3.3.3 Labor Plan

Table A3.3.3.1 Available Labor in Rural Area by County

Unit: man

	Total Population		Available Labor in Rural Area			
	(1991)	(2007)	(1991)			(2007)
			Male	Female	TOTAL	TOTAL
Luwero	449,691	715,000	59,625	53,844	113,469	180,060
Bamunanika	108,098	176,000	14,333	12,943	27,276	44,409
Buruli	100,497	146,000	14,325	13,033	27,358	39,745
Katikamu	147,292	240,000	18,530	16,636	35,166	57,300
Nakaseke	93,804	153,000	12,438	11,232	23,669	38,606
Masaka	845,736	1,367,000	107,426	101,265	208,691	337,316
Bukoto	416,120	678,000	52,856	49,824	102,680	167,301
Bukomansimbi	126,549	206,000	16,074	15,152	31,227	50,832
Kalungu	152,028	248,000	19,311	18,203	37,514	61,196
Lwemiyaga	21,127	35,000	2,684	2,530	5,213	8,636
Mawoggola	129,912	200,000	16,502	15,555	32,057	49,351
Mpigi	913,831	1,490,000	86,074	109,418	195,492	318,749
Busiro	298,187	486,000	28,086	35,704	63,790	103,968
Butambala	74,062	121,000	6,976	8,868	15,844	25,885
Gomba	119,550	195,000	11,260	14,314	25,575	41,716
Kyadondo	264,664	431,000	24,929	31,690	56,618	92,202
Mawokota	157,368	257,000	14,823	18,843	33,665	54,979
Mukono	824,602	1,343,000	101,395	98,734	200,129	325,940
Bbale	85,345	139,000	10,494	10,219	20,713	33,735
Buikwe	250,511	408,000	30,803	29,995	60,798	99,021
Buvuma	18,482	30,000	2,773	2,713	5,486	8,904
Mukono	181,695	296,000	22,342	21,755	44,097	71,839
Nakifuma	137,737	224,000	16,436	15,992	32,428	52,738
Ntenjeru	150,832	246,000	18,547	18,060	36,607	59,704
Total	3,033,860	4,915,000	354,520	363,261	717,781	1,162,066

Source : Population and Housing Census (1991)

Note : Population in 2007 is the trend with annual increase rate 3.1%.

Available Labor is of people with age of 15 years and above.

Table A3.3.3.2 Rural Labor Use Plan by County

Unit : man

	Available Labor		Requirement		Surplus	Labor for Processing	Outflow to City work
	(1991)	(2007)	Regular (2007)	Peak (2007)	(2007)	(2007)	(2007)
	a	b	c	d	b-d=e	f	e-f=g
Luwero	113,469	180,060	119,869	151,100	28,960	28,960	0
Bamunanika	27,276	44,409	33,928	40,800	3,609	3,609	0
Buruli	27,358	39,745	25,466	36,900	2,845	2,845	0
Katikamu	35,166	57,300	33,083	40,500	16,800	16,800	0
Nakaseke	23,669	38,606	27,392	32,900	5,706	5,706	0
Masaka	208,691	337,316	145,453	159,400	177,916	46,230	131,685
Bukoto	102,680	167,301	61,003	64,900	102,401	22,818	79,583
Bukomansimbi	31,227	50,832	30,536	34,100	16,732	9,830	6,902
Kalungu	37,514	61,196	23,299	26,300	34,896	5,554	29,342
Lwemiyaga	5,213	8,636	7,000	7,800	836	836	0
Mawoggola	32,057	49,351	23,615	26,300	23,051	7,192	15,859
Mpigi	195,492	318,749	128,752	150,200	168,549	40,832	127,717
Busiro	63,790	103,968	34,611	39,800	64,168	18,498	45,670
Butambala	15,844	25,885	15,311	18,500	7,385	4,765	2,620
Gomba	25,575	41,716	18,309	22,300	19,416	3,142	16,274
Kyadondo	56,618	92,202	29,767	34,300	57,902	6,113	51,789
Mawokota	33,665	54,979	30,754	35,300	19,679	8,314	11,365
Mukono	200,129	325,940	133,966	188,600	137,340	81,766	55,574
Bbale	20,713	33,735	11,504	15,000	18,735	6,441	12,294
Buikwe	60,798	99,021	28,034	60,600	38,421	14,107	24,314
Buvuma	5,486	8,904	5,640	7,700	1,204	1,204	0
Mukono	44,097	71,839	33,461	38,700	33,139	18,572	14,567
Nakifuma	32,428	52,738	25,044	30,100	22,638	22,610	28
Ntenjeru	36,607	59,704	30,283	36,500	23,204	18,832	4,372
	717,781	1,162,066	528,040	649,300	512,766	197,789	314,977

Table A3.3.3.3 Balance of Labor by County

County	Item	Labor (Unit: Man Days/25)											
		Jan.	Feb.	Mar.	Jun.	May	Jun.	Jul.	Aug.	Sep.	oct.	Nov.	Dec.
Bamunanika													
	Required Labors	35,703	33,534	32,776	30,858	31,642	30,640	35,310	32,709	26,714	21,688	26,848	33,978
	Available Labors	44,409	44,409	44,409	44,409	44,409	44,409	44,409	44,409	44,409	44,409	44,409	44,409
	Balance of Labors	8,706	10,875	11,633	13,551	12,767	13,769	9,099	11,700	17,695	22,721	17,561	10,431
Bunuli													
	Required Labors	25,834	23,093	25,869	27,596	28,004	31,331	36,206	29,502	25,670	20,151	22,540	28,808
	Available Labors	39,745	39,745	39,745	39,745	39,745	39,745	39,745	39,745	39,745	39,745	39,745	39,745
	Balance of Labors	13,911	16,652	13,876	12,149	11,741	8,414	3,539	10,243	14,075	19,594	17,205	10,937
Katikamu													
	Required Labours	33,988	32,175	31,202	29,729	30,104	29,350	34,163	31,557	25,454	20,295	24,225	31,732
	Available Labours	57,300	57,300	57,300	57,300	57,300	57,300	57,300	57,300	57,300	57,300	57,300	57,300
	Balance of Labours	23,312	25,125	26,098	27,571	27,196	27,950	23,137	25,743	31,846	37,005	33,075	25,568
Nakaseke													
	Required Labors	28,864	27,000	28,312	27,962	28,016	28,042	31,248	28,914	25,162	19,792	23,360	29,047
	Available Labors	38,606	38,606	38,606	38,606	38,606	38,606	38,606	38,606	38,606	38,606	38,606	38,606
	Balance of Labors	9,742	11,606	10,294	10,644	10,590	10,564	7,358	9,692	13,444	18,814	15,246	9,559
Bukoto													
	Required Labors	56,465	55,899	60,745	56,940	55,207	51,527	55,655	55,318	47,471	39,225	47,729	56,442
	Available Labors	167,301	167,301	167,301	167,301	167,301	167,301	167,301	167,301	167,301	167,301	167,301	167,301
	Balance of Labors	110,836	111,402	106,556	110,361	112,094	115,774	111,646	111,983	119,830	128,076	119,572	110,859
Bukoman-													
	Required Labors	28,469	28,480	29,220	27,833	27,643	25,591	25,954	27,012	23,907	20,225	22,913	27,439
	Available Labors	50,832	50,832	50,832	50,832	50,832	50,832	50,832	50,832	50,832	50,832	50,832	50,832
	Balance of Labors	22,363	22,352	21,612	22,999	23,189	25,241	24,878	23,820	26,925	30,607	27,919	23,393
Kalungu													
	Required Labors	23,188	22,666	23,700	23,204	22,458	20,749	20,902	21,777	19,831	16,259	18,140	22,053
	Available Labors	61,196	61,196	61,196	61,196	61,196	61,196	61,196	61,196	61,196	61,196	61,196	61,196
	Balance of Labors	38,008	38,530	37,496	37,992	38,738	40,447	40,294	39,419	41,365	44,937	43,056	39,143
Lwemiyaga													
	Required Labors	7,312	7,153	7,770	7,654	7,529	7,958	7,548	7,388	6,670	5,523	6,508	7,923
	Available Labors	8,636	8,636	8,636	8,636	8,636	8,636	8,636	8,636	8,636	8,636	8,636	8,636
	Balance of Labors	1,324	1,483	866	982	1,107	678	1,088	1,248	1,966	3,113	2,128	713
Mawagola													
	Required Labors	23,201	22,609	24,248	22,963	23,162	22,294	22,370	22,249	19,793	17,187	21,112	23,911
	Available Labors	49,351	49,351	49,351	49,351	49,351	49,351	49,351	49,351	49,351	49,351	49,351	49,351
	Balance of Labors	26,150	26,742	25,103	26,388	26,189	27,057	26,981	27,102	29,558	32,164	28,239	25,440
Busiro													
	Required Labors	34,647	30,809	32,698	30,945	31,732	32,543	34,283	31,723	28,512	21,695	25,611	32,470
	Available Labors	103,968	103,968	103,968	103,968	103,968	103,968	103,968	103,968	103,968	103,968	103,968	103,968
	Balance of Labors	69,321	73,159	71,270	73,023	72,236	71,425	69,685	72,245	75,456	82,273	78,357	71,498
Butambara													
	Required Labors	15,659	12,900	14,196	13,828	13,961	14,779	15,908	14,426	12,703	8,670	9,686	14,028
	Available Labors	25,885	25,885	25,885	25,885	25,885	25,885	25,885	25,885	25,885	25,885	25,885	25,885
	Balance of Labors	10,226	12,985	11,689	12,057	11,924	11,106	9,977	11,459	13,182	17,215	16,199	11,857
Gomba													
	Required Labors	21,871	18,029	18,873	18,766	19,560	20,558	21,580	19,512	17,624	12,871	14,590	20,237
	Available Labors	41,716	41,716	41,716	41,716	41,716	41,716	41,716	41,716	41,716	41,716	41,716	41,716
	Balance of Labors	19,845	23,687	22,843	22,950	22,156	21,158	20,136	22,204	24,092	28,845	27,126	21,479
Kyadondo													
	Required Labors	29,053	25,289	26,931	25,671	26,561	27,194	28,325	26,144	23,357	17,470	21,000	27,115
	Available Labors	92,202	92,202	92,202	92,202	92,202	92,202	92,202	92,202	92,202	92,202	92,202	92,202
	Balance of Labors	63,149	66,913	65,271	66,531	65,641	65,008	63,877	66,058	68,845	74,732	71,202	65,087
Mawokota													
	Required Labors	29,629	25,652	28,015	26,137	27,121	27,983	28,924	26,708	24,450	18,033	21,242	27,450
	Available Labors	54,979	54,979	54,979	54,979	54,979	54,979	54,979	54,979	54,979	54,979	54,979	54,979
	Balance of Labors	25,350	29,327	26,964	28,842	27,858	26,996	26,055	28,271	30,529	36,946	33,737	27,529
BBaale													
	Required Labors	13,876	12,037	12,233	11,418	12,620	13,588	14,844	12,837	10,327	8,163	10,550	13,922
	Available Labors	33,735	33,735	33,735	33,735	33,735	33,735	33,735	33,735	33,735	33,735	33,735	33,735
	Balance of Labors	19,859	21,698	21,502	22,317	21,115	20,147	18,891	20,898	23,408	25,572	23,185	19,813
Buikwe													
	Required Labors	24,258	22,243	25,048	27,284	26,413	21,092	51,266	29,291	22,493	16,898	19,430	22,874
	Available Labors	99,021	99,021	99,021	99,021	99,021	99,021	99,021	99,021	99,021	99,021	99,021	99,021
	Balance of Labors	74,763	76,778	73,973	71,737	72,608	77,929	47,755	69,730	76,528	82,123	79,591	76,147
Buvuma													
	Required Labors	6,557	5,199	4,423	4,613	5,251	4,993	4,808	4,675	4,937	3,422	3,710	5,760
	Available Labors	8,904	8,904	8,904	8,904	8,904	8,904	8,904	8,904	8,904	8,904	8,904	8,904
	Balance of Labors	2,347	3,705	4,481	4,291	3,653	3,911	4,096	4,229	3,967	5,482	5,194	3,144
Mukono													
	Required Labors	33,618	32,095	33,357	27,714	29,725	27,427	32,522	30,168	23,045	20,457	28,723	32,228
	Available Labors	71,839	71,839	71,839	71,839	71,839	71,839	71,839	71,839	71,839	71,839	71,839	71,839
	Balance of Labors	38,221	39,744	38,482	44,125	42,114	44,412	39,317	41,671	48,794	51,382	43,116	39,611
Nakifuma													
	Required Labors	25,420	22,158	23,952	20,706	21,957	21,722	25,332	21,747	20,195	15,266	20,629	24,450
	Available Labors	52,738	52,738	52,738	52,738	52,738	52,738	52,738	52,738	52,738	52,738	52,738	52,738
	Balance of Labors	27,318	30,580	28,786	32,032	30,781	31,016	27,406	30,991	32,543	37,472	32,109	28,288
Nkenjeru													
	Required Labors	30,926	27,222	29,333	24,123	26,126	25,472	29,187	26,535	20,083	15,989	25,097	29,754
	Available Labors	59,704	59,704	59,704	59,704	59,704	59,704	59,704	59,704	59,704	59,704	59,704	59,704
	Balance of Labors	28,778	32,482	30,371	35,581	33,578	34,232	30,517	33,169	39,621	43,715	34,607	29,950
Total													
	Required Labors	528,538	486,242	512,901	485,944	494,792	484,834	556,334	500,192	428,397	339,281	413,642	511,621
	Available Labors	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067	1,162,067
	Balance of Labors	633,529	675,825	649,166	676,123	667,275	677,233	605,733	661,875	733,670	822,786	748,425	650,446

Table A3.3.3.4 Required Labor for Agricultural Processing by County

Unit : man

	Jaggary	Tea(Dry)	Cacao	Vanilla	Bananas	Cassava	Pineapples
Bamunanika	11,271	0	0	7,837	1,639	2,782	5,561
Buruli	3,895	0	0	0	1,618	1,304	0
Katikamu	3,951	0	0	7,849	1,641	2,174	5,569
Nakaseke	3,434	0	0	2,047	1,427	2,434	4,841
Bukoto	4,473	25	1,036	4,443	1,858	3,877	6,305
Bukoman-	1,600	15	618	3,179	665	1,067	2,256
Kalungu	763	7	295	1,516	317	1,208	1,075
Lwemiyaga	444	0	0	265	184	546	626
Mawagola	1,538	0	0	917	639	1,759	2,168
Busiro	2,683	51	2,071	5,330	1,115	2,558	3,782
Butambara	612	12	473	1,216	254	682	863
Gomba	414	2	96	411	172	938	583
Kyadondo	590	11	455	1,171	245	2,045	831
Mawokota	1,237	12	478	1,229	514	2,301	1,744
BBaale	1,658	9	384	988	689	371	2,337
Buikwe	2,463	47	1,902	4,893	1,023	251	3,472
Buvuma	463	9	357	919	192	112	652
Mukono	2,981	56	2,302	5,922	1,238	1,776	4,202
Nakifuma	3,606	68	2,784	7,164	1,498	2,318	5,083
Ntenjeru	2,860	54	2,208	5,682	1,188	2,742	4,032
Total	50,935	379	15,458	62,976	18,116	33,245	55,982

	Tomatoes	Milk	Beef/Goat		Total	Rural	Urban
Bamunanika	198	12	3		29,303	3,609	25,694
Buruli	45	183	13		7,059	2,845	4,214
Katikamu	406	0	3		21,593	16,800	4,793
Nakaseke	253	165	13		14,614	5,706	8,908
Bukoto	806	0	4		22,828	22,828	0
Bukoman-	430	0	1		9,830	9,830	0
Kalungu	371	0	3		5,554	5,554	0
Lwemiyaga	81	31	2		2,179	836	1,343
Mawagola	140	28	4		7,192	7,192	0
Busiro	908	0	1		18,498	18,498	0
Butambara	654	0	1		4,765	4,765	0
Gomba	509	12	5		3,142	3,142	0
Kyadondo	763	0	1		6,113	6,113	0
Mawokota	799	0	1		8,314	8,314	0
BBaale	1	0	5		6,441	6,441	0
Buikwe	53	0	2		14,107	14,107	0
Buvuma	0	0	0		2,704	1,204	1,500
Mukono	95	0	1		18,572	18,572	0
Nakifuma	87	0	1		22,610	22,610	0
Ntenjeru	65	0	0		18,832	18,832	0
Total	6,662	431	64	0	244,249	197,798	46,451

3.3.4 Requirement of Farmland Improvement and Reclamation

Table A3.3.4.1 Farmland Improvement and Reclamation Plan

Unit : ha

	Bamuna-nika	Buruli	Katikamu	Nakaseke	Bukoto	Bukoman-sibi	Kalungu	Lwemiyaga	Mawagola
Improvement	2,897	297	2,856	1,468	5,929	2,534	1,869	275	1,548
1) By Individual Farmers	2,608	267	2,570	1,321	5,336	2,281	1,683	248	1,394
2) By Groups	290	30	286	147	593	253	187	28	155
Reclamation	15,372	16,277	16,277	15,372	0	0	0	1,808	0
3) By Individual Farmers	13,835	14,649	14,649	13,835	0	0	0	1,627	0
4) By Groups	1,537	1,628	1,628	1,537	0	0	0	181	0
Paddy Field Dev.	77	0	222	252	832	648	193	0	126
5) By Groups	77	0	222	252	832	648	193	0	126
Small Scale Irrigation	157	40	224	140	412	205	220	46	78
(by Groups)									
6) Under Impr. area	67	31	96	80	412	205	220	32	78
7) Under Recl. area	90	8	128	60	0	0	0	14	0

(Conti.)

	Busiro	Butambara	Gomba	Kyadondo	Mawokota	BBaale	Buikwe	Buvuma	Mukono	Nakifuma	Ntenjeru	Total
Imp.	2,234	1,144	1,049	1,972	2,151	1,106	1,908	0	4,873	2,155	4,733	43,000
1)	2,010	1,030	944	1,775	1,936	995	1,717	0	4,386	1,939	4,260	38,700
2)	223	114	105	197	215	111	191	0	487	215	473	4,300
Rec.	7,234	0	3,617	2,713	0	4,521	0	1,808	0	0	0	85,000
3)	6,511	0	3,255	2,442	0	4,069	0	1,627	0	0	0	76,500
4)	723	0	362	271	0	452	0	181	0	0	0	8,500
Wetland	687	193	0	435	1,064	0	242	0	339	77	2	5,390
5)	687	193	0	435	1,064	0	242	0	339	77	2	5,390
Irrigation	210	149	115	173	180	17	22	18	35	31	27	2,500
6)	42	149	29	38	180	12	22	13	35	31	27	1,800
7)	168	0	86	135	0	6	0	6	0	0	0	700

Appendix 3.4 Livestock Plan

3.4.1 Livestock Production

Table A3.4.1.1 Livestock Production and Consumption

(1) Beef, Milk

Counties	Population (2007)	Demand ①		Dairy Cattle ②					Beef Cattle ③					Total ④=②+③		Balance ⑤=④-①	
		Beef	Milk	Head		Cow	Production		Head		Cow	Production		Beef	Milk	Beef	Milk
		ton	ton	Inc Ratio	Head	41.8%	Beef	Milk	Inc Ratio	Head	34.6%	Beef	Milk	ton	ton	ton	ton
Luwero	733,000	3,826.3	21,161.7		5,348	2,236	236.8	6,171.4		532,359	184,195	15,244.6	58,279.6	15,481.4	64,451.0	11,655.1	43,289.3
Bururi	163,459	853.3	4,719.1	3.1	3,531	1,476	156.3	4,073.8	1.4	214,992	74,387	6,156.5	23,536.1	6,312.8	27,609.9	5,459.5	22,890.8
Katikamu	240,424	1,255.0	6,941.0	3.1	375	157	16.6	433.3	2.7	43,975	15,215	1,259.3	4,814.3	1,275.9	5,247.6	20.9	-1,693.4
Nakaseke	153,197	799.7	4,422.8	3.1	856	358	37.9	988.1	5.9	219,645	75,997	6,289.8	24,045.5	6,327.7	25,033.6	5,528.0	20,610.8
Wabusana	175,920	918.3	5,078.8	3.1	586	245	26.0	676.2	2.1	53,747	18,596	1,539.0	5,883.7	1,565.0	6,559.9	646.7	1,481.1
Masaka	1,367,000	7,135.8	39,465.3		3,649	1,526	161.5	4,211.7		266,810	92,316	7,640.3	29,209.1	7,765.4	32,471.4	629.6	-6,993.9
Bukomansibi	206,417	1,077.5	5,959.3	3.1	254	106	11.2	292.6	1.1	23,711	8,204	679.0	2,595.8	690.2	2,888.4	-387.3	-3,070.9
Bukoto	597,379	3,118.3	17,246.3	3.1	818	342	36.2	943.9	1.1	76,402	26,435	2,187.8	8,364.3	2,224.0	9,308.2	-894.3	-7,938.1
kalungu	247,427	1,291.6	7,143.2	3.1	536	224	23.7	618.2	1.1	50,057	17,320	1,433.5	5,480.0	1,457.2	6,098.2	165.6	-1,045.0
Lwemiyaga	34,175	178.4	986.6	3.1	397	166	17.6	458.2	1.2	40,237	13,922	1,152.2	4,404.7	1,169.8	4,862.9	991.4	3,876.3
Mawogola	200,949	1,049.0	5,801.4	3.1	822	344	36.4	949.4	1.1	76,403	26,435	2,187.8	8,364.3	2,224.2	9,313.7	1,175.2	3,512.3
Masaka M.	80,653	421.0	2,328.5	3.1	822	344	36.4	949.4	0							-421.0	-2,328.5
Mpigi	1,490,000	7,777.9	43,016.2		9,810	4,102	434.6	11,321.6		124,140	42,954	3,554.9	13,590.2	3,989.5	24,911.8	-3,788.4	-18,104.4
Entebbe M.	70,030	365.6	2,021.8	3.1	195	82	8.7	226.3	1	2,151	744	61.6	235.5	70.3	461.8	-295.3	-1,560.0
Busiro	415,710	2,170.0	12,001.5	3.1	784	328	34.8	905.3	1.8	15,491	5,360	443.6	1,695.9	478.4	2,601.2	-1,691.6	-9,400.3
Butanbara	120,690	630.0	3,484.3	3.1	784	328	34.8	905.3	1.1	9,467	3,276	271.1	1,036.4	305.9	1,941.7	-324.1	-1,542.6
Gomba	195,190	1,018.9	5,635.1	3.1	6,479	2,708	286.7	7,474.1	1.1	78,097	27,022	2,236.4	8,549.6	2,523.1	16,023.7	1,504.2	10,388.6
Kyadondo	432,100	2,255.6	12,474.7	3.1	784	328	34.8	905.3	1.1	9,467	3,276	271.1	1,036.4	305.9	1,941.7	-1,949.7	-10,533.0
Mawokota	256,280	1,337.8	7,398.8	3.1	784	328	34.8	905.3	1.1	9,467	3,276	271.1	1,036.4	305.9	1,941.7	-1,031.9	-5,457.1
Mukono	1,343,000	7,010.4	38,772.4		18,561	7,758	821.1	21,412.1		128,625	44,504	3,683.5	14,081.1	4,504.6	35,493.2	-2,505.8	-3,279.2
Bbale	139,672	729.1	4,032.3	3.1	4,455	1,862	197.1	5,139.1	4	72,296	25,014	2,070.3	7,914.5	2,267.4	13,053.6	1,538.3	9,021.3
Buikwe	408,272	2,131.2	11,786.8	3.1	6,495	2,715	287.3	7,493.4	1	26,357	9,120	754.8	2,885.6	1,042.1	10,379.0	-1,089.1	-1,407.8
Buvuma	29,546	154.2	853.0	3.1	741	310	32.8	855.6	0.7	2,108	729	60.4	230.5	93.2	1,086.1	-61.0	233.1
Mukono	295,460	1,542.3	8,529.9	3.1	3,711	1,551	164.2	4,280.8	1	15,061	5,211	431.3	1,648.9	595.5	5,929.7	-946.8	-2,600.2
Nakifuma	224,281	1,170.7	6,475.0	3.1	1,857	776	82.1	2,141.8	1	7,531	2,606	215.7	824.4	297.8	2,966.2	-872.9	-3,508.8
Ntenjeru	245,769	1,282.9	7,095.4	3.1	1,302	544	57.6	1,501.4	1	5,272	1,824	151.0	577.2	208.6	2,078.6	-1,074.3	-5,016.8
Total	4,933,000	25,750.4	142,415.6		37,368	15,622	1,654.0	43,116.8		1,051,934	363,969	30,123.3	115,160.0	31,740.9	157,327.4	5,990.5	14,911.8
Kampala	1,261,935	9,918.8	73,482.5														
Ratio to Present	1.63	2.072	2.047		3.169	3.127	3.751	3.127		1.606	1.455	1.967	1.836	2.015	2.056	1.8	2.148

