutric Cambisol (CMe)	49,840	8	S1	S3	S2	S1	S3t
Dystric Leptosol (LPd)	60,770	10	S1 ~ N	S1/S3	S2	S2	S2cp/S3t/N
Eutric Leptosol (LPe)	39,420	7	S1 ~ S2	-	-	-	S2~N
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	600	-	S1 ~ N	S1/S3	S1/S2	S1/S2	S2~N
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	97,380	16	S1 ~ N	S2/S3	S2	S2	S2~N
Basin Total	605,300	100					

S1: Highly Suitable

Subject soil or land characteristics present no significant limitations for a given use

S2: Moderately Suitable

Subject soil or land characteristics present moderately severe limitations for a given use

S3: Marginally Suitable

Subject soil or land characteristics present substantially severe limitations for a given use

S4: Conditionally Suitable

Suitability class categorized for farm land (rice fields & upland fields) distributed with sandy soils;

N: Not Suitable

Subject soil or land characteristics present limitations so severe as to preclude successful sustained use of the land in the given manner.

Table C1-6 Agro-demographic Features of the Battambang River Basin

Province/District	Commune	No. of Households		Crop Producing Households (% to Total Households)		Wet Season Rice Producing Households (% to Crop Producing Households)		Landless Households (% to Total Households)		Households with less than 10 a (% to Total Households)		Households with more than 3ha (% to Total Households)		Cropped Area of Wet Season Rice in 2003	Cropped Area of Wet Season Rice per Crop Producing Household	Irrigated Area	Irrigated Area per Crop Producing Household
		(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(ha)	(ha)	(ha)	(ha)
Battambang	Banan	Kantueu Muoy	1,040	1,008	97	975	97	32	3	0	0	870	84	3,395	3.5	0	0.00
		Kantueu Pir	1,127	1,092	97	1,002	92	35	3	150	13	103	9	1,570	1.6	0	0.00
Battambang	Battambang	Bay Damram	1,372	1,307	95	1,003	77	65	5	482	35	299	22	3,634	3.6	16	0.01
		Chheu Teal	3,041	2,922	96	1,372	47	119	4	279	9	305	10	1,718	1.3	230	0.08
		Chaeng Mean Chey	1,364	1,159	85	1,064	92	205	15	755	55	404	30	4,500	4.2	72	0.06
		Snoeng	3,277	3,126	95	2,751	88	151	5	159	5	3,118	95	6,043	2.2	0	0.00
		Tuol Ta Aek	3,094	58	2	9	16	3,036	98	0	0	0	0	8	0.9	0	0.00
		Preaek Preah Sdach	2,536	491	19	20	4	2,045	81	1,519	60	0	0	20	1.0	2	0.00
		Rotanak	2,715	964	36	540	56	1,751	64	131	5	6	0	196	0.4	30	0.03
		Chamkar Samraong	3,085	622	20	622	100	2,463	80	0	0	30	1	670	1.1	250	0.40
		Sla Kaet	1,471	187	13	51	27	1,284	87	150	10	14	1	300	5.9	35	0.19
		Kdol Doun Teav	1,633	1,079	66	1,079	100	554	34	0	0	0	0	646	0.6	30	0.03
		Voat Kor	2,860	2,738	96	2,718	99	122	4	36	1	21	1	1,069	0.4	450	0.16
		Ou Char	2,744	909	33	545	60	1,835	67	115	4	15	1	0	0.0	30	0.03
		Svay Pao	3,187	252	8	0	0	2,935	92	40	1	0	0	0	0	0	0.00
		Aek Phnum	Aek Phnum	Preaek Norint	2,796	2,740	98	2,236	82	56	2	0	0	419	15	1,572	0.7
Samraong Knong	2,109			1,984	94	1,779	90	125	6	0	0	75	4	1,273	0.7	30	0.02
Preaek Khpob	1,767			1,502	85	1,502	100	265	15	0	0	35	2	1,505	1.0	0	0.00
Preaek Luong	1,748			1,698	97	1,525	90	50	3	0	0	30	2	697	0.5	69	0.04
Peam Aek	2,515			1,886	75	1,886	100	629	25	0	0	377	15	0	0.0	417	0.22
Prey Chas	749			0	0	0	0	749	100	0	0	0	0	0	0	0	0.00
Kaoh Chivcang	1,681			0	0	0	0	1,681	100	0	0	0	0	0	0	0	0.00
Moung Ruessei	Moung Ruessei	Chrey	2,210	1,869	85	1,800	96	341	15	97	4	1,772	80	4,988	2.8	275	0.15
		Ta Loas	1,724	1,639	95	1,062	65	85	5	90	5	2,549	148	5,300	5.0	30	0.02
		Kakaoh	2,286	1,754	77	1,700	97	532	23	35	2	1,719	75	5,805	3.4	10	0.01
		Prey Touch	1,750	1,664	95	1,600	96	86	5	788	45	876	50	6,702	4.2	10	0.01
Rotonak Mondol	Rotonak Mondol	Sdau	2,689	2,689	100	2,447	91	0	0	242	9	35	1	1,657	0.7	15	0.01
		Andaek Haeb	957	957	100	957	100	0	0	45	5	12	1	925	1.0	0	0.00
		Phlov Meas	638	638	100	638	100	0	0	0	0	11	2	925	1.4	0	0.00
		Traeng	1,615	1,535	95	1,536	100	80	5	0	0	29	2	65	0.0	0	0.00
		Phlov Meas	638	638	100	638	100	0	0	0	0	11	2	925	1.4	0	0.00
Sangkac	Sangkac	Anlong Vil	3,270	3,266	100	1,297	40	4	0	105	3	83	3	2,620	2.0	0	0.00
		Norea	999	991	99	616	62	8	1	164	16	2	0	400	0.6	70	0.07
		Ta Pon	2,554	2,554	100	2,208	86	0	0	3	0	65	3	5,590	2.5	35	0.01
		Roka	1,588	1,580	99	1,359	86	8	1	15	1	519	33	2,035	1.5	0	0.00
		Kampong Preah	1,574	1,574	100	1,086	69	0	0	12	1	103	7	5,000	4.6	0	0.00
		Kampong Preang	2,049	2,045	100	1,997	98	4	0	121	6	0	0	5,000	2.5	0	0.00
		Reang Kesci	1,487	1,487	100	1,088	73	0	0	3	0	503	34	5,500	5.1	0	0.00
		Ou Dambang Muoy	2,274	1,853	81	1,120	60	421	19	950	42	25	1	1,340	1.2	0	0.00
		Ou Dambang Pir	2,515	2,366	94	1,877	79	149	6	229	9	61	2	1,517	0.8	0	0.00
		Voat Ta Muem	2,604	2,604	100	1,701	65	0	0	66	3	40	2	1,849	1.1	180	0.07
Samlot	Samlot	Samlot	820	820	100	810	99	0	0	0	0	50	6	400	0.5	0	0.00
		Thipakdei	1,762	1,762	100	1,600	91	0	0	0	0	150	9	7,885	4.9	0	0.00
		Kaos Krala	809	809	100	210	26	0	0	0	0	75	9	792	3.8	0	0.00
		Hab	662	622	94	622	100	140	21	0	0	35	5	1,739	2.8	0	0.00
		Preah Phos	556	506	91	500	99	50	9	0	0	30	5	554	1.1	0	0.00
		Doun Ba	558	498	89	498	100	60	11	248	44	67	12	4,500	9.0	0	0.00
		Chhnal Moan	529	480	91	480	100	380	72	0	0	25	5	1,170	2.4	0	0.00
		Samlot	820	820	100	810	99	0	0	0	0	0	0	400	0.5	0	0.00
Koas Krala	Koas Krala	Thipakdei	1,762	1,762	100	1,600	91	0	0	0	0	150	9	7,885	4.9	0	0.00
		Kaos Krala	809	809	100	210	26	0	0	0	0	75	9	792	3.8	0	0.00
Pursat	Veal Veang	Anlong Reab	273	267	98	267	100	6	2	0	0	0	0	0.0	0	0.00	
		Thma Da	172	165	96	165	100	7	4	0	0	0	0	0	0.0	0	0.00
Pailin	Pailin	Pailin	2,240	2,200	98	30	1	40	2	0	0	2,090	93	0.0	0	0.00	
		Ou Tavau	1,266	1,166	92	20	2	100	8	0	0	1,028	81	0.0	0	0.00	
		Tuol Lvea	1,284	1,080	84	30	3	204	16	65	5	635	49	0.0	0	0.00	
		Ba Yakha	534	394	74	15	4	140	26	20	4	98	18	0.0	0	0.00	
Sala Krau	Stung Trang	Stung Trang	1,793	1,730	96	60	3	63	4	22	1	1,721	96	0.0	0	0.00	
		Whole River Basin	95,952	73,288	76	54,075	74	23,095	24	7,136	7	20,529	21	103,074	1.9	2,579	0.04

Source: Commune Survey on Crops and Livestock, 2003, MAFF

Table C1-7 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Battambang River Basin (1/2)

Province/District	Commune	Year	Wet-season Rice Production						Dry-season Rice Production						
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated				
Battambang Banan	Kantueu Muoy	2006	3,395	3,395	0	3,395	1.5	5,093	0	0	0	0	0	0	
		2003	1,915	1,915	0	1,915	2.0	3,830	0	0	0	0	0	0	
		Avg.	2,655	2,655	0	2,655	1.7	4,461	0	0	0	0	0	0	
	Kantueu Pir	2006	1,570	1,770	0	1,570	1.0	1,570	0	0	0	0	0	0	
		2003	1,246	1,246	0	968	0.9	823	0	0	0	0	0	0	
		Avg.	1,408	1,508	0	1,269	0.9	1,196	0	0	0	0	0	0	
	Bay Damram	2006	3,634	3,634	0	3,634	2.5	9,085	16	0	16	16	3.0	48	
		2003	2,247	2,247	0	2,247	2.1	4,736	15	0	15	15	3.0	45	
		Avg.	2,941	2,941	0	2,941	2.4	6,911	16	0	16	16	3.0	47	
	Chheu Teal	2006	1,718	1,718	0	1,718	1.5	2,577	0	0	0	0	0	0	
		2003	1,703	1,703	0	1,703	2.0	3,401	200	0	0	200	3.0	600	
		Avg.	1,711	1,711	0	1,711	1.7	2,989	100	0	100	3.0	300		
	Chaeng Mean Chey	2006	4,500	4,500	0	4,500	2.0	9,000	0	0	0	0	0	0	
		2003	3,134	3,134	0	3,134	1.9	6,032	0	0	0	0	0	0	
		Avg.	3,817	3,817	0	3,817	2.0	7,516	0	0	0	0	0	0	
	Snoeng	2006	6,043	6,043	0	6,043	2.5	15,108	0	0	0	0	0	0	
		2003	5,174	3,174	0	5,174	2.0	10,251	0	0	0	0	0	0	
		Avg.	5,609	4,609	0	5,609	2.3	12,679	0	0	0	0	0	0	
	Sub-total			18,140	17,240	0	18,001	2.0	35,753	116	0	116	3.0	347	
	Battambang	Tuol Ta Aek	2006	8	8	0	8	4.0	32	0	0	0	0	0	
			2003	9	9	0	9	2.3	21	0	0	0	0	0	
			Avg.	9	9	0	9	3.1	27	0	0	0	0	0	
		Preaek Preah Sdach	2006	20	20	0	20	3.0	60	0	0	0	0	0	
			2003	28	20	8	28	2.4	67	0	0	0	0	0	
Avg.			24	20	4	24	2.6	63	0	0	0	0	0		
Rotanak		2006	196	196	0	196	2.5	490	0	0	0	0	0		
		2003	196	196	0	196	2.6	503	0	0	0	0	0		
		Avg.	196	196	0	196	2.5	496	0	0	0	0	0		
Chamkar Samraong		2006	670	621	49	670	1.5	1,005	0	0	0	0	0		
		2003	660			667	2.7	1,768	0	0	0	0	0		
		Avg.	665			669	2.1	1,387	0	0	0	0	0		
Sla Kaet		2006	300	300	0	300	2.5	750	0	0	0	0	0		
		2003	320			313	2.5	788	0	0	0	0	0		
		Avg.	310			307	2.5	769	0	0	0	0	0		
Kdol Doun Teav		2006	646	646	0	646	2.3	1,486	0	0	0	0	0		
		2003	646			646	2.7	1,761	0	0	0	0	0		
		Avg.	646			646	2.5	1,624	0	0	0	0	0		
Voat Kor		2006	1,069	1,069	0	1,069	2.4	2,566	0	0	0	0	0		
		2003	1,069			1,069	2.7	2,892	20	0	0	20	2.5	50	
		Avg.	1,069			1,069	2.6	2,729	10	0	0	10	2.5	25	
Svay Pao		2006	0	0	0	0		0	0	0	0	0	0		
		2003	0	0	0	0		0	0	0	0	0	0		
		Avg.	0	0	0	0		0	0	0	0	0	0		
Sub-total			2,919	0	0	2,919	2.4	7,094	10	0	10	2.5	25		
Aek Phnum	Preaek Norint	2006	1,572	1,534	38	1,572	2.0	3,144	120	60	60	120	3.0	360	
		2003	1,125			1,125	2.0	2,264	57			53	3.0	159	
		Avg.	1,349			1,349	2.0	2,704	89			87	3.0	260	
	Samraong Knong	2006	1,273	1,273	0	1,273	2.5	3,183	0	0	0	0	0		
		2003	1,125			1,125	2.0	2,281	35			32	3.0	96	
		Avg.	1,199			1,199	2.3	2,732	18			16	3.0	48	
	Preaek Khpob	2006	1,505	1,446	59	1,505	2.5	3,763	0	0	0	0	0		
		2003	1,442			1,442	2.0	2,927	0			0	0		
		Avg.	1,474			1,474	2.3	3,345	0			0	0		
	Preaek Luong	2006	697	697	0	697	2.3	1,568	17	9	8	17	4.0	68	
		2003	692			692	2.1	1,419	126			122	3.0	366	
		Avg.	695			695	2.2	1,494	72			70	3.1	217	
	Prey Chas	2006	0	0	0	0		0	0	0	0	0	0		
		2003	0	0	0	0		0	0	0	0	0	0		
		Avg.	0	0	0	0		0	0	0	0	0	0		
	Kaoh Chiveang	2006	0	0	0	0		0	0	0	0	0	0		
		2003	0	0	0	0		0	0	0	0	0	0		
		Avg.	0	0	0	0		0	0	0	0	0	0		
	Sub-total			4,716	0	0	4,716	2.2	10,274	178	60	172	3.0	525	
	Moung Ruessci	Chrey	2006	4,988	2,997	1,991	4,988	2.0	9,976	147	100	47	147	2.5	368
			2003	4,003			4,003	1.4	5,690	50			50	2.0	100
			Avg.	4,496			4,496	1.7	7,833	99			99	2.4	234
		Ta Loas	2006	5,300	4,897	403	5,300	2.0	10,600	182	0	182	182	3.0	546
			2003	3,503			3,503	1.7	5,805	30			30	2.0	60
Avg.			4,402			4,402	1.9	8,203	106			106	2.9	303	
Kakaoh		2006	5,805	5,805	0	5,805	1.3	7,547	0	0	0	0	0		
		2003	5,680			5,680	1.5	8,765	10			10	2.0	20	
		Avg.	5,743			5,743	1.4	8,156	5			5	2.0	10	
Prey Touch		2006	6,702	5,186	1,516	6,702	2.0	13,404	5	0	5	5	4.0	20	
		2003	5,000			5,000	1.5	7,693	10			10	1.8	18	
		Avg.	5,851			5,851	1.8	10,549	8			8	2.5	19	
Sub-total			20,491	0	0	20,491	1.7	34,740	217	0	217	2.6	566		
Koas Krala		Thipakkei	2006	7,885	7,885	0	7,885	1.0	7,885	0	0	0	0	0	
			2003	3,210			3,130	1.7	5,209	0	0	0	0	0	
	Avg.		5,548			5,508	1.2	6,547	0	0	0	0	0		
	Kaos Krala	2006	792	792	0	792	1.0	792	0	0	0	0	0		
		2003	3,128			3,008	1.6	4,809	0	0	0	0	0		
		Avg.	1,960			1,900	1.5	2,801	0	0	0	0	0		
	Hab	2006	1,739	1,739	0	1,739	0.7	1,217	0	0	0	0	0		
		2003	1,907			1,837	1.6	2,909	0	0	0	0	0		
		Avg.	1,823			1,788	1.2	2,063	0	0	0	0	0		

Table C1-7 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Battambang River Basin (2/2)

Province/District	Commune	Year	Wet-season Rice Production					Dry-season Rice Production							
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated				
Koas Krala (continued)	Preah Phos	2006	554	554	0	554	1.0	554	0	0	0	0	0	0	
		2003	1,838			1,788	1.5	2,757	0	0	0	0	0	0	
		Avg.	1,196			1,171	1.4	1,656	0	0	0	0	0	0	
	Doun Ba	2006	4,500	4,500	0	4,500	1.0	4,500	0	0	0	0	0	0	
		2003	1,824			1,694	1.7	2,913	0	0	0	0	0	0	
		Avg.	3,162			3,097	1.2	3,707	0	0	0	0	0	0	
	Chhnal Moan	2006	1,170	1,170	0	1,170	1.0	1,170	0	0	0	0	0	0	
		2003	1,387			1,387	1.8	2,523	0	0	0	0	0	0	
		Avg.	1,279			1,279	1.4	1,846	0	0	0	0	0	0	
		Sub-total	14,967			14,742	1.3	18,619	0	0	0	0	0	0	
	Rotonak Mondol	Sdau	2006	1,657	1,657	0	1,657	2.0	3,313	11	0	11	11	2.0	22
			2003	1,392			1,392	1.8	2,445	0	0	0	0	0	0
Avg.			1,524			1,524	1.9	2,879	6	0	6	6	2.0	11	
Andaeuk Haeb		2006	925	925	0	925	1.5	1,388	0	0	0	0	0	0	
		2003	1,305			1,305	1.8	2,305	0	0	0	0	0	0	
		Avg.	1,115			1,115	1.7	1,846	0	0	0	0	0	0	
Phlov Meas		2006	925	925	0	925	1.5	1,388	0	0	0	0	0	0	
		2003	225			225	1.7	374	0	0	0	0	0	0	
		Avg.	575			575	1.5	881	0	0	0	0	0	0	
Traeng		2006	65	65	0	65	1.5	98	0	0	0	0	0	0	
		2003	743			743	1.7	1,275	0	0	0	0	0	0	
		Avg.	404			404	1.7	686	0	0	0	0	0	0	
		Sub-total	3,618			3,618	1.7	6,292	0	0	0	0	0	0	
Sangkae		Anlong Vil	2006	2,620	2,620	0	2,620	2.5	6,550	0	0	0	0	0	0
			2003	2,560			2,560	2.0	5,223	0	0	0	0	0	0
	Avg.		2,590			2,590	2.3	5,886	0	0	0	0	0	0	
	Norea	2006	400	400	0	400	2.5	1,000	0	0	0	0	0	0	
		2003	400			400	2.1	843	70		70	3.0	210		
		Avg.	400			400	2.3	922	35		35	3.0	105		
	Ta Pon	2006	5,590	5,590	0	5,590	2.5	13,975	0	0	0	0	0	0	
		2003	4,846			4,844	1.2	5,634	0	0	0	0	0	0	
		Avg.	5,218			5,217	1.9	9,805	0	0	0	0	0	0	
	Roka	2006	2,035	2,018	17	2,035	2.0	4,070	0	0	0	0	0	0	
		2003	2,035			2,035	1.3	2,604	0	0	0	0	0	0	
		Avg.	2,035			2,035	1.6	3,337	0	0	0	0	0	0	
	Kampong Preah	2006	5,000	5,000	0	5,000	2.0	10,000	6	0	6	6	3.0	18	
		2003	4,577	0	0	4,573	2.0	9,166	0	0	0	0	0	0	
		Avg.	4,789			4,787	2.0	9,583	3	0	3	3.0	9		
	Kampong Preang	2006	5,000	5,000	0	5,000	1.5	7,500	0	0	0	0	0	0	
		2003	5,000			5,000	1.8	8,772	0	0	0	0	0	0	
		Avg.	5,000			5,000	1.6	8,136	0	0	0	0	0	0	
	Reang Kseai	2006	5,500	5,500	0	5,500	2.0	11,000	0	0	0	0	0	0	
		2003	5,460			5,451	1.7	9,499	0	0	0	0	0	0	
		Avg.	5,480			5,476	1.9	10,249	0	0	0	0	0	0	
	Ou Dambang Muov	2006	1,340	1,340	0	1,340	2.0	2,680	0	0	0	0	0	0	
		2003	1,500			1,500	1.7	2,561	0	0	0	0	0	0	
		Avg.	1,420			1,420	1.8	2,620	0	0	0	0	0	0	
	Ou Dambang Pir	2006	1,517	1,517	0	1,517	1.5	2,276	0	0	0	0	0	0	
		2003	1,517			1,510	1.8	2,706	0	0	0	0	0	0	
		Avg.	1,517			1,514	1.6	2,491	0	0	0	0	0	0	
Voat Ta Muem	2006	1,849	1,339	510	1,849	1.7	3,143	0	0	0	0	0	0		
	2003	1,849			1,839	1.8	3,278	30	0	20	3.0	60			
	Avg.	1,849			1,844	1.7	3,210	15	0	10	3.0	30			
	Sub-total	30,298			30,282	1.9	56,239	0	0	0	0	0	0		
Samlout	Samlout	2006	400	400	0	400	2.0	800	0	0	0	0	0	0	
		2003	3,720			3,720	2.2	8,106	0	0	0	0	0	0	
		Avg.	2,060			2,060	2.2	4,453	0	0	0	0	0	0	
Pursat	Veal Veaceng	Anlong Reab	2006	0	0	0	0	0	0	0	0	0	0	0	
			2003	88			70	3.0	208	0	0	0	0	0	
			Avg.	44			70	1.5	104	0	0	0	0	0	
	Thma Da	2006	0	0	0	0	0	0	0	0	0	0	0	0	
		2003	75			70	2.5	175	0	0	0	0	0	0	
		Avg.	38			70	1.3	88	0	0	0	0	0	0	
	Sub-total	2,142			2,200	2.1	4,645	0	0	0	0	0	0		
Pailin	Pailin	2006				4	1.8	7	0	0	0	0	0	0	
		2003	7			4	1.8	7	0	0	0	0	0	0	
		Avg.	7			4	1.8	7	0	0	0	0	0	16	
	Ou Tavau	2006				13	1.8	23	0	0	0	0	0	0	
		2003	23			13	1.8	23	0	0	0	0	0	0	
		Avg.	23			13	1.8	23	0	0	0	0	0	16	
	Tuol Lvea	2006				3	1.8	5	0	0	0	0	0	0	
		2003	3			3	1.8	5	0	0	0	0	0	0	
		Avg.	3			3	1.8	5	0	0	0	0	0	16	
	Ba Yakha	2006				8	2.0	16	0	0	0	0	0	0	
		2003	15			8	2.0	16	0	0	0	0	0	0	
		Avg.	15			8	2.0	16	0	0	0	0	0	16	
	Sub-total	48			28	1.9	51	0	0	0	0	0	16		
Sala Krau	Stueng Kach	2006				9	1.9	17	0	0	0	0	0	0	
		2003	9			9	1.8	16	0	0	0	0	0	0	
		Avg.	9			9	1.8	16	0	0	0	0	0	16	
	Whole River Basin	99,405			99,063	1.8	178,175	520	0	0	515	2.9	1,478		

Source: 2003 - Commune Survey on Crops and Livestock 2003, MAFF, 2004; 2006 - Dept. of Planning, Battambang

Table C1-8 Rice Cropped Area, Production & Yield from 2002 to 2005 in the Battambang River Basin: SEILA Data Base

Province/District	Communc	Type	Year 1/	Wet Season					Dry Season					
				Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	
				Rainfod Rice	Irrigated Rice	Total			Irrigated Rice	Recession Rice	Total			
Battambang														
Banan	Kantueu Muoy	Rural	3	2,356	0	2,356	2,757	1.2						
	Kantueu Pir	Rural	1	1,169	0	1,169	881	0.8						
	Bay Damram	Rural	4	3,650	0	3,650	3,456	0.9	4	13	12	25	33	1.3
	Chheu Teal	Rural	3	1,535	235	1,770	2,374	1.3	4	210	162	372	428	1.2
	Chaeng Mean Chey	Rural	3	5,427	0	5,427	5,828	1.1	1		25	25	34	1.4
	Snoeng	Rural	2	6,043	0	6,043	6,850	1.1						
	Sub-total			20,180	235	20,415	22,147	1.1		223	199	422	494	1.2
Battambang	Tuol Ta Aek	Urban				0								
	Preaek Preah Sdach	Urban				0								
	Rotanak	Urban				0								
	Chamkar Samraong	Urban				0								
	Sla Kaet	Urban				0								
	Kdol Down Teav	Rural	4	628	22	644	1,173	1.8						
	Voat Kor	Rural	3	880	124	1,005	1,652	1.6						
	Svay Pao	Urban				0								
	Sub-total			1,508	146	1,649	2,825	1.7		0	0	0	0	0
Aek Phnum	Preaek Norint	Rural	3	1,023	200	1,223	1,601	1.3	4	106	0	106	299	2.8
	Samraong Knong	Rural	2	1,278	0	1,278	1,215	1.0						
	Preaek Khpob	Rural	4	1,491	30	1,520	2,140	1.4	1		3	3	7	2.2
	Preaek Luong	Rural	4	617	0	617	971	1.6	4	64	4	69	172	2.5
	Prey Chas	Rural	4	0	0	0	0	0	4	0	0	0	0	0
	Kaoh Chiveang	Rural	4	0	0	0	0	0	4	0	0	0	0	0
	Sub-total			4,409	230	4,638	5,926	1.3		170	7	178	478	2.7
Moung Ruessei	Chrey	Rural	3	2,510	2,006	4,516	5,589	1.2	4	240	147	386	627	1.6
	Ta Loas	Rural	3	4,307	335	4,642	7,223	1.6		66	140	206	420	2.0
	Kakaoh	Rural	3	5,386	133	5,519	4,629	0.8						
	Prey Touch	Rural	2	6,275	0	6,275	7,382	1.2						
	Sub-total			18,477	2,475	20,952	24,824	1.2		306	286	592	1,047	1.8
Koas Krala	Thipakdei	Rural	2	5,340	-	5,340	19,616	3.7						
	Koas Krala	Rural	3	940	-	940	1,171	1.2						
	Hab	Rural	2	1,739	-	1,739	1,766	1.0						
	Donn Ba	Rural	1	4,115	-	4,115	3,292	0.8						
	Preah Phos	Rural	2	7,452	-	7,452	6,955	0.9						
	Chhnal Moan	Rural	3	1,487	0	1,487	1,564	1.1						
	Sub-total			21,072	0	21,072	34,364	1.6		0	0	0	0	0
Rotonak Mondul	Sdau	Rural	4	1,882	31	1,913	2,275	1.2	2	19	0	19	31	1.6
	Andaek Haeb	Rural	2	509	0	509	390	0.8						
	Phlov Meas	Rural	2	121	0	121	169	1.4						
	Traeng	Rural	2	471	0	471	361	0.8						
	Sub-total			2,982	31	3,013	3,194	1.1		19	0	19	31	1.6
Sangkae	Anlong Vil	Rural	3	2,299	0	2,299	3,697	1.6						
	Norea	Rural	3	333	67	400	1,030	2.6	4	113	50	163	246	1.5
	Ta Pon	Rural	4	5,554	0	5,554	8,331	1.5	4	265	265	530	663	1.3
	Roka	Rural	3	2,020	15	2,035	1,609	0.8						
	Kampong Preah	Rural	3	4,633	133	4,767	6,077	1.3						
	Kampong Preang	Rural	3	4,960	0	4,960	5,184	1.0						
	Reang Kessei	Rural	4	5,340	0	5,340	9,850	1.8						
	Ou Dambang Muoy	Rural	2	1,340	0	1,340	2,345	1.8						
	Ou Dambang Pir	Rural	4	1,501	16	1,517	1,706	1.1						
	Voat Ta Muem	Rural	4	1,268	520	1,788	3,606	2.0	4	52	86	138	318	2.3
	Sub-total			29,248	751	30,000	43,435	1.4		429	401	830	1,226	1.5
Samlout	Samlout	Rural	2	390	10	400	765	1.9						
	Province Total			98,265	3,878	102,138	137,479	1.3		1,147	893	2,040	3,276	1.6
Pursat														
Veal Veacng	Anlong Reab	Rural	1	108	0	108	105	1.0						
	Thma Da	Rural	3	84	0	84	66	1.1						
	Sub-total			192	0	171	171	1.0		0	0	0	0	0
	Province Total			192	0	171	171	1.0		0	0	0	0	0
Pailin														
Pailin	Pailin	Rural												
	Ou Tavau	Rural												
	Tuol Lvea	Rural												
	Ba Yakha	Rural	1	29	0	29	16	0.6						
	Sub-total			29	0	29	16	0.6		0	0	0	0	0
Sala Krau	Stueng Kach	Rural	4	0	0	0	0	0		0	0	0	0	0
	Province Total			29	0	29	16	0.6		0	0	0	0	0
River Basin Total				98,486	3,878	102,338	137,666	1.3		1,147	893	2,040	3,276	1.6

1/ No. of years of data used for estimating average figures
Source: SEILA Data Base, 2002 - 2005

Table C1-9 Rice Planted Areas by Plowing Method & Planting Method in the Battambang River Basin 1/

Province/ District	Commune	Year 2/	Plowing (ha.)			Tractor	Transplanting (ha.)			Direct sowing			Total							
			Total	Cattle	Hand Tractor		Normal	IR	Medium	Late	Total	Normal		IR	Plantation	Medium	Late	Flucting	Total	
																				Early
Battambang	Banan	Kanteu Muoy	4	2,630	1,481	491	659	7	0	9	18	34	593	0	781	1,192	0	2,566	2,600	
		Kanteu Pir	4	1,534	870	477	187	5	0	20	34	59	239	0	534	551	0	1,324	1,383	
		Bay Danran	4	3,377	2,603	711	64	99	0	247	1,012	1,357	306	0	460	912	0	1,678	3,036	
		Chheu Teal	4	1,636	913	668	54	13	43	0	219	279	671	0	299	508	0	932	1,604	
		Chheu Teal	4	3,802	1,881	896	1,025	1	0	7	14	342	0	0	1,028	2,656	0	4,027	4,040	
		Chheu Teal	4	5,771	2,107	1,657	2,007	54	0	308	336	697	446	0	1,829	2,686	0	4,961	5,638	
		Sub-total	Ha	18,749	9,404	5,350	3,995	296	43	810	1,685	2,833	2,051	0	4,931	8,506	0	15,488	18,321	
		%		100	50	29	21	2	2	2	1	15	11	0	26	45	0	85	100	
		Tuol Ta Aek	4	9	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
		Preaek Preah Sda	4	26	4	13	9	4	0	5	5	14	2	0	0	0	0	0	0	0
Rotanak	4	195	48	97	49	27	0	27	24	78	6	0	0	32	78	0	116	194		
Chamkar Samraon	4	674	83	340	251	26	0	58	72	155	8	0	0	154	353	0	515	670		
Sla Keut	4	322	38	134	150	8	0	16	23	47	9	0	0	50	217	0	275	321		
Kdol Daun Teav	4	810	194	225	391	11	0	44	29	84	4	0	0	77	481	0	562	646		
Vost Kor	4	1,072	179	728	165	214	0	311	360	885	7	0	0	91	85	0	182	1,067		
Svay Pao	4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sub-total	Ha	3,107	548	1,342	1,017	291	0	462	513	1,267	36	0	0	409	1,221	0	1,666	2,933		
%		100	18	50	33	3	0	16	15	60	91	0	0	19	206	0	884	1,205		
Preaek Nornt	4	1,403	166	759	479	0	0	16	15	60	91	0	0	513	400	0	1,051	1,165		
Samraong Knong	4	1,203	305	685	213	3	0	100	45	148	0	0	0	35	310	0	887	1,233		
Preaek Khab	4	2,770	226	607	1,938	1	0	27	26	54	0	0	0	88	310	0	1,233	1,287		
Preaek Luong	4	872	82	663	127	0	0	17	7	23	46	0	0	8	195	0	478	691		
Sub-total	Ha	6,248	778	2,713	2,757	3	0	34	149	153	338	0	0	574	1,111	0	2,353	4,147		
%		100	12	43	44	0	0	0	0	0	0	0	0	0	0	0	0	0		
Chrey	4	4,179	1,332	1,667	1,181	13	0	23	342	378	425	0	0	380	1,919	0	739	3,801		
Ta Loas	4	4,045	1,606	1,321	1,119	36	0	30	264	330	291	156	0	426	2,668	0	3,716	4,179		
Kakaoh	4	5,545	1,889	1,880	1,776	7	0	6	34	47	616	1	0	735	3,971	0	5,499	5,545		
Prey Touch	4	5,097	1,804	1,851	1,443	0	0	1	29	30	651	0	0	911	3,448	0	5,069	5,099		
Sub-total	Ha	18,866	6,631	6,717	5,518	57	0	60	668	784	1,963	295	0	2,652	12,005	0	11,771	18,085		
%		100	35	36	29	4	0	0	0	0	0	0	0	0	0	0	0	0		
Sdau	4	3,100	663	1,002	1,210	13	0	34	0	47	236	0	0	609	66	0	962	1,009		
Andeaek Haeb	4	950	401	311	523	25	0	17	0	31	149	0	0	261	1	0	340	371		
Phlov Meas	4	1,161	457	221	1,532	2	0	12	3	18	105	0	0	157	73	0	337	355		
Treang	4	2,314	440	568	1,150	6	0	23	0	28	169	0	0	524	2	0	741	769		
Sub-total	Ha	7,524	1,960	1,904	4,414	46	0	86	3	125	659	0	0	1,467	71	0	2,380	2,505		
%		100	26	25	59	0	0	0	0	0	0	0	0	0	0	0	0	0		
Auhang Vil	4	2,744	480	1,107	1,157	118	0	259	590	968	52	0	0	113	826	0	1,699	2,666		
Norea	4	463	133	243	86	61	0	116	141	317	3	0	0	13	130	0	146	463		
Ta Pon	4	5,545	364	2,089	3,091	55	0	113	128	295	112	0	0	596	1,358	0	5,194	5,493		
Roka	4	2,286	742	779	765	45	0	121	154	320	8	0	0	254	968	0	1,773	2,093		
Kampung Preah	4	4,932	1,432	1,588	1,912	70	0	138	200	408	275	0	0	507	1,697	0	4,429	4,837		
Kampung Preang	4	5,038	681	2,139	2,217	110	0	460	626	1,195	247	0	0	696	1,469	0	3,740	4,935		
Reang Kasi	4	5,520	1,201	2,985	1,334	751	0	1,108	664	2,522	583	0	0	822	1,591	0	2,993	5,518		
Ou Daouang Mu	4	1,470	475	927	68	90	0	241	295	626	94	0	0	164	587	0	844	1,470		
Ou Daouang Pir	4	1,559	524	855	180	67	0	161	206	428	109	0	0	280	742	0	1,130	1,559		
Vost Ta Muem	4	1,925	681	1,144	1,009	158	0	290	455	903	123	0	0	147	752	0	1,022	1,925		
Sub-total	Ha	31,477	6,712	13,856	10,909	1,518	0	3,006	3,457	7,981	1,605	0	0	3,591	10,119	0	22,971	30,952		
%		100	21	44	35	3	0	0	0	0	0	0	0	0	0	0	0	0		
Whole River Basin	Ha	85,971	26,033	32,032	28,610	2,210	77	4,572	6,479	13,327	6,313	404	298	13,624	33,032	11,179	64,736	78,063		
%		100	30	37	33	3	0	5	8	17	7	0	0	16	38	13	75	91		

1/ Data of all communes located in the Battambang River Basin. Not including some communes of Aek Panom, Keas Krasa, Sambout, Veal Veang, Plin and Sala Krau District in the basin. rice cropped area in those communes is some 22,000 ha.
2/ 4 --- average figures of 4 years from 2003 to 2006

Source: PDA Battambang

Table C1-11 Present Status of Irrigation Systems in the Battambang River Basin (2/3)

