Table K-17 Results of Farm Household Survey (17)

	5105a	5105b	5105c	5105d	5105e	5105f	5106a	5106b	5106c	5106d	5106e	5106f
Average	3.6	0.0	82.3	0.0	85.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	5105a	5105b	5105c	5105d	5105e	5105f	5106a	5106b	5106c	5106d	5106e	5106f
Count / 0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
Total (0-9)												

Table K-18 Results of Farm Household Survey (18)

	5107a	5107b	5107c	5107d	5107e	5107f
Average	0.0	0.0	102.5	0.0	102.5	0.0

	5107a	5107b	5107c	5107d	5107e	5107f
Count / 0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
Total (0-9)						

Table K-19 Results of Farm Household Survey (19)

	5201a	5201b	5201c	5201d	5201e	5201f	5201g	5201h
Average	4.4	9.8	4.9	1073.6	1073.6		3.2	

	5201a	5201b	5201c	5201d	5201e	5201f	5201g	5201h
Count / 0						0.0%		0.0%
1						75.0%		0.0%
2						12.5%		0.0%
3						12.5%		0.0%
4						0.0%		0.0%
5						0.0%		0.0%
6						0.0%		0.0%
7						0.0%		0.0%
8						0.0%		0.0%
9						0.0%		0.0%
Total (0-9)						100.0%		0.0%

Table K-20 Results of Farm Household Survey (20)

	5202a	5202b	5202c	5202d	5202e	5202f	5202g	5202h				
Average	5.7	11.1	4.2	1556.1	1556.1		0.9					

	5202a	5202b	5202c	5202d	5202e	5202f	5202g	5202h				
Count / 0						0.0%		0.0%				
1						0.0%		0.0%				
2						87.5%		0.0%				
3						12.5%		0.0%				
4						0.0%		0.0%				
5						0.0%		0.0%				
6						0.0%		0.0%				
7						0.0%		0.0%				
8						0.0%		0.0%				
9						0.0%		0.0%				
Total (0-9)						100.0%		0.0%				

Table K-21 Results of Farm Household Survey (21)

	5301a	5301b	5301c	5301d	5301e	5301f	5301g
Average							

	5301a	5301b	5301c	5301d	5301e	5301f	5301g
Count / 0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1	0.0%	100.0%	83.3%	90.9%	0.0%	0.0%	0.0%
2	100.0%	0.0%	8.3%	9.1%	81.8%	14.3%	42.9%
3	0.0%	0.0%	8.3%	0.0%	18.2%	85.7%	0.0%
4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.1%
5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
6	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (0-9)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table K-22 Results of Farm Household Survey (22)

	5302a	5302b	5302c	5302d	5302e	5302f	5302g
Average							

	5302a	5302b	5302c	5302d	5302e	5302f	5302g
Count / 0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1	0.0%	81.0%	4.8%	66.7%	38.5%	0.0%	0.0%
2	100.0%	9.5%	47.6%	26.7%	38.5%	0.0%	0.0%
3	0.0%	9.5%	47.6%	0.0%	23.1%	0.0%	0.0%
4	0.0%	0.0%	0.0%	6.7%	0.0%	0.0%	0.0%
5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
6	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (0-9)	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%

Table K-23 Results of Farm Household Survey (23)

	5303a	5303b	5303c	5303d	5303e	5303f	5303g
Average							

	5303a	5303b	5303c	5303d	5303e	5303f	5303g
Count / 0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1	0.0%	100.0%	16.7%	50.0%	0.0%	0.0%	0.0%
2	100.0%	0.0%	33.3%	0.0%	50.0%	0.0%	0.0%
3	0.0%	0.0%	50.0%	50.0%	50.0%	0.0%	0.0%
4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
6	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (0-9)	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%

Table K-24 Results of Farm Household Survey (24)

	5401a	5401b	5401c	5401d	5401e	5401f	5401g	5401h	5401i	5401j
Average	149.1	322.4	165.9	0.0	0.0	0.0	0.0	58.3	0.0	0.0

	5401a	5401b	5401c	5401d	5401e	5401f	5401g	5401h	5401i	5401j
Count / 0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
Total (0-9)										

Table K-25 Results of Farm Household Survey (25)

	5402a	5402b	5402c	5402d	5402e	5402f	5402g	5402h	5402i	5402j
Average	211.6	188.4	13.3	32.0	0.0	0.0	140.0	44.3	0.0	0.0

	5402a	5402b	5402c	5402d	5402e	5402f	5402g	5402h	5402i	5402j
Count / 0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
Total (0-9)										

Table K-26 Results of Farm Household Survey (26)

	5501	5502	5503	5504	5505
Average				320.0	

	5501	5502	5503		5505
Count / 0	38.9%	0.0%	71.4%		0.0%
1	61.1%	90.9%	28.6%		50.0%
2	0.0%	0.0%	0.0%		0.0%
3	0.0%	9.1%	0.0%		50.0%
4	0.0%	0.0%	0.0%		0.0%
5	0.0%	0.0%	0.0%		0.0%
6	0.0%	0.0%	0.0%		0.0%
7	0.0%	0.0%	0.0%		0.0%
8	0.0%	0.0%	0.0%		0.0%
9	0.0%	0.0%	0.0%		0.0%
Total (0-9)	100.0%	100.0%	100.0%		100.0%

Table K-27 Results of Farm Household Survey (27)

	6101a	6101b	6101c	6101d	6101e	6101f	6101g	6101h	6101i	6101j	6101k
Average		3.1	0.1	0.2	0.0	0.2	0.3	0.2	2.5		

	6101a	6101b	6101c	6101d	6101e	6101f	6101g	6101h	6101i	6101j	6101k
Count / 0	0.0%									0.0%	0.0%
1	45.8%									96.0%	6.7%
2	41.7%									0.0%	86.7%
3	8.3%									4.0%	6.7%
4	4.2%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-28 Results of Farm Household Survey (28)

	6102a	6102b	6102c	6102d	6102e	6102f	6102g	6102h	6102i	6102j	6102k
Average		3.1	0.1	0.2	0.0	0.2	0.3	0.2	2.5		

	6102a	6102b	6102c	6102d	6102e	6102f	6102g	6102h	6102i	6102j	6102k
Count / 0	0.0%									0.0%	0.0%
1	45.8%									96.0%	6.7%
2	41.7%									0.0%	86.7%
3	8.3%									4.0%	6.7%
4	4.2%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-29 Results of Farm Household Survey (29)

	6103a	6103b	6103c	6103d	6103e	6103f	6103g	6103h	6103i	6103j	6103k
Average		0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6		

	6103a	6103b	6103c	6103d	6103e	6103f	6103g	6103h	6103i	6103j	6103k
Count / 0	0.0%									0.0%	0.0%
1	33.3%									100.0%	0.0%
2	0.0%									0.0%	100.0%
3	0.0%									0.0%	0.0%
4	66.7%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-30 Results of Farm Household Survey (30)

	6104a	6104b	6104c	6104d	6104e	6104f	6104g	6104h	6104i	6104j	6104k
Average		0.6	0.0	0.0	0.0	0.7	0.0	0.0	1.2		

	6104a	6104b	6104c	6104d	6104e	6104f	6104g	6104h	6104i	6104j	6104k
Count / 0	0.0%									0.0%	0.0%
1	50.0%									100.0%	0.0%
2	0.0%									0.0%	100.0%
3	0.0%									0.0%	0.0%
4	50.0%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-31 Results of Farm Household Survey (31)

	6105a	6105b	6105c	6105d	6105e	6105f	6105g	6105h	6105i	6105j	6105k
Average		1.5	0.1	0.1	0.0	0.1	0.0	0.0	1.3		

	6105a	6105b	6105c	6105d	6105e	6105f	6105g	6105h	6105i	6105j	6105k
Count / 0	0.0%									0.0%	0.0%
1	10.0%									100.0%	0.0%
2	80.0%									0.0%	100.0%
3	0.0%									0.0%	0.0%
4	10.0%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-32 Results of Farm Household Survey (32)

	6106a	6106b	6106c	6106d	6106e	6106f	6106g	6106h	6106i	6106j	6106k
Average		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

	6106a	6106b	6106c	6106d	6106e	6106f	6106g	6106h	6106i	6106j	6106k
Count / 0	0.0%									0.0%	0.0%
1	0.0%									0.0%	0.0%
2	0.0%									0.0%	0.0%
3	0.0%									0.0%	0.0%
4	0.0%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	0.0%									0.0%	0.0%

Table K-33 Results of Farm Household Survey (33)

	6107a	6107b	6107c	6107d	6107e	6107f	6107g	6107h	6107i	6107j	6107k
Average		7.0	1.5	0.3	0.1	0.7	0.6	0.3	5.0		

	6107a	6107b	6107c	6107d	6107e	6107f	6107g	6107h	6107i	6107j	6107k
Count / 0	0.0%									0.0%	0.0%
1	0.0%									100.0%	0.0%
2	0.0%									0.0%	100.0%
3	100.0%									0.0%	0.0%
4	0.0%									0.0%	0.0%
5	0.0%									0.0%	0.0%
6	0.0%									0.0%	0.0%
7	0.0%									0.0%	0.0%
8	0.0%									0.0%	0.0%
9	0.0%									0.0%	0.0%
Total (0-9)	100.0%									100.0%	100.0%

Table K-34 Results of Farm Household Survey (34)

	6201a	6201b	6201c	6201d	6201e	6201f	6202a	6202b	6202c	6202d	6202e	6202f
Average	0.1	1200.0	105.9				0.1	73.3	8.5			

	6201a	6201b	6201c	6201d	6201e	6201f	6202a	6202b	6202c	6202d	6202e	6202f
Count / 0				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
1				0.0%	50.0%	100.0%				0.0%	50.0%	66.7%
2				50.0%	0.0%	0.0%				0.0%	0.0%	0.0%
3				50.0%	50.0%	0.0%				100.0%	50.0%	33.3%
4				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
5				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
6				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
7				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
8				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
9				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
Total (0-9)				100.0%	100.0%	100.0%				100.0%	100.0%	100.0%

Table K-35 Results of Farm Household Survey (35)

	6203a	6203b	6203c	6203d	6203e	6203f	6204a	6204b	6204c	6204d	6204e	6204f
Average	0.0	0.0	0.0				0.0	0.0	0.0			

	6203a	6203b	6203c	6203d	6203e	6203f	6204a	6204b	6204c	6204d	6204e	6204f
Count / 0				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
1				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
2				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
3				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
4				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
5				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
6				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
7				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
8				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
9				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
Total (0-9)				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%

Table K-36 Results of Farm Household Survey (36)

	6205a	6205b	6205c	6205d	6205e	6205f	6206a	6206b	6206c	6206d	6206e	6206f
Average	0.6	17.5	10.9				0.0	0.0	0.0			

	6205a	6205b	6205c	6205d	6205e	6205f	6206a	6206b	6206c	6206d	6206e	6206f
Count / 0				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
1				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
2				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
3				100.0%	100.0%	0.0%				0.0%	0.0%	0.0%
4				0.0%	0.0%	100.0%				0.0%	0.0%	0.0%
5				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
6				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
7				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
8				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
9				0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
Total (0-9)				100.0%	100.0%	100.0%				0.0%	0.0%	0.0%

Table K-37 Results of Farm Household Survey (37)

	6301	6302	6303	6304	6305	6306
Average	28.3	42.5	33.2	74.2	0.0	178.2

	6301	6302	6303	6304	6305	6306
Count / 0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
Total (0-9)						

Table K-38 Results of Farm Household Survey (38)

	6401	6402	6403	6404	6405	6406	6407	6408	6409	6410	6411a	6411b
Average												

	6401	6402	6403	6404	6405	6406	6407	6408	6409	6410	6411a	6411b
Count / 0	26.5%	0.0%	0.0%	0.0%	45.8%	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%
1	73.5%	50.0%	64.0%	52.0%	41.7%	60.0%	79.2%	62.5%	48.0%	37.5%	36.4%	28.6%
2	0.0%	37.5%	36.0%	8.0%	12.5%	4.0%	0.0%	25.0%	44.0%	45.8%	4.5%	0.0%
3	0.0%	0.0%	0.0%	32.0%	0.0%	0.0%	0.0%	12.5%	8.0%	16.7%	22.7%	57.1%
4	0.0%	12.5%	0.0%	8.0%	0.0%	36.0%	12.5%	0.0%	0.0%	0.0%	27.3%	14.3%
5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
6	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	0.0%
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (0-9)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table K-39 Results of Farm Household Survey (39)

	6411c	6412a	6412b	6412c	6412d	6412e	6413	6414	6415
Average									

	6411c	6412a	6412b	6412c	6412d	6412e	6413	6414	6415
Count / 0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%
1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	11.8%	66.7%
2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	33.3%
4	0.0%	70.0%	100.0%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%
5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.4%	0.0%
6	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.1%	0.0%
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (0-9)	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%

Table K-40 Results of Farm Household Survey (40)

	7101	7102	7103	7201	7202	7203	7301	7302	7303	7304	7305	7306
Average					1956.2					3476.2		62833

	7101	7102	7103	7201	7202	7203	7301	7302	7303	7304	7305	7306
Count / 0	0.0%	0.0%	0.0%	11.8%		0.0%	20.6%	0.0%	0.0%		0.0%	
1	0.0%	20.0%	50.0%	88.2%		100.0%	79.4%	50.0%	50.0%		6.3%	
2	28.6%	40.0%	0.0%	0.0%		0.0%	0.0%	7.7%	29.2%		12.5%	
3	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	20.8%		0.0%	
4	71.4%	0.0%	0.0%	0.0%		0.0%	0.0%	42.3%	0.0%		3.1%	
5	0.0%	20.0%	25.0%	0.0%		0.0%	0.0%	0.0%	0.0%		15.6%	
6	0.0%	10.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		56.3%	
7	0.0%	10.0%	25.0%	0.0%		0.0%	0.0%	0.0%	0.0%		6.3%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	
Total (0-9)	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%	100.0%		100.0%	

Table K-41 Results of Farm Household Survey (41)

	8101	8102	8103	8104	8105	8201	8202	8203	8204	8205	8206
Average							1989.8		528.8	17.6	

	8101	8102	8103	8104	8105	8201	8202	8203	8204	8205	8206
Count / 0	0.0%	0.0%	0.0%	0.0%	0.0%	52.9%		0.0%			47.1%
1	36.4%	41.2%	16.7%	0.0%	0.0%	47.1%		76.5%			52.9%
2	33.3%	17.6%	0.0%	0.0%	0.0%	0.0%		11.8%			0.0%
3	9.1%	23.5%	16.7%	0.0%	0.0%	0.0%		0.0%			0.0%
4	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%		11.8%			0.0%
5	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%		0.0%			0.0%
6	15.2%	0.0%	16.7%	0.0%	0.0%	0.0%		0.0%			0.0%
7	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%		0.0%			0.0%
8	3.0%	17.6%	16.7%	0.0%	0.0%	0.0%		0.0%			0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%			0.0%
Total (0-9)	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%		100.0%			100.0%

Table K-42 Results of Farm Household Survey (42)

	8301	8302a	8302b	8302c	8303	8304	8305	8306	8307	8308	8401	8402
Average									1876.4			3.0

	8301	8302a	8302b	8302c	8303	8304	8305	8306	8307	8308	8401	8402
Count / 0	8.8%	0.0%	0.0%	0.0%	6.3%	0.0%	47.1%	0.0%		0.0%	0.0%	
1	91.2%	3.4%	0.0%	6.7%	56.3%	0.0%	0.0%	0.0%		0.0%	80.8%	
2	0.0%	10.3%	12.0%	6.7%	31.3%	0.0%	52.9%	11.8%		91.3%	3.8%	
3	0.0%	62.1%	16.0%	6.7%	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	
4	0.0%	17.2%	20.0%	33.3%	0.0%	0.0%	0.0%	52.9%		4.3%	15.4%	
5	0.0%	3.4%	32.0%	20.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	
6	0.0%	3.4%	20.0%	26.7%	3.1%	0.0%	0.0%	35.3%		4.3%	0.0%	
7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	
9	0.0%	0.0%	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%		0.0%	0.0%	
Total (0-9)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	

Table K-43 The Detail of Questionnaires and Answer Codes for Questionnaire

Code	Item	0	1	2	3	4	5	6	7	8	9
2100	Housing Conditions										
2101	Master's House										
2101a	Duration after Built (year)										
2101b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud	Others			
2101c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2101d	Floor Material		Dung/Mud	Cement	Others						
2101e	Shape of Building		Round	Rectangle	Square	Others					
2102	Family House										
2102a	Duration after Built (year)										
2102b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud				
2102c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2102d	Floor Material		Dung/Mud	Cement	Others						
2102e	Shape of Building		Round	Rectangle	Square	Others					
2103	Kitchen Hut										
2103a	Duration after Built (year)										
2103b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud				
2103c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2103d	Floor Material		Dung/Mud	Cement	Others						
2103e	Shape of Building		Round	Rectangle	Square	Others					
2104	Granary										
2104a	Duration after Built (year)										
2104b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud				
2104c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2104d	Floor Material		Dung/Mud	Cement	Others						
2104e	Shape of Building		Round	Rectangle	Square	Others					
2105	Toilet										
2105a	Duration after Built (year)										

Code	Item	0	1	2	3	4	5	6	7	8	9
2105b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud				
2105c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2105d	Floor Material		Dung/Mud	Cement	Others						
2105e	Shape of Building		Round	Rectangle	Square	Others					
2106	Emergency Shed										
2106a	Duration after Built (year)										
2106b	Wall Material		Pole	Pole/Mud	Brick (B)	B/Cement	B/Mud				
2106c	Roof Material		Thatch	Iron Sheet	Asbestos	CementSlab	Others				
2106d	Floor Material		Dung/Mud	Cement	Others						
2106e	Shape of Building		Round	Rectangle	Square	Others					
2200	Water Supply										
2201	Source of Water	None	Borehole	Well	River	Others					
2202	Who dug well?		Myself	District	Government	Others					
2203	Is well protected?	No	Yes								
2204a	Amount of Water (Summer)	No	Yes								
2204b	Amount of Water (Winter)	No	Yes								
2205	Who controls well?		Myself	Community	Others						
2206	Duration after Dug (Year)										
2207	Depth of Well (meter)										
2208	Who fetches water?		Head	Wife	Son	Daughter	D-in-law	Parent	Grand Child	Others	
2209	Distance from Source of Water (meter)										
2210	Daily Water Consumption (liter)										
2211	Quality of Water		Excellent	Good	Fair	Bad					
2300	Fuel and Lighting										
2301	Kind of Fuel		Fire Wood	Others							
2302	Where fuel collected?		Mountain	Garden	Others						
2303	Who collects fuel?		Head	Wife	Son	Daughter	D-in-law	Parent	Grand Child	Others	

Code	Item	0	1	2	3	4	5	6	7	8	9
2304	Cost for Fuel (Z$ per month)										
2305	Adequacy of Fuel	No	Yes								
2306	Kind of Lighting		Paraffin	Garden	Others						
2307	Payment for Lighting	No	Yes								
2308	Cost for Lighting (Z$ per month)										
3100	Income										
3101	Income from Maize										
3101a	Quantity in Cash (kg)										
3101b	Value in Cash (Z$)										
3101c	Quantity in Commodity (kg)										
3101d	Value in Commodity (Z$)										
3101e	Total Value in Cash (Z$)										
3101f	Name of Gainer		Husband	Wife	Son	Daughter	D in-law	Parent	Grand Child	Others	Family
3102	Income from Cotton										
3102a	Quantity in Cash (kg per year)										
3102b	Value in Cash (Z$ per year)										
3102c	Quantity in Commodity (kg per year)										
3102d	Value in Commodity (Z$ per year)										
3102e	Total Value in Cash (Z$ per year)										
3102f	Name of Gainer		Husband	Wife	Son	Daughter	D in-law	Parent	Grand Child	Others	Family
3200	Food										
3201	Spending on Food (Z$ per month)										
3202	Help from Other Sources										
3203	Kind of Food Received										
3204	Amount of Food Received (Z$/month)										
3300	Expenditure										
3301	Foodstuff (Z$ per month)										

Code	Item	0	1	2	3	4	5	6	7	8	9
3302	Tobacco (Z$ per month)										
3303	Alcoholic Drinks (Z$ per month)										
3304	Soft Drinks (Z$ per month)										
3305	Cloths (Z$ per month)										
3306	Foot Wear (Z$ per month)										
3307	Building of House (Z$ per month)										
3308	Furniture (Z$ per month)										
3309	School Fee (Z$ per month)										
3310	Medical Treatment (Z$ per month)										
3311	Travel (Z$ per month)										
3312	Refund of Debt (Z$ per month)										
3400	Travel Experiences										
3401	Within District										
3401a	Destination		Center	Rural	Ex-province						
3401b	Frequency	None	1/week	2/month	1/month	1/2 month	1/3 month	1/6 month	1/year	Others	
3401c	Purpose		Work	Purchase	Sell	Others					
3401d	Accompany with		Alone	Family	Others						
3402	Within Province										
3402a	Destination		Center	Rural	Ex-province						
3402b	Frequency	None	1/week	2/month	1/month	1/2 month	1/3 month	1/6 month	1/year	Others	
3402c	Purpose		Work	Purchase	Sell	Others					
3402d	Accompany with		Alone	Family	Others						
3403	Out of Province										
3403a	Destination		Center	Rural	Ex-province						
3403b	Frequency	None	1/week	2/month	1/month	1/2 month	1/3 month	1/6 month	1/year	Others	
3403c	Purpose		Work	Purchase	Sell	Others					
3403d	Accompany with		Alone	Family	Others						

Code	Item	0	1	2	3	4	5	6	7	8	9
4100	Assets and Implements										
4101	Ox Plough										
4101a	Number Owned										
4101b	Duration Used (Year)										
4102	Ox Harrow										
4102a	Number Owned										
4102b	Duration Used (Year)										
4103	Ox Planter										
4103a	Number Owned										
4103b	Duration Used (Year)										
4104	Ox Cultvator										
4104a	Number Owned										
4104b	Duration Used (Year)										
4105	Ox Cart										
4105a	Number Owned										
4105b	Duration Used (Year)										
4106	Water Cart										
4106a	Number Owned										
4106b	Duration Used (Year)										
4107	Knapsack Sprayer										
4107a	Number Owned										
4107b	Duration Used (Year)										
4108	ULV Sprayer										
4108a	Number Owned										
4108b	Duration Used (Year)										
4109	Tractor										
4109a	Number Owned										

Code	Item	0	1	2	3	4	5	6	7	8	9
4109b	Duration Used (Year)										
4110	Plough-tractor Drawn										
4110a	Number Owned										
4110b	Duration Used (Year)										
4111	Row Cultivator-ditto										
4111a	Number Owned										
4111b	Duration Used (Year)										
4112	Planter-ditto										
4112a	Number Owned										
4112b	Duration Used (Year)										
4113	Trailer-ditto										
4113a	Number Owned										
4113b	Duration Used (Year)										
4114	Wheelbarrow										
4114a	Number Owned										
4114b	Duration Used (Year)										
4115	Hand Pump for Water										
4115a	Number Owned										
4115b	Duration Used (Year)										
4116	Milling Machine										
4116a	Number Owned										
4116b	Duration Used (Year)										
4117	Bicycle										
4117a	Number Owned										
4117b	Duration Used (Year)										
4118	Motor Bike										
4118a	Number Owned										

Code	Item	0	1	2	3	4	5	6	7	8	9
4118b	Duration Used (Year)										
4119	Motor Vehicle										
4119a	Number Owned										
4119b	Duration Used (Year)										
4120	Radio										
4120a	Number Owned										
4120b	Duration Used (Year)										
4121	Television										
4121a	Number Owned										
4121b	Duration Used (Year)										
4200	Implements Required										
4201	1st Required Implement		Plough	Cultivator	Planter	Wheelbarw	Water Cart	Tractor	Harrow	Sprayer	Others
4202	2nd Required Implement		Plough	Cultivator	Planter	Wheelbarw	Water Cart	Tractor	Harrow	Sprayer	Others
4203	3rd Required Implement		Plough	Cultivator	Planter	Wheelbarw	Water Cart	Tractor	Harrow	Sprayer	Others
4204	4th Required Implement		Plough	Cultivator	Planter	Wheelbarw	Water Cart	Tractor	Harrow	Sprayer	Others
4205	5th Required Implement		Plough	Cultivator	Planter	Wheelbarw	Water Cart	Tractor	Harrow	Sprayer	Others
5100	Land Holding										
5101	Houses										
5101a	Purchased Land (Acre)										
5101b	Rented Land (Acre)										
5101c	Communal Land (Acre)										
5101d	Leased Land (Acre)										
5101e	Total Land (Acre)										
5101f	Irrigated Land (Acre)										
5102	Arable Land										
5102a	Purchased Land (Acre)										
5102b	Rented Land (Acre)										

Code	Item	0	1	2	3	4	5	6	7	8	9
5102c	Communal Land (Acre)										
5102d	Leased Land (Acre)										
5102e	Total Land (Acre)										
5102f	Irrigated Land (Acre)										
5103	Garden										
5103a	Purchased Land (Acre)										
5103b	Rented Land (Acre)										
5103c	Communal Land (Acre)										
5103d	Leased Land (Acre)										
5103e	Total Land (Acre)										
5103f	Irrigated Land (Acre)										
5104	Fallow Land										
5104a	Purchased Land (Acre)										
5104b	Rented Land (Acre)										
5104c	Communal Land (Acre)										
5104d	Leased Land (Acre)										
5104e	Total Land (Acre)										
5104f	Irrigated Land (Acre)										
5105	Grazing Land										
5105a	Purchased Land (Acre)										
5105b	Rented Land (Acre)										
5105c	Communal Land (Acre)										
5105d	Leased Land (Acre)										
5105e	Total Land (Acre)										
5105f	Irrigated Land (Acre)										
5106	Pond etc.										
5106a	Purchased Land (Acre)										

Code	Item	0	1	2	3	4	5	6	7	8	9
5106b	Rented Land (Acre)										
5106c	Communal Land (Acre)										
5106d	Leased Land (Acre)										
5106e	Total Land (Acre)										
5106f	Irrigated Land (Acre)										
5107	Total Land										
5107a	Purchased Land (Acre)										
5107b	Rented Land (Acre)										
5107c	Communal Land (Acre)										
5107d	Leased Land (Acre)										
5107e	Total Land (Acre)										
5107f	Irrigated Land (Acre)										
5200	Crop Information										
5201	Cotton										
5201a	Area Cropped (Acre)										
5201b	Time of Sowing (month)										
5201c	Time of Havesting (month)										
5201d	Total Production (kg)										
5201e	Quantity Sold in Market (kg)										
5201f	Market		CMB	GMB	Others						
5201g	Unit Price (Z$/kg)										
5201h	Water Source for Irrigation		Borehole	Well	River	Others					
5202	Maize										
5202a	Area Cropped (Acre)										
5202b	Time of Sowing (month)										
5202c	Time of Havesting (month)										
5202d	Total Production (kg)										

Code	Item	0	1	2	3	4	5	6	7	8	9
5202e	Quantity Sold in Market (kg)										
5202f	Market		CMB	GMB	Others						
5202g	Unit Price (Z$/kg)										
5202h	Water Source for Irrigation		Borehole	Well	River	Others					
5300	Cropping Practices										
5301	Cotton										
5301a	Ploughing Method		Hands	Oxen	Tractor						
5301b	Ownership of Plough Tool		Own	Hired	Borrowed						
5301c	Place to Get Seed		CMB	Seed Coop	Others						
5301d	Type of Fertilizer	None	Compound	Others							
5301e	Time of Fertilizer Application	None	Before Plant	At Plant	After Plant	Others					
5301f	Type of Insecticide	None	Agrithrin	Cabaryl	Roger	Others					
5301g	Time of Insecticide Application	None	Oct.	Nov.	Dec.	Jan.	Feb.	Others			
5302	Maize										
5302a	Ploughing Method		Hands	Oxen	Tractor						
5302b	Ownership of Plough Tool		Own	Hired	Borrowed						
5302c	Place to Get Seed		CMB	Seed Coop	Others						
5302d	Type of Fertilizer	None	Compound	Others							
5302e	Time of Fertilizer Application	None	Before Plant	At Plant	After Plant	Others					
5302f	Type of Insecticide	None	Agrithrin	Cabaryl	Roger	Others					
5302g	Time of Insecticide Application	None	Oct.	Nov.	Dec.	Jan.	Feb.	Others			
5400	Crop Budget										
5401	Cotton										
5401a	Seed (Z$ per year)										
5401b	Fertilizer (Z$ per year)										
5401c	Pesticide (Z$ per year)										
5401d	Ploughing (Z$ per year)										

Code	Item	0	1	2	3	4	5	6	7	8	9
5401e	Fuel of Tractor (Z$ per year)										
5401f	Repair of Tractor (Z$ per year)										
5401g	Wage of Workers (Z$ per year)										
5401h	Transport (Z$ per year)										
5401i	Others-1 (Z$ per year)										
5401j	Others-2 (Z$ per year)										
5402	Maize										
5402a	Seed (Z$ per year)										
5402b	Fertilizer (Z$ per year)										
5402c	Pesticide (Z$ per year)										
5402d	Ploughing (Z$ per year)										
5402e	Fuel of Tractor (Z$ per year)										
5402f	Repair of Tractor (Z$ per year)										
5402g	Wage of Workers (Z$ per year)										
5402h	Transport (Z$ per year)										
5402i	Others-1 (Z$ per year)										
5402j	Others-2 (Z$ per year)										
5500	Tree Crop Information										
5501	Have you cropped trees?	No	Yes								
5502	Kind of Crop		Mango	Guava	Banana	Others					
5503	Have you sold Tree Crop?	No	Yes								
5504	Value Sold in Market (Z$)										
5505	Place of Market		Consume	Market	Others						
6100	Livestock Holding										
6101	Cow										
6101a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6101b	Number in Last Year										