(2) Goat meet , Mutton , Pork , Chicken , Egg

Counties	Population (2007)	Demand				Goats & Sheep					Pigs			Poultry				Balance			
						Head				PRODUCT.	Head		Production	Head		Production					
		Goat Meat +Mutton ton	Pork ton	Chicken ton	Egg ton	Inc Ratio	Goat Head	Sheep Head	Goat+ Sheep	Meat ton	Inc Ratio	Head	Pork ton	%	Head	Chicken ton	Egg ton	Goat Meat +Mutton ton	Pork ton	Chicken ton	Egg ton
Luwero	733,000	1,210	1,840	1,408	741		322,368	22,816	345,184	1,696		55,796	2,510		1,209,952	1,852	969	486	670	444	228
Bururi	163,459	270	410	314	165	7.36	171,503	12,137	183,640	902	1.48	18,245	821	3.5	470,670	720	377	632	411		
Katikamu	240,424	397	603	462	243	7.36	39,648	2,804	42,452	209	1.48	13,335	600	3.5	214,162	328	171	-188	-3		
Nakaseke	153,197	253	385	294	155	7.36	14,830	1,052	15,882	78	1.48	11,383	512	3.5	131,884	202	106	-175	127		
Wabusana	175,920	290	442	338	178	7.36	96,387	6,823	103,210	507	1.48	12,833	577	3.5	393,236	602	315	217	135		
Masaka	1,367,000	2,256	3,430	2,625	1,380		680,326	69,567	749,893	3,703		40,849	1,838		1,362,198	2,085	1,089	1,447	-1,592	-540	-291
Bukomansibi	206,417	341	518	396	208	3.68	56,481	5,774	62,255	307	1.48	15,155	682	3.5	288,785	442	231	-34	164		
Bukoto	597,379	986	1,499	1,147	603	7.36	234,416	23,972	258,388	1,276	1.48	11,969	539	3.5	382,778	586	306	290	-960		
kalungu	247,427	408	621	475	250	3.68	112,538	11,507	124,045	613	1.48	9,599	432	3.5	348,723	534	279	205	-189		
Lwemiyaga	34,175	56	86	66	35	7.36	95,128	9,730	104,858	518	1.48	654	29	3.5	108,976	167	87	462	-57		
Mawogola	200,949	332	504	386	203	7.36	181,763	18,584	200,347	989	1.48	3,472	156	3.5	232,936	356	186	657	-348		
Masaka M.	80,653	133	202	155	81	3.68	0											-133	-202		
Mpigi	1,490,000	2,459	3,740	2,861	1,505		185,431	34,316	219,747	1,098		65,417	2,943		2,352,701	3,601	1,882	-1,361	-797	740	377
Entebbe M.	70,030	116	176	134	71	7.36	868	162	1,030	5	1.48	327	15	3.5	7,060	11	6	-111	-161		
Busiro	415,710	686	1,043	798	420	1.84	31,755	5,877	37,632	188	1.48	29,372	1,322	3.5	776,391	1,188	621	-498	279		
Butanbara	120,690	199	303	232	122	3.68	23,408	4,331	27,739	139	1.48	4,252	191	3.5	308,203	472	247	-60	-112		
Gomba	195,190	322	490	375	197	3.68	71,962	13,318	85,280	426	1.48	8,112	365	3.5	555,237	850	444	104	-125		
Kyadondo	432,100	713	1,085	830	436	3.68	28,719	5,314	34,033	170	1.48	11,677	525	3.5	352,905	540	282	-543	-560		
Mawokota	256,280	423	643	492	259	3.68	28,719	5,314	34,033	170	1.48	11,677	525	3.5	352,905	540	282	-253	-118		
Mukono	1,343,000	2,217	3,372	2,579	1,356		254,350	86,150	340,500	1,734		114,110	5,135		1,267,351	1,940	1,013	-483	1,763	-639	-343
Bbale	139,672	230	351	268	141	3.68	86,517	29,304	115,821	590	1.48	6,391	288	3.5	130,536	200	104	360	-63		
Buikwe	408,272	674	1,025	784	412	0.92	47,503	16,090	63,593	324	1.48	41,878	1,885	3.5	441,039	675	353	-350	860		
Buvuma	29,546	49	74	57	30	0.92	2,875	973	3,848	20	1.48	2,054	92	3.5	19,012	29	15	-29	18		
Mukono	295,460	488	742	567	298	3.68	70,089	23,740	93,829	478	1.48	24,305	1,094	3.5	210,382	322	168	-10	352		
Nakifuma	224,281	370	563	431	227	0.92	23,546	7,975	31,521	160	1.48	22,366	1,006	3.5	258,538	396	207	-210	443		
Ntenjeru	245,769	406	617	472	248	0.92	23,820	8,068	31,888	162	1.48	17,116	770	3.5	207,844	318	166	-244	153		
Total	4,933,000	8,142	12,382	9,473	4,982		1,442,475	212,849	1,655,324	8,231		276,172	12,426		6,192,202	9,478	4,953	89	44	5	-29
Kampala	774,241	2,183	1,107	2,005	1,796																
Ratio to Present	1.63	2.072	2.122	2.083	2.033		3.932	2.793	3.736	4.185		1.48	1.48		3.5	3.501	3.498				

Note : (1) Consumption per Capital

Rural Beef : 5.22kg, Milk : 28.87kg, Goat meat + maton : 1.65kg, pork : 2.51kg, Chicken : 1.92kg, Egg : 1.01kg

Kampala Beef : 7.86kg, Milk : 58.23kg, Goat meat + maton : 2.82kg, pork : 1.43kg, Chicken : 2.59kg, Egg : 2.32kg

3.4.2 Livestock Husbandry

Table A3.4.2.1 Requirement of Grass and Grassland

(1) Requirement of Grass and Hay

County	Dairy Cattle				Beef Cattle				Goats & Sheep		Total Grass Requirement (ton) ⑪=③+⑦+⑩	Total Hay Requirement (ton) ⑫=④+⑧
	Total Head ①	Cow 41.8% ②	Grass Requirement (ton) ③=②× 16,026kg	Hay Requirement (ton) ④=②× 1,084kg	Total Head ⑤	Cow 34.6% ⑥	Grass Requirement (ton) ⑦=⑥× 22,461kg	Hay Requirement (ton) ⑧=⑥× 975kg	Total Head ⑨	Grass Requirement (ton) ⑩=⑨× 1,618kg		
Luwero	5,348	2,236	35,833	2,424	532,359	184,196	4,137,233	179,592	345,184	558,509	4,731,575	182,016
Bururi	3,531	1,476	23,654	1,600	214,992	74,387	1,670,811	72,528	183,639	297,129	1,991,594	74,128
Katikamu	375	157	2,516	170	43,975	15,215	341,753	14,835	42,453	68,688	412,957	15,005
Nakaseke	856	358	5,737	388	219,645	75,997	1,706,973	74,097	15,883	25,699	1,738,409	74,485
Wabusana	586	245	3,926	266	53,747	18,597	417,696	18,132	103,209	166,993	588,615	18,398
Masaka	3,649	1,526	24,456	1,655	266,810	92,316	2,073,515	90,009	749,892	1,213,325	3,311,296	91,664
Bukomansibi	254	106	1,699	115	23,711	8,204	184,270	7,999	62,255	100,728	286,697	8,114
Bukoto	818	342	5,481	371	76,402	26,435	593,759	25,774	258,388	418,071	1,017,311	26,145
kalungu	536	224	3,590	243	50,057	17,320	389,018	16,887	124,045	200,705	593,313	17,130
Lwemiyaga	397	166	2,660	180	40,237	13,922	312,702	13,574	104,858	169,660	485,022	13,754
Mawogola	822	344	5,513	373	76,403	26,435	593,766	25,775	200,347	324,161	923,440	26,148
Masaka M.	822	344	5,513	373	0	0	0	0	0	0	5,513	373
Mpigi	9,810	4,102	65,740	4,448	124,140	42,953	964,755	41,880	219,747	355,552	1,386,047	46,328
Entebbe M.	195	82	1,314	89	2,151	744	16,715	726	1,030	1,667	19,696	815
Busiro	784	328	5,257	356	15,491	5,360	120,389	5,226	37,632	60,888	186,534	5,582
Butanbara	784	328	5,257	356	9,467	3,276	73,573	3,194	27,740	44,883	123,713	3,550
Gomba	6,479	2,708	43,398	2,935	78,097	27,022	606,932	26,346	85,280	137,984	788,314	29,281
Kyadondo	784	328	5,257	356	9,467	3,276	73,573	3,194	34,033	55,065	133,895	3,550
Mawokota	784	328	5,257	356	9,467	3,276	73,573	3,194	34,033	55,065	133,895	3,550
Mukono	18,561	7,758	124,329	8,409	128,625	44,504	999,609	43,392	340,500	550,930	1,674,868	51,801
Bbale	4,455	1,862	29,840	2,018	72,296	25,014	561,848	24,389	115,821	187,398	779,086	26,407
Buikwe	6,495	2,715	43,511	2,943	26,357	9,120	204,833	8,892	63,593	102,894	351,238	11,835
Buvuma	741	310	4,968	336	2,108	729	16,383	711	3,848	6,227	27,578	1,047
Mukono	3,711	1,551	24,856	1,681	15,061	5,211	117,047	5,081	93,829	151,815	293,718	6,762
Nakifuma	1,857	776	12,436	841	7,531	2,606	58,527	2,541	31,521	51,001	121,964	3,382
Ntenjeru	1,302	544	8,718	590	5,272	1,824	40,971	1,778	31,888	51,595	101,284	2,368
Total	37,368	15,622	250,358	16,936	1,051,934	363,969	8,175,112	354,873	1,655,324	2,678,316	11,103,786	371,809

Note : Cow composition in Table A3.4.2.2 (2),(3)
Grass requirement in Table A3.4.2.2 (1),(4)

(2) Grass Production

County	Private Land								NRP					Public Land						
	Private Grassland (ha) ①	Availab. Grass land ②=①×90%	L. ty.	Land type (%)	ton/ha (t) ③	Grass Production (ton) ④=②×③	Eat rate (%) ⑤	Grass to be Fed (ton) ⑥=④×⑤	Grass land (ha) ⑦	ton/ha (t) ⑧	Grass Production (ton) ⑨=⑦×⑧	Eat rate (%) ⑩	Grass to be Fed (ton) ⑪=⑨×⑩	Public Grassland (ha) ⑫	L. ty.	Land type (%)	ton/ha (t) ⑬	Grass Production (ton) ⑭=⑫×⑬	Eat rate (%) ⑮	Grass to be Fed (ton) ⑯=⑭×⑮
Luwero	174,300	156,870				5,573,964		2,636,484	122,276		3,056,900		1,445,914	73,030				1,847,203		525,373
Bururi	108,660	97,794	D		35	3,422,650	47.3	1,618,913	19,215	25	480,375	47.3	227,217	57,210	D		25	1,430,250	28.44	406,785
Katikamu	14,030	12,627	D	41.3	35	464,298	47.3	219,613	10,481	25	262,025	47.3	123,938	2,570	D	41.3	25	68,777	28.44	19,561
Nakaseke	30,750	27,675	D	78.1	35	986,992	47.3	466,847	83,846	25	2,096,150	47.3	991,479	8,230	D	78.1	25	211,156	28.44	60,056
Wabusana	20,860	18,774	D	23.5	35	700,024	47.3	331,111	8,734	25	218,350	47.3	103,280	5,020	D	23.5	25	137,020	28.44	38,971
Masaka	185,850	167,265				5,856,533		2,770,139	1,747		38,434		18,179	79,540				1,924,369		547,320
Bukomansibi	14,260	12,834	P		38	487,540	47.3	230,606		28		47.3	0	7,100	P		28	198,800	28.44	56,542
Bukoto	45,150	40,635	D	42.7	35	1,491,893	47.3	705,665		25		47.3	0	25,380	D	42.7	25	678,129	28.44	192,870
kalungu	42,980	38,682	P		38	1,469,840	47.3	695,234		28		47.3	0	2,020	P		28	56,560	28.44	16,087
Lwemiyaga	26,920	24,228	T		32	775,360	47.3	366,745	1,747	22	38,434	47.3	18,179	15,860	T		22	348,920	28.44	99,238
Mawogola	55,910	50,319	T		32	1,610,240	47.3	761,644		22		47.3	0	29,180	T		22	641,960	28.44	182,583
Masaka M.	630	567	P		38	21,660	47.3	10,245		28		47.3	0					0	28.44	0
Mpigi	54,080	48,672	P			2,011,186		951,291	1,747		48,916		23,137	63,490	P			1,626,064		462,476
Entebbe M.	2,970	2,673	P		38	112,860	47.3	53,383		28		47.3	0		P		28	0	28.44	0
Busiro	9,250	8,325	P		38	351,500	47.3	166,260	1,747	28	48,916	47.3	23,137	620	P		28	17,360	28.44	4,937
Butanbara	6,880	6,192	P		38	261,440	47.3	123,661		28		47.3	0	1,980	P		28	55,440	28.44	15,768
Gomba	17,570	15,813	T	83.2	35	623,806	47.3	295,060		25		47.3	0	60,760	T	83.2	25	1,549,624	28.44	440,736
Kyadondo	8,760	7,884	P		38	332,880	47.3	157,452		28		47.3	0		P		28	0	28.44	0
Mawokota	8,650	7,785	P		38	328,700	47.3	155,475		28		47.3	0	130	P		28	3,640	28.44	1,035
Mukono	56,260	50,634				2,073,410		980,723	15,721		393,025		185,901	29,270				810,110		230,408
Bbale	21,490	19,341	D		35	752,150	47.3	355,767	15,721	25	393,025	47.3	185,901	3,150	D		25	78,750	28.44	22,398
Buikwe	13,890	12,501	P		38	527,820	47.3	249,659		28		47.3	0	9,530	P		28	266,840	28.44	75,893
Buvuma	1,460	1,314	P		38	55,480	47.3	26,242		28		47.3	0	1,800	P		28	50,400	28.44	14,335
Mukono	11,970	10,773	P		38	454,860	47.3	215,149		28		47.3	0	5,960	P		28	166,880	28.44	47,463
Nakifuma	4,000	3,600	P		38	152,000	47.3	71,896		28		47.3	0	5,330	P		28	149,240	28.44	42,446
Ntenjeru	3,450	3,105	P		38	131,100	47.3	62,010		28		47.3	0	3,500	P		28	98,000	28.44	27,873
Total	470,490	423,441				15,515,093		7,338,637	141,491		3,537,275		1,673,131	245,330				6,207,746		1,765,577

Note : Land types P : Penniscetum purpureum grass, D : Dry hyparrhenia grass, T : Themeda triandra grass

(3) Required Grassland

COUNTY	GRASS REQUIREMENT (ton) ①	Grass Production to be Fed: Private Grassland (ton) ②	NRP Grassland (ton) ③	Public Grassland (ton) ④	Total (ton) ⑤=②~④	Balance (ton) ⑥=①-⑤	Grass /ha (ton) ⑦	Adjustment (Public land (ha) ⑧=⑥/⑦	Grassland Requirement land (ha) ⑨	Grass land Requirement for Hay: Hay Req. (ton) ⑩	Necessary Hay Grassland (ha) ⑪=⑩/7	(Ref) NRP(EP)+ Private land(10%) (ha)
Luwero	4,731,575	2,636,484	1,445,914	525,373	4,607,771	123,804		4,952	374,558	182,016	26,003	34,230
Bururi	1,991,594	1,618,913	227,217	406,785	2,252,915	-261,321	25	-10453	174,632	74,128	10,590	13,506
Katikamu	412,957	219,613	123,938	19,561	363,112	49,845	25	1994	29,075	15,005	2,144	2,843
Nakaseke	1,738,409	466,847	991,479	60,056	1,518,382	220,027	25	8801	131,627	74,485	10,641	14,595
Wabusana	588,615	331,111	103,280	38,971	473,362	115,253	25	4610	39,224	18,398	2,628	3,286
Masaka	3,311,296	2,770,139	18,179	547,320	3,335,638	-24,342		-555	266,582	91,664	13,094	14,528
Bukomansibi	286,697	230,606	0	56,542	287,148	-451	28	-16	21,344	8,114	1,159	1,426
Bukoto	1,017,311	705,665	0	192,870	898,535	118,776	25	4751	75,281	26,145	3,735	4,515
kalungu	593,313	695,234	0	16,087	711,321	-118,008	28	-4215	40,785	17,130	2,447	1
Lwemiyaga	485,022	366,745	18,179	99,238	484,162	860	22	39	44,566	13,754	1,965	2,932
Mawogola	923,440	761,644	0	182,583	944,227	-20,787	22	-945	84,145	26,148	3,735	5,591
Masaka M.	5,513	10,245	0	0	10,245	-4,732	28	-169	461	373	53	63
Mpigi	1,386,047	951,291	23,137	462,476	1,436,904	-50,857		-1,591	117,726	46,328	6,618	1
Entebbe M.	19,696	53,383	0	0	53,383	-33,687	28	-1203	1,767	815	116	297
Busiro	186,534	166,260	23,137	4,937	194,334	-7,800	28	-279	11,338	5,582	797	1,165
Butanbara	123,713	123,661	0	15,768	139,429	-15,716	28	-561	8,299	3,550	507	688
Gomba	788,314	295,060	0	440,736	735,796	52,518	25	2101	80,431	29,281	4,183	1,757
Kyadondo	133,895	157,452	0	0	157,452	-23,557	28	-841	7,919	3,550	507	876
Mawokota	133,895	155,475	0	1,035	156,510	-22,615	28	-808	7,972	3,550	507	865
Mukono	1,674,868	980,723	185,901	230,408	1,397,032	277,836		10,844	112,095	51,801	7,400	7,786
Bbale	779,086	355,767	185,901	22,398	564,066	215,020	25	8601	48,962	26,407	3,772	4,309
Buikwe	351,238	249,659	0	75,893	325,552	25,686	28	917	24,337	11,835	1,691	1,389
Buvuma	27,578	26,242	0	14,335	40,577	-12,999	28	-464	2,796	1,047	150	146
Mukono	293,718	215,149	0	47,463	262,612	31,106	28	1111	19,041	6,762	966	1,197
Nakifuma	121,964	71,896	0	42,446	114,342	7,622	28	272	9,602	3,382	483	400
Ntenjeru	101,284	62,010	0	27,873	89,883	11,401	28	407	7,357	2,368	338	345
Total	11,103,786	7,338,637	1,673,131	1,765,577	10,777,345	326,441		13,650	870,961	371,809	53,115	56,545

Note : ①=⑪ in Table A3.4.2.2 (1) ②=⑥ in Table A3.4.2.2 (2) ③=⑪ in Table A3.4.2.2 (2)
④=⑯ in Table A3.4.2.2 (2) ⑨=①+⑦+⑫ in Table A3.4.2.2 (2) +⑧ ⑩=⑫ in Table A3.4.2.2 (1)

Hay production = 7ton/ha (grass yield : so ton/ha, hay made rate : 20%, harvest loss : 30%)

Table A 3.4.2.2 Grass Requirement for a Unit Animal

(a) Beef Cattle

Requirement of Grass for a Cow (360kg)

	Grass nutritive value			
	Feeding	DM	DCP	TDN
Nutrient maintenance ration (day)	(kg)	(g) 7500	(g) 200	(g) 2600
Nutrient Requirement /day		7500	396	3953
Wet season garss/day 164 days	36 5904	7488	576	3960
Dry season garss/day 201 days	19 3819	7732	398.5	3863
Total grass/year	9723			

Total Requirement for a beef cattle (converted for a cow)

	TDN ratio (%)	Grass (kg)	Composition of head	Requirement Grass(kg)
Cow	100	9723	1	9,723
Bull	129	12543	0.0154	193
Cow calf 0-6	36.7	1784	0.205	366
Bull calf 0-6	34.3	1667	0.205	342
Cow calf 7-12	68.8	6689	0.186	1,244
Bull calf 7-12	60.7	5902	0.186	1,098
Cow calf 13-18	81	7876	0.186	1,465
Heifer cow 19-30	99.1	9635	0.367	3,536
Bullock 13-18	74.9	7283	0.186	1,355
Bullock 19-30	87.5	8508	0.369	3,139
Total grass				22,461

(b) Dairy Cattle

Requirement of Grass for a Cow (510kg)

	Grass nutritive value			
	Feeding	DM	DCP	TDN
Nutrient maintenance ration (day)	(kg)	(g) 9600	(g) 294	(g) 4100
Nutrient Requirement		9600	829.5	7846
Wet season garss/day 164	39 6396	13968	1468	7895
Dry season garss/day 201	20 4020	14377	1229	7864.5
Total grass/year	10416			

Total Requirement for a Dairy cattle (converted for a cow)

	TDN ratio (%)	Grass (kg)	Composition of head	Requirement Grass(kg)
Cow	100	10,416	1	10,416
Cow calf 0-6	26.8	837.4	0.207	173
Bull calf 0-6	24.5	765.6	0.207	158
Cow calf 7-12	45.6	4,750	0.197	936
Bull calf 7-12	40.1	4,177	0.197	823
Heifer calf 13-15	55.1	5,739	0.098	562
Heifer cow 16-25	62.1	6,468	0.292	1,889
Bullock 13-18	52.1	5,427	0.197	1,069
Total grass				16,026

(c) Goat

Requirement of Grass (She-Goat 25kg)

	Grass nutritive value			
	Feeding	DM	DCP	TDN
Nutrient Requirement (day)		940	40	460
Wet season garss (day) 164 Day	4.4 722	915.2	70.4	484
Dry season garss (day) 201 Day	4.4 884	1355.2	35.2	624.8
Total grass (year)	1606			

Total Grass Requirement for a Goat

	live weig.	TDN ratio (%)	Grass (kg)	Composition of head	Requirement Grass (kg)
She-goat	25	100	1606	31.8	511
Buck	27	96.4	1548	1.3	20
Kid 0-2	4.8	36.7	295	8.5	25
Kid 3-6	11.1	84.8	1362	16.3	222
Female Kid 7-12	16.1	83.3	1338	10.2	136
Female kid 13-18	21.9	113.6	1824	11.7	213
Buckling Kid 7-12	19.4	124.2	1995	10.2	203
Buckling 13-18	26.7	170.9	2745	10	275
Total grass					1605

(d) Sheep

Requirement of Grass (Ewe 30kg)

	Grass nutritive value			
	Feeding	DM	DCP	TDN
Nutrient Requirement (day)		1000	50	490
Wet season garss (day) 164 Day	5.5 902	1144	88	605
Dry season garss (day) 201 Day	4.9 985	1509.2	39.2	695.8
Total grass (year)	1887			

Total Grass Requirement for a Sheep

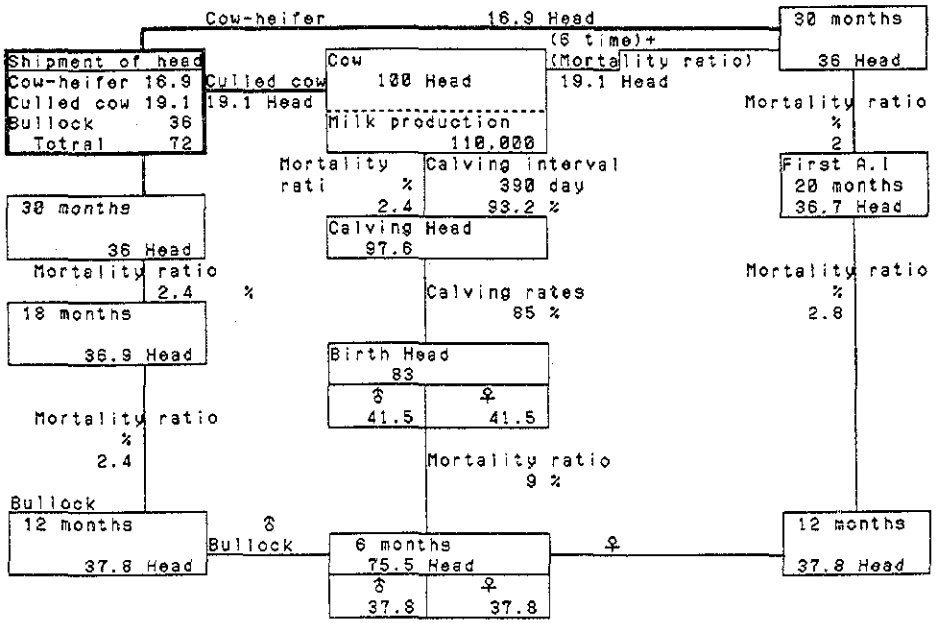
	live weig.	TDN ratio (%)	Grass (kg)	Composition of head	Requirement Grass (kg)
Ewe	30	100	1,887	40	755
Ram	32	97	1,830	1.6	29
Lamb 0-2	5.5	36	340	9.9	34
Ewe lamb 3-6	12.7	82	1,547	9.5	147
Ewe lamb 7-12	18.7	82	1,547	14.2	220
Ewe lamb 13-18	25.8	113	2,132	14.1	301
Ram lamb 3-6	13.1	85	1,604	9.5	152
Ram lamb 7-7.5	25	135	2,548	1.2	31
Total grass					1669

1669

Goat ratio	79.5	1276
Sheep ratio	20.5	342
Requirement Grass /Head		1618

TABLE A 3.4.2.3 Composition of a Raising Animal Unit

(a) Beef Cattle



Shipment of head	72	Milk prodc.	110,000
		Milk kg/day	
Cow-heifer	16.9	weaning(mon.)	6
		Total day	180
Culled cow	19.1	Milk kg	1081
		Calf Head	83
Bullock	36	Total Milk kg	89,723
		Shipment Milk	20,277