District	Scheme	No.	Sub Code	Scheme	Commune	Irrigation Method	Flood Influence	Status	Present Condition																				
									Rice Cropped Area (ha)						Existing Irrigated Area (ha)						Yield Data								
									Cropping Season			Annual			Recession			Annual			Recession			Annual			Recession		
									Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry	Wet 1	Wet 2	Dry
Bannan	> 100 ha	1	BAN-001	Banan	Banan (Kan Teu, I., Kan Teu, II., Sing Kr., (Rind, Keng), Kan Teu, I., Bay Dhanam., Sing Kr., (Rind, Keng), Bay Dhanam.)	Gravity	No	N	7,000	0	7,000	0	0	7,000	0	0	0	100	0	100	0	100	0	1.5/2.0	1.5/2.0	3.0	1.2/0.8		
		2	BAN-002	Sor Kheng	Sor Kheng	Gravity	No	F	800	0	800	0	0	800	0	0	0	100	0	100	0	100	0	1.5/2.4	1.5/2.4	3.0	1.2/0.9		
		3	BAN-003	Kou	Kou	Gravity	No	N	150	0	150	0	0	150	0	0	0	100	0	100	0	100	0	2.4	2.4	3.0	0.9		
		4	BAN-004	Bot Sala	Bot Sala	Gravity	No	P	105	0	105	0	0	105	0	0	0	100	0	100	0	100	0	2.4/1.7	2.4/1.7	3.0/3.0	0.9/2.0		
		5	BAN-005	Chheu Teal	Chheu Teal	Pump	No	P	780	0	780	0	0	780	0	0	0	100	0	100	0	100	0	1.3	1.3	2.0/2.6	3.0/2.5		
		6	BAN-001	Toual Thnong M	Kanteur Mouy	Pump	No	P	20	0	20	0	0	20	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.2		
		7	BAN-002	Toual Thnong P	Kanteur Mouy	Pump	No	F	30	0	30	0	0	30	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.2		
		8	BAN-003	Kampang Koet	Kanteur Peir	Pump	No	F	20	0	20	0	0	20	0	0	0	100	0	100	0	100	0	0.9	0.9	0.9	0.8		
		9	BAN-004	Cheng Mean Che	Cheng Mean Chey	Pump	No	N	35	0	35	0	0	35	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.3		
		10	BAN-005	Beung Andork Dal	Cheng Mean Chey	Gravity	No	N	15	0	15	0	0	15	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.1		
		11	BAN-006	Beung Snuol	Srong	Gravity	No	F	10	0	10	0	0	10	0	0	0	100	0	100	0	100	0	2.3	2.3	2.3	1.1		
		12	BAN-007	Or Ta Kdouch	Srong	Gravity	No	N	15	0	15	0	0	15	0	0	0	100	0	100	0	100	0	2.3	2.3	2.3	1.1		
		13	BAN-008	Kampang Sromol	Chen Teal	Pump	No	N	30	0	20	10	0	30	0	0	67	35	100	0	100	0	1.7	1.7	3.0	1.3			
		14	BAN-009	Antong Mean	Cheng Mean Chey	Gravity	No	N	15	0	15	0	0	15	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.1		
		15	BAN-010	Kbal Krabei	Cheng Mean Chey	-	No	N	20	0	20	0	0	20	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.1		
		16	BAN-011	Beung Anlok Ca	Srong	Gravity	No	F	23	0	23	0	0	23	0	0	0	100	0	100	0	100	0	2.3	2.3	2.3	1.1		
		17	BAN-012	Kampang koul	Cheng Mean Chey	Pump	No	N	20	0	20	0	0	20	0	0	0	100	0	100	0	100	0	1.3	1.3	2.0	1.1		
		18	BAN-013	Or Ampil	Cheng Mean Chey	Pump	No	N	25	0	0	25	0	25	0	0	0	100	0	100	0	100	0	3.9	3.9	1.3	2.0		
		19	BAN-014	Pat Lam	Cheng Mean Chey	Pump	No	N	25	0	25	0	0	25	0	0	0	100	0	100	0	100	0	2.2	2.2	2.0	1.1		
		20	BAN-015	Ta Tueng	Cheng Mean Chey	Pump	No	N	25	0	25	0	0	25	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.1		
		21	BAN-016	Troebok Pong	Cheng Mean Chey	Gravity/Pump	No	N	40	0	0	40	0	0	40	0	0	0	100	0	100	0	100	0	2.0	2.0	2.0	1.1	
Rotanak Mondul	< 100 ha	1	RTM-001	Serreiyan	Andek Herb	Pump	No	N	15	0	0	15	0	0	0	0	100	0	100	0	100	0	1.8	1.8	1.8	0.8			
		2	RTM-002	Svay Choir	Andek Herb	Pump	No	P	5	0	5	0	0	5	0	0	100	0	100	0	100	0	1.8	1.8	1.8	0.8			
		3	RTM-003	Or Andek Het	Andek Herb Sdao	Pump	No	P	26	0	0	26	0	0	0	0	100	0	100	0	100	0	1.8/1.9	1.8/1.9	2.0	0.8/1.2			
		4	RTM-004	Beung Borrei	Sdao	Gravity	No	N	15	0	15	0	0	15	0	0	0	100	0	100	0	100	0	1.9	1.9	2.0	1.2		
		5	RTM-005	Chak Thea	Treng	Pump	No	N	30	0	0	30	0	0	30	0	0	100	0	100	0	100	0	1.7	1.7	1.7	0.8		
		6	RTM-006	Chi Sang	Treng	Gravity	No	N	20	0	20	0	0	20	0	0	0	100	0	100	0	100	0	2.2	2.2	1.2	1.7		
		7	RTM-007	O Kroch	Treng	Pump	No	N	35	0	35	0	0	35	0	0	0	100	0	100	0	100	0	2.2	2.2	1.7	0.8		
		8	RTM-008	Ta Krouk	Treng	Pump	No	P	50	0	50	0	0	50	0	0	0	100	0	100	0	100	0	2.2	2.2	1.2	1.7		
		9	RTM-009	Tuek Sab	Phlor Meas	Pump	No	N	25	0	25	0	0	25	0	0	0	100	0	100	0	100	0	3.9	3.9	1.2	1.5		
		10	RTM-010	Rum Lech	Treng	Pump	No	N	50	0	50	0	0	50	0	0	0	100	0	100	0	100	0	1.7	1.7	1.7	0.8		

Table C1-11 Present Status of Irrigation Systems in the Battambang River Basin (3/3)

District	Scheme	No.	Sub Code	Scheme	Commune	Irrigation Method	Flood Influence	Status	Present Condition																	
									Rice Cropped Area (ha)						Existing Irrigated Area (ha)						Yield Data					
									Area (ha)		Cropping Season		Intensity (%)		Inventory		PDA 2/		SEILA							
									Wet 1	Wet 2	Dry	Recession	Annual	Wet 1	Wet 2	Dry	Recession	Annual	SWT	SDT	RWTD	W	D	W	D	
Ask Phnum	> 100 ha	1	AKP-001	Nor Rea	Norea, Samrong Krang	Pump	No	N	450	0	450	0	0	450	0	100	0	100	2.3/2.3	3.0/3.0	2.6/1.0	1.5				
		2	AKP-002	Or Daun Teav	Peam Aek	Gravity/Pump	No	P	2,900	0	2,900	0	0	2,900	0	100	0	100	2.2	2.2	1.2	2.3	3.0	1.0		
		3	AKP-003	Or Samrong Krol	Samrong Krang	Gravity/Pump	No	P	150	0	150	50	0	200	0	100	33	2.2	3.9	1.2	2.3	3.0	1.0/1.4	2.2		
		4	AKP-004	Or Snaor	Samrong Krang, Prek Kpob	Gravity/Pump	Yes	F	1,320	0	1,320	14	0	1,334	0	100	1	2.2	3.9	1.1	2.3/2.3	3.0	1.0/1.4	2.2		
		5	AKP-005	Prek Kroeh	Prek Noin	Gravity/Pump	No	N	180	0	180	0	0	180	0	100	0	100	2.2	2.2	2.0	3.0	1.3	2.8		
		6	AKP-006	Or Svay Chrom	Prek Noin	Gravity/Pump	No	F	209	0	200	8	0	208	0	100	4	104	2.2	3.9	2.0	3.0	1.3	2.8		
		7	AKP-007	Prek Klipob	Prek Kpob, Prek Loung	Gravity/Pump	Yes	P	1,505	0	1,505	45	0	1,550	0	100	3	103	2.2	3.9	2.3/2.2	3.1	1.3/1.6	2.8/2.5		
		8	AKP-01	Or Anderng	Prek Loung	Gravity/Pump	No	F	30	0	30	0	0	30	0	100	0	100	2.2	2.2	2.2	3.1	1.6	2.5		
		9	AKP-02	Or Bak Angreik	Prek Loung	Gravity/Pump	No	F	85	0	85	0	0	85	0	100	0	100	2.2	2.2	2.2	3.1	1.6	2.5		
		10	AKP-03	Or Kvit	Prek Klipob	Gravity/Pump	No	P	40	0	40	0	0	40	0	100	0	100	2.2	2.2	1.2	2.2	3.1	1.3	2.8	
		11	AKP-04	Prek Ambil	Prek Loung	Gravity/Pump	Yes	P	30	0	30	0	0	30	0	100	0	100	3.9	1.2	2.2	3.1	1.6	2.5		
		12	AKP-05	Prek Loung	Prek Loung	Gravity	No	F	10	0	10	0	0	10	0	100	0	100	3.9	1-1.2	2.2	3.1	1.6	2.5		
		13	AKP-06	Or Sdei	Prek Loung	Gravity	Yes	P	50	0	50	0	0	50	0	100	0	100	2.2	2.2	1-1.2	2.2	3.1	1.6	2.5	
		14	AKP-07	Or Doung Mea	Prek Norin	Gravity	Yes	N	0	0	0	0	0	0	0	0	0	0	0	0	2.0	3.0	1.3	2.8		
		15	AKP-08	Or Damrei Slab	Prek Norin	Gravity	Yes	P	35	0	35	0	0	35	0	100	0	100	2.2	2.2	1-1.2	2.0	3.0	1.3	2.8	
		16	AKP-09	Prek Norin	Prek Noin	Gravity	No	F	0	0	0	0	0	0	0	0	0	0	0	0	2.0	3.0	1.3	2.8		
Battambang	> 100ha	1	BTB-001	Kampong Saima	Vat Kour	Pump	No	N	50	0	50	0	0	50	0	100	0	100	0	0	2.6	2.5	1.6			
		2	BTB-002	O Kdol	Kdol Daun Teav	Gravity/Pump	No	P	860	0	860	0	0	860	0	100	0	100	2.2	2.2	1-1.2	2.5	1.8	1.8		
Kohs Krolor	<100ha	3	BTB-01	Khsach Pouy	Vat Kor	Pump	No	N	16	0	16	0	0	16	0	100	0	100	0	0	2.6	2.5	1.6			
	<100ha	1	KKL-001	Anlong Reang	Chhal Man	Gravity	No	N	0	0	0	0	0	0	0	0	0	0	0	1.4	1.4	1.1	1.1			
		2	KKL-002	Anlong Kor	Cibal Man	Gravity	No	N	0	0	0	0	0	0	0	0	0	0	0	1.4	1.4	1.1	1.1			
		3	KKL-003	Anlong Reusse	Daun Bar	Gravity	No	N	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1.2	0.8	0.8		
		4	KKL-004	Daun Bar	Daun Bar	Gravity	No	P	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1.2	0.8	0.8		
		5	KKL-005	Kaos Krolor	Kaos Krolor	Gravity	No	N	0	0	0	0	0	0	0	0	0	0	0	0	1.5	1.5	1.2	1.2		
		6	KKL-006	Dun Kong	Chhal Man	Gravity	No	N	0	0	0	0	0	0	0	0	0	0	0	0	1.4	1.4	1.1	1.1		
Maung Rausset	>100ha	1	MRS-001	Or Ver	Kor Kors	Gravity	No	P	1,240	0	1,240	0	0	1,240	0	100	0	100	0	0	1.4	1.4	0.8			
		2	MRS-002	Stoeng Chork	Kor Kors, Prey Toek	Gravity	No	P	1,560	0	1,560	0	0	1,560	0	100	0	100	0	0	1.4/1.8	2.0/2.5	0.8/1.2	0.8/1.2		
River Basin Total									21,604	5	21,255	78	629	21,967	0.02	98.4	2.9	0.4	101.7							

1/ Supplemental inventory survey by JICA Study Team
 2/ 2003 - Commune Survey on Crops and Livestock 2003, MAFF, 2004, 2006 - Dept. of Planning, Battambang
 3/ SEILA Data Base, 2002 - 2005

Table C1-12 Upland Crops Production Statistics in the Battambang River Basin in 2003 & 2006 (1/2) 1/

Province/ District	Commune	Year 2/	Corn			Soybeans			Mungbeans			Groundnut			Cassava			Sweet potato			Sesame			Total Cultivated Area (ha)				
			Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)					
Battambang	Banan	Kanteu Muoy	2	17	5.7	95	0	48	1.1	53	8	0.7	5	0	0	0	0	0	0	0	0	0	0	0	72			
		Kanteu Pir	2	25	6.8	167	2	137	0.5	68	8	0.7	5	0	0	0	0	0	0	0	0	0	0	0	172			
		Bay Damram	2	19	2.6	49	0	17	0.5	8	1	0.7	1	0	0	0	0	0	0	0	0	0	0	0	38			
		Chiheu Teal	2	19	6.2	115	0	87	0.7	58	5	0.7	4	22	2.0	43	2	2.2	4	2	0.4	1	0	0	136			
		Chieng Mean Chey	2	373	2.3	860	0	53	4.0	213	19	1.3	25	0	0	0	0	0	0	0	0	0	0	0	446			
		Snoeng	2	186	1.3	240	0	26	0.6	16	15	0.6	9	0	0	0	0	0	0	0	0	0	0	0	282			
		Sub-total		637	2.4	1,526	2	0.5	1	367	1.1	416	55	0.9	49	22	2.0	43	12	13.6	163	51	3.5	180	1,144			
		Battambang	Aek Phnum	Tuol Ta Aek	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
				Preaek Preah Sdach	2	1	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
				Rotanak	2	1	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Chamkar Samraong	2			3	2.5	6	0	4	2.0	8	1	2.0	1	2	8.0	12	0	0	0	0	0	0	0	0	0	9		
Sla Kaet	2			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Kdol Doum Teav	2			1	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Vat Kor	2			4	1.0	3	0	2	1.0	2	1	1.1	1	1	60.0	30	1	4.0	2	0	0	0	0	0	0	7		
Svay Pao	2			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sub-total				9	1.3	12	0	6	1.7	10	2	1.4	2	4	15.5	62	1	4.0	2	0	0	0	0	0	0	0	21	
Aek Phnum	Koas Krala			Preaek Norint	2	32	1.0	32	0	78	0.8	66	20	0.5	10	0	0	0	0	0	0	0	0	0	0	0	0	130
		Samraong Krong	2	2	2.3	3	0	1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
		Preaek Khpob	2	11	1.1	12	0	2	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		
		Preaek Luong	2	28	1.5	42	0	46	0.8	35	11	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	85		
		Prey Chas	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Kaoh Chiveang	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Chrey	2	1	2.8	3	0	1	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
		Ta Loas	2	1	2.5	3	0	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
		Kakaoh	2	2	2.1	4	0	1	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
		Prey Touch	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sub-total		77	1.3	99	0	130	0.8	104	32	0.5	16	2	15.0	30	4	8.9	36	1	0.2	0	0	0	0	244				
Koas Krala	Thipakdei	Thipakdei	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32		
		Koas Krala	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
		Hab	2	7	1.1	7	0	0	0.3	0	2	1.0	2	11	5.8	64	1	2.9	4	3	0.8	2	0	0	24			
		Preaek Phos	2	3	1.2	3	0	0	0	0	3	0.8	2	7	6.5	46	3	3.4	9	4	0.8	3	0	0	19			
		Doun Ba	2	11	1.0	12	0	6	0.7	4	9	0.7	6	28	5.5	151	2	4.0	6	5	0.8	4	0	0	60			
		Chhmal Moan	2	1	5.0	3	0	2	0.6	1	5	0.8	4	9	7.0	63	3	3.0	8	4	0.8	3	0	0	23			
		Sub-total		21	1.2	24	0	8	0.7	6	27	0.7	20	75	6.2	462	8	3.3	26	23	0.7	16	0	0	160			

Table C1-12 Upland Crops Production Statistics in the Battambang River Basin in 2003 & 2006 (2/2) 1/

Province/ District	Commune	Year 2/	Corn			Soybeans			Mungbeans			Groundnut			Cassava			Sweet potato			Sesame			Total Cultivated Area (ha.)
			Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	Cultivated Area (ha.)	Yield (tons/ha.)	Production (tons)	
Ratanak Mon	Sdan	2	1,821	2.5	4,621	290	2.6	744	132	0.8	109	138	1.7	238	229	4.1	926	13	3.0	39	125	1.4	179	2,748
	Andaek Haeb	2	356	4.0	1,420	115	0.8	92	167	0.5	84	165	0.6	103	23	2.3	53	0		0	129	0.5	68	954
	Phlov Meas	2	419	2.2	937	25	1.9	47	62	0.9	53	56	2.3	125	0		0	0		0	44	0.6	26	605
	Traeng	2	204	4.1	839	344	4.8	1,649	1,597	3.0	4,712	296	2.2	657	2,664	5.0	13,375	2	8.0	16	215	1.9	397	5,321
	Sub-total		2,800	2.8	7,817	773	3.3	2,551	1,958	2.5	4,958	654	1.7	1,123	2,916	4.9	14,354	15	3.6	55	512	1.3	669	9,627
Sangkae	Anlong Vil	2	3	2.0	5	0	0	38	0.5	19	0	0	0	0	1	2.9	3	1	1.8	2	0	0	0	43
	Norea	2	2	2.0	4	0	0	0	0.8	0	0	0	0	0	1	7.9	4	1	2.8	1	0	0	0	3
	Ta Pon	2	3	1.9	5	0	0	1	0.9	0	0	0	0	0	2	7.8	12	2	1.9	3	0	0	0	6
	Roka	2	3	1.9	6	0	0	1	0.9	1	0	0	0	0	1	4.1	4	1	2.5	1	0	0	0	6
	Kampong Preah	2	2	1.1	2	0	0	2	0.8	2	1	0.5	0	0	1	4.3	4	2	2.5	4	0	0	0	7
	Kampong Preang	2	1	1.5	2	0	0	0	0	0	0	0	0	0	1	4.4	2	1	3.0	3	0	0	0	3
	Reang Kset	2	2	1.4	2	0	0	1	1.1	1	1	1.5	1	1	1	7.5	4	1	4.5	2	0	0	0	4
	Ou Dambang Muoy	2	8	1.5	12	0	0	15	0.7	11	10	0.5	5	3	4.4	13	1	1.7	2	0	0	0	0	37
	Ou Dambang Pr.	2	61	0.4	24	0	0	58	0.5	26	33	0.4	12	4	4.2	15	9	3.4	29	0	0	0	0	163
	Voat Ta Maern	2	30	2.0	58	0	0	105	1.2	122	20	1.5	29	5	7.2	33	5	8.0	36	0	0	0	0	163
	Sub-total		113	1.1	119	0	0	220	0.8	183	63	0.8	48	17	5.5	93	21	4.0	83	0	0	0	0	433
Samlout	Samlout	2	14	4.1	58	323	1.6	508	19	1.1	20	442	1.3	558	0		0	0		0	3	0.4	1	800
	Sub-total		14	4.1	58	323	1.6	508	19	1.1	20	442	1.3	558	0		0	0	0	0	3	0.4	1	800
Pursat	Province Total		3,669	2.6	9,654	1,097	2.8	3,040	2,707	2.1	5,696	1,273	1.4	1,814	3,035	5.0	15,044	60	6.1	365	589	1.5	867	12,428
	Sub-total		0	0	0	4	1.0	4	8	1.0	8	3	0.5	2	2	4.0	6	4	1.5	5	83	3.0	248	102
Veal Veang	Anlong Reab	2	13	0.5	6	0	0	5	0.5	3	3	0.5	1	0	0		0	0		0	0	0	0	20
	Sub-total		13	0.5	6	4	1.0	4	13	0.8	10	6	0.5	3	2	4.0	6	4	1.5	5	83	3.0	248	122
Pailin	Pailin	1	1,569	3.1	4,852	203	1.4	290	0	0	0	2	0.8	2	0		0	0		0	60	0.6	38	1,834
	Ou Tavau	1	1,612	3.3	5,260	820	1.5	1,200	33	0.3	11	11	0.7	8	1	1.0	1	1	1.90	19	603	0.3	194	3,081
	Thol Lvea	1	467	3.8	1,762	225	1.5	335	18	0.6	11	5	0.6	3	0		0	2	7.0	11	308	1.0	315	1,025
	Ba Yakha	1	148	2.9	436	85	1.4	119	0	0	1	1.3	1	0	0		0	0		0	35	0.7	25	269
	Sub-total		3,796	3.2	12,310	1,333	1.5	1,943	51	0.4	22	19	0.7	14	1	1.0	1	3	11.8	30	1,006	0.6	571	6,208
Sala Krau	Stueng Kach	1	1,176	3.1	3,652	1,330	1.1	1,410	11	1.0	11	0	0	0	0		0	0		0	618	0.4	242	3,135
	Sub-total		1,176	3.1	3,652	1,330	1.1	1,410	11	1.0	11	0	0	0	0		0	0	0	0	618	0.4	242	3,135
Whole River Basin	ha		8,653	3.0	25,621	3,763	1.7	6,396	2,781	2.1	5,739	1,298	1.4	1,831	3,037	5.0	15,051	66	6.0	400	2,296	0.8	1,928	21,893
	%		40		17		13		6		14		6		14		10				10			100

1/: Data of all communes located in the Pursat River Basin

2/: 2 --- average figures of 2 years from 2003 & 2006, 1 --- data on 2003

Source: PDA Battambang

Table C1-13 Vegetable Production in the Battambang River Basin in 2003 1/

Province/ District	Commune	Cultivated Area (ha.)			Harvested Area (ha)			Yield (tons/ha)			Annual Production (Tons)		
		Total	Season		Total	Season		Total	Season		Total	Season	
			Wet	Dry		Wet	Dry		Wet	Dry		Wet	Dry
Battambang Banan	Kantueu Muoy	16	16	0	16	16	0	3.3	3.3		51	51	0
	Kantueu Pir	12	7	5	12	7	5	3.2	3.0	3.4	38	21	17
	Bay Damram	7	7	0	7	7	0	3.0	3.0		21	21	0
	Chheu Teal	135	135	0	135	135	0	3.3	3.3		446	446	0
	Chaeng Mean Chey	43	43	0	43	43	0	3.1	3.1		133	133	0
	Snoeng	0	0	0	0	0	0				0	0	0
Battambang	Tuol Ta Aek	2	2	0	2	2	0	2.0	2.0		4	4	0
	Preaek Preah Sdach	4	4	0	4	4	0	2.0	2.0		8	8	0
	Rotanak	3	3	0	3	3	0	1.8	1.8		5	5	0
	Chamkar Samraong	7	7	0	7	7	0	2.0	2.0		14	14	0
	Sla Kaet	1	1	0	1	1	0	1.5	1.5		2	2	0
	Kdol Doun Teav	18	18	0	18	18	0	2.2	2.2		40	40	0
	Voat Kor	26	26	0	26	26	0	2.0	2.0		52	52	0
	Ou Char	5	5	0	5	5	0	1.8	1.8		9	9	0
	Svay Pao	0	0	0	0	0	0				0	0	0
Aek Phnum	Preaek Norint	123	3	120	65	3	62	9.0	8.5	9.0	584	26	558
	Samraong Knong	5	0	5	4	0	4	8.0		8.0	32	0	32
	Preaek Khpob	24	8	16	17	8	9	7.7	8.0	7.5	132	64	68
	Preaek Luong	120	14	106	78	14	64	8.9	8.5	9.0	695	119	576
	Peam Aek	21	9	12	17	9	8	8.2	8.0	8.5	140	72	68
	Prey Chas	0	0	0	0	0	0				0	0	0
	Kaoh Chiveang	0	0	0	0	0	0				0	0	0
Moung Ruessei	Chrey	28	8	20	28	8	20	2.0	1.9	2.0	55	15	40
	Ta Loas	18	8	10	18	8	10	1.9	1.8	1.9	33	14	19
	Kakaoh	19	11	8	19	11	8	1.9	1.9	2.0	37	21	16
	Prey Touch	19	8	11	19	8	11	2.8	2.5	3.0	53	20	33
Rotonak Mondol	Sdau	8	8	0	8	8	0	4.0	4.0		32	32	0
	Andaek Haeb	13	13	0	13	13	0	4.0	4.0		52	52	0
	Phlov Meas	27	27	0	27	27	0	4.0	4.0		108	108	0
	Traeng	28	28	0	28	28	0	4.0	4.0		112	112	0
Sangkae	Anlong Vil	23	18	5	23	18	5	1.5	1.5	1.5	35	27	8
	Norea	10	9	1	10	9	1	3.0	3.0	3.0	30	27	3
	Ta Pon	14	12	2	14	12	2	1.9	1.9	1.9	27	23	4
	Roka	17	16	1	17	16	1	1.8	1.8	1.9	31	29	2
	Kampong Preah	13	11	2	13	11	2	1.6	1.6	1.7	21	18	3
	Kampong Preang	16	15	1	16	15	1	1.8	1.8	1.9	29	27	2
	Reang Ksei	10	9	1	10	9	1	3.1	3.1	2.9	31	28	3
	Ou Dambang Muoy	34	26	8	34	26	8	1.5	1.5	1.5	51	39	12
	Ou Dambang Pir	35	29	6	35	29	6	1.7	1.7	1.9	61	49	11
Voat Ta Muem	57	32	25	57	32	25	1.8	1.9	1.6	101	61	40	
Samlot	Samlot	28	14	14	18	14	14	5.5	5.0	6.0	154	70	84
Koas Krala	Thipakkdei	14	14	0	14	14	0	2.2	2.2		30	30	0
	Kaos Krala	0	0	0	0	0	0				0	0	0
	Hab	5	5	0	5	5	0	3.2	3.2		16	16	0
	Preah Phos	14	14	0	14	14	0	4.1	4.1		57	57	0
	Doun Ba	19	19	0	19	19	0	4.0	4.0		76	76	0
	Chhnal Moan	14	14	0	14	14	0	2.5	2.5		35	35	0
Pursat Veal Veang	Anlong Reab	0	0	0	0	0	0				0	0	0
	Thma Da	0	0	0	0	0	0				0	0	0
Pailin Pailin	Pailin	0	0	0	0	0	0	1.5	1.5	1.5	0	0	0
	Ou Tavau	12	9	3	4	4	0	2.0			0	0	0
	Tuol Lvea	10	8	2	9	6	3	1.5	1.5	1.5	14	9	5
	Ba Yakha	12	10	2	9	7	2	2.0	2.0	2.0	17	14	3
Sala Krau	Stueng Trang	0	0	0	0	0	0				0	0	0
Whole River Basin		1,088	703	386	954	693	272	3.9	3.0	5.9	3,701	2,095	1,606

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Battambang Pursat & Pailin, MAFF, 2004

Table C1-14 Fruit Tree Planted Area in the Battambang River Basin in 2003 1/

Province/ District	Commune	Planted Area of Fruit Tree (ha)										Total
		Banana	Coconut	Longan	Mango	Sapodilla	Jack Fruit	Custard	Orange	Pineapple	Others	
Battambang	Kantueu Muoy	0	0	0	0	0	0	0	23	0	0	23
	Kantueu Pir	10	1	0	2	1	3	1	15	0	1	34
	Bay Damram	0	0	0	0	0	0	0	18	0	0	18
	Chheu Teal	0	0	0	4	6	0	0	70	0	0	80
	Chaeng Mean Chey Snoeng	0	0	0	0	0	0	0	120	0	0	120
Battambang	Tuol Ta Aek	2	0	0	0	4	0	0	0	0	1	6.5
	Preaek Preah Sdach	2	1	0	0.5	0.5	0	0	0	0.5	1	5
	Rotanak	1	0	0	0	0	0	0	0	0	0	1
	Chamkar Samraong	3	0	0	0	3	0	0	0	0	1	7
	Sla Kaet	2	4	0	5	2	0	0	0	0	1	14
	Kdol Doun Teav	10	15	0	10	0	5	0	0	1	1	42
	Voat Kor	0	0	0	0	3	0	0	0	0	3	6
	Ou Char	2	0.5	0	0	0	0	0.5	0	0	0	3
Svay Pao	2	1	0	0	0	0	0	0	0	0	3	
Aek Phnum	Preaek Norint	34	21	0	17	0	0	0	3	0	2	77
	Samraong Knong	35	15	1	14	10	2	1	27	0.5	1	106.5
	Preaek Khpob	56	29	1	17	12	9	5	20	1	2	152
	Preaek Luong	45	20	0	10	7	0	0	12	0	0	94
	Peam Aek	66	33	0	22	12	8	0	14	0	4	159
	Prey Chas	0	0	0	0	0	0	0	0	0	0	0
Moung Ruessei	Kaoh Chiveang	0	0	0	0	0	0	0	0	0	0	0
	Chrey	0	0	0	0	0	0	0	0	0	0	0
	Ta Loas	10	2	0	1	2	1	1	4	2	5	28
	Kakaoh	10	0	0	0	0	0	0	0	0	0	10
Rotonak Mondol	Prey Touch	2	3	0	6	1	0	0	0	0	1	13
	Sdau	5.5	9.5	5	1	9	3	0	5	0	1.5	40
	Andaek Haeb	105	16	21	6.5	5	5	11	67	0	2	239
	Phlov Meas	3	0	2	3	0	14	2	15	0	0	39
Sangkae	Traeng	83	57	20	36	2	25	4	75	0	24	326
	Anlong Vil	15	0	0	0	2	0	0	5	8	0	30
	Norea	8	1	0	1	2	0	0	5	3	0	20
	Ta Pon	9	0	0	0	1	0	0	0	5	0	15
	Roka	95	0	0	0	5	0	0	8	6	0	114
	Kampong Preah	3	0	0	0	1	0	0	3	3	1	11
	Kampong Preang	8	0	0	5	2	0	0	2	3	10	30
	Reang Ksei	3	0	0	1	2	0	0	1	1	2	10
	Ou Dambang Muoy	21	1	0	0	22	0	0	12	25	2	83
Ou Dambang Pir	35	1	0	1	15	0	0	45	26	0	123	
Koas Krala	Voat Ta Muem	19	1	0	1	12	0	0	58	29	1	121
	Thipakkdei	20	10	4	7	6	5	3	9	5	10	79
	Kaos Krala	15	6	3	10	9	7	4	5	4	16	79
	Hab	10	6	4	8	3	7	4	8	5	9	64
	Preah Phos	5	11	9	10	6	7	5	7	7	16	83
	Doun Ba	8	2	1	4	2	3	4	6	5	4	39
Veal Veang	Chnal Moan	10	9	7	9	5	9	7	15	6	17	94
	Anlong Reab	0	0	0	0	0	0	0	0	0	0	0
Pailin	Thma Da	0	0	0	0	0	0	0	0	0	0	0
	Pailin	2	0	1	0	0	0	0	0	0	1	4
	Ou Tavau	7	0	0	0	0	0	0	0	0	0	6.5
	Tuol Lvea	3	0	2	3	0	1	0	0	0	0	9
Sala Krau	Ba Yakha	7	0	2	0	2	1	0	0	0	3	15
	Stueng Trang	0	0	0	0	0	0	0	0	0	0	0
Whole River Basin		791	276	83	215	177	115	53	677	146	143	2,675

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Battambang Purast & Pailin, MAFF, 2004

Table C1-15 Livestock Population in the Battambang River Basin in 2003 1/

Province/ District	Commune	Cattle Total	Cow	Draft Cattle	Buffalo Total	Buffalo Female	Draft Buffalo	Pig Total	Pig Female	Animal Units (A.U.) 2/	Poultry	No. of Farm Families 3/
Battambang Banan	Kantueu Muoy	1,436	265	534	30	14	24	292	64	1,378	2,072	1,008
	Kantueu Pir	1,653	340	890	29	6	10	155	5	1,545	2,601	1,092
	Bay Damram	2,581	550	1,361	33	12	22	638	82	2,480	5,726	1,307
	Chheu Teal	2,757	693	1,268	38	10	14	894	240	2,694	5,842	2,922
	Chaeng Mean Chey	1,329	396	848	17	5	8	315	48	1,274	2,760	1,159
	Snoeng	7,844	2,234	3,072	209	72	98	1,266	126	7,501	20,544	3,126
	Sub-total	17,600	4,478	7,973	356	119	176	3,560	565	16,872	39,545	10,614
Battambang	Tuol Ta Aek	58	25	6	0	0	0	833	51	219	5,266	58
	Preaek Preah Sdach	111	69	22	0	0	0	1,311	51	362	2,566	491
	Rotanak	324	172	72	0	0	0	534	47	398	2,624	964
	Chamkar Samraong	167	68	85	0	0	0	969	128	344	3,981	622
	Sla Kaet	20	10	9	0	0	0	65	9	31	4,719	187
	Kdol Doum Teav	284	125	22	0	0	0	444	39	344	3,405	1,079
	Voat Kor	1,721	846	678	38	17	36	1,469	133	1,877	23,846	2,738
	Ou Char	494	792	97	12	8	6	409	15	537	3,749	909
	Svay Pao	13	5	4	0	0	0	240	52	60	961	252
		Sub-total	3,192	2,112	995	50	25	42	6,274	525	4,173	51,117
Aek Phnum	Preaek Norint	1,947	1,087	515	31	18	20	1,594	637	2,099	11,479	2,740
	Samraong Knong	1,611	892	448	22	16	16	1,190	476	1,708	5,521	1,984
	Preaek Khpob	1,596	57	312	26	15	18	1,030	412	1,666	7,898	1,502
	Preaek Luong	1,993	1,290	393	17	12	11	1,420	568	2,093	7,165	1,698
	Peam Aek	2,472	1,242	810	14	16	16	1,685	674	2,574	8,484	1,886
	Prey Chas	0	0	0	0	0	0	0	0	0	0	0
	Kaoh Chiveang	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	9,619	4,568	2,478	110	77	81	6,919	2,767	10,140	40,547	9,810
Moung Ruessei	Chrey	2,076	916	1,157	516	172	343	961	35	2,525	2,788	1,869
	Ta Loas	951	343	716	36	15	35	69	34	902	16,940	1,639
	Kakaoh	4,367	1,180	2,299	189	85	95	888	87	4,278	2,658	1,754
	Prey Touch	2,116	673	1,297	168	49	72	722	96	2,200	17,515	1,664
		Sub-total	9,510	3,112	5,469	909	321	545	2,640	252	9,905	39,901
Rotonak Mondol	Sdau	6,242	1,901	2,012	225	71	83	2,273	149	6,275	7,638	2,689
	Andaek Haeb	2,948	944	1,073	81	22	34	209	103	2,768	2,737	957
	Phlov Meas	1,086	300	417	63	15	24	183	53	1,071	5,409	638
	Traeng	4,029	1,390	1,532	26	8	9	968	147	3,843	3,860	1,535
		Sub-total	14,305	4,535	5,034	395	116	150	3,633	452	13,957	19,644
Sangkae	Anlong Vil	2,083	537	849	8	2	8	1,194	129	2,121	5,164	3,266
	Norea	564	235	418	6	3	6	175	14	548	1,002	991
	Ta Pon	5,651	1,530	900	997	450	345	1,494	201	6,282	7,386	2,554
	Roka	1,278	350	658	35	18	24	659	52	1,314	2,352	1,580
	Kampong Preah	1,087	320	560	44	20	26	1,061	73	1,230	10,587	1,574
	Kampong Preang	2,500	530	884	35	20	16	1,084	138	2,498	13,794	2,045
	Reang Kessei	2,700	670	954	62	30	46	759	92	2,638	7,469	1,487
	Ou Dambang Muoy	2,404	600	222	0	0	0	1,634	225	2,490	14,847	1,853
	Ou Dambang Pir	1,421	430	1,043	11	7	9	1,228	141	1,534	3,230	2,366
	Voat Ta Muem	3,116	1,560	1,668	7	4	6	1,020	82	3,015	9,907	2,604
Samlot	145	76	56	12	4	6	315	36	204	4,892	820	
Koas Krala	Thipakkdei	635	210	296	20	10	10	350	40	660	3,270	1,762
	Kaas Krala	995	385	359	21	11	11	393	50	993	2,381	809
	Hab	677	241	436	0	0	0	201	60	650	3,687	522
	Preah Phos	576	205	230	15	5	10	280	60	588	3,687	506
	Doun Ba	756	412	344	0	0	0	315	15	743	2,500	498
	Chhnal Moan	786	268	297	23	12	10	367	40	802	4,782	149
		Sub-total	4,425	1,721	1,962	79	38	41	1,906	265	4,435	20,307
Pursat Veal Veang	Anlong Reab	131	83	40	66	51	14	101	13	198	4,619	267
	Thma Da	22	16	0	34	26	4	30	7	56	3,772	165
		Sub-total	153	99	40	100	77	18	131	20	254	8,391
Pailin	Pailin	540	345	100	6	3	2	212	89	534	3,060	2,200
	Ou Tavau	220	153	27	3	2	0	22	17	205	1,890	1,166
	Tuol Lvea	298	80	24	0	0	0	292	41	327	4,311	1,080
	Ba Yakha	410	247	46	0	0	0	106	13	390	1,232	394
		Sub-total	1,468	825	197	9	5	2	632	160	1,456	10,493
Sala Krau	Stueng Trang	182	23	42	0	0	0	50	10	174	150	1,730
River Basin Total	Head	60,599	21,549	24,246	2,020	782	1,061	26,060	5,052	61,569	234,987	52,537
	A.U. (No)	54,539			1,818			5,212		61,569		-
	A.U. (%)	89			3			8		100		-
Holding Size/Family	No./family	1.2	0.4	0.5	0.0	0.0	0.0	0.5	0.1	1.2	4.5	-

