

Tables

Table D.1.1.1 Results of Soil Analysis

Pit No.	Location	Soil Type / J/	Soil Layer	Depth (cm)	Texture	pH (H ₂ O)	Total Carbon (%)	Total Nitrogen (%)	Total P2O5 (ppm)	Available P2O5 (mg/100g)	Exchangeable Cations					Particle Size Distribution 2/			Bulk Density (g/cm ³)	Real Density (g/cm ³)	Remarks	Sample No.						
											Ca	Mg	K	Na	CEC	Clay (%)	Silt (%)	Sand (%)				Chemical	Undisturbed					
P1	Sob Ngor, Ktom Krang Com.	PA	I	0-20	SL																							
			II	20-30	SL																							
			III	30-80	SL																							
			IV	>80	CL~SC																							
P2	Bheng, Phueay Com	GAm	I	0-15	SL	4.85	0.20	0.032	50	4.0	1.5	6.5	0.2	0.7	0.5	14	11	75	1.83	2.62								
			II	15-30	SL	7.82	0.10	0.008	20	4.1	3.9	13.4	0.3	0.6	0.7	11	12	77	1.89	2.63	Test pit	P2-1	U1 1A, 1B, 1C					
			III	30-100	SCL	9.57	0.07	0.011	30	4.2	5.5	8.6	9.2	1.6	2.4								P2-2	U1 2A, 2B, 2C				
P3	Kla Kon, Peuk Com.	GAm	I	0-10	SL																							
			II	10-25	SL~SCL																							
			III	25->100	SCL~SC																							
P4	Sor Romang, Krang Mkak Com.	GAF	I	0-10	LiC	4.70	0.53	0.046	40	4.1	5.1	9.2	2.5	3.7	3.3	29	18	53	1.43	2.62								
			II	10-25	LiC	5.03	0.54	0.107	40	4.3	3.3	7.2	1.5	5.0	4.2	33	18	49	1.7	2.60	Test pit	P4-1	U3 1A, 1B, 1C					
			III	25-50	LiC	6.40	0.14	0.025	30	4.1	3.6	11.7	4.7	5.0	4.4								P4-2	U3 2A, 2B, 2C				
			IV	50->80	SiC~C																							
P5	Prey Taouk, Roka Koh Com.	PA	I	0-10	SL	4.85	0.78	0.027	40	4.1	1.9	6.0	5.7	1.0	3.8	14	19	67	1.84	2.60								
			II	10-25	SCL	6.27	0.60	0.016	30	4.1	2.1	5.1	6.7	1.1	4.0	16	12	72	1.91	2.56	Test pit	P5-1	U2 1A, 1B, 1C					
			III	25-50	SCL	6.46	0.63	0.040	20	4.4	4.3	10.8	3.2	0.7	2.1								P5-2	U2 2A, 2B, 2C				
			IV	>50	SCL																							
P6	Tuay Dang Kum, Sukuh Com.	PA	I	0-15	SL	5.97	0.65	0.016	40	4.2	2.5	9.6	3.0	1.4	2.2													
			II	15-25	SL	6.42	0.71	0.023	40	4.2	3.1	7.1	2.1	1.5	2.1													
			III	25-45	SCL	6.34	0.62	0.016	50	4.2	3.9	8.8	1.1	2.1	2.4													
			IV	>45	SC																							
P7	Krang Ampil, Sukuh Com.	GAF	I	0-10	SL~SCL																							
			II	10-30	SH~CL																							
			III	30->80	C																							
P8	Oukrang Ambel, Tra. Kong Com.	GAc	I	0-18	LS	6.43	0.21	0.031	50	6.2	1.4	9.2	14.9	0.9	2.2													
			II	18-48	LS	7.52	0.18	0.016	20	4.4	0.3	7.6	3.3	0.6	1.0													
			III	48-68	SCL	6.25	0.17	0.007	30	4.6	5.1	5.9	1.9	0.8	1.2													
			IV	>68	SCL																							
P9	Trapeang Kak, Krang Ampil Com.	GAF	I	0-15	CL~SCL	6.75	0.40	0.051	80	4.6	10.0	23.6	8.7	5.9	5.2													
			II	15-32	CL~C	7.87	0.58	0.036	70	4.3	13.0	41.5	13.9	2.4	3.7													
			III	32-52	C	7.83	0.32	0.046	60	4.4	12.0	35.3	14.2	2.4	2.9													
			IV	>52	C																							

2/: Average of 3 samples

J/: Soil Type
 GAn: Gleyic Acrisols Medium Textured Phase
 GAc: Gleyic Acrisols Coarse Textured Phase
 GAF: Gleyic Acrisols Medium to Fine Textured Phase
 PA: Plinthic Acrisols

Table D.1.2.1 Criteria for Land Suitability Classification for Annual Crops

Land Quality/Factor	Land Suitability Class / Criteria				
	S1	S2	S3	S3C	N
1. Land/Soil Physical Quality					
- Effective Soil Depth	> 100cm	> 50 - 100cm	30 - 50cm	-	< 30cm
- Soil Texture	CL, L	C, SL, SCL		LS, S	Coarse S
- Coarse fragments	Non to slight	Slight	Abundant	-	Stony/gravelly
- Slope	Flat	Slightly sloping	Sloping	-	Steep slope
- Drainage Condition	Moderately well to well	Moderately poor	Excessive Poor	-	Very poor/ inundated
2. Soil Chemical Characteristic					
- Soil Reaction	5.5 - 6.5	5.0 - 5.5 6.5 - 7.5	4.0 - 5.0 7.5 - 8.5	-	< 4.0 > 8.5
- CEC & Exchangeable Cations	High	Moderate	Low/very low	-	-

Land Suitability Definitions	
Land Suitability Class	Description
S1 Highly Suitable	Land having no significant limitations to sustained application of a given use, or only minor limitations that will not significantly reduce productivity or benefits and will not raise inputs above an acceptable level
S2 Moderately Suitable	Land having limitations which, in aggregate, are moderately severe for sustained application of a given use; the limitations will reduce productivity or benefits, and increase required inputs the extent that the overall advantage to be gained from the use, although still attractive, will be appreciably inferior to that expected on Class S1 land
S3 Marginally Suitable	Land having limitations which, in aggregate, are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified
S3C Marginally Suitable (Critical)	Land having limitations which, in aggregate, are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only critically justified In the present study, this class is set for soils with coarse textured surface layer
N Currently Not Suitable	Land having limitations which will be surmountable in time, but which can not be corrected with existing knowledge at currently acceptable cost; the limitations are so severe as to preclude successful sustained use of the land in the given manner

Table D.1.2.2 Results of Land Suitability Classification for Crop Production

Soil Type	Mapping Symbol		Land Suitability Class					Total
			S1	S2	S3	S3C	N	
Gleyic Acrisols Medium Textured Phase	GAm	Area			55,410			55,410
		%			100			53
Gleyic Acrisols Medium to Fine Textured Phase	GAf	Area		10,750				10,750
		%		100				10
Gleyic Acrisols Coarse Textured Phase	GAc	Area				1,460		1,460
		%				100		1
Plinthic Acrisols	PA	Area			28,580			28,580
		%			100			27
Dystric Leptosol	DL	Area					9,000	9,000
		%					100	9
Target Area		Area		10,750	83,990	1,460	9,000	105,200
		%		10	80	1	9	100

Table D.1.3.1 Agro-climatic Conditions in & around the Target Area

	Jan	Feb	Mar	Apr	May	June	July	Aug.	Sept.	Oct	Nov	Dec	Annual/Avg.	Remarks
Rainfall/Discharge														
260mm /MCM													1,251	
220mm /MCM													-	
180mm /MCM													80.5	from 1995 to 2005
140mm /MCM													28.3	from 1991 to 2005
100mm /MCM													32.7	from 1991 to 2005
60mm /MCM													23.9	from 1991 to 2005
20mm /MCM													7.1	from 1991 to 2005
Maximum temperature														
34°C														
32°C														
30°C														
probable rainfall (80%)														
probable discharge														
sunshine hours														
9 hrs														
7 hrs														
5 hrs														
Monthly Mean Rainfall	11	12	39	76	147	117	127	136	215	233	111	27		
Probable Rainfall	0.0	0.0	0.0	2.8	64.6	67.5	69.4	77.5	145.9	112.2	0.8	0.0		
No. of Rainy Days (>1.0mm/day)	2.0	0.3	3.8	4.5	6.5	8.3	8.8	10.8	13.8	14.3	6.5	1.3		
Mean Temperature	26.5	27.8	29.4	30.5	30.2	29.3	28.7	29.3	28.1	27.5	26.8	26.1		
Max. Temperature	31.5	33.0	34.7	35.5	34.8	33.7	32.5	32.4	32.0	31.2	30.9	30.6		
Min. Temperature	21.5	22.5	24.2	25.5	25.6	25.0	24.8	26.2	24.2	23.8	22.7	21.6		
Sunshine Hours	8.7	8.6	8.6	8.3	7.3	6.1	5.8	5.9	5.6	5.8	7.4	8.4		

Rainfall: mean monthly rainfall at Kampong Speu from 1901~2004 except for 1973~1980 & 1991~1994

Probable discharge: At Roleng Chrey Headwork, Prek Khnot River (observation period: 1966~1969 & 1983~2003, MORAM)

Sunshine hour & maximum temperature: Department of Meteorology, Pechetong Observatory

Table D.1.4.1 Agro-demographic Features of the Project Communes - 1/2

Province/District	Commune	Type	No. of Households	No. of Families	Population			Working Population			Total Households (% to)		Households with Less Than 10a		Households with More Than 3ha		Irrigated Area (ha)	Irrigated Area per Crop Producing Household (ha)					
					Male	Female	Total	Male	Female	Total	Average per Family	No.	%	No.	%	No.			%				
																				1/	2/	1/	2/
Kampong Speu	Chbar Mon	Urban	1,415	1,456	3,705	4,076	7,781	5.3	2,190	2,458	4,648	3.2	922	65	493	35	22	2	1	0	109	0.12	
		Urban	1,382	1,597	3,412	3,761	7,173	5.1	2,080	2,221	4,301	3.1	978	71	404	29	404	30	3	-	362	0.37	
		Urban	2,595	2,658	6,819	7,057	13,876	5.2	4,563	4,593	8,956	3.4	1,512	58	1,083	42	1,083	180	12	5	0	272	0.15
		Urban	1,154	1,132	2,950	3,121	6,071	5.4	1,723	1,833	3,556	3.1	890	77	264	23	264	100	11	-	-	136	0.15
		Urban	1,357	1,367	3,616	4,032	7,648	5.6	2,216	2,600	4,816	3.5	1,050	77	307	23	307	90	9	-	-	456	0.43
District/Project	Kong Pisei	Urban	7,903	8,010	20,502	22,047	42,549	5.3	12,572	13,705	26,277	3.3	5,352	68	2,551	32	5,352	422	8	6	0	1,285	0.24
		Rural	959	987	2,620	2,858	5,478	5.6	1,464	1,579	3,043	3.1	952	99	7	1	7	12	1	-	-	4	0.00
		Rural	2,080	2,131	5,691	6,039	11,730	5.5	3,043	3,288	6,331	3.0	1,775	85	305	15	305	486	27	247	14	22	0.01
		Rural	1,197	1,222	3,202	3,430	6,632	5.4	1,638	1,760	3,398	2.8	1,065	89	132	11	132	-	-	-	-	14	0.01
		Rural	1,482	1,535	4,012	4,525	8,537	5.6	2,336	2,703	5,039	3.3	1,471	99	11	1	11	24	2	51	3	13	0.01
		Rural	2,284	2,341	6,170	6,433	12,603	5.4	3,536	3,971	7,507	3.2	2,241	98	43	2	43	24	1	-	-	500	0.22
		Rural	1,685	1,806	4,616	5,121	9,737	5.4	2,469	2,908	5,377	3.0	1,592	94	93	6	93	29	2	-	-	4	0.00
		Rural	975	986	2,264	2,527	4,791	4.9	1,184	1,376	2,560	2.6	975	100	-	-	-	34	3	-	-	42	0.04
		Rural	1,072	1,099	2,749	2,965	5,714	5.2	1,653	1,886	3,539	3.2	1,031	96	41	4	41	61	6	-	-	12	0.01
		Rural	11,734	12,107	31,324	33,898	65,222	5.4	16,139	18,095	34,234	2.8	11,102	95	632	5	632	670	6	298	3	611	0.06
District/Project	Samaeong Tong	Rural	20,715	21,371	54,568	58,846	113,414	5.3	30,592	34,060	64,652	3.0	19,347	93	1,368	7	2,281	1,156	6	329	2	768	0.04
		Rural	1,479	1,470	3,796	4,161	7,957	5.4	2,148	2,402	4,550	3.1	1,479	100	-	-	-	-	-	-	-	187	0.13
		Rural	1,309	1,324	3,316	3,492	6,808	5.1	1,890	2,063	3,953	3.0	1,244	95	65	5	65	-	-	-	-	120	0.10
		Rural	2,005	2,039	5,876	5,875	11,751	5.8	3,443	3,649	7,092	3.5	2,005	100	-	-	-	-	-	-	-	412	0.21
		Rural	1,982	1,995	5,469	5,687	11,156	5.6	3,065	3,233	6,298	3.2	1,982	100	-	-	-	-	-	-	-	244	0.12
		Rural	1,429	1,500	3,499	3,917	7,416	4.9	1,876	2,261	4,137	2.8	1,429	100	-	-	-	-	-	-	-	-	-
		Rural	2,550	2,602	6,963	7,127	14,090	5.4	4,158	4,318	8,476	3.3	2,112	83	438	17	438	18	1	13	1	410	0.19
		Rural	2,322	2,424	5,989	6,670	12,659	5.2	3,436	3,917	7,353	3.0	2,013	87	309	13	309	17	45	2	626	0.31	
		Rural	1,288	1,318	3,289	3,444	6,733	5.1	1,803	1,933	3,736	2.8	1,288	100	-	-	-	-	-	-	-	120	0.09
		Rural	1,406	1,430	4,097	4,189	8,286	5.8	2,245	2,483	4,828	3.4	1,406	100	-	-	-	-	-	-	-	20	0.01
		Rural	1,967	2,025	5,273	5,718	10,991	5.4	2,977	3,288	6,265	3.1	1,967	100	-	-	-	-	-	-	-	169	0.09
		Rural	1,106	1,161	2,956	3,077	6,033	5.2	1,695	1,816	3,511	3.0	1,106	100	-	-	-	-	-	-	-	-	-
		Rural	1,362	1,391	3,578	3,824	7,402	5.3	2,057	2,244	4,301	3.1	1,362	100	-	-	-	-	-	-	-	-	-
		Rural	1,768	1,881	4,752	5,144	9,896	5.3	2,903	3,117	6,020	3.2	1,768	100	-	-	-	-	-	-	-	-	-
		Rural	1,779	1,801	4,395	4,871	9,266	5.1	2,370	2,696	5,086	2.8	1,779	100	-	-	-	-	-	-	-	-	-
Rural	1,052	1,116	2,844	2,885	5,729	5.1	1,547	1,630	3,177	2.8	1,052	100	-	-	-	-	-	-	-	-	-		
District/Project	Communes in Kp. Speu	Rural	24,804	25,477	66,092	70,081	136,173	5.3	37,713	41,950	78,763	3.1	25,992	97	812	3	812	18	0	58	0	2,428	0.10
		Rural	44,441	45,594	117,918	126,026	243,944	5.4	66,424	72,850	139,274	3.1	40,446	91	3,995	9	3,995	1,110	3	362	1	4,324	0.11
		Rural	132,618	137,071	353,355	357,628	690,963	5	188,717	208,246	396,963	3											

Table D.1.4.1 Agro-demographic Features of the Project Communes - 2/2

Kandal Kandal Stueung	Daeum Rues	1,636	1,669	3,850	4,120	7,970	4.8	2,233	2,486	4,719	2.8	1,580	97	56	3	56	-	-	-	578	0.37		
	Roka	620	618	1,433	1,656	3,089	5.0	790	907	1,697	2.7	610	98	10	2	10	30	5	-	270	0.44		
	Roleang Kaen	1,029	1,031	2,437	2,679	5,116	5.0	1,477	1,719	3,196	3.1	1,014	99	15	1	15	6	1	-	316	0.31		
	Project Communes Total	3,285	3,318	7,750	8,455	16,175	4.9	4,500	5,112	9,612	2.9	3,204	98	81	2	81	36	1	-	1,164	0.36		
	District Total	18,617	19,143	44,011	48,844	92,855	5	26,270	30,291	56,561	3	16,041	86	2,576	14	2,576	293	72	-	7,816	0.49		
Angk Snuol	Back Chan	1,785	1,845	4,422	4,881	9,303	5.0	2,741	3,063	5,804	3.1	962	54	823	46	823	25	3	-	-	-		
	Boeung Thuan	1,142	1,166	2,830	3,073	5,903	5.1	1,585	1,812	3,397	2.9	1,023	90	119	10	119	5	0	9	150	0.15		
	Chhak Ch. Neang	607	616	1,750	1,742	3,492	5.7	1,024	1,044	2,068	3.4	553	91	54	9	54	116	21	7	-	-		
	Dannak Ampil	872	863	2,285	2,405	4,690	5.4	1,344	1,432	2,776	3.2	541	62	331	38	331	-	-	-	-	-		
	Kantok	1,702	1,732	4,899	5,188	10,087	5.8	2,867	3,227	6,194	3.6	1,552	90	170	10	170	340	22	510	33	-		
	Kamboul	1,145	1,149	3,077	3,259	6,536	5.5	1,822	2,127	3,949	3.4	943	82	202	18	202	-	-	-	-	-		
	Krang Mkaek	781	796	2,064	2,334	4,398	5.5	1,287	1,465	2,752	3.5	781	100	-	-	-	47	6	1	0	449	0.57	
	Lunhacht	1,319	1,334	3,438	3,716	7,150	5.4	2,003	2,289	4,292	3.2	1,319	100	-	-	-	24	2	-	-	50	0.04	
	Peuk	1,208	1,210	3,128	3,424	6,552	5.4	1,923	2,107	4,030	3.3	884	73	324	27	324	78	9	-	-	-		
	Prey Puok	1,225	1,272	3,300	3,645	6,945	5.5	1,993	2,323	4,316	3.4	1,131	92	94	8	94	20	2	4	0	247	0.22	
	Ovlaok	618	631	1,627	1,837	3,464	5.5	980	1,149	2,129	3.4	618	100	-	-	-	10	2	-	-	-		
	Samraong Len	1,288	1,362	4,041	4,194	8,235	6.0	2,475	2,643	5,118	3.8	1,248	97	40	3	40	131	10	-	-	-		
	Srao	682	698	1,954	2,152	4,106	5.9	1,172	1,293	2,465	3.5	662	97	20	3	20	36	5	1	-	-		
		Project Communes Total	14,374	14,674	38,815	41,850	80,665	5.5	23,216	26,074	49,290	3.4	12,197	85	2,177	15	2,177	832	7	536	4	896	0.07
		District Total	18,116	18,996	50,727	54,816	103,543	5.6	30,266	34,078	64,344	3.4	15,939	88	2,177	12	2,177	832	5	536	3	941	0.06
		Project Communes in Kandal	17,659	17,992	46,535	50,305	96,840	5.4	27,716	31,186	58,902	3.3	15,401	87	2,258	13	2,258	868	6	556	3	2,060	0.13
		Province Total	127,526	229,263	572,277	613,514	1,185,791	5.2	339,144	371,718	710,862	3.1											
		Overall Project Communes	62,100	63,586	164,453	176,331	340,784	5.4	94,140	104,036	198,176	3.1	55,847	90	6,253	10	6,253	1,978	4	898	2	6,384	0.11

2/ Source: Commune Survey on Crops & Livestock, 2003, Statistic Office, MAFF

1/ Source: SEILA Commune Data Base, 2004

Table D.2.2.1 Improved Rice Varieties Released by CARDI and Common Varieties Grown in the Target Area

Major Improved Varieties Released by CARDI 1/							
Variety	Year Released	Adaptability	Photoperiod Sensitivity	Growth Period (days) or Flowering Date	Yield Level (ton/ha)	Resistance to BPH	Aroma
Early Rice							
IR 66 2/	1990	IRR/RFL	none	105 ~ 115 days	4.0 ~ 6.5	MS	none
Sen Pido 2/		IRR/RFL	none	105 ~ 115 days	4.0 ~ 6.5	MS	aromatic
IR 72	1990	IRR/RFL	none	110 ~ 120 days	3.5 ~ 6.0	S	none
IR 36		IRR/RFL	none	110 ~ 120 days	3.5 ~ 6.0	MR	none
Kru	1990	IRR/RFL	none	110 ~ 115 days	3.5 ~ 6.0		none
IR Kesar	1993	IRR/RFL	none	105 ~ 120 days	4.0 ~ 6.0	MR	none
Medium Rice							
Riang Chey	1999	IRR/RFL	sensitive	Nov. 5 - 11	3.5 ~ 5.5	MS	none
CAR 11	1997	IRR/RFL	sensitive	Nov. 5 - 11	2.5 ~ 4.5	S	none
CAR 3	1995	IRR/RFL	sensitive	Oct. 30 - Nov. 7	2.5 ~ 4.5	HS	none
Santepheap 1	1992	RFL	none	130 ~ 140 days	4.0 ~ 6.0	MS	none
Santepheap 2	1992	RFL	none	130 ~ 140 days	4.0 ~ 6.0	MS	none
Santepheap 3 2/	1992	RFL	none	140 ~ 145 days	4.0 ~ 6.5	S	none
Late Rice							
CAR 4	1995	RFL	highly sensitive	Nov. 8 - 15	2.5 ~ 5.0	MS	none
CAR 6	1995	RFL	highly sensitive	Nov. 9 - 16	2.5 ~ 5.0	S	none
Aromatic Rice							
Pkha Rumduoul 2/	1999	IRR/RFL	sensitive	Oct. 30 - Nov. 7	3.5 ~ 5.5	S	aromatic
Pkha Rumchek	1999	IRR/RFL	sensitive	Oct. 25 - Nov. 1	3.0 ~ 5.0	MS	aromatic
Rice Varieties Common in the Target Area							
Early Rice	Medium Rice		Late Rice		Aromatic Rice		
IR 66 IR 36 Sen Pido Lom Anghash Chrocchap Kra Ngok Pum	Chamar Prom Ranchey Pram Bei Kuo Chamar La Lit Chrom Peak Pdao Masari Mlis Kraoup		Kantom Kul Phkar Sdao Phkar Phnao Phkar Slar Khpour Donng Bei Kan Tom Neang Menh		Neang Malis 3/ Somaly Phka Knhei		

Note: IRR: irrigated field RFL: rainfed lowland BPH: brown plant hopper
 HS: highly susceptible S: susceptible MS: moderately susceptible
 MR: Moderately resistant

1/: Rice Varieties Released by the Varietal Recommendation Committee of Cambodia, CARDI, 2001 & CARDI

2/: Variety recommended by CARDI

3/: Variety for contract growing with Angkor Kasekam Roongroeng Co. Ltd.