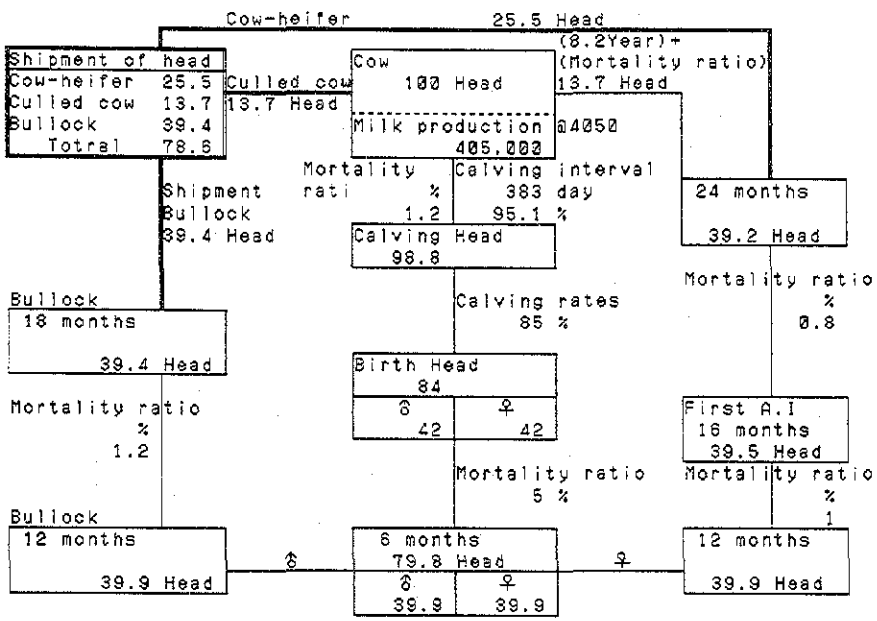
Calf weight − weaning wei.
35 − 111kg

1081 Kg

Construction of head (base of cow head)

ITEM	Herd	Remarks	AVG. mon	AVG. kg weight
		Head × Day		
Cow	100	100 × 365 / 365		360
Bull	0	0 × 365 / 365		423
Calf ♀ 0～6	20.5	41.5 × 180 / 365	3	78.5
Calf ♂ 0～6	20.5	41.5 × 180 / 365	3	64.2
Calf ♀ 7～12	18.6	37.8 × 180 / 365	9	153.6
Calf ♂ 7～12	18.6	37.8 × 180 / 365	9	131.2
Heifer Calf 13～18	18.6	37.8 × 180 / 365	15	216.1
Cow-heifer 19～30	36.7	36.7 × 365 / 365	24	292
Bullock Calf 13～18	18.6	37.8 × 180 / 365	15	183.7
Bullock 19～30	36.9	36.9 × 365 / 365	24	246
		Cow%		
TOTAL	289	34.6		

(b) Dairy Cattle

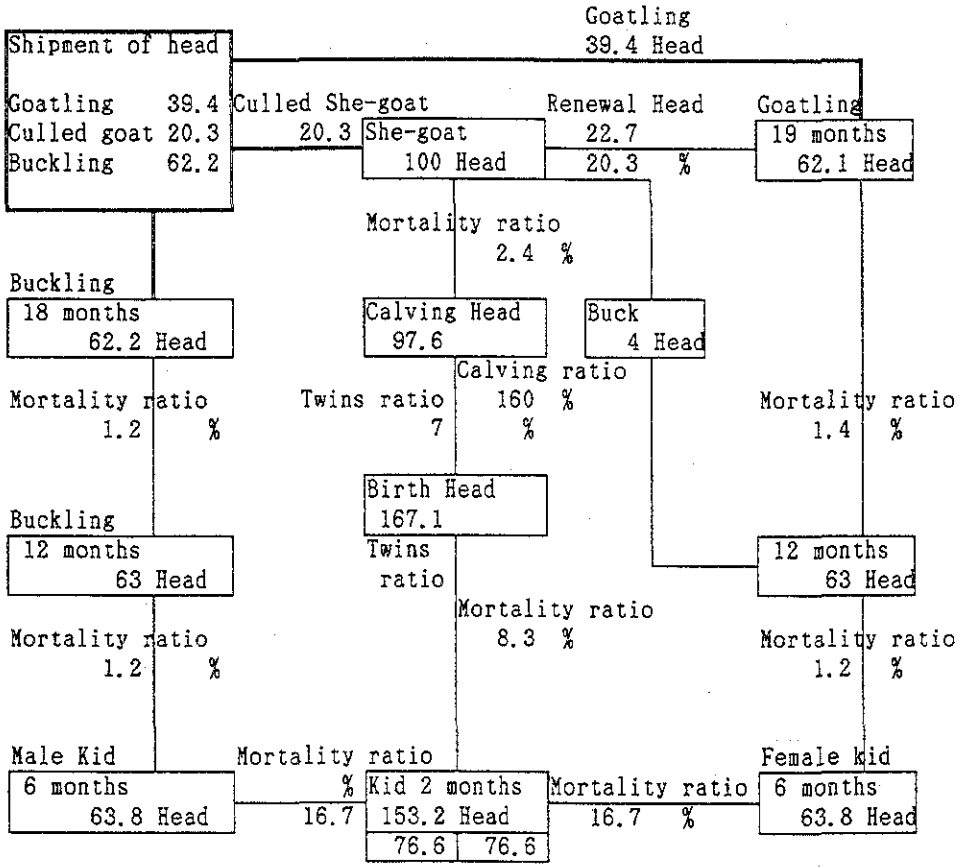


Shipment of head 78.6		Milk prodc.	405,000
			Calf weight−weaning w.
Cow-heifer	25.5	Milk kg/day	8.6 40 - 104kg
		weaning(mon.)	5 Avg. 72 ×0.12
Culled cow	13.7	Total day	150 = 8.6 l
		Milk kg	1290 1290
Bullock	39.4	Calf Head	84
		Total Milk kg	108,360
		Shipment Milk	296,640

Construction of head (base of cow head)

ITEM	Herd	Remarks Head × Day	AUG. kg mon	weight
Cow	100	100 ×365/365		510
Calf ♀ 0～6	20.7	42 ×180/365	3	91.7
Calf ♂ 0～6	20.7	42 ×180/365	3	96.7
Calf ♀ 7～12	19.7	39.9 ×180/365	9	220.2
Calf ♂ 7～12	19.7	39.9 ×180/365	9	213.6
Heifer Calf 13～15	9.8	39.9 ×90/365	13.5	300.6
Cow-Heifer 16～25	29.2	39.5 ×270/365	20	392.7
Bullock 13～18	19.7	39.9 ×180/365	15	314.3
TOTAL	239.5	Cow% 41.8		

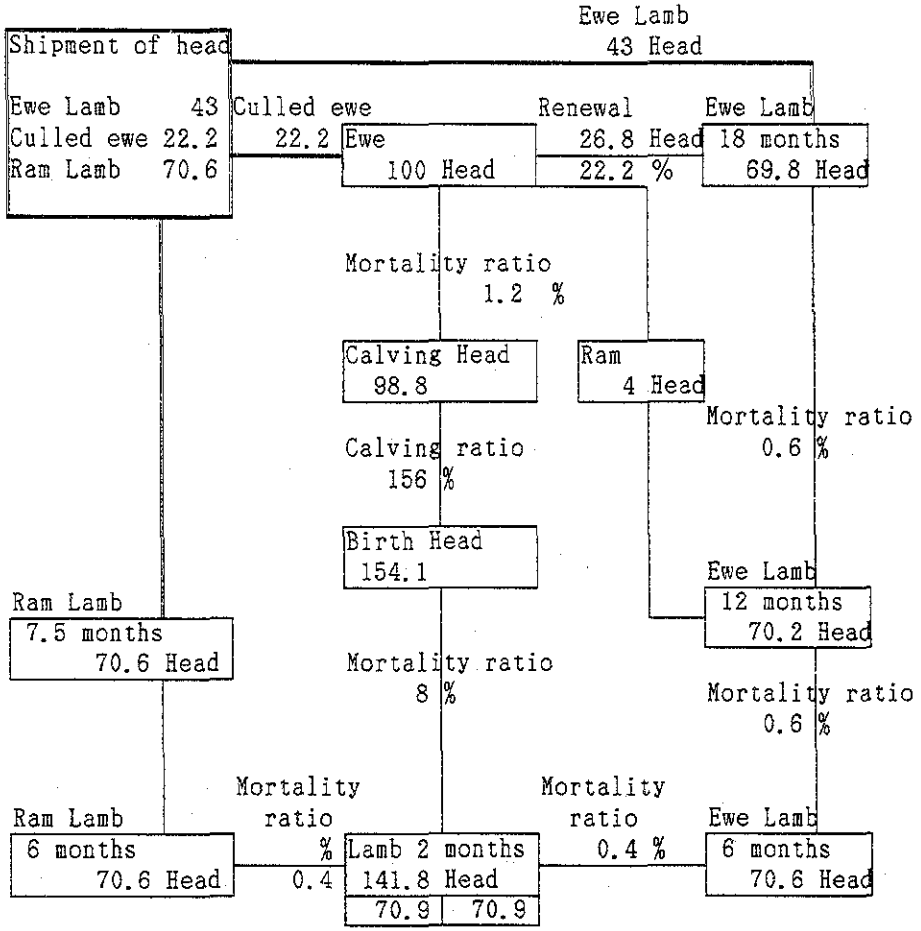
(c) Goat



Construction of head

ITEM	Head %	Herd	Remarks	AVG. W. kg mon	weight
Buck	1.3	4			27
She-goat	31.8	100			25
Kid 0-2	8.5	26.7	167.1 ÷ 153.2 (Birth Head+Kid 2 months)×1/2×2/12	1	4.8
Kid 3-6	16.3	51.1	153.2 Head×4/12	4	11.1
Kid ♀ 7-12	10.2	31.9	63.8 Head×6/12	9	16.1
Goatling 13-19	11.7	36.8	63 Head×7/12	15.5	21.9
Kid ♂ 7-12	10.2	31.9	63.8 Head×6/12	9	19.4
Buckling 13-18	10	31.5	63 Head×6/12	15	26.7
TOTAL	100	313.9	She-goat% 31.9		

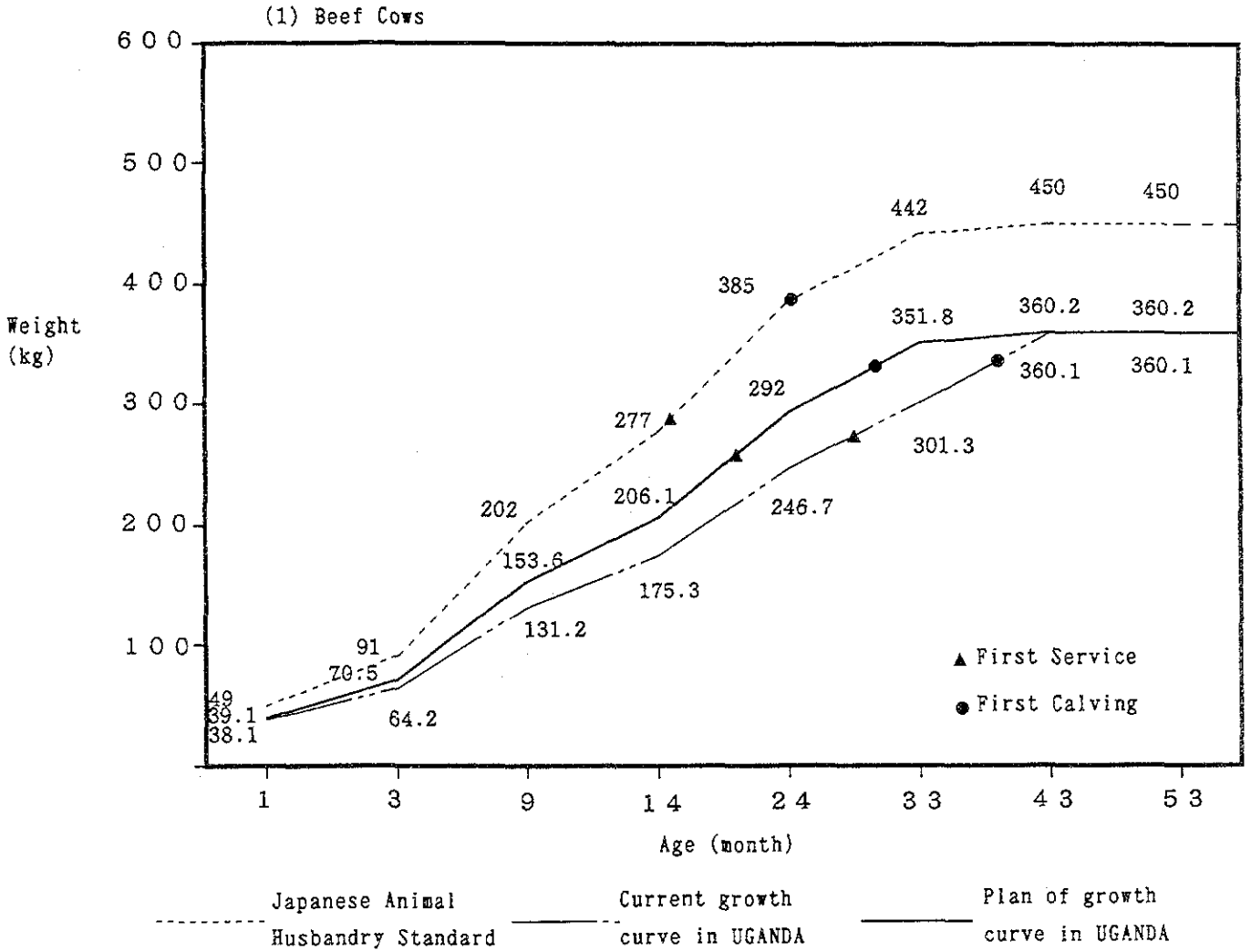
(d) Sheep



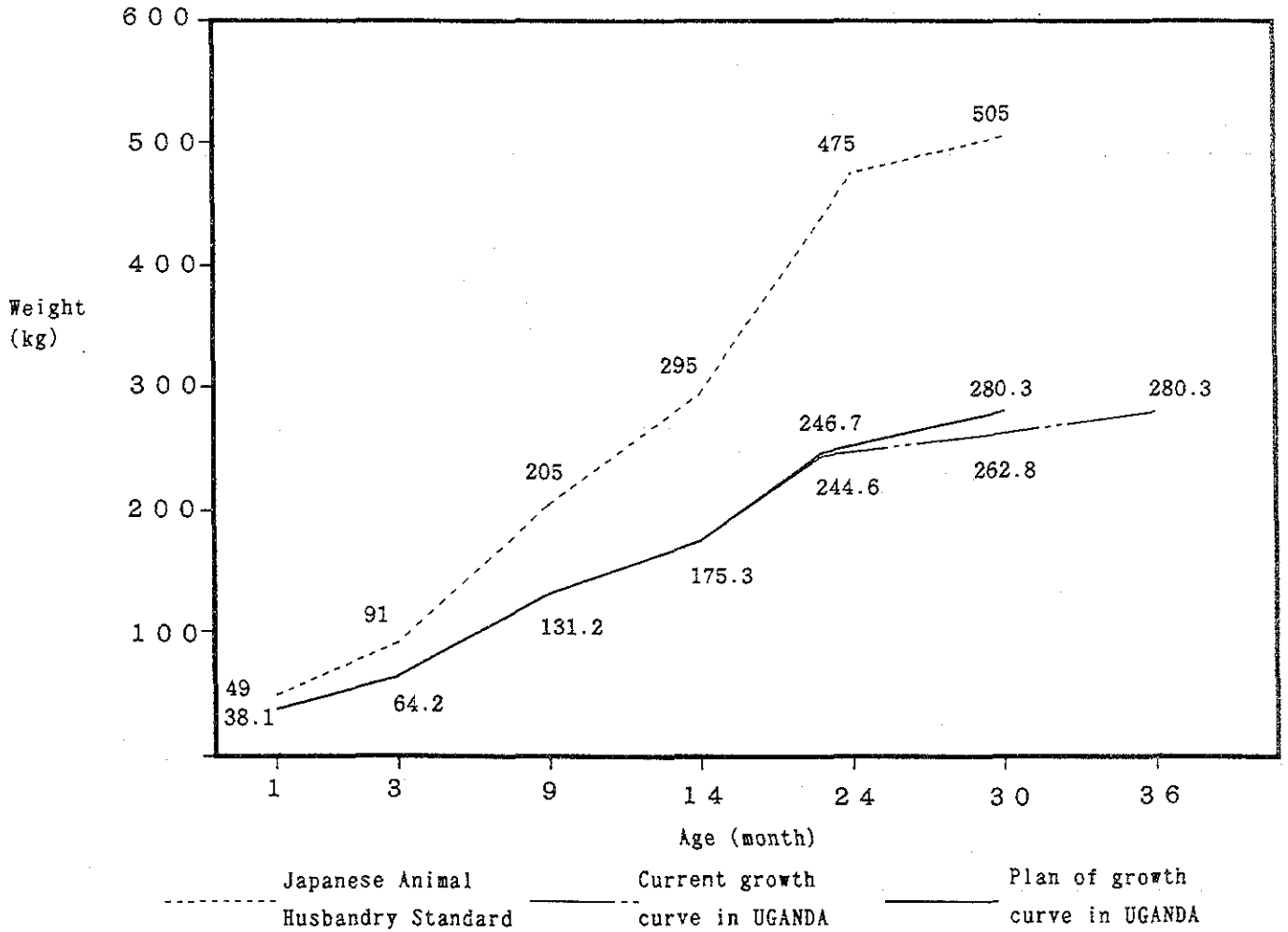
Construction of head

ITEM	Head %	Herd	Remarks	AVG. mon	W. kg weight
Ram	1.6	4			32
Ewe	40	100			30
Lamb 0-2	9.9	24.7	154.1 141.8 (Birth Head+Lamb 2 months)×1/2×2/12	1	5.5
Ewe Lamb 3-6	9.5	23.6	70.9 Head×4/12	4	12.7
Ewe Lamb 7-12	14.2	35.3	70.6 Head×6/12	9	18.7
Ewe Lamb 13-18	14.1	35.1	70.2 Head×6/12	15.5	25.8
Ram Lamb 3-6	9.5	23.6	70.9 Head×4/12	4	13.1
Ram Lamb 7-7.5	1.2	2.9	70.6 Head×0.5/12	7.5	25
TOTAL	100	249.2	Ewe% 40.1		

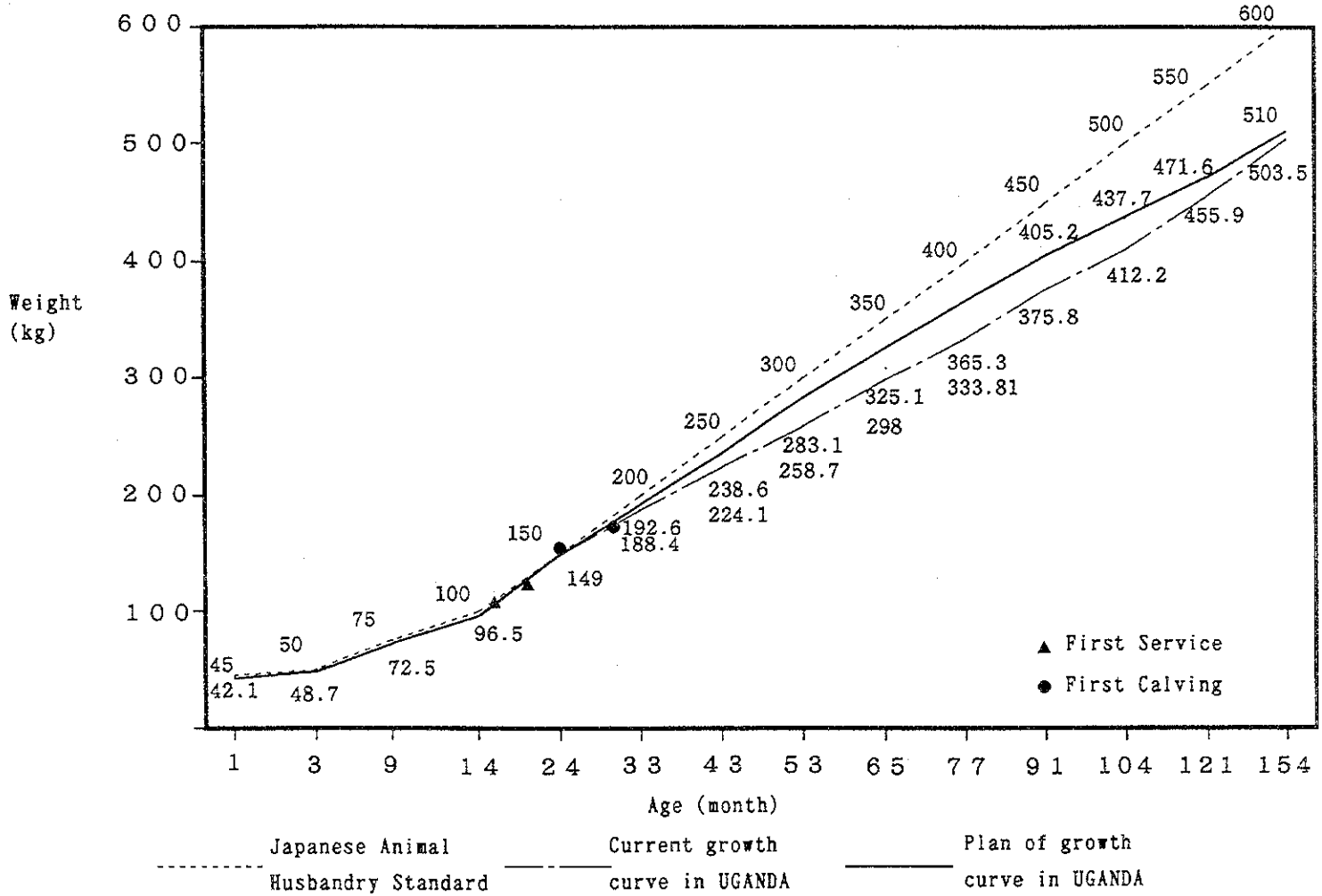
Figure A 3.4.2.1 Animal Growth Curves



(2) Beef Bullock



(3) Dairy Cows

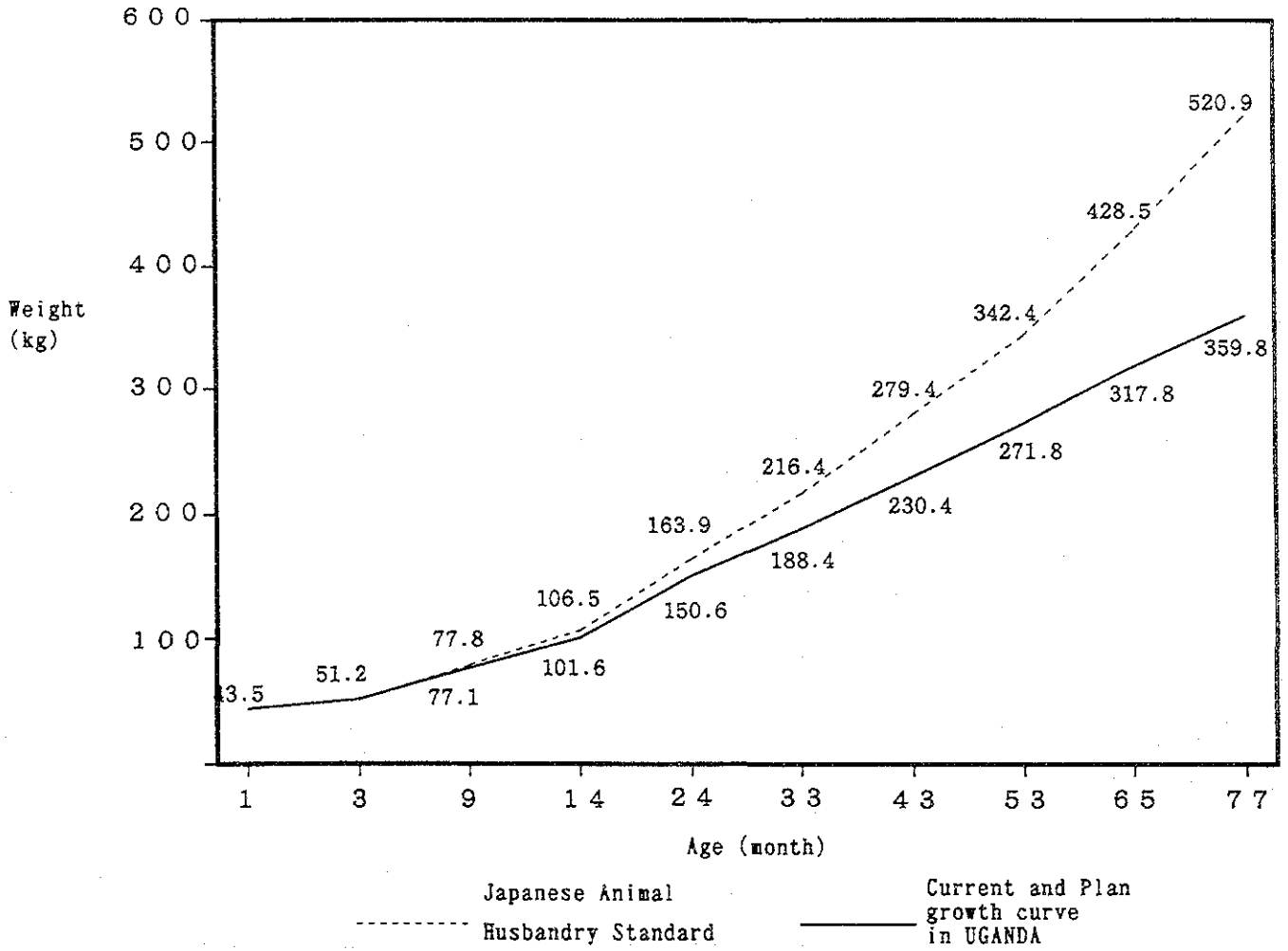


Japanese Animal Husbandry Standard

Current growth curve in UGANDA

Plan of growth curve in UGANDA

(4) Dairy Bullock



Appendix 3.5 Processing and Marketing Plan

3.5.1 Processing

Table A3.5.1.1 Agricultural Processing Plan by District

(1) Crop Cultivation Area for Agricultural Processing Unit : ha

	Total	Luwero	Masaka	Mpigi	Mukono
Sugar cane	43,609	15,225	8,818	5,535	14,031
Tea	1,456	0	184	337	936
Cacao	7,078	0	892	1,636	4,550
Vanilla	11,808	3,325	1,935	1,754	4,794
Banana	3,355	1,171	678	426	1,079
Cassava	4,908	1,284	1,249	1,258	1,118
Pineapples	5,246	1,497	1,165	731	1,853
Tomatoes	1,196	162	328	653	54