1/: Data of all communes located in the Battambang River Basin

2/: Animal units assumed as follows: cattle total & buffalo total x 0.9; pig total x 0.2

3/: Assuming crop production families as farm families

Source: Commune Survey on Crops and Livestock, 2003, Battambang, Pursat & Pailin, MAFF, 2004

Table C1-17 Farm Economy under the Present Condition: Battambang River Basin

Unit: 1000 riel

Item	Typical Farm					
	Family with Rainfed Paddy Field : 2.0 ha 1/					
	Cropping Intensity: 100%					
	Cropped Area (ha)	Production (kg)	Unit Price (riel)	Amount (1000 riel) (US\$) 2/		
1. Net Income				2,390	583	
1-1. Net Farm Income				722	176	
(1) Rice Production 3/						
Wet Season Rice	2.0	2,000	560	1,120		
Gross Return				1,120		
Production Cost 3/				966		
Net Return				154		
(2) Other Farm Products 4/						
Gross Return				811		
Livestock				394		
Fishery				112		
Other Crops				305		
Production Cost 5/				243		
Net Return				568	139	
1-2. Net Non-farm Income 4/						
(1) Net Income				1,668	407	
Wage & Salary				660		
Trade				420		
Remittance from Family Members				153		
Others				435		
2. Expenditure 4/				2,278	556	
Food				1,200		
Health/Medical				230		
Education				297		
Clothes				130		
Fuel				121		
Others				300		
3. Net Surplus (Capacity to Pay)				112	27	

1/: Land holding size: holding of 2.0 ha of rainfed paddy field

2/: Estimated by applying conversion rate of 1US\$ = Riel 4,100.-

3/: Direct sowing assumed: yield = 1.0 t/ha

4/: Estimated based on the crop budget analysis by the JICA Study Team

5/: Estimated based on the results of the Socio-economic Survey conducted by JICA Study Team in 2007

6/: Assumed to be 30% of gross return

Table C1-18 Results of Socio-economic Survey on Farming Constraints & Expectations: Battambang River Basin (1/3)

1. Design of Sample Survey

Sample Number	110 farmers	No. of communes	3 communes	Survey method	Interview survey by enumerators
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2. Farming Constraints and Improvement

2-1. Farming Constraints (agronomic & farm management)

Question What are serious agronomic & farm management constraints for farming ? (select plural answer)

Farming constraint (agronomic/farm management)	Degree of Constraints												Total Score	Rating
	Most Serious Score: 4			2nd Serious Score: 3			3rd Serious Score: 2			4th Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Low yield of crops (paddy)	40	36	160	5	5	15	6	5	12	6	10	6	193	1
Crop losses due to pest & disease	9	8	36	15	14	45	8	7	16	3	5	3	100	2
Weed problem	9	8	36	11	10	33	6	5	12	1	2	1	82	3
Crop losses due to wild animal	10	9	40	4	4	12	4	4	8	1	2	1	61	
Difficulty for hiring draft animal/machinery	3	3	12	2	2	6	2	2	4	1	2	1	23	
Labor shortage	5	5	20	5	5	15	9	8	18	3	5	3	56	
Insufficient extension services	6	5	24	5	5	15	6	5	12	6	10	6	57	
Shortage of farming capital	4	4	16	7	6	21	3	3	6	4	7	4	47	
Difficulty for obtaining quality seeds	4	4	16	12	11	36	4	4	8	5	9	5	65	
Difficulty for purchasing fertilizers	3	3	12	6	5	18	4	4	8	7	12	7	45	
Expensive farm inputs	1	1	4	4	4	12	3	3	6	3	5	3	25	
Poor soil conditions	2	2	8	10	9	30	11	10	22	6	10	6	66	
Marketing problems of products	0	0	0	0	0	0	1	1	2	0	0	0	2	
Lack of farm credit	0	0	0	1	1	3	0	0	0	2	3	2	5	
Others	14	13	56	23	21	69	43	39	86	10	17.24	10	221	
Total	110	100	440	110	100	330	110	100	220	58	100	58	1048	

2-2. Farming Constraints (physical)

Question What are serious physical constraints for farming ? (select plural answer)

Farming Constraints/Physical (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water shortage in wet season	88	80	264	8	9	16	1	2	1	281	1
Irrigation water shortage in dry season	8	7	24	33	37	66	5	9	5	95	2
Inundation/flooding	2	2	6	8	9	16	3	5	3	25	3
Drainage problem	3	3	9	31	34	66	22	39	19	9	
Lack of farm road	0	0	0	4	4	8	7	13	7	15	
Lack of transportation means	1	1	3	2	2	4	15	27	15	22	
Leveling problem of paddy field	0	0	0	2	2	4	3	5	3	7	
Others	8	7	24	2	2	4	0	0	0	28	
Total	110	100	330	90	100	118	56	100	34	482	

2-3. Marketing constraints

Marketing Constraints (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Unstable market prices of paddy/rice	72	67	216	12	13	24	5	8	5	245	1
Low market prices of paddy/rice	21	20	63	28	30	56	9	15	9	128	2
Limitation of market of paddy/rice	3	3	9	5	5	10	3	5	3	22	
Unstable market prices of other crops	4	4	12	16	17	32	12	19	12	56	3
Low market prices of other crops	4	4	12	9	10	18	7	11	7	37	
Limitation of market of other crops	0	0	0	3	3	6	1	2	1	7	
Unstable market prices of livestock	2	2	6	10	11	20	13	21	13	39	
Low market prices of livestock	1	1	3	7	7	14	9	15	9	26	
Limitation of market of livestock	0	0	0	1	1	2	0	0	0	2	
Lack of or poor farm to market road	0	0	0	3	3	6	3	5	3	9	
Total	107	100	321	94	100	188	62	100	62	571	

2-4. Reasons for limited productivity of crops in the rice field of interviewee (not specific to last year)

Reasons for Limited Productivity (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Drought in wet season	80	73	240	6	5	12	3	3	3	255	1
Water shortage in dry season	6	5	18	29	26	58	2	2	2	78	3
Shortage of farming capital	1	1	3	12	11	24	5	5	5	32	
Poor seed quality	2	2	6	8	7	16	8	7	8	30	
Poor soil	9	8	27	26	24	52	10	9	10	89	2
Limited application of fertilizer	3	3	9	4	4	8	1	1	1	18	
Damages caused by wild animal (rat)	2	2	6	7	6	14	18	16	18	38	
Poor drainage	1	1	3	4	4	8	13	12	13	24	
Flooding/inundation	2	2	6	1	1	2	1	1	1	9	
Inadequate farming technologies	0	0	0	5	5	10	5	5	5	15	
Damages caused by pest & disease	1	1	3	1	1	2	2	2	2	7	
Others	3	3	9	7	6	14	42	38	42	65	
Total	110	100	330	110	100	220	110	100	110	660	

Table C1-18 Results of Socio-economic Survey on Farming Constraints & Expectations: Battambang River Basin (2/3)

2-5. Activities/practices to improve rice productivity implemented by the interviewee in the past 3 years (plural answer)

Activities Implemented	No. & Proportion of Respondents Implemented Activities/Practices		Remarks
	No.	%	
Increased fertilization doses	90	20	No. of respondents : 110 Maximum 4 activities selected/respondent Total answers: 440
Applied of compost/manure	53	12	
Used quality seed (local variety)	52	12	
Used quality seed (high yielding variety)	54	12	
Constructed of farm pond	5	1	
Started to use water pump for irrigation	25	6	
Improved farming practices	19	4	
Improved post-harvest practices	11	3	
Changed marketing methods	1	0	
Others	130	30	
Total	440	100	

2-6. Necessary activities to improve rice productivity in the field of the interviewee (farming & farm management; plural answer)

Necessary Activities	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 4			2nd Most Required Score: 3			3rd Most Required Score: 2			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Improvement of farming practices	59	54	236	5	5	15	7	10	14	3	6	3	268	1
Use of quality seed (local variety)	8	7	32	25	24	75	10	15	20	12	24	12	139	3
Use of quality seed (high yielding variety)	18	17	72	29	28	87	13	19	26	1	2	1	186	2
Use of adequate doses of fertilizer	8	7	32	14	13	42	15	22	30	12	24	12	116	
Improved leveling of paddy field	1	1	4	4	4	12	0	0	0	1	2	1	17	
Planting at proper time	2	2	8	10	10	30	8	12	16	4	8	4	58	
Intensive weeding	6	6	24	12	12	36	12	18	24	13	26	13	97	
Formation/strengthening of farmers organization	1	1	4	1	1	3	2	3	4	4	8	4	15	
Others	6	6	24	4	3.85	12	1	1	2	0	0	0	38	
Total	109	100	436	104	100	312	68	100	136	50	100	50	934	

2-7. Necessary physical works to improve rice productivity in the field of the interviewee (plural answer)

Necessary Physical Works	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water supply for wet season	90	87	270	12	13	24	3	6	3	2	17	2	299	1
Irrigation water supply for dry season	6	6	18	54	58	108	2	4	2	3	25	3	131	2
Mitigation of inundation/flooding	3	3	9	6	6	12	9	17	9	2	17	2	32	
Drainage improvement	4	4	12	18	19	36	38	72	38	4	33	4	90	3
Others	1	1	3	3	3	6	1	2	1	1	8	1	11	
Total	104	100	312	93	100	186	53	100	53	12	100	12	563	

3. Livestock Constraints

Livestock Constraints	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Low productivity	41	38	123	15	15	30	11	18	11	164	2
Shortage of feed	12	11	36	19	20	38	7	11	7	81	3
Low or unstable market prices	3	3	9	13	13	26	4	7	4	39	
Market availability	1	1	3	2	2	4	0	0	0	7	
Losses due to diseases	50	46	150	29	30	58	4	7	4	212	1
Insufficient veterinary services	1	1	3	12	12	24	19	31	19	46	
Insufficient extension services	1	1	3	7	7	14	15	25	15	32	
Difficulty in obtaining good breed	0	0	0	0	0	0	1	2	1	1	
Others	0	0	0	0	0	0	0	0	0	0	
Total	109	100	327	97	100	194	61	100	61	582	

4. Expectations for Improvement

4-1. Farming (agronomic & farm management)

Expectations for Improvement	Degree of Expectation									Total Score	Rating
	Most Expected Score: 3			2nd Most Expected Score: 2			3rd Most Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Productivity improvement of wet season rice	99	90	297	5	5	10	1	1	1	308	1
Productivity improvement of dry season rice	0	0	0	39	35	78	5	5	5	83	3
Productivity improvement of field crops	3	3	9	32	29	64	12	11	12	85	2
Productivity improvement of vegetables	1	1	3	9	8	18	25	23	25	46	
Productivity improvement of livestock/poultry	0	0	0	1	1	2	7	6	7	9	
Increasing livestock holding size & production	1	1	3	12	11	24	12	11	12	39	
Increasing poultry holding size & production	1	1	3	1	1	2	9	8	9	14	
Strengthening/formation of farmers organizations	1	1	3	1	1	2	4	4	4	9	
Improvement of post-harvest operation	0	0	0	0	0	0	0	0	0	0	
Others	4	4	12	10	9	20	35	32	35	67	
Total	110	100	330	110	100	220	110	100	110	660	

Table C1-18 Results of Socio-economic Survey on Farming Constraints & Expectations: Battambang River Basin (3/3)

4-2. Farming (farming system)

Farming System	Degree of Expectation									Total Score	Rating
	Primarily Intended Score: 3			Secondary Intended Score: 2			Thirdly Intended Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Double cropping of rice	88	80	264	5	6	10	2	4	2	276	1
Stable single cropping of rice	13	12	39	28	31	56	10	20	10	105	3
Multiple farming (crop + livestock etc.)	6	5	18	47	52	94	12	24	12	124	2
Crop diversification	3	3	9	10	11	20	25	51	25	54	
Total	110	100	330	90	100	180	49	100	49	559	

4-3. Farming (physical)

Farming (physical)	Degree of Expectation									Total Score	Rating
	Primarily Expected Score: 3			Secondary Expected Score: 2			Thirdly Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Adequate irrigation water supply in wet season	94	85	282	7	8	14	2	4	2	298	1
Adequate irrigation water supply in dry season	6	5	18	50	54	100	5	9	5	123	2
Mitigation of inundation & flooding	2	2		7	8	14	8	14	8	22	
Construction/rehabilitation of farm road	2	2		4	4	8	6	11	6	14	
Construction/rehabilitation of farm to market road	0	0		1	1	2	6	11	6	8	
Drainage improvement	2	2	6	16	17	32	29	52	29	67	3
Leveling of paddy field	0	0		4	4	8	0	0	0	8	
Others (specify)	4	4		4	4	8	0	0	0	8	
Total	110	100	306	93	100	186	56	100	56	548	

4-4. Agricultural support services

Agricultural Support Required	Degree of Necessity of Support									Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Field Extension services (demonstration / field guidance)	72	65	216	16	15	32	7	6	7	255	1
Provision of quality seed	17	15	51	48	44	96	9	8	9	156	2
Farmer training (technical & post-harvest operation)	12	11	36	26	24	52	31	28	31	119	3
Farmer training (organization, marketing, farm management)	2	2		2	2	4	16	15	16	20	
Support to organize farmers	0	0		5	5	10	5	5	5	15	
Provision of market information	1	1	3	5	5	10	5	5	5	18	
Provision of farm credit	0	0		2	2	4	6	5	6	10	
Provision of fertilizer	5	5	15	4	4	8	8	7	8	31	
Others (specify)	1	1		0	0	0	23	21	23	23	
Total	110	100	330	108	100	324	110	100	330	990	

Table C1-19 Physical & Chemical Properties of the Major Soils Distributed in the Moug Ruessei River Basin

Soil Sub-unit/ (mapping symbol)	Pit No.	Depth (cm)	Particle Size Distribution (%)			Texture	pH		EC (1:5) ($\mu\text{s}/\text{cm}$)	Total Carbon (%)	Total Nitrogen (%)	C/N Ratio	Organic Matter (%)	Total P_2O_5 (%)	Available P_2O_5 (ppm)	CEC (meq /100g soil)	Exchangeable Cation (meq/100g soil)				Base Saturation (%)	
			Clay	Silt	Sand		(H_2O) (KCl)	(1:5)									Ca	Mg	K	Na		Total
Gleyic Luvisol (LVg)	MP1	00-12	49.7	19.4	30.9	HC	5.8	4.4	17.5	11.7	0.9	12.9	2.0	0.3	174.5	22.0	8.8	8.0	1.2	1.2	19.1	87
		12-22	47.8	17.5	34.7	HC	6.2	4.5	10.4	5.9	0.5	11.9	1.0	0.2	32.5	22.0	10.0	7.0	1.3	0.6	18.9	86
		22-50	57.7	16.7	25.6	HC	6.2	4.6	12.2	5.9	0.8	7.6	1.0	0.2	15.0	24.5	11.5	8.5	1.8	0.7	22.5	92
Plinthic Acrisol (Acp)	MP2	00-10	27.5	21.8	50.7	LiC	5.1	4.0	12.4	10.7	0.8	13.9	1.8	0.2	35.5	10.0	2.3	1.3	0.7	0.3	4.4	44
		10-24	28.0	20.0	52.0	LiC	5.6	4.1	7.2	16.8	1.4	12.0	2.9	0.1	28.5	10.0	2.5	1.0	0.7	0.2	4.3	43
		24-55	63.3	16.6	20.1	HC	6.1	4.5	6.1	5.9	0.9	6.4	1.0	0.1	43.5	25.0	7.0	6.3	1.5	0.4	15.2	61
		00-12	25.9	43.0	31.1	LiC	4.8	3.8	43.1	10.7	1.0	10.9	1.8	0.1	121.5	14.0	4.0	1.5	1.1	1.0	7.5	54
Plinthic Acrisol (ACg)	MP3	12-22	26.2	44.9	28.9	LiC	5.5	4.2	43.2	7.8	1.3	5.9	1.3	0.2	60.0	11.0	2.3	2.5	1.0	0.7	6.5	59
		22-47	33.2	39.6	27.2	LiC	5.9	4.5	9.5	5.9	0.7	8.4	1.0	0.2	29.5	15.5	6.5	5.0	0.8	0.4	12.6	82
		00-15	8.0	14.9	77.1	SL	4.2	3.5	16.7	3.9	0.6	7.0	0.7	0.1	73.0	9.5	2.5	1.5	0.8	0.3	5.0	53
		15-30	10.7	18.1	71.2	SL	7.1	5.8	122.1	3.9	0.4	11.1	0.7	0.1	18.5	6.0	2.0	1.5	1.4	0.3	5.2	87
Dystric Leptosol (LPd)	MP4	45-100	47.3	20.2	32.5	HC	5.8	3.8	26.4	3.9	0.5	8.0	0.7	0.5	156.0	17.0	4.0	1.8	3.7	1.0	10.4	61
		00-12	6.1	5.8	88.1	LS	5.6	4.4	20.3	10.7	0.7	15.3	1.8	0.1	53.0	7.0	1.5	1.0	0.4	0.2	3.1	45
		12-60	7.1	4.2	88.7	LS	5.7	4.5	4.3	3.9	0.4	11.1	0.7	0.2	35.5	6.5	1.3	1.0	0.4	0.1	2.8	43
Areni-gleyic Acrisol (ACga)	MP5	60-100	27.8	4.5	67.7	SC	5.3	4.0	8.6	5.8	0.4	16.6	1.0	0.1	39.0	12.0	3.3	1.8	0.8	0.6	6.3	53
		00-12	49.7	19.4	30.9	LS	5.0	4.1	4.7	5.8	0.6	9.2	1.0	0.1	21.0	6.0	1.5	1.0	0.4	0.06	3.0	50
		12-35	47.8	17.5	34.7	SL	6.6	4.7	8.9	3.9	0.4	11.1	0.7	0.1	48.0	7.0	1.8	1.0	2.5	0.06	5.3	76
		35-70	57.7	16.7	25.6	SL	7.0	5.2	33.6	3.9	0.4	11.1	0.7	0.1	59.0	11.5	1.8	1.5	7.9	0.12	11.3	98

Methods of soil analysis:

Texture --- pipette method

Organic matter --- ignition loss

CEC --- 1M $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$

Total C --- Black

Total P_2O_5 --- Murphy method

Exchangeable cations: 1M Ammonium Acetate pH 7

Total N --- Kjeldahl method

Available P_2O_5 --- Olsen method

TableC1-20 Properties and Suitability Classification of Soils: Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
Suitability Class	S1	-	S1/S2	S3	-		
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
Suitability Class	S1	-	S1/S2	S3	-		
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	-	S2	S3	-	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	Suitability Class	S1	-	S1/S2	S3		S3c
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARI)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	-	N	S3	-	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	-	N	S3	-	
Luvic Arenosol/Haplic Arenosol (ARI/ARh)	-						N
Suitability Class	S1			N	S3	-	
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S2tc
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
Suitability Class	S1	-	S2	S2	-		
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2c/S2tc
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	-	S1/S2	S2	-	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S2tc
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2tc/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
Suitability Class	S1 ~ N	-	S2/S3	S2	-		
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S2tc/S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	-	S2/S3	S2	-	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S2tc
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-						S2~N
Suitability Class	S1 ~ N			S2/S3	S2	-	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2~N
Suitability Class	S1 ~ N			S2	S2		

Table C1-21 Properties and Suitability Classification of Soils: Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture (t)		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c/S3tc
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	S2/S3	-	S3	S2	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c/S3tc
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	S1~S3	-	S3	S2	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	S2	-	S3	S2	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	-						S3c/S3tc
	Suitability Class	S1	S1~S3	-	S3	S2	
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	N	-		S1	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	N	-		S2	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						S1/S2
		S1	N	-			
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S3t
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2tcp/S3t
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	S2/S3	-	S2	S2	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S3t
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2cp/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	S1/S3	-	S2	S2	
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	S3	-	S1	S1	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S3t
	Suitability Class	S1	S3	-	S2	S1	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-						S2~N
	Suitability Class	S1 ~ N	S1/S3	-	S1/S2	S1/S2	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2~N
	Suitability Class	S1 ~ N	S2/S3	-	S2	S2	

Table C1-22 Land Suitability Classification of Soils Distributed in the Moug Ruessei River Basin

1. Suitability Classification for Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (60cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
	ha	%					
Gleyic Acrisol (ACg)	17,070	5	S1	S1/S2	S3	-	S3e
Plinthic Acrisol (ACp)	28,990	8	S1	S1/S2	S3	-	S3e
Areni-gleyic Acrisol (ACga)	45,930	12	S1	S2	S3	-	S3e
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	67,630	18	S1	S1/S2	S3	-	S3e
Gleyic Luvisol (LVg)	48,850	13	S1	S2	S2	-	S2tc
Dystric Fluvisol (FLd)	960	-	S1	S1/S2	S2	-	S2c/S2tc
Dystric Gleysol (GLd)	65,070	18	S1	S2	S2	-	S2tc
Dystric Leptosol (LPd)	27,720	8	S1 ~ N	S2/S3	S2	-	S2tc/S3t/N
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	67,380	18	S1 ~ N	S2/S3	S2	-	S2~N
Basin Total	369,600	100					

2. Suitability Classification for Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (30cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
	ha	%					
Gleyic Acrisol (ACg)	17,070	5	S1	S2/S3	S3	S2	S3c/S3tc
Plinthic Acrisol (ACp)	28,990	8	S1	S1~S3	S3	S2	S3c/S3tc
Areni-gleyic Acrisol (ACga)	45,930	12	S1	S2	S3	S2	S3c
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	67,630	18	S1	S1~S3	S3	S2	S3c/S3tc
Gleyic Luvisol (LVg)	48,850	13	S1	S3	S2	S2	S3t
Dystric Fluvisol (FLd)	960	-	S1	S2/S3	S2	S2	S2tep/S3t
Dystric Gleysol (GLd)	65,070	18	S1	S3	S2	S2	S3t
Dystric Leptosol (LPd)	27,720	8	S1 ~ N	S1/S3	S2	S2	S2ep/S3t/N
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	67,380	18	S1 ~ N	S1/S3	S1/S2	S1/S2	S2~N
Basin Total	369,600	100					

S1: Highly Suitable

Subject soil or land characteristics present no significant limitations for a given use

S2: Moderately Suitable

Subject soil or land characteristics present moderately severe limitations for a given use

S3: Marginally Suitable

Subject soil or land characteristics present substantially severe limitations for a given use

S4: Conditionally Suitable

Suitability class categorized for farm land (rice fields & upland fields) distributed with sandy soils;

N: Not Suitable

Subject soil or land characteristics present limitations so severe as to preclude successful sustained use of the land in the given manner.

Table C1-23 Agro-demographic Features of the Moung Ruessei River Basin

Province/District	Commune	No. of Households		Crop Producing Households (% to Total Households)		Wet Season Rice Producing Households (% to Total Households)		Landless Households (% to Total Households)		Households with less than 10 a (% to Total Households)		Households with more than 3ha (% to Total Households)		Cropped Area of Wet Season Rice in 2003 (ha)		Cropped Area of Wet Season Rice per Crop Producing Household (ha)		Irrigated Area (ha)		Irrigated Area per Crop Producing Household (ha)		
		(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(ha)	(ha)	(ha)	(ha)	(ha)	(ha)	
Battambang	Moung Ruessei	Moung	2,402	2,136	89	1,074	50	266	11	700	29	1,436	60	8,500	4.0	0	0.0	0	0.0	0	0.0	
		Kear	2,954	1,970	67	1,500	76	984	33	1,009	34	970	33	3,500	1.8	48	0.0	48	0.0	0	0.0	
		Prey Svay	2,672	2,619	98	2,582	99	53	2	1,019	38	1,600	60	7,001	2.7	20	0.0	20	0.0	0	0.0	
		Ruessei Krang	2,585	2,455	95	2,376	97	130	5	865	33	1,590	62	9,000	3.7	150	0.1	150	0.1	0	0.0	
		Chrey	2,210	1,869	85	1,800	96	341	15	97	4	1,772	80	4,003	2.1	275	0.1	275	0.1	0	0.0	
		Ta Loas	1,724	1,639	95	1,062	65	85	5	90	5	2,549	148	3,503	2.1	30	0.0	30	0.0	0	0.0	
		Kakaoh	2,286	1,754	77	1,700	97	532	23	35	2	1,719	75	5,680	3.2	10	0.0	10	0.0	0	0.0	
		Prey Touch	1,750	1,664	95	1,600	96	86	5	788	45	876	50	5,000	3.0	10	0.0	10	0.0	0	0.0	
		Robas Mongkol	2,385	2,265	95	2,000	88	120	5	160	7	2,105	88	4,030	1.8	211	0.1	211	0.1	0	0.0	
		Prek Chak	2,013	2,013	100	1,926	96	0	0	300	15	1,713	85	3,500	1.7	0	0.0	0	0.0	0	0.0	
		Prey Tralach	3,899	3,626	93	3,549	98	273	7	77	2	3,549	91	8,379	2.3	25	0.0	25	0.0	0	0.0	
		Samlot	820	820	100	810	99	0	0	0	0	0	0	50	6	3,720	4.5	0	0.0	0	0.0	
		Koas Krala	809	809	100	210	26	0	0	0	0	0	75	9	571	0.7	0	0.0	0	0.0	0	0.0
		Pursat	Bakan	Hab	662	622	94	622	100	140	21	0	0	35	5	1,907	3.1	0	0.0	0	0.0	0
Preah Phos	556			506	91	500	99	50	9	0	0	30	5	1,838	3.6	0	0.0	0	0.0	0	0.0	
Chhnal Moan	529			480	91	480	100	380	72	0	0	25	5	2,190	4.6	0	0.0	0	0.0	0	0.0	
Boeng Bat Kandaol	1,849			1,718	93	1,718	100	131	7	0	0	815	44	4,062	2.4	123	0.1	123	0.1	0	0.0	
Boeng Klnar	2,344			2,092	89	2,092	100	252	11	0	0	198	8	2,564	1.2	0	0.0	0	0.0	0	0.0	
Klnar Totieng	1,478			1,382	94	1,382	100	96	6	0	0	290	20	2,967	2.1	15	0.0	15	0.0	0	0.0	
Me Tuek	2,443			2,326	95	2,126	91	117	5	120	5	320	13	3,411	1.5	250	0.1	250	0.1	0	0.0	
Ou Ta Paong	2,877			2,708	94	2,708	100	169	6	65	2	825	29	5,115	1.9	350	0.1	350	0.1	0	0.0	
Rumlech	1,548			1,520	98	1,520	100	28	2	0	0	890	57	2,813	1.9	250	0.2	250	0.2	0	0.0	
Svay Doun Kaev	1,071			1,035	97	1,035	100	36	3	0	0	549	51	1,188	1.1	37	0.0	37	0.0	0	0.0	
Ta Lou	2,751			2,726	99	2,726	100	25	1	0	0	1,002	36	4,554	1.7	0	0.0	0	0.0	0	0.0	
Trapeang Chong	3,326			2,936	88	2,936	100	390	12	498	15	396	12	2,979	1.0	0	0.0	0	0.0	0	0.0	
Bak Chenhichien	1,278			1,263	99	1,204	95	15	1	0	0	422	33	1,315	1.0	33	0.0	33	0.0	0	0.0	
Piteah Rung	2,573			2,573	100	2,573	100	0	0	0	0	1,231	48	2,836	1.1	215	0.1	215	0.1	0	0.0	
Veal Veateng	Pramaoy	Samraong	1,948	1,925	99	1,868	97	23	1	0	0	1,200	62	1,382	0.7	2	0.0	2	0.0	0	0.0	
		Pramaoy	550	515	94	515	100	35	6	0	0	0	0	187	0.4	0	0.0	0	0.0	0	0.0	
		Anlong Reab	273	267	98	267	100	6	2	0	0	0	0	88	0.3	0	0.0	0	0.0	0	0.0	
		Ou Saom	203	203	100	203	100	0	0	0	0	0	0	114	0.6	0	0.0	0	0.0	0	0.0	
Whole River Basin		56,768	52,436	92	48,664	93	4,763	8	5,814	10	28,232	50	107,897	2.1	2,054	0.0	2,054	0.0	0	0.0		

Source: Commune Survey on Crops and Livestock, 2003, MAFF

Table C1-24 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Moug Ruessei River Basin (1/2)

Province/District	Commune	Year	Wet-season Rice Production						Dry-season Rice Production					
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated			
Battambang	Moug	2006	8,632	8,632	0	8,632	1.5	12,948	0	0	0	0		0
		2003	8,500			8,500	1.5	12,819	0			0		0
		Average	8,566			8,566	1.5	12,884	0			0		0
	Kear	2006	4,052	3,402	650	4,052	2.5	10,130	24	24	0	24	3.0	72
		2003	3,500			3,501	1.4	5,058	0			0		0
		Average	3,776			3,777	2.0	7,594	12			12	3.0	36
	Prey Svay	2006	7,024	7,024	0	7,024	1.2	8,429	0	0	0	0		0
		2003	7,001			7,001	1.4	9,541	0			0		0
		Average	7,013			7,013	1.3	8,985	0			0		0
	Ruessei Krang	2006	8,060	8,060	0	8,060	1.5	12,090	210	0	210	210	3.0	630
		2003	9,000			9,000	1.3	11,338	150			150	2.0	300
		Average	8,530			8,530	1.4	11,714	180			180	2.6	465
	Chrey	2006	4,988	2,997	1,991	4,988	2.0	9,976	147	100	47	147	2.5	368
		2003	4,003			4,003	1.4	5,690	50			50	2.0	100
		Average	4,496			4,496	1.7	7,833	99			99	2.4	234
	Ta Loas	2006	5,300	4,897	403	5,300	2.0	10,600	182	0	182	182	3.0	546
		2003	3,503			3,503	1.7	5,805	30			30	2.0	60
		Average	4,402			4,402	1.9	8,203	106			106	2.9	303
	Kakaoh	2006	5,805	5,805	0	5,805	1.3	7,547	0	0	0	0		0
		2003	5,680			5,680	1.5	8,765	10			10	2.0	20
		Average	5,743			5,743	1.4	8,156	5			5	2.0	10
	Prey Touch	2006	6,702	5,186	1,516	6,702	2.0	13,404	5	0	5	5	4.0	20
		2003	5,000			5,000	1.5	7,693	10			10	1.8	18
		Average	5,851			5,851	1.8	10,549	8			8	2.5	19
	Robas Mongkol	2006	4,651	4,300	351	4,651	1.5	6,977	0	0	0	0		0
		2003	4,030			4,030	1.4	5,462	0			0		0
		Average	4,341			4,341	1.4	6,219	0			0		0
	Prek Chik	2006	6,827	6,827	0	6,827	1.5	10,241	0	0	0	0		0
		2003	3,500			3,500	1.3	4,714	0			0		0
		Average	5,164			5,164	1.4	7,477	0			0		0
Prey Tralach	2006	12,950	12,950	0	12,950	1.0	12,950	0	0	0	0		0	
	2003	8,379			8,379	1.6	13,144	0			0		0	
	Average	10,665			10,665	1.2	13,047	0			0		0	
	Sub-total	68,544			68,544	1.5	102,660	409			409	2.6	1,067	
Koas Krala	Hab	2006	1,739	1,739	0	1,739	0.7	1,217	0	0	0	0		0
		2003	1,907			1,837	1.6	2,909	0			0		0
		Average	1,823			1,788	1.2	2,063	0			0		0
	Preah Phos	2006	554	554	0	554	1.0	554	0	0	0	0		0
		2003	1,838			1,788	1.5	2,757	0			0		0
		Average	1,196			1,171	1.4	1,656	0			0		0
	Chhnal Moan	2006	1,170	1,170	0	1,170	1.0	1,170	0	0	0	0		0
		2003	13,878			13,809	1.8	25,118	0			0		0
		Average	7,524			7,490	1.8	13,144	0			0		0
	Sub-total	10,543			10,449	1.6	16,863	0			0		0	
Samlout	Samlout	2006	400	400	0	400	2.0	800	0	0	0		0	
		2003	3,720			3,720	2.2	8,106	0			0		0
		Average	2,060			2,060	2.2	4,453	0			0		0
Province Total		81,147			81,053	1.5	123,976	409			409	2.6	1,067	

Table C1-24 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Moung Ruessei River Basin (2/2)

Province/District	Commune	Year	Wet-season Rice Production						Dry-season Rice Production						
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated				
Pursat	Bakan	Boeng Bat Kanc	2006	5,753	5,753	0	5,753	1.8	10,355	18	0	18	18	2.0	36
		2003	4,062			4,062	1.1	4,321	0			0	0		0
		Average	4,908			4,908	1.5	7,338	9			9	2.0	18	
	Boeng Khnar	2006	3,401	3,401	0	3,401	1.5	5,102	0	0	0	0	0		0
		2003	2,564			2,564	1.3	3,386	0			0	0		0
		Average	2,983			2,983	1.4	4,244	0			0	0		0
	Khnar Totueng	2006	3,840	3,515	325	3,840	1.5	5,760	12	0	12	12	1.3	16	
		2003	2,967			2,967	1.1	3,281	0			0		0	
		Average	3,404			3,404	1.3	4,521	6			6	1.3	8	
	Me Tuek	2006	4,110	4,110	0	4,110	1.3	5,343	235	0	235	235	2.0	470	
		2003	3,411			3,411	1.1	3,721	0			0		0	
		Average	3,761			3,761	1.2	4,532	118			118	2.0	235	
	Ou Ta Paong	2006	6,000	4,500	1,500	6,000	1.5	9,000	250	50	200	250	2.5	625	
		2003	5,115			5,115	1.1	5,760	0			0		0	
		Average	5,558			5,558	1.3	7,380	125			125	2.5	313	
	Rumlech	2006	4,650	4,650	0	4,650	1.5	6,975	0	0	0	0		0	
		2003	2,813			2,813	1.3	3,710	0			0		0	
		Average	3,732			3,732	1.4	5,342	0			0		0	
	Svay Doun Kae	2006	1,759	350	1,409	1,759	1.0	1,759	530	530	0	530	3.0	1,590	
		2003	1,188			1,188	1.2	1,367	0			0		0	
		Average	1,474			1,474	1.1	1,563	265			265	3.0	795	
Ta Lou	2006	7,811	7,811	0	7,811	1.8	14,060	0	0	0	0		0		
	2003	4,554			4,554	1.4	6,387	0			0		0		
	Average	6,183			6,183	1.7	10,223	0			0		0		
Trapeang Chong	2006	4,200	3,650	550	4,200	2.0	8,400	15	0	15	15	2.5	38		
	2003	2,979			2,979	1.1	3,334	0			0		0		
	Average	3,590			3,590	1.6	5,867	8			8	2.5	19		
	Sub-total		35,589		35,589	1.4	51,009	530			530	2.6	1,387		
Phnum Kravanh	Bak Chenhchier	2006	1,664	464	1,200	1,664	1.1	1,897	0	0	0	0		0	
		2003	1,315			1,315	1.4	1,830	0			0		0	
		Average	1,490			1,490	1.3	1,863	0			0		0	
	Phteah Rung	2006	4,178	3,363	815	4,178	1.5	6,267	15	0	15	15	1.5	23	
		2003	2,836			2,836	1.5	4,196	0			0		0	
		Average	3,507			3,507	1.5	5,231	8			8	1.5	11	
	Samraong	2006	1,625	1,625	0	1,625	1.2	1,950	0	0	0	0		0	
		2003	1,382			1,382	1.1	1,589	2			2	2.0	4	
Average		1,504			1,504	1.2	1,769	1			1	2.0	2		
	Sub-total		6,500		6,500	1.4	8,864	9			9	1.6	13		
Veal Veang	Pramaoy	2006	0	0	0	0	0.0	0	0	0	0	0		0	
		2003	187			165	2.3	376	0			0		0	
		Average	94			83	2.3	188	0			0		0	
	Anlong Reab	2006	0	0	0	0	0.0	0	0	0	0	0		0	
		2003	88			70	3.0	208	0			0		0	
		Average	44			35	3.0	104	0			0		0	
	Ou Saom	2006	0	0	0	0	0.0	0	0	0	0	0		0	
		2003	114			98	2.7	262	0			0		0	
Average		57			49	2.7	131	0			0		0		
	Sub-total		195		167	2.5	423	0			0		0		
Province Total		42,283		42,255	1.4	60,296	539			539	2.6	1,400			
Whole River Basin		123,430		123,308	1.5	184,272	948			948	2.6	2,467			