Table D.2.2.2 Rice Production Features in the Project Communes from 2002 to 2004 (SEILA Data Base)

Province/District	Commune	Paddy Field (ha)			Rainfed Rice Cropped Area			Cropped Area of Rice, Wet Season (ha)			Supplementary Irrigated			Fully Irrigated Rice Cropped Area			Cropping Intensity of Rice (%)	Annual Rice Area (ha)	Annual Cropping Intensity of Rice (%)	
		2002	2003	2004	Avg.	2002	2003	2004	Avg.	2002	2003	2004	Avg.	2002	2003	2004				Avg.
Kampong Speu Chbar Mon	Chbar Mon		807	807	730	730	730						53	53	53	53	7	783	97	
	Kandaol Dom		546	546	567	567	567							64	64	64	64	12	631	116
	Roka Thum		510	510	522	522	522	Included in rainfed rice cropped area						102	102	102	102	12	584	115
	Sopar Tep		357	357	361	361	361							45	45	45	45	13	406	114
	Svay Kravan		521	521	538	538	538							6	6	6	6	1	544	104
	Communes in the Target Area		2,741	2,741	2,718	2,718	2,718							230	230	230	230	8	2,948	108
	Kong Pisei		956	1,381	1,382	1,240	956	804	1,382	1,047	0	0	0	1,047	89	89	89	0	1,047	84
	Preah Niran		1,436	1,436	1,436	1,436	1,436	1,436	1,322	1,095	0	341	114	1,436	100	100	100	0	1,449	101
	Roka Kaoh		980	1,033	1,045	1,033	980	1,033	860	1,157	0	170	40	1,197	100	100	100	2	1,224	102
	Chongruk		1,029	1,029	1,029	1,029	1,029	1,029	709	922	0	320	107	1,029	100	100	100	0	1,029	100
Prey Nheat		1,229	1,229	1,229	1,229	1,229	1,229	1,453	500	0	0	333	1,786	110	200	210	200	14	2,006	124
Pechr Muni		500	552	500	500	448	469	40	52	0	0	48	517	100	40	23	4	538	104	
Tuek Lak		782	782	782	782	782	782	762	709	0	200	73	782	100	0	0	0	782	100	
Communes in the Target Area		8,531	9,658	8,957	9,049	8,491	8,329	8,104	8,308	540	752	853	715	9,023	100	245,267	0	9,304	103	
Samraong Tong	Roleang Chak	740	740	740	740	740	740	292	318	323	496	448	422	740	100	40	85	775	105	
	Kahaeng	703	703	703	703	703	703	429	439	120	397	274	264	703	100	40	47	747	106	
	Roleang Kreal	1,033	1,033	1,045	1,037	1,033	1,033	1,045	1,037	0	0	0	0	1,037	100	0	0	1,037	100	
	Saen Dei	1,110	1,110	1,110	1,110	1,110	1,089	867	1,022	0	21	243	88	1,110	100	0	0	1,110	107	
	Tang Krouch	1,235	1,235	1,276	1,249	1,186	1,086	1,160	1,144	149	149	116	138	1,282	103	0	33	1,315	105	
	Treapang Kong	1,241	1,165	1,365	1,257	730	863	1,046	880	314	302	319	312	1,191	95	10	232	1,349	107	
	Voa Sa	1,023	999	1,001	1,008	943	901	746	863	91	98	255	118	981	97	0	55	1,037	103	
	Khitum Krang	1,343	1,738	1,606	1,606	1,292	1,738	1,389	31	0	0	10	1,609	100	3	22	0	1,608	100	
	Krang Ampil	1,457	1,457	1,457	1,457	427	427	427	1,417	757	1,030	40	700	1,457	100	0	0	1,457	100	
	Pneay	154	1,505	1,505	1,505	154	1,505	1,505	836	305	350	218	1,055	100	0	0	0	1,055	100	
Kandal	Samraong Tong	833	826	826	826	833	826	649	769	0	177	59	828	100	0	0	0	828	100	
	Sambour	941	941	941	941	941	941	941	941	0	0	0	941	100	0	0	0	941	100	
	Skoh	1,357	1,357	1,357	1,357	1,357	1,357	1,343	1,328	0	14	5	1,332	100	3	10	0	1,357	100	
	Thornoda Ar	1,479	1,479	1,479	1,479	1,479	1,479	1,479	1,479	0	0	0	1,479	100	0	0	0	1,479	100	
	Tumpoar Meas	750	1,280	1,280	1,280	750	1,280	1,280	1,103	0	0	0	1,103	100	0	0	0	1,103	100	
	Communes in the Target Area		15,331	17,568	17,823	16,907	13,161	14,770	15,587	14,506	1,967	2,798	2,236	2,334	16,840	100	551	0	1,103	100
	Daeum Ruos	1,030	1,030	1,030	1,030	148	1,030	736	852	0	0	284	320	1,020	99	48	0	17,239	102	
	Roka	416	416	416	416	16	136	96	400	280	280	320	320	416	100	0	0	0	416	100
	Roleang Kaen	512	512	512	512	262	75	75	137	250	437	437	375	512	100	0	0	0	512	100
	Communes in the Target Area		1,958	1,958	1,958	1,958	426	1,241	1,241	969	1,502	717	717	979	1,948	99	48	0	1,964	100
Angk Snuol	Baek Chan	543	543	543	543	491	543	543	526	0	0	0	526	97	0	0	0	526	97	
	Boeng Thum	720	720	720	720	600	720	720	720	120	584	584	429	720	100	60	0	405	96	
	Chhak Chheu Ne	465	403	403	403	403	403	403	405	0	0	0	405	96	0	0	0	405	96	
	Dannak Ampil	385	385	385	385	385	385	385	328	0	171	57	385	100	0	0	0	385	100	
	Kantaok	750	750	750	750	750	750	750	750	0	0	0	750	100	0	0	0	750	100	
	Kambouj	790	795	792	790	790	790	790	792	0	0	0	792	100	0	0	0	792	100	
	Krang Meak	640	640	640	640	425	640	640	568	215	0	72	640	100	425	0	0	792	100	
	Lurhach	785	785	785	785	785	785	110	335	0	675	675	450	785	100	0	0	785	100	
	Peuk	577	577	577	577	468	577	540	540	0	0	0	540	100	0	0	0	540	100	
	Prey Puok	871	871	871	871	773	871	773	608	0	465	155	763	99	0	0	0	764	99	
Communes in the Target Area	Ovsaok	468	871	468	602	293	505	468	422	175	354	0	176	598	99	0	4	622	103	
	Samraong Leu	780	780	780	780	780	780	780	780	0	0	0	780	100	0	0	0	780	100	
	Snao	492	492	492	492	492	492	492	492	0	0	0	492	100	0	0	0	492	100	
	Communes in the Target Area		8,266	8,209	8,209	8,209	7,649	6,284	510	1,613	1,895	1,339	1,339	8,176	99	485	111	3	8,390	102
	Communes in Target Area Total		34,086	37,388	39,688	38,881	29,727	33,637	31,215	33,338	4,519	5,880	5,701	5,367	38,705	100	834	1,159	8,390	103

Source: SEILA Commune Data Base, 2002, 2003 & 2004 except for Chbar Mon, Chbar Mon data from DAO Chbar Mon & Commune Survey on Crops & Livestock, 2003, Statistic Office, MAF

Table D.2.2.3 Rice Production in the Project Communes - 1/3

Province	District	Commune	Year	Rainy Season Rice					Dry Season Rice				
				Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)	Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)
Kampong Speu	Chbar Mon	1 Chbar Mon	2003-2004	730	730	2.9	2.9	2,144	53	53	2.8	2.8	148
			2004-2005	534	264	1.8	0.9	476	46	40	2.9	2.5	117
			Average	632	497	2.6	2.1	1,310	50	47	2.8	2.7	133
		2 Kandaol Dom	2003-2004	567	567	3.0	3.0	1,689	64	64	2.5	2.5	160
			2004-2005	468	366	2.4	1.9	867	58	49	2.3	1.9	113
			Average	518	467	2.7	2.5	1,278	61	57	2.4	2.2	137
		3 Roka Thum	2003-2004	522	522	3.1	3.1	1,597	62	62	2.9	2.9	180
			2004-2005	403	297	2.6	1.9	761	27	23	2.6	2.2	59
			Average	463	410	2.9	2.5	1,179	45	43	2.8	2.7	120
		4 Sopoar Tep	2003-2004	361	361	3.0	3.0	1,085	45	45	2.5	2.5	113
			2004-2005	365	327	2.7	2.4	885	37	31	2.7	2.3	85
			Average	363	344	2.9	2.7	985	41	38	2.6	2.4	99
		5 Svay Kravan	2003-2004	538	538	3.1	3.1	1,656	6	6	2.8	2.8	17
			2004-2005	543	508	2.4	2.3	1,231	5	5	2.6	2.6	13
			Average	541	523	2.8	2.7	1,444	6	6	2.7	2.7	15
	Target Area	2003-2004	2,718	2,718	3.0	3.0	8,171	230	230	2.7	2.7	618	
		2004-2005	2,313	1,762	2.4	1.8	4,220	173	148	2.6	2.2	387	
		Average	2,516	2,240	2.8	2.5	6,196	202	189	2.7	2.5	503	
	Kong Pisei	1 Angk Popel	2003-2004	920	920	1.1	1.1	992	0	0			0
			2004-2005	940	940	2.3	2.3	2,152	0	0			0
			Average	930	930	1.7	1.7	1,572	0	0			0
		2 Preah Nipean	2003-2004	1,236	1,236	1.8	1.8	2,180	0	0			0
			2004-2005	970	647	1.5	1.0	990	0	0			0
			Average	1,103	942	1.7	1.4	1,585	0	0			0
		3 Roka Kaoh	2003-2004	983	983	1.2	1.2	1,181	10	10	1.5	1.5	15
			2004-2005	1,600	1,324	2.5	2.1	3,359	0	0			0
			Average	1,292	1,154	2.0	1.8	2,270	5	5	1.5	1.5	8
		4 Veal	2003-2004	1,095	1,066	0.9	0.9	964	0	0			0
			2004-2005	1,229	1,229	1.9	1.9	2,381	0	0			0
			Average	1,162	1,148	1.5	1.4	1,673	0	0			0
		5 Chongruk	2003-2004	1,631	1,631	1.4	1.4	2,290	0	0			0
			2004-2005	1,395	1,218	1.8	1.5	2,132	0	0			0
			Average	1,513	1,425	1.6	1.5	2,211	0	0			0
	6 Prey Nheat	2003-2004	1,233	986	1.3	1.0	1,239	4	4	1.3	1.3	5	
		2004-2005	1,030	1,029	1.6	1.5	1,595	0	0			0	
		Average	1,131	1,008	1.4	1.3	1,417	2	2	1.3	1.3	3	
	7 Tuek L'ak	2003-2004	890	890	1.4	1.4	1,224	0	0			0	
		2004-2005	673	114	0.8	0.1	91	0	0			0	
		Average	782	502	1.3	0.8	658	0	0			0	
	Target Area	2003-2004	7,988	7,712	1.3	1.3	10,070	14	14	1.4		20	
		2004-2005	7,837	6,501	2.0	1.6	12,700	0	0			0	
		Average	7,912	7,107	1.6	1.4	11,385	7	7	1.4		10	
	Samraong Tong	1 Roleang Chak	2003-2004	743	731	1.3	1.3	942	21	19	2.2	2.0	42
			2004-2005	740	488	2.7	1.8	1,317	38	35	2.9	2.7	103
			Average	742	610	1.9	1.5	1,130	30	27	2.7	2.5	73
2 Kahaeng		2003-2004	748	740	1.5	1.5	1,125	7	7	2.6	2.6	18	
		2004-2005	779	457	2.7	1.6	1,228	33	26	3.2	2.5	83	
		Average	764	599	2.0	1.5	1,177	20	17	3.1	2.5	51	
3 Roleang Kreul		2003-2004	1,089	1,076	1.5	1.4	1,562	86	83	2.3	2.2	187	
		2004-2005	1,334	937	1.9	1.3	1,741	22	20	3.5	3.2	70	
		Average	1,212	1,007	1.6	1.4	1,652	54	52	2.5	2.4	129	
4 Saen Dei		2003-2004	1,113	1,098	1.3	1.3	1,461	0	0			0	
		2004-2005	1,117	405	1.8	0.6	721	0	0			0	
		Average	1,115	752	1.5	1.0	1,091	0	0			0	
5 Tang Krouch		2003-2004	1,306	1,296	1.5	1.5	1,963	13	12	2.3	2.1	27	
		2004-2005	800	458	2.4	1.4	1,113	0	0			0	
		Average	1,053	877	1.8	1.5	1,538	7	6	2.3	2.1	14	
6 Trapeang Kon	2003-2004	1,141	1,135	1.4	1.4	1,585	6	5	2.2	1.8	11		
	2004-2005	1,030	123	2.0	0.2	248	3	3	3.0	3.0	9		
	Average	1,086	629	1.5	0.8	917	5	4	2.5	2.2	10		
7 Voa Sa	2003-2004	1,005	990	1.5	1.5	1,466	19	16	2.0	1.7	32		
	2004-2005	968	172	0.8	0.1	143	0	0			0		
	Average	987	581	1.4	0.8	805	10	8	2.0	1.7	16		
8 Khtum Krang	2003-2004	1,484	1,475	1.4	1.4	2,129	20	17	2.0	1.7	34		
	2004-2005	1,045	666	2.6	1.7	1,728	12	9	3.2	2.4	29		
	Average	1,265	1,071	1.8	1.5	1,929	16	13	2.4	2.0	32		
9 Krang Ampil	2003-2004	1,466	1,460	1.5	1.5	2,179	0	0			0		
	2004-2005	836	329	1.3	0.5	444	0	0			0		
	Average	1,151	895	1.5	1.1	1,312	0	0			0		

Table D.2.2.3 Rice Production in the Project Communes - 2/3

Province	District	Commune	Year	Rainy Season Rice					Dry Season Rice					
				Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)	Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)	
Kampong Speu	Samraong Tong	10 Pnelay	2003-2004	1,505	1,497	1.4	1.4	2,115	0	0				0
			2004-2005	1,114	458	1.6	0.7	739	0	0				0
			Average	1,310	978	1.5	1.1	1,427	0	0				0
		11 Samraong Ton	2003-2004	831	822	1.3	1.3	1,092	0	0				0
			2004-2005	863	653	1.8	1.3	1,163	15	15	3.5	3.5	53	0
			Average	847	738	1.5	1.3	1,128	8	8	3.5	3.5	27	0
		12 Sambour	2003-2004	941	930	1.4	1.4	1,303	0	0				0
			2004-2005	1,065	392	2.3	0.8	882	0	0				0
			Average	1,003	661	1.7	1.1	1,093	0	0				0
		13 Skuh	2003-2004	1,358	1,341	1.5	1.5	2,011	0	0				0
			2004-2005	1,340	732	2.5	1.3	1,801	0	0				0
			Average	1,349	1,037	1.8	1.4	1,906	0	0				0
		14 Thommoda Au	2003-2004	1,509	1,489	1.5	1.5	2,266	0	0				0
			2004-2005	889	300	1.9	0.6	570	0	0				0
			Average	1,199	895	1.6	1.2	1,418	0	0				0
	15 Tumpoar Mea	2003-2004	1,192	1,184	1.5	1.5	1,762	0	0				0	
		2004-2005	890	289	1.2	0.4	348	0	0				0	
		Average	1,041	737	1.4	1.0	1,055	0	0				0	
	Target Area	2003-2004	17,431	17,264	1.4	1.4	24,961	172	159	2.2	2.0	351	0	
		2004-2005	14,810	6,859	2.1	1.0	14,186	123	108	3.2	2.8	347	0	
		Average	16,121	12,062	1.6	1.2	19,574	148	134	2.6	2.4	349	0	
	Kapong Speu Target Area	2003-2004	28,137	27,694	1.6	1.5	43,202	416	403	2.5	2.4	989	0	
		2004-2005	24,960	15,122	2.1	1.2	31,106	296	256	2.9	2.5	734	0	
		Average	26,548	21,408	1.7	1.4	37,154	356	330	2.6	2.4	862	0	
	Kandal	Kandal Stueng	1 Daeum Rues	2000-2001	1,091	517	2.3	1.1	1,189	254	254	2.9	2.9	725
				2001-2002	1,070	817	1.8	1.4	1,471	60	60	2.0	2.0	120
				2002-2003	1,030	1,030	1.8	1.8	1,854	115	115	2.7	2.7	311
				2003-2004	1,066	356	1.8	0.6	626	82	82	2.2	2.2	180
2004-2005				1,076	964	2.5	2.3	2,452	0	0			0	
Average				1,067	737	2.1	1.4	1,518	102	102	2.6	2.6	267	
2 Roka			2000-2001	432	429	2.4	2.4	1,030	8	8	3.5	3.5	28	
			2001-2002	442	442	1.8	1.8	796	4	4	3.0	3.0	12	
			2002-2003	423	423	1.9	1.9	804	0	0			0	
			2003-2004	511	511	2.0	2.0	1,028	0	0			0	
			2004-2005	462	462	2.6	2.6	1,179	0	0			0	
			Average	454	453	2.1	2.1	967	2	2	3.3	3.3	8	
3 Roleang Kaen			2000-2001	596	536	2.3	2.1	1,233	118	118	2.5	2.5	295	
			2001-2002	530	530	1.8	1.8	954	9	9	3.0	3.0	27	
			2002-2003	514	514	1.8	1.8	924	0	0			0	
		2003-2004	594	594	2.0	2.0	1,181	0	0			0		
		2004-2005	533	511	2.2	2.1	1,145	0	0			0		
		Average	553	537	2.0	2.0	1,087	25	25	2.5	2.5	64		
Target Area		2000-2001	2,119	1,482	2.3	1.6	3,452	380	380	2.8	2.8	1,048		
		2001-2002	2,042	1,789	1.8	1.6	3,221	73	73	2.2	2.2	159		
		2002-2003	1,967	1,967	1.8	1.8	3,582	115	115	2.7	2.7	311		
		2003-2004	2,171	1,461	1.9	1.3	2,835	82	82	2.2	2.2	180		
		2004-2005	2,071	1,937	2.5	2.3	4,776	0	0			0		
		Average	2,075	1,675	2.0	1.6	3,273	163	163	2.6	2.6	425		
Angk Snuol		1 Baek Chan	2000-2001	566	566	1.9	1.9	1,075	0	0			0	
			2001-2002	543	527	1.7	1.7	896	0	0			0	
			2002-2003	491	491	1.7	1.7	835	0	0			0	
			2003-2004	543	543	1.7	1.7	909	0	0			0	
	2004-2005		543	423	1.6	1.2	677	0	0			0		
	Average		537	510	1.7	1.6	878	0	0			0		
	2 Boeng Thum	2000-2001	750	725	2.3	2.2	1,668	30	30	3.5	3.5	105		
		2001-2002	736	691	1.8	1.7	1,244	20	20	3.0	3.0	60		
		2002-2003	700	700	2.0	2.0	1,400	6	6	3.0	3.0	18		
		2003-2004	748	748	2.0	2.0	1,480	0	0			0		
		2004-2005	742	742	2.8	2.8	2,078	0	0			0		
	Average	735	721	2.2	2.1	1,574	11	11	3.3	3.3	37			
	3 Chhak Chheu	2000-2001	403	403	1.8	1.8	725	0	0			0		
2001-2002		403	388	1.7	1.6	660	0	0			0			
2002-2003		362	362	1.7	1.7	615	0	0			0			
2003-2004		403	403	1.8	1.8	717	0	0			0			
2004-2005		398	70	1.6	0.3	112	0	0			0			
Average		394	325	1.7	1.4	566	0	0			0			