(2) Facility Unit : No of Facility

	Total	Luwero	Masaka	Mpigi	Mukono
Total of Facility	380	81	108	94	97
For Sugar Cane/Vanilla	17	3	4	5	5
For Cacao/Tea	14	3	3	3	5
Solar Drying House	380	81	108	94	97
Collection Centre	25	8	6	5	6
Collection Sub-centre	200	73	47	41	39
Tractor Centre	250	100	54	47	49

(3) Production of Agricultural Processing Unit : Ton

	Total	Luwero	Masaka	Mpigi	Mukono
Sugar cane	127,338	56,379	22,044	13,838	35,077
Tea	946	0	119	219	608
Cacao	5,521	0	696	1,276	3,549
Vanilla	3,936	1,108	645	585	1,598
Bananas	9,058	3,163	1,832	1,150	2,914
Cassava	16,623	4,347	4,228	4,262	3,785
Pineapples	13,996	3,993	3,107	1,951	4,945
Tomatoes	833	113	228	454	37
Milk	53,873	44,981	7,388	1,504	0
Beef Slaughter	15,966	7,788	3,906	2,006	2,266
Goat Slaughter	10,287	2,095	2,759	2,012	3,421

(4) Gross Benefit of Agricultural Processing Unit : Million USH

	Total	Luwero	Masaka	Mpigi	Mukono
Jaggary	30,561	13,531	5,291	3,321	8,418
Tea(Dry-Leave)	201	0	25	47	129
Cacao	4,704	0	593	1,087	3,024
Vanilla	132,053	37,184	21,636	19,620	53,613
Bananas	9,511	3,321	1,923	1,207	3,060
Cassava	11,636	3,043	2,960	2,983	2,650
Pineapples	26,452	7,547	5,873	3,687	9,345
Tomatoes	3,789	513	1,039	2,067	170
Total	218,907	65,138	39,340	34,019	80,410
Milk	21,549	17,992	2,955	602	0
Beef Slaughter	19,159	9,346	4,687	2,408	2,719
Goat Slaughter	15,431	3,142	4,139	3,019	5,131
Total	56,140	30,481	11,781	6,028	7,850

(5) Production Cost of Agricultural Processing — Unit : Million USH

	Total	Luwero	Masaka	Mpigi	Mukono
Jaggary	24,449	10,825	4,232	2,657	6,735
Tea(Dry-Leave)	161	0	20	37	104
Cacao	3,763	0	474	870	2,419
Vanilla	105,642	29,747	17,309	15,696	42,890
Bananas	4,982	1,739	1,007	632	1,603
Cassava	9,142	2,391	2,326	2,344	2,082
Pineapples	13,996	3,993	3,107	1,951	4,945
Tomatoes	1,582	214	434	863	71
Total	163,718	48,909	28,910	25,050	60,848
Milk	18,748	15,653	2,571	523	0
Beef Slaughter	12,949	6,316	3,168	1,627	1,837
Goat Slaughter	12,777	2,602	3,427	2,499	4,249
Total	44,473	24,571	9,166	4,650	6,086

(6) Net Benefit of Agricultural Processing — Unit : Million USH

	Total	Luwero	Masaka	Mpigi	Mukono
Jaggary	6,112	2,706	1,058	664	1,684
Tea(Dry-Leave)	40	0	5	9	26
Cacao	941	0	119	217	605
Vanilla	26,411	7,437	4,327	3,924	10,723
Bananas	4,529	1,581	916	575	1,457
Cassava	2,493	652	634	639	568
Pineapples	12,456	3,554	2,766	1,736	4,401
Tomatoes	2,207	299	605	1,204	99
Total	55,189	16,229	10,430	8,969	19,562
Milk	2,801	2,339	384	78	0
Beef Slaughter	6,211	3,030	1,519	781	881
Goat Slaughter	2,654	540	712	519	883
Total	11,666	5,909	2,615	1,378	1,764
Agricultural Processing Production					
in Rural Area	45,144	6,810	10,173	8,969	19,193
in Urban Area	10,045	9,419	257	0	369

(7) Labour use plan for Agricultural Processing — Unit : Man

	Total	Luwero	Masaka	Mpigi	Mukono
Jaggary	50,935	22,552	8,818	5,535	14,031
Tea(Dry-Leave)	379	0	48	87	243
Cacao	15,458	0	1,948	3,573	9,937
Vanilla	62,976	17,733	10,318	9,357	25,568
Bananas	18,116	6,325	3,663	2,300	5,829
Cassava	33,245	8,694	8,457	8,524	7,571
Pineapples	55,982	15,972	12,430	7,803	19,778
Tomatoes	6,662	902	1,827	3,634	300
Milk	431	360	59	12	0
Beef/Goat	64	31	16	8	9
Total Required Labour	243,754	72,178	47,508	40,812	83,256
Capacity of					
Labor	512,767	28,960	177,916	168,550	137,341
For Rural Process	197,798	28,960	46,240	40,832	81,765
	1	0	1	1	1
For Urban Process	46,451	43,609	1,343	0	1,500
	0	1	0	0	0

Table A3.5.1.2 Required Facilities for Agricultural Processing, Marketing and Farming

Unit : Number

	Suger Cane Vanilla	Cacao	Solar Dry House	Collection Centre	Sub-Centre	Tractor Centre
Luwero	2	2	92	8	73	81
Bamunanika			30	3	27	30
Buruli			9	1	8	9
Katikamu	1	1	31	3	28	31
Nakaseke	1	1	22	1	10	11
Masaka	4	4	106	6	47	53
Bukoto	1	1	10	1	4	5
Bukoman-	1	1	38	2	17	19
Kalungu	1	1	14	1	6	7
Lwemiyaga	1	1	14	1	6	7
Mawagola			30	1	14	15
Mpigi	4	3	92	5	41	46
Busiro	1	1	24	1	11	12
Butambara	1		8	1	3	4
Gomba			30	1	14	15
Kyadondo	1	1	10	1	4	5
Mawokota	1	1	20	1	9	10
Mukono	5	6	90	6	39	45
Bbale		1	20	1	9	10
Buikwe	1	1	22	1	10	11
Buvuma	1	1	6	1	2	3
Mukono	1	1	18	1	8	9
Nakifuma	1	1	14	1	6	7
Ntenjeru	1	1	10	1	4	5
Total	15	15	380	25	200	225

Figure A 3.5.1.1 Slaughter Slab Plan

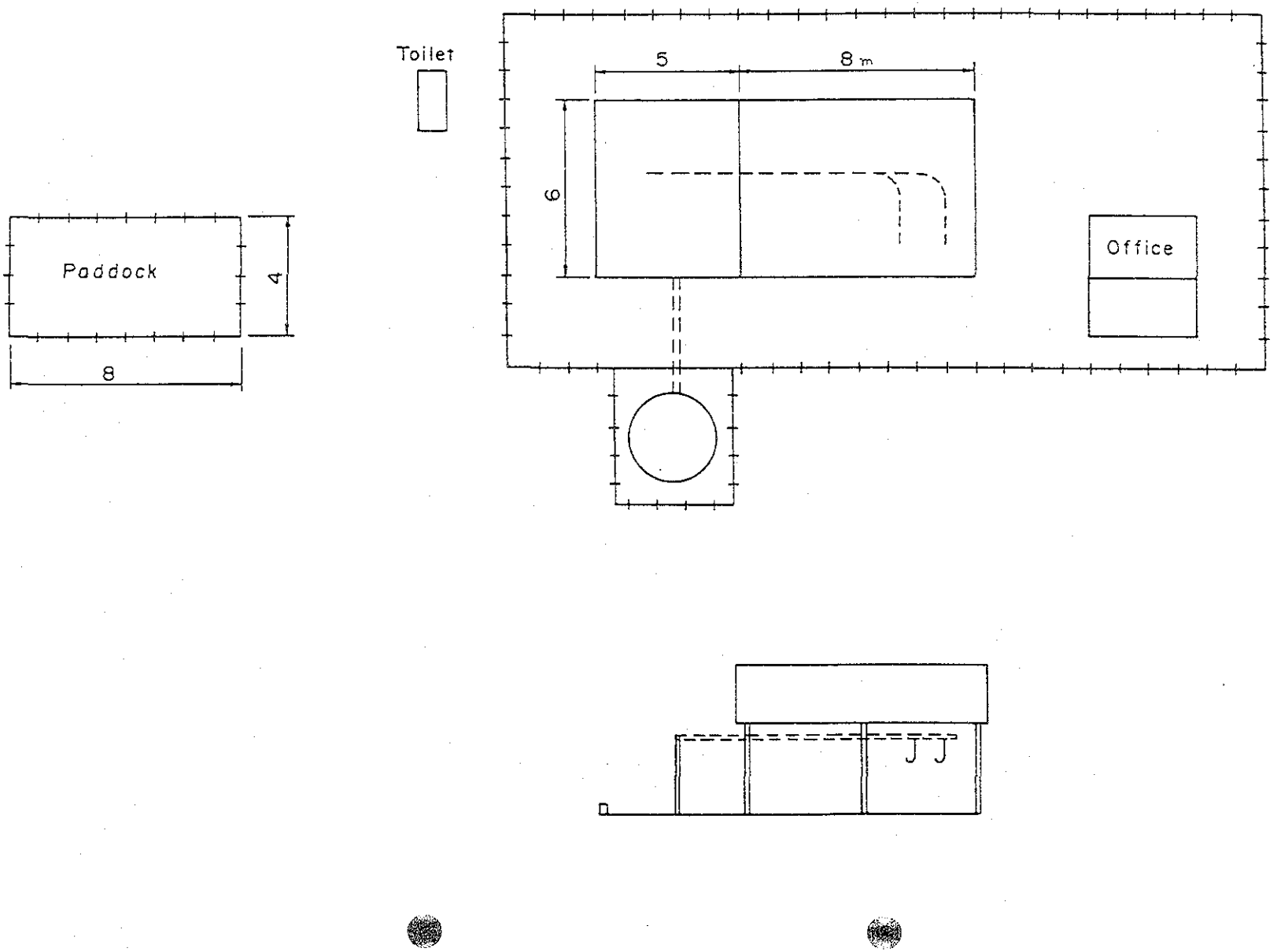
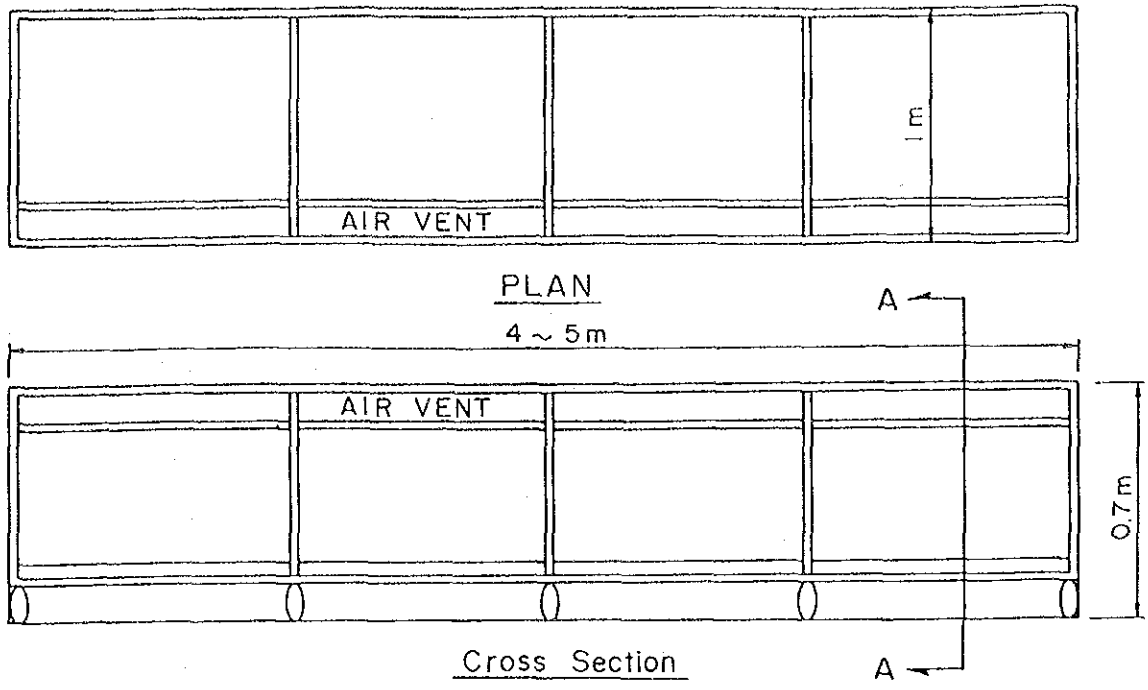
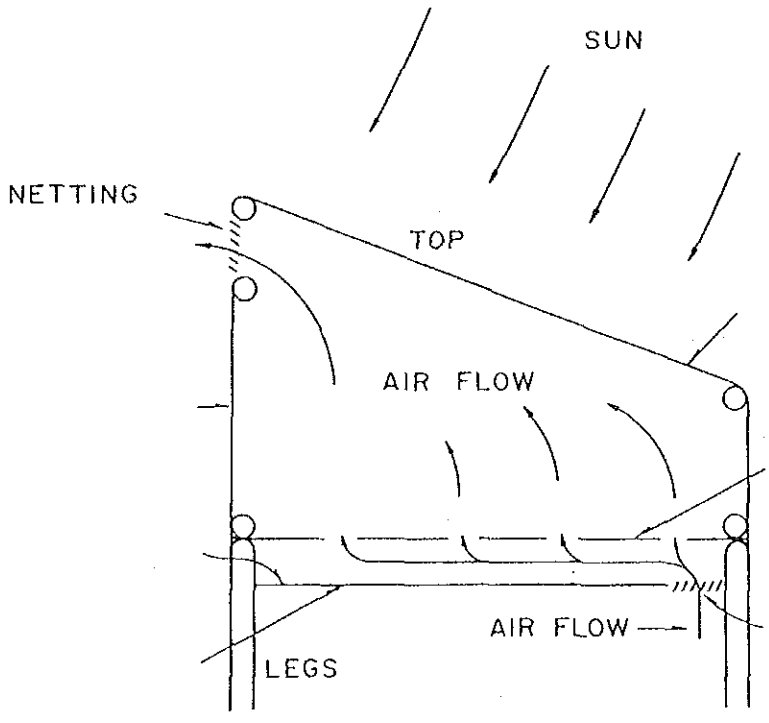


Figure A 3.5.1.2 SOLAR DRYER – SKETCH PLAN





Section A – A

3.5.2 Marketing

Table A3.5.2.1 Food Production and Consumption Balance in Luwero

(1) Production and Consumption Balance

Agricultural Production Volume

Unit : ton

Items	Bamunanika	Buruli	Katikamu	Nakaseke	Total
Banana/Tubers	160,195	121,701	143,305	142,683	567,884
Banana	73,532	34,133	63,431	65,100	236,196
Tubers	86,663	87,568	79,874	77,583	331,688
Cereals	21,584	17,325	22,156	15,678	76,743
Riec(Paddy)	377	0	1,088	1,235	2,700
Pulses	9,897	8,773	9,841	8,208	36,719
Oilseeds	2,792	9,762	2,632	4,750	19,936
Vegetables	8,539	1,925	13,966	8,725	33,155
Fruits	39,494	4,012	32,445	30,937	106,888

Food Consumption Volume

Unit : ton

Items	Bamunanika	Buruli	Katikamu	Nakaseke	Total
Banana/Tubers	68,542	63,722	93,394	59,479	285,137
Banana	46,341	43,082	63,143	40,213	192,779
Tubers	22,201	20,640	30,251	19,266	92,358
Cereals	21,673	20,149	29,531	18,807	90,160
Rice(Paddy)	529	491	720	459	2,199
Pulses	5,110	4,751	6,963	4,434	21,258
Oilseeds	2,114	1,966	2,881	1,835	8,796
Vegetables	3,524	3,276	4,802	3,058	14,660
Fruits	8,105	7,535	11,044	7,033	33,717

Balance of Production and Consumption Volume

Unit : ton

Items	Bamunanika	Buruli	Katikamu	Nakaseke	Total
Banana/Tubers	91,653	57,979	49,911	83,204	282,747
Banana	27,191	-8,949	288	24,887	43,417
Tubers	64,462	66,928	49,623	58,317	239,330
Cereals	-89	-2,824	-7,375	-3,129	-13,417
Rice(Paddy)	-152	-491	368	776	501
Pulses	4,787	4,022	2,878	3,774	15,461
Oilseeds	678	7,796	-249	2,915	11,140
Vegetables	5,015	-1,351	9,164	5,667	18,495
Fruits	31,389	-3,523	21,401	23,904	73,171

(2) Food Production in Luwero (Plan)

Item	Yield/ha	Bamunanika		Buruli		Katikamu		Nakaseke		Total	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton
Cash Crops											
Coffee(Robsta)	1.75	8,100	14,175	270	473	7,020	12,285	2,700	4,725	18,090	31,658
Sugar Cane	50.00	5,091	254,550	4,966	248,300	5,113	255,650	3,988	199,400	19,158	957,900
Tea	5.00	0	0	0	0	0	0	0	0	0	0
Cacao	0.78	69	54	0	0	23	18	0	0	92	72
Cotton	0.79	779	615	1,797	1,420	759	600	690	545	4,025	3,180
Vanilla	2.50	191	478	0	0	194	485	46	115	431	1,078
Food Crops											
Banana/Tubers		16,066	160,195	11,727	121,701	14,373	143,305	14,263	142,683	56,429	567,884
Banana	8.10	9,078	73,532	4,214	34,133	7,831	63,431	8,037	65,100	29,160	236,196
Tubers		6,988	86,663	7,513	87,568	6,542	79,874	6,226	77,583	27,269	331,688
Cassava	13.26	4,107	54,459	1,926	25,539	3,209	42,551	3,594	47,656	12,836	170,205
Sweet Potatos	11.08	2,759	30,570	5,519	61,151	3,173	35,157	2,345	25,983	13,796	152,861
Irish Potatos	14.00	104	1,456	50	700	142	1,988	269	3,766	565	7,910
Yams	9.87	18	178	18	178	18	178	18	178	72	712
Cereals		11,549	21,584	9,647	17,325	11,857	22,156	8,525	15,678	41,578	76,743
Maize	1.87	11,046	20,656	4,846	9,062	11,344	21,213	6,258	11,702	33,494	62,633
Finger Millet	1.54	129	199	2,681	4,129	139	214	1,085	1,671	4,034	6,213
Sorghum	1.95	374	729	2,120	4,134	374	729	1,182	2,305	4,050	7,897
Rice	2.45	77	377	0	0	222	1,088	252	1,235	551	2,700
Pulses		7,172	9,897	6,357	8,773	7,131	9,841	5,948	8,208	26,608	36,719
Beans	1.38	7,172	9,897	6,357	8,773	7,131	9,841	5,948	8,208	26,608	36,719
Field Peas	0.84	0	0	0	0	0	0	0	0	0	0
Cow Peas	0.66	0	0	0	0	0	0	0	0	0	0
Pigeon Peas	1.10	0	0	0	0	0	0	0	0	0	0
Oilseeds		1,684	2,792	6,009	9,762	1,592	2,632	2,903	4,750	12,188	19,936
Groundnuts	1.64	576	945	4,912	8,056	582	954	1,826	2,995	7,896	12,950
Simsim	0.85	20	17	67	57	20	17	26	22	133	113
Soyabean	1.69	1,067	1,803	802	1,355	961	1,624	944	1,595	3,774	6,377
Sunflowers	1.29	21	27	228	294	29	37	107	138	385	496
Vegetables		1,381	8,539	313	1,925	2,058	13,966	1,288	8,725	5,040	33,155
Tomatoes	10.91	325	3,546	74	807	664	7,244	413	4,506	1,476	16,103
Onions	9.11	62	565	12	109	107	975	67	610	248	2,259
Cabbages	4.48	675	3,024	125	560	1,048	4,695	671	3,006	2,519	11,285
Greens	4.40	319	1,404	102	449	239	1,052	137	603	797	3,508
Fruits		1,232	39,494	227	4,012	1,044	32,445	944	30,937	3,447	106,888
Pineapples	37.35	990	36,977	68	2,540	801	29,917	786	29,357	2,645	98,791
Passionfruits	11.41	185	2,111	84	958	186	2,122	108	1,232	563	6,423
Avocado	10.00	8	80	8	80	8	80	6	60	30	300
J.fruits/Paw-paw/Mango	10.00	8	80	8	80	8	80	6	60	30	300
Others(fruits)	6.00	41	246	59	354	41	246	38	228	179	1,074

(3) Food Consumption

in Luwero (Plan)

Item	Cconsump. /Capita kg	Bamunanika		Buruli		Katikamu		Nakaseke		Total	
		Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton
Cash crops											
Coffee(Robsta)											
Sugar Cane											
Tea											
Cacao											
Cotton											
Vanilla											
Food crops											
Banana/Tubers			68,542		63,722		93,394		59,479	0	285,137
Banana	0.263	176,201	46,341	163,811	43,082	240,087	63,143	152,901	40,213	733,000	192,779
Tubers	0.126	176,201	22,201	163,811	20,640	240,087	30,251	152,901	19,266	733,000	92,358
Cassava											
Sweet Potatos											
Irish Potatos											
Yams											
Cereals	0.123	176,201	21,673	163,811	20,149	240,087	29,531	152,901	18,807	733,000	90,160
Maize											
Finger Millet											
Sorghum											
Rice	0.003	176,201	529	163,811	491	240,087	720	152,901	459	733,000	2,199
Pulses	0.029	176,201	5,110	163,811	4,751	240,087	6,963	152,901	4,434	733,000	21,258
Beans											
Field Peas											
Cow Peas											
Pigeon Peas											
Oilseeds	0.012	176,201	2,114	163,811	1,966	240,087	2,881	152,901	1,835	733,000	8,796
Groundnuts											
Simsim											
Soyabean											
Sunflowers											
Vegetables	0.020	176,201	3,524	163,811	3,276	240,087	4,802	152,901	3,058	733,000	14,660
Tomatoes											
Onions											
Cabbages											
Greens											
Fruits	0.046	176,201	8,105	163,811	7,535	240,087	11,044	152,901	7,033	733,000	33,717
Pineapples											
Passionfruits											
Avocado											
J.fruits/Paw-paw/Mango											
Others(fruits)											

Table A3.5.2.2 Food Production and Consumption Balance in Masaka

(1) Production and Consumption Balance

Agricultural Production Volume

Unit : ton

Items	Bukoto	Bukomansimbi	Kalutanga	Lwemiyaga	Mawagola	Total
Banana/Tubers	349,536	194,566	148,821	42,049	168,954	903,926
Banana	243,543	153,851	98,512	26,276	121,411	643,593
Tubers	105,993	40,715	50,309	15,773	47,543	260,333
Cereals	14,976	7,481	7,123	4,045	6,316	39,941
Riec(Paddy)	4,077	3,175	946	0	617	8,815
Pulses	10,908	6,162	5,112	1,480	4,254	27,916
Oilseeds	8,290	2,369	1,825	1,394	2,793	16,671
Vegetables	26,236	13,293	13,523	2,871	4,849	60,772
Fruits	51,626	22,733	11,130	4,025	9,054	98,568