Source: 2003 - Commune Survey on Crops and Livestock 2003, MAFF, 2004; 2006 - Dept. of Planning, Battambang & Pursat

Table C1-25 Rice Cropped Area, Production & Yield from 2002 to 2005 in the Moung Ruessei River Basin: SEILA Data Base

Province/District	Commune	Type	Wet Season						Dry Season					
			Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)
				Rainfed Rice	Irrigated Rice	Total				Irrigated Rice	Recession Rice	Total		
Battambang														
Moung Ruessei	Moung	Rural	2	9,504	0	9,504	11,243	1.2						
	Kear	Rural	2	2,780	381	3,161	3,827	1.2	2	254	409	663	1,646	2.5
	Prey Svay	Rural	3	7,168	0	7,168	7,320	1.0						
	Ruessei Krang	Rural	3	8,643	191	8,834	6,975	0.8	4	272	53	325	550	1.7
	Chrey	Rural	3	2,510	2,006	4,516	5,589	1.2	4	240	147	386	627	1.6
	Ta Loas	Rural	3	4,307	335	4,642	7,223	1.6	3	66	140	206	420	2.0
	Kakaoh	Rural	3	5,386	133	5,519	4,629	0.8						
	Prey Touch	Rural	2	6,275	0	6,275	7,382	1.2						
	Robas Mongkol	Rural	2	4,979	82	5,061	6,416	1.3						
	Prek Chik	Rural	3	2,824	190	3,013	3,442	1.1	4	12	16	27	31	1.1
Prey Tralach	Rural	4	6,056	0	6,056	5,851	1.0	3	35	3	27	43	1.6	
	Sub-total			60,430	3,318	63,748	69,897	1.1		879	767	1,634	3,317	2.0
Koss Krab	Hab	Rural	2	1,739	-	1,739	1,766	1.0						
	Preah Phos	Rural	2	7,452	-	7,452	6,955	0.9						
	Chhnol Moan	Rural	3	1,487	-	1,487	1,564	1.1						
	Sub-total			10,678	-	10,678	10,285	1.0		0	0	0	0	
Samlout	Samlout	Rural	2	390	10	400	765	1.9						
	Province Total			71,498	3,328	74,825	80,946	1.1		879	767	1,634	3,317	2.0
Pursat														
Bakan	Boeng Bat Kandaol	Rural	4	4,662	0	5,049	8,408	1.7	3	0	100	100	160	1.6
	Boeng Khnar	Rural	3	3,630	85	3,715	3,576	1.0	1	25	25	50	62	1.2
	Khnar Totueng	Rural	4	2,719	10	3,009	3,958	1.3						
	Me Tuek	Rural	4	3,755	598	4,353	7,107	1.6	3	238	173	411	796	1.9
	Ou Ta Paong	Rural	2	6,169	125	6,294	10,107	1.6	1	250	0	250	875	3.5
	Rumlech	Rural	3	4,038	0	4,038	4,929	1.2						
	Svay Doun Kaev	Rural	1	1,500	649	2,149	2,250	1.0	3	148	148	297	770	2.6
	Ta Lou	Rural	4	4,684	0	4,684	7,871	1.7						
	Trapeang Chong	Rural	4	3,539	89	3,628	5,165	1.4						
	Sub-total			34,696	1,555	36,919	53,371	1.4		661	447	1,108	2,664	2.4
Phnum Kravanh	Bak Chenhchien	Rural	4	1,622	17	1,639	1,684	1.0	3	24	16	40	36	0.9
	Phteah Rung	Rural	4	3,274	235	3,509	4,874	1.4	2	345	345	690	577	0.8
	Samraong	Rural	3	1,214	0	1,214	862	0.7						
	Sub-total			6,110	252	6,362	7,421	1.2		369	361	730	613	0.8
Véal Veaeng	Ou Saom	Rural	2	133	0	133	221	1.7						
	Anlong Reab	Rural	1	108	0	108	105	1.0						
	Pramaoy	Rural	3	173	0	173	166	1.0						
		Sub-total			413	0	413	492	1.2		0	0	0	0
	Province Total			41,219	1,807	43,694	61,283	1.4		1,030	808	1,837	3,277	1.8
	River Basin Total			112,717	5,135	118,519	142,230	1.2		1,909	1,574	3,471	6,594	1.9

1/: No. of years of data used for estimating average figures

Source: SEILA Data Base, 2002 - 2005

Table C1-26 Rice Planting Areas by Plowing Method & Planting Method in the Moung Ruessei River Basin 1/

Province/District	Commune	Year	Plowing (ha.)					Transplanting (ha.)					Direct sowing					Total			
			Total	Cattle	Hand	Tractor	Tractor	Early			Medium			Late			Total				
								Normal	IR	Medium	Late	Total	Normal	IR	Plantation	Medium			Late	Floating	
Battambang	Moung Ruessei	Moung	4	9,290	4,092	2,697	2,501	27	0	42	178	247	2,260	0	1,780	5,006	0	9,046	9,292		
		Kear	4	3,500	1,461	1,094	945	21	0	25	165	211	728	18	1,455	1,777	0	3,289	3,500		
		Prey Svay	4	7,141	2,343	2,635	2,163	6	0	15	47	67	1,855	1	1,455	3,764	0	7,074	7,141		
		Ruessei Krang	4	8,992	3,206	3,179	2,607	28	0	36	63	127	2,616	55	1,586	3,950	658	8,864	8,992		
		Chrey	4	4,175	1,332	1,667	1,181	13	0	23	342	378	425	138	0	580	1,919	739	3,801	4,179	
		Ta Leas	4	4,045	1,606	1,321	1,119	36	0	30	264	330	291	156	0	426	2,668	175	3,716	4,046	
		Kakaoh	4	5,545	1,889	1,880	1,776	7	0	6	34	47	616	1	0	735	3,971	177	5,499	5,545	
		Kakaoh	4	5,097	1,804	1,851	1,443	0	0	1	29	30	631	0	0	911	3,448	80	5,069	5,099	
		Robas Mongkol	4	4,008	1,635	1,396	976	31	0	20	102	153	904	1	0	882	2,069	0	3,855	4,008	
		Prek Chik	4	3,500	1,485	1,304	711	33	0	28	80	141	834	1	0	973	1,552	0	3,359	3,500	
		Prey Tralach	4	8,732	4,256	2,689	1,788	78	1	70	197	347	1,849	0	8	2,018	4,518	0	8,393	8,740	
		Province Total		Ha	64,027	25,109	21,711	17,208	280	1	296	1,500	2,076	13,007	370	8	12,111	34,640	1,828	61,964	64,040
				%	100	39	34	27					3							97	100
		Pursat	Bakan	Boeng Bat Kanda	3	5,957	4,738	1,219	1,594	124	0	1,508	1,121	4,347	28	0	113	217	1,261	1,650	5,997
Boeng Khnar	3			3,243	2,846	397	397	881	19	1,336	475	2,711	107	6	0	128	155	106	503	3,213	
Khmar Toueng	3			3,806	3,440	366	366	1,467	48	1,372	488	3,374	120	3	0	215	15	0	353	3,727	
Me Tuek	3			4,332	2,157	2,175	2,87	287	108	655	591	1,640	124	104	0	67	163	2,188	2,646		
Ou Ta Paeng	3			6,232	3,645	2,587	2,587	738	71	672	641	2,122	422	172	0	366	285	2,618	3,863		
Rumlech	3			4,438	4,046	392	392	1,316	111	1,474	778	3,680	347	4	0	194	211	0	755	4,435	
Svay Doun Kaev	3			2,229	1,569	660	660	33	122	36	26	217	147	169	0	546	357	537	1,757		
Ta Lou	3			4,857	4,499	359	359	1,182	116	1,435	991	3,724	127	146	0	166	154	917	1,511		
Trapeang Chong	3			4,265	3,724	542	542	1,260	47	1,369	888	3,565	144	3	0	168	209	0	524		
Sub-total	Ha			39,360	30,663	8,697	8,697	78	22	9,857	5,999	25,379	1,566	639	0	1,963	1,767	7,626	13,561		
	%			100	78	22						65							35	100	
Pinum Kravanh	Bak Chenhchien			3	1,637	1,414	223	223	312	38	376	293	1,018	2	12	0	8	590	0	612	
	Piteah Rung			3	4,078	4,000	78	78	781	48	1,287	1,654	3,771	8	7	12	47	121	0	197	
	Samraong			3	1,773	1,551	223	223	379	91	626	583	1,679	18	7	84	5	37	0	150	
	Sub-total	Ha	7,488	6,966	524	524	1,472	177	2,289	2,531	6,468	28	26	96	60	749	0	958			
	%	100	93	7						87							13	100			
Province Total		Ha	46,848	37,627	9,221	9,221	10,230	942	12,146	8,530	31,847	1,595	665	96	2,022	2,515	7,626	14,520			
	%	100	80	20						69								31			
Whole River Basin		Ha	110,875	62,736	21,711	26,428	10,510	943	12,441	10,030	33,924	14,602	1,035	104	14,133	37,155	9,455	76,484			
	%	100	57	20						31								69			

1/: Data of all communes located in the Moung Ruessei River Basin; Not including communes of Koas Kralla and Samlout Districts in Battambang and Veal Veang District in those communes is some 2000 ha only.

2/: 4 --- average figures of 3 years from 2003 to 2006; 3 --- average figures of 3 years from 2004 to 2006

Source: PDA Battambang and Pursat

Target C1-28 Present Status of Irrigation Systems in the Moung Russei River Basin (2/2)

Province/ District	System Size	System No.	Sub Code	System	Commune	Irrigation Method	Flood Influence	Status	Present Condition												Yield Data												
									Area (ha)			Rice Cropped Area (ha)			Intensity (%)			Inventory I/			PDA 2/			SEILA 3/									
									Cropping Season		Annual	Recession		Annual	Wet 2		Wet 1	Recession		Annual	Dry		Wet 2	Recession		Annual	SWD		RWT/D	W		D	
									Wet 1	Wet 2		Dry	Wet 1		Wet 2	Dry		Wet 1	Wet 2		Dry	Wet 1		Wet 2	Dry		Wet 1	Wet 2		Dry	Wet 1	Wet 2	Dry
Pursat Bakam	> 100 ha	1	BAK-001	Thies Tachap	Lobk Sar	Gravty/Pump	No	M	1,140	0	1,140	20	0	1,160	0	100	2	0	102	2.2	0.8-0.9	1.6	1.6	0.7	0.7								
		2	BAK-002	Bakam	Tropeang Chlong	Gravty	No	F	560	0	560	5	0	565	0	100	1	0	101	2.2	0.8-0.9	1.6	2.5	1.4									
		3	BAK-003	Krosch Sech	Khnuh Tolbung	Gravty/Pump	No	P	763	0	763	7	0	770	0	100	1	0	101	2.2	0.8-0.9	1.3	1.3	1.3									
		4	BAK-004	Anlong Sdao	Rumlich	Gravty	No	P	293	0	293	0	0	293	0	100	0	0	100	2.2	0.8-0.9	1.4		1.2									
		5	BAK-005	Anlong Svey	Rumlich	Gravty/Pump	No	M	669	0	669	0	0	669	0	100	0	0	100	2.2	0.8-0.9	1.4		1.2									
		6	BAK-006	Rensan Pra Yaul	Sway Daun Koo	Gravty/Pump	No	P	291	0	291	10	0	301	0	100	3	0	103	2.2	0.8-0.9	1.1	3.0	1.0	2.6								
		7	BAK-007	Boung Kamseng	O Tapang	Gravty/Pump	No	P	618	0	618	43	0	661	0	100	7	0	107	2.2	0.8-0.9	1.3	2.5	1.6	3.5								
		8	BAK-008	Wet Chre	Boung Khnar	Gravty	No	M	1,000	0	1,000	20	0	1,020	0	100	2	0	102	2.2	0.8-0.9	1.4		1.0	1.2								
		9	BAK-009	Kompang	Sway Daun Koo	Gravty/Pump	No	F	1,140	0	1,140	730	0	1,140	0	36	64	0	100	2.3	3.9		1.1	3.0	1.0	2.6							
		10	BAK-010	Ta Nui	O Tapang	Gravty/Pump	No	F	440	0	380	60	0	440	0	86	14	0	100	2.2	0.8-0.9	1.3	2.5	1.6	3.5								
		11	BAK-011	Anlong Khouk	O Tapang	-	No	M	765	0	367	32	366	765	0	48	4	48	100	2.2	0.8-0.9	1.3	2.5	1.6	3.5								
		12	BAK-012	Boung Kambor	Me Teuk	Gravty/Pump	No	P	380	0	195	15	170	380	0	51	4	45	100	2.2	0.8-0.9	1.2	2.0	1.6	1.9								
		13	BAK-013	Wet Loep	Me Teuk	Gravty/Pump	No	P	569	0	165	60	344	569	0	29	11	60	100	2.3	3.5		1.2	2.0	1.6	1.9							
		14	BAK-014	Keik Khaech	Me Teuk	Gravty/Pump	No	P	1,180	0	436	83	661	1,180	0	37	7	56	100	2.2	0.8-0.9	1.2	2.0	1.6	1.9								
River Basin Total									12,058	0	9,057	1,535	1,571	12,163	0	75.1	12.7	13.0	100.9														

1/: Supplemental inventory survey by JICA Study Team 2/: 2003 - Commune Survey on Crops and Livestock 2003; MAFF, 2004; 2006 - Dept. of Planning, Battambang & Pursat

Source: Inventory Survey, JICA, 2006

Table C1-29 Upland Crops Production Statistics in the Moung Ruessei River Basin in 2003 & 2006 1/

Province/ District	Commune	Year 1/	Corn			Soy bean			Mung bean			Peanut			Cassava			Sweet potato			Sesame			Total Production (tons)	
			Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)		
Battambang	Moung Ruessei	Moung	0	0	0	11	0.7	7	10	1.0	10	5	37.6	169	3	6.0	18	1	1.2	1	29				
		Kear	3	2.9	7	0	0	8	0.7	5	8	0.6	5	9.2	74	6	5.3	32	1	0.4	0	33			
		Prey Sway	4	2.5	9	0	0	3	0.8	2	5	0.7	3	12.2	43	12	6.4	74	1	1.2	1	27			
		Ruessei Krang	2	2.0	4	0	0	3	0.6	2	0	0	1	10.0	5	1	3.5	4	0	0	0	6			
		Chrey	1	2.8	3	0	0	1	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
		Ta Leas	2	1	2.5	3	0	0	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	2		
		Kakap	2	2	2.1	4	0	0	1	0.7	0	0	0	10.0	10	4	9.1	32	0	0	0	0	8		
		Prey Touch	2	0	0	0	0	0	0	0	1	0.9	1	20.0	20	1	8.0	4	0	0	0	0	3		
		Robas Mongkol	2	12	2.6	30	0	0	8	0.5	4	12	0.7	8	11.3	68	4	12.0	42	0.8	0	41			
		Prek Chik	2	299	7.8	2,333	26	2.6	67	52	1.0	50	16	0.9	14	11	8.5	94	6	6.5	39	2	0.5	1	411
		Prey Tralach	2	296	7.8	2,318	21	3.0	62	55	0.9	51	15	1.0	14	22	10.7	229	23	4.1	95	2	0.6	1	431
		Sub-total		618	7.6	4,711	46	2.8	128	141	0.9	122	66	0.8	55	57	12.5	711	58	5.8	339	6	0.7	4	991
		Koas Krala	Hab	2	7	1.1	7	0	0	0	0.3	0	2	1.0	2	11	5.8	64	1	2.9	4	3	0.8	2	24
			Preah Phos	2	3	1.2	3	0	0	0	0	3	0.8	2	7	6.5	46	3	3.4	9	4	0.8	3	19	
Chhnal Moan	2		1	5.0	3	0	0	2	0.6	1	5	0.8	4	9	7.0	63	3	3.0	8	4	0.8	3	23		
Sub-total			10	1.3	13	0	0	2	0.5	1	9	0.8	8	27	64	173	6	3.1	20	11	0.8	8	65		
Samlout	Samlout	2	14	4.1	58	323	1.6	508	19	1.1	20	442	1.3	558	0	0	0	0	3	0.4	1	800			
	Sub-total		14	4.1	58	323	1.6	508	19	1.1	20	442	1.3	558	0	0	0	0	3	0.4	1	800			
	Province Total		642	7.5	4,781	369	1.7	636	162	0.9	144	516	1.2	620	84	10.5	883	64	5.6	358	19	0.7	13	1,855	
Pursat	Bakan	Boeng Bat Kand	2	1	1.0	1	0	0	1	1.5	2	0	2	5.8	9	3	4.5	15	0	0	0	7			
		Boeng Khnar	2	0	0	0	0	2	0.6	1	0	0	8	2.5	20	1	3.0	2	0	0.6	0	10			
		Khmar Totueng	2	2	2.2	3	0	0	1	0.7	1	1	1.5	3	4.1	10	2	3.1	6	0	0	8			
		Me Tuek	2	1	1.0	1	0	0	1	0.5	1	2	0.8	1	0	0	8	2.7	20	0	0	11			
		Ou Ta Paong	2	3	1.2	3	0	0	4	0.6	2	2	0.9	2	4.6	9	2	3.0	6	1	1.0	13			
		Rumlech	2	3	1.0	3	0	0	75	1.5	113	61	1.5	91	6	1.8	11	1	2.6	2	0	0	145		
		Svay Doun Kaey	2	1	1.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
		Ta Lou	2	0	0	0	0	0	6	0.5	3	2	0.8	2	3	5.7	17	2	3.7	7	0	0	13		
		Trapeang Chong	2	10	1.5	15	0	0	8	0.5	4	5	0.8	4	7	4.5	29	4	3.2	14	0	0	33		
		Sub-total		9	1.3	11	0	0	90	1.4	121	67	1.4	96	23	3.3	76	18	3.2	58	1	0.9	1	207	
		Phnum Kravai	Bak Chenhehien	2	6	1.4	8	0	0	7	3.6	24	5	3.0	15	4	4.4	16	1	2.0	2	12	1.4	17	34
			Phiteah Rung	2	11	1.1	12	0	0	25	0.9	23	35	0.8	28	0	0	0	0	0	0	0	0	0	71
			Samraong	2	31	5.2	160	3	3.0	9	2.7	0.6	16	18	0.7	12	10	5.0	50	1	7.5	8	2	1.8	49
			Sub-total		48	3.8	181	3	3.0	9	5.8	1.1	62	57	1.0	54	14	4.9	66	2	5.1	9	14	1.4	20
Veal Veang	Pramaoy	2	5	0.5	3	7	1.0	7	4	1.0	4	1	1.0	1	0	0	0	0	9	1.5	13	25			
	Anlong Reab	2	5	0.5	3	7	1.0	7	4	1.0	4	1	1.0	1	0	0	0	0	9	1.5	13	25			
	Ou Saom	2	4	1.0	4	0	0	5	0.3	2	3	0.5	2	0	0	0	0	0	0	0	0	12			
Sub-total		14	0.6	9	13	1.0	13	12	0.7	9	5	0.7	4	0	0	0	0	0	0	0	1.7	1.5	26	61	
Prvince Total	Sub-total		70	2.9	200	16	1.4	22	160	1.2	192	129	1.2	154	37	3.9	141	20	3.4	67	32	1.5	46	463	
	ha		712	7.0	4,981	395	1.7	658	321	1.0	336	645	1.2	774	121	8.5	1,024	84	5.1	426	51	1.2	59	2,318	
Whole River Basin	%		31		17			14		14		28		5		4		4		2		2		100	

1/: Data of all communes located in the Pursat River Basin

2/: 2 --- average figures of 2 years from 2003 & 2006

Source: PDA Battambang & Pursat

Table C1-30 Vegetable Production in the Moug Ruessei River Basin in 2003 1/

Province/ District	Commune	Cultivated Area (ha.)			Harvested Area (ha)			Yield (tons/ha)			Annual Production (Tons)		
		Total	Season		Total	Season		Total	Season		Total	Season	
			Wet	Dry		Wet	Dry		Wet	Dry		Wet	Dry
Battambang Moug Ruessei	Moug	60	13	47	60	13	47	2.4	2.0	2.5	144	26	118
	Kear	70	20	50	70	20	50	1.7	1.6	1.8	122	32	90
	Prey Svay	38	15	23	38	15	23	4.6	4.0	5.0	175	60	115
	Ruessei Krang	12	4	8	12	4	8	1.8	2.0	1.7	22	8	14
	Chrey	28	8	20	28	8	20	2.0	1.9	2.0	55	15	40
	Ta Loas	18	8	10	18	8	10	1.9	1.8	1.9	33	14	19
	Kakaoh	19	11	8	19	11	8	1.9	1.9	2.0	37	21	16
	Prey Touch	19	8	11	19	8	11	2.8	2.5	3.0	53	20	33
	Robas Mongkol	340	32	308	340	32	308	1.3	1.8	1.2	427	58	370
	Prek Chik	106	20	86	106	20	86	1.8	1.8	1.8	191	36	155
	Prey Tralach	100	20	80	100	20	80	1.2	1.2	1.2	120	24	96
Samlot	Samlot	28	14	14	18	14	14	5.5	5.0	6.0	154	70	84
Koas Krala	Kaos Krala	0	0	0	0	0	0				0	0	0
	Hab	5	5	0	5	5	0	3.2	3.2		16	16	0
	Preah Phos	14	14	0	14	14	0	4.1	4.1		57	57	0
	Chhnal Moan	14	14	0	14	14	0	2.5	2.5		35	35	0
Pursat Bakan	Boeng Bat Kandaol	5	5	0	5	5	0	2.5	2.5		13	13	0
	Boeng Khnar	4	4	0	4	4	0	6.5	6.5		26	26	0
	Khnar Totueng	0	0	0	0	0	0				0	0	0
	Me Tuek	3	3	0	3	3	0	6.5	6.5		20	20	0
	Ou Ta Paong	0	0	0	0	0	0				0	0	0
	Rumlech	8	8	0	8	8	0	6.5	6.5		52	52	0
	Svay Doun Kaev	2	2	0	2	2	0	6.5	6.5		13	13	0
	Ta Lou	9	9	0	9	9	0	6.5	6.5		59	59	0
	Trapeang Chong	8	0	8	8	0	8	6.5	0.0	6.5	52	0	52
Phnum Kravanh	Bak Chenhchien	6	5	1	6	5	1	7.0	7.0	7.0	42	35	7
	Phteah Rung	70	70	0	70	70	0	7.0	7.0		490	490	0
	Samraong	4	3	1	4	3	1	7.0	7.0	7.0	28	21	7
Veal Veang	Pramaoy	0	0	0	0	0	0				0	0	0
	Anlong Reab	0	0	0	0	0	0				0	0	0
	Ou Saom	0	0	0	0	0	0				0	0	0
Whole River Basin		990	315	675	980	315	675	2.5	3.9	1.8	2,436	1,221	1,215

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Battambang Pursat & Pilin, MAFF, 2004

Table C1-31 Fruit Tree Planted Area in the Mung Ruessei River Basin in 2003 1/

Province/ District	Commune	Planted Areas of Fruit Trees (ha)												Total
		Banana	Cashew	Coconut	Longan	Mango	Milk Fruit	Sapodilla	Jack fruit	Custard	Orange	Guava	Pineapple	
Battambang Moung Ruessei	Moung	15	0	8	0	6	1	2	1	1	1	1	4	40
	Kear	12	0	16	0	10	0	7	2	0	4	2	20	73
	Prey Svay	5	0	2	0	0	0	0	0	0	0	1	1	9
	Ruessei Krang	2	1	0	0	2	0	0	0	0	0	0	0	5
	Chrey	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ta Loas	10	0	2	0	1	2	2	1	1	4	3	2	28
	Kakaoh	10	0	0	0	0	0	0	0	0	0	0	0	10
	Prey Touch	2	1	3	0	6	0	1	0	0	0	0	0	13
	Robas Mongkol	7	0	0	0	0	0	10	0	0	0	0	35	52
	Prek Chik	20	0	7	0	5	0	2	7	0	20	0	10	71
Prey Tralach	10	0	3	0	0	0	0	0	0	0	0	4	17	
Koas Krala	Kaos Krala	15	2	6	3	10	8	9	7	4	5	6	4	79
	Hab	10	1	6	4	8	5	3	7	4	8	3	5	64
	Preah Phos	5	2	11	9	10	8	6	7	5	7	6	7	83
	Chhnal Moan	10	2	9	7	9	7	5	9	7	15	8	6	94
Purast Bakan	Boeng Bat Kandaol	6	0	0	0	0	0	0	0	0	0	0	0	6
	Boeng Khnar	3	0	0	0	1	0	0	0	0	0	0	0	4
	Khnar Totueng	0	0	5	0	3	0	1	0	0	4	0	0	13
	Me Tuek	4	0	0	0	0	0	0	0	0	0	0	0	4
	Ou Ta Paong	4	0	3	0	2	0	0	0	0	0	0	0	9
	Rumlech	2	0	0	0	0	0	0	0	0	0	0	0	2
	Svay Doun Kaev	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ta Lou	3	0	0	0	0	0	0	0	0	0	0	0	3
	Trapeang Chong	22	0	6	0	5	0	4	4	0	10	0	0	51
Phnum Kravanh	Bak Chenhchien	0	0	0	0	2	0	0	0	0	0	0	0	1.5
	Phteah Rung	0	0	0	0	0	0	0	0	0	0	0	0	0
	Samraong	4	2	0	0	3	0	0	0	0	11	0	0	20
Veal Veang	Pramaoy	0	0	0	0	0	0	0	0	0	0	0	0	0
	Anlong Reab	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ou Saom	0	0	0	0	0	0	0	0	0	0	0	0	0
Whole River Basin		181	11	87	23	83	31	52	45	22	89	30	98	752

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Battambang Purast & Pilin, MAFF, 2004

Table C1-32 Livestock Population in the Moung Ruessei River Basin in 2003 1/

Province/ District	Commune	Cattle Total	Cow	Draft Cattle	Buffalo Total	Buffalo Female	Draft Buffalo	Pig Total	Pig Female	Animal Units (A.U.) 2/	Poultry	No. of Farm Families 3/	
Battambang													
Moung Ruessei	Moung	3,129	741	2,282	0	0	0	2,005	80	3,217	12,262	2,136	
	Kear	1,976	273	836	106	46	60	1,066	69	2,087	2,109	1,970	
	Prey Svay	6,459	1,369	2,253	167	56	50	330	93	6,029	42,890	2,619	
	Ruessei Krang	5,966	2,004	3,598	295	176	185	2,231	72	6,081	11,592	2,455	
	Chrey	2,076	916	1,157	516	172	343	961	35	2,525	2,788	1,869	
	Ta Loas	951	343	716	36	15	35	69	34	902	16,940	1,639	
	Kakaoh	4,367	1,180	2,299	189	85	95	888	87	4,278	2,658	1,754	
	Prey Touch	2,116	673	1,297	168	49	72	722	96	2,200	17,515	1,664	
	Robas Mongkol	3,981	1,243	3,774	34	13	19	1,940	137	4,002	14,861	2,265	
	Prek Chik	2,501	108	1,393	25	4	16	221	81	2,318	26,880	2,013	
	Prey Tralach	4,239	1,020	2,536	569	158	293	2,755	130	4,878	21,341	3,626	
	Sub-total	37,761	9,870	22,141	2,105	774	1,168	13,188	914	38,517	171,836	24,010	
Samlot	Samlot	145	76	56	12	4	6	315	36	204	4,892	820	
Koas Krala	Koas Krala	995	385	359	21	11	11	393	50	993	2,381	809	
	Hab	677	241	436	0	0	0	201	60	650	3,687	522	
	Preah Phos	576	205	230	15	5	10	280	60	588	3,687	506	
	Chhnal Moan	786	268	297	23	12	10	367	40	802	4,782	149	
	Sub-total	3,034	1,099	1,322	59	28	31	1,241	210	3,032	14,537	1,986	
Province Total		40,795	10,969	23,463	2,164	802	1,199	14,429	1,124	41,549	186,373	25,996	
Pursat													
Bakan	Boeng Bat Kandaol	2,804	1,320	715	3,627	1,910	1,974	4,505	310	6,689	22,950	1,718	
	Boeng Khnar	2,257	840	1,027	1,917	572	734	1,379	125	4,032	14,640	2,092	
	Khnar Totueng	1,908	565	1,029	853	384	627	1,496	109	2,784	28,020	1,382	
	Me Tuek	3,403	1,675	806	1,743	884	871	4,505	310	5,532	22,900	2,326	
	Ou Ta Paong	3,887	2,498	1,369	1,389	91	1,298	2,576	341	5,264	14,385	2,708	
	Rumlech	1,746	623	972	1,740	866	1,139	1,834	143	3,504	17,770	1,520	
	Svay Doun Kaev	1,051	349	529	1,610	900	1,400	1,506	180	2,696	44,555	1,035	
	Ta Lou	4,058	1,606	1,744	2,385	1,453	6,443	3,799	400	6,559	26,428	2,726	
	Trapeang Chong	4,730	1,136	2,853	2,203	1,079	1,078	5,587	450	7,357	13,130	2,936	
	Sub-total	25,844	10,612	11,044	17,467	8,139	15,564	27,187	2,368	44,417	204,778	18,443	
Phnum Kravanh	Bak Chenhchien	2,272	362	1,200	477	202	302	1,248	44	2,724	12,780	1,263	
	Phteah Rung	3,941	615	2,038	1,975	813	926	4,230	428	6,170	7,945	2,573	
	Samraong	0	0	0	0	0	0	0	0	0	0	1,925	
	Sub-total	6,213	977	3,238	2,452	1,015	1,228	5,478	472	8,894	20,725	5,761	
Veal Veang	Pramaoy	233	129	30	101	75	14	131	18	327	5,300	515	
	Anlong Reab	131	83	40	66	51	14	101	13	198	4,619	267	
	Ou Saom	0	0	0	201	113	100	61	12	193	1,482	203	
	Sub-total	364	212	70	368	239	128	293	43	717	11,401	985	
Province Total		32,421	11,801	14,352	20,287	9,393	16,920	32,958	2,883	54,029	236,904	25,189	
River Basin Total		Head	73,216	22,770	37,815	22,451	10,195	18,119	47,387	4,007	95,578	423,277	51,185
		A.U. (No)	65,894			20,206			9,477		95,578		-
		A.U. (%)	69			21			10		100		-
Holding Size/Family	No./family	1.4	0.4	0.7	0.4	0.2	0.4	0.9	0.1	1.9	8.3	-	

1/: Data of all communes located in the Moung Ruessei River Basin

2/: Animal units assumed as follows: cattle total & buffalo total x 0.9; pig total x 0.2

3/: Assuming crop production families as farm families

Source: Commune Survey on Crops and Livestock, 2003, Battambang & Pursat, MAFF, 2004

Table C1-33 Financial Crop Budget per Ha under Present/Without-project Conditions

Items	Unit	Unit Price (Riel/1000)	Early Wet/Dry Season Rice						Wet Season Rice											
			Normal Irrigation			Recession Field			Normal Irrigation			Supplemental Irrigation			Rainfed Field					
			Transplanting		Value	Transplanting		Value	Transplanting		Value	Transplanting		Value	Direct Sowing		Value	Transplanting		Value
			Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)	Qty	(Riel/000)
1. Gross Return																				
Paddy	(ton/ha)																			
Unit Yield	(Riel/000/t)																			
Unit Price	(Riel/000)																			
Gross Return of Paddy	(Riel/000)																			
By Product (straw) 1/	(Riel/000)																			
Gross Return	(Riel/000)																			
2. Production cost																				
2-1. Farm Inputs	(kg)																			
Seed 1/																				
Fertilizers																				
- Urea	(kg)																			
- DAP	(kg)																			
- KCl	(kg)																			
- Compost	(ton)																			
Agro-chemicals																				
- Agro-chemicals	(lit)																			
- Agro-chemicals	(kg)																			
2-2. Labor Costs																				
Labor Requirements 2/																				
- Hired Labor	(man-day)																			
- Family Labor	(man-day)																			
Total	(man-day)																			
2-3. Land Preparation																				
- Draft Animal/Tractor	(Riel/000)																			
2-4. Pumping Cost	(Riel/000)																			
2-5. Transportation	(Riel/000/t)																			
- By Ox Cart																				
2-6. Miscellaneous Expenses	(L.S.)																			
(2-1 ~ 2-4 x 5%)																				
3. Net Return	Riel/000																			
%																				
Rounded																				

1/: By products/straw: assumed to be 5% of gross return of paddy & mungbeans to be 2% of gross return

2/: Hired Labor Requirements --- assumed to be 10% of total labor requirements in transplanting & 20% in case of direct sowing

Table C1-34 Farm Economy under the Present Condition: Moung Ruessei River Basin

Unit: 1000 riel

Item	Typical Farm					
	Family with Rainfed Paddy Field: 2.0 ha 1/					
	Cropping Intensity: 100%					
	Cropped Area (ha)	Production (kg)	Unit Price (riel)	Amount (1000 riel) (US\$) 2/		
1. Net Income				<u>2,750</u>	<u>671</u>	
1-1. Net Farm Income				<u>1,000</u>	<u>244</u>	
(1) Rice Production 3/						
Wet Season Rice	2.0	2,000	560	1,120		
Gross Return				1,120		
Production Cost 4/				966		
Net Return				<u>154</u>		
(2) Other Farm Products 5/						
Gross Return				<u>1,209</u>		
Livestock				244		
Fishery				26		
Other Crops				939		
Production Cost 6/				363		
Net Return				<u>846</u>	<u>206</u>	
1-2. Net Non-farm Income 5/						
(1) Net Income				<u>1,750</u>	<u>427</u>	
Wage & Salary				517		
Trade				230		
Remittance from Family Members				303		
Others				700		
2. Expenditure 5/				<u>2,802</u>	<u>683</u>	
Food				1,500		
Health/Medical				200		
Education				322		
Clothes				130		
Fuel				130		
Others				520		
3. Net Surplus (Capacity to Pay)				-52	-13	

1/: Land holding size: holding of 2.0 ha of rainfed paddy field

2/: Estimated by applying conversion rate of 1US\$ = Riel 4,100.-

3/: Direct sowing assumed: yield = 1.0 t/ha

4/: Estimated based on the crop budget analysis by the JICA Study Team

5/: Estimated based on the results of the Socio-economic Survey conducted by JICA Study Team in 2007

6/: Assumed to be 30% of gross return

Table C1-35 Results of Socio-economic Survey on Farming Constraints & Expectations: Moug Ruessei River Basin (1/3)

1. Design of Sample Survey

Sample Number	120 farmers	No. of communes	3 communes	Survey method	Interview survey by enumerators
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2. Farming Constraints and Improvement

2-1. Farming Constraints (agronomic & farm management)

Question What are serious agronomic & farm management constraints for farming ? (select plural answer)

Farming constraint (agronomic/farm management)	Degree of Constraints												Total Score	Rating
	Most Serious Score: 4			2nd Serious Score: 3			3rd Serious Score: 2			4th Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Low yield of crops (paddy)	39	33	156	11	9	33	9	8	18	6	5	6	213	1
Crop losses due to pest & disease	9	8	36	12	10	36	7	6	14	3	3	3	89	3
Weed problem	12	10	48	11	9	33	8	7	16	4	3	4	101	2
Crop losses due to wild animal	9	8	36	10	8	30	2	2	4	1	1	1	71	
Difficulty for hiring draft animal/machinery	3	3	12	5	4	15	1	1	2	1	1	1	30	
Labor shortage	2	2	8	8	7	24	6	5	12	0	0	0	44	
Insufficient extension services	7	6	28	12	10	36	10	8	20	2	2	2	86	
Shortage of farming capital	3	3	12	3	3	9	3	3	6	8	7	8	35	
Difficulty for obtaining quality seeds	4	3	16	11	9	33	11	9	22	5	4	5	76	
Difficulty for purchasing fertilizers	1	1	4	4	3	12	3	3	6	6	5	6	28	
Expensive farm inputs	5	4	20	1	1	3	3	3	6	2	2	2	31	
Poor soil conditions	4	3	16	2	2	6	9	8	18	13	11	13	53	
Marketing problems of products	1	1	4	2	2	6	0	0	0	1	1	1	11	
Lack of farm credit	0	0	0	1	1	3	4	3	8	2	1.667	2	13	
Others	21	18	84	27	23	81	44	37	88	66	55	66	319	
Total	120	100	480	120	100	360	120	100	240	120	100	120	1200	

2-2. Farming Constraints (physical)

Question What are serious physical constraints for farming ? (select plural answer)