Table D.2.2.3 Rice Production in the Project Communes - 3/3

Province	District	Commune	Year	Rainy Season Rice					Dry Season Rice				
				Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)	Cultivated Area (ha)	Harvested Area (ha)	Yield to Harvested Area (t/ha)	Yield to Cropped Area (t/ha)	Production (ton)
Kandal	Angk Snuol	4 Damnak Amp	2000-2001	385	385	1.8	1.8	693	0	0			0
			2001-2002	385	379	1.6	1.6	606	0	0			0
			2002-2003	383	383	1.8	1.8	689	0	0			0
			2003-2004	330	330	1.8	1.8	587	0	0			0
			2004-2005	385	345	2.8	2.5	966	0	0			0
			Average	374	364	1.9	1.9	708	0	0			0
		5 Kantaok	2000-2001	750	750	1.9	1.9	1,425	0	0			0
			2001-2002	750	744	1.7	1.7	1,265	0	0			0
			2002-2003	750	750	1.9	1.9	1,425	0	0			0
			2003-2004	750	750	1.8	1.8	1,348	0	0			0
			2004-2005	750	688	1.8	1.7	1,238	0	0			0
			Average	750	736	1.8	1.8	1,340	0	0			0
		6 Krang Mkak	2000-2001	655	655	2.3	2.3	1,507	15	15	3.5	3.5	53
			2001-2002	660	645	1.8	1.8	1,161	0	0			0
			2002-2003	647	647	2.0	2.0	1,294	0	0			0
			2003-2004	725	725	2.0	2.0	1,483	30	30	2.5	2.5	75
			2004-2005	665	613	2.5	2.3	1,533	0	0			0
			Average	670	657	2.1	2.1	1,396	9	9	2.8	2.8	26
		7 Lumhach	2000-2001	844	812	2.5	2.4	2,030	59	59	3.5	3.5	207
			2001-2002	800	777	1.8	1.7	1,399	39	39	3.5	3.5	137
			2002-2003	576	576	1.9	1.9	1,094	0	0			0
			2003-2004	867	867	3.0	3.0	2,601	0	0			0
			2004-2005	750	500	2.5	1.7	1,250	0	0			0
			Average	767	706	2.4	2.2	1,675	20	20	3.5	3.5	69
		8 Peuk	2000-2001	643	643	1.8	1.8	1,157	0	0			0
			2001-2002	643	628	1.7	1.7	1,068	0	0			0
			2002-2003	610	610	1.8	1.8	1,098	0	0			0
			2003-2004	643	643	2.0	2.0	1,280	0	0			0
			2004-2005	638	403	1.8	1.1	725	0	0			0
			Average	635	585	1.8	1.7	1,066	0	0			0
		9 Prey Puok	2000-2001	918	918	2.5	2.5	2,295	47	47	3.5	3.5	165
			2001-2002	891	866	1.8	1.7	1,559	0	0			0
			2002-2003	827	827	2.0	2.0	1,654	0	0			0
			2003-2004	1,045	1,045	1.9	1.9	1,934	0	0			0
			2004-2005	876	681	2.0	1.6	1,362	0	0			0
			Average	911	867	2.0	1.9	1,761	9	9	3.5	3.5	33
		10 Ovlaok	2000-2001	468	423	1.8	1.6	761	0	0			0
			2001-2002	468	458	1.6	1.6	733	0	0			0
			2002-2003	400	400	1.7	1.7	680	0	0			0
			2003-2004	468	468	1.6	1.6	746	0	0			0
			2004-2005	300	162	1.5	0.8	243	0	0			0
			Average	421	382	1.7	1.5	633	0	0			0
		11 Samraong Leu	2000-2001	780	780	1.7	1.7	1,326	0	0			0
			2001-2002	780	770	1.6	1.6	1,232	0	0			0
			2002-2003	750	750	1.7	1.7	1,275	0	0			0
			2003-2004	780	780	2.0	2.0	1,542	0	0			0
			2004-2005	700	100	1.1	0.2	110	0	0			0
			Average	758	636	1.7	1.4	1,097	0	0			0
		12 Snao	2000-2001	492	428	1.7	1.5	728	0	0			0
			2001-2002	492	479	1.6	1.6	766	0	0			0
			2002-2003	467	467	1.7	1.7	794	0	0			0
			2003-2004	492	492	1.7	1.7	816	0	0			0
			2004-2005	454	30	1.2	0.1	36	0	0			0
			Average	479	379	1.7	1.3	628	0	0			0
		Target Area	2000-2001	7,654	7,488	2.1	2.0	15,390	151	151	3.5	3.5	530
			2001-2002	7,551	7,352	1.7	1.7	12,589	59	59	3.3	3.3	197
			2002-2003	6,963	6,963	1.8	1.8	12,853	6	6	3.0	3.0	18
			2003-2004	7,794	7,794	2.0	2.0	15,443	30	30	2.5	2.5	75
			2004-2005	7,201	4,757	2.2	1.4	10,330	0	0			0
			Average	7,433	6,871	1.9	1.8	13,321	49	49	3.3	3.3	164
		Kandal Target Area	2000-2001	9,773	8,970	2.1	1.9	18,842	531	531	3.0	3.0	1,578
			2001-2002	9,593	9,141	1.7	1.6	15,810	132	132	2.7	2.7	356
			2002-2003	8,930	8,930	1.8	1.8	16,435	121	121	2.7	2.7	329
			2003-2004	9,965	9,255	2.0	1.8	18,278	112	112	2.3	2.3	255
			2004-2005	9,272	6,694	2.3	1.6	15,106	0	0			0
			Average	9,565	9,074	1.9	1.8	17,341	224	224	2.8	2.8	630
		Overall Target Area	2003-2004	38,102	36,949	1.7	1.6	61,480	528	515	2.4	2.4	1,244
			2004-2005	34,232	21,816	2.1	1.3	46,212	296	256	2.9	2.5	734
			Average	36,167	29,383	1.8	1.5	53,846	412	386	2.6	2.4	989

Source: Kampong Speu Kanda! 2003-2004: Commune Survey on Crops & Livestock, 2003, Statistic Office, MAFF; 2004-2005: PDA Kampong Speu PDA Kandal

Table D.2.2.4 Crop Losses of Rice in the Project Communes - 1/3

Province	District	Commune	Year	Rainy Season Rice										Dry Season Rice					
				Cultivated Area (ha)	Completely Destroyed by (Ha & %)								Harvested Area (ha)	Cultivated Area (ha)	Completely Destroyed by (Ha & %)				Harvested Area (ha)
					Flood		Draught		Insect &	Total		Draught			Insect &	Total			
					ha	%	ha	%		ha	%					ha	%		
Kampong Speu	Chbar Mon	1 Chbar Mon	2003-2004	730	0	0	0	0	0	0	730	53	0	0	0	0	53		
			2004-2005	534	0	270	51	0	270	51	264	46	0	0	6	13	40		
			Average	632	0	135	21	0	135	21	497	50	0	0	3	6	47		
		2 Kandaol Dom	2003-2004	567	0	0	0	0	0	0	567	64	0	0	0	0	64		
			2004-2005	468	0	102	22	0	102	22	366	58	0	0	9	16	49		
			Average	518	0	51	10	0	51	10	467	61	0	0	5	7	57		
		3 Roka Thum	2003-2004	522	0	0	0	0	0	0	522	62	0	0	0	0	62		
			2004-2005	403	0	106	26	0	106	26	297	27	0	0	4	15	23		
			Average	463	0	53	11	0	53	11	410	45	0	0	2	4	43		
		4 Sopoar Tep	2003-2004	361	0	0	0	0	0	0	361	45	0	0	0	0	45		
	2004-2005		365	0	38	10	0	38	10	327	37	0	0	6	16	31			
	Average		363	0	19	5	0	19	5	344	41	0	0	3	7	38			
	5 Svay Kravan	2003-2004	538	0	0	0	0	0	0	538	6	0	0	0	0	6			
		2004-2005	543	0	35	6	0	35	6	508	5	0	0	0	0	5			
		Average	541	0	18	3	0	18	3	523	6	0	0	0	0	6			
	Target Area	2003-2004	2,718	0	0	0	0	0	0	2,718	230	0	0	0	0	230			
		2004-2005	2,313	0	551	24	0	551	24	1,762	173	0	0	25	14	148			
		Average	2,516	0	276	11	0	276	11	2,240	202	0	0	13	6	189			
	Kong Pisei	1 Angk Popel	2003-2004	920	0	0	0	0	0	920	0	0	0	0	0	0			
			2004-2005	940	0	0	0	0	0	940	0	0	0	0	0	0			
			Average	930	0	0	0	0	0	930	0	0	0	0	0	0			
		2 Preah Nipean	2003-2004	1,236	0	0	0	0	0	0	1,236	0	0	0	0	0			
			2004-2005	970	0	323	33	0	323	33	647	0	0	0	0	0			
			Average	1,103	0	162	15	0	162	15	942	0	0	0	0	0			
		3 Roka Kaoh	2003-2004	983	0	0	0	0	0	0	983	10	0	0	0	0	10		
			2004-2005	1,600	0	276	17	0	276	17	1,324	0	0	0	0	0			
			Average	1,292	0	138	11	0	138	11	1,154	5	0	0	0	0	5		
		4 Veal	2003-2004	1,095	0	29	3	0	29	3	1,066	0	0	0	0	0			
	2004-2005		1,229	0	0	0	0	0	0	1,229	0	0	0	0	0				
	Average		1,162	0	15	1	0	15	1	1,148	0	0	0	0	0				
5 Chongruk	2003-2004	1,631	0	0	0	0	0	0	1,631	0	0	0	0	0					
	2004-2005	1,395	0	177	13	0	177	13	1,218	0	0	0	0	0					
	Average	1,513	0	89	6	0	89	6	1,425	0	0	0	0	0					
6 Prey Nheat	2003-2004	1,233	0	247	20	0	247	20	986	4	0	0	0	0	4				
	2004-2005	1,030	0	1	0	0	1	0	1,029	0	0	0	0	0					
	Average	1,131	0	124	11	0	124	11	1,008	2	0	0	0	0	2				
7 Tuek L'ak	2003-2004	890	0	0	0	0	0	0	890	0	0	0	0	0					
	2004-2005	673	0	559	83	0	559	83	114	0	0	0	0	0					
	Average	782	0	280	36	0	280	36	502	0	0	0	0	0					
Target Area	2003-2004	7,988	0	276	3	0	276	3	7,712	14	0	0	0	0	14				
	2004-2005	7,837	0	1,336	17	0	1,336	17	6,501	0	0	0	0	0					
	Average	7,912	0	806	10	0	806	10	7,107	7	0	0	0	0	7				
Samraong Tong	1 Roleang Chak	2003-2004	743	0	3	0	9	12	2	731	21	0	2	2	10	19			
		2004-2005	740	0	252	34	0	252	34	488	38	0	3	8	35				
		Average	742	0	128	17	5	132	18	610	30	0	2	3	8	27			
	2 Kahaeng	2003-2004	748	0	0	0	8	8	1	740	7	0	0	0	0	7			
		2004-2005	779	0	322	41	0	322	41	457	33	0	0	7	21	26			
		Average	764	0	161	21	4	165	22	599	20	0	0	4	18	17			
	3 Roleang Kreul	2003-2004	1,089	0	0	0	13	13	1	1,076	86	0	3	3	3	83			
		2004-2005	1,334	0	397	30	0	397	30	937	22	0	0	2	9	20			
		Average	1,212	0	199	16	7	205	17	1,007	54	0	3	3	5	52			
	4 Saen Dei	2003-2004	1,113	0	0	0	15	15	1	1,098	0	0	0	0	0				
2004-2005		1,117	0	712	64	0	712	64	405	0	0	0	0	0					
Average		1,115	0	356	32	8	364	33	752	0	0	0	0	0					
5 Tang Krouch	2003-2004	1,306	0	0	0	10	10	1	1,296	13	0	1	1	8	12				
	2004-2005	800	0	342	43	0	342	43	458	0	0	0	0	0					
	Average	1,053	0	171	16	5	176	17	877	7	0	1	1	8	6				
6 Trapeang Kong	2003-2004	1,141	0	0	0	6	6	1	1,135	6	0	1	1	17	5				
	2004-2005	1,030	0	907	88	0	907	88	123	3	0	0	0	0	3				
	Average	1,086	0	454	42	3	457	42	629	5	0	1	1	11	4				
7 Voa Sa	2003-2004	1,005	0	0	0	15	15	1	990	19	0	3	3	16	16				
	2004-2005	968	0	796	82	0	796	82	172	0	0	0	0	0					
	Average	987	0	398	40	8	406	41	581	10	0	3	2	16	8				
8 Khtum Krang	2003-2004	1,484	0	0	0	9	9	1	1,475	20	0	3	3	15	17				
	2004-2005	1,045	0	379	36	0	379	36	666	12	0	0	3	25	9				
	Average	1,265	0	190	15	5	194	15	1,071	16	0	3	3	19	13				
9 Krang Ampil	2003-2004	1,466	0	0	0	6	6	0	1,460	0	0	0	0	0					
	2004-2005	836	0	507	61	0	507	61	329	0	0	0	0	0					
	Average	1,151	0	254	22	3	257	22	895	0	0	0	0	0					

Table D.2.2.4 Crop Losses of Rice in the Project Communes - 3/3

Province	District	Commune	Year	Rainy Season Rice										Dry Season Rice					
				Cultivated Area (ha)	Completely Destroyed by (Ha & %)								Harvested Area (ha)	Cultivated Area (ha)	Completely Destroyed by (Ha & %)				Harvested Area (ha)
					Flood		Draught		Insect &	Total		Draught			Insect &	Total			
					ha	%	ha	%		ha	ha					%	ha	ha	
Kandal	Angk Snuol	4 Damnak Ampil	2000-2001	385	0	0	0	0	0	0	385	0	0	0	0	0	0	0	
			2001-2002	385	0	6	2	0	6	2	379	0	0	0	0	0	0	0	
			2002-2003	383	0	0	0	0	0	0	383	0	0	0	0	0	0	0	
			2003-2004	330	0	0	0	0	0	0	330	0	0	0	0	0	0	0	
			2004-2005	385	0	40	10	0	40	10	345	0	0	0	0	0	0	0	
		Average	374	0	9	2	0	9	2	364	0	0	0	0	0	0	0		
		5 Kantaok	2000-2001	750	0	0	0	0	0	0	750	0	0	0	0	0	0	0	
			2001-2002	750	0	6	1	0	6	1	744	0	0	0	0	0	0	0	
			2002-2003	750	0	0	0	0	0	0	750	0	0	0	0	0	0	0	
			2003-2004	750	0	0	0	0	0	0	750	0	0	0	0	0	0	0	
			2004-2005	750	0	62	8	0	62	8	688	0	0	0	0	0	0	0	
		Average	750	0	14	2	0	14	2	736	0	0	0	0	0	0	0		
		6 Krang Mkak	2000-2001	655	0	0	0	0	0	0	655	15	0	0	0	0	15	0	
			2001-2002	660	0	15	2	0	15	2	645	0	0	0	0	0	0	0	
			2002-2003	647	0	0	0	0	0	0	647	0	0	0	0	0	0	0	
			2003-2004	725	0	0	0	0	0	0	725	30	0	0	0	0	30	0	
			2004-2005	665	0	52	8	0	52	8	613	0	0	0	0	0	0	0	
		Average	670	0	13	2	0	13	2	657	11	0	0	0	0	11	0		
		7 Lumhach	2000-2001	844	32	4	0	0	32	4	812	59	0	0	0	0	59	0	
			2001-2002	800	0	23	3	0	23	3	777	39	0	0	0	0	39	0	
			2002-2003	576	0	0	0	0	0	0	576	0	0	0	0	0	0	0	
			2003-2004	867	0	0	0	0	0	0	867	0	0	0	0	0	0	0	
			2004-2005	750	0	250	33	0	250	33	500	0	0	0	0	0	0	0	
		Average	767	6	1	55	7	61	8	706	25	0	0	0	0	25	0		
		8 Peuk	2000-2001	643	0	0	0	0	0	0	643	0	0	0	0	0	0	0	
			2001-2002	643	0	15	2	0	15	2	628	0	0	0	0	0	0	0	
			2002-2003	610	0	0	0	0	0	0	610	0	0	0	0	0	0	0	
			2003-2004	643	0	0	0	0	0	0	643	0	0	0	0	0	0	0	
			2004-2005	638	0	235	37	0	235	37	403	0	0	0	0	0	0	0	
		Average	635	0	50	8	0	50	8	585	0	0	0	0	0	0	0		
		9 Prey Puok	2000-2001	918	0	0	0	0	0	0	918	47	0	0	0	0	47	0	
			2001-2002	891	0	25	3	0	25	3	866	0	0	0	0	0	0	0	
			2002-2003	827	0	0	0	0	0	0	827	0	0	0	0	0	0	0	
			2003-2004	1,045	0	0	0	0	0	0	1,045	0	0	0	0	0	0	0	
			2004-2005	876	0	195	22	0	195	22	681	0	0	0	0	0	0	0	
		Average	911	0	44	5	0	44	5	867	12	0	0	0	0	12	0		
		10 Ovlaok	2000-2001	468	45	10	0	0	45	10	423	0	0	0	0	0	0	0	
			2001-2002	468	0	10	2	0	10	2	458	0	0	0	0	0	0	0	
			2002-2003	400	0	0	0	0	0	0	400	0	0	0	0	0	0	0	
			2003-2004	468	0	0	0	0	0	0	468	0	0	0	0	0	0	0	
			2004-2005	300	0	138	46	0	138	46	162	0	0	0	0	0	0	0	
		Average	421	9	2	30	7	0	39	9	382	0	0	0	0	0	0		
		11 Samraong Leu	2000-2001	780	0	0	0	0	0	0	780	0	0	0	0	0	0	0	
			2001-2002	780	0	10	1	0	10	1	770	0	0	0	0	0	0	0	
			2002-2003	750	0	0	0	0	0	0	750	0	0	0	0	0	0	0	
			2003-2004	780	0	0	0	0	0	0	780	0	0	0	0	0	0	0	
			2004-2005	700	0	600	86	0	600	86	100	0	0	0	0	0	0	0	
		Average	758	0	122	16	0	122	16	636	0	0	0	0	0	0	0		
		12 Snao	2000-2001	492	64	13	0	0	64	13	428	0	0	0	0	0	0	0	
			2001-2002	492	0	13	3	0	13	3	479	0	0	0	0	0	0	0	
			2002-2003	467	0	0	0	0	0	0	467	0	0	0	0	0	0	0	
			2003-2004	492	0	0	0	0	0	0	492	0	0	0	0	0	0	0	
			2004-2005	454	0	424	93	0	424	93	30	0	0	0	0	0	0	0	
		Average	479	13	3	87	18	0	100	21	379	0	0	0	0	0	0		
		Target Area	2000-2001	7,654	166	2	0	0	166	2	7,488	151	0	0	0	0	151	0	
			2001-2002	7,551	0	199	3	0	199	3	7,352	59	0	0	0	0	59	0	
			2002-2003	6,963	0	0	0	0	0	0	6,963	6	0	0	0	0	6	0	
			2003-2004	7,794	0	0	0	0	0	0	7,794	30	0	0	0	0	30	0	
			2004-2005	7,201	0	2,444	34	0	2,444	34	4,757	0	0	0	0	0	0	0	
		Average	7,433	33	0	529	7	0	562	8	6,871	49	0	0	0	49	0		
		Kandal Target Area	2000-2001	9,773	803	8	0	0	803	8	8,970	531	0	0	0	0	531	0	
			2001-2002	9,593	253	3	199	2	452	5	9,141	132	0	0	0	0	132	0	
			2002-2003	8,930	0	0	0	0	0	0	8,930	121	0	0	0	0	121	0	
			2003-2004	9,965	710	7	0	0	710	7	9,255	112	0	0	0	0	112	0	
			2004-2005	9,272	0	2,578	28	0	2,578	28	6,694	0	0	0	0	0	0	0	
		Average	9,507	353	4	555	6	0	909	10	8,598	179	0	0	0	179	0		
		Overall Target Area	2003-2004	38,102	710	2	295	1	148	1,153	3	36,949	528	0	13	13	2	515	0
			2004-2005 1/	34,232	0	0	12,416	36	0	12,416	36	21,816	296	0	0	40	14	256	0