Food Consumption Volume

Unit : ton

Items	Bukoto	Bukomansimbi	Kalutanga	Lwemiyaga	Mawagola	Total
Banana/Tubers	267,323	80,233	96,386	13,395	77,927	535,264
Banana	180,735	54,245	65,166	9,056	52,686	361,888
Tubers	86,588	25,988	31,220	4,339	25,241	173,376
Cereals	84,526	25,369	30,477	4,235	24,640	169,247
Rice(Paddy)	2,062	619	743	103	601	4,128
Pulses	19,929	5,981	7,186	999	5,809	39,904
Oilseeds	8,246	2,475	2,973	413	2,404	16,511
Vegetables	13,744	4,125	4,956	689	4,007	27,521
Fruits	31,612	9,488	11,398	1,584	9,215	63,297

Balance of Production and Consumption Volume

Unit : ton

Items	Bukoto	Bukomansimbi	Kalutanga	Lwemiyaga	Mawagola	Total
Banana/Tubers	82,213	114,333	52,435	28,654	91,027	368,662
Banana	62,808	99,606	33,346	17,220	68,725	281,705
Tubers	19,405	14,727	19,089	11,434	22,302	86,957
Cereals	-69,550	-17,888	-23,354	-190	-18,324	-129,306
Rice(Paddy)	2,015	2,556	203	-103	16	4,687
Pulses	-9,021	181	-2,074	481	-1,555	-11,988
Oilseeds	44	-106	-1,148	981	389	160
Vegetables	12,492	9,168	8,567	2,182	842	33,251
Fruits	20,014	13,245	-268	2,441	-161	35,271

(2) Food Production

in Masaka (Plan)

Item	Yield/ha	Bukoto		Bukomansibi		Kalutanga		Lwemiyaga		Mawagola		Total	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton
Cash Crops													
Coffee(Robsta)	1.75	14,135	24,736	5,302	9,279	2,749	4,811	117	205	4,498	7,872	26,801	46,903
Sugar Cane	50.00	4,269	213,450	1,249	62,450	682	34,100	525	26,250	1,125	56,250	7,850	392,500
Tea	5.00	487	2,435	159	795	175	875	0	0	0	0	821	4,105
Cacao	0.78	527	411	248	193	130	101	0	0	0	0	905	705
Cotton	0.79	584	461	0	0	3	2	74	58	153	121	814	642
Vanilla	2.50	79	198	45	113	24	60	6	15	12	30	166	416
Food Crops													
Banana/Tubers		38,497	349,536	22,350	194,566	16,343	148,821	4,495	42,049	18,756	168,954	100,441	903,926
Banana	8.10	30,067	243,543	18,994	153,851	12,162	98,512	3,244	26,276	14,989	121,411	79,456	643,593
Tubers		8,430	105,993	3,356	40,715	4,181	50,309	1,251	15,773	3,767	47,543	20,985	260,333
Cassava	13.26	5,725	75,914	1,575	20,885	1,783	23,643	806	10,688	2,597	34,436	12,486	165,566
Sweet Potatos	11.08	2,668	29,561	1,748	19,368	2,365	26,204	392	4,343	1,121	12,421	8,294	91,897
Irish Potatos	14.00	37	518	33	462	33	462	53	742	49	686	205	2,870
Yams	9.87	0	0	0	0	0	0	0	0	0	0	0	0
Cereals		8,191	14,976	4,000	7,481	3,759	7,123	2,320	4,045	3,522	6,316	21,792	39,941
Maize	1.87	4,596	8,595	2,651	4,957	2,583	4,830	799	1,494	1,571	2,938	12,200	22,814
Finger Millet	1.54	1,535	2,364	258	397	0	0	1,010	1,555	1,040	1,602	3,843	5,918
Sorghum	1.95	2,060	4,017	1,091	2,127	1,176	2,293	511	996	911	1,776	5,749	11,209
Rice	2.45	832	4,077	648	3,175	193	946	0	0	126	617	1,799	8,815
Pulses		7,920	10,908	4,482	6,162	3,709	5,112	1,075	1,480	3,085	4,254	20,271	27,916
Beans	1.38	7,882	10,877	4,439	6,126	3,698	5,103	1,069	1,475	3,078	4,248	20,166	27,829
Field Peas	0.84	35	29	39	33	10	8	5	4	6	5	95	79
Cow Peas	0.66	3	2	4	3	1	1	1	1	1	1	10	8
Pigeon Peas	1.10	0	0	0	0	0	0	0	0	0	0	0	0
Oilseeds		5,048	8,290	1,432	2,369	1,099	1,825	845	1,394	1,700	2,793	10,124	16,671
Groundnuts	1.64	4,051	6,644	998	1,637	656	1,076	431	707	1,151	1,888	7,287	11,952
Simsim	0.85	3	3	2	2	0	0	5	4	5	4	15	13
Soyabean	1.69	903	1,526	432	730	443	749	388	656	497	840	2,663	4,501
Sunflowers	1.29	91	117	0	0	0	0	21	27	47	61	159	205
Vegetables		3,991	26,236	1,966	13,293	2,166	13,523	454	2,871	758	4,849	9,335	60,772
Tomatoes	10.91	1,318	14,379	703	7,670	606	6,611	132	1,440	229	2,498	2,988	32,598
Onions	9.11	0	0	0	0	0	0	0	0	0	0	0	0
Cabbages	4.48	1,201	5,380	830	3,718	607	2,719	178	797	298	1,335	3,114	13,949
Greens	4.40	1,472	6,477	433	1,905	953	4,193	144	634	231	1,016	3,233	14,225
Fruits		1,520	51,626	673	22,733	324	11,130	119	4,025	269	9,054	2,905	98,568
Pineapples	37.35	1,330	49,676	581	21,700	287	10,719	104	3,884	233	8,703	2,535	94,682
Passionfruits	11.41	132	1,506	83	947	32	365	8	91	19	217	274	3,126
Avocado	10.00	12	120	4	40	2	20	1	10	4	40	23	230
J.fruits/Paw-paw/Mango	10.00	12	120	4	40	2	20	1	10	4	40	23	230
Others(fruits)	6.00	34	204	1	6	1	6	5	30	9	54	50	300

(3) Food Consumption

in Masaka (Plan)

Item	Cconsump. /Capita kg	Bukoto		Bukomansibi		Kalutanga		Lwemiyaga		Mawagola		Total	
		Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton
Cash crops													
Coffee(Robsta)													
Sugar Cane													
Tea													
Cacao													
Cotton													
Vanilla													
Food crops													
Banana/Tubers			267,323		80,233		96,386		13,395		77,927		535,264
Banana	0.263	687,207	180,735	206,254	54,245	247,780	65,166	34,433	9,056	200,326	52,686	1,376,000	361,888
Tubers	0.126	687,207	86,588	206,254	25,988	247,780	31,220	34,433	4,339	200,326	25,241	1,376,000	173,376
Cassava													
Sweet Potatos													
Irish Potatos													
Yams													
Cereals	0.123	687,207	84,526	206,254	25,369	247,780	30,477	34,433	4,235	200,326	24,640	1,376,000	169,247
Maize													
Finger Millet													
Sorghum													
Rice	0.003	687,207	2,062	206,254	619	247,780	743	34,433	103	200,326	601	1,376,000	4,128
Pulses	0.029	687,207	19,929	206,254	5,981	247,780	7,186	34,433	999	200,326	5,809	1,376,000	39,904
Beans													
Field Peas													
Cow Peas													
Pigeon Peas													
Oilseeds	0.012	687,207	8,246	206,254	2,475	247,780	2,973	34,433	413	200,326	2,404	1,376,000	16,511
Groundnuts													
Simsim													
Soyabean													
Sunflowers													
Vegetables	0.020	687,207	13,744	206,254	4,125	247,780	4,956	34,433	689	200,326	4,007	1,376,000	27,521
Tomatoes													
Onions													
Cabbages													
Greens													
Fruits	0.046	687,207	31,612	206,254	9,488	247,780	11,398	34,433	1,584	200,326	9,215	1,376,000	63,297
Pineapples													
Passionfruits													
Avocado													
J.fruits/Paw-paw/Mango													
Others(fruits)													

Table A3.5.2.3 Food Production and Consumption Balance in Mpigi

(1) Production and Consumption Balance

Agricultural Production Volume

Unit : ton

Items	Busiro	Butambara	Gomba	Kyadondo	Mawokota	Total
Banana/Tubers	194,681	75,100	96,169	174,287	181,393	721,630
Banana	93,255	28,747	35,932	85,180	78,019	321,133
Tubers	101,426	46,353	60,237	89,107	103,374	400,497
Cereals	16,214	4,643	7,071	12,845	11,979	52,752
Rice(Paddy)	3,366	946	0	2,132	5,214	11,658
Pulses	11,786	7,247	9,519	10,622	11,215	50,389
Oilseeds	2,265	1,998	2,278	1,750	2,047	10,338
Vegetables	18,721	13,506	10,503	15,740	16,519	74,989
Fruits	13,903	3,075	5,172	8,353	7,331	37,834

Food Consumption Volume

Unit : ton

Items	Busiro	Butambara	Gomba	Kyadondo	Mawokota	Total
Banana/Tubers	189,129	46,975	75,827	167,866	99,813	579,610
Banana	127,869	31,759	51,266	113,493	67,483	391,870
Tubers	61,260	15,216	24,561	54,373	32,330	187,740
Cereals	59,802	14,853	23,976	53,079	31,560	183,270
Riec(Paddy)	1,459	362	585	1,295	770	4,471
Pulses	14,100	3,502	5,653	12,514	7,441	43,210
Oilseeds	5,834	1,449	2,339	5,178	3,079	17,879
Vegetables	9,724	2,415	3,899	8,631	5,132	29,801
Fruits	22,365	5,555	8,967	19,851	11,803	68,541

Balance of Production and Consumption Volume

Unit : ton

Items	Busiro	Butambara	Gomba	Kyadondo	Mawokota	Total
Banana/Tubers	5,552	28,125	20,342	6,421	81,580	142,020
Banana	-34,614	-3,012	-15,334	-28,313	10,536	-70,737
Tubers	40,166	31,137	35,676	34,734	71,044	212,757
Cereals	-43,588	-10,210	-16,905	-40,234	-19,581	-130,518
Rice(Paddy)	1,907	584	-585	837	4,444	7,187
Pulses	-2,314	3,745	3,866	-1,892	3,774	7,179
Oilseeds	-3,569	549	-61	-3,428	-1,032	-7,541
Vegetables	8,997	11,091	6,604	7,109	11,387	45,188
Fruits	-8,462	-2,480	-3,795	-11,498	-4,472	-30,707

(2) Food Production

in Mpigi (Plan)

Item	Yield/ha	Busiro		Butambara		Gomba		Kyadondo		Mawokota		Total	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton
Cash Crops													
Coffee(Robsta)	1.75	4,815	8,426	1,637	2,865	1,929	3,376	4,455	7,796	4,992	8,736	17,828	31,199
Sugar Cane	50.00	3,134	156,700	1,392	69,600	1,604	80,200	2,203	110,150	1,970	98,500	10,303	515,150
Tea	5.00	221	1,105	70	350	63	315	141	705	81	405	576	2,880
Cacao	0.78	982	766	137	107	101	79	676	527	445	347	2,341	1,826
Cotton	0.79	0	0	2	2	111	88	0	0	2	2	115	92
Vanilla	2.50	79	198	12	30	15	38	43	108	17	43	166	417
Food Crops													
Banana/Tubers		19,903	194,681	7,518	75,100	9,588	96,169	17,944	174,287	18,269	181,393	73,222	721,630
Banana	8.10	11,513	93,255	3,549	28,747	4,436	35,932	10,516	85,180	9,632	78,019	39,646	321,133
Tubers		8,390	101,426	3,969	46,353	5,152	60,237	7,428	89,107	8,637	103,374	33,576	400,497
Cassava	13.26	3,776	50,070	1,006	13,340	1,385	18,365	3,020	40,045	3,397	45,044	12,584	166,864
Sweet Potatos	11.08	4,489	49,738	2,855	31,633	3,676	40,730	4,287	47,500	5,102	56,530	20,409	226,131
Irish Potatos	14.00	93	1,302	76	1,064	59	826	89	1,246	106	1,484	423	5,922
Yams	9.87	32	316	32	316	32	316	32	316	32	316	160	1,580
Cereals		8,662	16,214	2,476	4,643	3,804	7,071	6,861	12,845	6,396	11,979	28,199	52,752
Maize	1.87	8,462	15,824	2,313	4,325	3,334	6,235	6,670	12,473	6,170	11,538	26,949	50,395
Finger Millet	1.54	0	0	0	0	196	302	0	0	0	0	196	302
Sorghum	1.95	200	390	163	318	274	534	191	372	226	441	1,054	2,055
Rice	2.45	687	3,366	193	946	0	0	435	2,132	1,064	5,214	2,379	11,658
Pulses		8,543	11,786	5,254	7,247	6,900	9,519	7,699	10,622	8,129	11,215	36,525	50,389
Beans	1.38	8,537	11,781	5,248	7,242	6,894	9,514	7,695	10,619	8,123	11,210	36,497	50,366
Field Peas	0.84	6	5	6	5	6	5	4	3	6	5	28	23
Cow Peas	0.66	0	0	0	0	0	0	0	0	0	0	0	0
Pigeon Peas	1.10	0	0	0	0	0	0	0	0	0	0	0	0
Oilseeds		1,353	2,265	1,194	1,998	1,373	2,278	1,048	1,750	1,228	2,047	6,196	10,338
Groundnuts	1.64	424	695	404	663	567	930	424	695	464	761	2,283	3,744
Simsim	0.85	0	0	0	0	9	8	0	0	6	5	15	13
Soyabean	1.69	929	1,570	790	1,335	780	1,318	624	1,055	758	1,281	3,881	6,559
Sunflowers	1.29	0	0	0	0	17	22	0	0	0	0	17	22
Vegetables		2,028	18,721	1,466	13,506	1,140	10,503	1,708	15,740	1,792	16,519	8,134	74,989
Tomatoes	10.91	1,486	16,212	1,070	11,674	833	9,088	1,249	13,627	1,308	14,270	5,946	64,871
Onions	9.11	18	164	13	118	9	82	13	118	18	164	71	646
Cabbages	4.48	485	2,173	349	1,564	272	1,219	407	1,823	427	1,913	1,940	8,692
Greens	4.40	39	172	34	150	26	114	39	172	39	172	177	780
Fruits		429	13,903	102	3,075	157	5,172	247	8,353	212	7,331	1,147	37,834
Pineapples	37.35	348	12,998	74	2,764	132	4,930	214	7,993	190	7,097	958	35,782
Passionfruits	11.41	70	799	25	285	14	160	24	274	13	148	146	1,666
Avocado	10.00	5	50	1	10	2	20	4	40	4	40	16	160
J.fruits/Paw-paw/Mango	10.00	5	50	1	10	2	20	4	40	4	40	16	160
Others(fruits)	6.00	1	6	1	6	7	42	1	6	1	6	11	66

(3) Food Consumption

in Mpigi (Plan)

Item	Cconsump. /Capita kg	Busiro		Butambara		Gomba		Kyadondo		Mawokota		Total	
		Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton
Cash crops													
Coffee(Robsta)													
Sugar Cane													
Tea													
Cacao													
Cotton													
Vanilla													
Food crops													
Banana/Tubers			189,129		46,975		75,827		167,866		99,813	0	579,610
Banana	0.263	486,194	127,869	120,758	31,759	194,926	51,266	431,534	113,493	256,588	67,483	1,490,000	391,870
Tubers	0.126	486,194	61,260	120,758	15,216	194,926	24,561	431,534	54,373	256,588	32,330	1,490,000	187,740
Cassava													
Sweet Potatos													
Irish Potatos													
Yams													
Cereals	0.123	486,194	59,802	120,758	14,853	194,926	23,976	431,534	53,079	256,588	31,560	1,490,000	183,270
Maize													
Finger Millet													
Sorghum													
Rice	0.003	486,194	1,459	120,758	362	194,926	585	431,534	1,295	256,588	770	1,490,000	4,471
Pulses	0.029	486,194	14,100	120,758	3,502	194,926	5,653	431,534	12,514	256,588	7,441	1,490,000	43,210
Beans													
Field Peas													
Cow Peas													
Pigeon Peas													
Oilseeds	0.012	486,194	5,834	120,758	1,449	194,926	2,339	431,534	5,178	256,588	3,079	1,490,000	17,879
Groundnuts													
Simsim													
Soyabean													
Sunflowers													
Vegetables	0.020	486,194	9,724	120,758	2,415	194,926	3,899	431,534	8,631	256,588	5,132	1,490,000	29,801
Tomatoes													
Onions													
Cabbages													
Greens													
Fruits	0.046	486,194	22,365	120,758	5,555	194,926	8,967	431,534	19,851	256,588	11,803	1,490,000	68,541
Pineapples													
Passionfruits													
Avocado													
J.fruits/Paw-paw/Mango													
Others(fruits)													

Table A3.5.2.4 Food Production and Consumption Balance in Mukono

(1) Production and Consumption Balance

Agricultural Production Volume

Unit : ton

Items	Bbale	Buikuwe	Buvuma	Mukono	Nakifuma	Nutenjeru	Total
Banana/Tubers	42,607	91,413	30,658	182,580	117,713	142,519	607,490
Banana	17,674	70,300	28,431	132,872	54,489	65,910	369,676
Tubers	24,933	21,113	2,227	49,708	63,224	76,609	237,814
Cereals	7,077	6,926	1,532	7,288	10,014	11,911	44,748
Riec(Paddy)	0	1,186	0	1,661	377	10	3,234
Pulses	4,229	4,267	3,581	4,466	6,200	6,142	28,885
Oilseeds	1,833	866	215	1,015	1,130	1,571	6,630
Vegetables	60	1,348	0	2,248	2,034	1,587	7,277
Fruits	9,116	14,909	2,879	20,369	17,359	28,650	93,282

Food Consumption Volume

Unit : ton

Items	Bbale	Buikuwe	Buvuma	Mukono	Nakifuma	Nutenjeru	Total
Banana/Tubers	54,070	158,712	11,710	115,113	87,263	95,560	522,428
Banana	36,556	107,304	7,917	77,827	58,998	64,607	353,209
Tubers	17,514	51,408	3,793	37,286	28,265	30,953	169,219
Cereals	17,097	50,184	3,702	36,398	27,592	30,216	165,189
Rice(Paddy)	417	1,224	90	888	673	737	4,029
Pulses	4,031	11,832	873	8,582	6,505	7,124	38,947
Oilseeds	1,668	4,896	361	3,551	2,692	2,948	16,116
Vegetables	2,780	8,160	602	5,918	4,487	4,913	26,860
Fruits	6,394	18,768	1,385	13,612	10,319	11,300	61,778

Balance of Production and Consumption Volume

Unit : ton

Items	Bbale	Buikuwe	Buvuma	Mukono	Nakifuma	Nutenjeru	Total
Banana/Tubers	-11,463	-67,299	18,948	67,467	30,450	46,959	85,062
Banana	-18,882	-37,004	20,514	55,045	-4,509	1,303	16,467
Tubers	7,419	-30,295	-1,566	12,422	34,959	45,656	68,595
Cereals	-10,020	-43,258	-2,170	-29,110	-17,578	-18,305	-120,441
Rice(Paddy)	-417	-38	-90	773	-296	-727	-795
Pulses	198	-7,565	2,708	-4,116	-305	-982	-10,062
Oilseeds	165	-4,030	-146	-2,536	-1,562	-1,377	-9,486
Vegetables	-2,720	-6,812	-602	-3,670	-2,453	-3,326	-19,583
Fruits	2,722	-3,859	1,494	6,757	7,040	17,350	31,504

(2) Food Production

in Mukono (Plan)

Item	Yield/ha	Bbale		Buikwe		Buvuma		Mukono		Nakifuma		Ntenjeru		Total	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	ha	ton	ha	ton	ton	ha	ton	ha	ton	ha	ton	ha	ton	ha	ton
Cash Crops															
Coffee(Robsta)	1.75	4,401	7,702	7,067	12,367	0	0	18,462	32,309	7,998	13,997	17,648	30,884	55,576	97,259
Sugar Cane	50.00	1,744	87,200	36,147	1,807,350	539	26,950	4,094	204,700	4,570	228,500	2,734	136,700	49,828	2,491,400
Tea	5.00	45	225	867	4,335	47	235	800	4,000	1,492	7,460	206	1,030	3,457	17,285
Cacao	0.78	288	225	2,301	1,795	709	553	1,226	956	3,865	3,015	1,580	1,232	9,969	7,776
Cotton	0.79	334	264	0	0	0	0	0	0	21	17	76	60	431	341
Vanilla	2.50	20	50	79	198	21	53	101	253	106	265	93	233	420	1,052
Food Crops															
Banana/Tubers		4,325	42,607	10,512	91,413	3,679	30,658	20,373	182,580	11,758	117,713	14,255	142,519	64,902	607,490
Banana	8.10	2,182	17,674	8,679	70,300	3,510	28,431	16,404	132,872	6,727	54,489	8,137	65,910	45,639	369,676
Tubers		2,143	24,933	1,833	21,113	169	2,227	3,969	49,708	5,031	63,224	6,118	76,609	19,263	237,814
Cassava	13.26	548	7,266	371	4,919	165	2,188	2,622	34,768	3,423	45,389	4,049	53,690	11,178	148,220
Sweet Potatos	11.08	1,591	17,628	1,458	16,155	0	0	1,336	14,803	1,596	17,684	2,065	22,880	8,046	89,150
Irish Potatos	14.00	0	0	0	0	0	0	7	98	8	112	0	0	15	210
Yams	9.87	4	39	4	39	4	39	4	39	4	39	4	39	24	234
Cereals		3,982	7,077	3,715	6,926	819	1,532	3,897	7,288	5,351	10,014	6,438	11,911	24,202	44,748
Maize	1.87	2,443	4,568	3,489	6,524	819	1,532	3,711	6,940	5,098	9,533	5,855	10,949	21,415	40,046
Finger Millet	1.54	1,200	1,848	96	148	0	0	35	54	31	48	427	658	1,789	2,756
Sorghum	1.95	339	661	130	254	0	0	151	294	222	433	156	304	998	1,946
Rice	2.45	0	0	242	1,186	0	0	339	1,661	77	377	2	10	660	3,234
Pulses		3,067	4,229	3,098	4,267	2,595	3,581	3,242	4,466	4,497	6,200	4,456	6,142	20,955	28,885
Beans	1.38	3,060	4,223	3,084	4,256	2,595	3,581	3,230	4,457	4,487	6,192	4,445	6,134	20,901	28,843
Field Peas	0.84	7	6	7	6	0	0	7	6	7	6	4	3	32	27
Cow Peas	0.66	0	0	7	5	0	0	5	3	3	2	7	5	22	15
Pigeon Peas	1.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oilseeds		1,163	1,833	538	866	147	215	628	1,015	699	1,130	983	1,571	4,158	6,630
Groundnuts	1.64	705	1,156	197	323	0	0	259	425	246	403	476	781	1,883	3,088
Simsim	0.85	58	49	0	0	0	0	0	0	6	5	40	34	104	88
Soyabean	1.69	279	472	258	436	64	108	286	483	364	615	384	649	1,635	2,763
Sunflowers	1.29	121	156	83	107	83	107	83	107	83	107	83	107	536	691
Vegetables		11	60	173	1,348	0	0	270	2,248	242	2,034	197	1,587	893	7,277
Tomatoes	10.91	1	11	87	949	0	0	155	1,691	142	1,549	106	1,156	491	5,356
Onions	9.11	1	9	3	27	0	0	9	82	8	73	5	46	26	237
Cabbages	4.48	6	27	81	363	0	0	99	444	90	403	77	345	353	1,582
Greens	4.40	3	13	2	9	0	0	7	31	2	9	9	40	23	102
Fruits		268	9,116	450	14,909	87	2,879	614	20,369	521	17,359	826	28,650	2,766	93,282
Pineapples	37.35	237	8,852	378	14,118	73	2,727	516	19,273	441	16,471	742	27,714	2,387	89,155
Passionfruits	11.41	10	114	53	605	11	126	85	970	65	742	71	810	295	3,367
Avocado	10.00	3	30	9	90	1	10	6	60	7	70	6	60	32	320
J.fruits/Paw-paw/Mango	10.00	3	30	9	90	1	10	6	60	7	70	6	60	32	320
Others(fruits)	6.00	15	90	1	6	1	6	1	6	1	6	1	6	20	120

(3) Food Consumption

in Mukono (Plan)