Farming Constraints/Physical (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water shortage in wet season	91	76	273	5	4	10	1	1	1	284	1
Irrigation water shortage in dry season	9	8	27	39	33	78	6	5	6	111	3
Inundation/flooding	4	3	12	9	8	18	7	6	7	37	
Drainage problem	4	3	12	31	26	25	21	21	12	12	
Lack of farm road	0	0	0	5	4	10	10	8	10	20	
Lack of transportation means	1	1	3	4	3	8	10	8	10	21	
Leveling problem of paddy field	1	1	3	1	1	2	2	2	2	7	
Others	10	8	30	26	22	52	59	49.17	59	141	2
Total	120	100	360	120	100	178	120	100	95	633	

2-3. Marketing constraints

Marketing Constraints (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Unstable market prices of paddy/rice	83	69	249	12	10	24	1	1	1	274	1
Low market prices of paddy/rice	19	16	57	18	15	36	9	8	9	102	2
Limitation of market of paddy/rice	4	3	12	19	16	38	4	3	4	54	
Unstable market prices of other crops	1	1	3	16	13	32	12	10	12	47	
Low market prices of other crops	1	1	3	4	3	8	6	5	6	17	
Limitation of market of other crops	0	0	0	3	3	6	2	2	2	8	
Unstable market prices of livestock	1	1	3	19	16	38	16	13	16	57	3
Low market prices of livestock	1	1	3	4	3	8	9	8	9	20	
Limitation of market of livestock	0	0	0	0	0	0	1	1	1	1	
Lack of or poor farm to market road	3	3	9	4	3	8	3	3	3	20	
Others	7	6	21	21	18	42	57	48	57	120	
Total	120	100	360	120	100	240	120	100	120	720	

2-4. Reasons for limited productivity of crops in the rice field of interviewee (not specific to last year)

Reasons for Limited Productivity (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Drought in wet season	86	72	258	6	5	12	8	6.667	8	278	1
Water shortage in dry season	5	4	15	37	31	74	5	4.167	5	94	2
Shortage of farming capital	3	3	9	8	7	16	13	10.83	13	38	
Poor seed quality	10	8	30	8	7	16	4	3.333	4	50	
Poor soil	5	4	15	23	19	46	9	7.5	9	70	3
Limited application of fertilizer	1	1	3	1	1	2	5	4.167	5	10	
Damages caused by wild animal (rat)	1	1	3	9	8	18	16	13.33	16	37	
Poor drainage	1	1	3	5	4	10	12	10	12	25	
Flooding/inundation	0	0	0	8	7	16	3	2.5	3	19	
Inadequate farming technologies	2	2	6	5	4	10	11	9.167	11	27	
Damages caused by pest & disease	0	0	0	1	1	2	6	5	6	8	
Others	6	5	18	9	8	18	28	23	28	64	
Total	120	100	360	120	100	240	120	100	120	720	

Table C1-35 Results of Socio-economic Survey on Farming Constraints & Expectations: Moug Ruessei River Basin (2/3)

2-5. Activities/practices to improve rice productivity implemented by the interviewee in the past 3 years (plural answer)

Activities Implemented	No. & Proportion of Respondents Implemented Activities/Practices		Remarks
	No.	%	
Increased fertilization doses	83	17	No. of respondents : 120 Maximum 4 activities selected/respondent Total answers: 480
Applied of compost/manure	54	11	
Used quality seed (local variety)	58	12	
Used quality seed (high yielding variety)	61	13	
Constructed of farm pond	2	0	
Started to use water pump for irrigation	34	7	
Improved farming practices	18	4	
Improved post-harvest practices	12	3	
Changed marketing methods	11	2	
Others	147	31	
Total	480	100	

2-6. Necessary activities to improve rice productivity in the field of the interviewee (farming & farm management; plural answer)

Necessary Activities	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 4			2nd Most Required Score: 3			3rd Most Required Score: 2			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Improvement of farming practices	54	45	216	14	12	42	9	8	18	3	3	3	279	2
Use of quality seed (local variety)	13	11	52	37	31	111	5	4	10	12	10	12	185	2
Use of quality seed (high yielding variety)	13	11	52	27	23	81	10	8	20	3	3	3	156	3
Use of adequate doses of fertilizer	16	13	64	16	13	48	21	18	42	14	12	14	168	3
Improved leveling of paddy field	1	1	4	3	3	9	7	6	14	0	0	0	27	
Planting at proper time	12	10	48	8	7	24	7	6	14	8	7	8	94	
Intensive weeding	2	2	8	9	8	27	16	13	32	12	10	12	79	
Formation/strengthening of farmers organization	2	2	8	0	0	0	1	1	2	3	3	3	13	
Others	7	6	28	6	5	18	44	37	88	65	54	65	199	
Total	120	100	480	120	100	360	120	100	240	120	100	120	1200	

2-7. Necessary physical works to improve rice productivity in the field of the interviewee (plural answer)

Necessary Physical Works	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water supply for wet season	97	81	291	11	9	22	2	2	2	2	2	2	317	1
Irrigation water supply for dry season	10	8	30	53	44	106	9	8	9	2	2	2	147	2
Mitigation of inundation/flooding	2	2	6	14	12	28	9	8	9	4	3	4	47	
Drainage improvement	6	5	18	17	14	34	41	34	41	10	8	10	103	3
Others	5	4	15	25	21	50	59	49	59	102	85	102	226	
Total	120	100	360	120	100	240	120	100	120	120	100	120	840	

3. Livestock Constraints

Livestock Constraints	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Low productivity	31	26	93	33	28	66	7	6	7	166	2
Shortage of feed	10	8	30	15	13	30	11	9	11	71	3
Low or unstable market prices	4	3	12	7	6	14	3	3	3	29	
Market availability	0	0	0	3	3	6	1	1	1	7	
Losses due to diseases	62	52	186	28	23	56	5	4	5	247	1
Insufficient veterinary services	5	4	15	12	10	24	19	16	19	58	
Insufficient extension services	3	3	9	0	0	0	23	19	23	32	
Difficulty in obtaining good breed	0	0	0	2	2	4	2	2	2	6	
Others	5	4	15	20	17	40	49	41	49	104	
Total	120	100	360	120	100	240	120	100	120	720	

4. Expectations for Improvement

4-1. Farming (agronomic & farm management)

Expectations for Improvement	Degree of Expectation									Total Score	Rating
	Most Expected Score: 3			2nd Most Expected Score: 2			3rd Most Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Productivity improvement of wet season rice	110	92	330	4	3	8	2	2	2	340	1
Productivity improvement of dry season rice	5	4	15	53	44	106	4	3	4	125	2
Productivity improvement of field crops	2	2	6	28	23	56	13	11	13	75	3
Productivity improvement of vegetables	1	1	3	7	6	14	17	14	17	34	
Productivity improvement of livestock/poultry	0	0	0	1	1	2	12	10	12	14	
Increasing livestock holding size & production	1	1	3	17	14	34	20	17	20	57	
Increasing poultry holding size & production	0	0	0	2	2	4	15	13	15	19	
Strengthening/formation of farmers organizations	0	0	0	4	3	8	4	3	4	12	
Improvement of post-harvest operation	0	0	0	1	1	2	2	2	2	4	
Others	1	1	3	3	3	6	31	26	31	40	
Total	120	100	360	120	100	240	120	100	120	720	

Table C1-35 Results of Socio-economic Survey on Farming Constraints & Expectations: Moug Ruessei River Basin (3/3)

4-2. Farming (farming system)

Farming System	Degree of Expectation									Total Score	Rating
	Primarily Intended Score: 3			Secondary Intended Score: 2			Thirdly Intended Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Double cropping of rice	89	74	267	10	8	20	0	0	0	287	1
Stable single cropping of rice	17	14	51	37	31	74	9	8	9	134	
Multiple farming (crop + livestock etc.)	11	9	33	48	40	96	11	9	11	140	2
Crop diversification	3	3	9	6	5	12	36	30	36	57	
Others	0	0	0	19	16	38	64	53	64	102	
Total	120	100	360	120	100	240	120	100	120	720	

4-3. Farming (physical)

Farming (physical)	Degree of Expectation									Total Score	Rating
	Primarily Expected Score: 3			Secondary Expected Score: 2			Thirdly Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Adequate irrigation water supply in wet season	103	86	309	7	6	14	4	3	4	327	1
Adequate irrigation water supply in dry season	6	5	18	58	48	116	5	4	5	139	2
Mitigation of inundation & flooding	6	5	18	11	9	22	10	8	10	50	
Construction/rehabilitation of farm road	1	1	3	3	3	6	3	3	3	12	
Construction/rehabilitation of farm to market road	0	0	0	3	3	6	4	3	4	10	
Drainage improvement	0	0	0	15	13	30	42	35	42	72	3
Leveling of paddy field	1	1	3	2	2	4	5	4	5	12	
Others (specify)	3	3	9	21	18	42	47	39	47	98	
Total	120	100	351	120	100	240	120	100	120	720	

4-4. Agricultural support services

Agricultural Support Required	Degree of Necessity of Support									Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Field Extension services (demonstration / field guidance)	83	69	249	13	11	26	8	7	8	283	1
Provision of quality seed	16	13	48	60	50	120	5	4	5	173	2
Farmer training (technical & post-harvest operation)	9	8	27	22	18	44	40	33	40	111	3
Farmer training (organization, marketing, farm management)	1	1	3	7	6	14	14	12	14	28	
Support to organize farmers	1	1	3	4	3	8	6	5	6	14	
Provision of market information	1	1	3	5	4	10	5	4	5	18	
Provision of farm credit	3	3	9	2	2	4	8	7	8	12	
Provision of fertilizer	5	4	15	5	4	10	13	11	13	38	
Others (specify)	1	1	3	2	2	4	21	18	21	25	
Total	120	100	360	120	100	360	120	100	360	1080	

Table C1-36 Physical & Chemical Properties of the Major Soils Distributed in the Pursat River Basin

Soil Sub-unit/ (mapping symbol)	Pit No.	Depth (cm)	Particle Size Distribution (%)			Texture	pH		EC (1:5) ($\mu\text{s}/\text{cm}$)	Total Carbon (%)	Total Nitrogen (%)	C/N Ratio	Organic Matter (%)	Total P ₂ O ₅ (%)	Available P ₂ O ₅ (ppm)	CEC (meq /100g soil)	Exchangeable Cation (meq/100g soil)				Base Saturation (%)	
			Clay	Silt	Sand		(H ₂ O)	(KCl)									Ca	Mg	K	Na		Total
Dystric Gleysol (GLd)	PP1	00-10	32.2	57.9	9.9	SIC	5.2	3.8	18.1	10.7	1.3	8.1	1.8	0.1	14.0	14.0	4.0	3.8	0.9	0.4	9.1	65
		10-20	34.0	56.8	9.2	SIC	5.3	3.8	14.7	4.8	0.4	13.6	0.8	0.4	70.0	13.0	4.8	2.3	0.8	0.3	8.1	62
		20-40	39.2	53.1	7.7	SIC	5.5	3.9	10.4	17.8	1.9	9.4	3.0	0.3	52.5	17.0	4.5	1.8	0.9	0.3	7.4	43
Dystric Fluvisol (FLd)	PP2	00-15	14.4	44.0	41.6	L	5.4	3.8	17.2	5.9	0.6	10.4	1.0	0.2	11.5	10.0	2.5	2.0	0.5	0.2	5.2	52
		15-35	38.4	36.7	24.9	LiC	6.0	4.5	5.9	5.9	0.6	10.4	1.0	0.1	5.0	14.0	3.3	2.3	0.9	0.3	6.7	48
		35-50	23.7	22.7	53.6	CL	6.0	4.7	5.2	5.8	0.7	8.3	1.0	0.1	22.5	10.5	3.0	1.5	0.5	0.1	5.1	49
Gleyic Acrisol (ACg)	PP3	00-10	7.4	19.7	72.9	SL	5.3	4.0	8.7	3.9	0.5	8.0	0.7	0.1	20.0	6.0	1.5	1.0	0.3	0.1	2.9	48
		10-25	8.8	22.9	68.3	SL	5.8	4.3	5.0	3.9	0.5	8.0	0.7	0.1	12.5	6.0	1.5	1.3	0.4	0.1	3.2	54
		45-90	32.7	21.8	45.5	LiC	6.4	4.5	8.8	7.8	1.0	8.0	1.3	0.1	23.5	11.5	1.8	1.3	3.4	0.2	6.6	57
Plinthic Acrisol (Acp)	PP4	00-10	10.0	14.8	75.2	SL	5.3	4.3	15.6	5.8	0.6	10.4	1.0	0.3	76.0	7.5	3.3	1.3	0.5	0.1	5.2	69
		10-30	11.1	14.6	74.3	SL	5.8	4.4	5.8	2.9	0.4	8.3	0.5	0.2	32.5	7.0	1.8	0.8	0.5	0.1	3.1	44
		40-60	18.5	15.5	66.0	SCL	6.4	4.2	8.1	2.9	0.4	8.3	0.5	0.0	13.0	8.0	1.5	1.0	2.7	0.1	5.3	67
Dystric Leptosol (LPd)	PP5	00-18	14.8	30.5	54.7	L	7.5	6.1	32.1	19.5	1.8	10.7	3.4	0.4	130.0	12.0	11.5	1.8	0.7	1.0	14.9	100
		18-86	45.8	18.4	35.8	HC	5.3	4.0	5.0	5.8	0.6	9.2	1.0	0.3	58.0	18.0	3.5	2.5	0.7	0.7	7.4	41
		86-100	14.8	19.6	65.6	SL	5.2	3.8	5.9	3.9	0.4	11.1	0.7	0.2	23.0	8.5	3.3	2.0	0.5	0.2	6.0	71
Dystric Cambisol (CXd)	PP6	00-20	58.7	13.9	27.4	HC	6.4	5.0	17.3	23.0	1.5	15.6	4.0	0.2	26.0	25.0	23.8	14.5	0.7	0.4	39.3	100
		20-45	28.8	15.1	56.1	SC	7.0	5.1	9.3	5.8	0.4	13.8	1.0	0.1	10.0	13.0	32.3	19.3	0.8	0.1	52.4	100
		45-80	13.1	10.2	76.7	SL	7.4	5.0	9.4	5.8	0.4	16.6	1.0	0.2	35.0	15.0	36.3	17.5	0.9	0.1	54.7	100

Methods of soil analysis:

Texture --- pipette method

Organic matter --- ignition loss

CEC --- 1M CaCl₂.2H₂O

Total C --- Black

Total P₂O₅ --- Murphy method

Exchangeable cations: 1M Ammonium Acetate pH 7

Total N --- Kjeldahl method

Available P₂O₅ --- Olsen method

Table C1-37 Properties and Suitability Classification of Soils: Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	-	S1/S2	S3	-	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	-	S1/S2	S3	-	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	-	S2	S3	-	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	Suitability Class	S1	-	S1/S2	S3		S3c
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	-	N	S3	-	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	-	N	S3	-	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						N
	Suitability Class	S1		N	S3	-	
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S2tc
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	-	S2	S2	-	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2c/S2tc
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	-	S1/S2	S2	-	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S2tc
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2tc/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	-	S2/S3	S2	-	
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S2tc/S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	-	S2/S3	S2	-	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S2tc
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-						S2~N
	Suitability Class	S1 ~ N		S2/S3	S2	-	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2~N
	Suitability Class	S1 ~ N		S2	S2		

Table C1-38 Properties and Suitability Classification of Soils: Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture (t)		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c/S3tc
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	S2/S3	-	S3	S2	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c/S3tc
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	S1~S3	-	S3	S2	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	S2	-	S3	S2	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	-						S3c/S3tc
	Suitability Class	S1	S1~S3	-	S3	S2	
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACH-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	N	-		S1	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	N	-		S2	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						S1/S2
		S1	N	-			
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S3t
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2tep/S3t
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	S2/S3	-	S2	S2	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S3t
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2ep/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	S1/S3	-	S2	S2	
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	S3	-	S1	S1	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S3t
	Suitability Class	S1	S3	-	S2	S1	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-						S2~N
	Suitability Class	S1 ~ N	S1/S3	-	S1/S2	S1/S2	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2~N
	Suitability Class	S1 ~ N	S2/S3	-	S2	S2	

Table C1-39 Properties and Suitability Classification of Soils Distributed in the Pursat River Basin

1. Suitability Classification for Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (60cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
	ha	%					
Gleyic Acrisol (ACg)	-	-	S1	S1/S2	S3	-	S3c
Plinthic Acrisol ACp)	-	-	S1	S1/S2	S3	-	S3c
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	168,620	28	S1	S1/S2	S3	-	S3c
Dystric Fluvisol (FLd)	14,940	3	S1	S1/S2	S2	-	S2c/S2tc
Dystric Gleysol (GLd)	41,490	7	S1	S2	S2	-	S2tc
Dystric Leptosol (LPd)	67,920	11	S1 ~ N	S2/S3	S2	-	S2tc/S3t/N
Dystric Cambisol CMD)	-	-	S1	S2/S3	S2	-	S2tc/S3t
Dystric Leptosol/Dystric Cambisol (LPd/CMD)	303,530	51	S1 ~ N	S2/S3	S2	-	S2~N
Basin Total	596,500	100					

2. Suitability Classification for Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (30cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
	ha	%					
Gleyic Acrisol (ACg)	-	-	S1	S2/S3	S3	S2	S3c/S3tc
Plinthic Acrisol ACp)	-	-	S1	S1~S3	S3	S2	S3c/S3tc
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	168,620	28	S1	S1~S3	S3	S2	S3c/S3tc
Dystric Fluvisol (FLd)	14,940	3	S1	S2/S3	S2	S2	S2tcp/S3t
Dystric Gleysol (GLd)	41,490	7	S1	S3	S2	S2	S3t
Dystric Leptosol (LPd)	67,920	11	S1 ~ N	S1/S3	S2	S2	S2cp/S3t/N
Dystric Cambisol CMD)	-	-	S1	S3	S1	S1	S3t
Dystric Leptosol/Dystric Cambisol (LPd/CMD)	303,530	51	S1 ~ N	S1/S3	S1/S2	S1/S2	S2~N
Basin Total	596,500	100					

S1: Highly Suitable

Subject soil or land characteristics present no significant limitations for a given use

S2: Moderately Suitable

Subject soil or land characteristics present moderately severe limitations for a given use

S3: Marginally Suitable

Subject soil or land characteristics present substantially severe limitations for a given use

S4: Conditionally Suitable

Suitability class categorized for farm land (rice fields & upland fields) distributed with sandy soils;

N: Not Suitable

Subject soil or land characteristics present limitations so severe as to preclude successful sustained use of the land in the given manner.

Table C1-40 Agro-demographic Features of the Pursat River Basin

Province/District	Commune	No. of Households	Crop Producing Households (%)	to Total Households (%)	Wet Season Rice Producing Households (%)	to Total Households (%)	Landless Households (%)	to Total Households (%)	Households with less than 10 a (%)	to Total Households (%)	Households with more than 3ha (%)	Cropped Area of Wet Season Rice in 2003 (ha)	Cropped Area of Wet Season Rice per Crop Producing (ha)	Irrigated Area (ha)	Irrigated Area per Crop Producing Household (ha)	
Pursat	Bakan	1,849	1,718	93	1,718	100	131	7	0	0	815	4,062	2.4	123	0.07	
		2,443	2,326	95	2,126	91	117	5	120	5	320	13	3,411	1.5	250	0.11
		3,110	2,810	90	2,810	100	300	10	0	0	562	18	3,841	1.4	0	0.00
	Kandieng	2,751	2,726	99	2,726	100	25	1	0	0	1,002	36	4,554	1.7	0	0.00
		3,326	2,936	88	2,936	100	390	12	498	15	396	12	2,979	1.0	0	0.00
		981	809	82	809	100	172	18	116	12	82	8	1,905	2.4	146	0.18
		1,059	953	90	953	100	106	10	79	7	19	2	791	0.8	253	0.27
		1,210	1,205	100	1,205	100	5	0	13	1	54	4	1,581	1.3	548	0.45
		1,708	1,379	81	1,379	100	329	19	181	11	142	8	2,331	1.7	115	0.08
		1,872	1,595	85	1,595	100	277	15	89	5	370	20	3,356	2.1	1,426	0.89
Krakor	1,144	885	77	885	100	259	23	3	0	52	5	965	1.1	775	0.88	
	1,240	1,200	97	1,200	100	40	3	170	14	150	12	2,636	2.2	1,058	0.88	
	1,098	682	62	682	100	416	38	372	34	6	1	417	0.6	517	0.76	
	1,130	1,130	100	1,105	98	0	0	590	52	515	46	1,051	0.9	430	0.38	
	2,204	2,095	95	1,565	75	109	5	210	10	1,355	61	1,551	0.7	310	0.15	
	1,164	1,045	90	886	85	119	10	205	18	681	59	1,031	1.0	342	0.33	
	867	821	95	746	91	46	5	235	27	511	59	1,037	1.3	587	0.71	
	902	863	96	863	100	39	4	439	49	424	47	1,003	1.2	0	0.00	
	1,058	1,026	97	973	95	32	3	295	28	678	64	1,545	1.5	402	0.39	
	1,796	1,633	91	1,200	73	163	9	350	19	850	47	1,502	0.9	0	0.00	
Phnum Kravanh	1,278	1,263	99	1,204	95	15	1	0	0	422	33	1,315	1.0	33	0.03	
	1,653	1,538	93	1,395	91	115	7	120	7	0	0	561	0.4	0	0.00	
	2,573	2,573	100	2,573	100	0	0	0	0	1,231	48	2,836	1.1	215	0.08	
	1,687	1,687	100	1,687	100	0	0	35	2	0	0	894	0.5	100	0.06	
	776	626	81	615	98	150	19	83	11	244	31	339	0.5	88	0.14	
	886	799	90	681	85	87	10	46	5	26	3	397	0.5	70	0.09	
	1,948	1,925	99	1,868	97	23	1	0	0	1,200	62	1,382	0.7	2	0.00	
	992	820	83	750	91	172	17	25	3	135	14	431	0.5	13	0.02	
	898	560	62	560	100	338	38	68	8	73	8	673	1.2	0	0.00	
	Sampov Meas	1,662	1,369	82	1,329	97	293	18	37	2	132	8	915	0.7	220	0.16
3,202		1,002	31	634	63	0	0	170	5	13	0	531	0.5	0	0.00	
1,331		1,210	91	1,110	92	121	9	103	8	157	12	1,579	1.3	210	0.17	
2,596		2,077	80	2,076	100	519	20	23	1	107	4	913	0.4	0	0.00	
1,086		1,051	97	1,050	100	35	3	63	6	85	8	875	0.8	35	0.03	
203		203	100	203	100	0	0	0	0	0	0	114	0.6	0	0.00	
550		515	94	515	100	35	6	0	0	0	0	187	0.4	0	0.00	
Veal Veaeang	273	267	98	267	100	6	2	0	0	0	0	75	0.3	0	0.00	
	172	165	96	165	100	7	4	0	0	0	0	0.0	0	0	0.00	
	56,678	49,487	87	47,044	95	4,991	9	4,738	8	12,809	23	55,566	1.1	8,268	0.17	

Source: Commune Survey on Crops and Livestock, 2003, MAF

Table C1-41 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Prusat River Basin (1/2)

Province/District	Commune	Year	Wet-season Rice Production						Dry-season Rice Production						
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated				
Pursat	Bakan	Boeung Bat Kandaol	2006	5,753	5,753	0	5,753	1.8	10,355	18	0	18	18	2.0	36
		2003	4,062			4,062	1.1	4,321	0			0	0		0
		Average	4,908			4,908	1.5	7,338	9			9	2.0	18	
	Me Tuek	2006	4,110	4,110	0	4,110	1.3	5,343	235	0	235	235	2.0	470	
		2003	3,411			3,411	1.1	3,721	0			0		0	
		Average	3,761			3,761	1.2	4,532	118			118		235	
	Snam Preah	2006	6,039	6,039	0	6,039	2.0	12,078	10	0	10	0	2.0	20	
		2003	3,841			3,841	1.2	4,609	0			0		0	
		Average	4,940			4,940	1.7	8,344	5			5		10	
	Ta Lou	2006	7,811	7,811	0	7,811	1.8	14,060	0	0	0	0		0	
		2003	4,554			4,554	1.4	6,387	0			0		0	
		Average	6,183			6,183	1.7	10,223	0			0		0	
	Trapeang Chong	2006	4,200	3,650	550	4,200	2.0	8,400	15	0	15	15	2.5	38	
		2003	2,979			2,979	1.1	3,334	0			0		0	
		Average	3,590			3,590	1.6	5,867	8			8	2.5	19	
	Sub-total		23,380		23,380	1.6	36,303	139			134	2.1	282		
Kandieng	Anlong Vil	2006	1,417	815	602	1,417	1.3	1,842	0	0	0	0		0	
		2003	1,905			1,191	2.0	2,357	0			0		0	
		Average	1,661			1,304	1.6	2,100	0			0		0	
	Banteay Dei	2006	791	771	20	791	1.5	1,187	0	0	0	0		0	
		2003	791			674	1.9	1,249	0			0		0	
		Average	791			733	1.7	1,218	0			0		0	
	Kandieng	2006	1,417	1,417	0	1,417	2.0	2,834	0	0	0	0		0	
		2003	1,581			1,417	2.0	2,766	0			0		0	
		Average	1,499			1,417	2.0	2,800	0			0		0	
	Kanhchor	2006	2,601	2,070	531	2,601	1.5	3,902	76	24	52	76	3.0	228	
		2003	2,331			1,933	2.3	4,359	0			0		0	
		Average	2,466			2,267	1.8	4,130	38			38	3.0	114	
	Srae Sdok	2006	5,465	5,220	245	5,465	0.8	4,481	19	3	16	19	2.0	38	
		2003	3,356			3,181	1.8	5,720	54			54	1.7	54	
		Average	4,411			4,323	1.2	5,101	37			37	1.3	46	
	Svay Luong	2006	964	300	664	964	2.2	2,121	0	0	0	0		0	
		2003	965			566	1.9	1,097	0			0		0	
		Average	965			765	2.1	1,609	0			0		0	
Sya	2006	2,408	2,045	363	2,408	2.5	6,020	150	90	60	150	2.0	300		
	2003	2,636			2,501	2.0	4,911	0			0		0		
	Average	2,522			2,455	2.2	5,466	75			75	2.0	150		
Veal	2006	417	45	372	417	1.2	500	0	0	0	0		0		
	2003	417			333	2.0	666	0			0		0		
	Average	417			375	1.6	583	0			0		0		
	Sub-total		10,780		10,185	1.7	16,889	150			150	2.1	310		
Krakor	Boeung Kantuot	2006	1,079	350	729	1,079	1.0	1,079	0	0	0	0		0	
		2003	1,051			1,051	2.0	2,093	0			0		0	
		Average	1,065			1,065	1.5	1,586	0			0		0	
	Chheu Tom	2006	1,362	1,362	0	1,362	1.5	2,043	0	0	0	0		0	
		2003	1,551			1,551	1.9	2,968	0			0		0	
		Average	1,457			1,457	1.7	2,506	0			0		0	
	Kampong Pou	2006	1,105	1,105	0	1,105	0.8	884	0	0	0	0		0	
		2003	1,031			1,031	2.0	2,107	50			50	3.0	150	
		Average	1,068			1,068	1.4	1,495	25			25	3.0	75	
	Ou Sandan	2006	850	350	500	850	1.0	850	0	0	0	0		0	
		2003	1,037			1,037	1.9	2,008	0			0		0	
		Average	944			944	1.5	1,429	0			0		0	
	Sna Ansa	2006	713	713	0		0.8	570	18	0	18	18	1.0	18	
		2003	1,003			1,003	2.1	2,118	15			15	3.0	45	
		Average	858			1,003	1.3	1,344	17			17	1.9	32	
	Svay Sa	2006	1,201	920	281	1,201	1.5	1,801	35	15	20	35	1.5	53	
		2003	1,545			1,545	1.9	2,922	0			0		0	
		Average	1,373			1,373	1.7	2,362	18			18	1.5	26	
Tnaot Chum	2006	1,600	1,600	0	1,600	1.1	1,760	0	0	0	0		0		
	2003	1,502			1,502	1.7	2,572	0			0		0		
	Average	1,551			1,551	1.4	2,166	0			0		0		
	Sub-total		5,793		5,938	1.5	8,795	59			59	2.3	133		

Table C1-41 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Prusat River Basin (2/2)

Province/District	Commune	Year	Wet-season Rice Production						Dry-season Rice Production					
			Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)			Harvested Area (ha)	Yield (t/ha)	Production (t)
			Total	Rain-fed	Irrigated				Total	Recession	Irrigated			
Phum Kraranh	Bak Chenhchien	2006	1,664	464	1,200	1,664	1.1	1,897	0	0	0	0	0	0
		2003	1,315			1,315	1.4	1,830	0			0		0
		Average	1,490			1,490	1.3	1,863	0			0		0
	Leach	2006	478	460	18	478	1.2	574	0	0	0	0	0	0
		2003	561			561	1.7	930	0			0		0
		Average	520			520	1.4	752	0			0		0
	Phteah Rung	2006	4,178	3,363	815	4,178	1.5	6,267	15	0	15	15	1.5	23
		2003	2,836			2,836	1.5	4,196	0			0		0
		Average	3,507			3,507	1.5	5,231	8			8	1.5	11
	Prongil	2006	1,246	1,126	120	1,246	1.0	1,246	16	0	16	16	2.0	32
		2003	894			894	1.7	1,499	0			0		0
		Average	1,070			1,070	1.3	1,373	8			8	2.0	16
	Rokat	2006	50	50	0	50	1.7	85	40	0	40	40	1.0	40
		2003	339			339	1.3	440	0			0		0
		Average	195			195	1.3	262	20			20	1.0	20
	Santreae	2006	779	599	180	779	1.5	1,169	0	0	0	0	0	0
		2003	397			397	1.6	627	0			0		0
		Average	588			588	1.5	898	0			0		0
	Samraong	2006	1,625	1,625	0	1,625	1.2	1,950	0	0	0	0	0	0
		2003	1,382			1,382	1.1	1,589	2			2	2.0	4
Average		1,504			1,504	1.2	1,769	1			1	2.0	2	
Sub-total		6,863			6,863	1.4	9,533	37			37	1.3	49	
Sampov Meas	Chamraeun Phal	2006	1,772	1,183	589	1,772	2.0	3,544	0	0	0	0	0	0
		2003	431			431	1.3	575	0			0		0
		Average	1,102			1,102	1.9	2,060	0			0		0
	Kaoh Chum	2006	1,625	1,625	0	1,625	1.2	1,950	0	0	0	0	0	0
		2003	673			673	1.0	645	0			0		0
		Average	1,149			1,149	1.1	1,297	0			0		0
	Lolok Sa	2006	1,110	930	180	1,110	2.0	2,220	6	3	3	6	1.5	9
		2003	915			915	1.1	1,032	10			10	1.6	16
		Average	1,013			1,013	1.6	1,626	8			8	1.6	13
	Phteah Prey	2006	634	634	0	634	1.2	761	0	0	0	0	0	0
		2003	531			531	1.1	608	0			0		0
		Average	583			583	1.2	684	0			0		0
	Prey Nhi	2006	434	434	0	434	1.3	564	0	0	0	0	0	0
		2003	1,579			1,579	1.0	1,624	0			0		0
		Average	1,007			1,007	1.1	1,094	0			0		0
	Roleab	2006	1,382	1,382	0	1,382	1.2	1,658	0	0	0	0	0	0
		2003	913			913	1.4	1,256	0			0		0
		Average	1,147			1,147	1.3	1,457	0			0		0
	Svay at	2006	677	564	113	677	1.2	812	0	0	0	0	0	0
		2003	875			875	1.0	883	0			0		0
Average		776			776	1.1	848	0			0		0	
Sub-total		4,525			4,525	1.3	5,709	8			8	1.6	13	
Veal Veacng	Ou Saom	2006	0	0	0	0	0	0	0	0	0	0	0	
		2003	114			98	2.7	262	0			0		
		Average	57			49	2.7	131	0			0		
	Pramaoy	2006	0	0	0	0	0	0	0	0	0	0	0	
		2003	187			165	2.3	376	0			0		
		Average	94			83	2.3	188	0			0		
	Anlong Reab	2006	0	0	0	0	0	0	0	0	0	0	0	
		2003	75			70	2.5	175	0			0		
		Average	38			35	2.5	88	0			0		
	Sub-total		5,390			5,368	1.3	6,928	8			8	1.6	13
Whole River Basin		56,731			56,259	1.5	84,159	400			395	2.0	799	

Source: 2003 - Commune Survey on Crops and Livestock 2003, MAFF, 2004; 2006 - Dept. of Planning, Pursat

Table C1-42 Rice Production & Yield from 2002 to 2005 in Pursat River Basin: SEILA Data Base

Province/District	Communc	Type	Wet Season						Dry Season					
			Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)
				Rainfed Rice	Irrigated Rice	Total				Irrigated Rice	Recession Rice	Total		
Pursat	Bakan	Rural	4	4,662	0	5,049	8,408	1.7	3	0	100	100	160	1.6
	Me Tuek	Rural	4	3,755	598	4,353	7,107	1.6	3	238	173	411	796	1.9
	Snam Preah	Rural	3	5,887	152	6,039	10,065	1.7	1		31	62	46	0.7
	Ta Lou	Rural	4	4,684	0	4,684	7,871	1.7						
	Trapeang Chong	Rural	4	3,960	108	4,068	5,894	1.4						
	Sub-total			22,948	858	24,193	39,346	1.6		238	304	573	1,002	1.7
Kandieng	Anlong Vil	Rural	1	1,541	455	1,996	2,967	1.5						
	Banteay Dei	Rural	4	699	60	759	1,338	1.8						
	Kandieng	Rural	4	1,294	132	1,425	2,246	1.6						
	Kanhchor	Rural	4	1,404	716	2,120	2,362	1.1	4	82	20	101	174	1.7
	Srae Sdok	Rural	3	4,384	0	4,384	4,872	1.1	2	51	51	102	122	1.2
	Svay Luong	Rural	4	827	128	956	1,832	1.9	2	12	12	24	24	1.0
	Sya	Rural	4	1,372	503	1,875	4,086	2.2	4	248	160	408	745	1.8
	Veal	Urban												
	Sub-total			11,520	1,994	13,514	19,702	1.5		392	243	635	1,065	1.7
Krakor	Boeng Kantuot	Rural	4	1,018	0	1,018	1,007	1.0						
	Chheu Tom	Rural	4	1,345	0	1,345	1,361	1.0						
	Kampong Pou	Rural	4	1,271	176	1,446	1,111	0.8	1	35	35	70	53	0.8
	Ou Sandan	Rural	4	1,164	0	1,164	1,244	1.1	1	93	93	186	93	0.5
	Sna Ansa	Rural	3	641	0	641	458	0.7						
	Svay Sa	Rural	4	847	354	1,200	1,800	1.5	1	31	31	62	52	0.9
	Tnaot Chum	Rural	4	1,320	50	1,370	1,197	0.9						
	Sub-total			7,605	579	8,184	8,178	1.0		159	159	318	198	0.6
Phnum Kravanh	Bak Chenhchien		4	1,341	17	1,357	1,348	1.0		24	16	40	36	0.9
	Leach	Rural	3	428	0	428	775	1.8	1	12	12	24	24	1.0
	Phteah Rung	Rural	4	3,274	235	3,509	4,874	1.4	2	345	345	690	577	0.8
	Prongil	Rural	3	1,122	144	1,266	1,841	1.5	2	55	15	70	206	2.9
	Rokat	Rural	2	412	6	418	626	1.5	3	5	4	9	10	1.2
	Santreae	Rural	3	414	0	414	491	1.2						
	Samraong	Rural	3	1,214	0	1,214	862	0.7						
	Sub-total			8,204	402	8,606	10,818	1.3		441	392	832	853	1.0
Sampov Meas	Chamraeun Phal	Rural	4	370	1,492	1,862	1,996	1.1						
	Kaoh Chum	Rural	4	2,749	0	2,749	3,551	1.3	3	44	0	44	99	2.3
	Lolok Sa	Rural	2	421	332	753	549	0.7	3	7	10	17	12	0.7
	Phteah Prey	Urban												
	Prey Nhi	Urban												
	Roleab	Rural	4	1,703	0	1,703	1,440	0.8						
	Svay at	Rural	4	563	113	676	762	1.1						
	Sub-total			5,805	1,936	7,741	8,298	1.1		50	10	60	112	1.8
Veal Veang	Ou Saom		2	133	0	133	221	1.7						
	Anlong Reab	Rural	1	108	0	108	105	1.0						
	Pramaoy	Rural	3	173	0	173	166	1.0						
	Sub-total			413	0	413	492	1.2		0	0	0	0	0
River Basin Total				56,495	5,770	62,652	86,834	1.4		1,279	1,107	2,418	3,230	1.3

1/: No. of years of data used for estimating average figures
Source: SEILA Data Base, 2002 - 2005

Table C1-43 Rice Planted Areas by Plowing Method & Planting Method in the Pursat River Basin 1/