Source: Kampong Speu 2003-2004; Commune Survey on Crops & Livestock, 2003, Statistic Office, MAFF; 2004-2005: PDA Kampong Speu Kandal PDA Kandal

Table D.2.2.5 Prevailing Farming Practices of Rice

Farming Practices	Irrigated Field	Rainfed Field
Major rice varieties	Early Variety: IR 66, Sen Pidao Ire 36, Kra Ngokpum Medium Variety Chmaprom, Riang Chey Masari, Neang Mleas Late Variety: CAR 4, CAR 5, kraham	Medium Variety Chamar Prom, Riang Chey, Masari, Neang Malis Late Variety: CAR 4, CAR 5, Kraham
Seeding rate (kg/ha)	Kampong Speu 45 ~ 60 kg/ha Kandal 80 ~ 100 kg/ha	Kampong Speu 45 ~ 60 kg/ha Kandal 80 ~ 100 kg/ha
Land preparation	Draft animal	Draft animal
Planting method	Transplanting	Transplanting
Planting distance	Kampong Speu 20 x 20 cm (random) Kandal 15 x 20 cm (random) Random planting prevailing	Kampong Speu 30 x 30 cm (random) Kandal 15 x 20 cm (random) Random planting prevailing
Age of seedling	30 days (or more depending on water availability in a field)	30 to 60 days (or more depending on water availability in a field)
Fertilization		
1st application	Timing: at time of land preparation	Timing: at time of land preparation
- Urea (kg/ha)	Limited	Limited
- DAP (kg/ha)	75 ~ 100 kg/ha	50 ~ 75 kg/ha
- KCl (kg/ha)	Not applied	Not applied
- Compost	Applied by farmer holding cattle	Applied by farmer holding cattle
2nd application	Timing: flowering stage or 1 ~ 1.5 month after planting	Timing: flowering stage or 1 ~ 1.5 month after planting
- Urea (kg/ha)	75 ~ 100 kg/ha	50 ~ 75 kg/ha
Agro-chemical spray	Application limited (Trebong etc.)	Application limited (Trebong etc.)
Manual weeding	3 times per a cropping season	3 times per a cropping season
Harvesting	Manual	Manual
Threshing	Manual in a field Use of thresher limited	Manual in a field 2. Pedal thresher Use of thresher limited
Drying	Sun drying in home yard after threshing	Sun drying in home yard after threshing
Yield Level: rainy season		
Range	Kampong Speu 2.0 ~ 5.0 ton/ha Kandal 1.8 ~ 4.0 ton/ha	Kampong Speu 1.5 ~ 2.5 ton/ha Kandal 1.8 ~ 4.0 ton/ha
Yield Level: dry season		
Range	Kampong Speu 2.0 ~ 6.0 ton/ha Kandal 2.0 ~ 5.5 ton/ha	

Source: PDA Kampong Speu & Kandal

Table D.2.2.6 Inventory on Agricultural Related Facilities and Machinery in the Project Communes

Province/District	Commune	No. of Market			Rice Mill 1/		No. of Farm Inputs Dealer/Shop	No. of Farm Machinery Dealer/Shop	No. of Farm Machinery & Equipment					Others			
		Village Market	Commune Market	District Market	Small	Medium/Large			Traктор	Power Tiller	Water Pump	Engine Thresher	Pedal Thresher	Hand Sprayer	Slaughter House		
Kampong Speu	1. Chbar Mon	1. Char Mon	1	1	1	42	4			19	56		2			1	
		2. Kandal Dorn	1	1	1	25	4			11	77		3				
		3. Roka Thum	1	1	1	19	4			14	30						
		4. Sopsar Tep	1	1	1	14	4			8	79						
		5. Svay Kravan	1	1	1	30	4			9	56						
		Total in District	0	4	2	130	16			61	298		3		36		
	2. Kong Pisei	1. Angk Poppel	1	1	1	26						8					
		2. Preah Niprean	1	1	1	64				2	87						
		3. Roka Kaoh	1	1	1	52	1			2	6						
		4. Veal	1	1	1	68					61						
		5. Chongruk	1	1	1	80				1	157						
		6. Prey Nheat	1	1	1	49	1				32						
		7. Tuek Lak	1	1	1	41					41						
		Total in District	0	6	6	380	2			5	392		0		0		1
	Kampong Speu	3. Samraong Tong	1. Roleang Chak	1	1	1	52	2			2	39					
2. Kamreng			1	1	1	32	5			2	100						
3. Roleang Kreul			1	1	1	74	6			2	70						
4. Saen Dei			1	1	1	33	1			2	23						
5. Tang Krouch			1	1	1	68				2	155						
6. Trapeung Kong			1	1	1	50	2			1	84						
7. Vea Sa			1	1	1	35	3			1	39						
8. Kihum Krang			1	1	1	39				5	27						
9. Krang Ampil			1	1	1	61	2			1	83						
10. Pnsey			1	1	1	17				3	25						
11. Samraong Tong			1	1	1	27				1	21						
12. Samhour			1	1	1	44				2	19						
13. Snuh			1	1	1	60	2			2	88						
14. Thommoda Ar			1	1	1	9				2	19						
15. Tumpear Meas			1	1	1	53	4			4	24						
	Total in District	0	3	2	654	26			35	816		0		24			
	Total in Project Communes in Kp. Speu	0	13	4	1,164	44			101	1,506		3		60			
Kampong Speu	1. Kandal Stueng	1. Daeum Rates	3	0	0	19	6			4	45					2	
		2. Roka	0	0	0	14	2			5	186					4	
		3. Roleang Kaen	11	0	0	21	2			2	47					3	
	Total in District	14	0	0	54	0			4	278		0		6			
Kandal	2. Angk Snuol	1. Baek Chan	1	1	1	2	4			0	0					0	
		2. Boeng Thum	1	1	1	15	2			3	115					1	
		3. Chhak Chhien Neang	1	1	1	12	3										
		4. Damnak Ampil	1	1	1	17	1			6	22						
		5. Kantaok	1	1	1	1	1			1	73						
		6. Krang Mtkak	1	1	1	31	3			6	106						
		7. Lumhach	1	1	1	19	3			1	15						
		8. Peuk	1	1	1	38	3			1	96						
		9. Prey Puok	1	1	1	17	3			1	14						
		10. Ovlaok	1	1	1	37	5			2	33						
		11. Samraong Len	1	1	1	11	5			5	12						
		12. Snao	1	1	1	209	23			2	486						
	Total in District	3	2	0	263	23			19	764		0		9			
	Total in Project Communes in Kandal	17	2	0	1,427	67			6	2,270		0		15			
	Overall in Project Communes	17	15	4	1,427	67			6	2,270		0		15			

1/ Milling capacity: small scale --- 200 to 500 kg/hour, medium/large scale --- > 500 kg/hour
Source: PDA Kampong Speu & Kandal

Table D.2.3.1 Food Balance Sheet for 2002/03 to 2004/05 in the Project Communes - 1/3

Province	District	Commune	Year	Population	Annual Paddy Production (ton)	13% for Seed & Post-harvest Losses	Paddy for Consumption (ton)	Converted into Milled Rice (64%)	Rice Requirement for Food (ton)	Food Balance: Surplus or Deficit (ton)	
Kampong Speu	Chbar Mon	1 Chbar Mon	2002-2003	7,619							
			2003-2004	7,447	2,292	298	1,994	1,276	1,065	211	
			2004-2005	7,781	593	77	516	330	1,113	-783	
			Average		1,443				1,089	-286	
		2 Kandaol Dom	2002-2003	6,877							
			2003-2004	6,893	1,849	240	1,609	1,030	986	44	
			2004-2005	7,173	980	127	853	546	1,026	-480	
			Average		1,415				1,006	-218	
		3 Roka Thum	2002-2003	13,459							
			2003-2004	14,797	1,777	231	1,546	989	2,116	-1,127	
			2004-2005	13,876	820	107	713	457	1,984	-1,528	
			Average		1,299				2,050	-1,327	
		4 Sopoar Tep	2002-2003	6,064							
			2003-2004	5,657	1,198	156	1,042	667	809	-142	
			2004-2005	6,071	970	126	844	540	868	-328	
			Average		1,084				839	-235	
		5 Svay Kravan	2002-2003	7,689							
			2003-2004	7,528	1,673	217	1,456	932	1,077	-145	
			2004-2005	7,648	1,244	162	1,082	693	1,094	-401	
			Average		1,459				1,085	-273	
		Target Area	2002-2003	41,708	5,042	655	4,387	2,807	5,964	-3,157	
	2003-2004		42,322	8,789	1,143	7,646	4,894	6,052	-1,158		
	2004-2005		42,549	4,607	599	4,008	2,565	6,085	-3,519		
	Average			6,146				6,034	-2,612		
	Kong Pisei	1 Angk Popel	2002-2003	5,300							
			2003-2004	5,383	992	129	863	552	770	-217	
			2004-2005	5,478	2,152	280	1,872	1,198	783	415	
			Average		1,572				777	99	
		2 Preah Nipean	2002-2003	11,454							
			2003-2004	11,662	2,180	283	1,897	1,214	1,668	-454	
			2004-2005	11,730	990	129	861	551	1,677	-1,126	
			Average		1,585				1,673	-790	
		3 Roka Kaoh	2002-2003	6,378							
			2003-2004	6,703	1,196	155	1,041	666	959	-293	
			2004-2005	6,632	3,359	437	2,922	1,870	948	922	
			Average		2,278				953	315	
		4 Veal	2002-2003	8,010							
			2003-2004	8,449	964	125	839	537	1,208	-671	
			2004-2005	8,537	2,381	310	2,071	1,326	1,221	105	
			Average		1,673				1,214	-283	
		5 Chongruk	2002-2003	11,583							
			2003-2004	12,561	2,290	298	1,992	1,275	1,796	-521	
2004-2005			12,603	2,132	277	1,855	1,187	1,802	-615		
Average				2,211				1,799	-568		
6 Prey Nheat		2002-2003	9,335								
	2003-2004	9,621	1,244	162	1,082	693	1,376	-683			
	2004-2005	9,737	1,595	207	1,388	888	1,392	-504			
	Average		1,420				1,384	-594			
7 Tuek L'ak	2002-2003	5,557									
	2003-2004	5,646	1,224	159	1,065	682	807	-126			
	2004-2005	5,714	91	12	79	51	817	-766			
	Average		658				812	-446			
Target Area	2002-2003 1/	57,617	10,200	1,326	8,874	5,679	8,239	-2,560			
	2003-2004	60,025	10,090	1,312	8,778	5,618	8,584	-2,965			
	2004-2005	60,431	12,700	1,651	11,049	7,071	8,642	-1,570			
	Average		10,997				8,488	-2,365			
Samraong Tong	1 Roleang Chak	2002-2003	7,409								
		2003-2004	7,443	984	128	856	548	1,064	-516		
		2004-2005	7,957	1,420	185	1,235	791	1,138	-347		
		Average		1,202				1,101	-432		
	2 Kahaeng	2002-2003	6,691								
		2003-2004	6,651	1,143	149	994	636	951	-315		
		2004-2005	6,808	1,311	170	1,141	730	974	-244		
		Average		1,227				962	-279		
	3 Roleang Kreul	2002-2003	11,676								
		2003-2004	10,940	1,749	227	1,522	974	1,564	-591		
		2004-2005	11,751	1,811	235	1,576	1,008	1,680	-672		
		Average		1,780				1,622	-631		
	4 Saen Dei	2002-2003	10,895								
		2003-2004	10,856	1,461	190	1,271	813	1,552	-739		
		2004-2005	11,156	721	94	627	401	1,595	-1,194		
		Average		1,091				1,574	-966		

Table D.2.3.1 Food Balance Sheet for 2002/03 to 2004/05 in the Project Communes - 2/3

Province	District	Commune	Year	Population	Annual Paddy Production (ton)	13% for Seed & Post-harvest Losses	Paddy for Consumption (ton)	Converted into Milled Rice (64%)	Rice Requirement for Food (ton)	Food Balance: Surplus or Deficit (ton)		
Kampong Speu	Samraong Tong	5 Tang Krouch	2002-2003	7,291								
			2003-2004	7,259	1,990	259	1,731	1,108	1,038	70		
			2004-2005	7,416	1,113	145	968	620	1,060	-441		
			Average		1,552				1,049	-185		
		6 Trapeang Kong	2002-2003	13,252								
			2003-2004	13,015	1,596	207	1,389	889	1,861	-972		
			2004-2005	14,090	257	33	224	143	2,015	-1,872		
			Average		927				1,938	-1,422		
		7 Voa Sa	2002-2003	13,786								
			2003-2004	14,030	1,498	195	1,303	834	2,006	-1,172		
			2004-2005	12,659	143	19	124	80	1,810	-1,731		
			Average		821				1,908	-1,451		
		8 Khtum Krang	2002-2003	6,629								
			2003-2004	7,301	2,163	281	1,882	1,204	1,044	160		
			2004-2005	6,733	1,757	228	1,529	978	963	15		
			Average		1,960				1,003	88		
		9 Krang Ampil	2002-2003	7,398								
			2003-2004	7,597	2,179	283	1,896	1,213	1,086	127		
			2004-2005	8,286	444	58	386	247	1,185	-938		
			Average		1,312				1,136	-405		
		10 Pnsey	2002-2003	10,610								
			2003-2004	10,954	2,115	275	1,840	1,178	1,566	-389		
			2004-2005	10,991	739	96	643	411	1,572	-1,160		
			Average		1,427				1,569	-775		
		11 Samraong Tong	2002-2003	5,845								
			2003-2004	5,857	1,092	142	950	608	838	-230		
			2004-2005	6,033	1,216	158	1,058	677	863	-186		
			Average		1,154				850	-208		
		12 Sambour	2002-2003	7,363								
			2003-2004	7,326	1,303	169	1,134	726	1,048	-322		
			2004-2005	7,402	882	115	767	491	1,058	-567		
			Average		1,093				1,053	-445		
		13 Skuh	2002-2003	9,745								
			2003-2004	9,646	2,011	261	1,750	1,120	1,379	-260		
			2004-2005	9,896	1,801	234	1,567	1,003	1,415	-412		
			Average		1,906				1,397	-336		
		14 Thommoda Ar	2002-2003	9,082								
			2003-2004	9,200	2,266	295	1,971	1,262	1,316	-54		
			2004-2005	9,266	570	74	496	317	1,325	-1,008		
			Average		1,418				1,320	-531		
		15 Tumpoar Meas	2002-2003	5,496								
			2003-2004	5,763	1,762	229	1,533	981	824	157		
			2004-2005	5,729	348	45	303	194	819	-625		
			Average		1,055				822	-234		
		Target Area	2002-2003	133,168	13,154	1,710	11,444	7,324	19,043	-11,719		
			2003-2004	133,838	25,312	3,291	22,021	14,094	19,139	-5,045		
			2004-2005	136,173	14,533	1,889	12,644	8,092	19,473	-11,381		
			Average		17,666				19,218	-9,382		
		Kapong Speu Target Area	2002-2003	232,493	28,396	3,691	24,705	15,811	33,246	-17,436		
			2003-2004	236,185	44,191	5,745	38,446	24,606	33,774	-9,169		
			2004-2005	239,153	31,840	4,139	27,701	17,729	34,199	-16,470		
			Average		34,809				33,740	-14,358		
		Kandal	Kandal Stung	1 Dacum Rues	2002-2003	7,472	2,165	281	1,884	1,205	1,068	137
					2003-2004	7,753	806	105	701	449	1,109	-660
					2004-2005	7,970	2,452	319	2,133	1,365	1,140	226
					Average		1,808				1,106	-99
				2 Roka	2002-2003	2,960	804	105	699	448	423	24
					2003-2004	3,004	1,028	134	894	572	430	143
					2004-2005	3,089	1,179	153	1,026	656	442	215
					Average		1,004				432	127
				3 Roleang Kaen	2002-2003	4,907	924	120	804	514	702	-187
					2003-2004	5,058	1,181	154	1,027	658	723	-66
					2004-2005	5,116	1,145	149	996	638	732	-94
					Average		1,083				719	-116
				Target Area	2002-2003	15,339	3,893	506	3,387	2,168	2,193	-26
					2003-2004	15,815	3,015	392	2,623	1,679	2,262	-583
					2004-2005	16,175	4,776	621	4,155	2,659	2,313	346
					Average		3,895				2,256	-87

Table D.2.3.1 Food Balance Sheet for 2002/03 to 2004/05 in the Project Communes - 3/3

Province	District	Commune	Year	Population	Annual Paddy Production (ton)	13% for Seed & Post-harvest Losses)	Paddy for Consumption (ton)	Converted into Milled Rice (64%)	Rice Requirement for Food (ton)	Food Balance: Surplus or Deficit (ton)
Kandal	Angk Snuol	1 Baek Chan	2002-2003	8,943	835	109	726	465	1,279	-814
			2003-2004	9,102	909	118	791	506	1,302	-795
			2004-2005	9,303	677	88	589	377	1,330	-953
			Average		807				1,304	-854
		2 Boeng Thum	2002-2003	5,961	1,418	184	1,234	790	852	-63
			2003-2004	6,051	1,480	192	1,288	824	865	-41
			2004-2005	5,903	2,078	270	1,808	1,157	844	313
			Average		1,659				854	70
		3 Chhak Chheu Neang	2002-2003	3,067	615	80	535	342	439	-96
			2003-2004	3,146	717	93	624	399	450	-51
			2004-2005	3,492	112	15	97	62	499	-437
			Average		481				463	-195
		4 Damnak Ampil	2002-2003	4,726	689	90	599	384	676	-292
			2003-2004	4,646	587	76	511	327	664	-338
			2004-2005	4,690	966	126	840	538	671	-133
			Average		747				670	-254
		5 Kantaok	2002-2003	9,423	1,425	185	1,240	793	1,347	-554
			2003-2004	9,604	1,348	175	1,173	751	1,373	-623
			2004-2005	10,087	1,238	161	1,077	689	1,442	-753
			Average		1,337				1,388	-643
		6 Krang Mkak	2002-2003	4,169	1,294	168	1,126	720	596	124
			2003-2004	4,329	1,538	203	1,355	867	619	248
			2004-2005	4,398	1,533	199	1,334	854	629	225
			Average		1,462				615	199
		7 Lumhach	2002-2003	6,829	1,094	142	952	609	977	-367
			2003-2004	7,155	2,601	338	2,263	1,448	1,023	425
			2004-2005	7,154	1,250	163	1,088	696	1,023	-327
			Average		1,648				1,008	-90
		8 Peuk	2002-2003	6,551	1,098	143	955	611	937	-325
			2003-2004	6,546	1,280	166	1,114	713	936	-223
			2004-2005	6,552	725	94	631	404	937	-533
			Average		1,034				937	-361
		9 Prey Puok	2002-2003	6,698	1,654	215	1,439	921	958	-37
			2003-2004	6,682	1,934	251	1,683	1,077	956	121
			2004-2005	6,945	1,362	177	1,185	758	993	-235
			Average		1,650				969	-50
		10 Ovlaok	2002-2003	3,249	680	88	592	379	465	-86
			2003-2004	3,328	746	97	649	415	476	-61
			2004-2005	3,464	243	32	211	135	495	-360
			Average		556				479	-169
		11 Samraong Leu	2002-2003	7,942	1,275	166	1,109	710	1,136	-426
			2003-2004	8,193	1,542	200	1,342	859	1,172	-313
			2004-2005	8,235	110	14	96	61	1,178	-1,116
			Average		976				1,162	-618
		12 Snao	2002-2003	3,907	794	103	691	442	559	-117
			2003-2004	3,948	816	106	710	454	565	-110
			2004-2005	4,106	36	5	31	20	587	-567
			Average		549				570	-265
		Target Area	2002-2003	71,465	12,871	1,673	11,198	7,167	10,219	-3,053
			2003-2004	72,730	15,518	2,017	13,501	8,640	10,400	-1,760
			2004-2005	74,329	10,330	1,343	8,987	5,752	10,629	-4,877
			Average		12,906				10,416	-3,230
		Kandal Target Area	2002-2003	86,804	16,764	2,179	14,585	9,334	12,413	-3,079
			2003-2004	88,545	18,533	2,409	16,124	10,319	12,662	-2,343
			2004-2005	90,504	15,106	1,964	13,142	8,411	12,942	-4,531
			Average		16,801				12,672	-3,318
		Overall Target Area	2002-2003	319,297	45,160	5,871	39,289	25,145	45,659	-20,514
			2003-2004	324,730	62,724	8,154	54,570	34,925	46,436	-11,512
			2004-2005	329,657	46,946	6,103	40,843	26,140	47,141	-21,001
			Average		51,610				28,736	-17,676