Code	Item	0	1	2	3	4	5	6	7	8	9
6101c	Change (Eaten)										
6101d	Change (Sold)										
6101e	Change (Bought)										
6101f	Change (Born)										
6101g	Change (Died)										
6101h	Change (Lost)										
6101i	Number at Present										
6101j	Feeding Method		Grazing	Paddock	Others						
6101k	Source of Forage		Paddock	Communal	Others						
6102	Bull										
6102a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6102b	Number in Last Year										
6102c	Change (Eaten)										
6102d	Change (Sold)										
6102e	Change (Bought)										
6102f	Change (Born)										
6102g	Change (Died)										
6102h	Change (Lost)										
6102i	Number at Present										
6102j	Feeding Method		Grazing	Paddock	Others						
6102k	Source of Forage		Paddock	Communal	Others						
6103	Heifer										
6103a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6103b	Number in Last Year										
6103c	Change (Eaten)										
6103d	Change (Sold)										
6103e	Change (Bought)										

Code	Item	0	1	2	3	4	5	6	7	8	9
6103f	Change (Born)										
6103g	Change (Died)										
6103h	Change (Lost)										
6103i	Number at Present										
6103j	Feeding Method		Grazing	Paddock	Others						
6103k	Source of Forage		Paddock	Communal	Others						
6104	Calves										
6104a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6104b	Number in Last Year										
6104c	Change (Eaten)										
6104d	Change (Sold)										
6104e	Change (Bought)										
6104f	Change (Born)										
6104g	Change (Died)										
6104h	Change (Lost)										
6104i	Number at Present										
6104j	Feeding Method		Grazing	Paddock	Others						
6104k	Source of Forage		Paddock	Communal	Others						
6105	Bullock										
6105a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6105b	Number in Last Year										
6105c	Change (Eaten)										
6105d	Change (Sold)										
6105e	Change (Bought)										
6105f	Change (Born)										
6105g	Change (Died)										
6105h	Change (Lost)										

Code	Item	0	1	2	3	4	5	6	7	8	9
6105i	Number at Present										
6105j	Feeding Method		Grazing	Paddock	Others						
6105k	Source of Forage		Paddock	Communal	Others						
6106	Sheep										
6106a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6106b	Number in Last Year										
6106c	Change (Eaten)										
6106d	Change (Sold)										
6106e	Change (Bought)										
6106f	Change (Born)										
6106g	Change (Died)										
6106h	Change (Lost)										
6106i	Number at Present										
6106j	Feeding Method		Grazing	Paddock	Others						
6106k	Source of Forage		Paddock	Communal	Others						
6107	Goat										
6107a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6107b	Number in Last Year										
6107c	Change (Eaten)										
6107d	Change (Sold)										
6107e	Change (Bought)										
6107f	Change (Born)										
6107g	Change (Died)										
6107h	Change (Lost)										
6107i	Number at Present										
6107j	Feeding Method		Grazing	Paddock	Others						
6107k	Source of Forage		Paddock	Communal	Others						

Code	Item	0	1	2	3	4	5	6	7	8	9
6108	Donkey										
6108a	Purpose of Breeding		Breeding	Ploughing	Eating/Sell	Others					
6108b	Number in Last Year										
6108c	Change (Eaten)										
6108d	Change (Sold)										
6108e	Change (Bought)										
6108f	Change (Born)										
6108g	Change (Died)										
6108h	Change (Lost)										
6108i	Number at Present										
6108j	Feeding Method		Grazing	Paddock	Others						
6108k	Source of Forage		Paddock	Communal	Others						
6200	Livestock Production										
6201	Cattle										
6201a	Quantity Sold (head)										
6201b	Unit Price (kg per head)										
6201c	Value Sold (Z$)										
6201d	Place of Market		CSC/DMB	Private	Locally	Others					
6201e	Means of Transport		On Foot	Truck	Others						
6201f	Who sold products?		Husband	Wife	Son	Daughter	D-in-law	Parent	Grand Child	Others	
6202	Goat										
6202a	Quantity Sold (head)										
6202b	Unit Price (kg per head)										
6202c	Value Sold (Z$)										
6202d	Place of Market		CSC/DMB	Private	Locally	Others					
6202e	Means of Transport		On Foot	Truck	Others						
6202f	Who sold products?		Husband	Wife	Son	Daughter	D-in-law	Parent	Grand Child	Others	

Code	Item	0	1	2	3	4	5	6	7	8	9
6203	Sheep										
6203a	Quantity Sold (head)										
6203b	Unit Price (kg per head)										
6203c	Value Sold (Z$)										
6203d	Place of Market		CSC/DMB	Private	Locally	Others					
6203e	Means of Transport		On Foot	Truck	Others						
6203f	Who sold products?		Husband	Wife	Son	Daughter	D-in-law	Parent	Grand Child	Others	
6300	Expenses for Cattle										
6301	Procurement of Cattle (Z$ per year)										
6302	Veterinary Supply (Z$ per year)										
6303	Veterinary Fee (Z$ per year)										
6304	Forage (Z$ per year)										
6305	Transport Cost (Z$ per year)										
6306	Others (Z$ per year)										
6400	Information on Livestock										
6401	Ownership of Cattle	No	Yes								
6402	Reason for No Ownership		No Money	Died	Others						
6403	Method of Herding		Individual	Communal	Paddock	Others					
6404	Who herds Cattle?		Men	Women	Children	Others					
6405	Purchase of Veternary Supply	No	Yes								
6406	Frequency of Dipping (Summer)		2/month	1/month	1/2 month	Others					
6407	Frequency of Dipping (Winter)		2/month	1/month	1/2 month	Others					
6408	Kind of Winter Feed		Grazing	Stalk	Others						
6409	Amount of Grass (Summer)		Enough	Shortage	Few						
6410	Amount of Grass (Winter)		Enough	Shortage	Few						
6411a	1st Problem for Cattle	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6411b	2nd Problem for Cattle	None	Grazing	Dipping	Water	Disease	Thieves	Others			

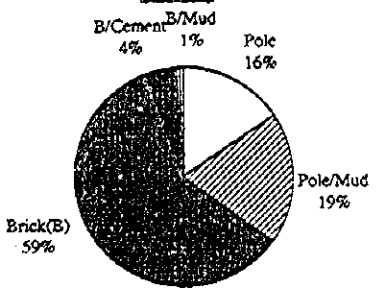
Code	Item	0	1	2	3	4	5	6	7	8	9
6411c	3rd Problem for Cattle	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6412a	1st Problem for Other Animals	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6412b	1st Problem for Other Animals	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6412c	1st Problem for Other Animals	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6412d	1st Problem for Other Animals	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6412e	1st Problem for Other Animals	None	Grazing	Dipping	Water	Disease	Thieves	Others			
6413	Availability of Veterinary Services	No	Yes								
6414	Frequency of Veterinary Services		2/ month	1/ month	1/2 month	1/6 month	1/ year	Others			
6415	Reason for No Veterinary Services		No Service	No Money	Others						
7100	Problems in Daily Life										
7101	1st Problem		Money	Food	Cloth	House	Water	Disease	Others		
7102	2nd Problem		Money	Food	Cloth	House	Water	Disease	Others		
7103	3rd Problem		Money	Food	Cloth	House	Water	Disease	Others		
7200	Schooling										
7201	Children of Schooling Age	No	Yes								
7202	Distance to Primary School (meter)										
7203	Means to Go to School		On Foot	Bicycle	Bus	Others					
7300	Medical Services										
7301	Experience of Medical Treatment	No	Yes								
7302	Name of Major Disease		Malaria	Asthma	Diarrhea	Others					
7303	Method of Cure	None	Clinic	Hospital	Medicine	Others					
7304	Distance to the Nearest Clinic (meter)										
7305	Frequency to Go to Clinic		2/ month	1/ month	1/2 month	1/6 month	1/year	Others			
7306	Distance to the Nearest Hospital(meter)										
8100	Problems in Production										
8101	1st Problem	None	Water	DroughtPW	Agro-input	Credit	Transport	Armyworm	WildAnimal	Others	
8102	2nd Problem	None	Water	DroughtPW	Agro-input	Credit	Transport	Armyworm	WildAnimal	Others	

Code	Item	0	1	2	3	4	5	6	7	8	9
8103	3rd Problem	None	Water	DroughtPW	Agro-input	Credit	Transport	Armyworm	WildAnimal	Others	
8104	4th Problem	None	Water	DroughtPW	Agro-input	Credit	Transport	Armyworm	WildAnimal	Others	
8105	5th Problem	None	Water	DroughtPW	Agro-input	Credit	Transport	Armyworm	WildAnimal	Others	
8200	Agricultural Credit										
8201	Experience of Agricultural Credit	No	Yes								
8202	Year of Experience (year)										
8203	From where?		AFC	CMB	Private	Others					
8204	How much? (Z$)										
8205	Interest Rate (% per Annum)										
8206	Have you refunded?	No	Yes								
8300	Irrigation										
8301	Will to Crop in Dry Season	No	Yes								
8302a	1st Posibble Crop in Dry Season		Wheat	Cotton	Maize	Vegetables	Beans	Others			
8302b	2nd Possible Crop in Dry Season		Wheat	Cotton	Maize	Vegetables	Beans	Others			
8302c	3rd Possible Crop in Dry Season		Wheat	Cotton	Maize	Vegetables	Beans	Others			
8303	Reason for Selection of Crops		Fast Cash	Consume	Others						
8304	Reason for No Crop in Dry Season		Water	Technical	Others						
8305	Have you heard about Kudu Dam?	No	Yes								
8306	Who informed?		Relatives	Officers	Others						
8307	When informed? (year)										
8308	Comments on Kudu Dam		Wanted	Nothing	Others						
8400	Soil Conservation										
8401	1st Technique for Soil Conservation		ContourRdg	Plant Grass	Use Manure	Others					
8402	2nd Technique for Soil Conservation		ContourRdg	Plant Grass	Use Manure	Others					

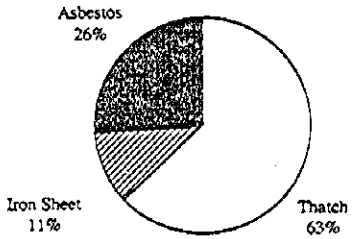
Figure K-1

2100 Housing Conditions -(1)

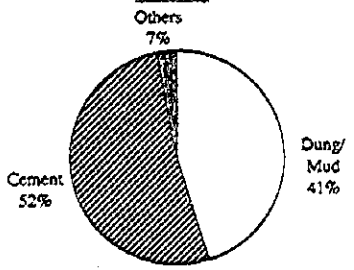
Wall Masterial of Master's House (2101b)



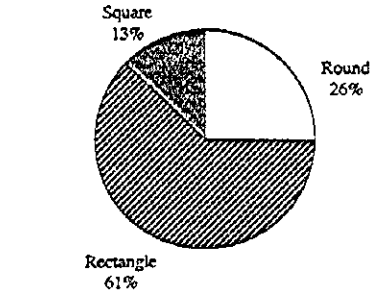
Roof Material of Master's House (2101c)



Floor Material of Master's House (2101d)



Shape of Master's House(2101e)



Number of Master's House (2101f)

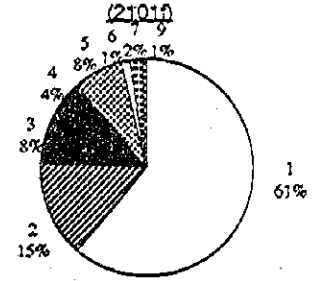
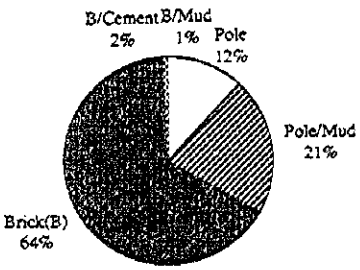


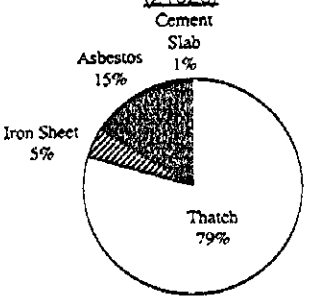
Figure K-1

2100 Housing Conditions -(2)

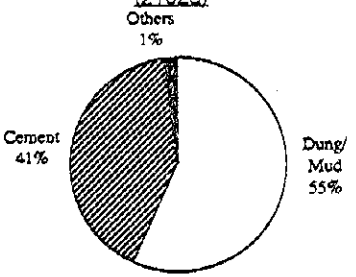
Wall Material of Family House (2102b)



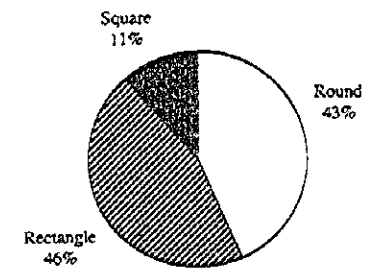
Roof Material of Family House (2102c)



Floor Material of Family House (2102d)



Shape of Family House (2102e)



Number of Family House (2102f)

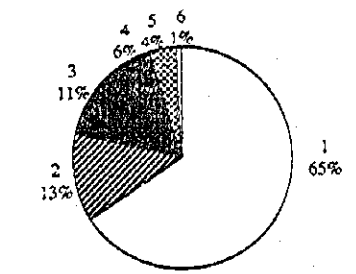
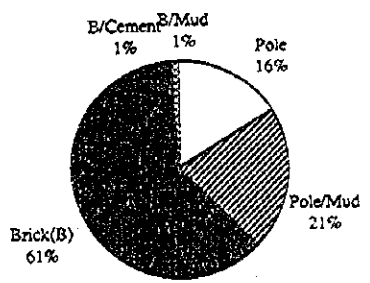


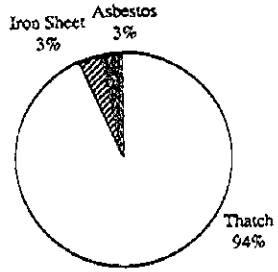
Figure K-1

2100 Housing Conditions -(3)

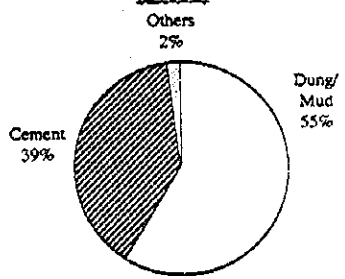
Wall Material of Kitchen Hut (2103b)



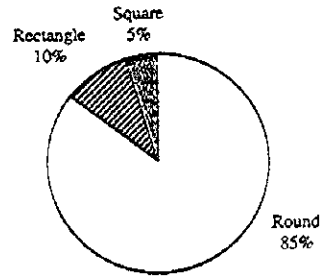
Roof Material of Kitchen Hut (2103c)



Floor Material of Kitchen Hut (2103d)



Shape of Kitchen Hut (2103e)



Number of Kitchen Hut (2103f)

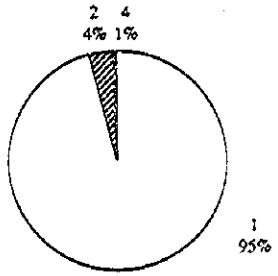
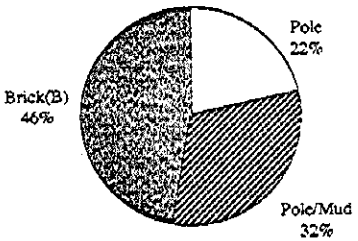


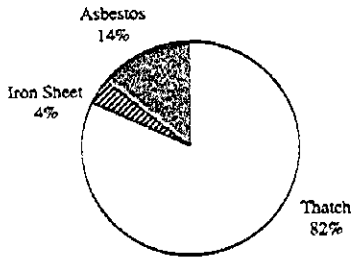
Figure K-1

2100 Housing Conditions -(4)

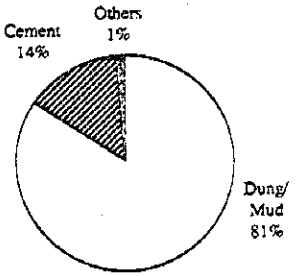
Wall Material of Granary (2104b)



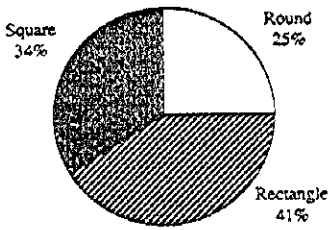
Roof Material of Granary (2104c)



Floor Material of Granary (2104d)



Shape of Granary (2104e)



Number of Granary (2104f)

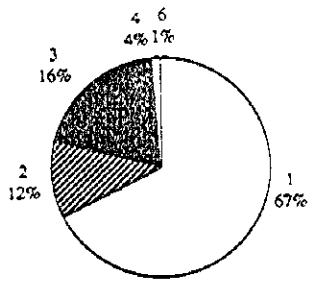
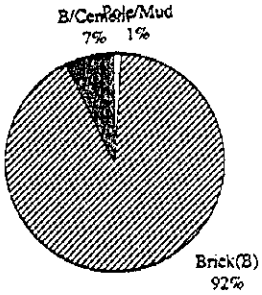


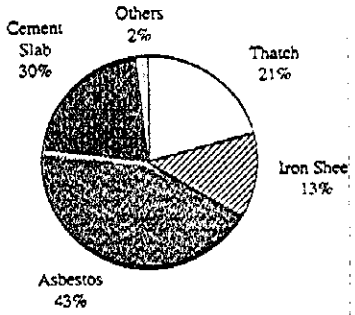
Figure K-1

2100 Housing Conditions -(5)

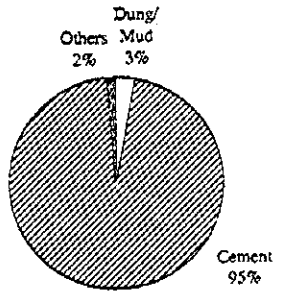
Wall Masterial of Toilet (2105b)



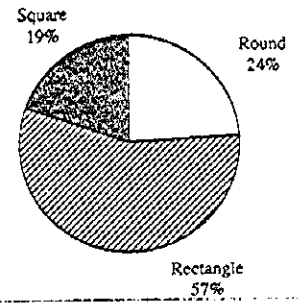
Roof Material of Toilet (2105c)



Floor Material of Toilet (2105d)



Shape of Toilet (2105e)



Number of Toilet (2105f)

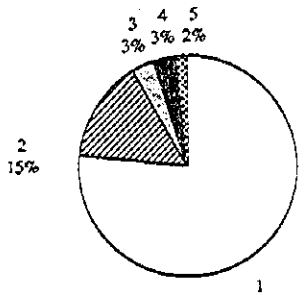
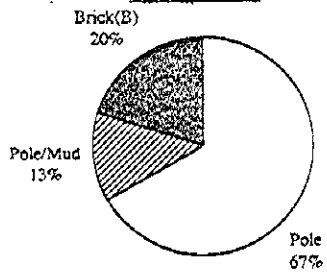


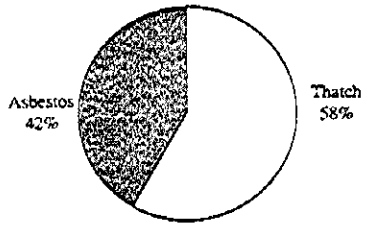
Figure K-1

2100 Housing Conditions -(6)

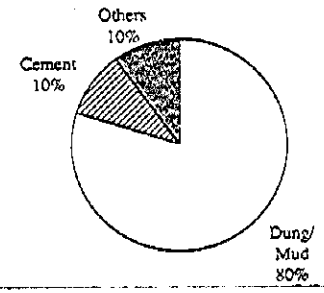
Wall Masterial of Emergency Shed (2106b)



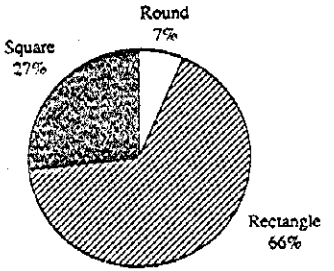
Roof Material of Emergency Shed (2106c)



Floor Material of Emergency Shed (2106d)



Shape of Emergency Shed (2106e)



Number of Emergency Shed (2106f)

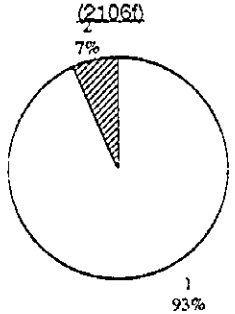
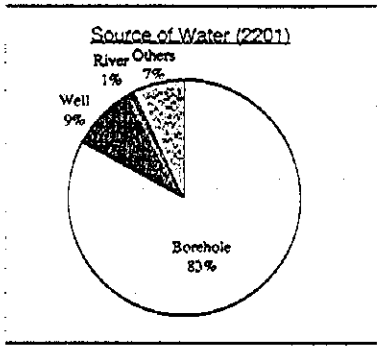
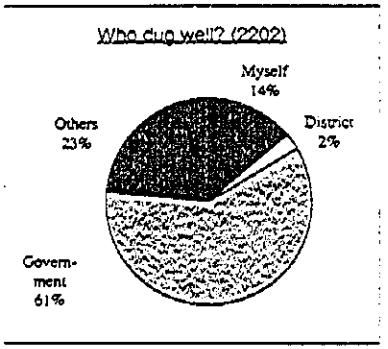
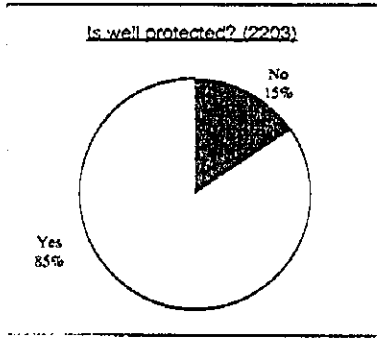
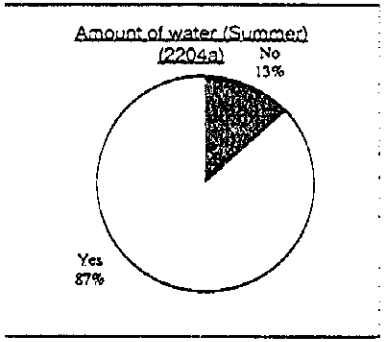


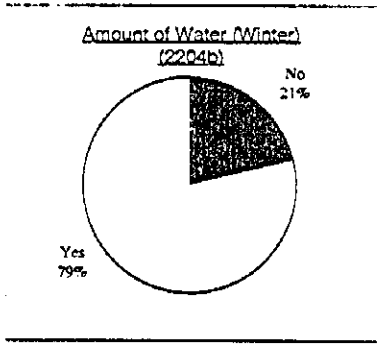
Figure K- 2
2200 Water Supply -(1)











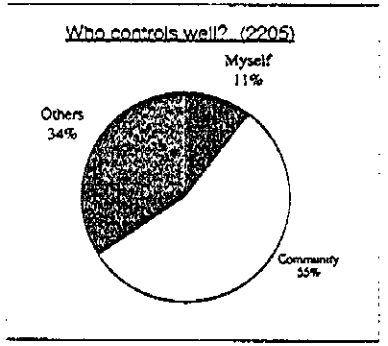
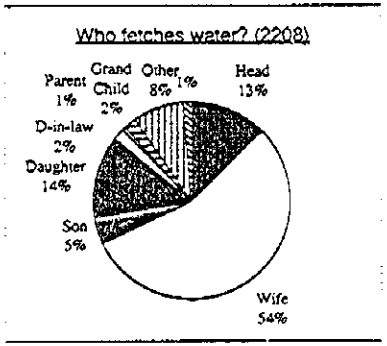


Figure K- 2
2200 Water Supply -(2)



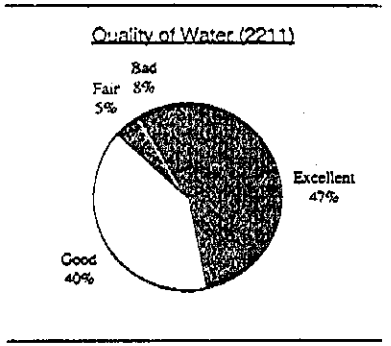
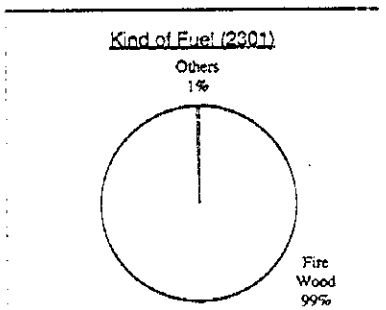
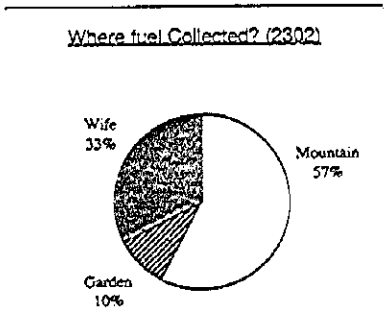
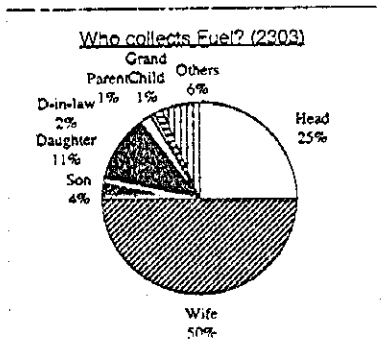


Figure K- 3 2300 Fuel and Lighting -(1)







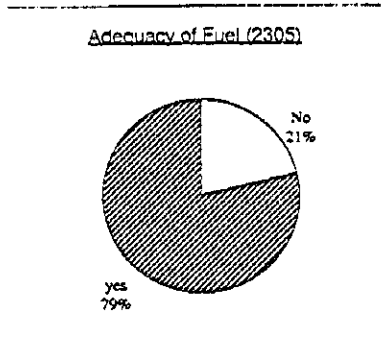
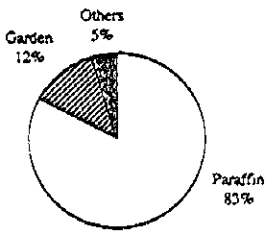


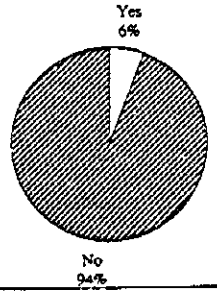
Figure K- 3

2300 Fuel and Lighting -(2)

Kind of Lighting (2306)

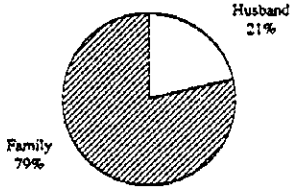


Payment for Lighting (2307)

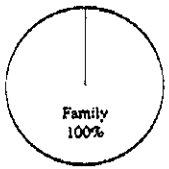


3100 Income

Name of Gainer : Income from Maize (3101f)

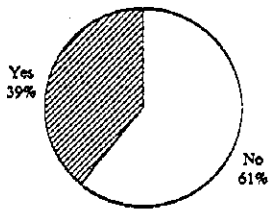


Name of Gainer : Income from Cotton(3102f)



3200 Food

Help from Other Sources (3202)



Kind of Food Received (3203)

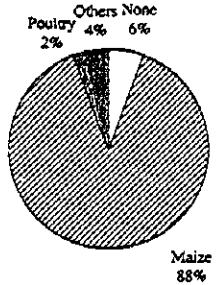
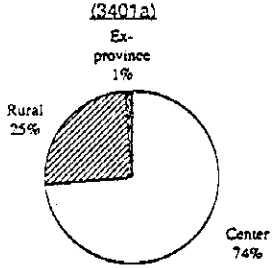


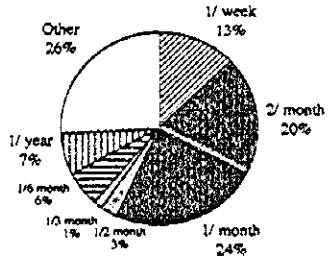
Figure K-4

3400 Travel Experiences -(1)

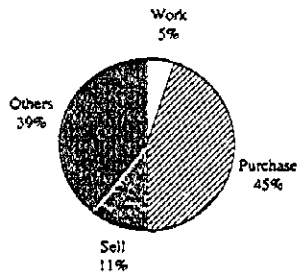
Destination : Within District (3401a)



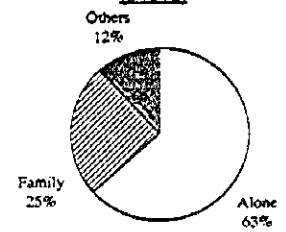
Frequency : Within District (3401b)



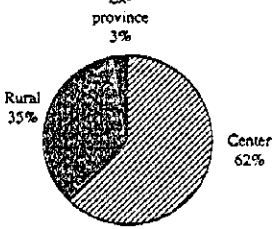
Purpose : Within District (3401c)



Accompany with : Within District (3401d)



Destination : Within Province (3402a)



Frequency : Within Province (3402b)