District	Commune	Year 2/	Plowing (ha.)			Transplanting (ha.)						Direct Sowing (ha)						Total			
			Total	Cattle	Tractor	Early		Medium	Late	Total	Early		Medium	Late	Total	Early			Medium	Late	Total
						Normal	IR				Normal	IR				Normal	IR				
Bakan	Boeung Bat Kandaol	3	5,957	4,738	1,219	1,594	124	1,508	1,121	4,347	28	32	0	113	217	1,261	1,650	5,997			
	Me Tuek	3	4,332	2,157	2,175	287	108	655	591	1,640	124	104	0	67	163	2,188	2,646	4,286			
	Siem Preah	3	5,785	4,771	1,013	1,489	170	1,852	1,273	4,784	119	12	0	169	103	590	993	5,777			
	Ta Lou	3	4,857	4,499	359	1,182	116	1,435	991	3,724	127	146	0	166	154	917	1,511	5,235			
	Trapeang Chong	3	4,265	3,724	542	1,260	47	1,369	888	3,565	144	5	0	168	209	0	524	4,088			
	Sub-total	Ha	25,196	19,888	5,308	5,812	564	6,819	4,865	18,060	542	297	0	683	846	4,956	7,324	25,383			
		%	100	79	21													100			
Kandieng	Anlong Vil	3	1,935	1,845	90	113	22	365	305	805	5	0	0	2	283	818	1,108	1,913			
	Bantay Dei	3	916	830	86	67	56	338	185	646	19	6	0	48	108	0	181	827			
	Kandieng	3	2,326	1,514	812	9	12	241	731	993	2	0	0	7	2	421	432	1,425			
	Kanhoch	3	2,542	1,287	1,255	128	47	240	369	784	22	12	0	277	310	1,092	1,712	2,496			
	Srae Sobok	3	3,149	2,422	927	327	26	1,172	1,096	2,620	28	8	0	98	136	864	1,135	3,755			
	Svay Luong	3	1,157	986	171	61	16	351	388	816	1	0	0	2	152	0	155	971			
	Sva	3	2,621	1,676	945	130	127	575	655	1,487	18	7	0	33	179	826	1,063	2,550			
	Veal	3	558	471	87	1	2	134	216	354	1	0	0	18	88	0	107	461			
		Sub-total	Ha	15,403	11,031	4,372	836	308	3,416	3,945	8,505	97	32	0	484	1,258	4,021	5,892	14,397		
			%	100	72	28													100		
Krakor	Boeung Kanhoch	2	1,125	1,125	0	215	0	509	351	1,075	0	0	0	0	0	0	0	1,075			
	Chheu Tom	2	1,337	1,337	0	358	5	520	436	1,319	0	0	0	0	0	0	0	1,319			
	Kampong Pou	2	1,078	904	174	183	0	425	238	846	0	0	0	0	0	256	256	1,102			
	Ou Sandan	2	1,008	942	66	244	5	339	365	952	2	0	0	0	0	111	113	1,065			
	Srae Ansa	2	615	615	0	214	0	189	217	620	3	0	13	620	0	18	33	653			
	Svay Sa	2	1,274	1,274	0	308	0	435	440	1,183	0	0	0	0	0	0	0	1,183			
	Tnaot Chum	2	1,670	1,670	0	243	0	793	550	1,588	0	0	0	0	0	0	0	1,588			
		Sub-total	Ha	8,105	7,866	240	1,767	10	3,209	2,595	7,580	4	0	13	0	0	385	402	7,982		
			%	100	97	3													100		
	Phnum Kravanh	Bak Chenhchien	3	1,637	1,414	223	312	38	376	293	1,018	2	12	0	8	590	0	612	1,630		
Leach		3	511	511	0	110	37	164	207	517	3	2	5	0	1	0	11	528			
Phteah Rung		3	4,078	4,000	78	781	48	1,287	1,654	3,771	8	7	12	47	121	0	197	3,967			
Prongl		3	1,537	1,537	0	246	268	366	574	1,454	14	4	8	0	0	0	26	1,480			
Rokat		3	445	445	0	100	24	131	182	436	0	0	14	0	0	0	14	450			
Santreae		3	682	682	0	184	68	157	213	622	3	0	19	0	0	0	23	644			
Sanraeng		3	1,773	1,551	223	379	91	626	583	1,679	18	7	84	5	37	0	150	1,829			
		Sub-total	Ha	10,663	10,139	524	2,111	573	3,107	3,707	9,498	49	32	142	60	749	0	1,032	10,530		
			%	100	95	5													100		
Sampov Meas		Chamraeun Phal	3	1,902	1,875	27	361	21	719	729	1,829	13	4	0	35	16	0	49	1,878		
	Kaach Chum	3	2,682	1,840	842	523	4	855	820	2,203	3	6	0	10	13	283	315	2,519			
	Lolek Sa	3	1,158	949	209	215	16	280	494	1,004	3	4	0	14	90	0	111	1,115			
	Phteah Prey	3	657	606	51	149	5	275	219	648	1	2	0	2	4	0	9	657			
	Prey Nhi	3	430	364	67	49	4	166	187	406	2	2	0	7	5	0	16	422			
	Roleab	3	1,575	1,341	234	284	3	527	540	1,353	11	3	0	28	173	0	215	1,568			
	Svay at	3	684	641	22	149	2	320	182	652	5	2	0	4	1	0	11	663			
		Sub-total	Ha	9,068	7,616	1,452	1,729	55	3,141	3,171	8,096	37	22	0	101	302	283	726	8,821		
			%	100	84	16													100		
		Sub-total	Ha	68,434	56,539	11,895	12,255	1,510	19,692	18,282	51,738	728	383	155	1,327	3,155	9,646	15,375	67,113		
		%	100	83	17													100			

1/ Data of all communes located in the Pursat River Basin; Not including communes of Veal Veang District in the basin; rice cropped area in those communes is a few hundred ha only

2/ 3 --- average figures of 3 years from 2004 to 2006; 2 --- average figures of 2 years of 2005 & 2006

Source: PDA Pursat

Table C1-46 Upland Crops Production Statistics in the Pursat River Basin in 2003 & 2006 1/

Province/ District	Commune	Year 2/	Corn		Soy bean		Mung bean		Peanut		Cassava		Sweet potato		Sesame		Total Cultivated Area (ha)										
			Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)	Production (tons)	Cultivated Area (ha)	Yield (tons/ha)		Production (tons)									
Pursat	Bakan	Boeng Bat Kandaol	2	1	1.0	1	0	0	1	1.5	2	0	2	5.8	9	3	3.9	15	0	7							
		Me Tuek	2	1	1.0	1	0	0	1	0.5	2	0.8	2	0	8	2.7	20	0	0	11							
		Sham Preah	2	3	1.0	3	0	0	6	0.5	3	3	0.8	2	5.4	28	5	4.3	18	0	21						
		Ta Lou	2	0	0	0	0	0	6	0.5	3	2	0.8	2	3	5.7	17	2	1.8	7	0	13					
		Trapeang Chong	2	10	1.5	15	0	0	8	0.6	4	5	0.9	4	7	3.1	29	4	2.8	14	0	33					
		Sub-total		14	1.4	19	0	0	22	0.6	12	12	0.8	9	16	5.2	83	22	3.4	74	0	85					
		Kandieng	Anlong Vil	Banteay Vil	2	6	3.6	22	0	0	2	1.5	2	0	1	4.2	4	1	2.0	2	0	0	9				
				Banteay Dei	2	0	0	0	0	0	0	0	0	0	0	0	2.5	1	0	0.6	0	0	0				
				Kandieng	2	2	1.1	2	0	0	2	0.9	1	0	0	0	0	0	1	2.0	2	0	0	4			
				Kanhohor	2	7	3.0	19	0	0	11	1.2	11	0	0	3	0.5	1	9	2.5	24	1	0.5	30			
Srae Sdok	2			0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.0	8	0	0	2					
Svay Luong	2			1	1.1	1	0	0	0	0	0	0	0	0	0	0	1	1.0	1	0	0	1					
Sya	2			22	2.6	56	0	0	26	1.0	24	0	0	0	0	0	0	0.0	0	0	0	0	47				
Veal	2			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0				
Sub-total				37	2.7	99	0	0	40	1.0	38	0	0	4	1.5	6	12	3.0	37	1	0.5	1	93				
Krakor	Boeng Kanhot			Chheu Tom	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0			
		Kampong Pou	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0				
		Ou Sandan	2	0	1.0	0	0	1	2.0	2	1	3.0	2	2	6.0	9	3	3.0	18	1	3.0	1	7				
		Srae Ansa	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0				
		Svay Sa	2	23	1.0	23	0	0	2	0.5	1	5	0.5	3	2	1.0	2	1	0.3	1	0	0	0	32			
		Tnaot Chum	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0				
		Sub-total		23	2.0	23	0	0	3	2.5	3	6	3.5	5	10	15.5	66	9	5.8	44	1	3.0	1	51			
		Phnum Krav	Bak Chienhchhen	Leach	2	6	1.4	8	0	0	7	3.5	24	5	4.4	15	4	4.0	16	1	1.0	2	12	2.3	17	34	
				Piteah Rung	2	25	0.9	23	0	0	43	1	41	47	0.9	32	4	1	0.4	1	0	0	0	0	0	0	3
				Prongil	2	19	2.2	41	0	0	8	1.7	16	6	2.7	18	7	6.0	41	8	5.1	45	2	0.5	1	49	
Rokat	2			9	1.7	16	0	0	3	1.0	3	0	0	0	0	0	0	0.0	0	0	0	0	0	0	13		
Santreae	2			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	6		
Samraong	2			31	5.2	160	3	3.0	9	27	0.6	16	18	0.7	12	10	5.0	50	1	3.8	8	2	1.8	4	91		
Sub-total				89	11.5	248	3	3.0	90	10.2	117	76	8.7	84	30	26.0	140	11	12.6	57	16	4.6	21	314			
Sampov Mea	Chamraeun Phal			Kaon Chum	Avg.	2	2.3	4	0	0	7	0.4	3	4	0.3	2	4	3.8	12	3	2.9	9	1	0.2	0	19	
				Lolok Sa	Avg.	11	2.2	24	0	0	0	0.3	0	0	0	0	1	2.9	2	0	1.8	1	0	0.3	0	2	
				Piteah Prey	Avg.	0	0	0	0	0	9	0.8	7	3	0.9	3	2	5.0	8	5	1.6	15	2	0.5	1	31	
		Prey NHI	Avg.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
		Roleab	Avg.	9	4.2	39	0	0	4	3.7	6	10	1.5	14	17	6.6	93	7	4.9	31	2	0.5	1	47			
		Svay at	Avg.	9	0.7	6	0	0	3	0.4	1	6	1.0	6	8	4.1	31	2	2.8	6	3	0.5	1	30			
		Sub-total		31	0.7	73	0	0	23	5.9	18	23	3.7	25	31	28.7	148	18	16.7	67	8	2.0	3	133			
		Veal Veang	Ou Saom	Pramaey	Avg.	4	1.0	4	0	0	5	0.3	2	3	0.5	2	0	0	0.0	0	0	0	0	0	0	12	
				Pranay	Avg.	5	0.5	3	7	1.0	7	4	1.0	4	1	0	0	0	0	0.0	0	0	0	0	0	13	
				Anlong Reab	Avg.	0	0	0	4	1.0	4	8	1.0	8	3	0.5	2	4.0	6	4	0.8	5	83	3.0	248	102	
Sub-total				9	1.5	6	10	2.0	10	16	2.3	13	7	2.0	4	2	4.0	6	4	0.8	5	91	4.5	260	138		
Whole River Basin	ha			202	2.3	467	13	1.5	19	193	1.0	201	122	1.0	127	92	4.9	449	76	3.7	283	116	2.5	285	813		
	%			25			2			24			15			11			9			14			100		

1/ : Data of all communes located in the Pursat River Basin 2/ : 2 --- average figures of 2 years from 2003 to 2006 Source: PDA Pursat

Table C1-47 Vegetable Production in the Pursat River Basin in 2003 1/

Distric	Commune	Cultivated Area (ha.)			Harvested Area (ha)			Yield (tons/ha)			Annual Production (Tons)		
		Total	Season		Total	Season		Total	Season		Total	Season	
			Wet	Dry		Wet	Dry		Wet	Dry		Wet	Dry
Pursat													
Bakan	Boeng Bat Kandaol	5	5	0	5	5	0	2.5	2.5		13	13	0
Bakan	Me Tuek	3	3	0	3	3	0	6.5	6.5		20	20	0
Bakan	Snam Preah	7	7	0	7	7	0	6.5	6.5		46	46	0
Bakan	Ta Lou	9	9	0	9	9	0	6.5	6.5		59	59	0
Bakan	Trapeang Chong	8	0	8	8	0	8	6.5		6.5	52	0	52
Kandieng	Anlong Vil	57	29	29	45	18	27	8.2	7.0	9.0	369	125	244
Kandieng	Banteay Dei	1	0	1	1	0	1	8.0		8.0	8	0	8
Kandieng	Kandieng	2.0	0	2	2	0	2	0.4		1.4	3	0	3
Kandieng	Kanhchor	15	0	15	14	0	14	7.5		7.5	101	0	101
Kandieng	Srae Sdok	6	0	6	5	0	5	7.5		7.5	40	0	40
Kandieng	Svay Luong	66	31	35	63	28	35	7.6	7.0	8.0	476	196	280
Kandieng	Sya	25	5	20	25	5	20	7.0	7.0	7.0	175	35	140
Kandieng	Veal	4	1.0	3	4	1.0	3	7.4	7.0	7.5	26	7	19
Krakor	Boeng Kantuot	0	0	0	0	0	0				0	0	0
Krakor	Chheu Tom	0	0	0	0	0	0				0	0	0
Krakor	Kampong Pou	0	0	0	0	0	0				0	0	0
Krakor	Ou Sandan	0	0	0	0	0	0				0	0	0
Krakor	Sna Ansa	0	0	0	0	0	0				0	0	0
Krakor	Svay Sa	0	0	0	0	0	0				0	0	0
Krakor	Tnaot Chum	0	0	0	0	0	0				0	0	0
Phnum Kravanh	Bak Chenhchien	6	5	1	6	5	1	7.0	7.0	7.0	42	35	7
Phnum Kravanh	Leach	0	0	0	0	0	0				0	0	0
Phnum Kravanh	Phteah Rung	70	70	0	70	70	0	7.0	7.0		490	490	0
Phnum Kravanh	Prongil	14	6	8	14	6	8	7.0	7.0	7.0	98	42	56
Phnum Kravanh	Rokat	5	3	2	5	3	2	7.0	7.0	7.0	35	21	14
Phnum Kravanh	Santreae	4	3	1	4	3	1	7.0	7.0	7.0	28	21	7
Phnum Kravanh	Samraong	4	3	1	4	3	1	7.0	7.0	7.0	28	21	7
Sampov Meas	Chamraeun Phal	5	2	3	5	2	3	3.8	3.5	4.0	19	7	12
Sampov Meas	Kaoh Chum	3	2	1	3	2	1	1.9	2.0	1.7	6	4	2
Sampov Meas	Lolok Sa	16	8	8	16	8	8	0.9	1.5	0.3	14	12	2
Sampov Meas	Phteah Prey	3	3	0	3	3	0	2.5	2.5		8	8	0
Sampov Meas	Prey Nhi	14	10	4	14	10	4	2.4	2.5	2.0	33	25	8
Sampov Meas	Roleab	23	10	13	23	10	13	2.9	3.5	2.5	68	35	33
Sampov Meas	Svay at	15	5	10	15	5	10	2.5	3.5	2.0	38	18	20
Veal Veang	Ou Saom	0	0	0	0	0	0				0	0	0
Veal Veang	Pranaoy	0	0	0	0	0	0				0	0	0
Veal Veang	Anlong Reab	0	0	0	0	0	0				0	0	0
Veal Veang	Thma Da	0	0	0	0	0	0				0	0	0
Whole River Basin		390	220	170	372	206	166	6.2	6.0	6.3	2,292	1,237	1,055

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Purast, MAFF, 2004

Table C1-48 Fruit Tree Planted Area in the Pursat River Basin in 2003 1/

Province/ District	Commune	Planted Areas of Fruit Trees (ha)											Total	
		Banana	Cashew	Coconut	Longan	Mango	Milk Fruit	Sapodilla	Jack Fruit	Custard	Orange	Guava		Pineapple
Pursat Bakan	Boeng Bat Kandaol	6	0	0	0	0	0	0	0	0	0	0	0	6
	Me Tuek	4	0	0	0	0	0	0	0	0	0	0	0	4
	Snam Preah	4	0	3	0	2	0	0	0	0	5	0	0	14
	Ta Lou	3	0	0	0	0	0	0	0	0	0	0	0	3
	Trapeang Chong	22	0	6	0	5	0	4	0	10	0	0	0	51
Kandieng	Anlong Vil	11	0	8	0	25	0	0	0	1	0	0	0	46
	Banteay Dei	2	0	2	0	5	0	0	1	1	1	0	0	11
	Kandieng	5	0	2	0	3	1	1	0	1	1	0	0	13
	Kanhchor	10	0	8	0	10	0	0	0	1	0	0	0	29
	Srae Sdok	3	0	1	0	3	0	0	0	1	0	0	0	7
Krakor	Svay Luong	51	0	8	1	12	1	2	3	1	3	0	1	82
	Sya	2,380	0	25	0	15	1	1	150	0	1	1	1	2,575
	Veal	15	0	10	0	4	3	0	1	0	0	0	0	33
Phnum Kravanh	Boeng Kantuot	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chheu Tom	0	0	0	0	0	0	0	0	0	0	0	0	0
	Kampong Pou	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ou Sandan	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sna Ansa	0	0	0	0	0	0	0	0	0	0	0	0	0
	Svay Sa	0	0	0	0	0	0	0	0	0	0	0	0	0
	Svay Chum	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bak Chenhchien	0	0	0	0	2	0	0	0	0	0	0	0	2
	Leach	0	0	0	0	0	0	0	0	0	0	0	0	0
	Phiteah Rung	0	0	0	0	0	0	0	0	0	0	0	0	0
	Prongil	0	5	0	0	10	0	0	1	1	3	0	1	21
Sampov Meas	Rokat	3	0	0	0	3	0	0	0	0	1	1	0	8
	Santrae	2	0	0	0	1	0	0	0	0	0	0	0	3
	Samraong	4	2	0	0	3	0	0	0	11	0	0	0	20
	Chamraeun Phal	2	3	6	0	7	0	2	1	1	1	1	1	23
Veal Veang	Kaach Chum	1	0	1	0	2	0	0	1	0	2	0	0	5
	Lolok Sa	10	0	6	0	8	1	1	2	8	3	0	0	40
	Phiteah Prey	1	0	1	0	3	1	0	1	0	0	1	0	7
	Prey Nhi	2	0	1	1	3	1	0	1	0	1	1	0	9
	Roleab	4	21	11	0	15	0	1	5	8	3	2	0	70
	Svay at	4	10	7	0	8	1	2	3	6	5	0	0	46
	Ou Saom	0	0	0	0	0	0	0	0	0	0	0	0	0
Whole River Basin	Pramaoy	0	0	0	0	0	0	0	0	0	0	0	0	0
	Anlong Reab	0	0	0	0	0	0	0	0	0	0	0	0	0
	Thma Da	0	0	0	0	0	0	0	0	0	0	0	0	0
	Whole River Basin	2,549	41	105	2	147	8	13	173	18	55	10	4	3,124

1/: Data of all communes located in the Boribo River Basin

Source: Commune Survey on Crops and Livestock, 2003, Pursat, MAFF, 2004

Table C1-49 Livestock Population in the Pursat River Basin in 2003 1/

Province/ District	Commune	Cattle Total	Cow	Draft Cattle	Buffalo Total	Buffalo Female	Draft Buffalo	Pig Total	Pig Female	Animal Units (A.U.) 2/	Poultry	No. of Farm Families 3/
Pursat Bakan	Boeng Bat Kandaol	2,804	1,320	715	3,627	1,910	1,974	4,505	310	6,689	22,950	1,718
	Me Tuek	3,403	1,675	806	1,743	884	871	4,505	310	5,532	22,900	2,326
	Snam Preah	2,210	722	1,128	766	596	766	1,371	80	2,953	7,280	2,810
	Ta Lou	4,058	1,606	1,744	2,385	1,453	6,443	3,799	400	6,559	26,428	2,726
	Trapeang Chong	4,730	1,136	2,853	2,203	1,079	1,078	5,587	450	7,357	13,130	2,936
	Sub-total	17,205	6,459	7,246	10,724	5,922	11,132	19,767	1,550	29,090	92,688	12,516
Kandieng	Anlong Vil	748	168	229	893	461	673	533	24	1,584	6,103	809
	Banteay Dei	355	116	137	423	172	310	636	46	827	4,934	953
	Kandieng	961	215	451	1,151	356	673	790	27	2,059	4,517	1,205
	Kanhchor	2,181	393	378	3,318	1,214	1,166	1,035	132	5,156	11,322	1,379
	Srae Sdok	1,182	314	342	3,431	1,106	2,199	1,329	196	4,418	26,217	1,595
	Svay Luong	898	436	171	1,295	383	815	2,342	29	2,442	8,326	885
	Sya	1,053	298	289	1,765	589	1,167	891	240	2,714	6,124	1,200
	Veal	294	71	139	85	19	52	182	5	378	2,215	682
	Sub-total	7,672	2,011	2,136	12,361	4,300	7,055	7,738	699	19,577	69,758	5,741
Krakor	Boeng Kantuot	1,860	466	865	1,233	416	920	1,743	191	3,132	16,101	1,130
	Chheu Tom	888	277	262	3,477	856	2,251	1,969	68	4,322	358,102	2,095
	Kampong Pou	1,155	331	246	1,572	513	901	1,626	158	2,780	12,060	1,045
	Ou Sandan	1,737	510	411	1,394	512	882	706	183	2,959	40,113	821
	Sna Ansa	2,074	538	379	1,766	435	733	867	40	3,629	63,328	863
	Svay Sa	321	83	98	3,501	1,349	2,706	1,165	32	3,673	17,357	1,026
	Tnaot Chum	1,583	472	507	2,832	726	1,814	3,022	231	4,578	27,095	1,633
	Sub-total	9,618	2,677	2,768	15,775	4,807	10,207	11,098	903	25,073	534,156	8,613
Phnum Kravanh	Bak Chenhchien	2,272	362	1,200	477	202	302	1,248	44	2,724	12,780	1,263
	Leach	1,440	696	473	638	382	424	1,214	192	2,113	8,453	1,538
	Phteah Rung	3,941	615	2,038	1,975	813	926	4,230	428	6,170	7,945	2,573
	Prongil	2,105	917	1,012	1,103	472	816	1,573	41	3,202	15,109	1,687
	Rokat	1,118	591	412	645	430	531	657	61	1,718	6,375	626
	Santreae	645	111	284	1,297	552	866	493	38	1,846	8,860	799
	Samraong	0	0	0	0	0	0	0	0	0	0	1,925
	Sub-total	11,521	3,292	5,419	6,135	2,851	3,865	9,415	804	17,773	59,522	10,411
Sampov Meas	Chamraeun Phal	236	95	81	541	323	409	437	28	787	6,123	820
	Kaoh Chum	812	217	283	338	138	224	400	8	1,115	121,280	560
	Lolok Sa	2,496	596	963	571	233	378	674	33	2,895	156,802	1,369
	Phteah Prey	790	95	241	210	26	156	1,200	140	1,140	92,303	1,002
	Prey Nhi	1,082	160	629	1,149	417	812	1,341	76	2,276	143,626	1,210
	Roleab	1,288	460	370	1,783	570	1,110	1,616	98	3,087	144,384	2,077
	Svay at	1,823	474	540	849	279	534	2,131	129	2,831	9,584	1,051
	Sub-total	8,527	2,097	3,107	5,441	1,986	3,623	7,799	512	14,131	674,102	8,089
Veal Veang	Ou Saom	0	0	0	201	113	100	61	12	193	1,482	203
	Pramaoy	233	129	30	101	75	14	131	18	327	5,300	515
	Anlong Reab	131	83	40	66	51	14	101	13	198	4,619	267
	Thma Da	22	16	0	34	26	4	30	7	56	3,772	165
	Sub-total	386	228	70	402	265	132	323	50	774	15,173	1,150
Whole River Basin	Head	54,929	16,764	20,746	50,838	20,131	36,014	56,140	4,518	106,418	1,445,399	46,520
	A.U. (No)	49,436			45,754			11,228		106,418		-
	A.U. (%)	46			43			11		100		-
Holding Size/Family	No./family	1.2	0.4	0.4	1.1	0.4	0.8	1.2	0.1	2.3	31.1	-

1/: Data of all communes located in the Boribo River Basin

2/: Animal units assumed as follows: cattle total & buffalo total x 0.9; pig total x 0.2

3/: Assuming crop production families as farm families

Source: Commune Survey on Crops and Livestock, 2003, Pursat, MAFF, 2004

Table C1-50 Financial Crop Budget per Ha under Present/Without-project Conditions

Items	Unit	Unit Price (Riel/1000)	Early Wet/Dry Season Rice						Wet Season Rice											
			Normal Irrigation			Recession Field			Normal Irrigation			Supplemental Irrigation			Rainfed Field					
			Transplanting	Value (Riel/000)	Qty	Transplanting	Value (Riel/000)	Qty	Direct Sowing	Value (Riel/000)	Qty	Transplanting	Value (Riel/000)	Qty	Direct Sowing	Value (Riel/000)	Qty	Transplanting	Value (Riel/000)	Qty
			Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	Value (Riel/000)	Qty	
1. Gross Return Paddy																				
Unit Yield (ton/ha)			3.0	560	2.0	560	2.0	560	3.0	560	1.5	560	2.0	560	1.0	560	1.5	560	560	
Unit Price (Riel/000/t)				1,680		1,120		1,680		1,120		1,680		1,120		1,680		1,120	840	
Gross Return of Paddy (Riel/000)				5,040		2,240		5,040		3,360		5,040		3,360		5,040		3,360	4,536	
By Product (straw) 1/				84		56		84		56		84		56		84		56	42	
Gross Return (Riel/000)				1,764		1,176		1,764		1,176		1,764		1,176		1,764		1,176	882	
2. Production cost				769		586		753		781		716		669		483		548	548	
2-1. Farm Inputs				328		197		231		339		182		241		116		176	176	
Seed 1/	(kg)	560	60	34	60	34	67	80	80	45	120	67	80	45	120	67	80	45	45	
Fertilizers																				
- Urea	(kg)	1,64	115	189	60	98	98	115	115	189	40	66	60	98	10	16	40	66	66	
- DAP	(kg)	1,63	65	106	40	65	65	65	65	106	30	49	60	98	20	33	40	65	65	
- KCl	(kg)	1,55																		
- Compost	(ton)	50																		
Agro-chemicals																				
- Agro-chemicals	(lit)	5.2																		
- Agro-chemicals	(kg)	8.6																		
2-2. Labor Costs				64		51		77		64		77		58		64		51	51	
Labor Requirements 2/																				
- Hired Labor	(man-day)	6.4	10	64	8	51	12	77	10	64	12	77	9	58	10	64	8	51	51	
- Family Labor	(man-day)		89	75	83		51	89	89	75	50	50	75	47	47	73	73	73	73	
Total	(man-day)		99	83			63	99	99	83	62	62	84	57	57	81	81	81	81	
2-3. Land Preparation				250		250		350		250		350		250		250		250	250	
- Draft Animal/Tractor	(Riel/000)																			
2-4. Pumping Cost	(Riel/000)																			
2-5. Transportation	(Riel/000/t)	30	3.0	90	2.0	60	2.0	60	3.0	90	1.5	45	2.0	60	1.0	30	1.5	45	45	
- By Ox Cart																				
2-6. Miscellaneous Expenses	(L.S.)			37		28		36		37		33		30		23		26	26	
(2-1 ~ 2-4 x 5%)																				
3. Net Return	Riel/000			995		590		423		983		166		507		105		334	334	
%	%			56		50		36		56		19		43		18		38	38	
Rounded				1,000		590		420		980		170		510		100		330	330	

1/: By products/straw: assumed to be 5% of gross return of paddy & mungbeans to be 2% of gross return

2/: Hired Labor Requirements --- assumed to be 10% of total labor requirements in transplanting & 20% in case of direct sowing

Table C1-51 Farm Economy under the Present Condition: Pursat River Basin

Unit: 1000 riel

Item	Typical Farm					
	Family with Rainfed Paddy Field: 1.1ha 1/					
	Cropping Intensity: 100%					
	Cropped Area (ha)	Production (kg)	Unit Price (riel)	Amount		
			(1000 riel)	(US\$) 2/		
1. Net Income				<u>2,600</u>	<u>634</u>	
1-1. Net Farm Income				<u>745</u>	<u>182</u>	
(1) Rice Production 3/ Wet Season Rice	1.1	1,650	560	924		
Gross Return				924		
Production Cost 4/				531		
Net Return				<u>393</u>		
(2) Other Farm Products 5/						
Gross Return				<u>503</u>		
Livestock				305		
Fishery				26		
Other Crops				172		
Production Cost 6/				151		
Net Return				<u>352</u>	<u>86</u>	
1-2. Net Non-farm Income 5/						
(1) Net Income				<u>1,855</u>	<u>452</u>	
Wage & Salary				570		
Trade				466		
Remittance from Family Members				189		
Others				630		
2. Expenditure 5/				<u>2,644</u>	<u>645</u>	
Food				1,419		
Health/Medical				207		
Education				230		
Clothes				105		
Fuel				74		
Others				609		
3. Net Surplus (Capacity to Pay)				-44	-11	

1/: Land holding size: holding of 2.0 ha of rainfed paddy field

2/: Estimated by applying conversion rate of 1US\$ = Riel 4,100.-

3/: Transplanting assumed: yield = 1.5 t/ha

4/: Estimated based on the crop budget analysis by the JICA Study Team

5/: Estimated based on the results of the Socio-economic Survey conducted by JICA Study Team in 2007

6/: Assumed to be 30% of gross return

Table C1-52 Results of Socio-economic Survey on Farming Constraints & Expectations: Pursat River Basin (1/3)

1. Design of Sample Survey

Sample Number	120 farmers	No. of communes	3 communes	Survey method	Interview survey by enumerators
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2. Farming Constraints and Improvement

2-1. Farming Constraints (agronomic & farm management)

Farming constraint (agronomic/farm management)	Degree of Constraints												Total Score	Rating
	Most Serious Score: 4			2nd Serious Score: 3			3rd Serious Score: 2			4th Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Low yield of crops (paddy)	40	31	160	12	9	36	6	5	12	9	7	9	217	1
Crop losses due to pest & disease	13	10	52	12	9	36	4	3	8	2	2	2	98	3
Weed problem	7	5	28	6	5	18	7	5	14	8	6	8	68	
Crop losses due to wild animal	4	3	16	7	5	21	4	3	8	1	1	1	46	
Difficulty for hiring draft animal/machinery	5	4	20	6	5	18	5	4	10	1	1	1	49	
Labor shortage	6	5	24	14	11	42	6	5	12	7	5	7	85	
Insufficient extension services	2	2	8	7	5	21	13	10	26	7	5	7	62	
Shortage of farming capital	5	4	20	6	5	18	7	5	14	4	3	4	56	
Difficulty for obtaining quality seeds	8	6	32	8	6	24	11	8	22	3	2	3	81	
Difficulty for purchasing fertilizers	10	8	40	9	7	27	9	7	18	4	3	4	89	
Expensive farm inputs	0	0	0	2	2	6	6	5	12	1	1	1	19	
Poor soil conditions	10	8	40	24	18	72	8	6	16	7	5	7	135	2
Marketing problems of products	0	0	0	1	1	3	4	3	8	2	2	2	13	
Lack of farm credit	0	0	0	2	2	6	2	2	4	0	0	0	10	
Others	20	15	80	14	11	42	38	29	76	74	56.92	74	272	
Total	130	100	520	130	100	390	130	100	260	130	100	130	1300	

2-2. Farming Constraints (physical)

Farming Constraints/Physical (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water shortage in wet season	111	85	333	17	13	34	2	2	2	369	1
Irrigation water shortage in dry season	5	4	15	59	45	118	4	3	4	137	2
Inundation/flooding	1	1	3	2	2	4	3	2	3	10	
Drainage problem	5	4	15	17	13	26	20	15	15	15	
Lack of farm road	0	0	0	1	1	2	9	7	9	11	
Lack of transportation means	0	0	0	6	5	12	16	12	16	28	3
Leveling problem of paddy field	0	0	0	2	2	4	11	8	11	15	
Others	8	6	24	26	20	52	59	45	59	135	
Total	130	100	390	130	100	226	130	100	104	720	

2-3. Marketing constraints

Marketing Constraints (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Unstable market prices of paddy/rice	69	53	207	20	15	40	4	3	4	251	1
Low market prices of paddy/rice	34	26	102	27	21	54	6	5	6	162	2
Limitation of market of paddy/rice	2	2	6	9	7	18	1	1	1	25	
Unstable market prices of other crops	3	2	9	8	6	16	9	8	9	34	
Low market prices of other crops	8	6	24	2	2	4	4	3	4	32	
Limitation of market of other crops	0	0	0	3	2	6	0	0	0	6	
Unstable market prices of livestock	5	4	15	20	15	40	17	14	17	72	3
Low market prices of livestock	2	2	6	18	14	36	20	17	20	62	
Limitation of market of livestock	0	0	0	0	0	0	2	2	2	2	
Lack of or poor farm to market road	2	2	6	7	5	14	7	6	7	27	
Others	5	4	15	16	12	32	50	42	50	97	
Total	130	100	390	130	100	260	120	100	120	770	

2-4. Reasons for limited productivity of crops in the rice field of interviewee (not specific to last year)

Reasons for Limited Productivity (Answer)	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Drought in wet season	98	75	294	13	10	26	8	6	8	328	1
Water shortage in dry season	9	7	27	31	24	62	3	2	3	92	3
Shortage of farming capital	1	1	3	14	11	28	13	10	13	44	
Poor seed quality	3	2	9	11	8	22	13	10	13	44	
Poor soil	8	6	24	38	29	76	20	15	20	120	2
Limited application of fertilizer	0	0	0	3	2	6	5	4	5	11	
Damages caused by wild animal (rat)	0	0	0	8	6	16	13	10	13	29	
Poor drainage	2	2	6	4	3	8	11	8	11	25	
Flooding/inundation	1	1	3	0	0	0	0	0	0	3	
Inadequate farming technologies	1	1	3	6	5	12	9	7	9	24	
Damages caused by pest & disease	0	0	0	0	0	0	5	4	5	5	
Others	7	5	21	2	2	4	30	23	30	55	
Total	130	100	390	130	100	260	130	100	130	780	

Table C1-52 Results of Socio-economic Survey on Farming Constraints & Expectations: Pursat River Basin (2/3)

2-5. Activities/practices to improve rice productivity implemented by the interviewee in the past 3 years (plural answer)

Activities Implemented	No. & Proportion of Respondents Implemented Activities/Practices		Remarks
	No.	%	
Increased fertilization doses	101	19	No. of respondents : 130 Maximum 4 activities selected/respondent Total answers: 520
Applied of compost/manure	77	15	
Used quality seed (local variety)	68	13	
Used quality seed (high yielding variety)	63	12	
Constructed of farm pond	4	1	
Started to use water pump for irrigation	42	8	
Improved farming practices	25	5	
Improved post-harvest practices	15	3	
Changed marketing methods	18	3	
Others	107	21	
Total	520	100	

2-6. Necessary activities to improve rice productivity in the field of the interviewee (farming & farm management; plural answer)

Necessary Activities	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 4			2nd Most Required Score: 3			3rd Most Required Score: 2			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Improvement of farming practices	49	38	196	16	12	48	9	9	18	8	13	8	270	1
Use of quality seed (local variety)	22	17	88	22	17	66	13	13	26	8	13	8	188	
Use of quality seed (high yielding variety)	18	14	72	38	29	114	10	10	20	8	13	8	214	2
Use of adequate doses of fertilizer	19	15	76	19	15	57	29	30	58	10	16	10	201	3
Improved leveling of paddy field	2	2	8	5	4	15	3	3	6	3	5	3	32	
Planting at proper time	2	2	8	14	11	42	15	15	30	5	8	5	85	
Intensive weeding	1	1	4	8	6	24	13	13	26	11	17	11	65	
Formation/strengthening of farmers organization	1	1	4	2	2	6	4	4	8	9	14	9	27	
Others	16	12	64	6	5	18	2	2	4	1	2	1	87	
Total	130	100	520	130	100	390	98	100	196	63	100	63	1169	

2-7. Necessary physical works to improve rice productivity in the field of the interviewee (plural answer)

Necessary Physical Works	Degree of Necessity of Activity												Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1			4th Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score	No.	%	Score		
Irrigation water supply for wet season	103	79	309	20	15	40	4	3	4	0	0	0	353	1
Irrigation water supply for dry season	12	9	36	59	45	118	10	8	10	4	3	4	168	2
Mitigation of inundation/flooding	1	1	3	2	2	4	7	5	7	7	5	7	21	
Drainage improvement	3	2	9	23	18	46	37	28	37	2	2	2	94	3
Others	11	8	33	26	20	52	72	55	72	117	90	117	274	
Total	130	100	390	130	100	260	130	100	130	130	100	130	910	