Source:

Kampong Speu 2002-2003 & 2004-2005, 2002-2003, 2003-2004, 2004-2005, PDA Kandal

Kong Pisei: 2002-2003 estimated — rice field in target area 8,500 ha x average yield in the district 1.2 = 10,200

Kandal 2002-2003, 2003-2004 Kong Pisei: 2002-2003 estimated — rice field in target area 8,500 ha x average yield in the district 1.2 = 10,200

Population: 2002-2003, 2003-2004 & 2004-2005 based on SEILA Data Base, 2002, 2003 & 2004, respectively

Table D.2.3.2 Food Balance Sheet for 2002/03 to 2004/05 in the Project Districts

	District	Year	Population	Annual Paddy Production (ton)	13% for Seed & Post-harvest Losses	Paddy for Consumption (ton)	Converted into Milled Rice (64%)	Rice Requirement for Food (ton)	Food Balance: Surplus or Deficit (ton)
Kampong Speu	1 Chbar Mon	2002-2003	47,281	5,042	655	4,387	2,807	6,761	-3,954
		2003-2004	46,948	6,622	861	5,761	3,687	6,714	-3,026
		2004-2005	41,753	5,023	653	4,370	2,797	5,971	-3,174
		Average	45,327	5,562	723	4,839	3,097	6,482	-3,385
	2 Kong Pisei	2002-2003	115,343	13,062	1,698	11,364	7,273	16,494	-9,221
		2003-2004	115,011	28,114	3,655	24,459	15,654	16,447	-793
		2004-2005	112,273	9,651	1,255	8,396	5,374	16,055	-10,681
		Average	114,209	16,942	2,203	14,740	9,433	16,332	-6,898
	3 Samraong Tong	2002-2003	135,145	13,154	1,710	11,444	7,324	19,326	-12,002
		2003-2004	134,813	33,076	4,300	28,776	18,417	19,278	-862
		2004-2005	133,119	17,131	2,227	14,904	9,539	19,036	-9,497
		Average	134,359	21,120	2,746	18,375	11,760	19,213	-7,454
	Project District	2002-2003	297,769	31,258	4,064	27,194	17,404	42,581	-25,177
		2003-2004	296,772	67,812	8,816	58,996	37,758	42,438	-4,681
		2004-2005	287,145	31,805	4,135	27,670	17,709	41,062	-23,353
		Average	293,895	43,625	5,671	37,954	24,290	42,027	-17,737
Kandal	1 Kandal Stueng	2002-2003	98,437	31,981	4,158	27,823	17,807	14,076	3,731
		2003-2004	95,909	31,813	4,136	27,677	17,713	13,715	3,998
		2004-2005	120,684	32,783	4,262	28,521	18,254	17,258	996
		Average	105,010	32,192	4,185	28,007	17,925	15,016	2,908
	1 Angk Snoul	2002-2003	112,552	29,488	3,833	25,655	16,419	16,095	324
		2003-2004	109,661	30,959	4,025	26,934	17,238	15,682	1,556
		2004-2005	103,660	10,628	1,382	9,246	5,918	14,823	-8,906
		Average	108,624	23,692	3,080	20,612	13,192	15,533	-2,342
	Project District	2002-2003	210,989	61,469	7,991	53,478	34,226	30,171	4,055
		2003-2004	205,570	62,772	8,160	54,612	34,951	29,397	5,555
		2004-2005	224,344	43,411	5,643	37,768	24,171	32,081	-7,910
		Average	213,634	55,884	7,265	48,619	31,116	30,550	567
	Overall Project District	2002-2003	508,758	92,727	12,055	80,672	51,630	72,752	-21,122
2003-2004		502,342	130,584	16,976	113,608	72,709	71,835	874	
2004-2005		511,489	75,216	9,778	65,438	41,880	73,143	-31,263	
Average		507,530	99,509	12,936	86,573	55,407	72,577	-17,170	

Source: Food Balance Sheet, Paddy 2002-2003, 2003-2004 & 2004-2005, Statistic Office, MAFF

Table D.2.4.1 Cropped Area of Upland Crops & Vegetables in the Project Communes in 2003: Kampung Speu - 1/3

District/Commune	Crop	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)			
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	
Chbar Mon	White Corn	0	0	0	0	0	0				0	0	0	
	Vegetables	30	18	12	30	18	12	1.8	2.0	1.5	53	35	18	
	Mungbeans	39	39	0	39	39	0							
	Peanut	0	0	0	0	0	0							
	Others	6	6	0	6	6	0	3.5	3.5		21	21	0	
	Sub-total	74	62	12	74	62	12	-	-	-	74	56	18	
	Kandaol Dom	White Corn	4	4	0	4	4	0	1.5	1.5		6	6	0
		Vegetables	8	5	3	8	5	3	1.7	2.0	1.3	14	10	4
		Mungbeans	8	8	0	8	8	0						
		Peanut	1	1	0	1	1	0						
		Others	2	2	0	2	2	0	1.2	1.2		2	2	0
	Sub-total	23	20	3	23	20	3	-	-	-	22	18	4	
	Roka Thum	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	7	5	2	7	5	2	1.9	2.0	1.5	13	10	3
		Mungbeans	3	3	0	3	3	0						
		Peanut	0	0	0	0	0	0				0	0	0
		Others	7	7	0	7	7	0	7.5	7.5		53	53	0
	Sub-total	17	15	2	17	15	2	-	-	-	66	63	3	
	Sopoar Tep	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	8	8	0	8	8	0	2.0	2.0		16	16	0
		Mungbeans	5	5	0	5	5	0						
		Peanut	2	2	0	2	2	0						
		Others	4	4	0	4	4	0	2.4	2.4		8	8	0
	Sub-total	18	18	0	18	18	0	-	-	-	24	24	0	
Svay Kravan	White Corn	0	0	0	0	0	0				0	0	0	
	Vegetables	14	9	5	14	9	5	1.8	2.0	1.5	26	18	8	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Others	5	5	0	5	5	0	2.5	2.5		13	13	0	
Sub-total	19	14	5	19	14	5	-	-	-	38	31	8		
Target Area	White Corn	4	4	0	4	4	0	1.5	1.5		6	6	0	
	Vegetables	67	45	22	67	45	22	1.8	2.0	1.5	121	89	32	
	Mungbeans	54	54	0	54	54	0							
	Peanut	3	3	0	3	3	0							
	Others	23	23	0	23	23	0	4.2	4.2		96	96	0	
Total	151	129	22	151	129	22	-	-	-	224	192	33		
Kong Pisei	Angk Popel	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	1	1	0	1	1	0	3.0	3.0		4	4	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Others	0	0	0	0	0	0				0	0	0
	Sub-total	1	1	0	1	1	0	-	-	-	4	4	0	
	Preah Nipean	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	3	3	0	3	3	0	2.0	2.0		5	5	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Others	4	4	0	4	4	0	3.9	3.9		17	17	0
	Sub-total	7	7	0	7	7	0	-	-	-	22	22	0	
	Roka Kaoh	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	105	105	0	105	105	0	5.0	5.0		525	525	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	25	25	0	25	25	0				0	0	0
		Others	8	8	0	8	8	0	16.1	16.1		129	129	0
	Sub-total	138	138	0	138	138	0	-	-	-	654	654	0	
	Veal	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	6	3	3	6	3	3	2.1	1.2		13	4	9
		Mungbeans	5	5	0	5	5	0						
		Peanut	0	0	0	0	0	0				0	0	0
		Others	0	0	0	0	0	0				0	0	0
	Sub-total	11	8	3	11	8	3	-	-	-	13	4	9	
Chongruk	White Corn	0	0	0	0	0	0				0	0	0	
	Vegetables	380	133	247	380	133	247	4.4	5.0	4.0	1,655	667	988	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Others	5	5	0	537	537	0	15.0	15.0		8,055	8,055	0	
Sub-total	386	139	247	917	670	247	-	-	-	9,710	8,722	988		

Table D.2.4.1 Cropped Area of Upland Crops & Vegetables in the Project Communes in 2003: Kampong Speu - 2/3

District/Commune	Crop	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)			
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	
Kong Pisei	Prey Nheat	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	18	15	3	18	15	3	4.7	5.0		84	75	9
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Others	8	1	7	8	1	7	16.8	10.0	18.0	134	12	122
	Sub-total	26	16	10	26	16	10	-	-	-	218	87	131	
	Tuck L'ak	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	19	19	0	19	19	0	6.0	6.0		113	113	0
		Mungbeans	19	19	0	19	19	0	0.5	0.5		10	10	0
		Peanut	0	0	0	0	0	0				0	0	0
		Others	9	9	0	9	9	0	10.1	10.1		91	91	0
	Sub-total	47	47	0	47	47	0	-	-	-	213	213	0	
	Target Area	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	514	264	250	514	264	250	4.5	5.0	4.0	2,314	1,317	997
		Mungbeans	24	24	0	24	24	0						
Peanut		33	26	7	33	26	7							
Others		53	43	10	584	574	10	14.6	14.6		8,510	8,379	131	
Total	590	340	250	1,121	871	250	-	-	-	10,616	9,619	997		
Samraong Tong	Roleang Chak	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	22	17	5	22	17	5	1.5	1.5	1.5	33	26	8
		Mungbeans	3	3	0	3	3	0						
		Peanut	2	2	0	2	2	0	0.5	0.5		1	1	0
		Others	11	11	0	11	11	0	9.3	9.3		102	102	0
	Sub-total	38	33	5	38	33	5	-	-	-	137	129	8	
	Kahaeng	White Corn	0	0	0	0	0	0				0	0	0
		Vegetables	33	26	7	33	26	7	1.5	1.5	1.5	49	39	10
		Mungbeans	6	6	0	6	6	0						
		Peanut	3	3	0	3	3	0	0.5	0.5		2	2	0
		Others	7	7	1	7	7	1	8.1	7.2	20.0	59	49	10
	Sub-total	49	42	7	49	42	7	-	-	-	110	90	20	
	Roleang Kreul	White Corn	2	2	0	2	2	0	1.0	1.0		2	2	0
		Vegetables	20	16	4	20	16	4	1.5	1.5	1.5	30	24	5
		Mungbeans	8	8	0	8	8	0						
Peanut		3	3	0	3	3	0	0.5	0.5		2	2	0	
Others		7	7	1	7	7	1	9.6	8.8	20.0	67	57	10	
Sub-total	39	35	4	39	35	4	-	-	-	100	85	15		
Saen Dei	White Corn	0	0	0	0	0	0				0	0	0	
	Vegetables	20	20	0	20	20	0	1.5	1.5		30	30	0	
	Mungbeans	5	5	0	5	5	0							
	Peanut	0	0	0	0	0	0				0	0	0	
	Others	5	5	0	5	5	0	3.3	3.3		18	18	0	
Sub-total	30	30	0	30	30	0	-	-	-	48	48	0		
Tang Krouch	White Corn	1	1	0	1	1	0	2.0	2.0		2	2	0	
	Vegetables	15	12	3	15	12	3	1.5	1.5	1.5	23	18	5	
	Mungbeans	10	10	0	10	10	0							
	Peanut	3	3	0	3	3	0	0.5	0.5		2	2	0	
	Others	6	5	1	6	5	1	11.9	11.0	20.0	65	55	10	
Sub-total	35	31	4	35	31	4	-	-	-	91	77	15		
Trapeang Kong	White Corn	1	1	0	1	1	0	1.0	1.0		1	1	0	
	Vegetables	5	4	1	5	4	1	1.5	1.5	1.5	7	5	2	
	Mungbeans	1	1	0	1	1	0							
	Peanut	2	2	0	2	2	0	0.5	0.5		1	1	0	
	Others	5	5	0	5	5	0	6.8	6.8		34	34	0	
Sub-total	13	12	1	13	12	1	-	-	-	43	41	2		
Voa Sa	White Corn	1	1	0	1	1	0	2.0	2.0		2	2	0	
	Vegetables	19	15	4	19	15	4	1.6	1.6	1.6	30	24	6	
	Mungbeans	6	6	0	6	6	0							
	Peanut	8	8	0	8	8	0	0.5	0.5		4	4	0	
	Others	10	9	2	10	9	2	8.0	6.0	20.0	83	53	30	
Sub-total	44	39	5	44	39	5	-	-	-	118	83	36		
Khtum Krang	White Corn	6	6	0	6	6	0	1.0	1.0		6	6	0	
	Vegetables	15	12	3	15	12	3	1.5	1.5	1.5	23	18	5	
	Mungbeans	5	5	0	5	5	0							
	Peanut	2	2	0	2	2	0	0.5	0.5		1	1	0	
	Others	9	9	0	9	9	0	1.9	1.9		16	16	0	
Sub-total	36	33	3	36	33	3	-	-	-	46	41	5		

Table D.2.4.1 Cropped Area of Upland Crops & Vegetables in the Project Communes in 2003: Kampung Speu - 3/3

District/Commune	Crop	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)			
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	
Samraong Tong	Krang Ampil	White Corn	7	7	0	7	7	0	1.0	1.0	-	7	7	0
		Vegetables	46	15	31	46	15	31	1.5	1.5	1.5	69	23	46
		Mungbeans	35	35	0	35	35	0	-	-	-	-	-	-
		Peanut	3	3	0	3	3	0	0.5	0.5	-	2	2	0
		Others	27	21	7	27	21	7	13.8	11.8	20.0	372	242	130
		Sub-total	117	80	37	117	80	37	-	-	-	449	273	176
	Pneay	White Corn	9	9	0	9	9	0	1.0	1.0	-	9	9	0
		Vegetables	8	7	2	8	7	2	1.5	1.5	1.5	12	10	2
		Mungbeans	1	1	0	1	1	0	-	-	-	-	-	-
		Peanut	5	5	0	5	5	0	0.5	0.5	-	3	3	0
		Others	9	9	0	9	9	0	6.3	6.3	-	59	59	0
		Sub-total	33	31	2	33	31	2	-	-	-	83	81	2
	Samraong Tong	White Corn	0	0	0	0	0	0	-	-	-	0	0	0
		Vegetables	3	3	0	3	3	0	1.5	1.5	-	5	5	0
		Mungbeans	13	13	0	13	13	0	-	-	-	-	-	-
		Peanut	1	1	0	1	1	0	0.5	0.5	-	1	1	0
		Others	5	5	0	5	5	0	3.8	3.8	-	18	18	0
		Sub-total	22	22	0	22	22	0	-	-	-	23	23	0
	Sambour	White Corn	0	0	0	0	0	0	-	-	-	0	0	0
Vegetables		5	5	0	5	5	0	1.5	1.5	-	8	8	0	
Mungbeans		1	1	0	1	1	0	-	-	-	-	-	-	
Peanut		4	4	0	4	4	0	0.5	0.5	-	2	2	0	
Others		5	5	0	5	5	0	3.6	3.6	-	19	19	0	
	Sub-total	15	15	0	15	15	0	-	-	-	28	28	0	
Skuh	White Corn	2	2	0	2	2	0	1.0	1.0	-	2	2	0	
	Vegetables	30	17	14	30	17	14	1.5	1.5	1.5	46	25	21	
	Mungbeans	50	50	0	50	50	0	-	-	-	-	-	-	
	Peanut	1	1	0	1	1	0	0.5	0.5	-	1	1	0	
	Others	5	5	0	5	5	0	5.2	5.2	-	26	26	0	
	Sub-total	88	74	14	97	83	14	-	-	-	74	53	21	
Thommoda Ar	White Corn	2	2	0	2	2	0	1.0	1.0	-	2	2	0	
	Vegetables	15	13	2	15	13	2	1.5	1.5	1.5	22	20	2	
	Mungbeans	66	66	0	66	66	0	-	-	-	-	-	-	
	Peanut	7	7	0	7	7	0	0.5	0.5	-	4	4	0	
	Others	9	9	0	9	9	0	15.0	15.0	-	135	135	0	
	Sub-total	99	97	2	99	97	2	-	-	-	163	160	2	
Tumpoar Meas	White Corn	29	29	0	29	29	0	1.0	1.0	-	29	29	0	
	Vegetables	55	52	3	55	52	3	1.5	1.5	1.5	83	79	5	
	Mungbeans	52	52	0	52	52	0	-	-	-	-	-	-	
	Peanut	2	2	0	2	2	0	0.5	0.5	-	1	1	0	
	Others	7	7	0	7	7	0	7.2	7.2	-	52	52	0	
	Sub-total	145	142	3	145	142	3	-	-	-	165	160	5	
Target Area	White Corn	59	59	0	59	59	0	1.0	1.0	-	61	61	0	
	Vegetables	309	233	76	309	233	76	1.5	1.5	1.5	470	354	115	
	Mungbeans	261	261	0	270	270	0	-	-	-	-	-	-	
	Peanut	45	45	0	45	45	0	-	-	-	-	-	-	
	Others 1/	128	118	10	128	118	10	8.8	7.9	-	1,126	936	190	
	Total	803	716	87	812	725	87	-	-	-	1,678	1,372	307	

Target Area	Crop	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)		
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry
Kampong Speu Target Area	White Corn	63	63	0	63	63	0	1.1	1.1	-	67	67	0
	Vegetables	889	541	348	889	541	348	3.3	3.3	3.3	2,905	1,760	1,145
	Mungbeans	339	339	0	348	348	0	-	-	-	-	-	-
	Peanut	80	73	7	80	73	7	-	-	-	-	-	-
	Others 1/	204	184	20	735	715	20	13.2	13.2	16.5	9,732	9,411	321
	Total	1,544	1,185	359	2,084	1,725	359	-	-	-	-	-	-

Overall Target Area (Kampong Speu & Kandal)	White Corn	63	63	0	63	63	0	1.1	1.1	-	67	67	0
	Vegetables	907	556	350	907	556	350	3.3	3.3	3.3	2,987	1,822	1,164
	Mungbeans	341	341	0	350	350	0	-	-	-	-	-	-
	Peanut	83	76	7	83	76	7	-	-	-	-	-	-
	Others 1/	211	188	23	742	719	23	13.2	13.1	15.8	9,809	9,453	356
	Total	1,604	1,224	380	2,144	1,764	380	-	-	-	-	-	-

1/: Including sugarcane; harvested area include crop planted in 2002

Source: Commune Survey on Crops & Livestock, 2003, Statistic Office, MAFF

Table D.2.4.2 Cropped Area of Upland Crops & Vegetables in the Project Communes in 2003: Kandal - 1/2