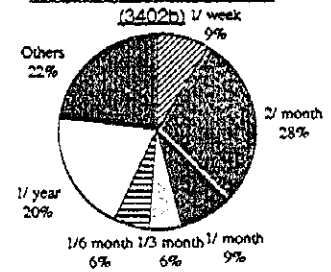


Figure K- 4

3400 Travel Experiences -(2)

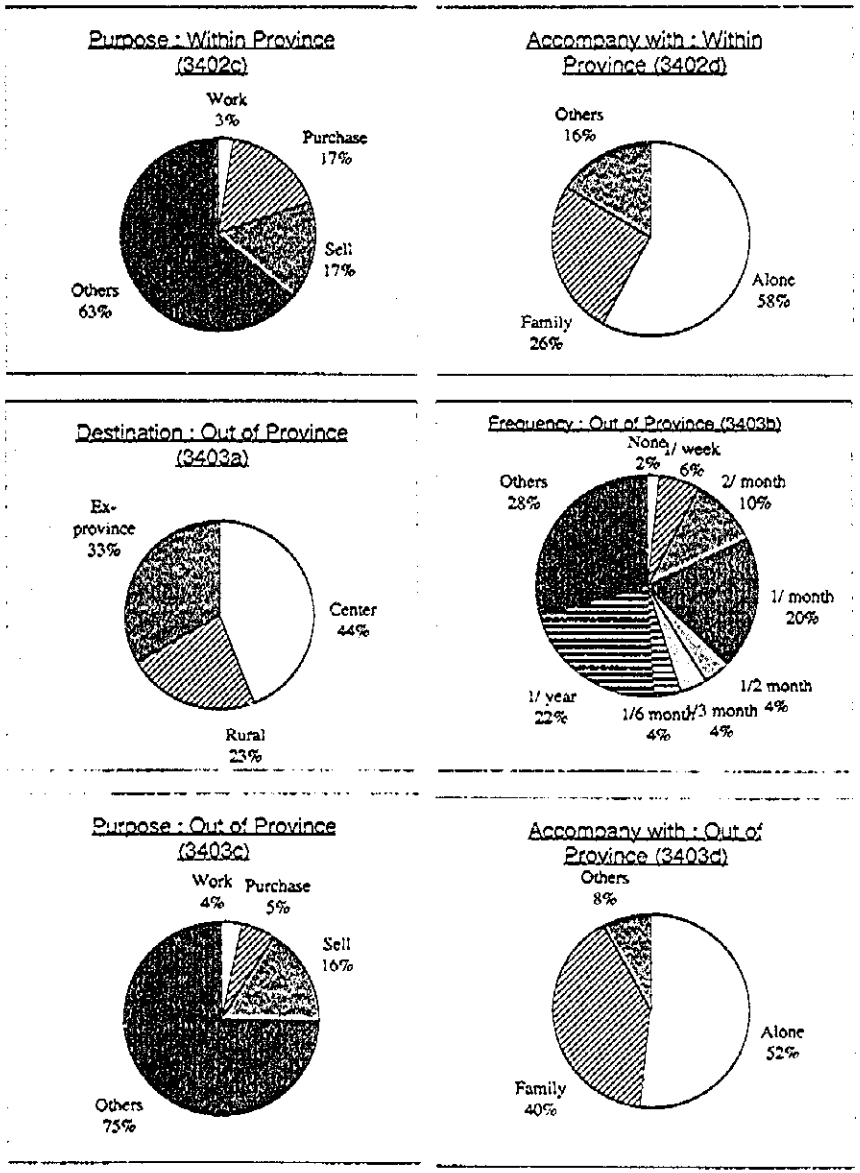


Figure K- 5

4100 Assets and Implements -(1)

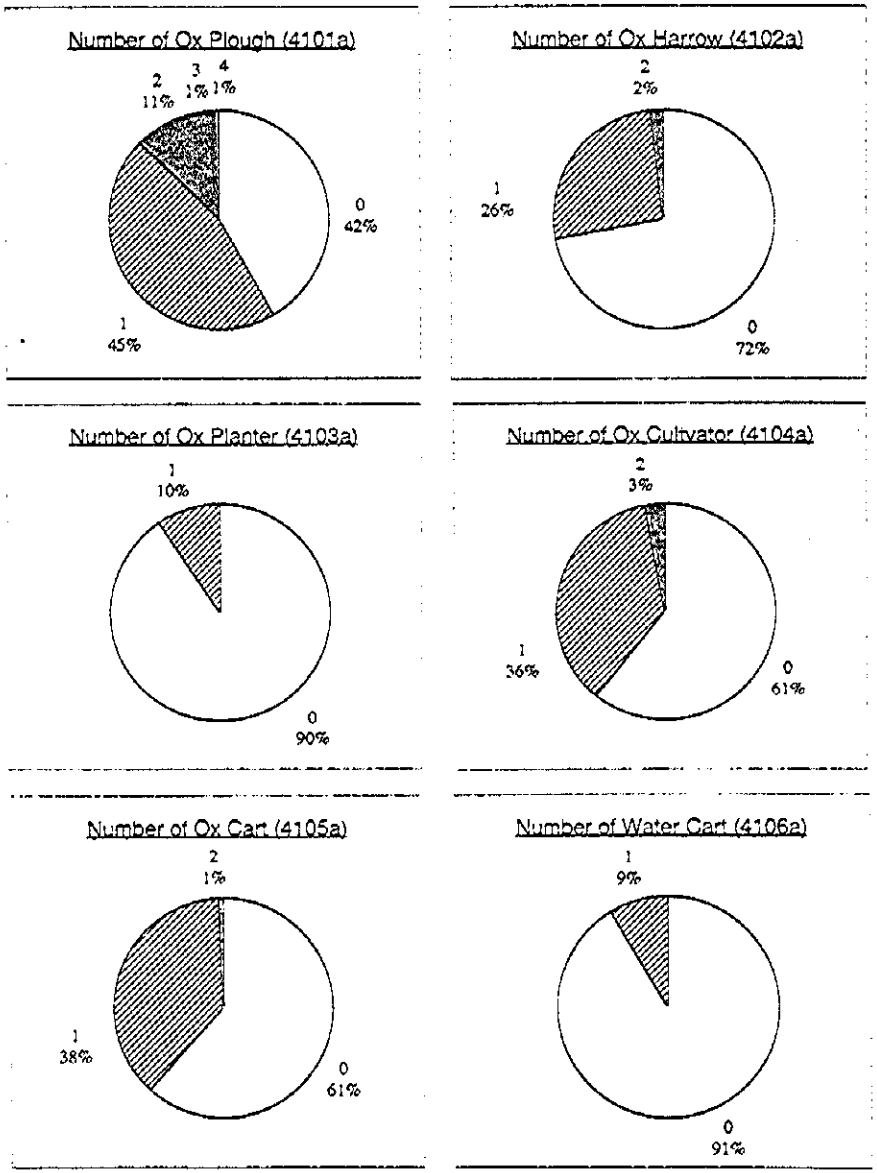
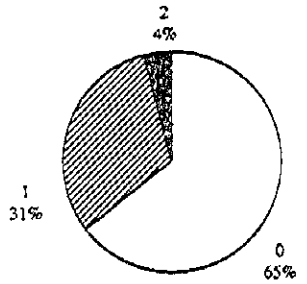


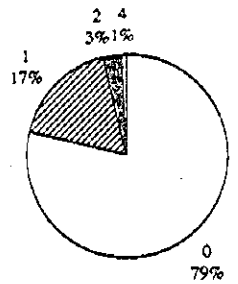
Figure K- 5

4100 Assets and Implements -(2)

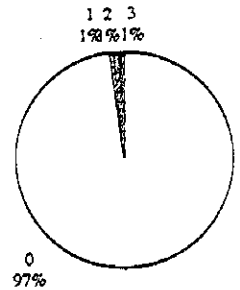
Number of Knapsack (4107a)



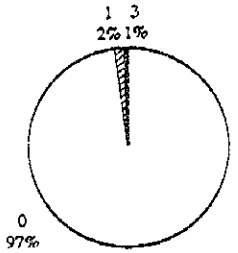
Number of ULV Sprayer (4108a)



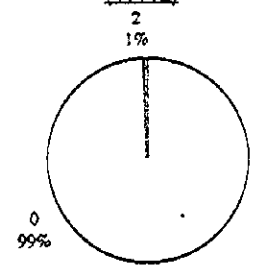
Number of Tractor (4109a)



Number of Plough-Tractor Drawn (4110a)



Number of Bow Cultivator-ditto (4111a)



Number of Planter-ditto (4112a)

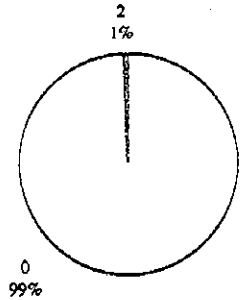
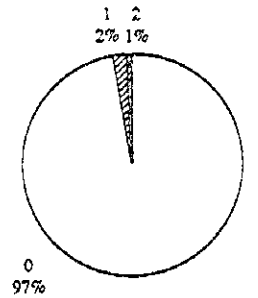


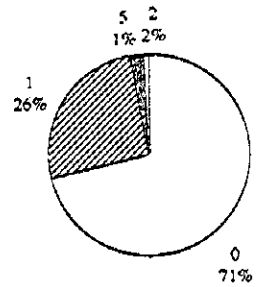
Figure K- 5

4100 Assets and Implements -(3)

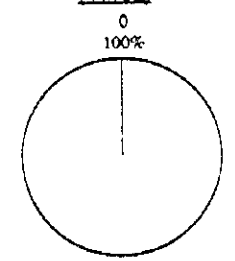
Number of Trailer-ditto (4113a)



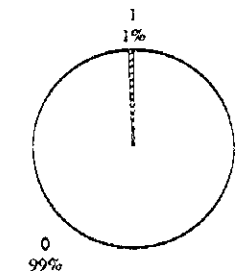
Number of Wheelbarrow (41142)



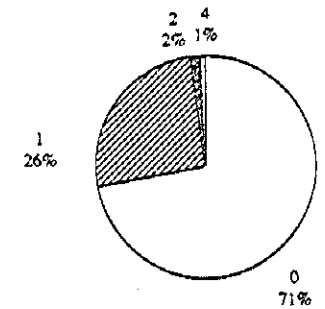
Number of Hand Pump for Water (4115a)



Number of Milling Machine (4116a)



Number of Bicycle (4117a)



Number of Motor Bike (4118a)

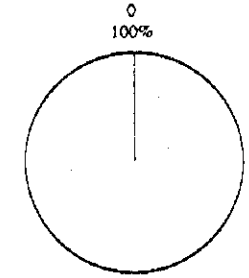
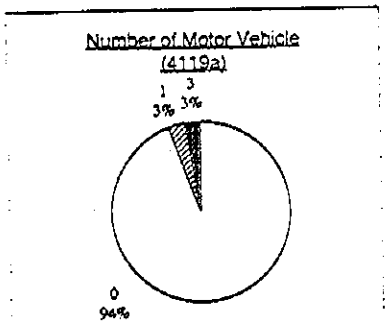
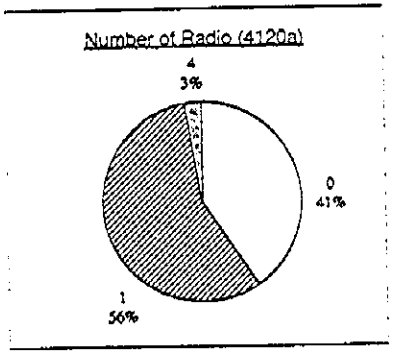


Figure K- 5

4100 Assets and Implements -(4)





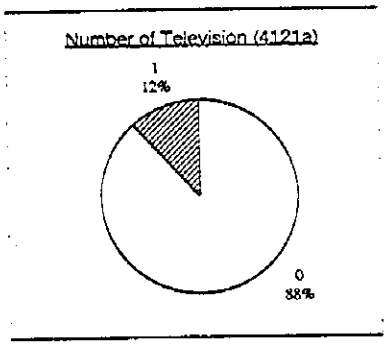
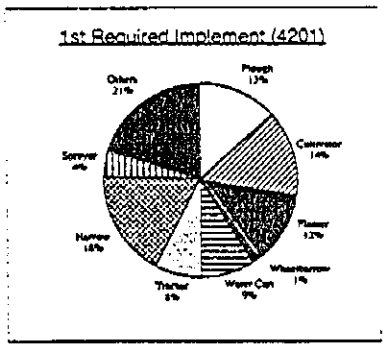


Figure K-6 4200 Implements Required -(1)



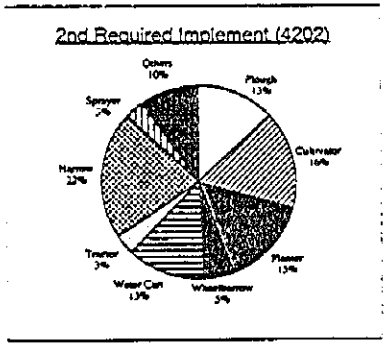
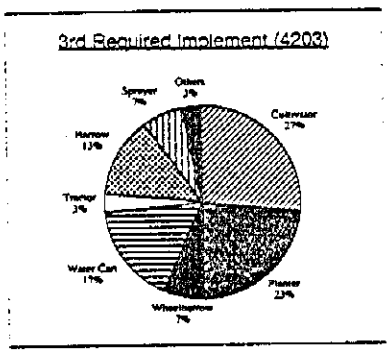
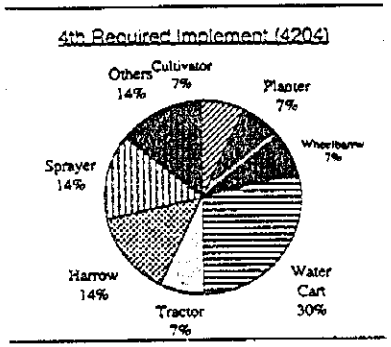


Figure K- 6

4200 Implements Required -(2)





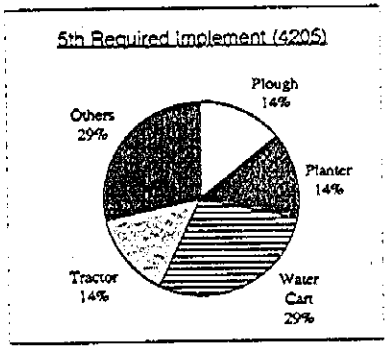
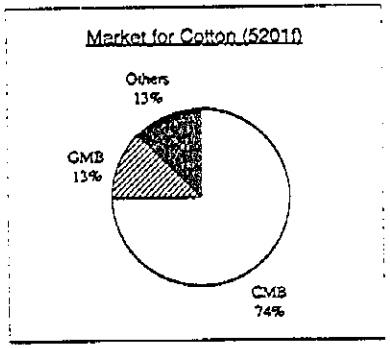


Figure K- 7 5200 Crop Information



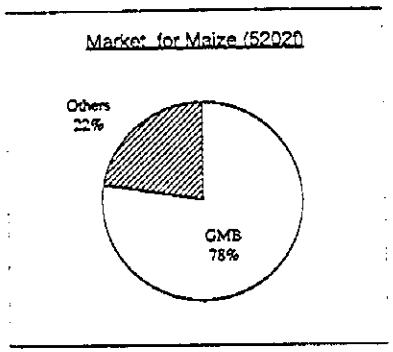


Figure K- 8

5300 Cropping Practices -(1)

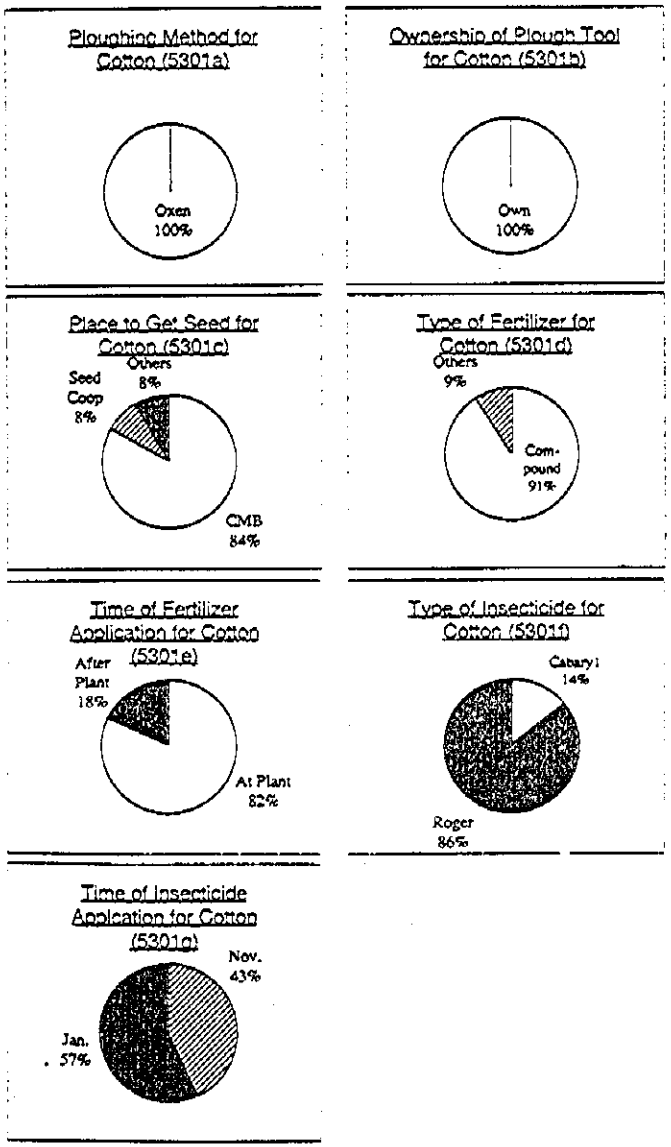


Figure K- 8

5300 Cropping Practices -(2)

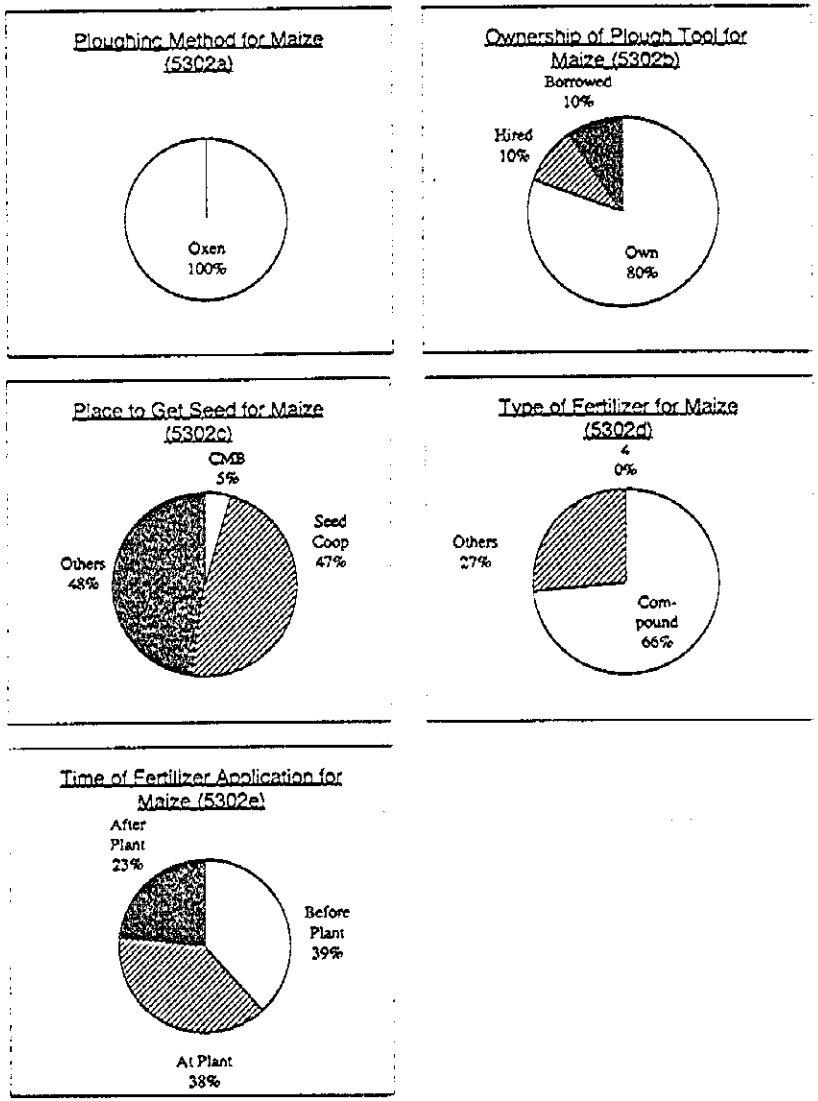


Figure K- 9

5500 Tree Crop Information

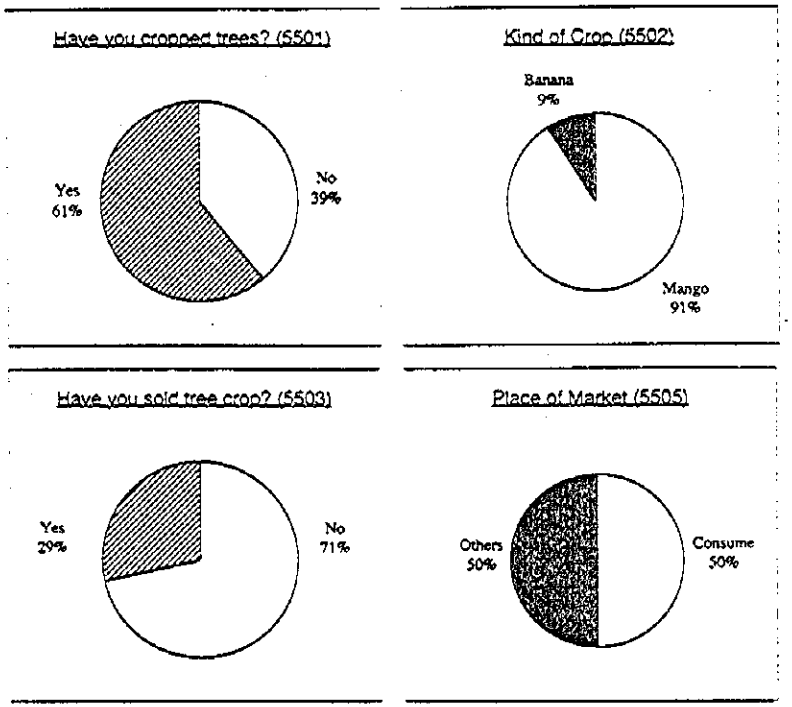


Figure K- 10 6100 Livestock Holding -(1)

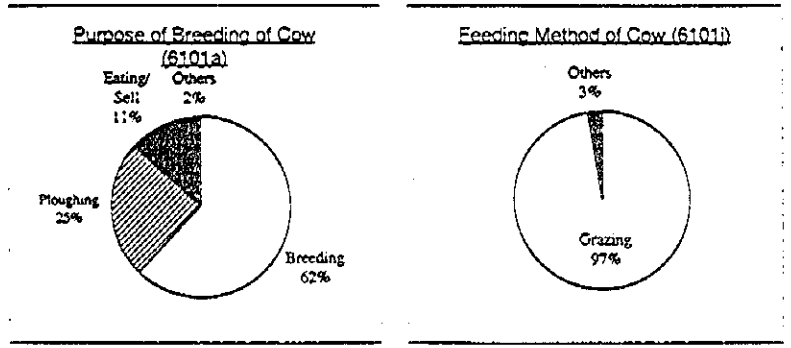
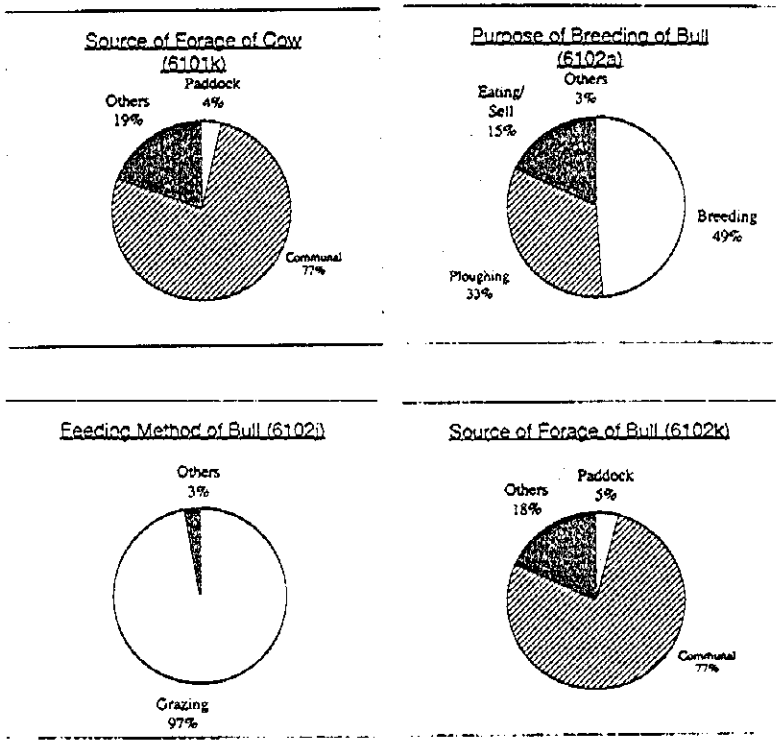


Figure K- 10

6100 Livestock Holding -(2)



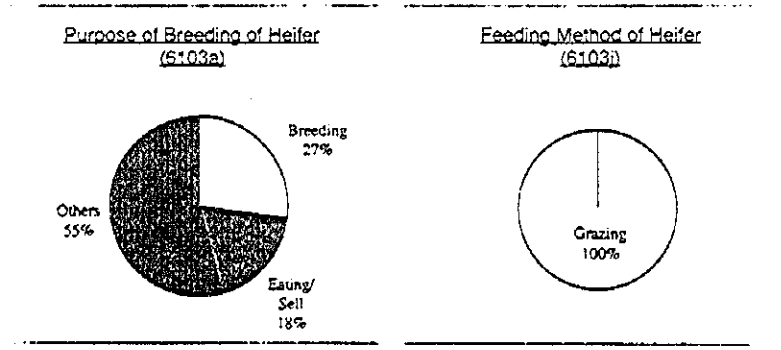
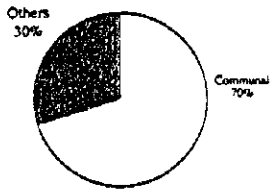


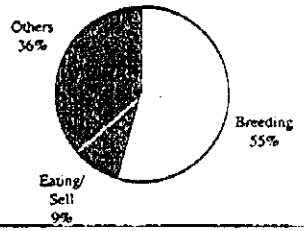
Figure K-10

6100 Livestock Holding -(3)

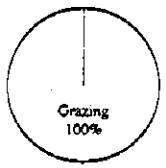
Source of Forage of Heifer (6103k)



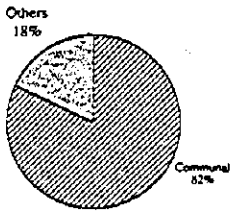
Purpose of Breeding of Calves (6104a)



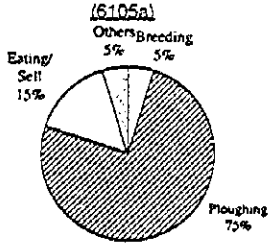
Feeding Method of Calves (6104j)



Source of Forage of Calves (6104k)



Purpose of Breeding of Bullock (6105a)



Feeding Method of Bullock (6105j)

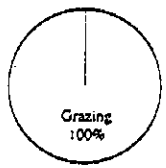
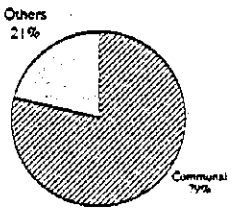


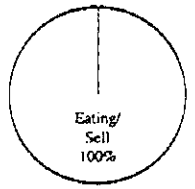
Figure K-10

6100 Livestock Holding -(4)

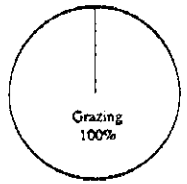
Source of Forage of Bullock (6105k)



Purpose of Breeding of Goat (6107a)



Feeding Method of Goat (6107j)



Source of Forage of Goat (6107k)

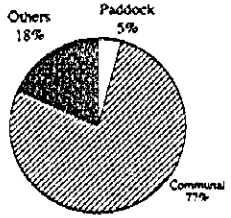
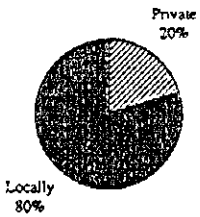


Figure K-11 6200 Livestock Production -(1)

Place of Market for Cattle (6201d)



Means of Transport for Cattle (6201e)

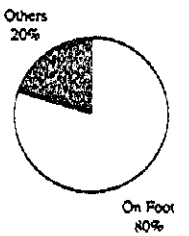
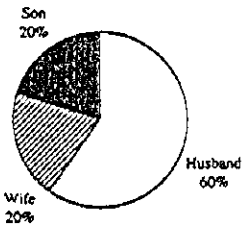


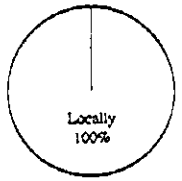
Figure K- 11

6200 Livestock Production -(2)

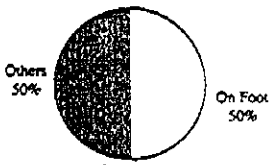
Who sold products? :Cattle (6201f)