Item	Cconsump. /Capita kg	Bbale		Buikwe		Buvuma		Mukono		Nakifuma		Nkonjeru		Total	
		Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton	Popula.	Consump. ton
Cash crops															
Coffee(Robsta)															
Sugar Cane															
Tea															
Cacao															
Cotton															
Vanilla															
Food crops															
Banana/Tubers			54,070		158,712		11,710		115,113		87,263		95,560		522,428
Banana	0.263	138,998	36,556	407,999	107,304	30,101	7,917	295,920	77,827	224,327	58,998	245,655	64,607	1,343,000	353,209
Tubers	0.126	138,998	17,514	407,999	51,408	30,101	3,793	295,920	37,286	224,327	28,265	245,655	30,953	1,343,000	169,219
Cassava															
Sweet Potatos															
Irish Potatos															
Yams															
Cereals	0.123	138,998	17,097	407,999	50,184	30,101	3,702	295,920	36,398	224,327	27,592	245,655	30,216	1,343,000	165,189
Maize															
Finger Millet															
Sorghum															
Rice	0.003	138,998	417	407,999	1,224	30,101	90	295,920	888	224,327	673	245,655	737	1,343,000	4,029
Pulses	0.029	138,998	4,031	407,999	11,832	30,101	873	295,920	8,582	224,327	6,505	245,655	7,124	1,343,000	38,947
Beans															
Field Peas															
Cow Peas															
Pigeon Peas															
Oilseeds	0.012	138,998	1,668	407,999	4,896	30,101	361	295,920	3,551	224,327	2,692	245,655	2,948	1,343,000	16,116
Groundnuts															
Simsim															
Soyabean															
Sunflowers															
Vegetables	0.020	138,998	2,780	407,999	8,160	30,101	602	295,920	5,918	224,327	4,487	245,655	4,913	1,343,000	26,860
Tomatoes															
Onions															
Cabbages															
Greens															
Fruits	0.046	138,998	6,394	407,999	18,768	30,101	1,385	295,920	13,612	224,327	10,319	245,655	11,300	1,343,000	61,778
Pineapples															
Passionfruits															
Avocado															
J.fruits/Paw-paw/Mango															
Others(fruits)															

Table A3.5.2.5 Production Plan and Required Storage Capacity

(1) Cotton (Cooperative society)

District	County	The number of present storage facility		The number of planed storage facility		The total number of storage facility		Planed production volume	Required storage capacity ②	Balance ①-②
		Number	Capacity	Number	Capacity	Number	Capacity ①			
			ton		ton		ton	ton	ton	ton
Luwero	Bamunanika	17	136	5	40	22	176	227	114	62
	Buruli	15	525	6	48	21	573	3,031	1,516	-943
	Katikamu	10	80	5	40	15	120	150	75	45
	Nakaseke	20	160	8	64	28	224	377	189	35
	Sub-total	62	901	24	192	86	1,093	3785	1,894	-801
Masaka	Bukoto							27	14	-14
	Bukomansimbi							0	0	0
	Kalungu							9	5	-5
	Lwemiyaga							27	14	-14
	Mawoggola							18	9	-9
	Sub-total							81	42	-42
Mpigi	Busiro							0	0	0
	Butambala							9	5	-5
	Gomba							0	0	0
	Kyadondo							0	0	0
	Wawokota							9	5	-5
	Sub-total							18	10	-10
Mukono	Bbale							191	96	-96
	Buikwe							0	0	0
	Buvuma							0	0	0
	Mukono							0	0	0
	Nakifuma							41	21	-21
	Nutenjeru							154	77	-77
	Sub-total							386	194	-194
Total								4,270	2,140	-2,140

(2) Coffee and Grain

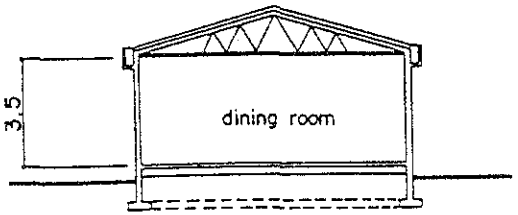
District	County	Coffee				Grain				
		Present production volume	Planed production volume	Increment	Required storage capacity	Surplus				Required storage capacity
						Cereals	Pulses	Oil seed	Total	
		ton	ton	ton	ton	ton	ton	ton	ton	ton
Luwero	Bamunanika	12,150	14,504	2,354	235	0	2,669	0	2,669	133
	Buruli	405	483	78	8	4,420	794	1,952	7,166	358
	Katikamu	10,530	12,570	2,040	204	0	533	0	533	27
	Nakaseke	4,050	4,835	785	79	3,027	2,506	0	5,533	277
	Sub-total	27,135	32,392	5,257	526	7,447	6,502	1,952	15,901	795
Masaka	Bukoto	18,204	21,731	3,527	353	0	0	0	0	0
	Bukomansimbi	10,953	13,075	2,122	212	0	1,527	856	2,383	119
	Kalungu	6,374	7,609	1,235	124	0	0	0	0	0
	Lwemiyaga	176	210	34	3	4,151	392	600	5,143	257
	Mawoggola	4,497	5,368	871	87	0	0	0	0	0
	Sub-total	40,204	47,993	7,789	779	4,151	1,919	1,456	7,526	376
Mpigi	Busiro	3,852	4,598	746	75	0	0	0	0	0
	Butambala	1,710	2,041	331	33	0	9,373	2,180	11,553	578
	Gomba	1,143	1,364	221	22	0	4,015	818	4,833	242
	Kyadondo	3,564	4,254	690	69	0	1,020	0	1,020	51
	Wawokota	3,994	4,768	774	77	0	7,362	357	7,719	386
	Sub-total	14,263	17,025	2,762	276	0	21,770	3,355	25,125	1,257
Mukono	Bbale	7,042	8,406	1,364	136	0	85	1,378	1,463	73
	Buikwe	18,507	22,093	3,586	359	0	0	0	0	0
	Buvuma	0	0	0	0	0	4,957	2,049	7,006	350
	Mukono	22,339	26,667	4,328	433	0	0	0	0	0
	Nakifuma	12,797	15,276	2,479	248	0	0	431	431	22
	Nutenjeru	28,237	33,708	5,471	547	0	0	972	972	49
	Sub-total	88,922	106,150	17,228	1,723	0	5,042	4,830	9,872	494
Total		170,524	203,560	33,036	3,304	11,598	35,233	11,593	58,424	2,922

Appendix 3.6 Agricultural Support

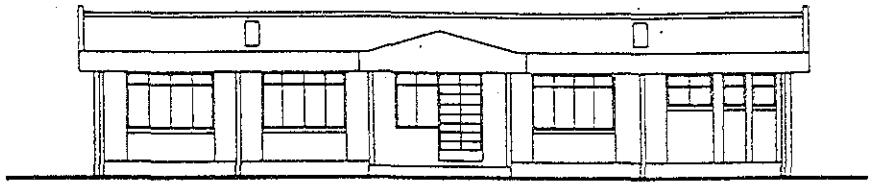
3.6.2 Extension

Figure A3.6.2.1 Plan of District Farm Institute

1) Plan of Dining Hall



SECTION B-B 1:200



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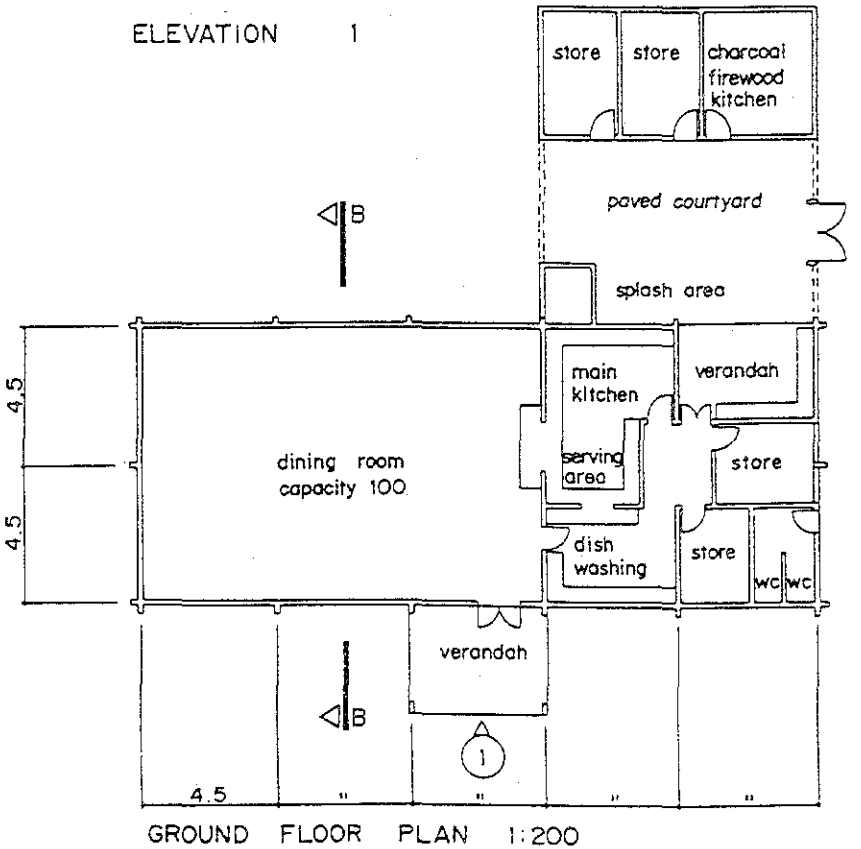
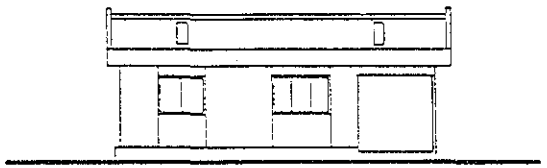


GROUND FLOOR PLAN 1:200

2) Plan of Two Bedroom Unit



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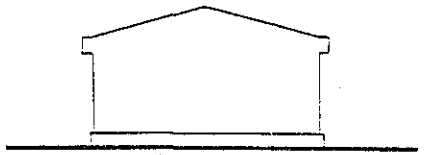

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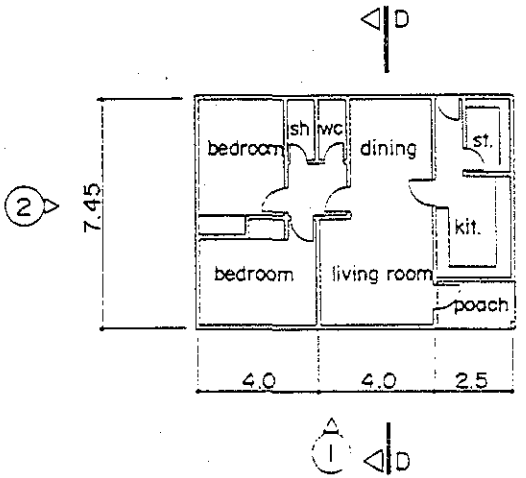
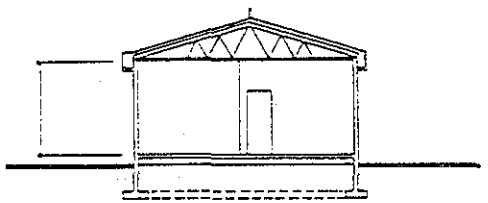
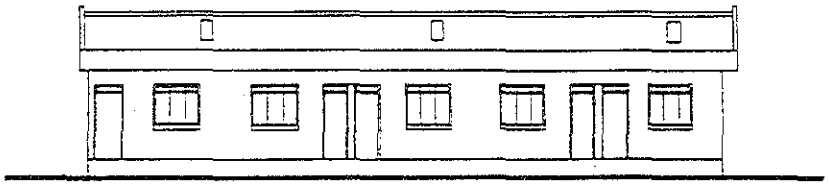


GROUND FLOOR PLAN 1:200



SECTION D-D 1:200

3) Plan of One Bedroom House 5No.



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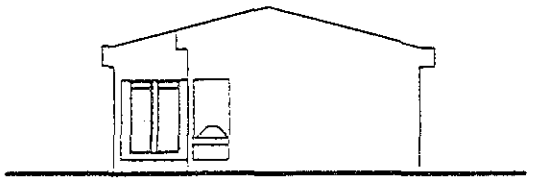

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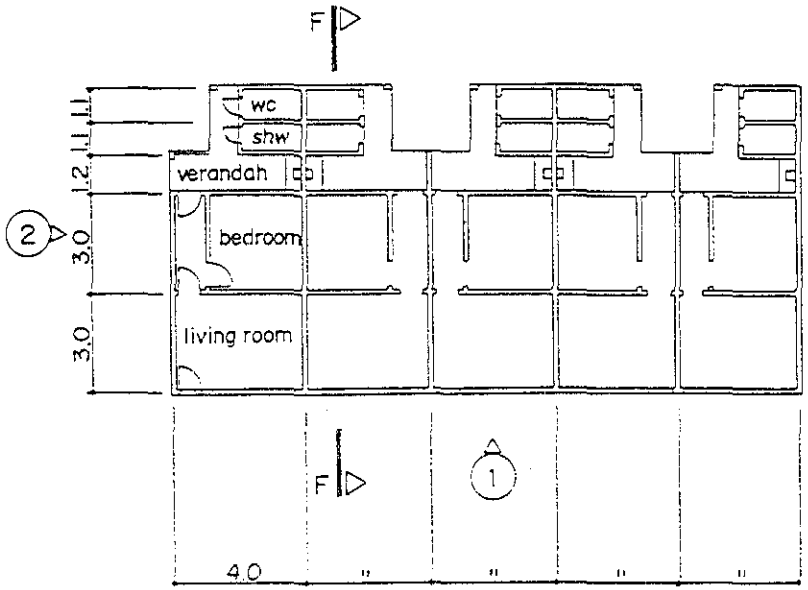
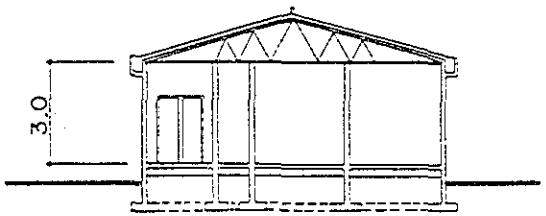
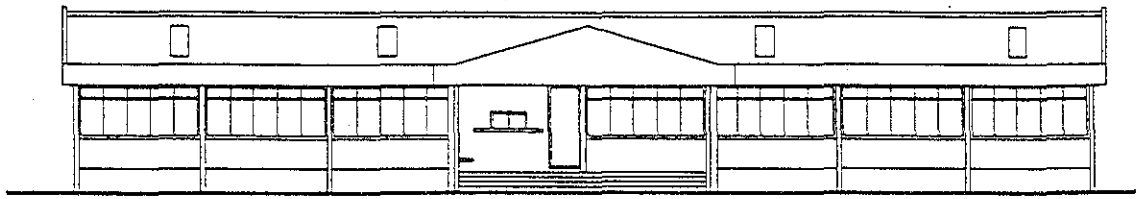


GROUND FLOOR PLAN 1:200



SECTION F-F 1:200

4) Plan of Administration/Classroom Block



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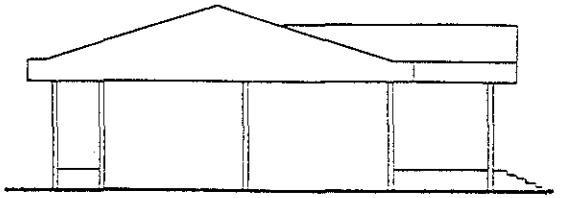

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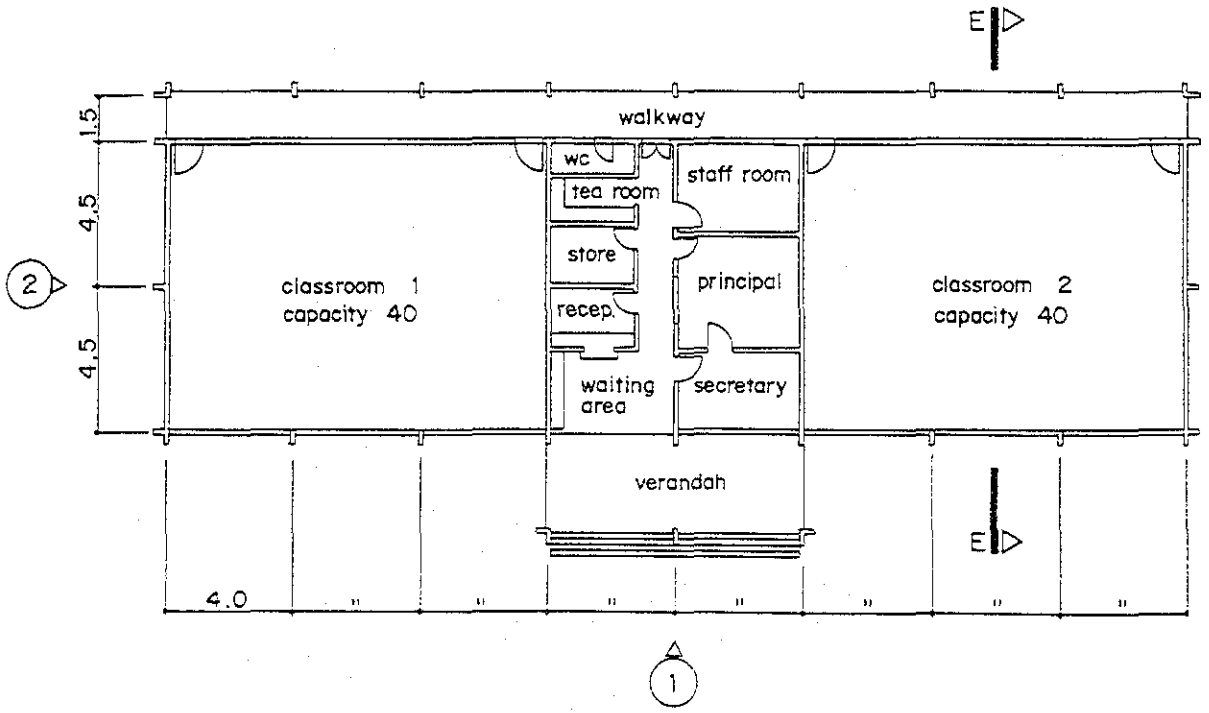
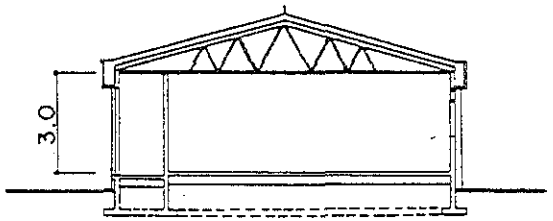
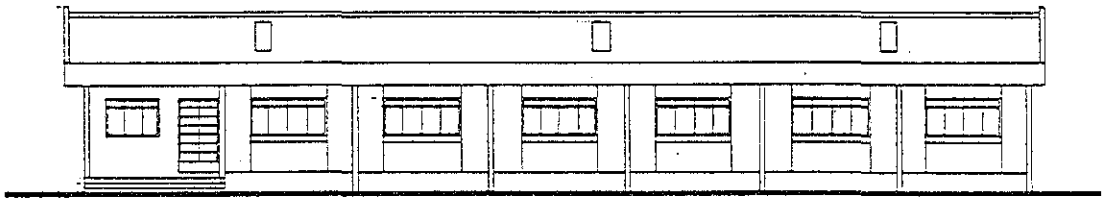


GROUND FLOOR PLAN 1:200



SECTION E-E 1:200

5) Plan of Dormitory



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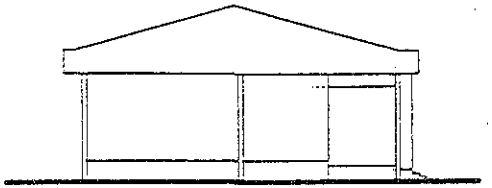

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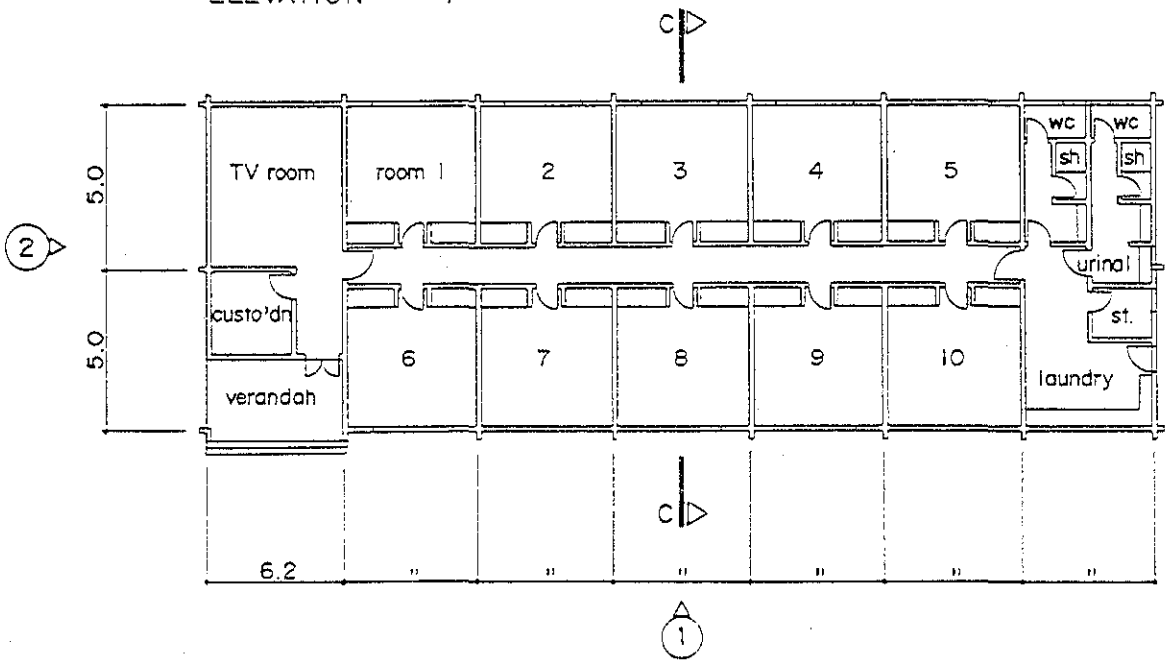
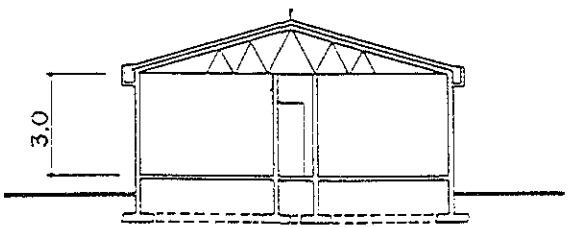
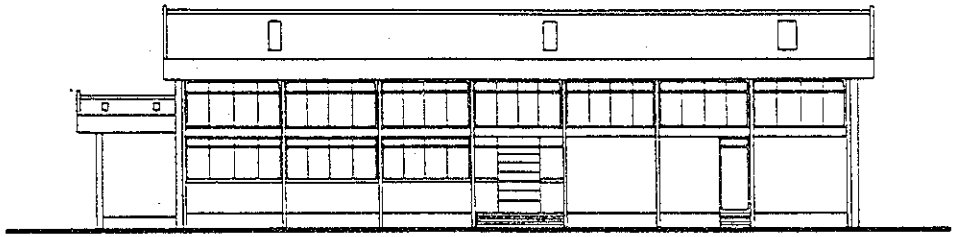


GROUND FLOOR PLAN 1:200



SECTION C-C 1:200

6) Plan of Assembly Hall



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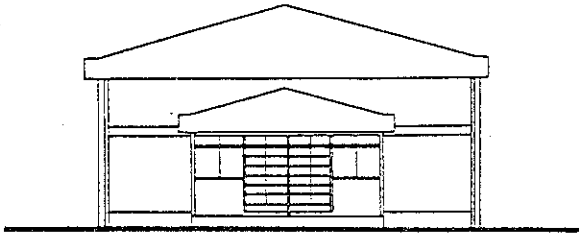

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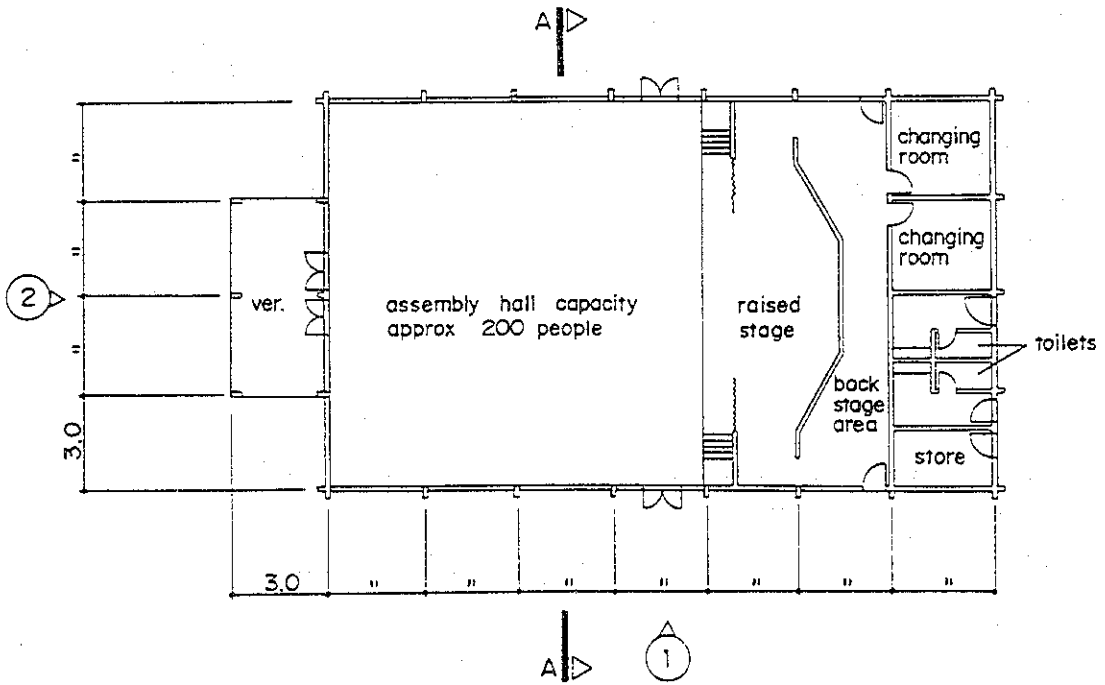
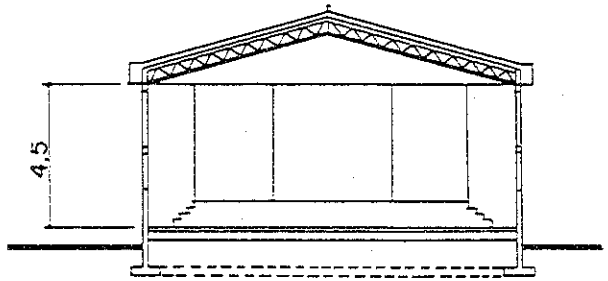