3. Livestock Constraints

Livestock Constraints	Degree of Constraints									Total Score	Rating
	Most Serious Score: 3			2nd Serious Score: 2			3rd Serious Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Low productivity	45	35	135	18	14	36	12	9	12	183	2
Shortage of feed	16	12	48	20	15	40	6	5	6	94	3
Low or unstable market prices	8	6	24	15	12	30	13	10	13	67	
Market availability	1	1	3	3	2	6	2	2	2	11	
Losses due to diseases	52	40	156	42	32	84	14	11	14	254	1
Insufficient veterinary services	4	3	12	18	14	36	27	21	27	75	
Insufficient extension services	3	2	9	7	5	14	20	15	20	43	
Difficulty in obtaining good breed	0	0	0	0	0	0	0	0	0	0	
Others	1	1	3	7	5	14	36	28	36	53	
Total	130	100	390	130	100	260	130	100	130	780	

4. Expectations for Improvement

4-1. Farming (agronomic & farm management)

Expectations for Improvement	Degree of Expectation									Total Score	Rating
	Most Expected Score: 3			2nd Most Expected Score: 2			3rd Most Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Productivity improvement of wet season rice	108	83	324	11	8	22	1	1	1	347	1
Productivity improvement of dry season rice	9	7	27	43	33	86	2	2	2	115	2
Productivity improvement of field crops	4	3	12	29	22	58	20	15	20	90	3
Productivity improvement of vegetables	2	2	6	11	8	22	24	18	24	52	
Productivity improvement of livestock/poultry	0	0	0	13	10	26	12	9	12	38	
Increasing livestock holding size & production	2	2	6	18	14	36	17	13	17	59	
Increasing poultry holding size & production	0	0	0	1	1	2	12	9	12	14	
Strengthening/formation of farmers organizations	1	1	3	0	0	0	8	6	8	11	
Improvement of post-harvest operation	2	2	6	3	2	6	3	2	3	15	
Others	2	2	6	1	1	2	31	24	31	39	
Total	130	100	390	130	100	260	130	100	130	780	

Table C1-52 Results of Socio-economic Survey on Farming Constraints & Expectations: Pursat River Basin (3/3)

4-2. Farming (farming system)

Farming System	Degree of Expectation									Total Score	Rating
	Primarily Intended Score: 3			Secondary Intended Score: 2			Thirdly Intended Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Double cropping of rice	94	73	282	12	11	24	2	3	2	308	1
Stable single cropping of rice	15	12	45	36	33	72	12	16	12	129	
Multiple farming (crop + livestock etc.)	15	12	45	48	44	96	19	26	19	160	2
Crop diversification	5	4	15	12	11	24	41	55	41	80	
Total	129	100	387	108	100	216	74	100	74	677	

4-3. Farming (physical)

Farming (physical)	Degree of Expectation									Total Score	Rating
	Primarily Expected Score: 3			Secondary Expected Score: 2			Thirdly Expected Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Adequate irrigation water supply in wet season	109	84	327	17	13	34	1	1	1	362	1
Adequate irrigation water supply in dry season	10	8	30	64	51	128	12	10	12	170	2
Mitigation of inundation & flooding	2	2	6	1	1	2	9	8	9	11	
Construction/rehabilitation of farm road	0	0	0	4	3	8	6	5	6	14	
Construction/rehabilitation of farm to market road	1	1	3	2	2	4	3	3	3	7	
Drainage improvement	0	0	0	17	13	34	35	30	35	69	3
Leveling of paddy field	1	1	3	5	4	10	12	10	12	22	
Others (specify)	7	5	21	16	13	32	37	32	37	69	
Total	130	100	357	126	100	252	115	100	115	724	

4-4. Agricultural support services

Agricultural Support Required	Degree of Necessity of Support									Total Score	Rating
	Most Required Score: 3			2nd Most Required Score: 2			3rd Most Required Score: 1				
	No.	%	Score	No.	%	Score	No.	%	Score		
Field Extension services (demonstration / field guidance)	77	59	231	25	19	50	6	5	6	287	1
Provision of quality seed	36	28	108	47	36	94	10	8	10	212	2
Farmer training (technical & post-harvest operation)	9	7	27	32	25	64	33	25	33	124	3
Farmer training (organization, marketing, farm management)	1	1	3	12	9	24	15	12	15	39	
Support to organize farmers	0	0	0	4	3	8	7	5	7	15	
Provision of market information	1	1	3	3	2	6	6	5	6	15	
Provision of farm credit	0	0	0	2	2	4	2	2	2	6	
Provision of fertilizer	4	3	12	3	2	6	21	16	21	39	
Others (specify)	2	2	6	2	2	4	30	23	30	34	
Total	130	100	390	130	100	390	130	100	390	1170	

Table C1-53 Physical & Chemical Properties of the Major Soils Distributed in the Borribo River Basin

Soil Sub-unit/ (mapping symbol)	Pit No.	Depth (cm)	Particle Size Distribution (%)			Texture	pH		EC (1.5) ($\mu\text{s}/\text{cm}$)	Total Carbon Nitrogen (%)	C/N Ratio	Organic Matter (%)	Total P_2O_5 (%)	Available P_2O_5 (ppm)	CEC (meq /100g soil)	Exchangeable Cation (meq/100g soil)				Base Saturation (%)	
			Clay	Silt	Sand		(H_2O)	(KCl)								Ca	Mg	K	Na		Total
Luvic Arenosol (ARl)	BP1	00-10	3.7	3.1	93.2	S	5.7	4.8	5.0	3.9	0.4	9.3	0.0	11.5	5.5	1.8	1.3	0.3	0.1	3.4	61
		10-30	4.0	2.6	93.4	S	6.3	5.5	4.7	2.9	0.4	7.0	0.5	14.0	6.0	2.5	1.5	0.3	0.1	4.4	73
		30-55	10.6	3.1	86.3	LS	6.7	5.8	7.5	2.9	0.4	8.3	0.5	23.5	6.5	3.0	1.5	0.5	0.1	5.1	78
Haplic Arenosol (ARh)	BP2	00-16	3.4	3.2	93.4	S	5.8	4.5	3.4	4.9	0.4	13.9	0.8	20.0	5.5	1.3	1.3	0.4	0.1	3.0	54
		16-32	4.0	2.8	93.2	S	5.9	4.8	11.3	5.8	0.5	11.8	1.0	12.5	4.0	1.5	1.0	0.1	0.1	2.7	67
		32-52	3.5	2.6	93.9	S	6.4	5.0	4.2	5.8	0.5	11.8	1.0	75.0	4.0	1.3	1.0	0.1	0.1	2.4	60
Plinthic Acrisol (ACp)	BP3	00-12	13.1	24.7	62.2	L	5.9	4.5	9.2	6.8	0.4	19.4	1.4	28.5	6.5	2.8	1.3	0.5	0.3	4.8	74
		12-25	13.2	23.1	63.7	L	6.1	5.0	5.9	3.9	0.5	8.0	0.7	17.5	8.0	2.5	1.3	0.5	0.2	4.5	56
		25-45	17.2	23.0	59.8	CL	6.0	4.5	4.2	5.8	0.4	13.8	1.0	3.0	6.0	2.0	1.3	0.4	0.1	3.7	62
Dystric Fluvisol (FLd)	BP4	00-16	9.9	15.5	74.6	SL	5.5	4.6	39.3	10.7	0.8	12.8	1.8	21.5	7.0	1.8	1.0	0.8	0.3	3.8	54
		16-44	15.8	17.5	66.7	SCL	7.3	5.5	30.6	7.8	0.6	12.4	1.3	6.5	5.0	2.3	1.0	0.8	0.3	4.3	85
		44-72	20.1	2.8	77.1	SCL	7.2	5.8	32.5	4.9	0.5	9.9	0.8	5.0	7.5	4.3	1.3	1.0	0.8	7.2	96
Gleyic Acrisol (ACg)	BP5	00-10	4.2	14.8	81.0	SL	6.0	4.7	22.8	3.9	0.4	11.1	0.7	4.0	5.0	1.3	1.0	0.3	0.2	2.8	55
		10-26	2.8	12.3	84.9	SL	6.2	4.9	5.5	2.9	0.4	8.3	0.5	1.0	4.0	1.3	1.0	0.3	0.1	2.6	66
		26-49	2.3	20.7	77.0	SL	5.8	4.5	12.5	3.9	0.4	11.1	0.7	0.0	0.0	5.0	1.5	1.0	0.5	0.1	3.2
Dystric Cambisol (CMD)	BP6	00-12	4.3	5.5	90.2	LS	6.3	4.9	5.8	7.8	0.6	12.4	1.3	28.5	4.5	1.5	1.0	0.3	0.2	3.0	66
		12-30	9.5	3.6	86.9	LS	5.4	4.5	7.9	7.8	0.5	15.9	1.3	13.5	7.0	1.5	1.0	0.4	0.3	3.2	45
		30-100	18.6	2.8	78.6	SCL	5.7	4.4	3.7	3.9	0.6	6.2	0.7	0.1	21.5	7.0	1.3	1.0	0.7	0.4	3.3

Methods of soil analysis:

Texture --- pipette method

Total C --- Black

Total N --- Kjeldahl method

Organic matter --- ignition loss

Total P_2O_5 --- Murphy method

Available P_2O_5 --- Olsen method

CEC --- 1M $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$

Exchangeable cations: 1M Ammonium Acetate pH 7

Table C1-54 Properties and Suitability Classification of Soils: Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture		Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	-	S1/S2	S3	-	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	-	S1/S2	S3	-	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	-	S2	S3	-	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	Suitability Class	S1	-	S1/S2	S3		S3c
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	-	N	S3	-	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	-	N	S3	-	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						N
	Suitability Class	S1		N	S3	-	
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S2tc
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	-	S2	S2	-	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2c/S2tc
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	-	S1/S2	S2	-	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S2tc
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2tc/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average	shallow - deep			11	5.8	
	Suitability Class	S1 ~ N	-	S2/S3	S2	-	
Eutric Leptosol (LPe)	-	shallow - deep					S2-N
Dystric Cambisol (CMd)	PP6	deep (>80cm)	HC	HC	25	6.4	S2tc/S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	-	S2/S3	S2	-	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S2tc
	Suitability Class	S1	-	S2	S2	-	
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	-						S2-N
	Suitability Class	S1 ~ N		S2/S3	S2	-	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2-N
	Suitability Class	S1 ~ N		S2	S2		

Table C1-55 Properties and Suitability Classification of Soils: Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Sample No.	Effective Soil Depth	Surface Soil Texture (t)		Top Soil CEC (e) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
			30cm	60cm			
Gleyic Acrisol (ACg)	P2	deep (>80cm)	LiC	HC	13	5.6	S3c/S3tc
	MP3	deep (>80cm)	LiC	LiC	13	5.2	
	PP3	deep (>80cm)	SL	SL	6	5.6	
	BP5	deep (>80cm)	SL	SL	5	6.1	
	Average	deep (>80cm)			9	5.6	
	Suitability Class	S1	S2/S3	-	S3	S2	
Plinthic Acrisol (ACp)	MP2	deep (>80cm)	LiC	HC	10	5.4	S3c/S3tc
	MP4	deep (>80cm)	SL	SL	8	5.7	
	PP4	deep (>80cm)	SL	SL	7	5.6	
	BP3	deep (>80cm)	L	L	7	6.0	
	Average	deep (>80cm)			8	5.7	
	Suitability Class	S1	S1-S3	-	S3	S2	
Areni-gleyic Acrisol (ACga)	MP6	deep (>80cm)	SL	SL	7	5.8	S3c
	Suitability Class	S1	S2	-	S3	S2	
Gleyic-plinthic Acrisol (ACpg)	-						S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	-						S3c/S3tc
	Suitability Class	S1	S1-S3	-	S3	S2	
Areni-haplic Acrisol (ACha)	-						S3
Haplic Acrisol-skeletal (ACh-C)	-						S3
Luvic Arenosol (ARl)	BP1	deep (>80cm)	S	S	6	6.0	N
	Suitability Class	S1	N	-		S1	
Haplic Arenosol (ARh)	BP2	deep (>80cm)	S	S	5	5.9	N
	Suitability Class	S1	N	-		S2	
Luvic Arenosol/Haplic Arenosol (ARl/ARh)	-						S1/S2
		S1	N	-			
Gleyic Luvisol (LVg)	P1	deep (>80cm)	LiC	HC	19	6.0	S3t
	P3	deep (>80cm)	HC	HC	20	5.5	
	MP1	deep (>80cm)	HC	HC	22	6.0	
	Average	deep (>80cm)			20	5.8	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Fluvisol (FLd)	PP2	deep (>80cm)	LiC	CL	12	5.7	S2tcp/S3t
	BP4	deep (>80cm)	SL	SCL	7	5.5	
	Average	deep (>80cm)			10	5.6	
	Suitability Class	S1	S2/S3	-	S2	S2	
Eutric Fluvisol (FLe)	-	deep (>80cm)					S2
Dystric Gleysol (GLd)	P4	deep (>80cm)	HC	HC	22	5.7	S3t
	PP1	deep (>80cm)	SiC	SiC	14	5.3	
	Average	deep (>80cm)			18	5.5	
	Suitability Class	S1	S3	-	S2	S2	
Dystric Leptosol (LPd)	P5	shallow - deep	LiC	LiC	12	5.4	S2cp/S3t/N
	MP5	shallow - deep	LS	LS	7	5.7	
	PP5	shallow - deep	L	HC	15	6.4	
	Average				11	5.8	
	Suitability Class	S1 ~ N	S1/S3	-	S2	S2	
Eutric Leptosol (LPe)	-	shallow - deep					S2~N
Dystric Cambisol (CMD)	PP6	deep (>80cm)	HC	HC	25	6.4	S3t
	BP6	deep (>80cm)	LS	LS			
	Suitability Class	S1	S3	-	S1	S1	
Eutric Cambisol (CMe)	P6	deep (>80cm)	HC	HC	18	6.6	S3t
	Suitability Class	S1	S3	-	S2	S1	
Dystric Leptosol/Dystric Cambisol (LPd/CMD)	-						S2~N
	Suitability Class	S1 ~ N	S1/S3	-	S1/S2	S1/S2	
Eutric Leptosol/Eutric Cambisol (LPe/CMe)	-						S2~N
	Suitability Class	S1 ~ N	S2/S3	-	S2	S2	

Table C1-56 Land Suitability Classification of Soils Distributed in the Boribo River Basin

1. Suitability Classification for Rice Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (60cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Rice
	ha	%					
Gleyic Acrisol (ACg)	92,340	13	S1	S1/S2	S3	-	S3c
Plinthic Acrisol (ACp)	23,270	3	S1	S1/S2	S3	-	S3c
Areni-gleyic Acrisol (ACga)	1,560	-	S1	S2	S3	-	S3c
Gleyic-plinthic Acrisol (ACpg)	10,630	1	S1	-	-	-	S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	119,750	17	S1	S1/S2	S3	-	S3c
Haplic Acrisol-skeletal (ACh-c)	12,220	2	S1	-	-	-	S3
Luvic Arenosol (ARI) 1/	680	-	S1	N/S4	S3	-	N/S4
Haplic Arenosol (ARh) 1/	-	-	S1	N/S4	S3	-	N/S4
Luvic Arenosol/Haplic Arenosol (ARI/ARh) 1/	221,630	31	S1	N/S4	S3	-	N/S4
Dystric Fluvisol (FLd)	40,650	6	S1	S1/S2	S2	-	S2c/S2tc
Dystric Gleysol (GLd)	26,550	4	S1	S2	S2	-	S2tc
Dystric Leptosol (LPd)	-	-	S1 ~ N	S2/S3	S2	-	S2tc/S3t/N
Dystric Cambisol (CMd)	-	-	S1	S2/S3	S2	-	S2tc/S3t
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	153,860	21	S1 ~ N	S2/S3	S2	-	S2~N
Water Surface & Residential Area	12,260	2	-	-	-	-	-
Basin Total	715,400	100					

2. Suitability Classification for Upland Crops Cultivation

Soil Sub-unit (Mapping Symbol)	Distribution		Effective Soil Depth	Surface Soil Texture (t) (30cm)	Top Soil CEC (c) (meq)	Top Soil pH (p) (H ₂ O)	Suitability Sub-class for Upland Crops
	ha	%					
Gleyic Acrisol (ACg)	92,340	13	S1	S2/S3	S3	S2	S3c/S3tc
Plinthic Acrisol (ACp)	23,270	3	S1	S1~S3	S3	S2	S3c/S3tc
Areni-gleyic Acrisol (ACga)	1,560	-	S1	S2	S3	S2	S3c
Gleyic-plinthic Acrisol (ACpg)	10,630	1	S1	-	-	-	S3
Gleyic Acrisol/Plinthic Acrisol (ACg/ACp)	119,750	17	S1	S1~S3	S3	S2	S3c/S3tc
Haplic Acrisol-skeletal (ACh-c)	12,220	2	S1	-	-	-	S3
Luvic Arenosol (ARI) 1/	680	-	S1	N/S4	-	S1	N/S4
Haplic Arenosol (ARh) 1/	-	-	S1	N/S4	-	S2	N/S4
Luvic Arenosol/Haplic Arenosol (ARI/ARh) 1/	221,630	31	S1	N/S4	-	S1/S2	N/S4
Dystric Fluvisol (FLd)	40,650	6	S1	S2/S3	S2	S2	S2tcp/S3t
Dystric Gleysol (GLd)	26,550	4	S1	S3	S2	S2	S3t
Dystric Leptosol (LPd)	-	-	S1 ~ N	S1/S3	S2	S2	S2cp/S3t/N
Dystric Cambisol (CMd)	-	-	S1	S3	S1	S1	S3t
Dystric Leptosol/Dystric Cambisol (LPd/CMd)	153,860	21	S1 ~ N	S1/S3	S1/S2	S1/S2	S2~N
Water Surface & Residential Area	12,260	2	-	-	-	-	-
Basin Total	715,400	100					

1/: S4 for existing rice & upland fields

S1: Highly Suitable

Subject soil or land characteristics present no significant limitations for a given use

S2: Moderately Suitable

Subject soil or land characteristics present moderately severe limitations for a given use

S3: Marginally Suitable

Subject soil or land characteristics present substantially severe limitations for a given use

S4: Conditionally Suitable

Suitability class categorized for farm land (rice fields & upland fields) distributed with sandy soils;

Existing rice & upland fields distributed with sandy soils are classified into S4 because land use conversion to other more productive agricultural use is not conceived.

N: Not Suitable

Subject soil or land characteristics present limitations so severe as to preclude successful sustained use of the land in the given manner.

Table C1-57 Agro-demographic Features of the Boribo River Basin (1/2)

Province/District	Commune	No. of Households		Crop Producing Households (% to Total Households)		Wet Season Rice Producing Households (% to Crop Producing Households)		Landless Households (% to Total Households)		Households with less than 10 a (% to Total Households)		Households with more than 30a (% to Total Households)		Cropped Area of Wet Season Rice in 2003	Cropped Area of Wet Season Rice per Household	Irrigated Area	Irrigated Area per Crop Producing Household
		(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(ha)	(ha)	(ha)	(ha)
Kampong Chhnang Baribour	Anhchanh Rung	981	100	981	100	0	0	0	0	26	3	3,540	3.6	0	0.00		
	Chhnok Tru	1,495	85	0	0	228	15	0	0	20	1	510	0.0	0	0.00		
	Chak	582	97	552	95	15	3	0	0	0	0	1,046	1.9	0	0.00		
	Khon Rang	1,331	92	1,053	79	101	8	0	0	0	0	1,585	1.5	0	0.00		
	Kampong Preah Kokir	353	96	0	0	15	4	0	0	20	6	0	0.0	0	0.00		
	Melum	790	98	776	98	14	2	0	0	0	0	1,648	2.1	0	0.00		
	Phsar	1,109	95	331	30	55	5	0	0	0	0	1,565	4.7	0	0.00		
	Pech Changyar	700	94	660	94	40	6	0	0	6	1	1,145	1.7	0	0.00		
	Popel	922	98	899	98	23	2	33	4	0	0	1,065	1.2	0	0.00		
	Ponley	1,401	79	1,104	79	297	21	413	29	3	0	740	0.7	0	0.00		
	Trapeang Chan	940	82	722	77	166	18	0	0	0	0	1,093	1.5	0	0.00		
	Kampong Tralach	Ampil Tuek	2,301	100	0	0	0	0	0	0	10	0	0	0.0	1,755	0.76	
		Chhuk Sa	1,642	90	1,485	90	157	10	96	6	23	1	1,900	1.3	56	0.04	
Chres		1,770	98	1,402	79	40	2	0	0	0	0	1,304	0.9	405	0.23		
Kampong Tralach		1,114	100	227	20	5	0	0	0	10	1	300	1.3	390	0.35		
Longveack		1,390	95	1,115	80	75	5	80	6	55	4	1,850	1.7	400	0.30		
Ou Ruessei		1,618	80	1,245	77	323	20	485	30	0	0	750	0.6	425	0.33		
Peani		1,462	92	1,342	92	120	8	145	10	0	0	800	0.6	380	0.28		
Saeb		1,316	80	1,042	79	257	20	27	2	3	0	1,800	1.7	287	0.27		
Ta Ches		20,736	100	1,901	9	0	0	500	2	0	0	1,900	1.0	0	0.00		
Thma Edth		933	98	910	98	23	2	104	11	0	0	1,800	2.0	0	0.00		
Rolea B'ier		Andoung Snay	1,002	100	972	97	0	0	229	23	82	8	1,415	1.5	50	0.05	
	Banteay Preal	881	100	0	0	0	0	0	0	0	0	2,129	0.0	0	0.00		
	Cheung Kreav	1,273	93	1,182	93	84	7	0	0	0	0	2,338	2.0	0	0.00		
	Chrey Bak	1,992	100	1,992	100	0	0	0	0	65	3	2,739	1.4	120	0.06		
	Kouk Banteay	1,048	99	768	73	10	1	51	5	51	5	622	0.8	1,039	1.00		
	Krang Leav	1,220	98	1,195	98	25	2	55	5	0	0	2,480	2.1	0	0.00		
	Pongro	1,492	98	1,455	98	37	2	28	2	0	0	1,450	1.0	0	0.00		
	Prasneb	971	97	946	97	25	3	0	0	0	0	3,400	3.6	0	0.00		
	Prey Mul	835	100	835	100	0	0	35	4	0	0	1,575	1.9	0	0.00		
	Rolea B'ier	1,659	92	1,627	98	32	2	20	1	0	0	1,570	1.0	0	0.00		
	Srac Thmei	2,022	89	1,797	89	225	11	0	0	0	0	1,330	0.7	0	0.00		
	Svay Chrum	2,766	100	2,215	80	10	0	15	1	15	1	2,817	1.3	478	0.17		
	Tuek Hout	1,335	85	938	70	197	15	115	9	267	20	1,245	1.3	45	0.04		
	Sameakki Mean Ch	Chhean Laeung	688	99	680	99	8	1	150	22	0	0	862	1.3	120	0.18	
Khmar Chhmar		1,307	99	1,292	99	15	1	71	5	0	0	1,912	1.5	504	0.39		
Krang Lvea		1,564	99	1,512	97	15	1	57	4	15	1	2,213	1.5	254	0.16		
Peam		1,504	94	1,419	94	85	6	92	6	22	1	1,741	1.2	320	0.23		
Sodthei		1,262	100	1,206	96	0	0	0	0	198	16	1,250	1.0	25	0.02		
Svay		1,880	96	1,809	96	71	4	51	3	0	0	1,741	1.0	21	0.01		
Svay Chuk		1,615	99	1,600	99	15	1	42	3	52	3	2,111	1.3	200	0.13		
Tbaeng Khpos		1,617	97	1,575	97	42	3	20	1	0	0	2,113	1.3	250	0.16		
Thlok Vien		1,085	98	1,067	98	18	2	71	7	0	0	1,743	1.6	430	0.40		
Tuek Phos		1,677	85	1,427	85	250	15	0	0	86	5	2,805	2.0	250	0.18		
Kampong Speu Aoral	Chieb	1,267	98	1,247	98	20	2	0	0	300	24	2,405	1.9	250	0.20		
	Chaong Maong	1,245	99	1,230	99	15	1	0	0	225	18	2,081	1.7	400	0.33		
	Kbal Tuek	822	99	817	99	5	1	0	0	11	1	1,759	2.2	120	0.15		
	Khlong Popok	1,088	99	1,077	99	11	1	0	0	37	3	1,751	1.6	115	0.11		
	Krang Skeep	2,246	93	2,096	93	150	7	0	0	80	4	3,337	1.6	155	0.07		
	Tang Krasang	1,740	89	1,544	89	196	11	0	0	171	10	2,559	1.7	175	0.11		
	Toul Khpos	746	94	702	94	44	6	0	0	14	2	1,631	2.3	30	0.04		
	Trapeang Chour	1,572	10	159	10	0	0	0	0	92	6	1,895	11.9	0	0.00		
	Sangkac Satob	1,022	88	902	88	120	12	0	0	50	5	708	0.8	13	0.01		
	Odongk	Chant Saen	1,097	100	1,097	100	0	0	0	0	0	0	904	0.8	30	0.03	
Cheung Roas		1,148	100	1,148	100	0	0	0	0	0	0	840	0.7	80	0.07		
Khsem Khsan		1,550	100	1,550	100	0	0	0	0	0	0	1,668	1.1	0	0.00		
Krang Chek		2,307	91	2,105	91	202	9	120	5	0	0	719	0.3	152	0.07		
Mean Chey		1,039	100	1,039	100	0	0	0	0	28	3	1,205	1.2	35	0.03		
Preah Srae		1,318	100	1,318	100	0	0	0	0	0	0	935	0.7	150	0.11		
Prey Krasang		1,483	100	1,483	100	0	0	0	0	0	0	900	0.6	35	0.02		
Trach Tong		1,219	100	0	0	0	0	0	0	25	2	1,347	18	0.01			
Veal Pung		2,222	100	2,222	100	0	0	0	0	0	0	255	0.1	504	0.23		
Veang Chas		1,258	91	1,150	91	108	9	10	1	0	0	1,010	0.9	0	0.00		
Yuth Sameakki		1,206	100	1,206	100	0	0	15	1	150	12	673	0.6	40	0.03		
Damnak Reang		1,057	100	1,057	100	0	0	0	0	0	0	1,058	1.0	0	0.00		
Peang Lvea		1,241	100	1,241	100	0	0	0	0	0	0	1,038	0.8	10	0.01		
Phum Touch		1,547	100	1,547	100	0	0	0	0	0	0	1,740	1.1	0	0.00		

Table C1-57 Agro-demographic Features of the Boribo River Basin (2/2)

Province/District	Commune	No. of Households		Crop Producing Households (% to Total Households)		Wet Season Rice Producing Households (% to Crop Producing Households)		Landless Households (% to Total Households)		Households with less than 10 a (% to Total Households)		Households with more than 3ha (% to Total Households)		Cropped Area of Wet Season Rice in 2003	Cropped Area of Wet Season Rice per Rice Producing Household	Irrigated Area	Irrigated Area per Crop Producing Household
		(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)	(ha)	(ha)	(ha)	(ha)
Thpong	Amleang	1,779	100	1,779	100	0	0	450	25	36	2	759	0.4	200	0.11		
	Monourom	926	97	901	97	25	3	50	5	0	0	1,248	1.4	270	0.30		
	Prambei Mom	1,709	99	1,695	99	14	1	20	1	0	0	1,373	0.8	250	0.15		
	Rung Roeang	1,635	100	1,635	100	0	0	52	3	315	19	895	0.5	20	0.01		
	Vcal Pon	1,423	99	1,415	99	8	1	35	2	40	3	1,264	0.9	285	0.20		
Yea Angk	1,413	100	1,413	100	0	0	0	0	0	0	543	0.4	138	0.10			
Kandal Angk Snuol	Back Chan	1,785	54	962	54	823	46	25	1	0	0	748	0.8	0	0.00		
	Boeng Thum	1,142	90	1,023	90	119	10	5	0	9	1	403	0.4	150	0.15		
	Chhak Chheu Neang	607	53	91	53	91	54	9	116	19	7	330	0.6	0	0.00		
	Damnak Ampil	872	108	943	108	541	62	331	38	0	0	790	1.5	0	0.00		
	Kamboul	1,145	47	943	82	202	18	0	0	0	0	750	0.8	0	0.00		
	Kantaok	1,702	90	1,532	90	1,532	90	170	10	340	20	510	30	725	0.5	0	0.00
	Krang Mkak	781	100	781	100	0	0	47	6	1	0	867	1.1	449	0.57		
	Lumhach	1,319	100	1,319	100	0	0	24	2	0	0	798	0.6	50	0.04		
	Mkak	1,314	100	1,300	99	0	0	0	0	0	0	468	0.4	0	0.00		
	Ovlaok	618	100	618	100	0	0	10	2	0	0	643	1.0	0	0.00		
	Peuk	1,208	73	884	73	324	27	78	6	0	0	872	1.0	0	0.00		
	Ponsang	1,390	100	1,200	86	0	0	0	0	0	0	1,045	0.9	45	0.03		
	Prey Puok	1,225	92	1,131	92	94	8	20	2	4	0	780	0.7	247	0.22		
	Samraong Leu	1,288	97	1,248	97	40	3	131	10	0	0	492	0.4	0	0.00		
	Snao	682	62	662	97	20	3	36	5	5	1	608	0.9	0	0.00		
	Tuol Prech	1,038	100	1,038	100	0	0	0	0	0	0	731	0.7	0	0.00		
	Ponhea Lueu	Chhveang	1,339	98	1,307	98	32	2	0	0	0	0	671	0.5	105	0.08	
Chrey Loas		1,343	92	1,237	92	106	8	0	0	7	1	30	0.0	475	0.38		
Kampong Luong		1,868	39	90	5	1,148	61	27	1	16	1	0	0.0	745	1.03		
Kampong Os		1,238	84	0	0	194	16	0	0	0	0	0	1,881	1.80			
Kaoh Chen		1,745	92	0	0	146	8	0	0	39	2	2,212	1,062	0.66			
Phnum Bat		1,909	90	1,547	81	194	10	54	3	45	2	0	0.0	397	0.23		
Ponhea Lueu		703	95	0	0	35	5	0	0	0	0	514	313	0.47			
Ponhea Pon		1,004	94	944	94	60	6	0	0	15	1	0	0.0	87	0.09		
Preaek Pnov		2,217	1	0	0	2,192	99	0	0	0	0	0	0	20	0.80		
Preaek Ta Teacn		1,372	88	0	0	169	12	0	0	0	0	444	464	0.39			
Phsar Daek		1,276	92	705	55	105	8	16	1	15	1	57	0.1	188	0.16		
Samraong		1,203	94	205	17	75	6	644	54	5	0	771	3.8	453	0.40		
Tumnob Thum		1,203	98	1,176	98	27	2	0	0	0	0	370	0.3	0	0.00		
Vihear Luong		1,218	99	925	76	12	1	0	0	0	0	1,051	1.1	41	0.03		
Pursat Krakor		Anlong Tnaot	1,619	89	1,235	76	180	11	251	16	984	61	1,606	1.3	45	0.03	
	Ansa Chambak	1,163	87	910	78	148	13	305	26	605	52	1,551	1.7	150	0.15		
	Chheu Tom	2,204	95	1,565	71	109	5	210	10	1,355	61	1,035	0.7	310	0.15		
	Kbal Trach	1,422	93	926	65	100	7	370	26	556	39	1,037	1.1	65	0.05		
	Ou Sandan	867	95	746	86	46	5	235	27	511	59	1,003	1.3	587	0.71		
	Sna Ansa	902	96	863	96	39	4	439	49	424	47	1,545	1.8	0	0.00		
	Svay Sa	1,058	97	973	92	32	3	295	28	678	64	1,502	1.5	402	0.39		
	Tnaot Chum	1,796	91	1,200	67	163	9	350	19	850	47	894	0.7	0	0.00		
Phnum Kravanh	1,687	100	1,687	100	0	0	35	2	0	0	0	0.0	100	0.06			
Prongil	1,687	100	1,687	100	0	0	35	2	0	0	0	0.0	100	0.06			
Whole River Basin		168,378	155,336	92	118,007	70	11,525	7	7,800	5	9,244	5	135,785	1.2	20,510	0.13	

Source: Commune Survey on Crops and Livestock, 2003, MAFF

Table C1-58 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Boribo River Basin (1/2)

Province/District	Commune	Year	Wet-season Rice Production				Dry-season Rice Production			
			Cultivated Area (ha.)	Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)	Harvested Area (ha)	Yield (t/ha)	Production (t)
Kampong Chhnang Baribour	Anhchanh Rung	4	4,054	4,033	1.4	5,547	0	0	0	0
	Chhnok Tru	4	196	112	3.1	350	335	331	3.5	1,160
	Chak	4	1,119	1,109	1.2	1,355	0	0	0	0
	Khon Rang	4	1,698	1,618	1.4	2,250	313	295	3.0	884
	Kampong Preah Kokir	4	0	0		0	313	304	3.3	990
	Melum	4	1,711	1,606	1.4	2,238	289	280	3.0	828
	Phsar	4	1,834	1,816	1.4	2,591	234	220	2.9	636
	Pech Changyar	4	1,400	1,383	1.3	1,785	0	0	0	0
	Popel	4	1,177	1,158	1.4	1,588	0	0	0	0
	Ponley	4	861	830	1.3	1,047	0	0	0	0
Trapeang Chan	4	1,067	1,027	1.2	1,235	300	298	3.0	896	
	Sub-total		15,116	14,691	1.4	19,987	1,783	1,729	3.1	5,395
Kampong Tralach	Ampil Tuek	4	0	0	#DIV/0!	0	2,522	2,522	3.2	8,155
	Chhuk Sa	4	2,025	2,025	1.8	3,585	0	0	0	0
	Chres	4	1,380	1,380	1.8	2,442	490	488	3.2	1,539
	Kampong Tralach	4	336	336	1.8	594	799	795	3.2	2,566
	Longveak	4	2,010	2,010	1.8	3,564	533	513	3.2	1,649
	Ou Ruessei	4	794	790	1.8	1,397	93	93	3.2	294
	Peani	4	992	992	1.8	1,770	3	3	3.3	11
	Saeb	4	1,757	1,757	1.8	3,093	189	184	3.2	596
	Ta Ches	4	2,038	2,038	1.8	3,609	249	249	3.2	804
	Thma Edth	4	1,887	1,887	1.8	3,336	0	0	0	0
	Sub-total		13,217	13,213	1.8	23,390		4,845	3.2	15,614
Rolea B'ier	Andoung Snay	4	1,329	1,291	1.8	2,296	50	50	3.0	152
	Banteay Preal	4	2,271	2,233	1.7	3,799	0	0	0	0
	Cheung Kreav	4	2,472	2,449	2.6	6,302	0	0	0	0
	Chrey Bak	4	2,747	2,686	2.1	5,541	121	110	3.2	346
	Kouk Banteay	4	643	600	1.4	826	1,182	1,129	3.4	3,871
	Krang Leav	4	2,883	2,855	2.5	7,058	0	0	0	0
	Pongro	4	1,428	1,394	2.7	3,766	0	0	0	0
	Prasneb	4	3,507	3,470	2.0	6,854	3	3	2.3	6
	Prey Mul	4	1,619	1,592	1.9	3,045	1	1	2.0	1
	Rolea B'ier	4	1,630	1,618	2.5	4,124	0	0	0	0
	Srae Thmei	4	1,308	1,268	2.3	2,899	0	0	0	0
	Svay Chrum	4	2,594	2,421	2.2	5,327	663	663	3.6	2,390
Tuek Hout	4	1,436	1,401	1.6	2,242	486	483	3.5	1,684	
	Sub-total		25,866	25,279	2.1	54,080	2,505	2,437	3.5	8,450
Tuek Phos	Akphivoadth	4	2,915	2,878	1.8	5,113	0	0	0	0
	Chieb	4	2,536	2,445	1.8	4,353	0	0	0	0
	Chaong Maong	4	2,147	2,105	1.9	3,958	0	0	0	0
	Kbal Tuek	4	1,872	1,792	1.8	3,210	0	0	0	0
	Khlong Popok	4	1,836	1,776	1.8	3,111	0	0	0	0
	Krang Skear	4	3,442	3,311	1.8	5,794	0	0	0	0
	Tang Krasang	4	2,706	2,687	1.9	5,053	26	26	2.4	63
	Toul Khpos	4	1,902	1,844	2.0	3,650	0	0	0	0
		Sub-total		19,355	18,837	1.8	34,242	26	26	2.4
Sameakki Mean Chey	Chhean Laeung	4	892	838	1.6	1,335	1	0	0.8	0
	Khmar Chhmar	4	1,920	1,907	1.6	3,006	0	0	0	0
	Krang Lvea	4	2,325	2,303	1.5	3,511	0	0	0	0
	Peam	4	1,803	1,674	1.6	2,634	0	0	0	0
	Sedthei	4	1,321	1,308	1.5	1,983	1	1	1.5	1
	Svay	4	1,775	1,761	1.6	2,802	0	0	0	0
	Svay Chuk	4	2,205	2,001	1.6	3,250	0	0	0	0
	Tbaeng Khpos	4	2,237	2,220	1.6	3,540	0	0	0	0
	Thlok Vien	4	1,796	1,776	1.5	2,743	0	0	0	0
	Sub-total		16,273	15,786	1.6	24,804	1	1	1	1
Province Total			89,826	87,806	1.8	156,503	4,315	9,038	3.3	29,523
Kampong Speu Aoral	Trapeang Chour	1	1,895	1,882	1.9	3,557	0	0	0	0
Odongk	Chant Saen	1	708	708	0.9	637	0	0	0	0
	Cheung Roas	1	904	904	1.0	888	0	0	0	0
	Khsem Khsan	1	840	840	0.9	762	0	0	0	0
	Krang Chek	1	1,668	1,663	1.1	1,786	0	0	0	0
	Mean Chey	1	719	719	1.1	800	0	0	0	0
	Preah Srae	1	1,205	1,205	1.0	1,219	0	0	0	0
	Prey Krasang	1	935	935	0.9	873	0	0	0	0
	Trach Tong	1	900	900	1.0	892	0	0	0	0
	Veal Pung	1	1,347	1,347	1.2	1,575	0	0	0	0
	Veang Chas	1	255	255	1.1	284	0	0	0	0
	Yuth Sameakki	1	1,010	1,010	1.0	1,038	0	0	0	0
	Damnak Reang	1	673	673	1.0	648	0	0	0	0
	Peang Lvea	1	1,058	1,058	0.9	949	0	0	0	0
	Phnum Touch	1	1,038	1,038	1.1	1,174	0	0	0	0
	Sub-total		15,155	15,137	1.1	17,080	0	0	0	0