Place of Market for Goat (6202d)



Means of Transport for Goat (6202e)



Who sold products? :Goat(6202f)

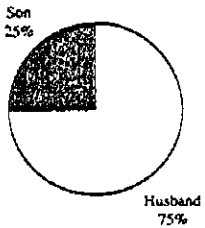
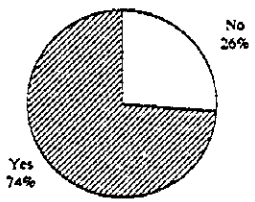


Figure K- 12 6400 Information on Livestock -(1)

Ownership of Cattle (6401)



Reason for No Ownership (6402)

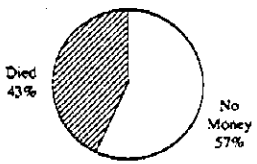
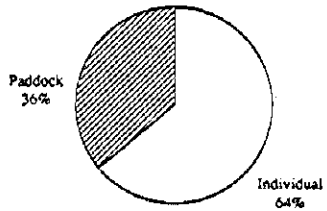
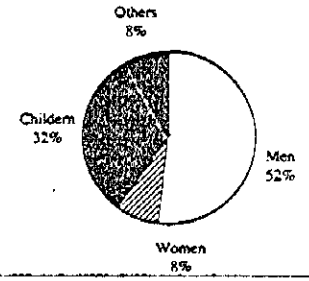


Figure K- 12 6400 Information on Livestock -(2)

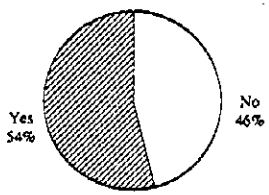
Method of Herding (6403)



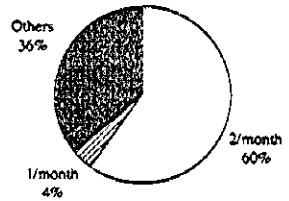
Who herds Cattle? (6404)



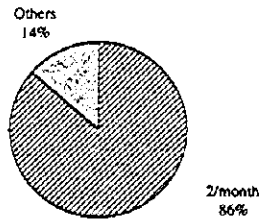
Purchase of Veternary Supply (6405)



Frequency of Dipping (Summer) (6406)



Frequency of Dipping (Winter) (6407)



Kind of Winter Feed (6408)

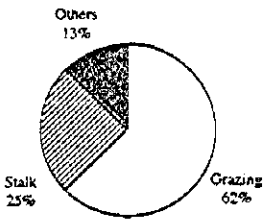
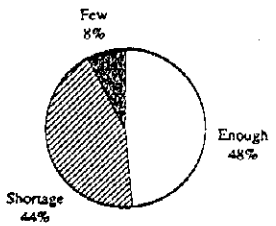
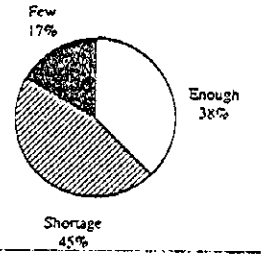


Figure K-12 6400 Information on Livestock -(3)

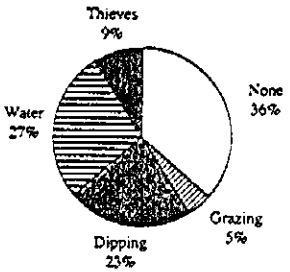
Amount of Grass (Summer) (6409)



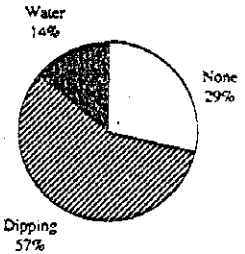
Amount of Grass (Winter) (6410)



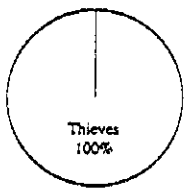
1st Problem for Cattle (6411a)



2nd Problem for Cattle (6411b)



3rd Problem for Cattle (6411c)



1st Problem for Other Animals (6412a)

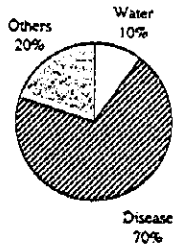


Figure K-12

6400 Information on Livestock -(4)

2nd Problem for Other Animals (6412b)

Availability of Veterinary Services (6413)

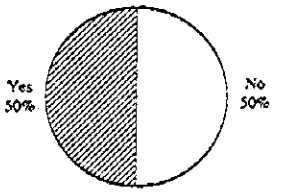
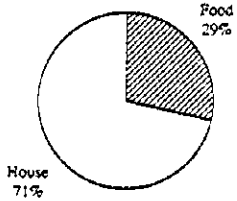
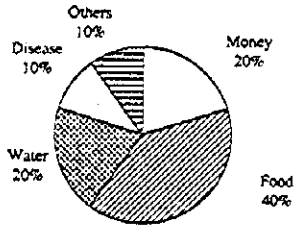


Figure K-13 7100 Problems in Daily Life (1)

1st Problem (7101)



2nd Problem (7102)



3rd Problem (7103)

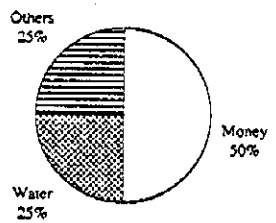
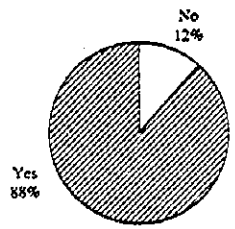


Figure K-13 (2)

7200 Problems in Daily Life

Children of Schooling Age (7201)



Means to Go to School (7203)

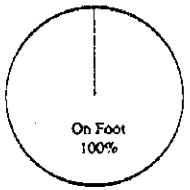
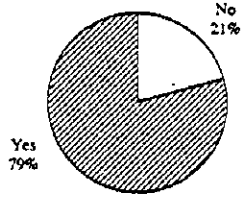
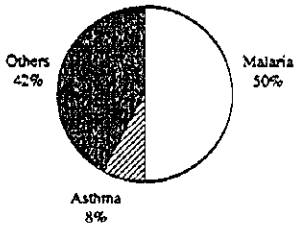


Figure K-14 7300 Medical Services

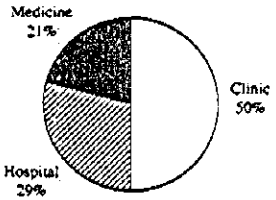
Experience of Medical Treatment (7301)



Name of Major Disease (7302)



Method of Cure (7303)



Frequency to Go to Clinic (7305)

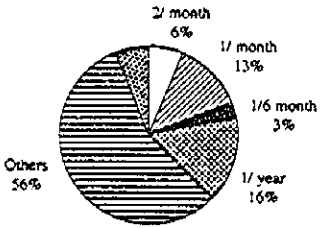
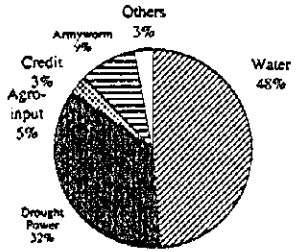


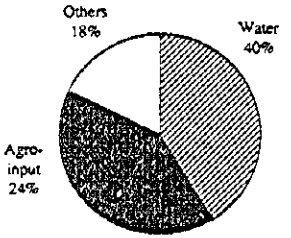
Figure K-15

8100 Problems in Production

1st Problem (8101)



2nd Problem (8102)



2nd Problem (8103)

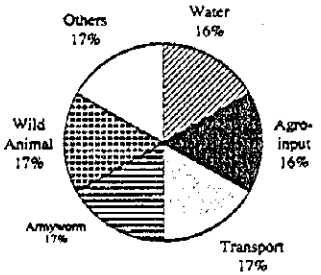
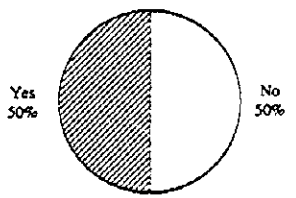


Figure K-16 8200 Agricultural Credit -(1)

Experience of Agricultural Credit (8201)



From where? (8203)

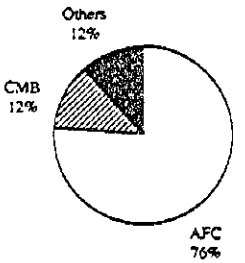


Figure K- 16

8200 Agricultural Credit -(2)

Have you refunded? (8206)

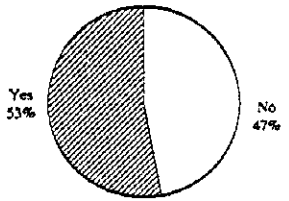
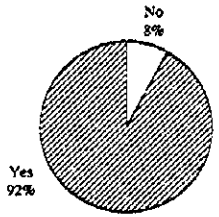
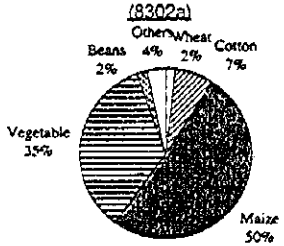


Figure K- 17 8300 Irrigation -(1)

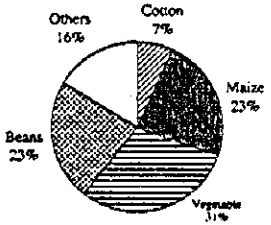
Will to Crop in Dry Season (8301)



1st Possible Crop in Dry Season (8302a)



2nd Posibble Crop in Dry Season (8302b)



3rd Posibble Crop in Dry Season (8302c)

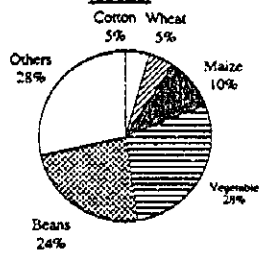
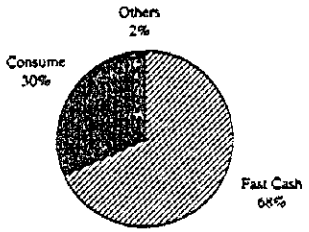


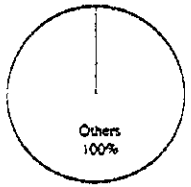
Figure K- 17

8300 Irrigation -(2)

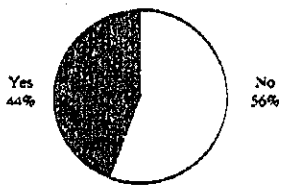
Reason for Selection of Crops (8303)



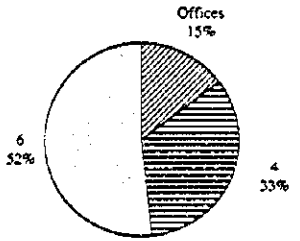
Reason for No Crop in Dry Season (8304)



Have you heard about Kudu Dam? (8305)



Who informed? (8306)



Comments on Kudu Dam (8308)

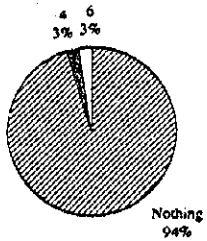
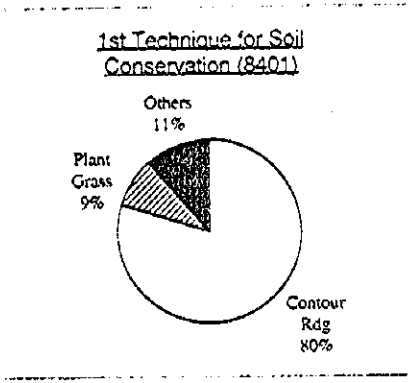


Figure K- 18

8400 Soil Conservation



APPENDIX L PROJECT EVALUATION

APPENDIX L. PROJECT EVALUATION

L-1 Explanatory Note on Project Evaluation

L-1-1 Economic and Financial Analyses

Both the economic and financial analyses of projects are conducted in monetary terms with the difference lying in the definition of projects costs and benefits. Financial analysis evaluates the commercial viability of a project from the viewpoint of the project entity - all expenditures incurred on the project and revenues arising from it are taken into consideration. This form of analysis is necessary to assess the degree to which a project will generate revenues sufficient to meet its financial obligations, which is an important issue in financial planning.

Economic analysis attempts to assess the overall impact of a project in achieving national economic objectives of a specific country. The impact of project is assessed in the context of the national economy rather than in the context of the project entity. Economic analysis differs from financial analysis both in terms of identification and evaluation of inputs and outputs and therefore in the composition of "cost" and "benefit". The benefit from a project constitutes the extent to which the end-product contributes to the achievement of national objectives, cost reflects the degree to which the achievement of those objectives is sacrificed by diverting the resources required by the project from alternative uses.

L-1-2 Valuation of Prices and Conversion Factor

(1) Economic Prices of Traded Goods and Services

It is necessary to make an initial distinction between those goods and services traded internationally at the margin and those are not. These are respectively referred to as "traded" and "non-traded" goods and services. The term "traded" means that the goods and services concerned are actually imported into or exported from the country and are not subject to binding quantitative restrictions such as import quotas or to prohibitive trade taxes (i.e. taxes that are so high as to prevent trade

from occurring). All other goods and services are treated as "non-traded". The valuation of these two categories of goods and services is different.

In case of traded goods, it can usually be assumed that the country concerned can buy and sell such goods at prevailing prices. In this case, traded goods and services are valued at their "border" prices net of any trade taxes or subsidies existing in the country. These are the CIF prices in the case of imports and the FOB prices in the case of exports. The prices are calculated by using official exchange rate and then adjusted for local transport and distribution cost, though trade taxes or subsidies are not included in the prices used in economic evaluation of projects.

Production or use of traded goods generally does not affect border prices since the impact on global demand and supply may well be small. However, in cases where such an assumption is not justified and project inputs or outputs are considered as influencing border prices, the marginal costs or marginal revenues, as the case may be, should be used in the valuation of these traded commodities. Changes in prices that arise because of the project will also affect demand and supply of the goods and services involved elsewhere in the economy. The effects of these changes in addition to the effect on foreign trade will also have to be taken into account in evaluating a project.

(2) Economic Prices of Non-Traded Goods and Services

The valuation of non-traded goods and services tends to be more complex than the valuation of traded goods and services because production or use of non-traded goods in a project often affects domestic market prices of these and hence the use of these goods by other users or producers. The use of non-traded goods as a project input may be met partly by reducing consumption of the goods elsewhere and partly by increasing domestic production. If the use of a non-traded input by the project affects only the amount of use by others, the input's economic price should be derived from its marginal value to users (demand price). If the project affects only the level of production, then the economic cost should be derived from the input's marginal cost of production (supply price).

In most cases, the valuation of non-traded goods and services will be at the supply price or cost of production. However, it should be noted that there will be several cases where the price structure for non-traded goods and services departs significantly from the structure of marginal cost. For example, peak load power or power supply to rural areas may be priced well below marginal cost, railway tariffs may not fully reflect the transportation costs of goods both by commodity and by destination, and road transport rates may not reflect the costs of highway development and maintenance. It is necessary that such discrepancies between price and marginal cost be taken into account in the valuation of non-tradeable goods and services.

(3) Conversion Factors

According to the procedure suggested in the above, treadeables should be valued in terms of border prices, and non-tradeables in terms of opportunity costs measured in domestic market prices. There remains the task of bringing the two sets of prices into correct alignment; two approaches are possible in this regard. The first is the shadow exchange rate approach, which converts the border value of tradeable inputs and outputs into an equivalent value in domestic market prices. The second is the conversion factor approach, whereby the domestic price valuation on non-tradeable goods is converted to an equivalent value in border prices. The advantage of the conversion factor approach is that it can take into account the distortions in the pricing of non-tradeable inputs and outputs that are specific to the project. It may be noted that the shadow exchange rate and conversion factors are not meant to reflect any balance of payments disequilibrium; they only reflect the distortions between border prices and domestic prices which may be present even if the balance of payment is equilibrium.

So far, conversion factors for specific commodities and services have been described. However, the data on benefits and costs may often be available in the form of values for aggregates of commodities. For instance, the aggregates may be "costs of domestic machinery", "civil construction", "transport and distribution margins", or, for the shadow wage calculation, "value of agricultural output foregone". In such cases,

group conversion factors (GCF) could be used.

GCFs are defined as weighted averages of commodity conversion factors for an appropriate set of commodities. For instance, the GCF for civil construction may be a weighted average of the conversion factors for steel, cement, bricks, skilled and unskilled labor. GCFs are approximations and may be calculated for general use for any magnitude on the benefit or cost side when the analysis of the magnitude in terms of specific commodities is difficult or time consuming. The calculation of the GCFs requires (a) an estimate of the conversion factors for the component commodities; and (b) a set of weights for aggregation. Foreign trade and border tax data and similar sources can provide information for the estimation of conversion factors for component commodities, and data for the weights can be obtained from general statistical sources, such as the consumer expenditure surveys, crop production statistics, and censuses of manufacturing.

There will be some items for which even a GCF can not be readily estimated. In such cases, use can be made of a standard conversion factor (SCF) defined as a weighted average of commodity conversion factors for all commodities produced or consumed in the economy.

In certain situations, commodity-specific or groups conversion factors may not be available for any time. In such case, the first step is to correct any underpricing or overpricing of the critical non-tradeable inputs relative to marginal cost. In the second step, the principal tradeable inputs used to produce the critical non-tradeable outputs should be segregated and valued at border prices. If these two steps are taken, the residual non-tradeable element can be converted with an SCF into an equivalent value in border prices. This procedure would capture most of the adjustment required for the inputs in question.

If SCF is used to convert the entire cost of non-tradeable output valued at market prices, the approach is equivalent to the use of a shadow exchange rate (SER). The only difference would be that with the use of SCF, all the values of non-tradeable inputs and outputs will be adjusted to be expressed in therms of border prices, whereas with the use of SER, all the values of tradeable inputs and outputs will be adjusted to be

expressed in terms of domestic prices. This will not affect the ranking of projects or the calculations of internal rates of return but if a major part of the adjustment for non-tradeable inputs and outputs is made with the use of GCFs or commodity specific conversion factors, the two approaches will not be equivalnet except in the unlikely event of all conversion factors being equal to the SCF. The real advantage of the conversion factor approach is in the more thorough treatment of non-tradeable inputs and outpit.

Conversion factors are basically ment to be used in converting domestic prices of non-tradeable outputs into equivalent border prices. Tradeable goods can be valued directly in terms of border prices, but since the conversion factors for non-tradeable outputs are derived on the basis of the conversion factors of closely related substitutes and complements, it is necessary to have conversion factor for tradeable goods. Conversion factors are also useful in estimating group conversion factors for both inputs and outputs. Finally, even though tradeable goods can be border-priced directly, it is convenient to have the conversion factors of commonly encountered project inputs and outputs on hand.

Conversion factor for each specific commodity can be computed in the following formula:

$$\alpha_i = \frac{M_i + X_i}{(M_i + TM_i) + (X_i + TX_i)}$$

Where, α_i = Specific Commodity Conversion Factor
M_i = Value of imports of i number of commodity
X_i = Value of exports of i number of commodity
TM_i = Value of taxes on imports of i number of commodity
TX_i = Value of taxes on exports of i number of commodity

GCF and SCF can be worked out by grouping related commodities and by aggregating all commoditities in the above formula, respectively.

L-2 SOCIAL EVALUATION IN THIS MASTER PLAN

L-2-1 Methodology

It is often the case that which income group shall be benefited from the project is neglected in the project evaluation. As a result, in some cases, the project for a lower income group is not adopted simply because EIRR of the project is lower than the opportunity cost of capital. In order to solve this problem, in this master plan, the social evaluation with SIRR (Social Internal Rate of Return) shall be introduced for the purpose of incorporating the income distribution function of the project into the project evaluation.

SIRR is one of the internal rate of which comes from multiplication of the economic price by SBI (Social Benefit Index). SBI is an indicator which illustrates how many times of the project benefit is valued as much as that for the average beneficiaries of the whole economy. In other words, SIRR is a concept that value of one Zimbabwe dollar project benefit for richer beneficiaries is socially more valuable than that for poorer beneficiaries. In general, SBI shall be calculated through the following procedures.

(a) Calculation of Shadow Income Weight (SIW) of benefit in each income group

$$SIW(n) = (AI / I(n))^{e}$$

Where,

SIW (n)	=	Shadow Income Weight in Income Group n
AI	=	Average Income
I (n)	=	Income in Income Group n
e	=	Elasticity of Marginal Utility (Usually, e = 1)

(b) Calculation of Social Benefit Index (SBI)

$$SBI = \sum_{n=1}^{k} \times SIW(n)$$

Where,

SBI	=	Social Benefit Index
SIW (n)	=	Shadow Income Weight in Income Group n
k	=	Numbers of Income Group

The SBI worked out in these processes, indicates how many times the benefit enjoyed by the project's beneficiary could be valued in comaparison that the project benefit would be shared by the average income group in the country.

In this Master Plan, SIRR, which is calculated by the social benefit (the economic multiplied by SBI), measures the income distribution effect of the project.

L-2-2 Results of Social Evaluation

(1) Income Distribution in Zimbabwean Economy

The income disparity between small-scale farmers and large-scale farmers is considerably large in the agriculture sector of the Zimbabwean economy. According to the World Development Report (World Bank) in 1994, while in Zimbabwe the lowest 20% income group occupies only 4% of the whole economy, the highest 20% income group occupies 62.3%. Figure L-1 illustrates the Lorentz curve of the Zimbabwean economy, indicating the large income disparity. Under this situation, in case of the project evaluation, it is more important to examine who is benefited by the project than to calculated only EIRR.

In other words, it is absolutely necessary to quantify the effect of income distribution by the project using the social internal rate of return (SIRR).

(2) Calculation of SIRR

(a) Calculation of Shadow Income Weight (SIW) in each Income Group

As is shown in Table L-15, compared with the average income of Z$3,816 in the agricultural sector, the annual income for large-scale commercial employees is Z$4,407, that for small-scale commercial

farmers is Z$4,027, tand those for communal and resettlement farmers is Z$2,527. As a result, the shadow income weight of respective farming group is estimated at 0.87, 0.95 and 1.51.

(b) Calculation of Social Benefit Index

As is shown in Table L-15, the value of benefit for the beneficiaries in the study area is estimated at 1.26 times as much as that for the average income group in the agricultural sector of Zimbabwe.

(3) Result of SIRR Calculation

SIRR is a discount rate at which the net production value of the social benefit adjusted by SBI is same as that of the cost. The result of the calculation of SIRR in each scenario is summarized below, and its calculation basis is as per Tables L-16 (a - c).

Scenario	SIRR (%)
B-2	11.72
B-1	10.64
A	9.45

Table L-1 Standard Conversion Factor from Trade Statistics

(Unit: Million Z$)

No	Item	1988	1989	1990	1991	1992	Average of 5 Years
1	1) Total Imports of Goods & Services (CIF)	1163.6	1318.3	1505.2	1645.7	1782.1	1483.0
2	1) Total Exports of Goods & Services (FOB)	1664.9	1693.5	1747.9	1693.8	1527.6	1665.5
3	2) Total Custom Duties & Import Taxes	452.5	482.5	532.2	625.1	675.2	553.5
4	2) Total Export Taxes	0.0	0.0	0.0	0.0	0.0	0.0
5	2) Total Export Subsidies	0.0	0.0	0.0	0.0	0.0	0.0
6	1 + 2	2828.5	3011.8	3253.1	3339.5	3309.7	3148.5
7	1 + 2 + 3 - 4 +5	3281.0	3494.3	3785.3	3964.6	3984.9	3702.0
8	Standard Conversion Factor SCF = 6/7	0.862	0.862	0.859	0.842	0.831	0.851

Notes : 1) Quarterly Digest of Statistics, Sep 1994 from Central Statistical Office
2) Trade Statistics Division, Central Statistical Office

Table L-2 Consumption Conversion Factor from Trade Statistics

(Unit: Million Z$)

No	Item	1988	1989	1990	1991	1992	Average of 5 Years
1	1) Total Imports of Goods & Services (CIF)	512.1	547.8	639.1	727.8	800.1	645.4
2	1) Total Exports of Goods & Services (FOB)	689.4	652.3	665.2	685.2	639.2	666.3
3	2) Total Custom Duties & Import Taxes on Consumption Goods	285.2	248.5	280.1	322.2	342.3	295.7
4	2) Total Export Taxes on Consumption Goods	0.0	0.0	0.0	0.0	0.0	0.0
5	2) Total Export Subsidies on Consumption Goods	0.0	0.0	0.0	0.0	0.0	0.0
6	1 + 2	1201.5	1200.1	1304.3	1413.0	1439.3	1311.6
7	1 + 2 + 3 - 4 +5	1486.7	1448.6	1584.4	1735.2	1781.6	1607.3
8	Consumption Conversion Factor CCF = 6/7	0.808	0.828	0.823	0.814	0.808	0.816

Notes : 1) Quarterly Digest of Statistics, Sep 1994 from Central Statistical Office
2) Trade Statistics Division, Central Statistical Office

Table L-3 Conversion Factors for Seed, Chemical & Fertilizer

Item		Traded Goods	Non-traded Goods	Skilled Labour	Unskilled Labour	Transportation	Fuel	Tax & Duties	Total
Cost Component / Conversion Factor		1.000	1) 0.851	2) 0.816	3) 0.409	4) 0.705	5) 0.620	0.000	
Seed	Composition of Cost (%)	26.7	17.6	1.2	23.5	3.8	20.6	6.6	100.0
	Adjusted Conversion Factor	0.267	0.150	0.010	0.096	0.027	0.128	0.000	0.677
Chemical & Fertilizer	Composition of Cost (%)	18.8	12.7	1.8	17.4	3.8	38.9	6.6	100.0
	Adjusted Conversion Factor	0.188	0.108	0.015	0.071	0.027	0.241	0.000	0.650

1) Standard Conversion Factor from Trade Statistics (0.852)
2) Consumption Conversion Factor from Trade Statistics (0.816)
3) Consumption Conversion Factor from Trade Statistics (0.816) X Shadow Wage Rate from world Bank Estimation (0.500)=0.409
4) Estimated from Conversion Factors for Truck & Train
5) Conversion Factor for Oil from World Bank Estimation (0.620)

Table L-4 Price Structure of Maize

Cost Item	Unit	Constant 1995 Price		
		Financial	Conversion Factor	Economic
1) Projected 2000 FOB Export Price of Maize(US), No.2, Yellow	US$/t	144.0	n.r.	144.0
Projected 2000 FOB Export Price of Maize(US), No.2 Yellow(US$1=Z$8.3871)	Z$/t	1,207.7	n.r.	1,207.7
2) Corresponding FOB Export Price Durban	Z$/t	1,296.5	n.r.	1,296.5
Export Tax (0%)	Z$/t	0.0	0.000	0.0
Export Subsidy (0%)	Z$/t	0.0	0.000	0.0
3) Port Handling Charge	Z$/t	24.0	0.409	9.8
4) Estimated GMB Export Margin (5.0%)	Z$/t	60.6	0.816	49.4
5) Transport and Handling Charge from Project Area to Durban	Z$/t	364.4	0.713	259.8
6) Approved Agent Margin (5.0%)	Z$/t	40.4	0.816	33.0
7) Packing Charge	Z$/t	18.0	0.409	7.4
Farmgate Price	Z$/t	789.1	1.188	937.1

Notes : 1) World Bank Commodity Price Forecasts for 2000 Price in 1990 Constant US Dollar Adjusted to 1995 Constant US Dollar Using MUV Index of 103.9
2) Considered to reflect the long-term relationship between FOB Durban and FOB Gulf Ports
3) National Railway of Zimbabwe, Kadoma Office
4) Grain Marketing Board, Sanyati Depot
5) Refer to Table 9-7
6) Grain Marketing Board, Sanyati Depot
7) Grain Marketing Board, Sanyati Depot

Table L-5 Price Structure of Wheat

Cost Item	Unit	Constant 1995 Price		
		Financial	Conversion Factor	Economic
1) Projected 2000 FOB Export Price of Wheat(Canadian), No.1 Western Red Spring 13.5%	US$/t	225.8	n.r.	225.8
Projected 2000 FOB Export Price of Wheat(Canadian), No.1 Western Red Spring 13.5%(US$1=Z$8.3871)	Z$/t	1893.8	n.r.	1893.8
2) Corresponding FOB Export Price Durban	Z$/t	1923.5	n.r.	1923.5
Export Tax (0%)	Z$/t	0.0	0.000	0.0
Export Subsidy (0%)	Z$/t	0.0	0.000	0.0
3) Port Handling Charge	Z$/t	24.0	0.409	9.8
4) Estimated GMB Export Margin (5.0%)	Z$/t	90.5	0.816	73.8
5) Transport and Handling Charge from Project Area to Durban	Z$/t	364.4	0.713	259.8
6) Approved Agent Margin (5.0%)	Z$/t	66.2	0.816	54.0
7) Packing Charge	Z$/t	20.6	0.409	8.4
Farmgate Price	Z$/t	1357.8	1.118	1517.7

Notes : 1) World Bank Commodity Price Forecasts for 2000 Price in 1990 Constant US Dollar Adjusted to 1995 Constant US Dollar Using MUV Index of 103.9
2) Considered to reflect the long-term relationship between FOB Durban and FOB Canada
3) National Railway of Zimbabwe, Kadoma Office
4) Grain Marketing Board, Sanyati Depot
5) Refer to Table 9-7
6) Grain Marketing Board, Sanyati Depot
7) Grain Marketing Board, Sanyati Depot