District/Commune	Commune	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)			
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	
Kandal Stueing	Daeum Rues	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	2.8	2.8	0	2.8	2.8	0	7.0	7.0		19.6	19.6	0
		Vegetables	7.7	5.5	2.2	7.7	5.5	2.2	6.6	6.0	8.0	50.6	33	17.6
		Mungbeans	1.5	1.5	0	1.5	1.5	0						
		Peanut	0	0	0	0	0	0						
		Sugarcane	2.2	1.1	1.1	2.2	1.1	1.1	20.5	20.0	21.0	45.1	22	23.1
		Subtotal	14	11	3	14	11	3	-	-	-	115	75	41
	Roka	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Roleang Kaen	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	2.4	2.1	0.3	2.4	2.1	0.3	6.4	6.3	7.1	15.3	13.2	2.1
		Mungbeans	0	0	0	0	0	0						
		Peanut	2.6	2.6	0	2.6	2.6	0						
		Sugarcane	0	0	0	0	0	0				0	0	0
	Subtotal	5	5	0	5	5	0	-	-	-	15	13	2	
Target Area	Cassava	0	0	0	0	0	0				0	0	0	
	Sweet Potato	3	3	0	3	3	0	7.0	7.0		20	20	0	
	Vegetables	10	8	3	10	8	3	6.5	6.1	7.9	66	46	20	
	Mungbeans	2	2	0	2	2	0							
	Peanut	3	3	0	3	3	0							
	Sugarcane	2	1	1	2	1	1	20.5	20.0	21.0	45	22	23	
	Total	19	16	3	19	16	3	-	-	-	130	88	43	
Angk Snuol	Baek Chan	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Boeng Thum	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Chhak Chheu Neang	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	5	5	0	5	5	0	2	2		10	10	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
	Subtotal	5	5	0	5	5	0	-	-	-	10	10	0	
Dannak Ampil	Cassava	0	0	0	0	0	0				0	0	0	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	0	0	0	0	0	0				0	0	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Subtotal	0	0	0	0	0	0	-	-	-	0	0	0	
Kantaok	Cassava	0	0	0	0	0	0				0	0	0	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	2	2	0	2	2	0	3	3		6	6	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Subtotal	2	2	0	2	2	0	-	-	-	6	6	0	

Table D.2.4.2 Cropped Area of Upland Crops & Vegetables in the Project Communes in 2003: Kandal - 2/2

District/Commune	Commune	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)			
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	
Angk Snuol	Krang Mkak	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Lumhach	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Peuk	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
	Prey Puok	Cassava	0	0	0	0	0	0				0	0	0
		Sweet Potato	0	0	0	0	0	0				0	0	0
		Vegetables	0	0	0	0	0	0				0	0	0
		Mungbeans	0	0	0	0	0	0				0	0	0
		Peanut	0	0	0	0	0	0				0	0	0
		Sugarcane	0	0	0	0	0	0				0	0	0
		Subtotal	0	0	0	0	0	0	-	-	-	0	0	0
Ovlaok	Cassava	0	0	0	0	0	0				0	0	0	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	0	0	0	0	0	0				0	0	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Subtotal	0	0	0	0	0	0	-	-	-	0	0	0	
Samraong Leu	Cassava	2	0	2	2	0	2	6	0	6	12	0	12	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	0	0	0	0	0	0				0	0	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Subtotal	2	0	2	2	0	2	-	-	-	12	0	12	
Snao	Cassava	0	0	0	0	0	0				0	0	0	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	0	0	0	0	0	0				0	0	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Subtotal	0	0	0	0	0	0	-	-	-	0	0	0	
Target Area	Cassava	2	0	2	2	0	2	6.0		6.0	12	0	12	
	Sweet Potato	0	0	0	0	0	0				0	0	0	
	Vegetables	7	7	0	7	7	0	2.3	2.3		16	16	0	
	Mungbeans	0	0	0	0	0	0				0	0	0	
	Peanut	0	0	0	0	0	0				0	0	0	
	Sugarcane	0	0	0	0	0	0				0	0	0	
	Total	9	7	2	9	7	2	-	-	-	28	16	12	

Target Area	Crop	Cultivated Area (Ha)			Harvested Area (Ha)			Yield (Tons/ha)			Production (Tons)		
		Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry	Total	Wet	Dry
Kandal	Cassava	2	0	2	2	0	2	6.0		6.0	12	0	12
Target Area	Sweet Potato	3	3	0	3	3	0	7.0	7.0		20	20	0
	Vegetables	17	15	3	17	15	3	4.8	4.3	7.9	82	62	20
	Mungbeans	2	2	0	2	2	0						
	Peanut	3	3	0	3	3	0						
	Sugarcane	2	1	1	2	1	1	20.5	20.0	21.0	45	22	23
	Total	28	23	5	28	23	5	-	-	-	170	115	55

Source: Crops & Livestock Survey, 2003, MAFF

Table D.2.4.3 Planted Areas of Fruits in the Project Communes

Province/District/Commune	Banana	Cashew	Coconut	Longan	Mango	Milk Fruit	Sapodilla	Durian	Jack Fruit	Custard	Orange	Coffee	Rambutan	Guava	Pineapple	Total
Kampong Speu	Chbar Mon	17.5	1.0	31.5	0	36.5	0.0	0	8.0	0	6.5	0	0	0	0	0
	Kandaol Dom	1.0	1.0	1.0	0.5	0.7	0.2	0	0.5	0.7	1.0	0	0	0.2	0	6
	Roka Thum	4.0	2.0	1.5	0.5	3.0	0.5	0	0.5	3.0	2.0	0	0	0.5	0	18
	Soppar Tep	2.2	1.2	1.5	0.5	1.5	0.5	0	0.5	1.0	1.0	0	0	0.3	0	10
	Svay Kravan	2.0	1.0	5.0	0.0	3.0	1.0	0	1.0	1.0	2.0	0	0	1.0	0	17
	Target Area	26.7	5.2	40.5	1.5	44.7	2.2	0	10.5	5.7	12.5	0	0	2.0	0	152
	Angk Popel	1.5	0	1.0	0.2	1.8	0.5	0	1.8	1.0	0.2	0	0	0.3	0	8
	Preah Nipean	12.0	0	1.8	0	3.5	0	0	0.0	0.9	0	0	0	0	0	18
	Roka Kaoh	8.5	0	10.4	1.0	8.0	0	0	0.9	0.5	0	0	0	0	0	29
	Veal	5.5	0	4.5	0	10.0	0.3	0	0.3	0	0	0	0	0	0	21
	Chongruk	1.7	0	1.5	0.2	0.7	0.1	0	1.1	1.0	0.2	0	0	0.1	0	7
	Prey Nheat	11.5	0	4.0	0.0	7.0	1.0	0	0.0	0.0	0.5	0	0	0	0	24
	Tuek Lak	1.5	0	0.9	0.2	2.0	0.5	0	0.5	0.5	0.0	0	0	0.2	0	6
	Target Area	42.2	0	24.1	1.6	33.0	2.4	0	4.6	3.9	0.9	0	0	0.6	0	113
	Kandal	Roleang Chak	15.0	0	2.0	0.5	16.0	13.0	0	0.5	2.0	0.0	0	0	2.0	0
Kahaeng		15.0	0	16.0	0.5	2.0	1.2	0	1.2	0.8	0.5	0	0	0.6	0	50
Roleang Kreul		9.0	0	7.6	0	2.0	0	0	0.0	1.7	0	0	0	0	0	23
Saen Dei		3.0	0	2.0	0	3.0	0	0	1.0	2.0	0	0	0	1.5	0	10
Tang Krouch		5.0	0	5.0	0	0.5	0.5	0	0.5	0.8	0.8	0	0	0.3	0	17
Trapeang Kong		5.0	0.5	8.0	0	2.0	1.0	0	1.0	12.0	0	0	0	3.0	0	17
Voa Sa		10.0	0	6.0	1.0	3.8	1.5	0	3.8	9.0	0	0	0	0.7	0	36
Khim Krang		11.0	0.6	14.0	0.0	39.0	2.0	0	6.4	2.7	1.0	0	0	2.7	0	44
Krang Ampil		35.0	0.0	6.8	0.5	4.8	2.6	0	4.8	1.3	0	0	0	0.8	0	121
Preay		15.0	1.0	6.0	0.0	6.5	2.0	0	6.5	3.0	0	0	0	3.0	0	37
Samraong Tong		12.0	1.0	12.0	1.0	6.0	6.0	0	12.0	2.0	0	0	0	2.0	0	40
Sambour		18.0	4.0	16.0	0	19.0	3.0	0	16.5	1.0	0	0	0	1.0	0	69
Skuh		21.0	0	19.0	0	17.9	17.9	0	19.0	2.0	0	0	0	2.0	0	74
Thommoda Ar		25.0	0	17.9	0	17.9	17.9	0	17.9	6.7	0	0	0	6.7	0	89
Tumpoar Meas		23.0	2.0	17.9	0	17.9	17.9	0	17.9	6.7	0	0	0	6.7	0	110
Target Area	222.0	9.1	177.3	4.5	137.6	53.3	0	106.9	58.9	3.0	0	0	27.5	0	800	
Target Area in Kp. Speu	290.9	14.3	241.9	7.6	215.3	57.9	0	122.0	68.4	16.4	0	0	30.1	0	1,065	
Kandal	Daeum Rues	3.3	0	1.6	0.5	3.5	2.5	0.4	2.7	1.8	2.0	0	0	1.0	0	19
	Roka	6.2	0	2.5	0	9.1	0.7	0.2	0.8	0.9	0.3	0	0	0.3	0	21
	Roleang Kaen	51.0	0	12.0	0	21.0	0.8	0.0	0.8	1.2	3.0	0	0	2.1	0	92
Target Area	60.4	0	16.1	0.5	33.6	4.0	0.5	4.3	3.8	5.2	0	0	3.4	0	132	
Kandal	Baek Chan	0	0	2.0	0	4.0	0	0	0	0	0	0	0	0	0	6
	Boeng Thum	0	0	15.0	0	18.0	0	0	2.0	0	0	0	0	0	0	35
	Chhak Chheu	0	0	1.0	0	1.0	0	0	0	0	0	0	0	0	0	2
	Damma Ampil	0	0	5.0	0	3.0	0	0	0	0	0	0	0	0	0	8
	Kantaok	0	0	0	0	0	1.0	0	0	0	0	0	0	0	0	1
	Krang Mkak	0	0	4.0	0	2.0	0	0	0	0	0	0	0	0	0	6
	Lumhach	5.0	0	3.0	0	3.0	0	0	0	0	0	0	0	0	0	11
	Peuk	0	0	1.0	0	1.0	0	0	0	0	0	0	0	0	0	2
	Prey Puok	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Oviaok	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Samraong Leu	3.0	0	1.0	0	1.5	0	0	1.0	0	0	0	0	0	0	0
	Snao	0	0	0	0	10.0	0	0	0	0	0	0	0	0	0	0
	Target Area	8.0	0	32.0	0	43.5	1.0	0	3.0	0	0	0	0	0	0	10
	Target Area in Kandal	68.4	0	48.1	0.5	77.1	5.0	0.5	7.3	3.8	5.2	0	0	3.4	0	88
	Overall Target Area	359	14	290	8	292	63	1	129	72	22	0	0	33	0	2,194

Source: Commune Survey on Crops & Livestock, 2003, Statistic Office, MAFF

Table D.2.5.1 Livestock Population and Holding Status by Commune in the Target Area in 2003 - 1/2

Province/ District/Commune	No. of Farm Households		Cattle		Cow		Draught Cattle		Buffalo Total	Draught Buffalo	Pig Total		Pigs (female)	Poultry		No. of Families		No. & Proportion of Cattle & Buffalo Families with	No. & Proportion of Families with Pigs	Works Done by Draught Animal (ha)	No. of Ox & Horse Cart	
	1/	2/	Population	Average Holding per Farm	Population	Average Holding per Farm	Population	Average Holding per Farm			Population	Average Holding per Farm		Population	Average Holding per Farm	2/	3/					No.
	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Kampong Speu																						
Chbar Mon	922	2,360	615	0.7	886	1.0	0	0	0	0	2,276	2.5	389	10,198	11.1	1,456	-	-	-	-	-	-
Kandaol Dom	978	1,881	622	0.6	628	0.6	0	0	0	0	714	0.7	39	4,132	4.2	1,397	-	-	-	-	-	-
Roka Thum	1,512	939	468	0.3	178	0.1	0	0	0	0	1,830	1.2	123	172,290	113.9	2,658	-	-	-	-	-	-
Sopoar Tep	890	1,057	374	0.4	425	0.5	0	0	0	0	659	0.7	24	3,665	4.1	1,132	-	-	-	-	-	-
Svay Kravan	1,050	1,053	278	0.3	532	0.5	0	0	0	0	936	0.9	42	4,536	4.3	1,367	-	-	-	-	-	-
Project																						
Communes Total	5,352	7,290	2,357	0.4	2,649	0.5	0	0	0	0	6,415	1.2	617	194,821	36.4	8,010	-	-	-	-	-	-
Kong Pisei																						
Angk Popel	952	1,764	814	0.9	708	0.7	0	0	0	0	624	0.7	7	2,436	2.6	987	74	469	48	214	214	
Preah Nipean	1,775	4,160	1,028	0.6	1,350	0.8	5	2	5	2	1,620	0.9	6	2,504	1.4	2,131	1,575	74	479	22	625	
Roka Kaoh	1,065	2,839	1,088	1.0	2,462	2.3	3	2	3	2	668	0.6	22	3,339	3.1	1,222	1,042	85	781	64	673	
Veal	1,031	4,392	1,169	1.1	1,571	1.5	0	0	0	0	456	0.4	20	24,150	23.4	1,535	1,252	82	994	65	555	
Chongruk	2,241	5,066	1,603	0.7	3,297	1.5	0	0	0	0	1,228	0.5	235	6,474	2.9	2,341	1,912	82	140	6	1,064	
Prey Nheat	1,592	3,192	1,334	0.8	1,678	1.1	0	0	0	0	9,364	5.9	6	3,397	2.1	1,806	1,543	85	1,168	65	955	
Tuek Lak	1,471	2,202	905	0.6	1,066	0.7	0	0	0	0	2,108	1.4	18	12,116	8.2	1,099	877	80	331	30	530	
Project																						
Communes Total	10,127	23,615	7,941	0.8	12,132	1.2	8	4	8	4	16,068	1.6	314	54,416	5.4	11,121	8,934	80	4,362	39	4,616	4,616
Samraong Tong																						
1 Roleang Chak	1,479	3,838	705	0.5	1,212	0.8	0	0	0	0	1,038	0.7	128	10,603	7.2	1,470	1,076	73	297	20	402	
2 Kahaeng	1,244	2,569	738	0.6	937	0.8	0	0	0	0	762	0.6	189	9,672	7.8	1,324	966	73	575	43	464	
3 Roleang Kreul	2,005	4,819	1,365	0.7	1,496	0.7	10	8	10	8	1,762	0.9	258	9,891	4.9	2,039	1,484	73	1,117	55	677	
4 Saen Dei	1,982	6,649	3,742	1.9	2,896	1.5	10	10	10	10	801	0.4	66	1,007	0.5	1,995	1,651	83	1,188	60	929	
5 Tang Krouch	1,429	4,261	1,118	0.8	2,023	1.4	0	0	0	0	2,182	1.5	49	4,286	3.0	1,500	1,338	89	59	4	1,076	
6 Trapeang Kong	2,112	3,474	1,662	0.8	1,172	0.6	0	0	0	0	1,782	0.8	32	9,916	4.7	2,602	1,575	61	789	30	576	
7 Voa Sa	2,013	3,771	427	0.2	1,712	0.9	2	2	2	2	579	0.3	57	10,678	5.3	2,424	1,564	65	587	24	669	
8 Khum Krang	1,288	5,128	1,269	1.0	1,386	1.1	0	0	0	0	3,964	3.1	50	9,725	7.6	1,318	1,133	86	205	16	783	
9 Krang Ampil	1,406	5,257	1,892	1.3	985	0.7	0	0	0	0	892	0.6	228	5,376	3.8	1,430	1,274	89	135	9	785	
10 Preay	1,967	6	2	0.0	3	0.0	0	0	0	0	2	0.0	158	11,562	5.9	2,025	1,546	76	399	20	1,101	
11 Samraong Tong	1,106	2,829	967	0.9	1,216	1.1	0	0	0	0	683	0.6	139	7,592	6.9	1,161	896	77	208	18	635	
12 Sambour	1,362	4,376	847	0.6	1,618	1.2	0	0	0	0	592	0.4	156	10,243	7.5	1,391	1,162	84	140	10	846	
13 Skuh	1,768	5,378	1,623	0.9	1,449	0.8	4	4	4	4	1,394	0.8	268	6,351	3.6	1,881	1,567	83	284	15	787	
14 Thommoda Ar	1,779	8,266	2,907	1.6	5,359	3.0	0	0	0	0	1,928	1.1	136	14,369	8.1	1,801	1,660	92	431	24	1,082	
15 Tumpoar Meas	1,052	5,126	1,493	1.4	1,325	1.3	0	0	0	0	1,468	1.4	193	7,376	7.0	1,116	873	78	114	10	762	
Project																						
Communes Total	23,992	65,747	20,757	0.9	24,789	1.0	26	24	26	24	19,829	0.8	2,107	128,647	5.4	25,477	19,767	78	6,528	26	25,212	11,574
Communes in Kp. Speu																						
Project																						
Communes in Kp. Speu	39,471	96,652	31,055	0.8	39,570	1.0	34	28	34	28	42,312	1.1	3,038	377,884	9.6	44,608	28,701	64	10,890	24	16,190	16,190

Table D.2.5.1 Livestock Population and Holding Status by Commune in the Target Area in 2003 - 2/2

Province/ District/Commune	No. of Farm Households		Cattle		Cow		Draught Cattle		Buffalo Total	Draught Buffaloes	Pig Total		Poultry	No. of Families	No. & Proportion of Cattle & Buffalo		No. & Proportion of Families with Pigs		Works Done by Draught Animal (ha)	Unit: head/bird/ha	
	1/	2/	Average Holding per Farm	Population	Average Holding per Farm	Population	Population	Average Holding per Farm			Population	Average Holding per Farm			Population	No.	%	No.			%
	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	3/	3/	4/	3/			
Kandal																					
Kandal Stueung	1,580	2,028	1.3	387	0.2	439	0.3	0	0	0	700	0.4	2,257	1.4	1,669	1,020	61	647	39	356	
Daeum Rues	610	1,468	2.4	114	0.2	273	0.4	0	0	0	274	0.4	680	1.1	618	398	64	184	30	129	
Roka	1,014	1,490	1.5	246	0.2	754	0.7	0	0	0	823	0.8	3,310	3.3	1,031	823	80	409	40	384	
Project	3,204	4,986	1.6	747	0.2	1,466	0.5	0	0	0	1,797	0.6	6,247	1.9	3,318	2,241	68	1,240	37	869	
Communes Total																					
Angk Snuol																					
1 Baek Chan	962	1,280	1.3	432	0.4	398	0.4	0	0	0	829	0.9	5,130	5.3	1,845	632	34	310	17	192	
2 Boeng Thum	1,023	1,835	1.8	1,210	1.2	625	0.6	0	0	0	744	0.7	4,281	4.2	1,166	752	64	245	21	283	
3 Chhak Chheu N	553	860	1.6	271	0.5	344	0.6	0	0	0	325	0.6	2,715	4.9	616	341	55	147	24	196	
4 Damnak Ampil	541	1,148	2.1	301	0.6	512	0.9	0	0	0	600	1.1	4,815	8.9	863	448	52	420	49	236	
5 Kantaok	1,532	1,482	1.0	483	0.3	552	0.4	0	0	0	859	0.6	2,976	1.9	1,732	616	36	470	27	284	
6 Krang Mkak	781	1,503	1.9	425	0.5	614	0.8	0	0	0	393	0.5	2,128	2.7	796	622	78	155	19	318	
7 Lumhach	1,319	3,957	3.0	1,369	1.0	360	0.3	0	0	0	164	0.1	2,217	1.7	1,334	966	72	492	37	352	
8 Peuk	1,131	1,575	1.4	508	0.4	646	0.6	0	0	0	955	0.8	7,915	7.0	1,210	631	52	190	16	289	
9 Prey Puok	618	2,013	3.3	539	0.9	926	1.5	0	0	0	703	1.1	6,217	10.1	1,272	865	68	326	26	438	
10 Oviaok	884	1,527	1.7	500	0.6	594	0.7	0	0	0	545	0.6	5,066	5.7	631	443	70	112	18	302	
11 Samraong Leu	1,248	3,057	2.4	2,049	1.6	1,448	1.2	0	0	0	501	0.4	2,293	1.8	1,362	1,056	78	610	45	747	
12 Snao	662	1,561	2.4	516	0.8	658	1.0	0	0	0	679	1.0	5,361	8.1	698	549	79	253	36	322	
Project	11,254	21,798	1.9	8,603	0.8	7,677	0.7	0	0	0	7,297	0.6	51,114	4.5	13,525	7,921	59	3,730	28	3,959	
Communes Total																					
Project																					
Communes in Kandal	14,458	26,784	1.9	9,350	0.6	9,143	0.6	0	0	0	9,094	0.6	57,361	4.0	16,843	10,162	60	4,970	30	4,828	
Overall Project Communes	53,929	123,436	2.3	40,405	0.7	48,713	0.9	34	28	28	51,406	1.0	435,245	8.1	61,451	38,863	63	15,860	26	21,018	