GROUND FLOOR PLAN 1:200



SECTION A-A 1:200

Appendix 3.7 Irrigation and Drainage Plan

3.7.1 Irrigation and Drainage

Table A3.7.1.1 Inventory of Reclaimable Sites for SSIS (Small Scale Irrigation Scheme)

District	County	Sub-county	Topographic Map (1/50.000)				Vegetation Map (symbol)	Land Use Map (symbol)	Soil Map (sym.)	Remarks
			NO.	C.Area (sq.km)	Upland Area (ha)	Altitude (ft)				
Luwero	Wabusana	Zirobwe	Wab	57	157	3,500	F2	SS	Buy	
	Buruli	Kakooge	Bur	57	40	3,500	K	SD	Buy	
	Katikamu	Luwero	Kat	>200	223	3,500	F2	FC	Buy	
	Nakaseke	Wakyato	Nka	>200	140	3,550	N2	SD	Lwa	
	Subtotal				560					
Masaka	Bukoto	Lwengo	Bk-1	200	112	4,100	J1	SS	Mir	
		Lwengo	Bk-2	100	100	4,000	J1	SS	Mir	
		Kisekka	Bk-3	100	100	4,000	P1	SS	Mir	
		Kaswa	Bk-4	150	100	4,000	F2	FC	Bug	
	Bukomansimbi	Kitanda	Bu-1	>100	70	4,000	P1	SS	Mir	
		Kitanda	Bu-2	>100	65	4,000	P1	SS	Mir	
		Butenga	Bu-3	>100	70	3,900	F2	FC	Bug	
	Kalungu	Kyamulibwa	Kal	>200	220	4,000	J1	SS	Mir	
	Lwemiyaga	Ntuusi	Lwe	>150	46	4,000	P1	SS	Maw	
	Mawogola	Mijwala	Mag	>100	78	4,000	P1	SS	Mir	
	Subtotal				961					
Mpigi	Busiro	Kasanje	Bs-1	>100	100	3,800	F2	FC	Kab/Kat	
		Wakiso	Bs-2	>100	110	3,800	F2	FC	Bug	
	Butambala	Ngando	But	>150	150	3,800	P1	FC/SS	Maw	
	Gomba	Kabulasoke	Gom	>150	115	3,750	P1	SS	Lwa	
	Kyadondo	Busukuma	Kya	>200	173	3,600	F2	FC	Buy	
	Mawakota	Nkozi	Maw	>200	180	3,800	Q7	SS	Kat	
	Subtotal				828					
Mukono	Bbaale	Kitimbwa	Bba	>50	18	3,450	F2	FC	Buy	
	Buikwe	Ngogwe	Bui	>100	22	3,900	F2	SW	Bug	
	Buvuma	Nairambi	Buv	>	18	3,750	D1+G1+Qt	FC	Scs/Kik	
	Mukono	Kyampisi	Muk	>100	35	3,600	F2	FC	Bug/Mir	
	Nakifuma	Kasawo	Nki	>100	31	3,500	F2	FC	Buy/Kam	
	Ntejeru	Kangulumira	Nte	>100	27	3,500	D1/F2	FC	Buy/Kam	
	Subtotal				151					
	Sumtotal				2,500					

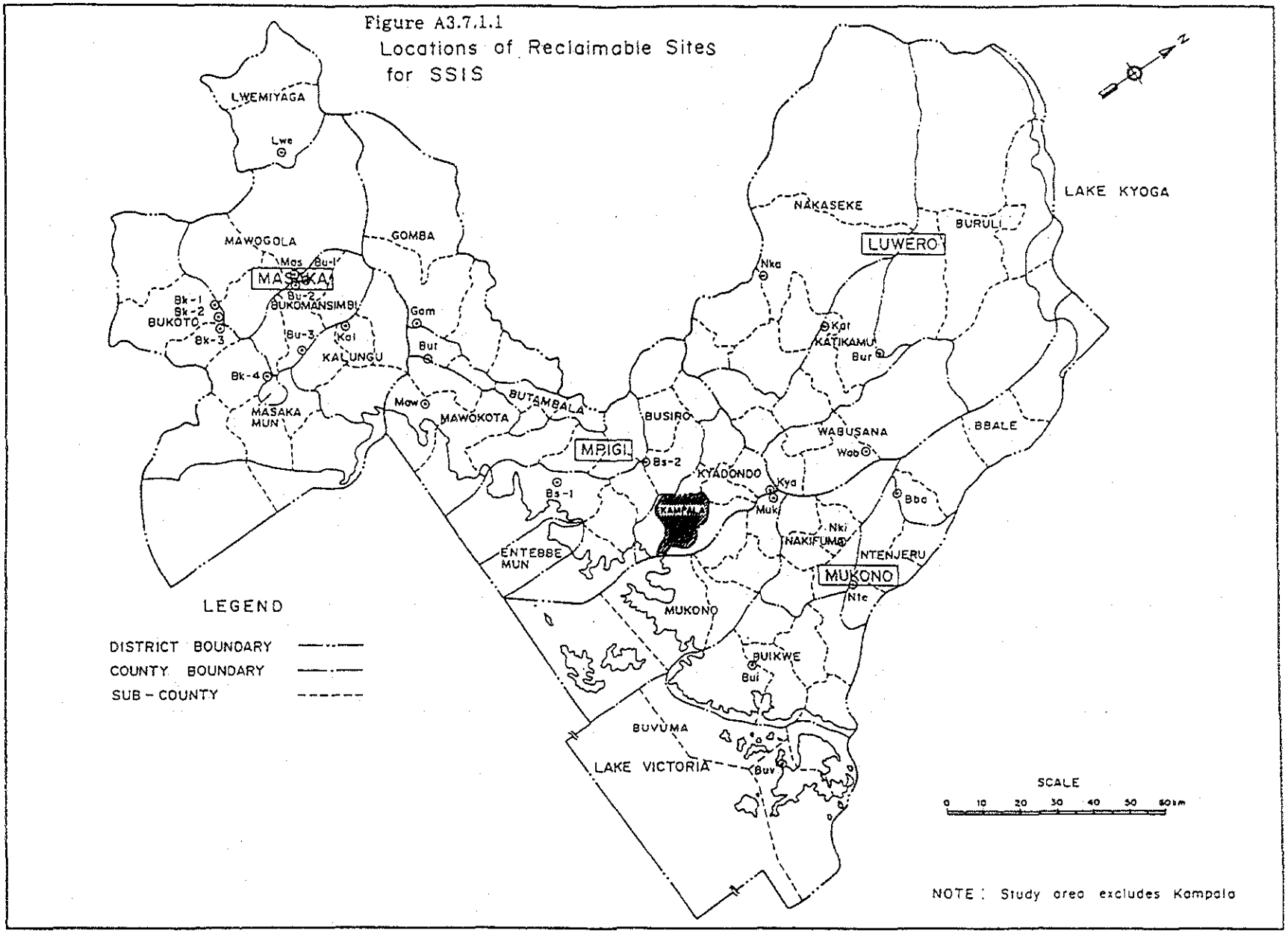


Figure A3.7.1.1
Locations of Reclaimable Sites for SSIS
LWEMIYAGA
Lwe
MAWOGOLA
GOMBA
Mas
Bu-1
MASAKA
Bu-2
BUKOMANSIMBI
Bk-1
Bk-2
BUKOTO
Bk-3
Bu-3
Kal
KALUNGU
Gom
But
Bk-4
MASAKA MUN
Maw
MAWOKOTA
BUTAMBALA
MPIGI
Bs-2
Bs-1
BUSIRO
KAMPALA
ENTEBBE MUN
LAKE VICTORIA
BUVUMA
Buv
BUIKWE
Bui
MUKONO
Nte
NTENJERU
Nki
NAKIFUMA
Muk
KYADONDO
Kya
WABUSANA
Wab
BBALE
Bbe
KATIKAMU
Kat
Bur
LUWERO
BURULI
NAKASEKE
Nka
LAKE KYOGA
N
LEGEND
DISTRICT BOUNDARY
COUNTY BOUNDARY
SUB - COUNTY
SCALE
0 10 20 30 40 50 60km
NOTE : Study area excludes Kampala

Table A3.7.1.2 Inventory of Reclaimable Swamps for WUS (Wetland Utilization Scheme)

(1) Luwero District

Main Swamp	District	Topographic Map (1/50,000)						Vegetation Map (symbol)	Land Use Map (symbol)	Soil Map (sym.)	Remarks
		Local Name	NO.	C.Area (sq.km)	Paddy Area (ha)	Altitude (ft)	Vegetation				
Lugogo	Luwero		LUG-1	18	50	3,700	P.Swamp	N3	FC	Buk	
			LUG-2	10	50	3,800	S.Swamp	X1/X2	SW	Buk	
		Lumansi	LUG-3	30	100	3,750	P.Swamp	- do -	SW	Buk	
		Katensule	LUG-4	12	60	3,500	S.Swamp	- do -	SD	Buk	
Subtotal					260						
Mayanja	Luwero	Kagoye	MAY-1	10	60	3,600	S.Swamp	X1/X2	SS	Mul	
			MAY-2	25	150	3,600	- do -	- do -	SS	Mul	
		Kizikibi	MAY-3	6	50	3,600	- do -	- do -	SW	Buk	
Subtotal					260						
Sezibwa	Luwero	Lwamirindi	SEZ-1	10	80	3,600	S.Swamp	X1/X2	SD	Kak	
Total	(Luwero)				600						

(2) Masaka District

Main Swamp	District	Topographic Map (1/50,000)						Vegetation Map (symbol)	Land Use Map (symbol)	Soil Map (sym.)	Remarks
		Local Name	NO.	C.Area (sq.km)	Paddy Area (ha)	Altitude (ft)	Vegetation				
Kyogya	Masaka	Lwenswera	KYL-1	23	100	4,000	S.Swamp	-	SW	Mul	
		Bukumbula	KYL-2	15	90	4,000	- do -	-	SS	Mul	
		Kattabaganga	KYL-3	21	130	4,000	- do -	-	SS	Mul	
		Muchwankwa	KYR-1	15	200	4,000	P.Swamp	X2/X1	SS	Mul	
			KYR-2	30	200	4,000	- do -	X2/X1	SW	Mul	2 dams
		Katabana	KYR-3	10	100	4,000	S.Swamp	-	SW	Mul	
		Kasabwera	KYR-4	12	80	4,000	- do -	-	SS	Mul	
			KYR-5	6	20	4,000	- do -	-	SS	Mul	
		Kabirobiro	KYR-6	20	120	4,000	- do -	-	SS	Mul	
		Naalagge	KYR-7	12	120	4,000	- do -	-	FC	Mul	
			KYR-8	11	80	4,000	- do -	-	SS	Mul	
Subtotal					1,240						
Nabajuzi	Masaka	Gambuze	NAL-1	23	80	3900~4000	P.Swamp	X2/X1	SW	Kif	
		Nabirabusa	NAL-2	11	80	3900~4000	S.Swamp	- do -	FC	Kif	
		Lusamatu	NAL-3	15	100	4,000	- do -	-	FC	Kif	
		Byonyonywa	NAL-4	6	20	4,000	- do -	-	FC	Kif	
		Kataba	NAL-5	10	30	4,000	- do -	-	FC	Kif	
			NAL-6	20	100	3900~4000	- do -	-	FC	Mul	
			NAR-1	16	80	3,900	- do -	X2/X1	FC	Kif	
		Kitante	NAR-2	16	80	3,900	- do -	-	FC	Kif	
		Kabuka	NAR-3	14	80	3,900	- do -	-	FC	Kif	
			NAR-4	7	80	3,900	- do -	-	FC	Kif	
Subtotal					730						
Total	(Masaka)				1,970						

(3) Mpigi District

Main Swamp	District	Topographic Map (1/50,000)						Vegetation Map (symbol)	Land Use Map (symbol)	Soil Map (sym.)	Remarks
		Local Name	NO.	C.Area (sq.km)	Paddy Area (ha)	Altitude (ft)	Vegetation				
Kasemulamba	Mpigi	Kasemulamba	MP-1	11	100	3,800	P.Swamp	X2/X1	FC	Kif	
Kibukuta		Kibukuta	MP-2	40	400	3,800	- do -	- do -	SS	Kif	
Nawandigi		Nawandigi	MP-3	64	400	3,750	- do -	- do -	FC	Kif	
Nakyetema		Nakyetema	MP-4	32	200	3,800	- do -	- do -	SW	Kif	
Kiganja		Kiganja	MP-5	19	150	3,800	- do -	-	FC	Kif	
Kamirangoma		Kamirangoma	MP-6	15	200	3,750	Tree Swamp	-	FC	Kak	
Subtotal					1,450						
Mayanja	Mpigi	Kasenso	MA-1	21	200	3,900	Tree Swamp	X2/X1	SW	Kak	
		Nawaya	MA-2	14	140	3,850	- do -	- do -	SW	Kak	
			MA-3	12	120	3,800	P.Swamp	- do -	SW	Kak	
		Lubigi	MA-4	24	150	3,800	- do -	- do -	FC	Kak	
			MA-5	48	200	3,700	- do -	X2	SW	Kif	
Subtotal					810						
Lwajali	Mpigi	Kattabana	LW-1	14	100	3,700	P.Swamp	X1	FC	Kak	
		Namagombe	LW-2	16	100	3,700	- do -	- do -	FC	Kak	
		Nakalere	LW-3	33	150	3,700	- do -	- do -	FC	Kak	
Subtotal					350						
Total	(Mpigi)				2,610						

(4) Mukono District

Main Swamp	District	Topographic Map (1/50,000)						Vegetation Map (symbol)	Land Use Map (symbol)	Soil Map (sym.)	Remarks
		Local Name	NO.	C.Area (sq.km)	Paddy Area (ha)	Altitude (ft)	Vegetation				
Lwajali	Mukono	Nakyanja	LW-4	20	150	3,700	P.Swamp	X1	SW	Kak	
			LW-5	61	240	3,700	- do -	- do -	SW	Kak	
		Matumbwe	LWA-1	36	80	3,650	- do -	X1/X2	SS	Kak	
Subtotal					470						
Sezibwa	Mukono		SEZ-2	49	250	3,900	P.Swamp	X1/X2	FC	Kif	
Total	(Mukono)				720						
G. Total					5,900						

Table A3.7.1.3 Wetlands Ranking for Utilization

Rank	Luwero			Masaka			Mpigi			Mukono			Total Paddy Area (ha)	Remarks
	No.	Paddy Area (ha)	F.S.	No.	Paddy Area (ha)	F.S.	No.	Paddy Area (ha)	F.S.	No.	Paddy Area (ha)	F.S.		
A				NAL-2	80	o	MP-1	100	o	SEZ-2	250	o		
				NAL-4	20	x	MP-2	400	o					
				NAL-5	30	x	MP-4	200	o					
				NAR-2	80	o	MP-5	150	o					
				NAR-3	80	o	MA-2	140	o					
				NAR-4	80	o	LW-2	100	o					
Total		-			370			1,090			250		1,710	
B				KYL-1	100	x	MA-3	120	o					
				KYR-3	100	x	MA-4	150	o					
				KYR-4	80	x	MA-5	200	x					
				NAL-1	80	o	LW-3	150	o					
				NAL-3	100	o								
				NAL-6	100	x								
				NAR-1	80	x								
Total		-			640			620			-		1,260	
C	LUG-1	50	x	KYL-2	90	x	MP-3	400	o	LW-4	150	o		
	LUG-2	50	x	KYL-3	130	x	MP-6	200	o	LW-5	240	x		
	LUG-3	100	x	KYR-1	200	o	MA-1	200	o	LWA-1	80	o		
	LUG-4	60	x	KYR-2	200	o	LW-1	100	o					
	MAY-1	60	x	KYR-5	20	x								
	MAY-2	150	x	KYR-6	120	x								
	MAY-3	50	x	KYR-7	120	x								
	SEZ-1	80	x	KYR-8	80	x								
Total		600			960			900			470		2,930	
G.TTL		600			1,970			2,610			720		5,900	

Note : Rank A :Most feasible, Rank B :Moderately feasible, Rank C :Least feasible,
F.S. :Field Survey o :carried out x :not carried out

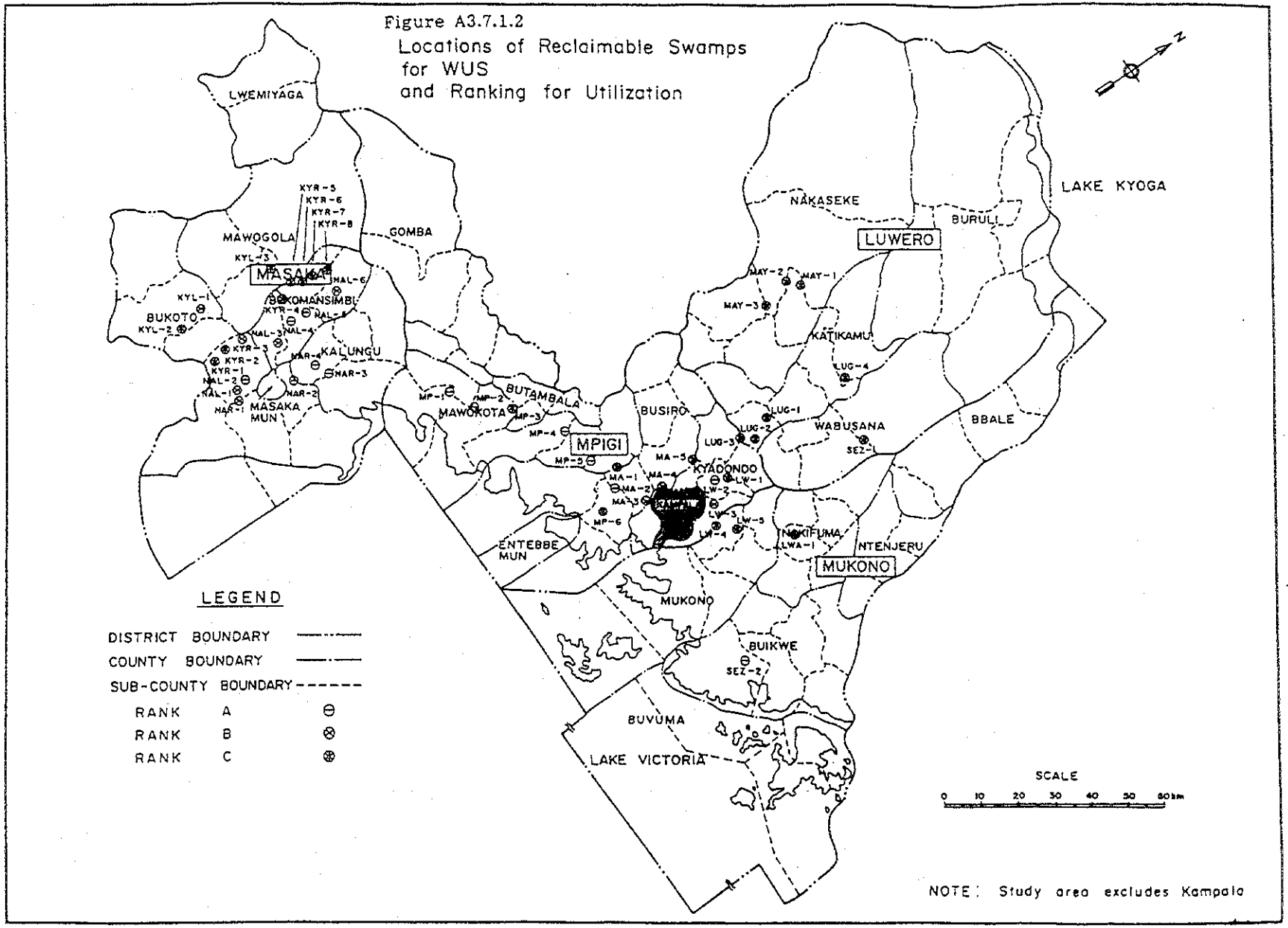


Figure A3.7.1.2
Locations of Reclaimable Swamps
for WUS
and Ranking for Utilization
LWEMIYAGA
MAWOGOLA
GOMBA
MASAKA
BUKOMANSIMBI
BUKOTO
KALUNGU
MASAKA MUN
BUTAMBALA
MAWOKOTA
MPIGI
BUSIRO
KYADONDO
ENTEBBE MUN
MUKONO
NAKIFUMA
NTENJERU
BUIKWE
BUVUMA
LAKE VICTORIA
NAKASEKE
BURULI
LUWERO
KATIKAMU
WABUSANA
BBALE
LAKE KYOGA
LEGEND
DISTRICT BOUNDARY
COUNTY BOUNDARY
SUB-COUNTY BOUNDARY
RANK A
RANK B
RANK C
SCALE
0 10 20 30 40 50 60km
NOTE: Study area excludes Kampala

Table A3.7.1.4 Water Requirement for Each Crop

(1) Applied for Luwero and Mpigi District

Data : NAMULONGE 1991

Item	Process	Unit	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	TOTAL
Rainfall(Standard year)	a	mm/mon.	12	65	95	193	134	48	14	50	48	161	81	36	937
Epan (Evaporation)	b	mm/day	4.3	3.6	4.7	4.4	3.5	3.5	3.6	3.7	4.0	3.8	4.1	4.2	
	c=b*Days	mm/mon.	133	101	146	132	109	105	112	115	120	118	123	130	
ETo	d=c*0.75	mm/mon.	100	76	109	99	81	79	84	86	90	88	92	98	
HORTICULTURE (Banana)															
Kc = ETc/ETo (SSIS)	f		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Water Reqirement	g=d*f	mm/mon.	100	76	109	99	81	79	84	86	90	88	92	98	1,082
Rice															
Kc = ETc/ETo (WUS)	l			1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.4	
Water Reqirement	m=d*l	mm/mon.		106	153	139	113	111		120	126	123	129	137	1,257

(2) Applied for Masaka District

Data : KATIGONDO 1969

Item	Process	Unit	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	TOTAL
Rainfall(Standard year)	a	mm/mon.	100	77	160	106	81	23	52	14	70	141	123	61	1,008
Epan (Evaporation)	b	mm/day	3.1	4.5	3.6	3.6	2.5	3.1	3.2	4.0	3.3	3.5	3.5	3.2	
	c=b*Days	mm/mon.	96	126	112	108	78	93	99	124	99	109	105	99	
ETo	d=c*0.75	mm/mon.	72	95	84	81	58	70	74	93	74	81	79	74	
HORTICULTURE (Banana)															
Kc = ETc/ETo (SSIS)	f		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Water Reqirement	g=d*f	mm/mon.	72	95	84	81	58	70	74	93	74	81	79	74	935
Rice															
Kc = ETc/ETo (WUS)	l			1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.4	
Water Reqirement	m=d*l	mm/mon.		133	118	113	81	98		130	104	113	111	104	1,105

(3) Applied for Mukono District

Data : JINJA 1983

Item	Process	Unit	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	TOTAL
Rainfall(Standard year)	a	mm/mon.	33	20	61	208	166	64	58	133	91	171	94	38	1,137
Epan (Evaporation)	b	mm/day	3.8	4.7	4.5	3.3	3.1	2.8	2.8	3.1	3.5	3.8	3.6	3.3	
	c=b*Days	mm/mon.	118	132	140	99	96	84	87	96	105	118	108	102	
ETo	d=c*0.75	mm/mon.	88	99	105	74	72	63	65	72	79	88	81	77	
HORTICULTURE (Banana)															
Kc = ETc/ETo (SSIS)	f		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Water Reqirement	g=d*f	mm/mon.	88	99	105	74	72	63	65	72	79	88	81	77	963
Rice															
Kc = ETc/ETo (WUS)	l			1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.4	
Water Reqirement	m=d*l	mm/mon.		139	147	104	101	88		101	111	123	113	108	1,135

Table A3.7.1.5 Hydraulic Calculation of Pump Capacity for SSIS

Station		No. 0	No. 1	No. 2	No. 3	No. 4	No. 5
Interval	m	0	200	200	200	200	200
Accum.L	m	0	200	400	600	800	1,000
Altitude	m	0	10	15	30	30	30
Hyd. Pres.	m	40.0	40.0	40.0	40.0	40.0	40.0