Table C1-58 Rice Cropped Area, Production & Yield in 2003 & 2006 in the Boribo River Basin (2/2)

Province/District	Commune	Year	Wet-season Rice Production				Dry-season Rice Production			
			Cultivated Area (ha.)	Harvested Area (ha)	Yield (t/ha)	Production (t)	Cultivated Area (ha.)	Harvested Area (ha)	Yield (t/ha)	Production (t)
Thpong	Amleang	1	1,740	1,641	1.3	2,092	0	0		0
	Monourom	1	759	718	0.9	672	0	0		0
	Prambei Mom	1	1,248	1,235	1.4	1,704	3	3	1.9	5
	Rung Roeang	1	1,373	1,336	0.9	1,257	0	0		0
	Veal Pon	1	895	880	1.0	897	0	0		0
	Yea Angk	1	1,264	1,223	1.0	1,240	0	0		0
	Sub-total			7,279	7,033	1.1	7,861	3	3	1.9
Province Total			24,329	24,052	1.2	28,498		3	1.9	5
Kandal										
Angk Snuol	Baek Chan	1	543	543	1.7	908	0	0		0
	Boeng Thum	1	748	748	2.0	1,480	0	0		0
	Chhak Chheu Neang	1	403	403	1.8	717	0	0		0
	Damnak Ampil	1	330	330	1.8	587	0	0		0
	Kamboul	1	790	790	1.8	1,394	0	0		0
	Kantaok	1	750	750	1.8	1,348	0	0		0
	Krang Mkak	1	725	725	2.0	1,483	30	30	2.5	75
	Lumhach	1	867	867	3.0	2,601	0	0		0
	Mkak	1	798	798	1.8	1,436	0	0		0
	Ovlaok	1	468	468	1.6	745	0	0		0
	Peuk	1	643	643	2.0	1,280	0	0		0
	Ponsang	1	872	872	1.6	1,431	45	45	2.0	90
	Prey Puok	1	1,045	1,045	1.9	1,934	0	0		0
	Samraong Leu	1	780	780	2.0	1,542	0	0		0
	Snao	1	492	492	1.7	816	0	0		0
Tuol Prech	1	608	608	1.7	1,019	0	0		0	
Sub-total			10,862	10,862	1.9	20,722	75	75	2.2	165
Ponhea Lueu	Chhveang	1	731	726	1.9	1,389	105	103	4.0	407
	Chrey Loas	1	671	671	2.2	1,459	468	464	4.3	1,995
	Kampong Luong	1	30	30	1.9	57	745	745	4.3	3,204
	Kampong Os	1	0	0		0	1,881	1,866	4.5	8,397
	Kaoh Chen	1	0	0		0	1,062	1,055	4.3	4,537
	Phnum Bat	1	2,212	1,942	1.7	3,320	397	397	3.0	1,191
	Ponhea Lueu	1	0	0		0	313	309	4.3	1,329
	Ponhea Pon	1	514	514	1.9	963	87	87	3.9	339
	Preaek Pnov	1	0	0		0	20	20	4.5	90
	Preaek Ta Teaan	1	0	0	#DIV/0!	0	464	459	4.3	1,974
	Phsar Daek	1	444	442	2.0	903	188	188	3.9	733
	Samraong	1	57	57	3.1	177	453	453	4.2	1,903
	Tumnob Thum	1	771	714	1.9	1,373	0	0		0
	Vihear Luong	1	370	370	2.1	778	41	41	4.3	176
	Sub-total			5,800	5,466	1.9	10,418	6,224	6,187	4.2
Province Total			16,662	16,328	1.9	31,140	6,299	6,262	4.2	26,439
Pursat										
Krakor	Anlong Tnaot	2	1,065	1,051	1.5	1,586	0	0		0
	Ansa Chambak	2	1,528	1,528	1.4	2,192	150	150	1.5	225
	Chheu Tom	2	1,457	1,457	1.7	2,506	0	0		0
	Kbal Trach	2	1,030	1,030	1.5	1,508	18	18	1.9	35
	Ou Sandan	2	944	944	1.5	1,429	0	0		0
	Sna Ansa	2	858	858	1.6	1,344	17	17	1.9	32
	Svay Sa	2	1,373	1,373	1.7	2,362	18	18	1.5	26
	Tnaot Chum	2	1,551	1,551	1.4	2,166	0	0		0
Sub-total			9,804	9,790	1.5	15,092	202	202	1.6	317
Phnum Kravanh	Prongil		1,070	1,070	1.3	1,373	8	8	2.0	16
Province Total			10,874	10,860	1.5	16,465	210	210	1.6	333
Whole River Baasin			141,691	139,047	1.7	232,607	10,824	15,512	3.6	56,300

Source: Kampung Chhnang Province data: PDA Kampung Chhnang; other province data: Commune Survey on Crops and Livestock 2003, MAFF, 2004;

Table C1-59 Rice Cropped Area, Production & Yield from 2002 to 2005 in the Boribo River Basin: SEILA Data Base (1/2)

Province/District	Commune	Type	Year 1/	Wet Season					Dry Season						
				Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	
				Rainfed Rice	Irrigated Rice	Total				Irrigated Rice	Recession Rice	Total			
Pursat	Krakor	Anlong Tnaot	Rural	4	874	101	975	1,588	1.6	2	5	2	7	8	1.1
		Ansa Chambak	Rural	3	2,294	0	2,294	1,587	0.7	1	380	0	380	380	1.0
		Chheu Tom	Rural	4	1,345	0	1,345	1,361	1.0						
		Kbal Trach	Rural	4	1,144	5	1,149	980	0.9	2	15	8	23	18	0.8
		Ou Sandan	Rural	4	1,164	0	1,164	1,244	1.1	2	45	45	90	66	0.7
		Sna Ansa	Rural	3	641	0	641	458	0.7						
		Svay Sa	Rural	4	847	354	1,200	1,800	1.5	1	31	31	62	52	0.9
		Sub-total			8,308	460	8,768	9,018	1.0		476	86	561	524	0.9
	Phnum Kravanh	Prongil	Rural	3	1,122	144	1,266	1,841	1.5	2	55	15	70	206	2.9
	Province Total				9,430	604	10,034	10,860	1.1		531	101	631	730	1.2
Kampong Chhnang	Baribour	Anhchanh Rung	Rural	3	4,209	0	4,209	4,409	1.0						
		Chhnok Tru	Rural	2	350	0	350	595	1.7	4	602	596	1,197	1,752	1.5
		Chak	Rural	4	1,110	0	1,110	1,666	1.5						
		Khon Rang	Rural	3	1,880	0	1,880	1,615	0.9	4	570	95	665	788	1.2
		Kampong Preah Kokir	Rural							3	457		457	915	2.0
		Melum	Rural	4	1,449	0	1,449	2,134	1.5	4	88	87	174	326	1.9
		Phsar	Rural	4	1,304	0	1,304	1,240	1.0	4	210	210	420	424	1.0
		Pech Changvar	Rural	4	1,650	0	1,650	2,022	1.2						
		Popel	Rural	4	1,178	14	1,192	1,850	1.6						
		Ponley	Rural	4	607	0	607	1,099	1.8						
		Trapeang Chan	Rural	4	520	470	990	941	1.0						
		Sub-total			14,256	484	14,740	17,571	1.2		1,926	987	2,914	4,203	1.4
Kampong Tralach		Ampil Tuek	Rural							2	2,318		2,318	5,768	2.5
		Chhuk Sa	Rural	4	1,640	0	1,640	1,383	0.8						
		Chres	Rural	4	1,052	0	1,052	1,236	1.2		552	0	552	1,309	2.4
		Kampong Tralach	Rural	4	300	0	300	435	1.5	4	596	0	596	1,545	2.6
		Longveack	Rural	4	1,497	92	1,588	1,601	1.0		100	400	500	692	1.4
		Ou Ruessei	Rural	4	624	171	795	1,100	1.4	4	70	5	75	141	1.9
		Peani	Rural	4	400	310	710	1,065	1.5						
		Saeb	Rural	4	1,003	699	1,701	1,503	0.9	4	248	0	248	517	2.1
		Ta Chcs	Rural	4	1,487	507	1,994	2,897	1.5	4	407	0	407	1,104	2.7
		Thma Edth	Rural	1	1,324	0	1,324	1,324	1.0						
		Sub-total			9,326	1,778	11,104	12,544	1.1		4,290	405	4,695	11,074	2.4
Rolea B'ier		Andoung Snay	Rural	4	1,205	0	1,205	1,276	1.1	4	20	20	40	76	1.9
		Banteay Preal	Rural	3	1,066	52	1,118	782	0.7						
		Cheung Kreav	Rural	4	2,027	350	2,377	3,196	1.3						
		Chrey Bak	Rural	3	2,440	153	2,593	3,385	1.3	4	180	75	255	377	1.5
		Kouk Banteay	Rural	3	582	0	582	737	1.3	3	993	900	1,893	1,986	1.3
		Krang Leav	Rural	4	2,741	5	2,746	3,952	1.4						
		Pongro	Rural	4	759	0	759	1,526	2.0						
		Prasncb	Rural	2	2,375	0	2,375	7,180	3.0						
		Prey Mul	Rural	4	1,446	98	1,544	1,995	1.3	1	270	0	270	675	2.5
		Rolea B'ier	Rural	4	228	1,255	1,483	1,520	1.0						
		Srae Thmci	Rural	4	1,246	0	1,246	1,132	0.9						
		Svay Chrum	Rural	3	2,000	0	2,000	4,467	2.2		420	90	510	1,266	2.5
		Tuek Hout	Rural	2	684	0	684	350	0.5		113	338	451	653	1.4
		Sub-total			18,799	1,912	20,711	31,498	1.5		1,995	1,424	3,419	5,033	1.5
Sameakki Mean Chey		Chhean Lacung	Rural	4	895	470	918	898	1.0						
		Khmar Chhmar	Rural	4	1,185	192	1,377	1,360	1.0						
		Krang Lvea	Rural	4	2,448	186	2,634	2,711	1.0						
		Peam	Rural	3	1,721	139	1,860	1,751	0.9						
		Sedthei	Rural	3	969	365	1,334	1,250	0.9						
		Svay	Rural	4	1,360	379	1,739	1,900	1.1						
		Svay Chuk	Rural	4	2,264	433	2,697	4,136	1.5						
		Tbaeng Khpos	Rural	4	1,756	337	2,093	2,899	1.4						
		Thiok Vien	Rural	3	1,351	370	1,721	1,546	0.9						
		Sub-total			13,949	2,871	16,372	18,450	1.1		0	0	0	0	0
Tuck Phos		Akhivoadth	Rural	4	1,505	0	1,505	1,805	1.2						
		Chieb	Rural	4	1,607	155	1,762	2,198	1.2						
		Chaong Maong	Rural	4	1,922	0	1,922	2,736	1.4						
		Kbal Tuek	Rural	3	1,561	0	1,561	1,459	0.9						
		Khlong Popok	Rural	4	1,271	0	1,271	1,219	1.0						
		Krang Skear	Rural	3	2,686	0	2,686	4,062	1.5						
		Tang Krasang	Rural	4	2,643	80	2,723	3,640	1.3	3	9	4	13	24	1.8
		Toul Khpos	Rural	4	1,346	261	1,607	1,477	0.9						
		Sub-total			14,540	496	15,036	18,595	1.2		9	4	13	24	1.8
Province Total					70,870	7,541	77,963	98,658	1.3		8,221	2,820	11,041	20,334	1.8

Table C1-59 Rice Cropped Area, Production & Yield from 2002 to 2005 in the Boribo River Basin: SEILA Data Base (1/2)

Province/District	Commune	Type	Wet Season						Dry Season						
			Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	Year 1/	Rice Cropped Area (ha)			Production (ton)	Yield (ton/ha)	
				Rainfed Rice	Irrigated Rice	Total				Irrigated Rice	Recession Rice	Total			
Kampung Speu															
Aoral	Trapang Chour	Rural	3	2,703	876	3,579	5,017	1.4							
Odangk	Chant Saen	Rural	3	1,701	0	1,701	2,571	1.5							
	Cheung Roas	Rural	3	946	0	946	1,355	1.4							
	Khem Khsan	Rural	4	854	0	854	1,081	1.3							
	Krang Chek	Rural	3	1,339	329	1,668	1,877	1.1	2	54	54	108	118	1.1	
	Mean Chey	Rural	3	755	2	757	1,072	1.4							
	Preah Srae	Rural	4	1,134	74	1,208	1,365	1.1							
	Prey Krasang	Rural	2	930	5	935	1,261	1.3							
	Trach Tong	Rural	3	1,004	-	1,004	1,004	1.0							
	Veal Pung	Rural	4	843	504	1,347	1,812	1.3							
	Veang Chas	Urban													
	Yuth Sameakki	Rural	4	1,050	-	1,050	1,503	1.4							
	Damnak Reang	Rural	3	676	-	676	819	1.2							
	Peang Lvea	Rural	4	1,058	-	1,058	1,113	1.1							
	Phnum Touch	Rural	3	690	-	690	1,189	1.7							
	Sub-total			12,979	914	13,893	18,020	1.3		54	54	108	118	1.1	
Thpong	Amleang	Rural	3	1,634	227	1,860	2,032	1.1							
	Monourom	Rural	3	780	270	1,050	1,575	1.5							
	Prambei Mom	Rural	3	1,213	20	1,233	2,017	1.6							
	Rung Roeang	Rural	3	1,355	35	1,390	1,873	1.3							
	Veal Pon	Rural	4	725	258	983	1,304	1.3							
	Yea Angk	Rural	3	1,231	17	1,247	2,403	1.9							
		Sub-total			6,937	827	7,764	11,203	1.4		0	0	0	0	
					22,619	2,616	25,236	34,240	1.4		54	54	108	118	1.1
Kandal															
Angk Snuol	Baek Chan	Rural	4	530	-	530	547	1.0							
	Boeng Thum	Rural	4	252	468	720	1,296	1.8	4	45	45	90	86	1.0	
	Chhak Chheu Neang	Rural	4	405	-	405	516	1.3							
	Damnak Ampil	Rural	4	268	117	385	573	1.5							
	Kamboul	Rural	4	793	-	793	949	1.2							
	Kantaok	Rural	4	749	-	749	1,236	1.6							
	Krang Mkak	Rural	3	640	-	640	768	1.2							
	Lumhach	Rural	4	279	506	785	1,302	1.7							
	Mkak	Rural	3	748	50	798	1,461	1.8							
	Ovlaok	Rural	1	468	-	468	468	1.0							
	Peuk	Rural	4	572	-	572	987	1.7							
	Ponsang	Rural	2	895	-	895	819	0.9	2	35	35	70	160	2.3	
	Prey Puok	Rural	4	537	291	829	1,397	1.7	4	26	24	50	62	1.2	
	Samraong Leu	Rural	3	780	-	780	975	1.2							
	Snao	Rural	3	492	-	492	708	1.4							
	Tuol Prech	Rural	3	608	-	608	513	0.8							
	Sub-total			9,015	1,433	10,447	14,517	1.4		106	104	210	308	1.5	
Ponhea Lueu	Chhveang	Rural	4	731	-	731	1,754	2.4	4	103	-	103	325	3.2	
	Chrey Loas	Rural	4	760	-	760	1,488	2.0	4	853	-	853	3,363	3.9	
	Kampong Luong	Rural	2	30	-	30	60	2.0	2	272	810	677	1,250	1.8	
	Kampong Os	Rural							3	1,564	-	1,564	5,531	3.5	
	Kaoh Chen	Rural							2	1,804	-	1,804	5,372	3.0	
	Phnum Bat	Rural	3	1,309	-	1,309	1,958	1.5	3	354	72	426	777	1.8	
	Ponhea Lueu	Rural							3	319	-	319	856	2.7	
	Ponhea Pon	Rural	4	514	36	550	1,028	1.9	3	87	-	87	228	2.6	
	Preack Pnov	Urban	2002												
	Preack Ta Tean	Rural							3	476	-	476	1,613	3.4	
	Phsar Daek	Rural	4	434	-	434	673	1.6	4	258	10	266	558	2.1	
	Samraong	Rural	3	52	63	115	247	2.1	4	448	-	448	1,200	2.7	
	Tunnob Thum	Rural	3	870	12	882	1,521	1.7	2	25	-	25	50	2.0	
	Vihear Luong	Rural	3	370	-	370	555	1.5	3	113	-	113	235	2.1	
		Sub-total			5,071	111	5,182	9,285	1.8		6,675	892	7,160	21,358	3.0
Province Total				14,086	1,543	15,629	23,802	1.5		6,781	996	7,370	21,666	2.9	
River Basin Total				117,005	12,304	128,862	167,560	1.3		15,586	3,971	19,150	42,847	2.2	

1/: No. of years of data used for estimating average figures
Source: SEILA Data Base, 2002 - 2005

Table C1-60 Prevailing Cropping Patterns in Irrigation Systems in the Boribo River Basin (1/3)

Province/ District	No.	Sub Code	System	1/	2/	3/	Cropping Pattern												Cropping Calendar 4/		
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		Apr	May
Pursat Krakor	1	KRR-001	Bomnork	Wet 1	T	300														N4-7	
				Wet 2	T	600															N6-11/12
				Dry	T	300															
	2	KRR-002	Tram Mnas Dam	Wet 1	T	100														N3-6	
				Wet 2	T	730															N6-11
	3	KRR-003	Thlea Maam	Dry	T	70														N11-5/6	
				Wet 1	T	200															N4-7
				Wet 2	T	673															N6-11
	4	KRR-004	Kampong Lar	Dry	T	50														N11-2	
				Wet 1	T	0															N4-7
				Wet 2	T	250															N6-11
	5	KRR-005	Khia Kroupeu Dam	Dry	T	20														N11-3	
				Wet 2	T	410															N5/6-11/1
				Wet 1	T	520															N5/6-11/1
	7	KRR-007	Bantey Krong	Wet 2	T	290														N5/6-11/1	
8	KRR-008	Angkunh	Wet 2	T	1,100														N5/6-12/1		
9	KRR-009	Kan Seng	Wet 2	T	470														N5/6-11/1		
10	KRR-010	Cham Kar Krouch	Wet 1	T	20														N4-7		
			Wet 2	T	100															N6-11	
11	KRR-011	Wat Ron	Wet 2	T	445														N5/6-11/12		
12	KRR-012	Dammak Kranh	Wet 2	T	480														N5/6-11/1		
13	KRR-013	Wat Sdao	Wet 2	T	370														N5/6-11/1		
14	KRR-014	Neak Taro	Wet 2	T	225														N5/6-11/1		
15	KRR-015	Kouch Nop	Wet 2	T	150														N4/5-9/11		
			Dry	T	532															N4/5-11/2	
Kampong Chhnang Kampong Chhnang	1	KCHH-001	Boeung Thom	Dry	T	360													N2/3-6/7		
				D															D2/3-6/7		
	2	KCHH-001	Moan Rongev	Dry	T	15													N2/3-6/7		
				D															D2/3-6/7		
3	KCHH-002	Boeung Chealea	Dry	T	30													N2/3-6/7			
			D															D2/3-6/7			
4	KCHH-003	Kampong Sok	Dry	T	30														N2/3-6/7		
			D																D2/3-6/7		
Boribo	1	BRB-001	Lum Hach	Wet 2	T	7,945													N5/6-12/1		
				Dry	T	1,535															N12/1-2/3
Roleaphiear	1	RLP-001	Phum Kork	Wet 2	T	50													N5/6-11/12		
	2	RLP-002	Chhveang	Wet 2	T	670													N5/6-11/12		
	3	RLP-003	Ta Baing	Wet 2	T	200													N5/6-11/12		
	4	RLP-004	Banteay Chea	Wet 2	T	170													N5/6-11/12		
	5	RLP-005	Trapeang Por	Wet 2	T	150													N5/6-11/12		
	6	RLP-006	Boeung Bourn Mom	Dry	T	220													N2/3-6/7		
	7	RLP-007	Dom Reik	Dry	T	220													N2/3-6/7		
	8	RLP-008	Dach Dam	Dry	T	220														N2/3-6/7	
				D																D2/3-6/7	
	9	RLP-009	Trapeang Trabek	Wet 2	T	450													N5/6-11/12		
	10	RLP-010	Ta Sekchrum Station	Dry	D	115													D11/12-3/4		
	11	RLP-011	Kong Meas Station	Dry	T	50														N2/3-6/7	
				D																D2/3-6/7	
	12	RLP-012	Rong Damrey	Dry	T	80													N2/3-6/7		
	13	RLP-013	Kong Long	Dry	T	50														N2/3-6/7	
	14	RLP-014	Konleng Phc	Dry	T	180														N2/3-6/7	
15	RLP-015	Ta Phen	Dry	T	50														N2/3-6/7		
			D																D2/3-6/7		
16	RLP-001	Ta Top	Wet 2	T	50													N5/6-10/12			
Tuck Phos	1	TKP-001	Khvet	Wet 2	T	250													N5/6-10/12		
	2	TKP-002	Ta Ram	Wet 2	T	180													N5/6-10/12		
	3	TKP-003	O Spean	Wet 2	T	30													N5/6-10/12		
	4	TKP-004	Rolong Leu	Wet 2	T	30													N5/6-10/12		
	5	TKP-005	Rolong Krom	Wet 2	T	55													N5/6-10/12		
	6	TKP-006	Koma	Wet 2	T	20													N5/6-10/12		
	7	TKP-007	O Kel	Wet 2	T	50													N5/6-10/12		
	8	TKP-008	Pok Pen	Wet 2	T	250													N5/6-10/12		
	9	TKP-009	Chak Teum	Dry	D	0														N5/6-10/12	
				Wet 1	D	0														D11/12-3/4	
	10	TKP-010	Teuk Chegn	Wet 2	T	20														N5/6-10/12	
				Wet 2	T	130															N5/6-10/12
	12	TKP-012	Khpet	Wet 2	T	50													N5/6-10/12		
	13	TKP-013	Trapeang Khlong	Wet 2	T	530														N5/6-10/12	
	14	TKP-014	Don Pov	Wet 2	T	0														N5/6-10/12	
	15	TKP-015	Tang Prich	Wet 2	T	0														N5/6-10/12	
16	TKP-016	Chi Promg	Wet 2	T	460														N5/6-10/12		

Table C1-61 Present Status of Irrigation Systems in the Boribo River Basin (2/4)

Province/ District	System Size	No	Sub Code	Irrigation System	Commune	Irrigation Method	Flood Influence	Status	Rice Cropped Area by Cropping Season (ha)										Existing Irrigated Paddy Field						Yield Data					
									Area (ha)			Intensity (%)			Inventory I/			PDA 2/			SEILA 3/									
									Normal	Recession	Total	Wet 1	Wet 2	Dry	Recession	Annual	Wet 1	Wet 2	Dry	Recession	Annual	SWT	SDI	RWT	RWD	W	D	W	D	
Tuaik Phos (continued)	> 100 ha	7	TKP-007	O Kal	Tuaikhep	Gravity	No	M	50	0	50	0	100	0	100	0	100	0	100	0	100	0	100	2.0	0.9	2.0	0.9			
		8	TKP-008	Pha Pen	Tuaikhep	Gravity/Pump	No	P	250	0	250	0	100	0	100	0	100	0	100	0	100	0	100	2.0	0.9	2.0	0.9			
		9	TKP-009	Chak Tom	Chieap	Gravity/Pump	No	M	230	0	230	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		10	TKP-010	Touk Chga	Tuaikhep	Gravity/Pump	No	M	20	0	20	0	100	0	100	0	100	0	100	0	100	0	100	2.0	0.9	2.0	0.9			
		11	TKP-011	Amsut	Tuaikhep	Gravity/Pump	No	M	130	0	130	0	100	0	100	0	100	0	100	0	100	0	100	2.0	0.9	2.0	0.9			
		12	TKP-012	Shpet	Khlong Popok	Gravity	No	M	50	0	50	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		13	TKP-013	Trepsang Khlong	Chieap	Gravity	No	M	530	0	530	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		14	TKP-014	Dan Pov	Chieap	Gravity	No	M	220	0	220	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		15	TKP-015	Tang Pith	Chieap	Gravity	No	M	150	150	0	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		16	TKP-016	Chi Prom	Khlong Popok	Gravity	No	M	460	0	460	0	100	0	100	0	100	0	100	0	100	0	100	2.0	1.0	2.0	1.0			
		17	TKP-017	Youth	Khlong Popok	Gravity	No	M	280	0	280	0	100	0	100	0	100	0	100	0	100	0	100	2.0	1.0	2.0	1.0			
		18	TKP-018	Chak Leang	Chong Mong	Gravity	No	M	30	0	30	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.4	1.9	1.4			
		19	TKP-019	Suy Chak	Chong Mong	Gravity	No	M	850	0	850	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.4	1.9	1.4			
		20	TKP-020	Khiet	Chong Mong	Gravity	No	M	83	0	83	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.4	1.9	1.4			
		21	TKP-021	Touk Champey	Chong Mong	Gravity	No	M	360	0	360	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.4	1.9	1.4			
		22	TKP-022	Kamnat Prom	Chong Mong	Gravity	No	M	86	0	86	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.4	1.9	1.4			
		23	TKP-023	Angkor Taten	Aphiet	Gravity/Pump	?	M	186	0	186	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		24	TKP-024	Teuk Leak	Khlong Popok	Gravity	No	M	105	0	105	0	100	0	100	0	100	0	100	0	100	0	100	2.0	1.0	2.0	1.0			
		25	TKP-025	Trepsang Thlan	Aphiet	Gravity	No	M	125	0	125	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		26	TKP-026	Kandit Chum	Tang Krasang	Gravity	No	M	50	0	50	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.3	1.9	1.3			
		27	TKP-027	Tang Krasang	Tang Krasang	Gravity/Pump	No	P	5,500	0	5,500	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.3	1.9	1.3			
		28	TKP-028	Ta Mem	Tang Krasang	Gravity	No	M	120	0	120	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.5	1.8	1.5			
		29	TKP-029	Veal Shov	Tang Krasang	Gravity/Pump	No	M	110	0	110	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.3	1.9	1.3			
		30	TKP-030	Streung Chnag	Krang Sear	Gravity/Pump	No	M	260	0	260	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.5	1.8	1.5			
		31	TKP-031	Beth Pitak	Krang Sear	Gravity/Pump	No	M	280	0	280	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.5	1.8	1.5			
		32	TKP-032	Phnom Dry	Krang Sear	Gravity	No	M	450	0	450	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.5	1.8	1.5			
		33	TKP-033	O Chamnay	Krang Sear	Gravity/Pump	No	M	450	0	450	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.5	1.8	1.5			
		34	TKP-034	Ambing Phideak	Krang Leav	Gravity	No	M	80	0	80	0	100	0	100	0	100	0	100	0	100	0	100	2.5	1.4	2.5	1.4			
		35	TKP-035	Chanlos	Tang Krasang	Gravity/Pump	No	M	135	0	135	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.3	1.9	1.3			
		36	TKP-036	Trepsang Sngae	Khlar Chhnar	Gravity	No	P	1,550	0	1,550	0	100	0	100	0	100	0	100	0	100	0	100	1.6	1.0	1.6	1.0			
		37	TKP-037	Kip Sae	Krang Ghas	Gravity	?	M	650	0	650	0	100	0	100	0	100	0	100	0	100	0	100	1.8	3.2	1.8	3.2			
		38	TKP-038	Aubing Chrey	Cham Leang	Gravity	No	M	2,770	0	2,770	0	100	0	100	0	100	0	100	0	100	0	100	1.6	0.8	1.6	0.8			
		39	TKP-001	Tang Thning	Chieab	Gravity	?	M	38	0	38	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.2	1.8	1.2			
		40	TKP-002	Spean Sar	Tang Krasang	Gravity/Pump	No	M	25	0	25	0	100	0	100	0	100	0	100	0	100	0	100	1.9	1.3	1.9	1.3			

Table C1-61 Present Status of Irrigation Systems in the Boribo River Basin (3/4)

Province/ District	System Size	No.	Sub Code	Irrigation System	Commune	Irrigation Method	Flood Influence	Status	Rice Cropped Area by Cropping Season (ha)										Yield Data									
									Area (ha)		Wet 1		Wet 2		Dry		Recession		Annual		Annual		Annual		Annual		Annual	
									Normal	Recession	Total	Wet 1	Wet 2	Dry	Recession	Annual	Wet 1	Wet 2	Dry	Recession	Intensity (%)	SWT	SDI	RWT	RWD	W	D	SEILA 3/ PDA 2/
Kampong Tralach	> 100 ha	1	SMC-001	Kdal	Peay	Gravity	No	M	1,150	1,150	0	1,150	0	1,150	0	100	0	100	0	100	0	100	0	100	1.6	0.9		
		2	SMC-002	Krapou	Teng Kloeps	Gravity/Pump	No	P	1,373	1,373	0	1,373	0	1,373	0	100	0	100	0	100	0	100	0	100	1.6	1.4		
		3	SMC-003	Ta Vay	Svay Chhak	Gravity	No	M	120	120	0	120	0	120	0	100	0	100	0	100	0	100	0	100	1.6	1.5		
		4	SMC-004	O Roves	Teng Kloeps	Gravity	No	P	50	50	0	50	0	50	0	100	0	100	0	100	0	100	0	100	1.6	1.4		
		5	SMC-005	Dieh Samrek	Teng Kloeps	Gravity	No	M	300	300	0	300	0	300	0	100	0	100	0	100	0	100	0	100	1.6	1.4		
		6	SMC-006	Sreun Dek	Peay	Gravity	No	P	1,020	1,020	0	1,020	0	1,020	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		7	SMC-007	Yutush	Svay	Gravity/Pump	No	P	1,200	1,200	0	1,200	0	1,200	0	100	0	100	0	100	0	100	0	100	1.6	1.1		
		8	SMC-008	Beoung Knar	Chhmar	Gravity	No	M	900	900	0	900	0	900	0	100	0	100	0	100	0	100	0	100	1.6	1.0		
		9	SMC-009	O Bakar	Tibek Vann	Gravity	No	P	209	209	0	209	0	209	0	100	0	100	0	100	0	100	0	100	1.5	0.9		
		10	SMC-001	Sek	Teng Kloeps	Gravity	No	M	70	70	0	70	0	70	0	100	0	100	0	100	0	100	0	100	1.6	1.5		
	< 100 ha	1	KTL-001	O Knum	Chhak Sar	Gravity	No	M	600	600	0	600	0	600	0	100	0	100	0	100	0	100	0	100	1.8	0.8		
		2	KTL-002	Chhan Teal	Tamar Eih	Gravity	No	M	650	650	0	650	0	650	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		3	KTL-003	Tam Phik	Tamar Eih	Gravity	No	M	205	205	0	205	0	205	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		4	KTL-004	Char Teak	Tamar Eih	Gravity/Pump	No	P	250	250	0	250	0	250	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		5	KTL-005	Boeng Leach	O Russey	Gravity	?	P	400	400	0	400	0	400	0	100	0	100	0	100	0	100	0	100	1.8	1.4		
		6	KTL-006	Kraeg Poutly	Lungkek	Gravity	Yes	P	210	210	0	210	0	210	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		7	KTL-007	Anlong Thal	Peay	Gravity/Pump	No	M	320	320	0	320	0	320	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		8	KTL-008	Sar Toeh	Peay	Gravity/Pump	No	M	260	260	0	260	0	260	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		9	KTL-009	Tamar Angkam	Chhak Sar	Gravity/Pump	No	M	270	270	0	270	0	270	0	100	0	100	0	100	0	100	0	100	1.8	0.8		
		10	KTL-010	O Tasm	Chhak Sar	Gravity	No	M	230	230	0	230	0	230	0	100	0	100	0	100	0	100	0	100	1.8	0.8		
		11	KTL-011	Chen Keak	O Russey	Gravity/Pump	?	P	110	110	0	110	0	110	0	100	0	100	0	100	0	100	0	100	1.8	1.4		
		12	KTL-012	Sar Thom	Lungkek	Gravity/Pump	Yes	P	250	250	0	250	0	250	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		13	KTL-013	Boeng Thom	Lungkek	Gravity	Yes	M	110	110	0	110	0	110	0	100	0	100	0	100	0	100	0	100	1.8	1.0		
		14	KTL-014	Veat Thum	Appl Truck	Gravity	Yes	P	140	140	0	140	0	140	0	100	0	100	0	100	0	100	0	100	1.8	3.2		
		15	KTL-015	Prek Kunbung	Kg. Tralach	Gravity/Pump	Yes	P	110	110	0	110	0	110	0	100	0	100	0	100	0	100	0	100	1.8	2.5		
		16	KTL-016	Chhmar Men	Appl Truck	Gravity/Pump	Yes	P	365	365	0	365	0	365	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		17	KTL-017	Tham	Appl Truck	Gravity/Pump	Yes	P	220	220	0	220	0	220	0	100	0	100	0	100	0	100	0	100	1.8	3.2		
		18	KTL-018	Boeung Chhak	Ta Ches	Gravity/Pump	Yes	P	150	150	0	150	0	150	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		19	KTL-019	Kruing Meas	Ta Ches	Gravity/Pump	Yes	P	200	200	0	200	0	200	0	100	0	100	0	100	0	100	0	100	1.8	2.7		
		20	KTL-001	Sar Thom	Peay	Gravity/Pump	No	M	91	91	0	91	0	91	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
		21	KTL-002	Prey Sak	Peay	Gravity	No	M	70	70	0	70	0	70	0	100	0	100	0	100	0	100	0	100	1.8	1.5		
22	KTL-003	Anlong Thimlay	Peay	Gravity/Pump	No	M	65	65	0	65	0	65	0	100	0	100	0	100	0	100	0	100	1.8	1.5				
23	KTL-004	Ka Ped	Lung Vek	Gravity/Pump	Yes	P	60	60	0	60	0	60	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
24	KTL-005	Svay Chhnam	Lung Vek	Gravity/Pump	Yes	P	60	60	0	60	0	60	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
25	KTL-006	Ta An	Lung Vek	Gravity/Pump	Yes	P	90	90	0	90	0	90	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
26	KTL-007	O Seng	Lung Vek	Gravity/Pump	Yes	P	60	60	0	60	0	60	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
27	KTL-008	Ta Toy	Lung Vek	Gravity/Pump	Yes	P	60	60	0	60	0	60	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
28	KTL-009	Ta EK	Lung Vek	Lung Vek	Yes	P	70	70	0	70	0	70	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
29	KTL-010	Preah In Top	Lung Vek	Gravity/Pump	Yes	P	100	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
30	KTL-011	Khach Romrea	Lung Vek	Gravity/Pump	Yes	P	50	50	0	50	0	50	0	100	0	100	0	100	0	100	0	100	1.8	1.0				
31	KTL-012	Kema	Kg. Tralach	Gravity/Pump	Yes	P	78	78	0	78	0	78	0	100	0	100	0	100	0	100	0	100	1.8	1.5				