Table L-6 Price Structure of Cotton

Cost Item	Unit	Constant 1995 Price		
		Financial	Conversion Factor	Economic
1) Projected 2000 CIF Export Price of Cotton (Outlook"A"Index), Middling(1-3/32)	US$/t	1,683.2	n.r.	1,683.2
Projected 2000 CIF Export Price of Cotton (Outlook"a"Index), Middling(1-3/32) (US$1=Z$8.3871)	Z$/t	14,117.2	n.r.	14,117.2
2) Corresponding FOB Export Price Durban	Z$/t	13,058.4	n.r.	13,058.4
Export Tax (0%)	Z$/t	0.0	0.000	0.0
Export Subsidy (0%)	Z$/t	0.0	0.000	0.0
3) Port Handling Charge	Z$/t	64.0	0.409	26.2
4) Estimated COTTOCO Export Margin	Z$/t	618.8	0.816	504.9
5) Yielding Ratio of Cotton Lint from Seed	Z$/t	33.3	n.r.	33.3
6) Ginning Cost	Z$/t	61.6	0.816	50.3
7) Transport and Handling Charge from Project Area to Durban	Z$/t	418.6	0.710	297.2
8) Packing Charge	Z$/t	49.6	0.409	20.3
Farmgate Price	Z$/t	3,591.3	1.059	3,803.8

Notes : 1) World Bank Commodity Price Forecasts for 2000 Price in 1990 Constant US Dollar Adjusted to 1995 Constant US Dollar Using MUV Index of 103.9
2) Considered to reflect the long-term relationship between FOB Durban and FOB Europe
3) National Railway of Zimbabwe, Kadoma Office
4) COTTOCO, Sanyati Depot
5) COTTOCO, Sanyati Depot
6) COTTOCO, Sanyati Depot
7) Refer to Table 9-7
8) COTTOCO, Sanyati Depot

Table L-7 Transport and Handling Charge from Project Area to Durban

(A) Maize & Wheat

Transport and Handling	Vehicle	Distance (km)	Unit Cost (Z$/t · km)	Financial Cost (Z$/t)	Conversion Factor	Economic Cost (Z$/t)
Project Area→ Sanyati Depot	Truck	40	0.40	1) 16.0	0.680	10.9
Handling Charge at Sanyati Depot	n.r.	n.r.	n.r.	1) 5.0	0.409	2.0
Sanyati Depot → Kadoma Depot	Truck	110	0.40	1) 44.0	0.680	29.9
Handling Charge at Kadoma Depot	n.r.	n.r.	n.r.	1) 5.0	0.409	2.0
Kadoma Depot → Beitbridge	Train (in Zimbabwe)	400	0.20	2) 80.0	0.730	58.4
Beitbridge → Durban Port	Train (in South Africa)	1,340	0.16	2) 214.4	0.730	156.5
TOTAL COST	n.r.	1,890	n.r.	364.4	0.713	259.8

NOTES: 1) GMB, Sanyati Depot
2) National Railway of Zimbabwe, Kadoma Office

(B) Cotton

Transport and Handling	Vehicle	Distance (km)	Unit Cost (Z$/t · km)	Financial Cost (Z$/t)	Conversion Factor	Economic Cost (Z$/t)
Project Area→ Sanyati Depot	Truck	40	0.50	1) 20.0	0.680	13.6
Handling Charge at Sanyati Depot	n.r.	n.r.	n.r.	1) 7.2	0.409	2.9
Sanyati Depot → Kadoma Depot	Truck	110	0.50	1) 55.0	0.680	37.4
Handling Charge at Kadoma Depot	n.r.	n.r.	n.r.	2) 7.2	0.409	2.9
Kadoma Depot → Beitbridge	Train (in Zimbabwe)	400	0.22	2) 88.0	0.730	64.2
Beitbridge → Durban Port	Train (in South Africa)	1,340	0.18	2) 241.2	0.730	176.1
TOTAL COST	n.r.	1,890	n.r.	418.6	0.710	297.2

NOTES: 1) COTTOCO, Sanyati Depot
2) National Railway of Zimbabwe, Kadoma Office

Table L-8 Financial & Economic Prices of Locally-Traded Farm Output

Price / Crop	Financial Price (Z$/kg)	Conversion Factor	Economic Price (Z$/kg)
Sugar Bean	1) 2.240	0.851	1.906
Green Maize	2) 400.0	0.851	340.4
Groundnuts	1) 2.355	0.851	2.004
Sunflower	1) 1.472	0.851	1.253
Onion	3) 2.000	0.851	1.702

NOTES : 1) Financial prices of sunflower, groundnuts and sugar bean are GMB producer prices.
2) Financial price of green maize is local market price, and unit is 1000 cobs.
3) Financial price of onion is local market price.

Table L-9 Financial & Economic Prices of Farm Inputs

	Item	Unit	1 Financial price	2 Sales Tax	3=1-2 Financial Price Less Sales Tax	4 Conversion Factor	5=3X4 Economic Price
Seed	Cotton Seed	Z$/kg	0.63	0.00	0.63	0.677	0.43
	Maize Seed	Z$/kg	3.30	0.00	3.30	0.677	2.23
	Wheat Seed	Z$/kg	4.88	0.00	4.88	0.677	3.30
	Sugar Bean Seed	Z$/kg	0.90	0.00	0.90	0.677	0.61
	Sunflower Seed	Z$/kg	9.60	0.00	9.60	0.677	6.50
	Ground Nuts Seed	Z$/kg	4.84	0.00	4.84	0.677	3.28
	Onion Seed	Z$/kg	9.60	0.00	9.60	0.677	6.50
Fertilizer	Compound D	Z$/t	1296.00	129.60	1166.40	0.650	758.16
	Compound L	Z$/t	1657.00	165.70	1491.30	0.650	969.35
	Compound S	Z$/t	1779.00	177.90	1601.10	0.650	1040.72
	Ammonium Nitrate	Z$/t	1222.00	122.20	1099.80	0.650	714.87
	Manure	Z$/t	50.00	5.00	45.00	0.650	29.25
	Gypsum	Z$/t	310.00	31.00	279.00	0.650	181.35
Chemical	Carbaryl	Z$/kg	84.00	8.40	75.60	0.650	49.14
	Agrithrin	Z$/l	136.00	13.60	122.40	0.650	79.56
	Atrazine	Z$/kg	32.40	3.24	29.16	0.650	18.95
	Endosulfan	Z$/kg	81.00	8.10	72.90	0.650	47.39
	Dithane	Z$/kg	63.50	6.35	57.15	0.650	37.15
	Thiram	Z$/kg	54.00	5.40	48.60	0.650	31.59
	Mancozeb	Z$/kg	63.00	6.30	56.70	0.650	36.86
	Copper Oxychloride	Z$/kg	23.30	2.33	20.97	0.650	13.63
	Thiodan	Z$/kg	7.00	0.70	6.30	0.650	4.10
	Rogor	Z$/l	50.00	5.00	45.00	0.650	29.25
Machinery & Equipment	Scotch Cart	Z$/Unit	3000.00	300.00	2700.00	0.851	2297.70
	Cultivater	Z$/Unit	625.80	62.58	563.22	0.851	479.30
	Wheelburrow	Z$/Unit	586.00	58.60	527.40	0.851	448.82
	Plough	Z$/Unit	395.40	39.54	355.86	0.851	302.84
	Sickle	Z$/Unit	33.00	3.30	29.70	0.851	25.27
	Hoe	Z$/Unit	20.00	2.00	18.00	0.851	15.32
	Napsak Sprayer	Z$/Unit	759.00	75.90	683.10	0.851	581.32
	Tractor	Z$/Unit · day	400.00	0.00	400.00	0.851	340.40
Lanour	Skilled Labour	Z$/man · day	11.00	0.00	11.00	0.816	8.98
	Unskilled Labour	Z$/man · day	6.00	0.00	6.00	0.409	2.45
	Draft Animal Labour	Z$/ox · day	5.52	0.00	5.52	0.409	2.26
Charge	Handling Charge	Z$/ha	16.70	0.00	16.70	0.816	13.63
	ZFA Fee	Z$/ha	8.33	0.00	8.33	0.816	6.80

Table L-10-a Conversion Factors for Construction Cost, Operation & Management Cost and Replacement Cost (Scenario A)

Cost Items	1 Share(%)	Traded Good & Services	Non-traded Good & Service	Skilled Labour	Unskilled Labour	Transferred Values	2 Conversion Factor for Each Cost Item	1 X 2
		1.000	0.852	0.817	0.409	0.000		
Investment Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.781
(1) Kudu Dam	16.4	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.126
(2) Medium Size Dam	2.0	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.015
(3) Kudu Irrigation Project	77.6	45.0	20.0	10.0	20.0	5.0	100.0	
	n.r.	0.450	0.170	0.082	0.082	0.000	0.784	0.608
(4) Agriculture Research Center	1.6	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.014
(5) Rehabilitation of Road	2.0	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.015
(6) Expansion of Collection & Deposit Points	0.3	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.003
(7) Rehabilitation of Boreholes	0.1	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.001
(8) Land Reclamation & Soil Conservation	0.0	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.000
Operation & Maintenance Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.760
(1) Salary & Wages	30.3	0.0	0.0	30.0	65.0	5.0	100.0	
	n.r.	0.000	0.000	0.245	0.266	0.000	0.511	0.155
(2) Fuel & Oil	13.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.114
(3) Spare Parts & Materials	50.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.437
(4) General Expenses	6.7	30.0	50.0	5.0	10.0	5.0	100.0	
	n.r.	0.300	0.426	0.041	0.041	0.000	0.808	0.054
Replacement Cost	100.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.874

Table L-10-b Conversion Factors for Construction Cost, Operation & Management Cost and Replacement Cost (Scenario B-1)

Cost Items	1 Share(%)	Traded Good & Services	Non-traded Good & Service	Skilled Labour	Unskilled Labour	Transferred Values	2 Conversion Factor for Each Cost Item	1 X2
		1.000	0.852	0.817	0.409	0		
Investment Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.755
(1) Kudu Dam	0.0	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.000
(2) Medium Size Dam	25.1	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.193
(3) Kudu Irrigation Project	3.2	45.0	20.0	10.0	20.0	5.0	100.0	
	n.r.	0.450	0.170	0.082	0.082	0.000	0.784	0.025
(4) Agriculture Research Center	7.6	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.065
(5) Rehabilitation of Road	15.0	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.110
(6) Expansion of Collection & Deposit Points	2.2	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.019
(7) Rehabilitation of Boreholes	0.5	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.004
(8) Land Reclamation & Soil Conservation	46.4	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.340
Operation & Maintenance Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.760
(1) Salary & Wages	30.3	0.0	0.0	30.0	65.0	5.0	100.0	
	n.r.	0.000	0.000	0.245	0.266	0.000	0.511	0.155
(2) Fuel & Oil	13.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.114
(3) Spare Parts & Materials	50.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.437
(4) General Expenses	6.7	30.0	50.0	5.0	10.0	5.0	100.0	
	n.r.	0.300	0.426	0.041	0.041	0.000	0.808	0.054
Replacement Cost	100.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.874

Table L-10-c Conversion Factors for Construction Cost, Operation & Management Cost and Replacement Cost (Scenario B-2)

Cost Items	1 Share(%)	Traded Good & Services	Non-traded Good & Service	Skilled Labour	Unskilled Labour	Transferred Values	2 Conversion Factor for Each Cost Item	1 X 2
		1.000	0.852	0.817	0.409	0		
Investment Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.744
(1) Kudu Dam	0.0	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.000
(2) Medium Size Dam	0.0	35.0	30.0	10.0	20.0	5.0	100.0	
	n.r.	0.350	0.256	0.082	0.082	0.000	0.769	0.000
(3) Kudu Irrigation Project	0.0	45.0	20.0	10.0	20.0	5.0	100.0	
	n.r.	0.450	0.170	0.082	0.082	0.000	0.784	0.000
(4) Agriculture Research Center	5.9	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.050
(5) Rehabilitation of Road	21.2	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.155
(6) Expansion of Collection & Deposit Points	3.2	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.027
(7) Rehabilitation of Boreholes	0.7	60.0	15.0	10.0	10.0	5.0	100.0	
	n.r.	0.600	0.128	0.082	0.041	0.000	0.850	0.006
(8) Land Reclamation & Soil Conservation	69.0	10.0	55.0	10.0	20.0	5.0	100.0	
	n.r.	0.100	0.469	0.082	0.082	0.000	0.732	0.505
Operation & Maintenance Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	0.760
(1) Salary & Wages	30.3	0.0	0.0	30.0	65.0	5.0	100.0	
	n.r.	0.000	0.000	0.245	0.266	0.000	0.511	0.155
(2) Fuel & Oil	13.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.114
(3) Spare Parts & Materials	50.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.437
(4) General Expenses	6.7	30.0	50.0	5.0	10.0	5.0	100.0	
	n.r.	0.300	0.426	0.041	0.041	0.000	0.808	0.054
Replacement Cost	100.0	75.0	5.0	5.0	10.0	5.0	100.0	
	n.r.	0.750	0.043	0.041	0.041	0.000	0.874	0.874

Table L-11-a Financial & Economic Project Cost (Scenario A)

(Unit: thousand Z$)

Cost Items	Financial Cost	Conversion Factor	Economic Cost
Investment Cost			
(1) Kudu Dam	430,500	0.769	331,055
(2) Medium Size Dam	237,700	0.769	182,791
(3) Kudu Irrigation Project	1,826,000	0.784	1,431,584
(4) Agriculture Research Center	41,200	0.850	35,020
(5) Rehabilitation of Road	53,400	0.732	39,089
(6) Expansion of Collection & Deposit Points	8,000	0.850	6,800
(7) Rehabilitation of Boreholes	1,700	0.850	1,445
(8) Land Reclamation & Soil Conservation	0	0.732	0
Total	2,598,500	0.780	2,027,784
Operation & Maintenance Cost			
(1) Salary & Wages	9,583	0.511	4,897
(2) Fuel & Oil	4,112	0.874	3,594
(3) Spare Parts & Materials	15,814	0.874	13,821
(4) General Expenses	2,119	0.808	1,712
Total	31,628	0.760	24,024
Replacement Cost			
Total	25,950	0.874	22,680

Table L-11-b Financial & Economic Project Cost (Scenario B-1)

(Unit: thousand Z$)

Cost Items	Financial Cost	Conversion Factor	Economic Cost
Investment Cost			
(1) Kudu Dam	0	0.769	0
(2) Medium Size Dam	97,900	0.769	75,285
(3) Kudu Irrigation Project	0	0.784	0
(4) Agriculture Research Center	27,200	0.850	23,120
(5) Rehabilitation of Road	53,400	0.732	39,089
(6) Expansion of Collection & Deposit Points	8,000	0.850	6,800
(7) Rehabilitation of Boreholes	1,700	0.850	1,445
(8) Land Reclamation & Soil Conservation	286,600	0.732	209,791
Total	474,800	0.749	355,530
Operation & Maintenance Cost			
(1) Salary & Wages	3,151	0.511	1,610
(2) Fuel & Oil	1,362	0.874	1,190
(3) Spare Parts & Materials	5,220	0.874	4,562
(4) General Expenses	697	0.808	563
Total	10,430	0.760	7,926
Replacement Cost			
Total	23,860	0.874	20,854

Table L-11-c Financial & Economic Project Cost (Scenario B-2)

(Unit: thousand Z$)

Cost Items	Financial Cost	Conversion Factor	Economic Cost
Investment Cost			
(1) Kudu Dam	0	0.769	0
(2) Medium Size Dam	0	0.769	0
(3) Kudu Irrigation Project	0	0.784	0
(4) Agriculture Research Center	14,800	0.850	12,580
(5) Rehabilitation of Road	53,400	0.732	39,089
(6) Expansion of Collection & Deposit Points	8,000	0.850	6,800
(7) Rehabilitation of Boreholes	1,700	0.850	1,445
(8) Land Reclamation & Soil Conservation	300,800	0.732	220,186
Total	378,700	0.740	280,099
Operation & Maintenance Cost			
(1) Salary & Wages	2,531	0.511	1,293
(2) Fuel & Oil	1,086	0.874	949
(3) Spare Parts & Materials	4,176	0.874	3,650
(4) General Expenses	560	0.808	452
Total	8,353	0.760	6,345
Replacement Cost			
Total	18,900	0.874	16,519

Table L-12-a Net Production Value (Scenario A, Irrigated, 2010, Communal & Resettlement Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (ZS/kg)	Gross Production Value (ZS/ha)	Production Cost (ZS/ha)	Net Production Value (ZS/ha)	Area (ha)	Total Net Production Value (ZS)
COTTON	F	2,700	3.591	9,695.7	2713.4	6,982.3	3675.0	25,659,953
	E	2,700	3.804	10,270.8	1461.5	8,809.3	3675.0	32,374,178
MAIZE	F	5,400	0.789	4,260.6	1884.5	2,376.1	7350.0	17,464,335
	E	5,400	0.937	5,059.8	1076.2	3,983.6	7350.0	29,279,460
WHEAT	F	4,500	1.358	6,111.0	2355.6	3,755.4	7350.0	27,602,190
	E	4,500	1.518	6,831.0	1369.3	5,461.7	7350.0	40,143,495
SUGAR BEAN	F	1,350	2.240	3,024.0	1547.1	1,476.9	1837.5	2,713,804
	E	1,350	1.906	2,573.1	870.3	1,702.8	1837.5	3,128,895
GREEN MAIZE	F	4,050	0.400	1,620.0	1324.9	295.1	1837.5	542,246
	E	4,050	0.340	1,377.0	779.8	597.2	1837.5	1,097,355
GROUNDNUTS	F	2,250	2.355	5,298.8	1992.5	3,306.3	1837.5	6,075,234
	E	2,250	2.004	4,509.0	1175.1	3,333.9	1837.5	6,126,041
SUNFLOWER	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
ONION	F	9,000	2.000	18,000.0	3766.9	14,233.1	1837.5	26,153,321
	E	9,000	1.702	15,318.0	2094.4	13,223.6	1837.5	24,298,365
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	25725.0	106,211,083
	E	n. r.	n. r.	n. r.	n. r.	n. r.	25725.0	136,447,789

NOTES : F = Financial Value
E = Economic Value

Table L-12-b Net Production Value (Scenario A, Rainfed, 2005, Communal & Resettlement Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (Z$/kg)	Gross Production Value (Z$/ha)	Production Cost (Z$/ha)	Net Production Value (Z$/ha)	Area (ha)	Total Net Production Value (Z$)
COTTON	F	900	3.591	3,231.9	2476.1	755.8	32643.6	24,672,033
	E	900	3.804	3,423.6	1353.6	2,070.0	32643.6	67,572,252
MAIZE	F	1,300	0.789	1,025.7	1164.9	-139.2	40804.5	-5679986
	E	1,300	0.937	1,218.1	689.9	528.2	40804.5	21,552,937
WHEAT	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
SUGAR BEAN	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GREEN MAIZE	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GROUNDNUTS	F	560	2.355	1,318.8	1242.3	76.5	4080.45	312,154
	E	560	2.004	1,122.2	736.3	385.9	4080.45	1,574,809
SUNFLOWER	F	500	1.472	736.0	729.7	6.3	4080.45	25,707
	E	500	1.253	626.5	471.7	154.8	4080.45	631,654
ONION	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	81609.0	19,304,201
	E	n. r.	n. r.	n. r.	n. r.	n. r.	81609.0	90,699,998

NOTES : F = Financial Value
E = Economic Value

Table L-12-c Net Production Value (Scenario A, Rainfed, 2010, Communal & Resettlement Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (ZS/kg)	Gross Production Value (ZS/ha)	Production Cost (ZS/ha)	Net Production Value (ZS/ha)	Area (ha)	Total Net Production Value (ZS)
COTTON	F	900	3.591	3,231.9	2476.1	755.8	17228.0	13,020,922
	E	900	3.804	3,423.6	1353.6	2,070.0	17228.0	35,661,960
MAIZE	F	1,300	0.789	1,025.7	1164.9	-139.2	21535.0	-2997672
	E	1,300	0.937	1,218.1	689.9	528.2	21535.0	11,374,787
WHEAT	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
SUGAR BEAN	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GREEN MAIZE	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GROUNDNUTS	F	560	2.355	1,318.8	1242.3	76.5	2153.5	164,743
	E	560	2.004	1,122.2	736.3	385.9	2153.5	831,122
SUNFLOWER	F	500	1.472	736.0	729.7	6.3	2153.5	13,567
	E	500	1.253	626.5	471.7	154.8	2153.5	333,362
ONION	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	43070.0	10,187,993
	E	n. r.	n. r.	n. r.	n. r.	n. r.	43070.0	47,867,869

NOTES : F = Financial Value
E = Economic Value

Table L-12-d Net Production Value (Scenario A, Irrigated, 2010, Small-Scale Commercial Farm)

Crop	Item	Target Yield (Kg/ha)	Farmgate Price (Z$/kg)	Gross Production Value (Z$/ha)	Production Cost (Z$/ha)	Net Production Value (Z$/ha)	Area (ha)	Total Net Production Value (Z$)
COTTON	F	3,000	3.591	10,773.0	2713.4	8,059.6	2950.0	23,775,820
	E	3,000	3.804	11,412.0	1461.5	9,950.5	2950.0	29,353,975
MAIZE	F	6,000	0.789	4,734.0	1884.5	2,849.5	1475.0	4,203,013
	E	6,000	0.937	5,622.0	1076.2	4,545.8	1475.0	6,705,055
WHEAT	F	5,000	1.358	6,790.0	2355.6	4,434.4	1475.0	6,540,740
	E	5,000	1.518	7,590.0	1369.3	6,220.7	1475.0	9,175,533
SUGAR BEAN	F	1,500	2.240	3,360.0	1547.1	1,812.9	737.5	1,337,014
	E	1,500	1.906	2,859.0	870.3	1,988.7	737.5	1,466,666
GREEN MAIZE	F	4,500	0.400	1,800.0	1324.9	475.1	737.5	350,386
	E	4,500	0.340	1,530.0	779.8	750.2	737.5	553,273
GROUNDNUTS	F	2,500	2.355	5,887.5	1992.5	3,895.0	737.5	2,872,563
	E	2,500	2.004	5,010.0	1175.1	3,834.9	737.5	2,828,239
SUNFLOWER	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
ONION	F	10,000	2.000	20,000.0	3766.9	16,233.1	1475.0	23,943,823
	E	10,000	1.702	17,020.0	2094.4	14,925.6	1475.0	22,015,260
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	9587.5	63,023,358
	E	n. r.	n. r.	n. r.	n. r.	n. r.	9587.5	72,098,000

NOTES : F = Financial Value
E = Economic Value

Table L-12-e Net Production Value (Scenario A, Irrigated, 2010, Large-Scale Commercial Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (ZS/kg)	Gross Production Value (ZS/ha)	Production Cost (ZS/ha)	Net Production Value (ZS/ha)	Area (ha)	Total Net Production Value (ZS)
COTTON	F	3,000	3.591	10,773.0	3491.6	7,281.4	2200.0	16,019,080
	E	3,000	3.804	11,412.0	1844.9	9,567.1	2200.0	21,047,620
MAIZE	F	6,000	0.789	4,734.0	2342.7	2,391.3	1100.0	2,630,430
	E	6,000	0.937	5,622.0	1328.5	4,293.5	1100.0	4,722,850
WHEAT	F	5,000	1.358	6,790.0	2813.8	3,976.2	1100.0	4,373,820
	E	5,000	1.518	7,590.0	1621.5	5,968.5	1100.0	6,565,350
SUGAR BEAN	F	1,500	2.240	3,360.0	2005.3	1,354.7	0.0	0
	E	1,500	1.906	2,859.0	1122.6	1,736.4	0.0	0
GREEN MAIZE	F	4,500	0.400	1,800.0	1758.3	41.7	0.0	0
	E	4,500	0.340	1,530.0	1021.9	508.1	0.0	0
GROUNDNUTS	F	2,500	2.355	5,887.5	2810.7	3,076.8	1100.0	3,384,480
	E	2,500	2.004	5,010.0	1574.4	3,435.6	1100.0	3,779,160
SUNFLOWER	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
ONION	F	10,000	2.000	20,000.0	4585.1	15,414.9	1650.0	25,434,585
	E	10,000	1.702	17,020.0	2494.3	14,525.7	1650.0	23,967,405
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	7150.0	51,842,395
	E	n. r.	n. r.	n. r.	n. r.	n. r.	7150.0	60,082,385

NOTES : F = Financial Value
E = Economic Value

Table 9-12-f Net Production Value (Scenario B-1, Irrigated, 2010, Communal & Resettlement Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (Z$/kg)	Gross Production Value (Z$/ha)	Production Cost (Z$/ha)	Net Production Value (Z$/ha)	Area (ha)	Total Net Production Value (Z$)
COTTON	F	2,700	3.591	9,695.7	2713.4	6,982.3	82.8	577,785
	E	2,700	3.804	10,270.8	1461.5	8,809.3	82.8	728,970
MAIZE	F	5,400	0.789	4,260.6	1884.5	2,376.1	165.5	393,245
	E	5,400	0.937	5,059.8	1076.2	3,983.6	165.5	659,286
WHEAT	F	4,500	1.358	6,111.0	2355.6	3,755.4	165.5	621,519
	E	4,500	1.518	6,831.0	1369.3	5,461.7	165.5	903,911
SUGAR BEAN	F	1,350	2.240	3,024.0	1547.1	1,476.9	41.375	61,107
	E	1,350	1.906	2,573.1	870.3	1,702.8	41.375	70,453
GREEN MAIZE	F	4,050	0.400	1,620.0	1324.9	295.1	41.375	12,210
	E	4,050	0.340	1,377.0	779.8	597.2	41.375	24,709
GROUNDNUTS	F	2,250	2.355	5,298.8	1992.5	3,306.3	41.375	136,796
	E	2,250	2.004	4,509.0	1175.1	3,333.9	41.375	137,940
SUNFLOWER	F	0	0.000	0.0	0.0	0.0	0.000	0
	E	0	0.000	0.0	0.0	0.0	0.000	0
ONION	F	9,000	2.000	18,000.0	3766.9	14,233.1	41.375	588,895
	E	9,000	1.702	15,318.0	2094.4	13,223.6	41.375	547,126
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	579.25	2,391,556
	E	n. r.	n. r.	n. r.	n. r.	n. r.	579.25	3,072,396

NOTES : F = Financial Value
E = Economic Value

Table L-12-g Net Production Value (Scenario B-1, Rainfed, 2010, Communal & Resettlement Farm)

Crop \ Item		Target Yield (Kg/ha)	Farmgate Price (ZS/kg)	Gross Production Value (ZS/ha)	Production Cost (ZS/ha)	Net Production Value (ZS/ha)	Area (ha)	Total Net Production Value (ZS)
COTTON	F	900	3.591	3,231.9	2476.1	755.8	46177.2	34,900,728
	E	900	3.804	3,423.6	1353.6	2,070.0	46177.2	95,586,804
MAIZE	F	1,300	0.789	1,025.7	1164.9	-139.2	57721.5	- 8034833
	E	1,300	0.937	1,218.1	689.9	528.2	57721.5	30,488,496
WHEAT	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
SUGAR BEAN	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GREEN MAIZE	F	0	0.000	0.0	0.0	0.0	0.00	0
	E	0	0.000	0.0	0.0	0.0	0.00	0
GROUNDNUTS	F	560	2.355	1,318.8	1242.3	76.5	5772.15	441,569
	E	560	2.004	1,122.2	736.3	385.9	5772.15	2,227,704
SUNFLOWER	F	500	1.472	736.0	729.7	6.3	5772.15	36,365
	E	500	1.253	626.5	471.7	154.8	5772.15	893,529
ONION	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	115443.0	27,307,464
	E	n. r.	n. r.	n. r.	n. r.	n. r.	115443.0	128,303,004

NOTES : F = Financial Value
E = Economic Value

Table L-12-h Net Production Value (Scenario B-2, Rainfed, 2010, Communal & Resettlement Farm)

Crop	Item	Target Yield (Kg/ha)	Farmgate Price (Z$/kg)	Gross Production Value (Z$/ha)	Production Cost (Z$/ha)	Net Production Value (Z$/ha)	Area (ha)	Total Net Production Value (Z$)
COTTON	F	900	3.591	3,231.9	2476.1	755.8	46977.6	35,505,670
	E	900	3.804	3,423.6	1353.6	2,070.0	46977.6	97,243,632
MAIZE	F	1,300	0.789	1,025.7	1164.9	-139.2	58722.0	-8174102
	E	1,300	0.937	1,218.1	689.9	528.2	58722.0	31,016,960
WHEAT	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
SUGAR BEAN	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GREEN MAIZE	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
GROUNDNUTS	F	560	2.355	1,318.8	1242.3	76.5	5872.2	449,223
	E	560	2.004	1,122.2	736.3	385.9	5872.2	2,266,317
SUNFLOWER	F	500	1.472	736.0	729.7	6.3	5872.2	36,995
	E	500	1.253	626.5	471.7	154.8	5872.2	909,017
ONION	F	0	0.000	0.0	0.0	0.0	0.0	0
	E	0	0.000	0.0	0.0	0.0	0.0	0
TOTAL	F	n. r.	n. r.	n. r.	n. r.	n. r.	117444.0	27,780,791
	E	n. r.	n. r.	n. r.	n. r.	n. r.	117444.0	130,526,909