1/: Assumed to be equal to No. of crop growing households
 2/: Source: Commune Survey on Crops & Livestock, 2003, Statistic Office, MAF 3/: Source: SEILA Commune Data Base, 2004
 4/: Land preparation works done by draught animals in 2004; Source: PDA Kampong Speu

Table D.2.7.1 Summary Results of Socio-economic Survey (Land Use and Cropped Area, Cropping Intensity, Production, Unit Yield & Marketing Volume of Paddy by Category of Land) /1

Item	Land Use (ha)										Cropped Area of Paddy (ha)				Cropping Intensity of Paddy (%)				Paddy Production (kg)				Paddy Yield (kg/ha)				Marketed Volume of Paddy (kg & %)						
	Paddy Field		Upland Field for Tree Crop		Upland Field for Field Crop		Total Paddy Field		Irrigated Field		Rainfed Field		Total Farm Land		Rainy Season		Dry Season		Total		Rainy Season		Dry Season		Total		Rainy Season		Dry Season		Total		
	Irrigated Field	Supplementary Irrigated	Irrigated Field Total	Rainfed Field	Total Paddy Field	Irrigated Field for Tree	Upland Field for Field	Total Paddy Field	Irrigated Field	Rainfed Field	Total	Irrigated Paddy	Rainfed Paddy	Total	Rainy Season	Dry Season	Total	Rainy Season	Dry Season	Total	Rainy Season	Dry Season	Total	Rainy Season	Dry Season	Total	Rainy Season	Dry Season	Total	Rainy Season	Dry Season	Total	
Category Area-1: Fully Irrigated Rice Field																																	
Total	19.3	17.4	36.7	10.1	46.8	5.5	2.8	55.0	35.0	20.7	55.7	9.1	64.8	95	56	152	90	138	68,690	46,100	18,260	133,050	1,964	2,225	2,061	2,011	23,090	23,950	2,750	49,790	37		
No. of Respondent	40	25	49	26	49	19	12	49	49	40	49	26	49	49	49	49	26	49	49	39	25	49	49	40	49	26	33	31	8	49	49		
Per Respondent	0.48	0.70	0.75	0.39	0.96	0.29	0.23	1.12	0.71	0.52	1.14	0.35	1.32						1,402	1,182	730	2,715					700	773	344	1,016	37		
Per Sample (50 samples)	0.39	0.35	0.73	0.20	0.94	0.11	0.06	1.10	0.70	0.41	1.11	0.18	1.30	95	44	152	90	138	1,374	922	365	2,661					462	479	55	996	37		
Category Area-2: Supplementary Irrigated Rice Field (large irrigation system)																																	
Total	15.62	17.29	32.91	5.43	38.34	3.73	2.70	44.77	33.19	1.03	34.22	5.43	39.65	101	3	104	100	103	83,330	5,280	7,675	96,285	2,511	5,126	2,389	1,413	18,876	2,500	1,900	23,276	24		
No. of Respondent	27	33	47	20	47	13	8	47	47	4	47	20	47	47	47	20	47	47	5	17	47	47	47	4	47	20	24	1	4	47	47		
Per Respondent	0.56	0.52	0.70	0.27	0.82	0.29	0.34	0.95	0.71	0.26	0.73	0.27	0.84						1,773	1,056	451	2,049					787	2,508	475	495	24		
Per Sample (50 samples)	0.31	0.35	0.66	0.11	0.77	0.07	0.05	0.90	0.66	0.02	0.68	0.11	0.79	101	3	104	100	103	1,667	106	154	1,926					378	50	38	466	24		
Category Area-3: Supplementary Irrigated Rice Field (small irrigation system)																																	
Total	0.44	24.03	24.47	35.17	59.64	11.59	1.34	72.37	24.47	1.40	25.87	31.32	37.19	100	6	106	89	96	47,090	4,140	35,185	86,415	1,924	2,957	1,980	1,123	14,570	1,970	15,350	31,890	37		
No. of Respondent	3	44	47	37	47	24	9	47	45	2	47	37	47	45	45	45	37	47	43	3	26	47	45	2	45	37	16	2	10	47	43		
Per Respondent	0.15	0.55	0.52	0.95	1.27	0.48	0.15	1.54	0.54	0.70	0.55	0.85	1.22						1,095	1,380	1,353	1,839					911	985	1,535	679	37		
Per Sample (50 samples)	0.01	0.48	0.49	0.70	1.19	0.23	0.03	1.45	0.49	0.03	0.52	0.63	1.14	100	2	106	89	96	942	83	704	1,728					291	39	307	638	37		
Category Area-4: Rainfed Rice Field																																	
Total	-	-	-	48.13	7.84	2.12	58.09	-	-	-	36.83	36.83	-	-	-	77	77	-	-	-	37,412	37,412	-	-	-	1,016	-	-	13,200	35			
No. of Respondent	-	-	-	41	18	9	41	-	-	-	41	41	-	-	-	41	41	-	-	-	41	41	-	-	-	41	-	-	13	41	41		
Per Respondent	-	-	-	1.17	1.17	0.44	2.42	-	-	-	0.90	0.90	-	-	-	912	912	-	-	-	912	912	-	-	-	-	-	-	1,015	322	35		
Per Sample (50 samples)	-	-	-	0.96	0.96	0.16	0.04	1.16	-	-	0.74	0.74	-	-	-	77	77	-	-	-	748	748	-	-	-	-	-	-	264	264	35		
Overall																																	
Total	35	59	94	99	193	29	9	230	94	23	116	83	198	100	25	123	84	103	199,110	55,520	98,532	353,162	2,126	2,398	2,199	1,192	58,686	28,920	33,200	120,806	34		
No. of Respondent	70	102	143	124	184	74	38	184	141	46	143	124	184	141	141	141	124	184	139	47	109	184	141	46	141	124	73	34	35	184	-		
Per Respondent	0.51	0.58	0.66	0.80	1.05	0.39	0.23	1.25	0.66	0.30	0.81	0.67	1.08						1,432	1,181	904	1,919					804	851	949	657	34		
Per Sample (200 samples)	0.18	0.29	0.47	0.49	0.96	0.14	0.04	1.15	0.47	0.12	0.58	0.41	0.99	100	12	123	84	103	996	278	493	1,766					293	145	166	604	34		

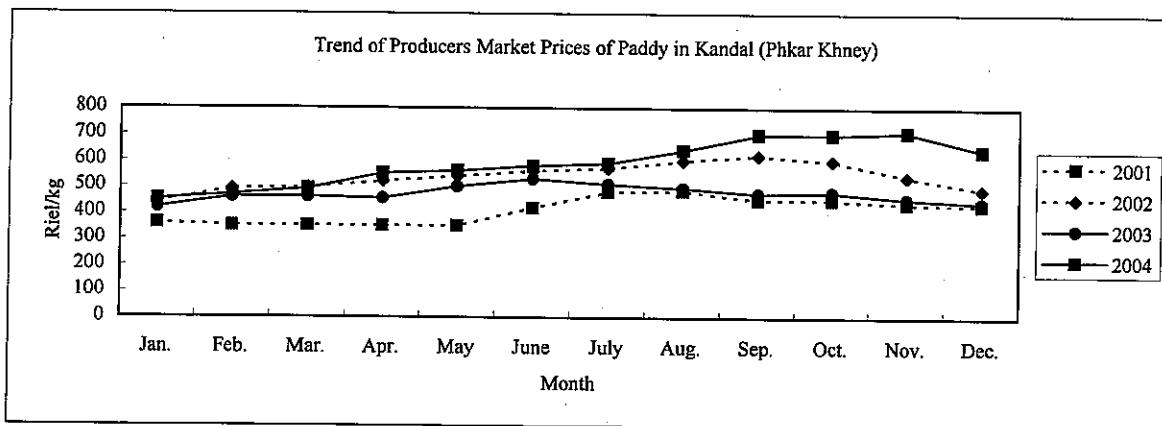
1/ Results of the Socio-economic Survey conducted by the IICA Study Team, 2005
Note: Sample No. per category 50; total 200 samples

Table D.2.7.2 Trend of Producers Prices of Paddy in Kandal and Takeo

Trend of Producers Prices of Paddy in Kandal													Unit: Riel/kg
Year	Monthly Average Price in Kandal												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
2001	360	350	350	350	350	420	480	485	450	450	435	430	
2002	440	490	495	520	540	560	570	600	620	600	540	490	
2003	420	460	460	455	500	530	510	495	475	480	455	440	
2004	450	470	490	550	560	580	590	640	700	700	710	640	

1/: Producers market prices of local variety: Phkar Khney

Source: Agricultural Market Information Bulletin, Yearly Bulletin 2004, MAFF



Trend of Producers Prices of Paddy in Takeo													Unit: Riel/kg
Year	Monthly Average Price in Takeo												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
2001	300	315	300	310	330	360	405	390	400	380	390	410	
2002	400	420	420	420	450	460	495	540	545	530	520	430	
2003	390	370	360	380	390	450	455	460	430	440	450	435	
2004	410	410	420	480	520	530	550	565	660	670	650	640	

1/: Producers market prices of paddy (variety mixed -- average of all paddies)

Source: Agricultural Market Information Bulletin, Yearly Bulletin 2004, MAFF

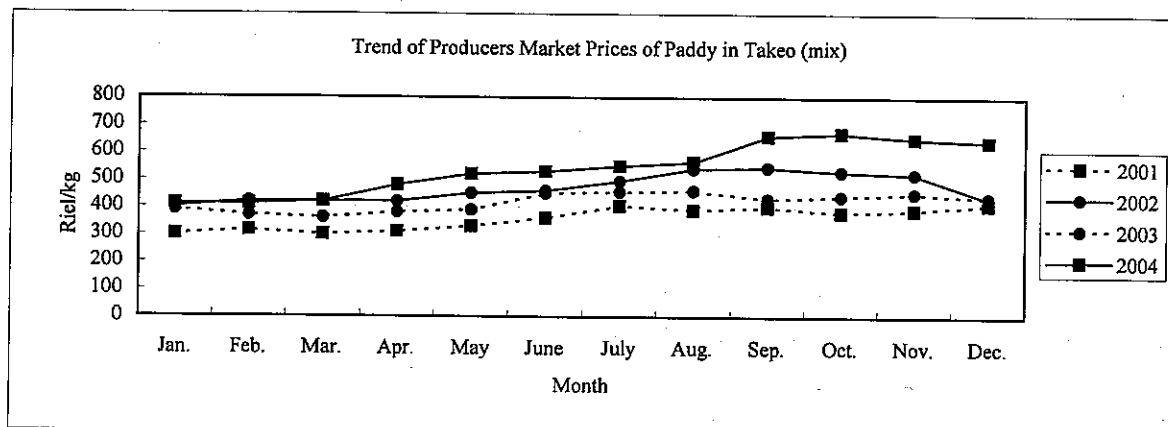


Table D.3.1.1 Current Functions of Technical Offices of PDA

Office	Functions	Major Projects by Donors	
		Kampong Speu	Kandal
Agronomy Office	<ul style="list-style-type: none"> - Trial & technical development - Plant protection (implementation of IPM program) - Seed production (currently not implemented) - Production statistics 	<ul style="list-style-type: none"> - APIP (IPM) - CDA (RFV) - WVC (IPM) - LWF (IPM) 	<ul style="list-style-type: none"> - APIP (IPM) - FAO (IPM)
Agricultural Extension	<ul style="list-style-type: none"> - Field extension activities through AEWs - Farmer training activities - AEA - Pilot operation of EPP 	<ul style="list-style-type: none"> - CAAEP II - SEILA - SLPP - LWS - World Vision 	<ul style="list-style-type: none"> - CAAEP II - SEILA
Animal Health & Production	<ul style="list-style-type: none"> - Technology development/improvement - Extension & farmer training (livestock sub-sector) - Animal health, quarantine & veterinary activities 	<ul style="list-style-type: none"> - UNICEF - SEILA - SLPP - LWS - World Vision 	<ul style="list-style-type: none"> - SEILA - World Vision - LWS - VSS
Fisheries	<ul style="list-style-type: none"> - Production of fish fries & fingerings - Fish culture - Organization of fishery community - Control of fishing season & lots - Release fingerings in natural water areas 	<ul style="list-style-type: none"> - JICA - SEILA 	<ul style="list-style-type: none"> - SEILA - MRC
Agricultural Machinery	<ul style="list-style-type: none"> - No activities being taken in principle, no farm machinery possessed 		
Agro-industry	<ul style="list-style-type: none"> - Newly established office, no activity reported 		
Planning & Finance	<ul style="list-style-type: none"> - Planning & agricultural statistic - Accounting 		
DAO	<ul style="list-style-type: none"> - Statistic data collection - Extension activities (project activities in collaboration with PDA) - Animal vaccination 	<ul style="list-style-type: none"> - PDA project activities 	<ul style="list-style-type: none"> - PDA project activities

Source: PDA Kampong Speu & Kandal

Table D.3.1.2 On-going Donors' Projects for Agricultural and Water Sector in Kampong Speu and Kandal Province - 1/3

As of November 2005

Donor Agency	Project Title	Executing Agency	Approx. Amount	Provinces	Objectives/Scope of Works	Period
1 AusAID	Cambodia Australia Agricultural Extension Project Phase II (CAAEP II)	MAFF	US\$12.11 million	Kandal Kampong Speu	<p>To assist the RGC to achieve its development goals by improving access to agricultural knowledge.</p> <p>To increase household cash incomes by further developing a sustainable direct-oriented extension system with the DAE of MAFF as a focal point for coordinating and facilitating all extension service providers in Cambodia.</p> <p>Further objectives are as follows:</p> <ul style="list-style-type: none"> - Building the capacity of DAE to act as a focal point for coordinating and facilitating all extension service providers in Cambodia. - Working towards a government extension system focused at the district level and utilizing agro-ecosystems analysis to identify local extension priorities. - Providing training to government extension staff at national, provincial and district levels. - Collecting and analysing information to establish extension priorities. - Strengthening capacity of MAFF to deliver extension at provincial and district levels. - Establishing an effective M&E system to improve decision making and extension strategies over time. 	March 2002- March 2006
2 AusAID	Agriculture Quality Improvement Project (AQIP)	MAFF, PDAFF, PDWVA, MOC, MRD	US\$11.93 million	Kandal	<p>To support economic growth in Cambodia by providing high quality services in rice production, rice post harvest technology and fruit and vegetable marketing which contribute to a secure food supply, increased agricultural output and add value on a sustainable and cost effective basis.</p> <p>To improve food security and cash income for farm households to take them beyond their current levels of marginal subsistence in selected districts of selected provinces.</p> <p>Further objectives are as follows:</p> <ul style="list-style-type: none"> - Establishing seed grower associations and commercial seed companies in each of the four provinces. - Producing high quality rice seed. - Developing institutional capacity at provincial level in relation to seed inspection, crop production monitoring, post harvest technology transfer, training provision. - Developing institutional capacity at provincial level in - Rehabilitating selected irrigation infrastructures. 	August 2000- August 2006

Table D.3.1.2 On-going Donors' Projects for Agricultural and Water Sector in Kampong Speu and Kandal Province - 2/3

Donor Agency	Project Title	Executing Agency	Approx. Amount	Provinces	Objectives/Scope of Works	Period
3 AusAID	CARDI Assistance Project (CARDI AP)	MAFF, CARDI	US\$4.56 million	Whole Country	To assist CARDI in achieving sustainable management of its personnel, finances and physical resources to deliver its mandate according to national priorities for food security, poverty reduction and natural resource management. The project has four components, the titles and objectives of which are: <ul style="list-style-type: none"> - Governance: CARDI operating as a semi-autonomous (financial and administration) research institution. - Corporate Development: CARDI management and staff implementing research and development projects as required by government and commercial interests. - Service Delivery: Promotion of CARDI as the preferred provider of agricultural research services for government, joint venture partners and contracted services. - Project Management: Delivery of all inputs in a timely and cost effective manner. 	September 2002 December 2006
4 EU	Smallholder Livestock Production Programme (SLPP)	MAFF	US\$ 6 million	Kampong Speu	To reduce poverty and food insecurity in rural areas by increasing the rate of growth of livestock GDP. The project activities are as follows: <ul style="list-style-type: none"> - Institutional capacity building of DAPH - Improved rural animal health services through training, certification, and expansion of Village Animal Health Workers - Introduction and implementation of a national system of animal disease surveillance and monitoring - Improved animal health through demonstration and extension services - Improved livestock feed regimes - Linking producers with local markets - Improved meat processing, storage and marketing 	April 2005 - March 2010
5 JICA	Feasibility Study on Establishment of Open Paddy Market	MOC, MAFF	-	Kandal	To prove the validity of open paddy market in terms of: <ul style="list-style-type: none"> - Reasonable price formation of rice, - Stability of supply provision through information of price and others concerning to rice in each province, - quality improvement of rice, and - improvement of condition for intraregional commercial transaction. 	2003 - 2006

Table D.3.1.2 On-going Donors' Projects for Agricultural and Water Sector in Kampong Speu and Kandal Province - 3/3

Donor Agency	Project Title	Executing Agency	Approx. Amount	Provinces	Objectives/Scope of Works	Period
6 JICA	Freshwater Aquaculture Improvement and Extension Project	MAFF	US\$4.8 million	Kampong Speu	To achieve the increase in aquaculture production in target areas including Kampong Speu, small-scale aquaculture technologies are largely extended. Major outputs are as follows: - Seed producing farmers are trained among existing, small-scale fish farmers by improving their aquaculture technologies. - Small-scale aquaculture technologies and its extension methods are improved. - Aquaculture-related activities to benefit the poorest landless farmers are promoted. - An aquaculture extension network in rural area is developed.	2005-2009
II Water Sector 1 AFD/ADB Cofinance	Northwest Irrigation Sector Project	MOWRAM, MAFF, MLMPUC	US\$18.6 million	Kandal	To support government effort to reduce poverty in selected northwest rural areas through enhanced agricultural production thereby alleviating food insecurity and improving farming household incomes. To establish rehabilitated and sustainability operate small to medium-scale irrigation schemes and other water-control infrastructure within the studied priority river basins. Further objectives are as follows: - Regulatory framework for refined Irrigation Management Transfer (IMT) policy with MOWRAM/PDOWRAM capacity building. - 35,000 ha of irrigated (16,000 ha) and flood spreading/recession (19,000ha) agriculture in 10-12 rehabilitated schemes increased rice productivity to 3.5 t/ha and diversified agricultural production where appropriate, - Structures and canals in all rehabilitated schemes operated and maintained by stakeholders (MOWRAM/FWUCs), - Provincial and district extension staff and local extension terms with improved technical extension skills, - Diversified and intensified agricultural production activities undertaken.	2004 - 2009
2 JICA	Technical Service for Irrigation System Project	MOWRAM	US\$ 8 million	Kandal	To improve the technical capacity of the engineers and technicians of MOWRAM and PDOWRAM in the fields of survey, planning, design, construction management, and water management with participation of farmers in irrigation systems.	2001 - 2006