NOTES : F = Financial Value
E = Economic Value

Table L-13-a Crop Budget (Without Case, Communal & Resettlement Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/kg)	MAIZE Quantity	MAIZE Cost(Z$/ha)	COTTON Quantity	COTTON Cost(Z$/ha)	WHEAT Quantity	WHEAT Cost(Z$/ha)	SUGAR BEAN Quantity	SUGAR BEAN Cost(Z$/ha)	GREEN MAIZE Quantity	GREEN MAIZE Cost(Z$/ha)	GROUND NUTS Quantity	GROUND NUTS Cost(Z$/ha)	SUNFLOWER Quantity	SUNFLOWER Cost(Z$/ha)	ONION Quantity	ONION Cost(Z$/ha)
1.Yield		kg/ha		1,006		702		0		0		0		379		303		0	
2.Farmgate	F	Z$/kg		0.789		3.591		0.000		0.000		0.000		2.355		1.472		0.000	
Price	E			0.937		3.804		0.000		0.000		0.000		2.004		1.253		0.000	
3.G.Production	F	Z$/ha			793.8		2520.9		0.0		0.0		0.0		892.5		446.0		0.0
Value	E				942.6		2670.4		0.0		0.0		0.0		759.5		379.7		0.0
4.Production	F	Z$/ha			962.7		1827.2		0.0		0.0		0.0		807.9		597.4		0.0
Cost	E				564.1		1002.3		0.0		0.0		0.0		467.6		391.0		0.0
Seed																			
Standard	F	kg/ha	n.r.	25.0	82.5	25.0	15.8		0.0		0.0		0.0	50.0	242.0	30.0	258.0		0.0
Variety	E		n.r.	25.0	55.8	25.0	10.8		0.0		0.0		0.0	50.0	164.0	30.0	195.0		0.0
New	F	kg/ha	n.r.	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Variety	E		n.r.	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Fertilizer																			
Compound D	F	kg/ha	1.296	200.0	259.2	0.0	0.0		0.0		0.0		0.0	35.0	45.4	0.0	0.0		0.0
	E		0.758	200.0	151.6	0.0	0.0		0.0		0.0		0.0	35.0	26.5	0.0	0.0		0.0
Compound L	F	kg/ha	1.657	0.0	0.0	250.0	414.3		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.969	0.0	0.0	250.0	242.3		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	53.4		0.0
	E		1.040	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	31.2		0.0
Ammonium	F	kg/ha	1.222	200.0	244.4	150.0	183.3		0.0		0.0		0.0	20.0	24.4	0.0	0.0		0.0
Nitrate	E		0.715	200.0	143.0	150.0	107.3		0.0		0.0		0.0	20.0	14.3	0.0	0.0		0.0
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.029	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.181	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Chemical																			
Carbaryl	F	kg/ha	84.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		43.14	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Agrishrin	F	l/ha	136.00	0.0	0.0	2.5	340.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		79.56	0.0	0.0	2.5	198.9		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Atracine	F	kg/ha	32.40	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		18.95	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Endosulfan	F	kg/ha	81.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		47.39	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Ortiane	F	kg/ha	63.50	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		37.15	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Thiram	F	kg/ha	54.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		31.59	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		36.86	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Copper	F	kg/ha	23.30	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Oxychloride	E		13.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Triazfan	F	kg/ha	7.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		4.10	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Roger	F	l/ha	50.00	0.0	0.0	1.5	75.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		29.25	0.0	0.0	1.5	43.9		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	1.0	50.0	1.0	50.0		0.0		0.0		0.0	1.0	50.0	1.0	50.0		0.0
	E		42.55	1.0	42.6	1.0	42.6		0.0		0.0		0.0	1.0	42.6	1.0	42.6		0.0
Cultivator	F	ha	10.43	1.0	10.4	1.0	10.4		0.0		0.0		0.0	1.0	10.4	1.0	10.4		0.0
	E		8.88	1.0	8.9	1.0	8.9		0.0		0.0		0.0	1.0	8.9	1.0	8.9		0.0
Ridger/Burrow	F	ha	9.77	1.0	9.8	1.0	9.8		0.0		0.0		0.0	1.0	9.8	1.0	9.8		0.0
	E		8.31	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
Plough	F	ha	6.59	1.0	6.6	1.0	6.6		0.0		0.0		0.0	1.0	6.6	1.0	6.6		0.0
	E		5.61	1.0	5.6	1.0	5.6		0.0		0.0		0.0	1.0	5.6	1.0	5.6		0.0
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6		0.0		0.0		0.0	1.0	0.6	1.0	0.6		0.0
	E		0.47	1.0	0.5	1.0	0.5		0.0		0.0		0.0	1.0	0.5	1.0	0.5		0.0
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
	E		0.28	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
Knapsack	F	ha	12.65	0.0	0.0	1.0	12.7		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Sprayer	E		10.77	0.0	0.0	1.0	10.8		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Tractor	F	ha	57.14	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		48.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Labor																			
Family Labor	F	man -	6.00	30.0	180.0	85.0	510.0		0.0		0.0		0.0	50.0	300.0	10.0	60.0		0.0
	E	day/ha	2.45	30.0	73.5	85.0	208.3		0.0		0.0		0.0	50.0	122.5	10.0	24.5		0.0
Unskilled Labor	F	man -	6.00	0.0	0.0	25.0	150.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E	day/ha	2.45	0.0	0.0	25.0	61.3		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Draft Animal	F	ox -	5.52	10.0	55.2	20.0	110.4		0.0		0.0		0.0	10.0	55.2	10.0	55.2		0.0
Labor	E	day/ha	2.26	10.0	22.6	20.0	45.2		0.0		0.0		0.0	10.0	22.6	10.0	22.6		0.0
Charge																			
Handling	F	ha	16.70	1.0	16.7	1.0	16.7		0.0		0.0		0.0	1.0	16.7	1.0	16.7		0.0
Charge	E		13.63	1.0	13.6	1.0	13.6		0.0		0.0		0.0	1.0	13.6	1.0	13.6		0.0
ZIMFEE	F	ha	8.33	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
	E		6.80	1.0	6.8	1.0	6.8		0.0		0.0		0.0	1.0	6.8	1.0	6.8		0.0
Interest																			
AFC Loan	F	ha	38.17	1.0	38.2	1.0	38.2		0.0		0.0		0.0	1.0	38.2	1.0	38.2		0.0
Interest	E		31.15	1.0	31.2	1.0	31.2		0.0		0.0		0.0	1.0	31.2	1.0	31.2		0.0
Net Production	F	Z$/ha			-168.3		643.7		0.0		0.0		0.0		84.7		-151.4		0.0
Value	E				378.5		1668.1		0.0		0.0		0.0		291.9		-11.3		0.0

Table L-13-b Crop Budget (Without Case, Small-Scale Commercial Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/Kg)	MAIZE		COTTON		WHEAT		SUGAR BEAN		GREEN MAIZE		GROUND NUTS		SUNFLOWER		ONION	
				Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)
1 Yield		kg/ha		2,340		1,300		0		0		0		504		719		0	
2 Farmgate Price	F	Z$/Kg		0.789		3.591		0.000		0.000		0.000		2.355		1.472		0.000	
	E			0.937		3.804		0.000		0.000		0.000		2.004		1.253		0.000	
3 G.Production Value	F	Z$/ha			1846.3		4668.3		0.0		0.0		0.0		1993.4		1058.4		0.0
	E				2192.6		4945.2		0.0		0.0		0.0		1611.2		900.9		0.0
4 Production Cost	F	Z$/ha			1376.7		2463.9		0.0		0.0		0.0		1664.7		693.4		0.0
	E				816.1		1346.5		0.0		0.0		0.0		873.1		456.0		0.0
Seed																			
Standard Variety	F	kg/ha	n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	40.0	384.0		0.0
	E		n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	40.0	260.0		0.0
New Variety	F	kg/ha	n.r.	30.0	148.5	30.0	28.5	0.0	0.0	0.0	0.0		0.0	60.0	435.6		0.0		0.0
	E		n.r.	30.0	100.5	30.0	19.2	0.0	0.0	0.0	0.0		0.0	60.0	295.2		0.0		0.0
Fertilizer																			
Compound D	F	kg/ha	1.296	250.0	324.0	0.0	0.0		0.0		0.0		0.0	200.0	259.2	0.0	0.0		0.0
	E		0.758	250.0	189.5	0.0	0.0		0.0		0.0		0.0	200.0	151.6	0.0	0.0		0.0
Compound L	F	kg/ha	1.657	0.0	0.0	300.0	497.1		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.960	0.0	0.0	300.0	290.7		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	53.4		0.0
	E		1.040	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	31.2		0.0
Ammonium Nitrate	F	kg/ha	1.222	250.0	305.5	200.0	244.4		0.0		0.0		0.0	100.0	122.2	0.0	0.0		0.0
	E		0.715	250.0	178.8	200.0	143.0		0.0		0.0		0.0	100.0	71.5	0.0	0.0		0.0
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.029	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0		0.0		0.0		0.0	100.0	31.0	0.0	0.0		0.0
	E		0.181	0.0	0.0	0.0	0.0		0.0		0.0		0.0	100.0	18.1	0.0	0.0		0.0
Chemical																			
Carbaryl	F	kg/ha	88.00	2.5	220.0	3.5	294.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		49.14	2.5	122.9	3.5	172.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Agrithrin	F	l/ha	136.00	0.0	0.0	3.5	476.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		79.56	0.0	0.0	3.5	278.5		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Atrazine	F	kg/ha	32.40	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		18.95	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Endosulfan	F	kg/ha	81.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		47.39	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Dithane	F	kg/ha	63.50	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		37.15	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Thiuram	F	kg/ha	54.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	2.0	108.0	0.0	0.0		0.0
	E		31.59	0.0	0.0	0.0	0.0		0.0		0.0		0.0	2.0	63.2	0.0	0.0		0.0
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		36.86	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Copper Oxychloride	F	kg/ha	23.30	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		13.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Thiodan	F	kg/ha	7.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		4.10	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Rogor	F	l/ha	50.00	0.0	0.0	1.5	75.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		29.25	0.0	0.0	1.5	43.9		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	1.0	50.0	1.0	50.0		0.0		0.0		0.0	1.0	50.0	1.0	50.0		0.0
	E		42.55	1.0	42.6	1.0	42.6		0.0		0.0		0.0	1.0	42.6	1.0	42.6		0.0
Cultivator	F	ha	10.43	1.0	10.4	1.0	10.4		0.0		0.0		0.0	1.0	10.4	1.0	10.4		0.0
	E		8.88	1.0	8.9	1.0	8.9		0.0		0.0		0.0	1.0	8.9	1.0	8.9		0.0
Wheelbarrow	F	ha	9.77	1.0	9.8	1.0	9.8		0.0		0.0		0.0	1.0	9.8	1.0	9.8		0.0
	E		8.31	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
Plough	F	ha	6.59	1.0	6.6	1.0	6.6		0.0		0.0		0.0	1.0	6.6	1.0	6.6		0.0
	E		5.61	1.0	5.6	1.0	5.6		0.0		0.0		0.0	1.0	5.6	1.0	5.6		0.0
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6		0.0		0.0		0.0	1.0	0.6	1.0	0.6		0.0
	E		0.47	1.0	0.5	1.0	0.5		0.0		0.0		0.0	1.0	0.5	1.0	0.5		0.0
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
	E		0.28	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
Knapsack Sprayer	F	ha	12.65	1.0	12.7	1.0	12.7		0.0		0.0		0.0	1.0	12.7	0.0	0.0		0.0
	E		10.77	1.0	10.8	1.0	10.8		0.0		0.0		0.0	1.0	10.8	0.0	0.0		0.0
Tractor	F	ha	57.14	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		48.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Labor																			
Family Labor	F	man -	6.00	30.0	180.0	85.0	510.0		0.0		0.0		0.0	50.0	300.0	10.0	60.0		0.0
	E	day/ha	2.45	30.0	73.5	85.0	208.3		0.0		0.0		0.0	50.0	122.5	10.0	24.5		0.0
Unskilled Labor	F	man -	6.00	0.0	0.0	25.0	150.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E	day/ha	2.45	0.0	0.0	25.0	61.3		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Draft Animal Labor	F	ox -	5.52	10.0	55.2	20.0	110.4		0.0		0.0		0.0	10.0	55.2	10.0	55.2		0.0
	E	day/ha	2.26	10.0	22.6	20.0	45.2		0.0		0.0		0.0	10.0	22.6	10.0	22.6		0.0
Charge																			
Handling Charge	F	ha	16.70	1.0	16.7	1.0	16.7		0.0		0.0		0.0	1.0	16.7	1.0	16.7		0.0
	E		13.63	1.0	13.6	1.0	13.6		0.0		0.0		0.0	1.0	13.6	1.0	13.6		0.0
ZFA Fee	F	ha	8.33	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
	E		6.80	1.0	6.8	1.0	6.8		0.0		0.0		0.0	1.0	6.8	1.0	6.8		0.0
Interest :																			
AFC Loan Interest	F	ha	38.17	1.0	38.2	1.0	38.2		0.0		0.0		0.0	1.0	38.2	1.0	38.2		0.0
	E		31.35	1.0	31.2	1.0	31.2		0.0		0.0		0.0	1.0	31.2	1.0	31.2		0.0
Net Production Value	F	Z$/ha			469.5		2204.4		0.0		0.0		0.0		428.7		364.9		0.0
	E				1376.4		3598.7		0.0		0.0		0.0		738.1		444.9		0.0

Table L-13-c : Crop Budget (Irrigated, Communal & Resettlement Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/kg)	MAIZE Quantity	MAIZE Cost(Z$/ha)	COTTON Quantity	COTTON Cost(Z$/ha)	WHEAT Quantity	WHEAT Cost(Z$/ha)	SUGAR BEAN Quantity	SUGAR BEAN Cost(Z$/ha)	GREEN MAIZE Quantity	GREEN MAIZE Cost(Z$/ha)	GROUND NUTS Quantity	GROUND NUTS Cost(Z$/ha)	SUNFLOWER Quantity	SUNFLOWER Cost(Z$/ha)	ONION Quantity	ONION Cost(Z$/ha)
1 Yield		kg/ha		5,400		2,700		4,500		1,350		4,050		2,250		0		9,000	
2 Farmgate	F	Z$/Kg		0.789		3.591		1.358		2.240		0.400		2.355		0.000		2.000	
Price	E			0.937		3.804		1.518		1.906		0.340		2.004		0.000		1.702	
3 G.Production	F	Z$/ha			4260.6		9695.7		6111.0		3024.0		1620.0		5298.8		0.0		18000.0
Value	E				5059.8		10270.8		6831.0		2573.1		1377.0		4509.0		0.0		15318.6
4 Production	F	Z$/ha			1894.5		2743.4		2355.6		1547.1		1324.9		1992.5		0.0		3766.9
Cost	E				1076.2		1461.5		1369.3		870.3		779.8		1175.1		0.0		2094.4
Seed																			
Standard	F	kg/ha	n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Variety	E		n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
New	F	kg/ha	n.r.	40.0	135.0	40.0	38.0	80.0	390.4	80.0	108.0	40.0	135.0	80.0	530.8		0.0	30.0	432.0
Variety	E		n.r.	40.0	134.0	40.0	25.6	80.0	264.0	80.0	72.8	40.0	134.0	80.0	393.6		0.0	30.0	292.5
Fertilizer																			
Compound D	F	kg/ha	1.296	300.0	388.8	0.0	0.0	600.0	777.6	300.0	388.8	200.0	259.2	300.0	388.8		0.0	0.0	0.0
	E		0.758	300.0	227.4	0.0	0.0	600.0	454.8	300.0	227.4	200.0	151.6	300.0	227.4		0.0	0.0	0.0
Compound L	F	kg/ha	1.657	0.0	0.0	350.0	580.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.969	0.0	0.0	350.0	339.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	1245.3
	E		1.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	728.0
Ammonium	F	kg/ha	1.222	300.0	366.6	250.0	305.5	350.0	427.7	200.0	244.4	200.0	244.4	200.0	244.4		0.0	300.0	366.6
Nitrate	E		0.715	300.0	214.5	250.0	178.8	350.0	250.3	200.0	143.0	200.0	143.0	200.0	143.0		0.0	300.0	214.5
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Chemical																			
Carbaryl	F	kg/ha	84.00	2.5	210.0	3.0	252.0	0.0	0.0	1.0	84.0	1.5	126.0	0.0	0.0		0.0	0.0	0.0
	E		49.14	2.5	122.9	3.0	147.4	0.0	0.0	1.0	49.1	1.5	73.7	0.0	0.0		0.0	0.0	0.0
Agrithion	F	l/ha	136.00	0.0	0.0	2.0	272.0	1.0	136.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	340.0
	E		79.56	0.0	0.0	2.0	159.1	1.0	79.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	198.9
Atrazine	F	kg/ha	32.40	3.0	97.2	0.0	0.0	0.0	0.0	0.0	0.0	1.5	48.6	0.0	0.0		0.0	0.0	0.0
	E		18.95	3.0	56.9	0.0	0.0	0.0	0.0	0.0	0.0	1.5	28.4	0.0	0.0		0.0	0.0	0.0
Endosulfan	F	kg/ha	81.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		47.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Dithane	F	kg/ha	63.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	95.3
	E		37.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	55.7
Thiram	F	kg/ha	54.00	0.0	0.0	3.0	162.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	108.0		0.0	3.0	162.0
	E		31.59	0.0	0.0	3.0	94.8	0.0	0.0	0.0	0.0	0.0	0.0	2.0	63.2		0.0	3.0	94.8
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0	0.0	0.0	1.0	63.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		36.86	0.0	0.0	0.0	0.0	0.0	0.0	1.0	36.9	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Copper	F	kg/ha	23.30	0.0	0.0	0.0	0.0	0.0	0.0	1.5	35.0	0.0	0.0	2.0	46.6		0.0	0.0	0.0
Oxychloride	E		13.63	0.0	0.0	0.0	0.0	0.0	0.0	1.5	20.4	0.0	0.0	2.0	27.3		0.0	0.0	0.0
Thiodan	F	kg/ha	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		4.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Roger	F	l/ha	50.00	0.0	0.0	2.5	125.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		29.25	0.0	0.0	2.5	73.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0		0.0	1.0	50.0
	E		42.55	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6		0.0	1.0	42.6
Cultivator	F	ha	10.43	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4		0.0	1.0	10.4
	E		8.88	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9		0.0	1.0	8.9
Ridger/Burrow	F	ha	9.77	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8		0.0	1.0	9.8
	E		8.31	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3		0.0	1.0	8.3
Plough	F	ha	6.59	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6		0.0	1.0	6.6
	E		5.61	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6		0.0	1.0	5.6
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6		0.0	1.0	0.6
	E		0.47	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5		0.0	1.0	0.5
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
	E		0.28	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
Knapsack	F	ha	12.65	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7		0.0	1.0	12.7
Sprayer	E		10.77	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8		0.0	1.0	10.8
Tractor	F	ha	57.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		48.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Labor																			
Family Labor	F	man -	6.00	60.0	360.0	100.0	600.0	60.0	360.0	60.0	360.0	40.0	240.0	60.0	360.0		0.0	150.0	900.0
	E	day/ha	2.45	60.0	147.0	100.0	245.0	60.0	147.0	60.0	147.0	40.0	98.0	60.0	147.0		0.0	150.0	367.5
Unskilled Labor	F	man -	6.00	0.0	0.0	40.0	240.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E	day/ha	2.45	0.0	0.0	40.0	98.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Draft Animal	F	ox -	5.52	20.0	110.4	20.0	110.4	20.0	110.4	20.0	110.4	10.0	55.2	20.0	110.4		0.0	20.0	110.4
Labor	E	day/ha	2.26	20.0	45.2	20.0	45.2	20.0	45.2	20.0	45.2	10.0	22.6	20.0	45.2		0.0	20.0	45.2
Charge																			
Handling	F	ha	16.70	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7		0.0	1.0	16.7
Charge	E		13.63	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6		0.0	1.0	13.6
AA Fee	F	ha	8.33	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3		0.0	1.0	8.3
	E		6.80	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8		0.0	1.0	6.8
Interest:																			
AFC Loan	F	ha	38.17	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2		0.0		0.0
Interest	E		31.15	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2		0.0		0.0
Net Production	F	Z$/ha			2376.1		6582.3		3755.4		1476.9		295.1		3306.2		0.0		14233.1
Value	E				3983.6		8809.3		5461.7		1702.8		597.2		3333.9		0.0		13223.6

Table L-13-d Crop Budget (Irrigated, Small-Scale Commercial Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/Kg)	MAIZE		COTTON		WHEAT		SUGAR BEAN		GREEN MAIZE		GROUND NUTS		SUNFLOWER		ONION	
				Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)
1 Yield		kg/ha		6,000		3,000		5,000		1,500		4,500		2,500		0		10,000	
2 Farmgate	F	Z$/Kg		0.789		3.591		1.358		2.240		0.406		2.355		0.000		2.000	
Price	E			0.937		3.804		1.519		1.900		0.340		2.004		0.000		1.702	
3 G.Production	F	Z$/ha			4734.0		10773.0		6790.0		3360.0		1500.0		5887.5		0.0		20000.0
Value	E				5622.0		11412.0		7590.0		2859.0		1530.0		5010.0		0.0		17020.0
4 Production	F	Z$/ha			1884.5		2713.4		2355.6		1547.1		1324.9		1992.5		0.0		3766.9
Cost	E				1076.2		1469.5		1369.3		870.3		779.8		1175.1		0.0		2084.4
Seed																			
Standard	F	kg/ha	n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Variety	E		n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
New	F	kg/ha	n.r.	40.0	138.0	40.0	38.0	80.0	390.4	80.0	108.0	40.0	198.0	80.0	580.8		0.0	30.0	432.0
Variety	E		n.r.	40.0	134.0	40.0	25.6	80.0	264.0	80.0	72.8	40.0	134.0	80.0	393.6		0.0	30.0	292.5
Fertilizer																			
Compound D	F	kg/ha	1.296	300.0	388.8	0.0	0.0	600.0	777.6	300.0	388.8	200.0	259.2	300.0	388.8		0.0	0.0	0.0
	E		0.758	300.0	227.4	0.0	0.0	600.0	454.8	300.0	227.4	200.0	151.6	300.0	227.4		0.0	0.0	0.0
Compound L	F	kg/ha	1.657	0.0	0.0	350.0	580.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.969	0.0	0.0	350.0	339.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	1245.3
	E		1.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	728.0
Ammonium	F	kg/ha	1.222	300.0	366.6	250.0	305.5	350.0	427.7	200.0	244.4	200.0	244.4	200.0	244.4		0.0	300.0	366.6
Nitrate	E		0.715	300.0	214.5	250.0	178.8	350.0	250.3	200.0	143.0	200.0	143.0	200.0	143.0		0.0	300.0	214.5
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.079	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Chemical																			
Carbaryl	F	kg/ha	84.00	2.5	210.0	3.0	252.0	0.0	0.0	1.0	84.0	1.5	126.0	0.0	0.0		0.0	0.0	0.0
	E		49.14	2.5	122.9	3.0	147.4	0.0	0.0	1.0	49.1	1.5	73.7	0.0	0.0		0.0	0.0	0.0
Agritrin	F	l/ha	136.00	0.0	0.0	2.0	272.0	1.0	136.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	340.0
	E		79.56	0.0	0.0	2.0	159.1	1.0	79.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	198.9
Atrazine	F	kg/ha	32.49	3.0	97.2	0.0	0.0	0.0	0.0	0.0	0.0	1.5	48.6	0.0	0.0		0.0	0.0	0.0
	E		18.95	3.0	56.9	0.0	0.0	0.0	0.0	0.0	0.0	1.5	28.4	0.0	0.0		0.0	0.0	0.0
Endosulfan	F	kg/ha	31.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		47.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Orthene	F	kg/ha	63.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	95.3
	E		37.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	55.7
Thiram	F	kg/ha	54.00	0.0	0.0	3.0	162.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	108.0		0.0	3.0	162.0
	E		31.59	0.0	0.0	3.0	94.8	0.0	0.0	0.0	0.0	0.0	0.0	2.0	63.2		0.0	3.0	94.8
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0	0.0	0.0	1.0	63.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		36.86	0.0	0.0	0.0	0.0	0.0	0.0	1.0	36.9	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Copper	F	kg/ha	23.30	0.0	0.0	0.0	0.0	0.0	0.0	1.5	35.0	0.0	0.0	2.0	46.6		0.0	0.0	0.0
Oxychloride	E		13.63	0.0	0.0	0.0	0.0	0.0	0.0	1.5	20.4	0.0	0.0	2.0	27.3		0.0	0.0	0.0
Thiodan	F	kg/ha	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		4.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Rogor	F	l/ha	50.00	0.0	0.0	2.5	125.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		29.25	0.0	0.0	2.5	73.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0	1.0	50.0		0.0	1.0	50.0
	E		42.55	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6	1.0	42.6		0.0	1.0	42.6
Cultivator	F	ha	13.43	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4	1.0	10.4		0.0	1.0	10.4
	E		8.88	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9	1.0	8.9		0.0	1.0	8.9
Wheelbarrow	F	ha	9.77	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8	1.0	9.8		0.0	1.0	9.8
	E		8.31	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3		0.0	1.0	8.3
Plough	F	ha	6.59	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6		0.0	1.0	6.6
	E		5.61	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6		0.0	1.0	5.6
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6		0.0	1.0	0.6
	E		0.47	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5		0.0	1.0	0.5
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
	E		0.28	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
Knapsack	F	ha	12.65	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7		0.0	1.0	12.7
Sprayer	E		10.77	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8		0.0	1.0	10.8
Tractor	F	ha	57.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		48.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Labor																			
Skilled Labor	F	man -	6.00	60.0	360.0	100.0	600.0	60.0	360.0	60.0	360.0	40.0	240.0	60.0	360.0		0.0	150.0	900.0
	E	day/ha	2.45	60.0	147.0	100.0	245.0	60.0	147.0	60.0	147.0	40.0	98.0	60.0	147.0		0.0	150.0	367.5
Unskilled Labor	F	man -	6.00	0.0	0.0	40.0	240.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E	day/ha	2.45	0.0	0.0	40.0	98.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Draft Animal	F	ox -	5.52	20.0	110.4	20.0	110.4	20.0	110.4	20.0	110.4	10.0	55.2	20.0	110.4		0.0	20.0	110.4
Labor	E	day/ha	2.26	20.0	45.2	20.0	45.2	20.0	45.2	20.0	45.2	10.0	22.6	20.0	45.2		0.0	20.0	45.2
Charge																			
Handling	F	ha	16.70	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7		0.0	1.0	16.7
Charge	E		13.63	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6		0.0	1.0	13.6
ZFA Fee	F	ha	8.33	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3	1.0	8.3		0.0	1.0	8.3
	E		6.80	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8		0.0	1.0	6.8
Interest :																			
AFC Loan	F	ha	38.17	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2		0.0		0.0
Interest	E		31.15	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2		0.0		0.0
Net Production	F	Z$/ha			2849.5		8059.6		4434.4		1812.9		475.1		3895.0		0.0		16233.1
Value	E				4545.8		9950.5		6220.7		1958.7		750.2		3834.9		0.0		14325.6