Table D.3.1.3 NGOs and Their Projects/Activities related to Agricultural Sector

NGOs	Working Site	Projects/Major Activities
(1) Kampong Speu Province		
IPM	Whole Province	<ul style="list-style-type: none"> - Implementation of integrated agricultural development - Dissemination of rice production technique - Extension of fish culture - Organization of farmer association
CAP	Samroang Tong Kong Pisei	<ul style="list-style-type: none"> - Establishment of environmental network - Farmers' capacity building - Demonstration of animal raising and vegetable cultivation
World Vision	Samroang Tong	<ul style="list-style-type: none"> - Execution of community development (Farmers agriculture school)
CEDAC	Samroang Tong Kong Pisei	<ul style="list-style-type: none"> - Organization of farmers' association - Dissemination of System for Rice Intensification (SRI) - Dissemination of ecological farming vegetable cultivation - Execution of community development
Asia URB	Samroang Tong Chbar Mon	<ul style="list-style-type: none"> - Execution of community development (pig bank, credit & saving, fish culture, home garden, SRI) - Introduction of foreign vegetables to farmers - Marketing arrangement of foreign vegetables
Enfant & Development	Kong Pisei	<ul style="list-style-type: none"> - Implementation of rural development including micro-credit, cow bank, animal raising, home garden in close communication Community
NAPA	Samroang Tong Kong Pisei	<ul style="list-style-type: none"> - Execution of Farmer Livelihood Development consisting of animal raising, SRI, home garden, organization of farmers' association, credit and introduction organic farming.
FLD	Kong Pisei	<ul style="list-style-type: none"> - Execution of Farmer Livelihood Development including SRI, micro-credit, animal raising, organization of farmers' association, and introduction organic farming
(2) Kandal Province		
JVC	Angk Snuol	<ul style="list-style-type: none"> - Implementation of sustainable agriculture & rural development
CEDAC	Angk Snuol	<ul style="list-style-type: none"> - Execution of SLS Project covering organic farming, SRI, animal raising, organization of farmers association.
Sre Khmer	Kandal Stung	<ul style="list-style-type: none"> - Introduction of organic farming - Organization of farmers association - Experiment of wood vinegar for protecting vegetables from pest - Seed selection
World Vision	Kandal Stung	<ul style="list-style-type: none"> - Increase of family income - Construction of small dam
IPM	Whole province	<ul style="list-style-type: none"> - Implementation of integrated agriculture development consisting of improvement of rice production technique, introduction of fish culture, and organization of farmers association
FLD	Kandal Stung	<ul style="list-style-type: none"> - Execution of Farmer Livelihood Development including SRI, micro-credit, animal raising, organization of farmers' association, and introduction organic farming

Source: Interview survey and Directory of International Development Assistance 2003-04 and Directory of Cambodian NGOs 2004-05

Table D.3.3.1 AEA Implementation Procedures

Stage	Procedures
Stage 1	<p>Planning & preparation</p> <ul style="list-style-type: none"> - AEA team formation and organization and logistical arrangements - Orientation for partners (Commune Council, Village Chief, etc.) - Assigning tasks and responsibilities
Stage 2	<p>Secondary data collection & organization</p> <ul style="list-style-type: none"> - Assembling, collating and preparing relevant available data - Spatial data: topography, elevation, geology, soils, climate, land use, watersheds, rivers, administration boundaries, village locations, roads, etc. - Statistical data demographic, economic, social, agriculture, climate, etc.
Stage 3	<p>Preliminary analysis</p> <ul style="list-style-type: none"> - Conduct transects across the area of study - Identification of initial boundaries of agro-ecological zones in the system - Drafting a description of each zone, and identification of key issues regarding land use, production systems and livelihoods
Stage 4	<p>RRA</p> <ul style="list-style-type: none"> - RRA is conducted with participants from villages in all agro-ecological zones - PRA uses a variety of tools including historical profiles, agro-ecosystem base maps, transects, seasonal calendars, flow diagrams, Venn diagrams, etc. - PRA is used to verify and explore key issues with farmers and local stakeholders - PRA identifies and priorities key problems and opportunities with farmers
Stage 5	<p>Systems analysis</p> <ul style="list-style-type: none"> - Preparation, presentation and analysis of the PRA information on time, flow, space and decision-making - Assembling, collating and preparing relevant available data - Analysis of the system properties using force field analysis techniques - Preparing a cause-effect diagram for each problem and ranking the problems - Formulation of key questions and proposed solutions and ranking these using innovation assessment procedures
Stage 6	<p>Reporting & write-up</p> <ul style="list-style-type: none"> - Draft report for presentation to national and provincial agencies, commune councils, - Presentation of findings to all stakeholders - Incorporation of feedback and finalizing the report
Stage 7	<p>Use of the Output</p> <ul style="list-style-type: none"> - Presentation of priorities identified to district and provincial level agriculture staff for consideration in the annual SEILA PIF allocation - Use in SEILA District Integration Workshop at the time of developing temporary contracts
Major Outputs	<ul style="list-style-type: none"> - Delineation and description (bio-physical and socio-economic) of agro-ecological zones (agro-ecosystems) within the area of study - Improved, holistic understanding of the major farming systems in each zone - Prioritized list of the problems and opportunities for each zone (key questions) - Prioritized set of extension or development activities proposed to solve the problems

Source: AEA for Irrigation System Development (ISAEA), 2005, CAAEP II

Table D.3.3.2 Results of Prioritization of Programs through AEA - 1/3

Province/ District/Commune	Required Activities/Programs	Productivity	Sustainability	Continuity	Equality	Cost	Length	Feasibility	Priority
Kampong Speu Chbar Mon Chbar Mon	1. Training on animal rearing technical (cows, pigs, chickens)	+++	++	+++	+++	Low	Short	High	1
	2. Training on vegetable planting technical	+++	++	++	+++	Low	Short	High	2
	3. Demonstrate on rice planting	+++	++	++	+++	Low	Medium	Medium	3
	4. Open the school for farmers	+++	+++	++	+++	Medium	Medium	High	5
	5. Demonstrate on chicken vaccination	++	++	++	+++	Medium	Short	High	3
	6. Demonstrate on pig vaccination	++	++	++	+++	High	Long	Medium	8
	7. Demonstrate on cows vaccination	++	+	++	+++	High	Long	Medium	9
	8. Show about vegetable planting	++	+	++	++	Low	Short	Medium	5
	9. Show about tree planting	++	+	++	++	Medium	Short	Medium	7
	10. Create FWUC	++	+	++	++	High	Long	Medium	10
	11. Create the forestry conservative community	+	+	+	++	High	Long	Low	11
Samrong Tong Kaheang	1. Make rice show about fertilizer usage	+	+	+	+	Low	Medium	Medium	8
	2. Make rice to show the local rice seed with high output, IR	++	++	++	++	Low	Medium	High	1
	3. Show vegetable seed with high output	+	+	+	+	Low	Medium	Medium	9
	4. Training on fertile land management and organic fertilizer saving	++	+	+	++	Low	Short	High	2
	5. Training to the vets in the village - Show about the cows vaccination	++	0	+	+	Low	Medium	Medium	6
	6. Training and presentation about the effective of pesticide to rice crop	++	+	+	++	Low	Medium	Medium	4
	7. Training on rice, crop cultivation technical	++	++	+	+	Low	Medium	High	3
	8. Training on animals rearing and chicken vaccination	++	+	+	++	Low	Medium	Low	6
	9. Training on animals rearing and pig vaccination	++	+	+	++	Low	Medium	Medium	4
	10. Training and show the effective of pesticide on the vegetable	+	+	+	+	Low	Medium	Low	10
Krang Ampil	1. Demonstrate on cows vaccination	+++	++	+++	+++	Medium	Short	Medium	1
	2. Training on fertile soil management technical	++	+	++	++	Low	Short	High	2
	3. Training on rice crop production	++	+	+	+	Low	Short	High	5
	4. Present to do rice field	+	+	+	++	Low	Short	Medium	8
	5. Training on animals rearing	++	+	+	++	Low	Short	Medium	6
	6. Training on cows breed selection technical	+	+	++	++	Medium	Medium	Medium	9
	7. Testing on pigs rearing	++	+	+	+	Low	Short	Medium	7
	8. Demonstrate on vegetable crop	++	++	++	++	Low	Short	Medium	3
	9. Open the school for farmers	++	+	+	++	Low	Short	Medium	4
Roreang Chak	1. Training on animals power and create association	++	++	++	++	Medium	Medium	Medium	7
	2. Training on cows rearing and vaccination	++	++	++	++	Medium	Short	Medium	2
	3. Training on soil management and show about the soil fertile	++	+	+	++	Low	Medium	Medium	9
	4. Demonstrate about good rice seeds	++	++	++	++	Low	Medium	Medium	6
	5. Demonstrate about fertilizer usage	++	++	++	++	Low	Medium	Medium	4
	6. Open the school for the farmers (insects fighting)	++	++	++	++	Medium	Medium	Medium	8
	7. Training on rice crop production & demonstrate	++	++	++	++	Low	Medium	High	1
	8. Training on animals rearing, and show the vaccination	++	++	+	++	Low	Medium	High	3
	9. Training and create the good cows breed controlling communit	++	++	++	++	Medium	Medium	High	5
	10. Open the school for farmers	++	++	++	+	Medium	Medium	Medium	10
Sambo	1. Rice demonstration field on chemical fertilizer usage and fertile soil	+++	+++	++	++	Medium	Medium	High	4
	2. Educate on fertile soil management, make the fertilizer saving room, and rotation planting	++	++	+	+	Low	Short	Medium	1
	3. Training and show new rice seeds with high output	+++	++	++	++	Medium	Medium	High	2
	4. Training on cows rearing and vaccination	++	+	+	+	Medium	Medium	Medium	3
	5. Training to the vets about animal health care in the village	++	+	+	+	Medium	Short	Medium	7
	6. Buy the medicine and vaccinate the animals all seasons	+	+	+	+	Medium	Long	Medium	5
	7. Training on fighting against insects that destroy rice	+++	++	++	++	Medium	Medium	Medium	6
	8. Training on pig rearing & make vaccination	++	++	+	+	Medium	Medium	Medium	9
	9. Training on chicken rearing & make vaccination	+	+	+	+	Medium	Medium	Medium	8
	10. Choosing good breeding OX	+	+	+	+	High	Long	Medium	10

Table D.3.3.2 Results of Prioritization of Programs through AEA - 2/3

Province/ District/Commune	Required Activities/Programs	Productivity	Sustainability	Continuity	Equality	Cost	Length	Feasibility	Priority
Sendey	1. Training on using of chemical fertilizer technical	+++	++	++	++	Low	Medium	Medium	2
	2. Training on rice production	+++	++	+	++	Medium	Medium	Medium	9
	3. Rice farming school	++	++	++	++	Medium	Medium	Medium	8
	4. Training on vegetable seed with high output	+	+	+	++	Low	Short	Medium	10
	5. Training on how to raise demonstration	++	++	++	++	Medium	Short	Medium	4
	6. Demonstrate about pig husbandry and vaccination	+++	++	++	+++	Medium	Short	Medium	1
	7. Demonstrate about cow vaccination	++	++	++	+++	High	Short	Medium	5
	8. Training and demonstrate about high quality rice seed producing with high output	++	++	++	++	Low	Medium	Medium	6
	9. Demonstrate about organic fertilizer saving and rotation plants	++	++	++	++	Low	Medium	Medium	7
	10. Training on rice production and demonstrate about high quality seed with high output	+++	++	++	++	Medium	Medium	High	3
Trapeang Kong	1. Train to the vets on animal health in each village	++	++	+	++	Medium	Medium	Medium	4
	2. Training on cow feeding	++	++	+	++	Low	Short	Medium	1
	3. Demonstrate about make rice field to get high output	++	++	+	++	Medium	Medium	High	2
	4. Training on rice crop production	++	+	+	+	Low	Short	Medium	3
	5. Set the farmer training course	++	+	+	+	Medium	Medium	Medium	7
	6. Training on vegetable planting technique	++	+	+	++	Low	Medium	Medium	5
	7. Presentation on pig vaccination	+	+	+	++	Low	Medium	Medium	6
	8. Presentation on organic fertilizer saving	+	+	+	+	Low	Medium	Low	9
	9. Presentation on chicken vaccination	+	+	+	++	Low	Medium	Low	8
	10. Educate on planting small trees in empty land	+	+	+	+	Low	Medium	Low	10
Kong Pisei Chung Ruk	1. Present about modern rice seeds with high output	++	+	++	+	Low	Short	High	1
	2. Set the schedule for vaccination on cows scarlet fever	+	+	+	+	High	Long	Short	4
	3. Vaccination on chickens	+	+	++	+	Medium	Short	Medium	4
	4. Open the school for farmers (IPM Program)	++	++	++	+	Low	Short	Medium	1
	5. Change the experience & study tour in the commune	+	+	+	+	Low	Short	Medium	8
	6. Set the schedule for vaccination on measles to test on pigs	+	+	+	+	High	Long	Medium	6
	7. Show the grass breed, animal food	++	?	+	+	Low	Short	Low	5
	8. Training on management and water usage	+	+	+	+	High	Long	Medium	9
Preah Nipean	1. Training on cow rearing, vaccination	++	++	+++	++	Medium	Medium	Medium	3
	2. Training how to make rice to the farmers	+++	+++	++	++	Medium	Medium	Medium	2
	3. Educate on the measure how to kill insect destroy the rice crop	++	++	+	++	Low	Short	Medium	10
	4. Training on soil fertile management technical	+++	++	++	++	Low	Short	Medium	7
	5. V-Make rice to show good rice seed	++	+	+	+	Low	Long	Medium	9
	6. Training on rice production to the farmers	+++	++	+	++	Medium	Long	Medium	4
	7. Training on cows, pigs rearing and demonstrate how to vaccination	+	+	++	++	Medium	Long	Medium	6
	8. Training and demonstrate on vegetable planting	++	++	+	++	Medium	Long	Medium	5
	9. Open the farming school	+	+	+	++	Medium	Long	Medium	8
	10. Training on cows rearing	++	++	+++	++	Medium	Long	High	1
Prey Nheat	1. Training on technical to make Compose fertilizer	++	+	++	++	Low	Short	Medium	9
	2. Training on mix measure for crop, rice, vegetable cultivation	+++	+	++	+++	Low	Medium	Medium	6
	3. Training on land management technical	++	++	+++	+++	Low	Short	High	5
	4. Set the farmers group and make the condition of cows credit	++	+	+	++	Medium	Long	Medium	10
	5. Training on technical to save the seeds	+++	++	+++	+++	Low	Short	High	3
	6. Training on technical of cows, pigs, chickens husbandry	+++	++	+++	+++	Low	Short	High	2
	7. Training on pesticide usage	++	+	++	++	Low	Short	High	7
	8. Training on technique of rice, vegetable productivity	+++	++	+++	+++	Low	Short	High	1
	9. Training on animals vaccination	+++	++	+++	+++	Low	Medium	High	4
	10. Show how to make animal food	++	+	+	++	Low	Short	Medium	8

Table D.3.3.2 Results of Prioritization of Programs through AEA - 3/3

Province/ District/Commune	Required Activities/Programs	Productivity	Sustainability	Continuity	Equality	Cost	Length	Feasibility	Priority
Rokakaoh	1. Training on land fertile management technical	++	+	+	++	Low	Short	Medium	3
	2. Create FWUC	++	+	+	++	Low	Long	Low	9
	3. Create the farmers group and make loan conditions	++	0	+	++	Medium	Long	Medium	10
	4. Demonstrate about diversification system based on natural policy	++	0	+	++	Low	Medium	Medium	8
	5. Demonstrate on animal rearing	++	+	+	++	Low	Medium	High	5
	6. Educate on animals rearing and make vaccination	+++	++	+++	+++	Medium	Medium	Medium	1
	7. Opening the farming school	++	+	+	++	Low	Medium	Medium	7
	8. Demonstrate about the new rice seeds with high output	++	++	++	++	Low	Medium	High	2
	9. Training how to make the Compose fertilizer	++	+	+	++	Low	Short	Medium	6
	10. Training on rice production	++	+	++	++	Low	Medium	High	4
Veal	1. Educate on cow feeding and vaccination	+++	+++	+++	+++	Medium	Medium	Medium	1
	2. Set the school for farmers	++	+	+	++	Low	Medium	Medium	5
	3. Training on agriculture fertile land management	++	+	++	++	Low	Short	Medium	3
	4. Show how to make the Compose fertilizer	++	+	++	++	Low	Short	Medium	2
	5. Presentation about rice crop diversification by natural policy	+	0	+	++	Low	Medium	Medium	10
	6. Set school for farmers	++	+	+	++	Low	Short	Medium	4
	7. Show the rice seeds	++	+	+	++	Low	Medium	Medium	6
	8. Show the vegetable seeds	++	+	+	++	Low	Medium	Medium	7
	9. Show how to feed the pigs	+	+	+	++	Low	Medium	Medium	8
	10. Show to feed the chickens	+	+	+	++	Low	Medium	Medium	9
Kandal Angk Snoul Bek Chan	1. Publish sources of credit	+	+	+	+	High	Short	High	2
	2. Select good seeds responded to market demand	+++	++	++	++	Low	Medium	High	1
	3. Communicate for assistance from government, NGOs	++	+	+	++	Medium	Long	Medium	7
	4. Select fast growing tree seeds - Disseminators must work hand in hand with farmers and instruct them - Present on tree planting - Seek assistant from experts	+	+	+	+	Medium	Long	Medium	6
	5. Convent a meeting of members of community in view to manage the use of water and to secure fund from the government and NGOs	++	+	+	++	High	Long	Long	5
	6. Training on application of chemical and present on the mix and application of natural fertilizers	+	+	+	Nil	Medium	Medium	Low	3
	7. Training on animal husbandry	+	+	+	+	Medium	Medium	Medium	
	8. Training on making of compose fertilizers - Present on saving of compose fertilizers and chemicals for enriching land for crops growing	+	Nil	+	+	Medium	Long	Medium	3
	9. Training on: - Introducing new seeds - Introducing new technique - Demonstrating - Study visit	++	++	+	+	Medium	Medium	High	8

Note: +: positive impact; -: negative impact; 0: neutral
Source: PDA Kampong Speu & Kandal

Table D.3.7.1 Technical Implementation Procedures (TIP) Identified through AEA

Province/District/Commune	TIP
Kampong Speu	
Samrong Tong Rolaing Chak	<ol style="list-style-type: none"> 1. Open training program about rice production and rice planting demonstration 2. Extension and training program about cow rearing and vaccination 3. Extension and training program about pig and chicken rearing and demonstration
Kahaeng	<ol style="list-style-type: none"> 1. Open training program about rice production and rice planting demonstration 2. Extension and training program about cow rearing and vaccination 3. Demonstration about making compost fertilizer
Krang Ampil	<ol style="list-style-type: none"> 1. Training program about cow rearing and vaccination 2. Training about soil fertilizer controlling technical 3. Training about vegetable planting technical and demonstration
Trapeang Kong	<ol style="list-style-type: none"> 1. Extension and training program about cow rearing and vaccination 2. Open training program about rice production and rice planting demonstration 3. Open farm school about rice production
Sambour	<ol style="list-style-type: none"> 1. Open farm school about rice production 2. Extension and training program about pig and chicken rearing and demonstration 3. Open training program about rice production and rice planting demonstration
Saen Dei	<ol style="list-style-type: none"> 1. Extension and training program about pig rearing and demonstration 2. Open farm school about rice production
Kong Pisei	
Preah Nippean	<ol style="list-style-type: none"> 1. Extension and training program about cow rearing and vaccination 2. Demonstration about new rice seed with high yield 3. Open farm school about rice production 4. Rice production program
Roka Kaoh	<ol style="list-style-type: none"> 1. Extension and training program about cow rearing and vaccination 2. Training about soil fertilizer controlling technical 3. Demonstration about new rice seed with high yield 4. Demonstration about making compost fertilizer 5. Rice production program
Veal	<ol style="list-style-type: none"> 1. Extension and training program about cow rearing and vaccination 2. Demonstration about making compost fertilizer 3. Open farm school about rice production
Prey Nheath	<ol style="list-style-type: none"> 1. Extension and training program about cow rearing and vaccination 2. Open farm school about rice production 3. Training about soil fertilizer controlling technical
Kandal	
Angk Snoul Bek Chan	<ol style="list-style-type: none"> 1. Rice production program 2. Technical of making mushroom 3. Technical of fish raising by family type 4. Technical of animals raising by family type
Krang Mokak	<ol style="list-style-type: none"> 1. Technical of animals raising by family type 2. Rice production program 3. Technical of making mushroom
Prey Pouch	<ol style="list-style-type: none"> 1. Rice production program 2. Technical of animals raising by family type 3. Technical of vegetable planting production 4. Technical program of rice seed production 5. Technical program of land quality improvement 6. Technical program of cow food improvement
Boeng Thom	<ol style="list-style-type: none"> 1. Technical of animals raising by family type 2. Rice production program

Source: PDA Kampong Speu & Kandal