Table L-13-e Crop Budget (Irrigated, Large-Scale Commercial Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/Kg)	MAIZE		COTTON		WHEAT		SUGAR BEAN		GREEN MAIZE		GROUNDNUTS		SUNFLOWER		ONION	
				Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)	Quantity	Cost(Z$/ha)
1 Yield		kg/ha		6,000		3,000		5,000		1,500		4,500		2,500		0		10,000	
2 Farmgate	F	Z$/Kg		0.789		3.591		1.355		2.240		0.400		2.355		0.000		2.000	
Price	E			0.937		3.804		1.518		1.900		0.340		2.004		0.000		1.702	
3 G Production	F	Z$/ha			4734.0		10773.0		6790.0		3360.0		1800.0		5887.5		0.0		20000.0
Value	E				5622.0		11412.0		7590.0		2859.0		1530.0		5010.0		0.0		17020.0
4 Production	F	Z$/ha			2342.7		3491.6		2813.8		2005.3		1758.3		2810.7		0.0		4585.1
Cost	E				1328.5		1844.9		1621.5		1122.6		1021.9		1574.4		0.0		2494.3
Seed																			
Standard	F	kg/ha	n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Variety	E		n.r.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
New	F	kg/ha	n.r.	40.0	198.0	40.0	38.0	80.0	390.4	80.0	108.0	40.0	158.0	80.0	580.8		0.0	30.0	432.0
Variety	E		n.r.	40.0	134.9	40.0	25.6	80.0	264.0	80.0	72.8	40.0	134.0	80.0	393.6		0.0	30.0	292.5
Fertilizer																			
Compound D	F	kg/ha	1.296	300.0	388.8	0.0	0.0	600.0	777.6	300.0	388.8	200.0	259.2	300.0	388.8		0.0	0.0	0.0
	E		0.758	300.0	227.4	0.0	0.0	600.0	454.8	300.0	227.4	200.0	151.6	300.0	227.4		0.0	0.0	0.0
Compound L	F	kg/ha	1.657	0.0	0.0	350.0	580.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.969	0.0	0.0	350.0	339.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	1245.3
	E		1.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	700.0	728.0
Ammonium	F	kg/ha	1.222	300.0	366.6	250.0	305.5	350.0	427.7	200.0	244.4	200.0	244.4	200.0	244.4		0.0	300.0	366.6
Nitrate	E		0.715	300.0	214.5	250.0	178.8	350.0	250.3	200.0	143.0	200.0	143.0	200.0	143.0		0.0	300.0	214.5
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		0.181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Chemical																			
Carbaryl	F	kg/ha	84.00	2.5	210.0	3.0	252.0	0.0	0.0	1.0	84.0	1.5	126.0	0.0	0.0		0.0	0.0	0.0
	E		49.14	2.5	122.9	3.0	147.4	0.0	0.0	1.0	49.1	1.5	73.7	0.0	0.0		0.0	0.0	0.0
Agrithrin	F	l/ha	136.00	0.0	0.0	2.0	272.0	1.0	136.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	340.0
	E		79.56	0.0	0.0	2.0	159.1	1.0	79.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5	198.9
Atrazine	F	kg/ha	32.40	3.0	97.2	0.0	0.0	0.0	0.0	0.0	0.0	1.5	48.6	0.0	0.0		0.0	0.0	0.0
	E		18.95	3.0	56.9	0.0	0.0	0.0	0.0	0.0	0.0	1.5	28.4	0.0	0.0		0.0	0.0	0.0
Endosulfan	F	kg/ha	31.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		47.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Dithane	F	kg/ha	63.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	95.3
	E		37.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5	55.7
Thiram	F	kg/ha	54.00	0.0	0.0	3.0	162.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	108.0		0.0	3.0	162.0
	E		31.55	0.0	0.0	3.0	94.8	0.0	0.0	0.0	0.0	0.0	0.0	2.0	63.2		0.0	3.0	94.8
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0	0.0	0.0	1.0	63.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		36.86	0.0	0.0	0.0	0.0	0.0	0.0	1.0	36.9	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Copper	F	kg/ha	23.30	0.0	0.0	0.0	0.0	0.0	0.0	1.5	35.0	0.0	0.0	2.0	46.6		0.0	0.0	0.0
Oxychloride	E		13.63	0.0	0.0	0.0	0.0	0.0	0.0	1.5	20.4	0.0	0.0	2.0	27.3		0.0	0.0	0.0
Thiodan	F	kg/ha	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		4.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Rogor	F	l/ha	50.00	0.0	0.0	2.5	125.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		29.25	0.0	0.0	2.5	73.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		42.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Cultivator	F	ha	10.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		8.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Wheelbarrow	F	ha	9.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	E		8.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Plough	F	ha	6.59	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6	1.0	6.6		0.0	1.0	6.6
	E		5.61	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6	1.0	5.6		0.0	1.0	5.6
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6	1.0	0.6		0.0	1.0	0.6
	E		0.47	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5		0.0	1.0	0.5
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
	E		0.28	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3		0.0	1.0	0.3
Knapsack	F	ha	12.65	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7	1.0	12.7		0.0	1.0	12.7
Sprayer	E		10.77	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8	1.0	10.8		0.0	1.0	10.8
Truck &	F	ha	57.14	1.0	57.1	1.0	57.1	1.0	57.1	1.0	57.1	1.0	57.1	1.0	57.1		0.0	1.0	57.1
Tractor	E		48.63	1.0	48.6	1.0	48.6	1.0	48.6	1.0	48.6	1.0	48.6	1.0	48.6		0.0	1.0	48.6
Labor																			
Family Labor	F	man ·	6.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	360.0		0.0	0.0	0.0
	E	day/ha	2.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	147.0		0.0	0.0	0.0
Hired Labor	F	man ·	10.00	60.0	600.0	140.0	1400.0	60.0	600.0	60.0	600.0	40.0	400.0	60.0	600.0		0.0	150.0	1500.0
	E	day/ha	4.09	60.0	245.4	140.0	572.6	60.0	245.4	60.0	245.4	40.0	163.6	60.0	245.4		0.0	150.0	613.5
Draft Animal	F	ox ·	5.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Labor	E	day/ha	2.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Charge																			
Handling	F	ha	16.70	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7	1.0	16.7		0.0	1.0	16.7
Charge	E		13.63	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6	1.0	13.6		0.0	1.0	13.6
Pump Operating	F	ha	350.00	1.0	350.0	1.0	350.0	1.0	350.0	1.0	350.0	1.0	350.0	1.0	350.0		0.0	1.0	350.0
Charge	E		217.00	1.0	217.0	1.0	217.0	1.0	217.0	1.0	217.0	1.0	217.0	1.0	217.0		0.0	1.0	217.0
Interest :																			
AFC Loan	F	ha	38.17	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2	1.0	38.2		0.0		0.0
Interest	E		31.15	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2	1.0	31.2		0.0		0.0
Net Production	F	Z$/ha			2391.3		7281.4		3976.2		1354.7		41.7		3076.8		0.0		15414.9
Value	E				4233.5		9567.1		5908.5		1736.4		508.1		3435.6		0.0		14525.7

Table L-13-f Crop Budget (Improved Rainfed, Communal & Resettlement Farm)

Item \ Crop		Quantity Unit	Unit Cost (Z$/Kg)	MAIZE Quantity	MAIZE Cost(Z$/ha)	COTTON Quantity	COTTON Cost(Z$/ha)	WHEAT Quantity	WHEAT Cost(Z$/ha)	SUGAR BEAN Quantity	SUGAR BEAN Cost(Z$/ha)	GREEN MAIZE Quantity	GREEN MAIZE Cost(Z$/ha)	GROUND NUTS Quantity	GROUND NUTS Cost(Z$/ha)	SUNFLOWER Quantity	SUNFLOWER Cost(Z$/ha)	ONION Quantity	ONION Cost(Z$/ha)
1 Yield		kg/ha		1,300		900		0		0		0		560		500		0	
2 Farmgate	F	Z$/Kg		0.789		3.591		0.000		0.000		0.000		2.355		1.472		0.000	
Price	E			0.937		3.804		0.000		0.000		0.000		2.004		1.253		0.000	
3 G.Production	F	Z$/ha			1025.7		3231.9		0.0		0.0		0.0		1318.8		736.0		0.0
Value	E				1218.1		3423.6		0.0		0.0		0.0		1122.2		626.5		0.0
4 Production	F	Z$/ha			1164.9		2476.1		0.0		0.0		0.0		1242.3		729.7		0.0
Cost	E				689.9		1353.6		0.0		0.0		0.0		736.3		471.7		0.0
Seed																			
Standard	F	kg/ha	n.r.	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	288.0		0.0
Variety	E		n.r.	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	30.0	195.0		0.0
New	F	kg/ha	n.r.	25.0	123.8	30.0	28.5		0.0		0.0		0.0	50.0	363.0	0.0	0.0		0.0
Variety	E		n.r.	25.0	83.8	30.0	19.2		0.0		0.0		0.0	50.0	246.0	0.0	0.0		0.0
Fertilizer																			
Compound D	F	kg/ha	1.296	250.0	324.0	0.0	0.0		0.0		0.0		0.0	150.0	194.4	0.0	0.0		0.0
	E		0.758	250.0	189.5	0.0	0.0		0.0		0.0		0.0	150.0	113.7	0.0	0.0		0.0
Compound L	F	kg/ha	1.657	0.0	0.0	300.0	437.1		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.969	0.0	0.0	300.0	290.7		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Compound S	F	kg/ha	1.779	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	50.0	89.0		0.0
	E		1.040	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	50.0	52.0		0.0
Ammonium	F	kg/ha	1.222	200.0	244.4	300.0	366.6		0.0		0.0		0.0	100.0	122.2	0.0	0.0		0.0
Nitrate	E		0.715	200.0	143.0	300.0	214.5		0.0		0.0		0.0	100.0	71.5	0.0	0.0		0.0
Manure	F	kg/ha	0.050	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.029	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Gypsum	F	kg/ha	0.310	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		0.181	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Chemical																			
Carbaryl	F	kg/ha	84.00	1.0	84.0	3.0	252.0		0.0		0.0		0.0	0.0	0.0	1.0	84.0		0.0
	E		49.14	1.0	49.1	3.0	147.4		0.0		0.0		0.0	0.0	0.0	1.0	49.1		0.0
Agrithrin	F	l/ha	136.00	0.0	0.0	3.0	408.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		79.56	0.0	0.0	3.0	238.7		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Atrazine	F	kg/ha	32.40	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		18.95	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Endosulfan	F	kg/ha	81.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		47.39	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Orthene	F	kg/ha	63.59	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		37.19	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Thiram	F	kg/ha	54.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	1.0	54.0	0.0	0.0		0.0
	E		31.59	0.0	0.0	0.0	0.0		0.0		0.0		0.0	1.0	31.6	0.0	0.0		0.0
Mancozeb	F	kg/ha	63.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		36.86	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Copper	F	kg/ha	23.30	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Oxychloride	E		13.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Thiodan	F	kg/ha	7.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		4.10	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Rogor	F	l/ha	50.00	0.0	0.0	2.5	125.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		29.25	0.0	0.0	2.5	73.1		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Machinery & Equipment																			
Scotch Cart	F	ha	50.00	1.0	50.0	1.0	50.0		0.0		0.0		0.0	1.0	50.0	1.0	50.0		0.0
	E		42.55	1.0	42.6	1.0	42.6		0.0		0.0		0.0	1.0	42.6	1.0	42.6		0.0
Cultivator	F	ha	10.43	1.0	10.4	1.0	10.4		0.0		0.0		0.0	1.0	10.4	1.0	10.4		0.0
	E		8.88	1.0	8.9	1.0	8.9		0.0		0.0		0.0	1.0	8.9	1.0	8.9		0.0
Wheelburrow	F	ha	9.77	1.0	9.8	1.0	9.8		0.0		0.0		0.0	1.0	9.8	1.0	9.8		0.0
	E		8.31	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
Plough	F	ha	6.59	1.0	6.6	1.0	6.6		0.0		0.0		0.0	1.0	6.6	1.0	6.6		0.0
	E		5.61	1.0	5.6	1.0	5.6		0.0		0.0		0.0	1.0	5.6	1.0	5.6		0.0
Sickle	F	ha	0.55	1.0	0.6	1.0	0.6		0.0		0.0		0.0	1.0	0.6	1.0	0.6		0.0
	E		0.47	1.0	0.5	1.0	0.5		0.0		0.0		0.0	1.0	0.5	1.0	0.5		0.0
Hoe	F	ha	0.33	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
	E		0.28	1.0	0.3	1.0	0.3		0.0		0.0		0.0	1.0	0.3	1.0	0.3		0.0
Knapsack	F	ha	12.65	1.0	12.7	1.0	12.7		0.0		0.0		0.0	1.0	12.7	1.0	12.7		0.0
Sprayer	E		10.77	1.0	10.8	1.0	10.8		0.0		0.0		0.0	1.0	10.8	1.0	10.8		0.0
Tractor	F	ha	57.14	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E		49.63	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Labor																			
Family Labor	F	man -	6.00	30.0	180.0	110.0	660.0		0.0		0.0		0.0	50.0	300.0	10.0	60.0		0.0
	E	day/ha	2.45	30.0	73.5	110.0	269.5		0.0		0.0		0.0	50.0	122.5	10.0	24.5		0.0
Unskilled Labor	F	man -	6.00	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
	E	day/ha	2.45	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.0
Draft Animal	F	ox -	5.52	10.0	55.2	20.0	110.4		0.0		0.0		0.0	10.0	55.2	10.0	55.2		0.0
Labor	E	day/ha	2.26	10.0	22.6	20.0	45.2		0.0		0.0		0.0	10.0	22.6	10.0	22.6		0.0
Charge																			
Handling	E	ha	16.70	1.0	16.7	1.0	16.7		0.0		0.0		0.0	1.0	16.7	1.0	16.7		0.0
Charge	E		13.63	1.0	13.6	1.0	13.6		0.0		0.0		0.0	1.0	13.6	1.0	13.6		0.0
GA Fee	F	ha	8.33	1.0	8.3	1.0	8.3		0.0		0.0		0.0	1.0	8.3	1.0	8.3		0.0
	E		6.80	1.0	6.8	1.0	6.8		0.0		0.0		0.0	1.0	6.8	1.0	6.8		0.0
Interest:																			
AFC Loan	F	ha	38.17	1.0	38.2	1.0	38.2		0.0		0.0		0.0	1.0	38.2	1.0	38.2		0.0
Interest	E		31.15	1.0	31.2	1.0	31.2		0.0		0.0		0.0	1.0	31.2	1.0	31.2		0.0
Net Production	F	Z$/ha			-139.2		755.8		0.0		0.0		0.0		76.5		6.3		0.0
Value	E				528.2		2070.0		0.0		0.0		0.0		385.9		154.8		0.0

Table L-14 Benefit from Road Improvement

District / Type of Improvement		Saving of Fixed Cost (Z$/t・km/Unit)	Saving of Varieble Cost (Z$/t・km/Unit)	Saving of VOC (Z$/t・km/Unit)	Length of Road to be improved (km)	Average Daily Trafic (Unit/day)	Annnal Saving of Total VOC (Z$)
Kadoma	Gravel (Constructed)	0.05	0.10	0.15	35	100	191,625
	Track→Gravel	0.025	0.05	0.075	97	100	265,538
	Total	n.r.	n.r	n.r.	132	n.r.	457,163
Gokwe North	Gravel→Narrow Tarred	0.02	0.04	0.06	0	50	0
	Track→Gravel	0.01	0.02	0.03	54	50	29,565
	Total	n.r.	n.r.	n.r.	54	n.r.	29,565
Gokwe South	Gravel→Narrow Tarred	0.02	0.04	0.06	0	50	0
	Track→Gravel	0.01	0.02	0.03	98	50	53,655
	Total	n.r.	n.r.	n.r.	98	n.r.	53,655
Kwekwe	Gravel→Narrow Tarred	0.02	0.04	0.06	0	50	0
	Track→Gravel	0.01	0.02	0.03	30	50	16,425
	Total	n.r.	n.r.	n.r.	30	n.r.	16,425
Kadoma to GokweNorth	Gravel→Narrow Tarred	0.02	0.04	0.06	70	100	153,300
	Track→Gravel	0.01	0.02	0.03	0	100	0
	Total	n.r.	n.r.	n.r.	70	n.r.	153,300
Grand Total		n.r.	n.r.	n.r.	384	n.r.	710,108

Table L-15 Social Benefit Index from Shadow Income Weight

Type of Household	Adjusted Average Household Income	Shadow Income Weight	Social Benefit Index					
			Scenario A		Scenario B-1		Scenario B-2	
			Share (%)	Index	Share (%)	Index	Share (%)	Index
Average Index	3816	n.r.	100	1.26	100	1.51	100	1.51
Large-scale Commercial Employees	4407	0.87	19.3	0.17	0	0	0	0
Small-scale Commercial Farmers	4027	0.95	23.2	0.22	0	0	0	0
Communal & Resettlement Farmers	2527	1.51	57.5	0.87	100	1.51	100	1.51

Table L-16-a Social Internal Rate of Return (SIRR)

Scenario: A

(Unit: Z$1,000)

Project	Project Cost			Project	Net	Present Worth Value			
	Investment	O & M Cost	Total			D. R. = 0.10		D. R. = 0.11	
Year	Cost	Replacem't		Benefit	Benefit	Pj Cost	Pj Benefit	Pj Cost	Pj Benefit
1	3,535	0	3,535	0	-3,535	3,214	0	3,185	0
2	3,535	0	3,535	0	-3,535	2,921	0	2,869	0
3	24,904	0	24,904	0	-24,904	18,711	0	18,210	0
4	37,292	0	37,292	665	-36,627	25,471	454	24,565	438
5	95,107	1,774	96,881	5,514	-91,367	60,159	3,424	57,494	3,272
6	283,757	1,774	285,531	11,016	-274,515	161,175	6,218	152,657	5,890
7	271,332	2,574	273,906	11,423	-262,483	140,557	5,862	131,929	5,502
8	323,396	2,574	325,970	14,442	-311,528	152,067	6,737	141,447	6,267
9	397,896	3,510	401,406	32,774	-368,632	170,235	13,899	156,920	12,812
10	326,565	10,751	337,316	73,292	-264,024	130,050	28,257	118,797	25,812
11	74,501	14,438	88,939	131,514	42,575	31,173	46,095	28,219	41,727
12	43,728	17,202	60,930	186,151	125,221	19,414	59,313	17,416	53,210
13	49,287	19,363	68,650	218,658	150,008	19,885	63,337	17,678	56,308
14	49,287	21,523	70,810	243,739	172,929	18,646	64,184	16,428	56,540
15	43,661	24,003	67,664	263,141	195,477	16,198	62,994	14,142	54,998
16	0	24,003	24,003	282,594	258,591	5,224	61,501	4,520	53,210
17	0	24,003	24,003	296,318	272,315	4,749	58,625	4,072	50,265
18	0	24,003	24,003	304,310	280,307	4,317	54,733	3,668	46,505
19	0	24,003	24,003	309,436	285,433	3,925	50,595	3,305	42,602
20	0	23,203	23,203	309,450	286,247	3,449	45,998	2,878	38,382
21	0	23,203	23,203	310,957	287,754	3,135	42,020	2,593	34,747
22	0	23,203	23,203	312,088	288,885	2,850	38,339	2,336	31,417
23	0	23,203	23,203	312,842	289,639	2,591	34,938	2,104	28,372
24	0	23,203	23,203	313,220	290,017	2,356	31,800	1,890	25,592
25	0	45,882	45,882	313,220	267,338	4,235	28,909	3,377	23,056
26	0	23,203	23,203	313,220	290,017	1,947	26,281	1,539	20,771
27	0	23,203	23,203	313,220	290,017	1,770	23,892	1,386	18,712
28	0	23,203	23,203	313,220	290,017	1,609	21,720	1,249	16,858
29	0	23,203	23,203	313,220	290,017	1,463	19,745	1,125	15,187
30	0	23,203	23,203	313,220	290,017	1,330	17,950	1,014	13,682
31	0	23,203	23,203	313,220	290,017	1,209	16,318	913	12,326
32	0	23,203	23,203	313,220	290,017	1,099	14,835	823	11,105
33	0	23,203	23,203	313,220	290,017	999	13,486	741	10,004
34	0	23,203	23,203	313,220	290,017	908	12,260	668	9,013
35	0	45,882	45,882	313,220	267,338	1,633	11,146	1,189	8,120
36	0	23,203	23,203	313,220	290,017	751	10,132	542	7,315
37	0	23,203	23,203	313,220	290,017	682	9,211	488	6,590
38	0	23,203	23,203	313,220	290,017	620	8,374	440	5,937
39	0	23,203	23,203	313,220	290,017	564	7,613	396	5,349
40	0	23,203	23,203	313,220	290,017	513	6,921	357	4,819
41	0	23,203	23,203	313,220	290,017	466	6,291	322	4,341
42	0	23,203	23,203	313,220	290,017	424	5,719	290	3,911
43	0	23,203	23,203	313,220	290,017	385	5,200	261	3,523
44	0	23,203	23,203	313,220	290,017	350	4,727	235	3,174
45	0	45,882	45,882	313,220	267,338	629	4,297	419	2,860
46	0	23,203	23,203	313,220	290,017	289	3,906	191	2,576
47	0	23,203	23,203	313,220	290,017	263	3,551	172	2,321
48	0	23,203	23,203	313,220	290,017	239	3,228	155	2,091
49	0	23,203	23,203	313,220	290,017	217	2,935	140	1,884
50	0	23,203	23,203	313,220	290,017	198	2,668	126	1,697
Total	2,027,783	1,002,828	3,030,611	2,087,264	9,056,653	1,027,262	1,070,640	947,883	891,099
							S. I. R. R. =	10.4%	

Note: Project Year 1 = 1996, D.R. : Discount Rate

Table L-16-b Social Internal Rate of Return (SIRR)

Scenario: B-1

(Unit: Z$1,000)

Project	Project Cost			Project	Net	Present Worth Value			
	Investment	O & M Cost	Total			D.R. = 0.09		D.R. = 0.10	
Year	Cost	Replacem't		Benefit	Benefit	Pj Cost	Pj Benefit	Pj Cost	Pj Benefit
1	1,231	0	1,231	0	-1,231	1,129	0	1,119	0
2	1,231	0	1,231	0	-1,231	1,036	0	1,017	0
3	37,683	0	37,683	0	-37,683	29,098	0	28,312	0
4	48,165	363	48,528	-2	-48,530	34,378	-1	33,145	-1
5	42,683	2,499	45,182	418	-44,764	29,365	272	28,054	260
6	26,688	3,110	29,798	3,120	-26,678	17,768	1,860	16,820	1,761
7	26,744	3,719	30,463	6,078	-24,385	16,664	3,325	15,632	3,119
8	32,171	4,331	36,502	9,646	-26,856	18,319	4,841	17,028	4,500
9	32,172	4,941	37,113	13,729	-23,384	17,088	6,321	15,740	5,822
10	26,688	5,834	32,522	18,330	-14,192	13,738	7,743	12,539	7,067
11	16,015	6,443	22,458	22,846	388	8,703	8,854	7,871	8,007
12	16,015	6,805	22,820	27,464	4,644	8,113	9,764	7,271	8,751
13	16,015	7,168	23,183	32,183	9,000	7,562	10,497	6,715	9,322
14	16,015	7,530	23,545	36,669	13,124	7,046	10,973	6,200	9,656
15	16,015	7,893	23,908	40,926	17,018	6,564	11,236	5,723	9,797
16	0	7,893	7,893	45,362	37,469	1,988	11,425	1,718	9,872
17	0	7,893	7,893	52,010	44,117	1,824	12,018	1,562	10,290
18	0	7,893	7,893	55,355	47,462	1,673	11,735	1,420	9,956
19	0	7,893	7,893	58,272	50,379	1,535	11,333	1,291	9,528
20	0	7,893	7,893	60,904	53,011	1,408	10,867	1,173	9,053
21	0	7,893	7,893	64,731	56,838	1,292	10,590	1,067	8,747
22	0	7,893	7,893	65,311	57,418	1,185	9,809	970	8,023
23	0	7,893	7,893	67,085	59,192	1,088	9,243	881	7,492
24	0	7,893	7,893	68,572	60,679	998	8,668	801	6,962
25	0	28,747	28,747	68,572	39,825	3,334	7,952	2,653	6,329
26	0	7,893	7,893	68,572	60,679	840	7,296	662	5,754
27	0	7,893	7,893	68,572	60,679	770	6,693	602	5,231
28	0	7,893	7,893	68,572	60,679	707	6,141	547	4,755
29	0	7,893	7,893	68,572	60,679	648	5,634	498	4,323
30	0	7,893	7,893	68,572	60,679	595	5,168	452	3,930
31	0	7,893	7,893	68,572	60,679	546	4,742	411	3,573
32	0	7,893	7,893	68,572	60,679	501	4,350	374	3,248
33	0	7,893	7,893	68,572	60,679	459	3,991	340	2,952
34	0	7,893	7,893	68,572	60,679	421	3,661	309	2,684
35	0	28,747	28,747	68,572	39,825	1,408	3,359	1,023	2,440
36	0	7,893	7,893	68,572	60,679	355	3,082	255	2,218
37	0	7,893	7,893	68,572	60,679	325	2,827	232	2,017
38	0	7,893	7,893	68,572	60,679	299	2,594	211	1,833
39	0	7,893	7,893	68,572	60,679	274	2,380	192	1,667
40	0	7,893	7,893	68,572	60,679	251	2,183	174	1,515
41	0	7,893	7,893	68,572	60,679	231	2,003	159	1,377
42	0	7,893	7,893	68,572	60,679	212	1,838	144	1,252
43	0	7,893	7,893	68,572	60,679	194	1,686	131	1,138
44	0	7,893	7,893	68,572	60,679	178	1,547	119	1,035
45	0	28,747	28,747	68,572	39,825	595	1,419	394	941
46	0	7,893	7,893	68,572	60,679	150	1,302	98	859
47	0	7,893	7,893	68,572	60,679	137	1,194	89	777
48	0	7,893	7,893	68,572	60,679	126	1,096	81	707
49	0	7,893	7,893	68,572	60,679	116	1,005	74	643
50	0	7,893	7,893	68,572	60,679	106	922	67	584
Total	355,531	399,453	754,984	2,531,881	1,776,897	243,341	257,442	224,364	211,762
							S.I.R.R. =	9.5%	

Note: Project Year 1 = 1996, D.R. : Discount Rate

Table L-16-c Social Internal Rate of Return (SIRR)

Scenario: B-2

(Unit: Z$1,000)

Project	Project Cost			Project	Net	Present Worth Value			
	Investment	O & M Cost	Total			D.R. = 0.10		D.R. = 0.11	
Year	Cost	Replacem't		Benefit	Benefit	Pj Cost	Pj Benefit	Pj Cost	Pj Benefit
1	1,068	0	1,068	0	-1,068	971	0	962	0
2	1,068	0	1,068	0	-1,068	883	0	867	0
3	38,538	0	38,538	0	-38,538	28,954	0	28,179	0
4	38,538	381	38,919	4	-38,923	26,582	3	25,637	3
5	32,803	2,535	35,338	453	-34,885	21,942	281	20,971	269
6	16,808	2,916	19,724	2,857	-16,867	11,134	1,613	10,545	1,527
7	16,808	3,296	20,104	5,371	-14,733	10,317	2,756	9,683	2,587
8	16,808	3,677	20,485	8,347	-12,138	9,556	3,894	8,889	3,622
9	16,808	4,057	20,865	11,786	-9,079	8,849	4,998	8,157	4,607
10	16,808	4,438	21,246	15,684	-5,562	8,191	6,047	7,483	5,524
11	16,808	4,818	21,626	19,870	-1,756	7,580	6,964	6,862	6,304
12	16,808	5,199	22,007	24,343	2,336	7,012	7,756	6,290	6,958
13	16,808	5,579	22,387	29,104	6,717	6,485	8,436	5,765	7,495
14	16,808	5,960	22,768	33,687	10,919	5,996	8,871	5,282	7,815
15	16,808	6,340	23,148	38,093	14,945	5,541	9,119	4,838	7,962
16	0	6,340	6,340	42,858	36,518	1,380	9,327	1,191	8,070
17	0	6,340	6,340	47,162	40,822	1,254	9,331	1,075	8,000
18	0	6,340	6,340	51,005	44,665	1,140	9,174	969	7,795
19	0	6,340	6,340	54,384	48,044	1,037	8,892	873	7,487
20	0	6,340	6,340	57,303	50,963	942	8,518	786	7,108
21	0	6,340	6,340	59,935	53,595	857	8,090	708	6,697
22	0	6,340	6,340	63,035	56,695	779	7,744	638	6,340
23	0	6,340	6,340	64,341	58,001	708	7,185	575	5,835
24	0	6,340	6,340	65,209	58,869	644	6,620	518	5,328
25	0	22,859	22,859	65,209	42,350	2,110	6,019	1,683	4,800
26	0	6,340	6,340	65,209	58,869	532	5,471	420	4,324
27	0	6,340	6,340	65,209	58,869	484	4,974	379	3,896
28	0	6,340	6,340	65,209	58,869	440	4,522	341	3,510
29	0	6,340	6,340	65,209	58,869	400	4,111	307	3,162
30	0	6,340	6,340	65,209	58,869	363	3,737	277	2,849
31	0	6,340	6,340	65,209	58,869	330	3,397	250	2,566
32	0	6,340	6,340	65,209	58,869	300	3,088	225	2,312
33	0	6,340	6,340	65,209	58,869	273	2,808	203	2,083
34	0	6,340	6,340	65,209	58,869	248	2,552	182	1,876
35	0	22,859	22,859	65,209	42,350	813	2,320	593	1,690
36	0	6,340	6,340	65,209	58,869	205	2,109	148	1,523
37	0	6,340	6,340	65,209	58,869	186	1,918	133	1,372
38	0	6,340	6,340	65,209	58,869	169	1,743	120	1,236
39	0	6,340	6,340	65,209	58,869	154	1,585	108	1,114
40	0	6,340	6,340	65,209	58,869	140	1,441	98	1,003
41	0	6,340	6,340	65,209	58,869	127	1,310	88	904
42	0	6,340	6,340	65,209	58,869	116	1,191	79	814
43	0	6,340	6,340	65,209	58,869	105	1,082	71	734
44	0	6,340	6,340	65,209	58,869	96	984	64	661
45	0	22,859	22,859	65,209	42,350	314	895	209	595
46	0	6,340	6,340	65,209	58,869	79	813	52	536
47	0	6,340	6,340	65,209	58,869	72	739	47	483
48	0	6,340	6,340	65,209	58,869	65	672	42	435
49	0	6,340	6,340	65,209	58,869	59	611	38	392
50	0	6,340	6,340	65,209	58,869	54	555	34	353
Total	280,095	320,653	600,748	2,300,257	1,789,509	176,969	196,267	163,939	162,557
							S.I.R.R. =	10.9%	

Note: Project Year 1 = 1996, D.R. : Discount Rate

Table L-17-a Financial Analysis on Communal & Resettlement Model Farmer (Without: Rainfed, With: Irrigated)

No.	Cost Item	Unit	Without Project	With Project
1	Farming Area	ha	4.00	1.00
	Dry	ha	4.00	0.00
	Irrigated	ha	0.00	1.00
2	Number of Family	person	8	8
	Farming Adult	person	2	2
	Non-farming Adult	person	1	1
	Children	person	5	5
3	Gross Production Value of Agricultural Output	z$	6579.6	9574.9
	Cotton	z$	5041.8	2423.9
	Maize	z$	1270.1	2130.3
	Sunflower	z$	89.2	0.0
	Ground Nuts	z$	178.5	662.4
	Wheat	z$	0.0	1527.8
	Sugar Bean	z$	0.0	378.0
	Green Maize	z$	0.0	202.5
	Onion	z$	0.0	2250.0
4	Food Retention	z$	780.0	1364.7
	Maize	z$	762.1	1278.2
	Ground Nuts	z$	17.9	66.2
	Green Maize	z$	0.0	20.3
5	Marketed Gross Production Value of Agricultural Output	z$	5799.6	8210.2
6	Agricultural Cost	z$	4139.0	3430.0
	Seed	z$	269.6	468.6
	Fertilizer	z$	2025.7	1624.7
	Chemical	z$	830.0	563.0
	Machinery & Equipment	z$	336.1	336.1
	Hired Labor	z$	300.0	60.0
	Charges	z$	100.0	100.0
	Interest	z$	277.6	277.6
7	Marketed Net Production Value of Agricultural Output	z$	1660.6	4780.2
8	Sales of Livestock	z$	523.2	523.2
9	Off-farm Income	z$	343.2	0.0
10	Total Income	z$	2527.0	5303.4

Table L-17-b Financial Analysis on Communal & Resettlement Model Farmer (Without: Rainfed, With: Rainfed)

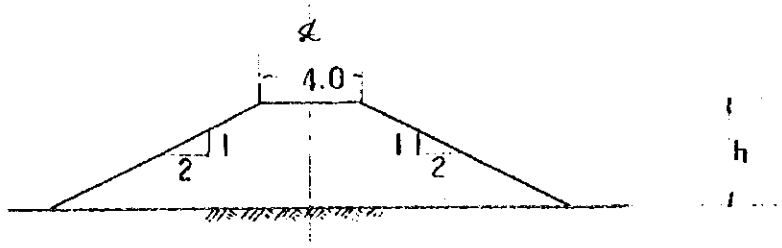
No.	Cost Item	Unit	Without Project	With Project
1	Farming Area	ha	4.00	4.00
	Dry	ha	4.00	4.00
	Irrigated	ha	0.00	0.00
2	Number of Family	person	8	8
	Farming Adult	person	2	2
	Non-farming Adult	person	1	1
	Children	person	5	5
3	Gross Production Value of Agricultural Output	z$	6579.6	8515.9
	Cotton	z$	5041.8	6463.8
	Maize	z$	1270.1	1641.1
	Sunflower	z$	89.2	147.2
	Ground Nuts	z$	178.5	263.8
	Wheat	z$	0.0	0.0
	Sugar Bean	z$	0.0	0.0
	Green Maize	z$	0.0	0.0
	Onion	z$	0.0	0.0
4	Food Retention	z$	780.0	780.0
	Maize	z$	762.1	762.1
	Ground Nuts	z$	17.9	17.9
	Green Maize	z$	0.0	0.0
5	Marketed Gross Production Value of Agricultural Output	z$	5799.6	7735.9
6	Agricultural Cost	z$	4139.0	5524.4
	Seed	z$	269.6	385.3
	Fertilizer	z$	2025.7	2917.9
	Chemical	z$	830.0	1482.0
	Machinery & Equipment	z$	336.1	361.6
	Hired Labor	z$	300.0	0.0
	Charges	z$	100.0	100.0
	Interest	z$	277.6	277.6
7	Marketed Net Production Value of Agricultural Output	z$	1660.6	2211.5
8	Sales of Livestock	z$	523.2	523.2
9	Off-farm Income	z$	343.2	343.2
10	Total Income	z$	2527.0	3077.9

APPENDIX M COST ESTIMATE

APPENDIX M. COST ESTIMATE PAGE

M.1 Estimation of dam embankment for Medium Size Dams

Except for the Mtange and Sanyati-2 dams, the cross section of the embankment is fixed as shown in the figure below.



It could not be measured on site, the longitudinal section along the dam axis is anticipated as v-shaped giving the volume as :

$$V = L \times h \times (h+2)$$

where L is the length and h is the height of the dams.

Dam No.	Dam Height (h m)	Dam Length (L m)	Embankment Volume (cu.m)
D 1	8.6	300	27,348
D 2	10.2	200	24,888
D 3	11.8	120	19,540
D 4	9.2	125	12,880
D 5	22.0	133	72,300*
D 6	13.1	500	98,905
D 7	15.9	400	113,844
D 8	16.0	432	140,000**
D 9	7.0	400	25,200

Note : * sourced by the Mtange Dam Design Report DWD March 1994
** sourced by the Design Report Sanyati-2 Dam MEWRD July 1991

Table M-1 PROJECT COMPONENTS FOR REGIONAL FARMING TECHNOLOGY CENTER IN EACH SCENARIO

Component		Scenario B-2	Scenario B-1	Scenario A
1. Research and improvement of rainfed agriculture technology				
Intrduction of drought resistible crop	sorghum ,millet	○	○	○
Intrduction of drought resistible variety	maize, cotton	○	○	○
Intrduction of feed crops and trees		-	-	○
Promotion of Livestock		-	-	○
2. Reinforcement of extension				
Reinforcement of extension worker		-	△	○
Procurement of Facilities & machinery		-	△	○
Retraining of extention worker		^	△	○
Training og farmers		^	△	○
3. Regional Farming Technology Center				
3.1 Building				
Site		2 ha	3 ha	4 ha
Administration office		400㎡	800㎡	1200㎡
Guest house for lectures		80㎡	120㎡	200㎡
Dormitory for trainee		120㎡	180㎡	240㎡
Storage	seed,fetilizer,chemical	80㎡	120㎡	160㎡
Garage		100㎡	200㎡	300㎡
Warehouse for machinery & repairshop		250㎡	500㎡	1000㎡
Total		1030㎡	1920㎡	3100㎡
3.2 Pilot farm		10	20	30
Rainfed farm (ha)		10	6	6
Fallow (ha)		0	6	8
Sprinkler (ha)		0	4	8
Drip (ha)		0	4	8
3.3 Machinery				
Bulldozer 6t		1	2	3
Tractor-trailer 35ps		2	4	8
Disk plough		2	4	8
Disk harrow		2	4	8
Pick-uo truck 10t		3	4	8
Microbus		0	1	1
3.4 Other				
Laboratory equipment		1 Lot	1 Lot	1 Lot
Audio-Visual Equipment		1 Lot	1 Lot	1 Lot
Agri-machine & workshop equipment		-	1 Lot	1 Lot
Meteorological observation equipment		1 Lot	1 Lot	1 Lot

Table M-2 COST ESTIMATION FOR REGIONAL FARMING TECHNOLOGY CENTER

Component	Unit	Unit Price	Scenario B-2	Cost	Scenario B-1	Cost	Scenario A	Cost
		$		$		$		$
1. Building			2 ha		3 ha		4 ha	
Administration building	sq-m	1400	400	560,000	800	1,120,000	1200	1,680,000
Guest house for lecturers	sq-m	1700	80	136,000	120	204,000	200	340,000
Dormitory for trainee	sq-m	1500	120	180,000	180	270,000	240	360,000
Storage	sq-m	810	80	64,800	120	97,200	160	129,600
Garage	sq-m	810	100	81,000	200	162,000	300	243,000
Warehouse for machinery & repairshop	sq-m	810	250	202,500	500	405,000	1000	810,000
sub-total			1030m²	1,224,300	1920m²	2,258,200	3100m²	3,562,600
2. Pilot farm								
Site(ha)			10		20		30	
Rainfed farm (ha)	ha	15,000	10	150,000	6	90,000	6	90,000
Fallow (ha)	ha	20,000	0		6	120,000	8	160,000
Sprinkler (ha)	ha	35,000	0		4	140,000	8	280,000
Drip (ha)	ha	35,000	0		4	140,000	8	280,000
sub-total				150,000		490,000		810,000
3. Machinery								
Bulldozer 6t		1,800,000	1	1,800,000	2	3,600,000	3	5,400,000
Tractor								
Tractor implement		350,000	2	700,000	4	1,400,000	8	2,800,000
Pick-uo truck 1t		120,000	3	360,000	4	480,000	8	960,000
Microbus		300,000	0	0	1	300,000	1	300,000
sub-total				2,860,000		5,780,000		9,460,000
4. Other								
Laboratory equipment			1 Lot	500,000	1 Lot	750,000	1 Lot	1,000,000
Audio-Visual Equipment			1 Lot	400,000	1 Lot	800,000	1 Lot	1,000,000
Meteorological observation equipment			1 Lot	500,000	1 Lot	500,000	1 Lot	500,000
sub-total				1,400,000		2,050,000		2,500,000
Total				5,634,300		10,578,200		16,332,600
Miscellaneous Total x 10 %				563,430		1,057,820		1,633,260
Contingency Total x 10 %				563,430		1,057,820		1,633,260

Table M-3 INFRASTRUCTURE DEVELOPMENT COST

	Unit	Unit Price $	Quantity	Cost $
1. Road				
1.1 Rehabilitation				
Gravel road, B=3m	km	58,000	279	16,182,000
Narrow tarred road, B=3m	km	300,000	70	21,000,000
1.2 Construction				
Gravel road	km	73,000	35	2,555,000
Bridge(Munyati River), B=5m	m	80,000	60	4,800,000
Sub -total				44,537,000
Contingency and Engineering Services Fee			20%	8,907,400
Total				53,444,400
2. Expantion of the Collection & Deposit Point				
2.1 Construction of Collection Points				
Grain Marketing Board(GMB)	Nos.	421,000	5	2,105,000
Cotton Company of Zimbabwe(COTTCO)	Nos.	421,000	6	2,526,000
2.2 Construction of Deposit Point	Nos.	2,090,000	1	2,090,000
Sub-total				6,721,000
Contingency and Engineering Services Fee			20%	1,344,200
Total				8,065,200
3. Boreholes				
3.1 Rehabilitation of boreholes	Nos.	6,000	60	360,000
3.2 Drilling of boreholes	Nos.	25,000	43	1,075,000
Sub-total				1,435,000
Contingency and Engineering Services Fee			20%	287,000
Total				1,722,000
4. Construction of Community Center 200 sq-m, $810/sq-m)	Nos.	162,000	6	972,000
Contingency and Engineering Services Fee			20%	194,400
Total				1,166,400
Total Project Cost				64,398,000
			say	64,400,000

Table M-4 LAND RECLAMATION AND SOIL CONSERVATION

1. Scenario B-2			
Clearing	3500	35504	124,264,000
Earth Work	3519	35504	124,938,576
Afforestation	40	35504	1,420,160
Sub-Total			250,622,736
Miscellaneous and Contingency		20%	50,124,547
Total			300,747,283

2 . Scenario B-1

Clearing	3500	33834	118,419,000
Earth Work	3519	33834	119,061,846
Afforestation	40	33834	1,353,360
Sub-Total			238,834,206
Miscellaneous and Contingency		20%	47,766,841
Total			286,601,047

Table M-5 COST BREAKDOWN OF INFRASTRUCTURE

	Unit	Unit Price $	Quantity	Cost $
1. Construction of Collection Point (GMB & CMB)				
Crearing	ha	3,500	1	1,750
Concrete Yard t=20 cm	sq-m	600	500	300,000
Area=2500sq-m				
Office	sq-m	810	100	81,000
sub-total				382,750
Miscellaneous	10%			38,275
Total				421,025
			say	421,000
2. Construction of Deposit Point				
Crearing	ha	3,500	4	14,000
Concrete Yard t=20 cm	sq-m	600	2,880	1,728,000
Area=14,400 sq-m				
Office	sq-m	810	200	162,000
sub-total				1,904,000
Miscellaneous	10%			190,400
Total				2,094,400
			say	2,090,000
3. Construction of Community Center				
Office including miscellaneous	sq-m	810	200	162,000
4. Soil Conservation per ha				
4.1 Clearing	ha	3500		3,500
4.2 Earth Work	cu.m	17	207	3,519
Contour Band (Earth Road B=3.0m, h=0.3m, L=200m/ha)				
4.3 Afforestation 1 line/ 10 m	Nos.	2	20	40
4.4 Fodder Crops 4 m interval	Nos.	1	625	625

Table M-6 SUMMARY OF THE PROJECT COST IN KUDU DAM

1.1 PROJECT COST

Description			Amount (z$)
1. Excavation			28,836,150
2. Embankment			94,350,000
3. Grouting			1,312,500
4. Concrete			10,614,500
5. Steel Work			335,500
Sub Total			135,448,650
6. Miscellaneous		5%	6,772,433
7. Preliminry and General		20%	28,444,217
8. Extra P & G-Foreign Contractors		30%	51,199,590
9. Contingencies		15%	33,279,733
Contract Price			255,144,622
	say		255,145,000
Departmental			
10. Access & Rerouted Road			100,000
11. Temporary Housing			1,200,000
12. Permanent Building	Water Bailiff Etc.		500,000
13. Land Compensation			750,000
14. Samabwa School			500,000
15. Replace Flooded Bridge			400,000
16. Guaging Weirs			150,000
17. Departmental Expenses			2,000,000
18. Contingencies on 10 to 16		15%	660,000
Sub Total			6,260,000
19. Engineering Services on 1 to 9 Review of Detail Design & Supervision		10%	25514500
Total Project Cost at Nov. 1992			286,919,500
	say		287,000,000
Total Project Cost at Jan. 1995			
	Inflation Rate 50 %		430,500,000

1.2 Unit Cost of Water

Costing has been determined using a 40 year redemption period with 9.75 % interest rate :

		Amount (z$)
Total Project Cost		430,500,000
Interest and Redemption at 9.75 % over 40 years		41,973,750
Annual Operation and Maintenance	1.5%	6,457,500
Total Annual Cost		48,431,250
Annual Dam Yield		380 MCM
Cost of Water 1,000 cu.m / $		127

Cost per 1cu.m embankment

Embankment	
Core Material	2,500,000
Fill Material	5,000,000
Total	7,500,000

Total Project Cost / Embankment $/ cu.m	57

Source : Design Report February1993
Department of Water Development
Ministry of Agriculture and Water Development

Table M-7 SUMMARY OF THE PROJECT COST IN MTANGE DAM

Description		Amount(z$)
1. Preliminary and General		2,560,000
2. Excavations		998,010
3. Embankment		1,796,850
4. Grouting		279,046
5. Concrete, Formwork and Masonry Work		7,701,750
6. Miscellaneous and Outlet Works		480,000
7. Drainage Holes and Reinforcing Bars		59,920
Sub Total		13,875,576
8. Extra Cost for Foreign Contractor	30%	4,162,673
Contract Cost		18,038,249
9. Inhouse Works & Compensation		5,050,000
Sub Total		23,088,249
10. Engineering Service Fee	10%	2,308,825
11. Contingencies	10%	2,308,825
Total Project Cost at March 1994		27,705,899
Total Project Cost at January 1995 Inflation Rate 15 %		31,861,783

Embankment	
Impervious core	26,000
Place & Compact rolled Fill	46,300
Total	72,300
Total Project Cost / Embankment ($ / cu.m)	441

Source : Mtange Dam Design Report March 1994
Midlands Province
Department of Water Development

Table M-8 SUMMARY OF THE PROJECT COST IN SANYATI-2 DAM

Description		Amount(z$)
1. Preliminary and General		32,600
2. Excavations		1,954,000
3. Embankment		1,810,500
4. Grouting		300,000
5. Concrete, Formwork and Masonry Work		162,500
6. Miscellaneous and Outlet Works		876,000
Sub Total		5,135,600
7. Extra cost for Foreign Contractor 30 %		1,540,680
Contract Cost		6,676,280
8. Inhouse Works & Compensation		500,000
Sub Total		7,176,280
9. Engineering Service Fee	10%	717,628
10. Contingencies	10%	717,628

Total Project Cost at July 1991			8,611,536
Total Project Cost at January 1995			
Inflation Rate 100 %			17,223,072
Embankment		cu.m	140,000
Total Project Cost / Embankment		$ / cu.m	123

Source : Design Report July 1991
Operation Branch
MEWRD ZIMBABWE

Table M-9 SUMMARY OF THE PROJECT COST IN ZHOVHE DAM

Total Project Cost at November 1993		69,227,269
Total Project Cost at January 1995		
Inflation Rate 15 %		79,611,359
Embankment Volume		
Core Material	660,000 cu.m	
Fill Material	838,000 cu.m	
Total	1,498,000 cu.m	
Total Project Cost / Embankment	$ / cu.m	53

Source : Contract for the Main Civil Engineering Works
ZHOVHE DAM SFT / TBR 2021
Department of Water Development
November 1993

Table M-10 COST ESTIMATION OF MEDIUM SIZE DAMS

No.	Hydrologic Zone	River Name	Grid Ref.	Dam Height	Dam Length	Storage Capacity	Embankment Volume	Embankment Cost	Estimated Cost	Remarks
				m	m	1000 m^3	m^3	$/$m^3$	$	
D1	CUN 1	Ganyungu	QL 251064	8.6	300	480	27,348	125	3,418,500	
D2	CUN 1	Nyarupakwe	QL 276015	10.2	200	750	24,888	125	3,111,000	
D3	CUN 1	Nyarupakwe	QK 266977	11.8	120	660	19,541	125	2,442,600	
D4	CUN 1	Nyamachene	QK 317998	9.2	125	170	12,880	125	1,610,000	
D5	CUN 1	Mtanke	QK 365853	22.0	133	4100	72,300		31,860,000	Mtange Dam*
D6	CUN 1	Gwanyika	QK 361797	13.1	500	1590	98,905	125	12,363,125	
D7	CUN 1	Njerere	QK 450714	15.9	400	1090	113,844	125	14,230,500	
D8	CUN 1	Seki	QL 604131	16.0	432	3,870	140,000		17,220,000	Sanyati-2 Dam(Reg. Reservoir-2)**
D9	CUN 1	Mudzongwe	QL 610520	7.0	400	2,130	25,200	125	3,150,000	Reg.Reservoir-1
	Total	Total							89,405,725	

* Estimated by the Design Report prepared by DWD in March 1994

** Estimated by the Design Report prepared by MEWRD in July 1991

Table M- 11 (1) SUMMARY OF THE KUDU IRRIGATION PROJECT

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000z$)	NOTE
I. CANAL					
1. EARTH WORK					
(1) Clear and Grub	ha	324.5	3,500.0	1,136	
(2) Excavation	m3	1,280,441.0	14.0	17,926	soft
(3) Back Filling	m3	536,316.0	17.0	9,117	
(4) Embankment	m3	1,080,121.0	17.0	18,362	
SUB-TOTAL				46,541	
2. CONCRETE WORK	m3	831,774.0	980.0	815,139	
3. SIPHON					
(1) Munyati Siphon	L.Sum	1.0		17,269	
(2) Others	NO.	21.0	1,030.1	21,631	
SUB-TOTAL				38,900	
4. MISCELLANEOUS					
(1) Division Work	L.Sum			9,308	Σ1 x 20%
(2) Drainage Culvert	L.Sum			4,654	Σ1 x 10%
(3) Access Road	L.Sum			37,962	
SUB-TOTAL				51,924	
TOTAL				952,505	
II. REGULATING RESERVOIR	L.Sum			3,150	
III. NIGHT STORAGE RESERVOIR	No.	147.0	127,890.0	18,800	
IV. FIELD CONSOLIDATION WORKS	ha	14,700.0	22,500.0	330,750	
V. ENGINEERING & ADMINISTRATION COST					
1. ADMINISTRATION COST				39,156	Σ I ~III x 3%
2. CONSULTING SERVICE				130,520	Σ I ~III x 10%
3. INVESTIGATION FOR DETAILED DESIGN				13,052	Σ I ~III x 1%
TOTAL				182,729	
VI. CONTIGENCIES				223,190	Σ I ~IV x 15%
PROJECT COST				1,707,973	
(say)				1,708,000	

Table M - 11 (2) CONSTRUCTION COST OF MUNYATI SIPHON

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
I. SECTION A (L=150m)					
1. EARTH WORK					
(1) Clear and Grub	ha	0.1	3,500.0	0	
(2) Excavation	m3	2,493.0	14.0	35	
(3) Back Filling	m3	921.0	17.0	16	
SUB-TOTAL				51	
2. CONCRETE WORK	m3	1,230.0	980.0	1,205	
3. STEEL PIPE (φ1600)	m	300.0	7,200.0	2,160	
4. Miscellaneous	L.Sum			171	Σ1~3 x 5%
SUB-TOTAL				3,536	
TOTAL				3,587	
II. SECTION B (L=875m)					
1. EARTH WORK					
(1) Clear and Grub	ha	0.6	3,500.0	2	
(2) Excavation	m3	13,530.0	14.0	189	
(3) Back Filling	m3	10,185.0	17.0	173	
(4) Sand Bed	m3	840.0	80.0	67	
SUB-TOTAL				431	
2. STEEL PIPE (φ1600)	m	1,750.0	7,200.0	12,600	
3. Miscellaneous	L.Sum			652	Σ1~2 x 5%
SUB-TOTAL				13,252	
TOTAL				13,683	
CONSTRUCTION COST				17,269	

Table M- 11 (3) UNIT COST OF OTHER SYPHON

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
I. SECTION A (L= 30m)					
1. EARTH WORK					
(1) Clear and Grub	ha	0.0	3,500.0	0	
(2) Excavation	m3	483.5	14.0	7	
(3) Back Filling	m3	184.2	17.0	3	
SUB-TOTAL				10	
2. CONCRETE WORK	m3	246.0	980.0	241	
3. STEEL PIPE (φ1600)	m	60.0	7,200.0	432	
4. Miscellaneous	L.Sum			34	Σ1~3 x 5%
SUB-TOTAL				707	
TOTAL				717	
II. SECTION B (L= 20m)					
1. EARTH WORK					
(1) Clear and Grub	ha	0.0	3,500.0	0	
(2) Excavation	m3	307.2	14.0	4	
(3) Back Filling	m3	232.8	17.0	4	
(4) Sand Bed	m3	19.2	80.0	2	
SUB-TOTAL				10	
2. STEEL PIPE (φ1600)	m	40.0	7,200.0	288	
3. Miscellaneous	L.Sum	1.0		15	Σ1~2 x 5%
SUB-TOTAL				303	
TOTAL				313	
UNIT COST (NO.)				1,030	

Table M- 11 (4) UNIT COST OF NIGHT STORAGE RESERVOIR

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
1. DAM					
(1) Clear and Grub	ha	0.9	3,500.0	3	
(2) Excavation	m3	912.4	14.0	13	
(3) Back Filling	m3	912.4	17.0	16	
(4) Embankment	m3	4,830.0	17.0	82	
(5) Rip Rap 200mm	m3	18.0	118.5	2	
SUB-TOTAL				116	
2. OUTLET & INLET FACILITY	L.Sum			6	Σ1 x 5%
3. Miscellaneous	L.Sum	1		6	Σ1~2 x 5%
SUB-TOTAL				12	
TOTAL (NO.)				128	

Table M- 11 (5) UNIT COST OF FIELD CONSOLIDATION WORKS

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
1. LAND GRADING WORKS					
(1) Clear and Grub	ha	1.0	3,500.0	4	
(2) Excavation	m3	0.0	14.0	0	
(3) Embankment	m3	0.0	17.0	0	
SUB-TOTAL				4	
2. DISTRIBUTION CANAL					
(1) Excavation	m3	18.0	14.0	0	
(2) Concrete	m3	6.3	980.0	6	
SUB-TOTAL				6	
3. DRAINAGE CANAL	m3	27.3	17.0	0	
4. FARM ROAD					
4-1. Trunk Road					
(1) Excavation	m3	101.3	14.0	1	
(2) Gravel Pavement	m2	180.0	21.5	4	
4-2. Lateral Road					
(1) Excavation	m3	140.0	14.0	2	
(2) Gravel Pavement	m2	240	21.5	5	
SUB-TOTAL				12	
5. Miscellaneous	L.Sum			1	Σ1~4 x 5%
TOTAL				23	

Table M- 11 (6) CONSTRUCTION COST OF LARGE SCALE IRRIGATION PROJECT

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
1. EARTH WORK					
(1) Clear and Grub	ha	0.3	3,500.0	1	
(2) Excavation	m3	2,709.3	14.0	38	
(3) Back Filling	m3	2,314.0	17.0	39	
(4) Sand Bed	m3	319.8	80.0	26	
SUB-TOTAL				104	
2. PUMP FACILITY (φ200 X 2 UNITS)	L.Sum	1.0		1,400	
3. STEEL PIPE (φ400)	L.Sum	1.0		1,800	
4. PUMP HOUSE	L.Sum	1.0		700	
5. Miscellaneous	L.Sum	1.0		200	Σ1~4 x 5%
SUB-TOTAL				4,100	
TOTAL				4,204	
PROJECT COST	ha	4,400	4,204.2	184,985	
(say)				185,000	

TableM- 11 (7) CONSTRUCTION COST OF SMALL SCALE IRRIGATION PROJECT

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (1000Z$)	NOTE
PROJECT COST	ha	5,900	20,000.0	118,000	

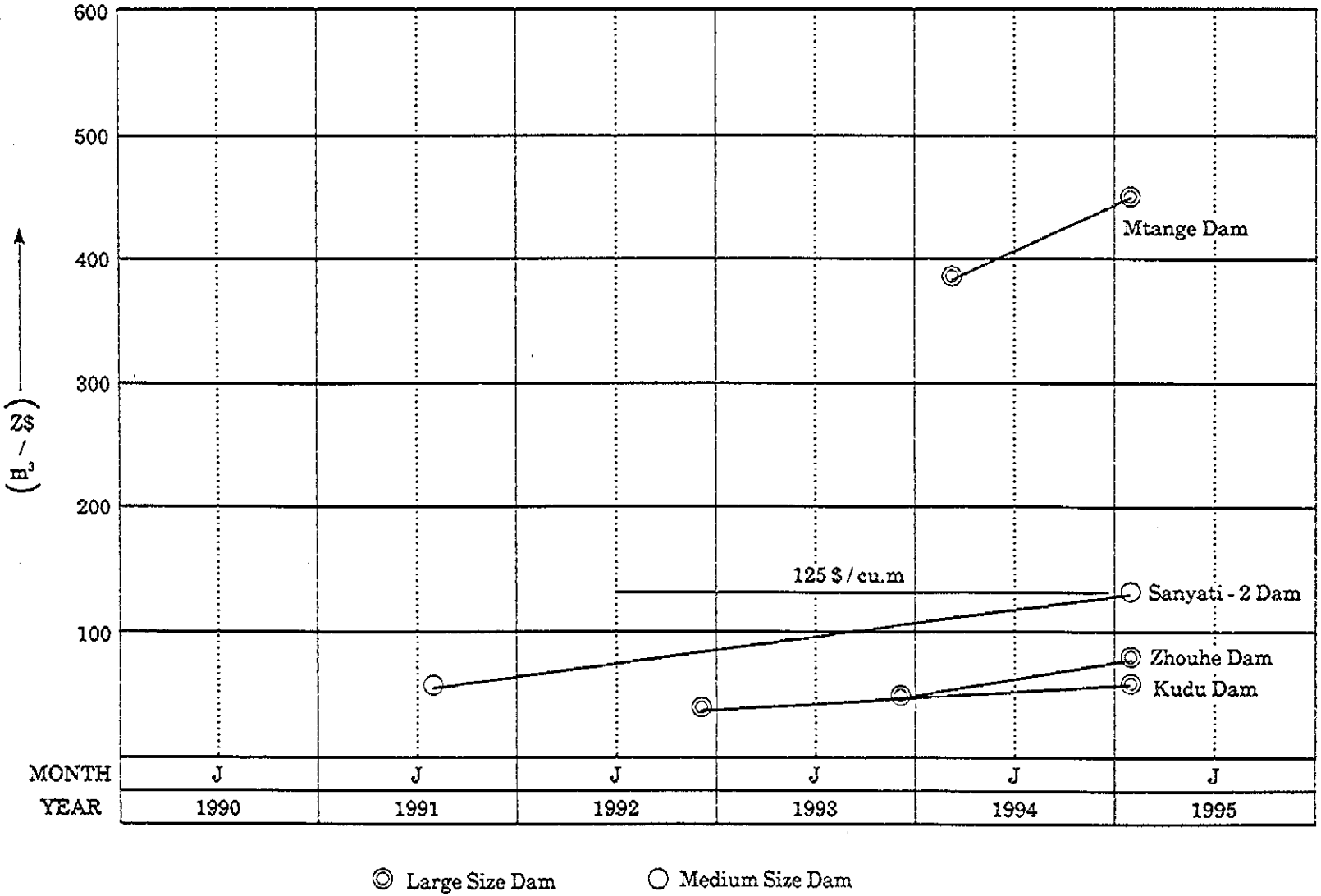
Table M- 12 CONSTRUCTION COST OF MEDIUM SIZE DAMS FOR SCENARIO B-1

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (10002$)	NOTE
1. Land Consolidation	ha	331.0	22,500.0	7,448	
2. Night Storage	No.	8.0	127,890.0	1,023	
TOTAL				8,471	
(say)				8,500	

Table M- 13 CONSTRUCTION COST OF MEDIUM SIZE DAMS FOR SCENARIO A

ITEM	UNIT	QUANTITY	RATE (Z$)	AMOUNT (10002$)	NOTE
1. Land Consolidation	ha	160.0	22,500.0	3,600	
2. Night Storage	No.	0.0	127,890.0	0	
TOTAL				3,600	
(say)				3,600	

Figure M1-1 Estimation of the Construction Cost of Medium Size Dams




JICA