* Pipe : Steel Pipe D=100mm Irrigation Area 20ha

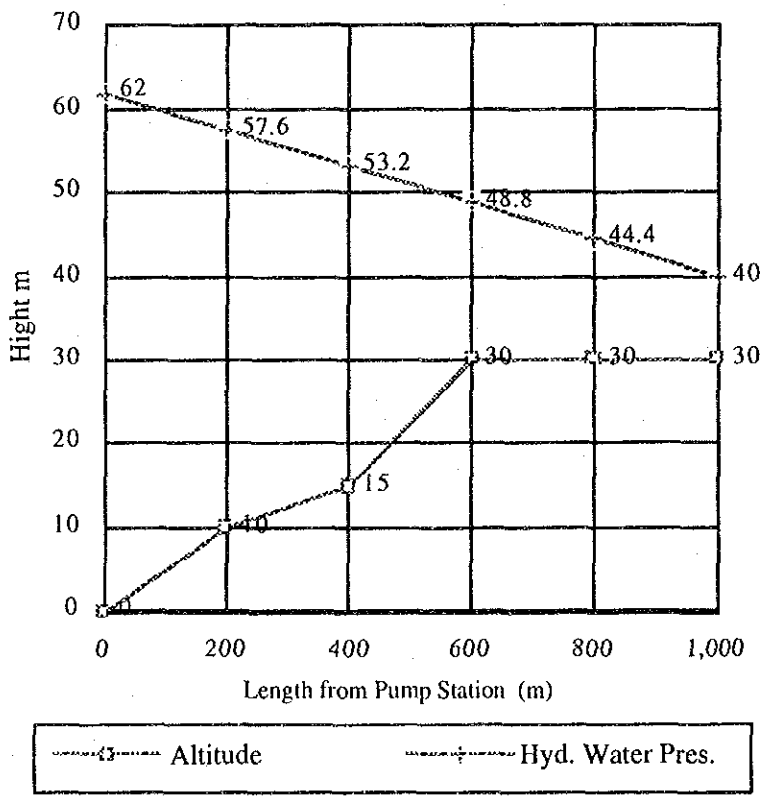
Max.Water Req.		Qmax	I(Hyd.Grd)	V(Velocity)
mm/mon.	mm/day	m^3/sec	(non.D)	m/sec
138~153	5	0.0116	0.022	1.48

I = 10.67 * C^-1.85 * D^-4.87 * Q^1.85

V = 0.355 * C * D^0.63 * I^0.54 (m/s)

D≦150→C=140, D>150→C=100

Calculation Trial for Pump Capacity



Appendix 3.9 Rural Social Infrastructure Plan

3.9.1 Water Supplies

Table A3.9.1.1 Difference of Basic Design Figures between Water Supply Projects

	NRWP	RUWASA	SWIP	ODA
Daily Water consumption per capita	25L/D	30L/D	20L/D	20L/D
Water Supply Capacity (people)	150~SP,DW,AW 250~BH	150~SP 300 ~BH,DW,AW	150~SP 200~AW 250~BH,DW	150~SP 300~BH,DW,AW
Distance between house and water	1.5km	1.5km~BH 500m~SP		1.0km
Basic Year	1990	1991	1991	1991
Target Year	2000	1995	2000	2000
Rate of people with safe water in Target Year (%)	100, 75, 50	70	75	100, 85, 75

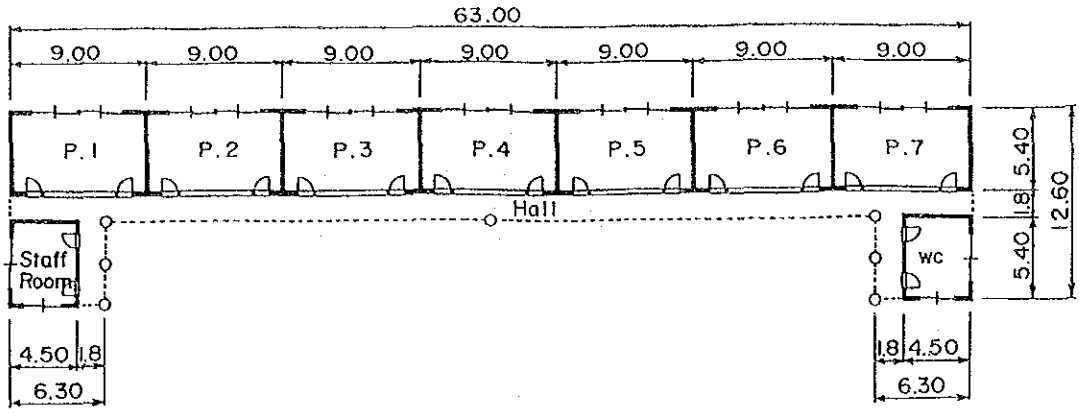
Source : NRWP : DANIDA(July1991) National Rural Water Supply Programme
RUWASA : RUWASA Project (Sep1992) Draft Plan of Operation
SWIP : Unicef (Dec,1992) South-West Integrated Programme,Masaka District
ODA : Halcrow Rural Management (Aug,1992) District Rural Water Supply and Sanitation Project ODA Financed Feasibility Study.

Note : SP : Spring, BH : Borehole, DW : Dug Well, AW : Augered Well

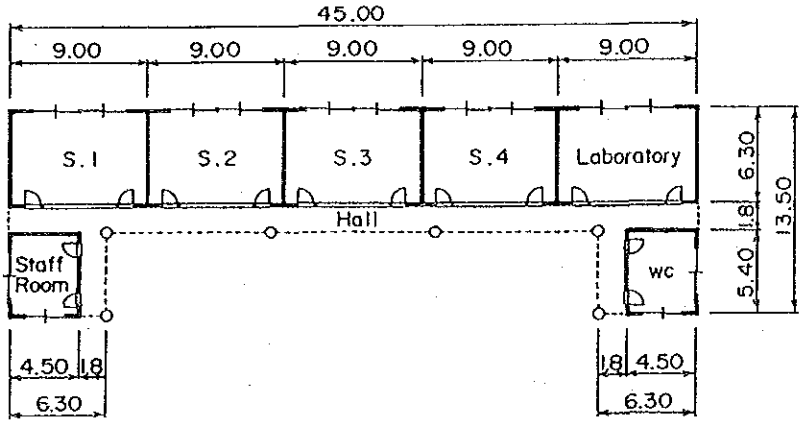
3.9.2 Education, Health Care and Hygien

Figure A3.9.2.1 Plan of Primary and Secondary School

Primary School



Secondary School



Dormitory

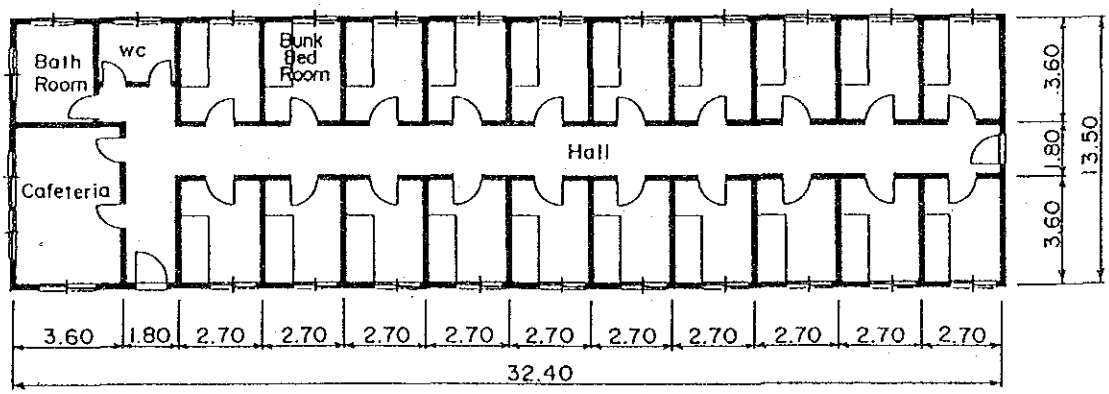
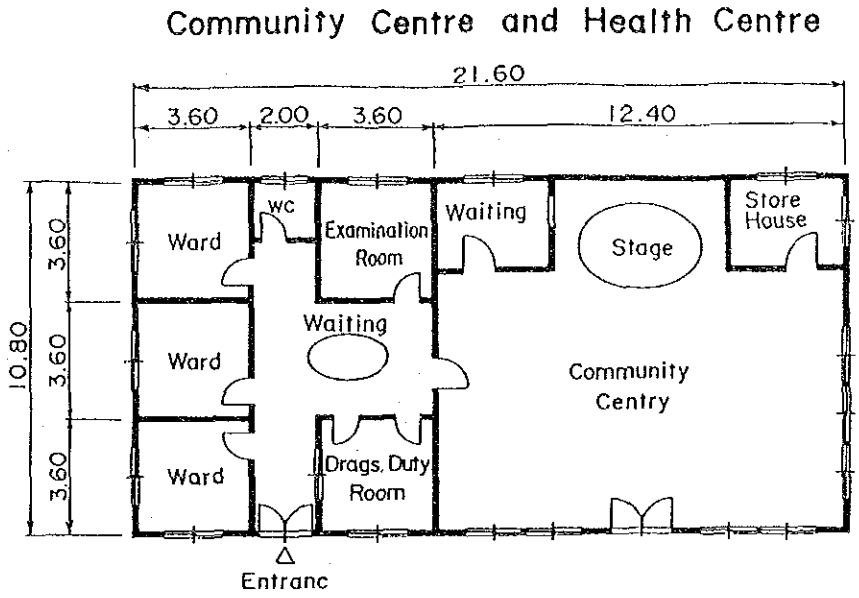
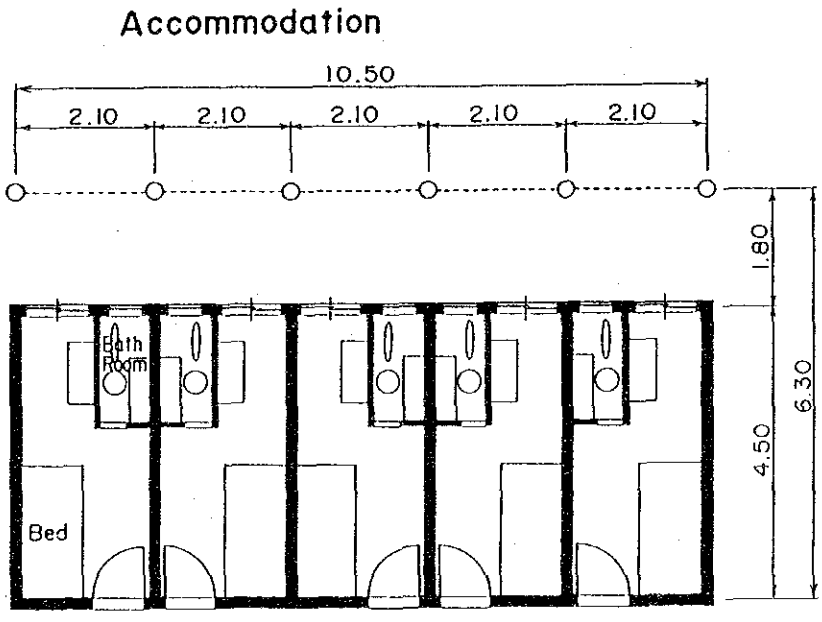


Figure A3.9.2.2 Plan of Community Centre attached by Health Centre





Appendix 3.10 Environment and Social Issues

3.10.1 Soil Conservation

1) Soil Erosion

Uganda, situated on the central eastern plateau of Africa, is confined by central and east African rifts. Accordingly, it has a great geographical diversity ranging from the mountainous areas (5,000 meters) to low-ground wetland (600 meters above sea level). Here, people are engaged in agricultural activities in many types of areas including slopes of the undulating areas and the gentle plains.

The study area consists of the areas around Lake Victoria, where small isolated hills of around 100 meters high are found here and there whereas further inland from the Lake, there are relative gentle terrains.

Due to lack of a soil policy to address, among others, regulations for soil conservation practices, soil erosion has become a big problem not only for sustainable agriculture but also sustainable environment management.

Aggravated by the heavy rains, overgrazing related to other factors soils are eroded from the sloped farmlands in the Lake Victoria Crescent zone and grasslands in the inlands.

This leads to depletion of the farmlands fertility, siltation of many dams and tanks built in the valleys.

In spite of the size of the soil degradation problem, no coordinated research programmes have been put in place to address it in the Study area; only soil losses transported by the water to Lake Kyoga and Lake Victoria have been reported (UNEP).

Given its disastrous effects, soil erosion is a grave problem that must urgently be addressed.

2) Estimation of Soil Loss

A) Method to Estimate Soil Loss

Since there is no survey data about the actual situation of soil erosion from the farmlands in the study area, the only way to find it out is to estimate it indirectly by using parameters which represent the conditions involved in the area.

This may be done by using the widely used Universal Soil-Loss Equation, (USLE, USDA-SEA) which is an empirical equation constructed in USA. The USLE gives us dependable results, provided appropriate parameters are given.

The equation is presented in the form

$$A = R * K * L * S * C * P$$

Where A is soil loss in tons per hector during specified period,

R is the rainfall erosivity index,

a number which indicated the erosivity of the rain on a scale based on the EI index described below,

K is the soil erodibility factor,

a number which reflects the liability of a soil type to erosion.

L is the length factor

a ratio which compares the soil loss with that from a field of specified length (22.6m)

S is the slope factor

a ratio which compares the soil loss with that from a field of specified slope (9%)

C is the crop management factor

a ratio which compares the soil loss with that from a field under a standard treatment (1.0 for cultivated bare fallow)

P is the conservation practice factor

a ratio which compares the soil loss with that from a field with no conservation practice

B) Computation Method of USLE Parameters

(a) R (Rainfall Erosivity)

This was drawn from test results that show soil erosion is influenced by the compound effect of mechanical energy and intensity of the rain. It is obtained by dividing the product of E and I by 1,000.

$$R = E * I / 1{,}000$$

Here, E is the product of the amount of rain (mm) and the corresponding intensity converted to energy. When a series of rain is less than 13mm in total, soil erosion would be extremely small and thus would be excluded from calculation. While, I indicates rain intensity per hour (mm/h) derived from the hardest 30 minute rainfall amount being doubled.

Below is an example of the calculation of R in a series of rain. Depending on the time period for calculating soil loss, R is to be the accumulation of the period.

1 Intensity (mm/h)	2 Amount (mm)	3 Energy (J/m^2/mm)	4 Total (Col2 x Col3)
0-25	30	22.0	660
25-50	25	26.0	650
50-75	15	28.0	420
>75	10	28.3	283
			2,013 J/m^2=E

I is derived from rain gauge charts
Using a typical value of say 20mm/h

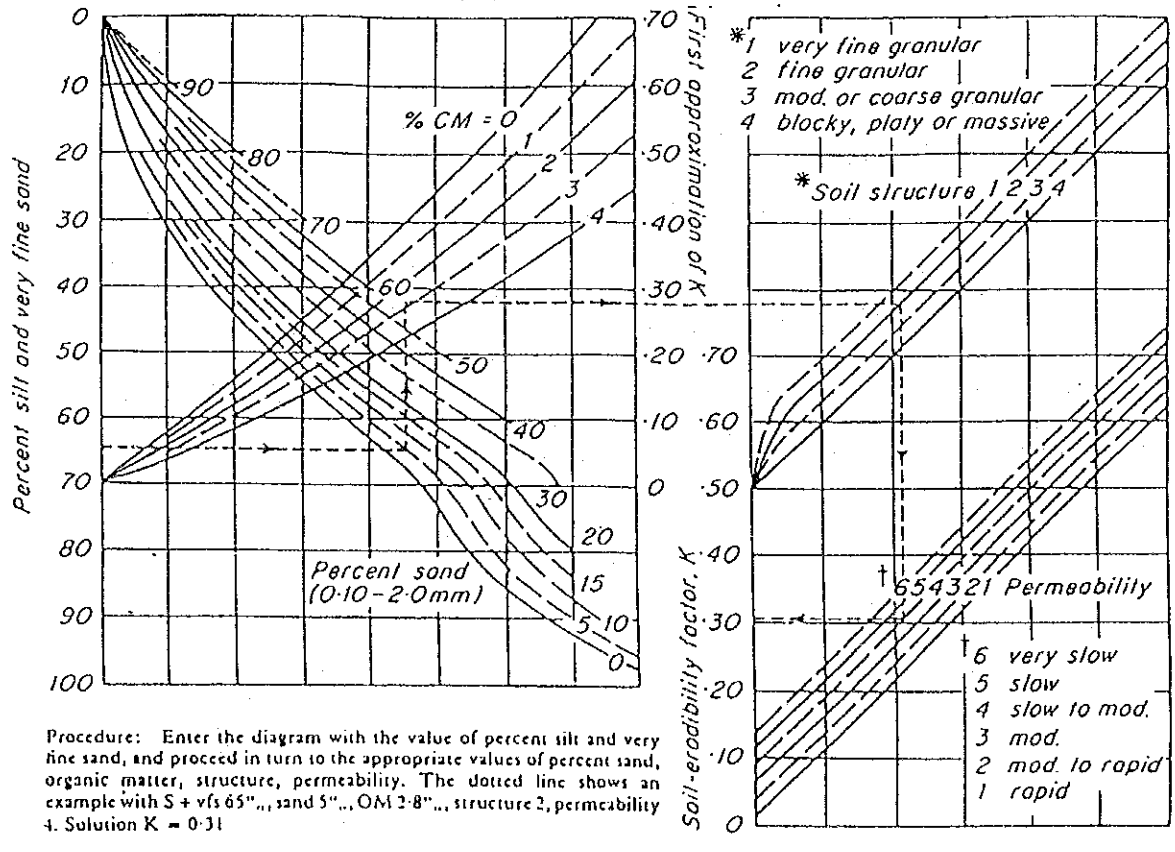
$$EI = \frac{E \times I30}{1{,}000} = \frac{2{,}013 \times 20}{1{,}000} = 40.26 \text{ erosivity units (2)}$$

Energy (Col3) = 11.9 + 8.7 log I.(Col1)

(b) K (Soil Erodibility)

This is the factor of soil resistance to erosion. It is governed by soil particle distribution, organic matter contents, structure, and percolation. The homograph below is used. The homograph is constructed in foot-tons / acre-inch units; and to convert it into metric units (tons-meter / hector-centimeter), it should be multiplied by 1.3.

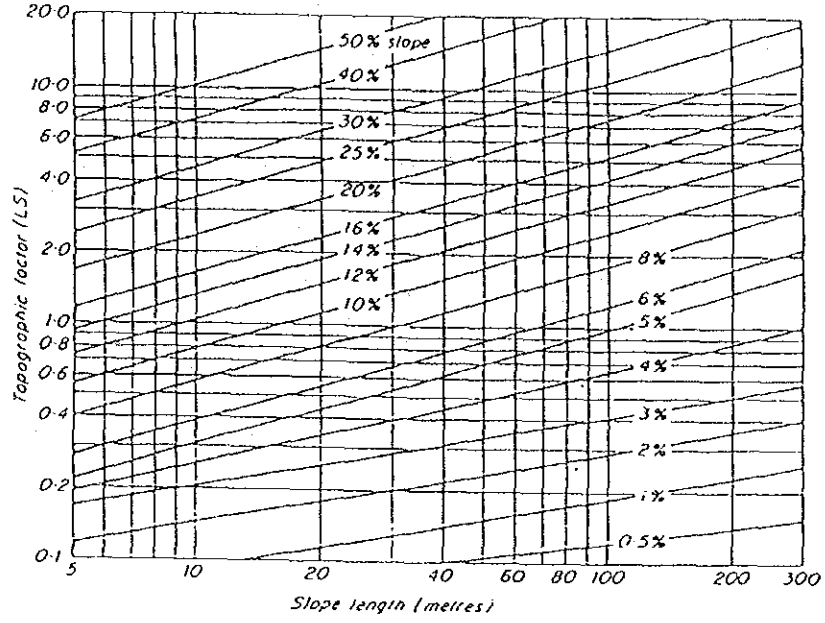
The soil erodibility nomograph (WISCHMEIER and SMITH 1978).



Procedure: Enter the diagram with the value of percent silt and very fine sand, and proceed in turn to the appropriate values of percent sand, organic matter, structure, permeability. The dotted line shows an example with S + vfs 65%, sand 5%, OM 2·8%, structure 2, permeability 4. Solution K = 0·31

(c) L (Length Factor) and S (Slope Factor)

In principle, L and S are independent of each other, however, when conservation work such as terracing is to be done, L which relates to the span between the work is regulated by S. Therefore, L and S hold a close relationship, and it is common to treat them together as a topographical factor LS. This LS can be extracted from the homograph below.



The combined Slope-Length factor

(d) C (Crop Management Factor)

This factor relates to cultivation management and crop covering. No covering results in 1.0, and thick grass results in 0. It relates more to vegetation density than to types of crops, but here it follows the crop classification shown below which is used in Japan for its simplicity.

pasture:	0.02
sugar canes, wheat:	0.2
dry field rice, potatoes, vegetables:	0.3 to 0.4
corns:	0.4
beans:	0.5

(e) P (Conservation Practice Factor)

Conservational agricultural techniques such as plowing, breaking soil, and planting on the directions of contours are preconditions here. The effect of these management of soil conservation vary according to the slope as shown below.

Together with the agricultural conservation techniques, building of contour ditches is also effective. It is said to cut the soil erosion in half, but these ditches are not necessarily maintained through the year. Therefore, the effective period should be taken into consideration.

Values of conservation practice factor P

Slope(5)	P value
1 to 2	0.40
2 - 7	0.50
7 - 12	0.60
12 - 18	0.80
18 - 24	0.90

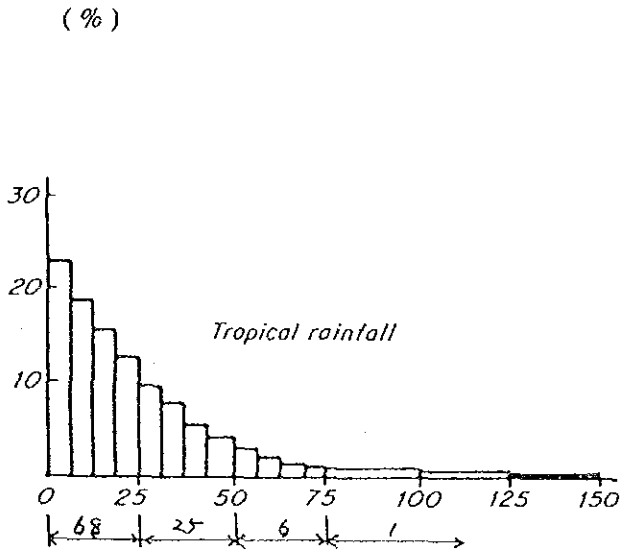
Table A3.10.1.1 Basic Data for Soil Loss Estimates

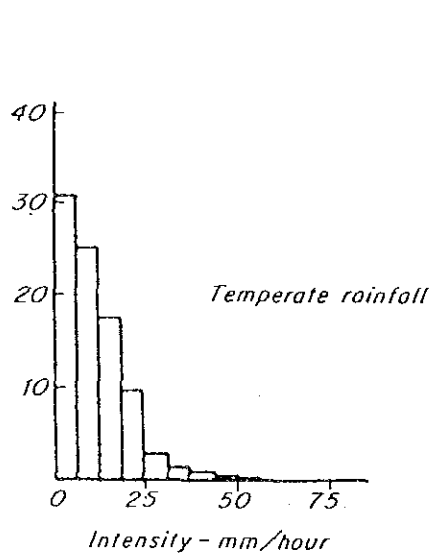
(1) Rainfall erosivity

R = EI=E* I / 1,000 = 17,566 *20 / 1,000 = 351
(note1) (note 2)

note 1 : from the table below
note 2 : Tropical common rainfall intensity (20mm/hour)

1 Intensity (mm/hour)	2 Distribution (%)	3 Amount (mm)	4 Energy	5 Total (Column 3 * Column 4)
0-25	68	510	22.0	11,220
25-50	25	188	26.0	4,888
50-75	6	45	28.0	1,260
>75	1	7	28.3	198
Total		750		17,566





Source : Norman Hudson ; Soil Conservation

note 3 : Column 2 : The distribution of rainfall at different intensities common in tropical rainfalls.
Column 3 : Annual average rainfall for 5 years in Jinja station accumulation of daily rainfall more than 13mm. (Table A3.10.1.1 (2))

(2) Annual Average Rainfall (Jinja Station)

Item		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1992	Total	25	2	4	100	160	94	113	90	135	129	198	140	1,190
	>13mm/d	-	-	-	41	93	68	80	41	106	57	159	92	737
1991	Total	40	88	127	176	198	74	130	33	122	101	70	52	1,210
	>13mm/d	15	47	76	133	158	37	115	-	98	68	17	36	800
1990	Total	44	122	200	176	68	2	11	57	142	134	63	119	1,141
	>13mm/d	24	80	140	129	26	-	-	19	117	112	27	86	760
1987	Total	58	148	194	206	168	83	7	100	232	144	101	33	1,472
	>13mm/d	24	107	159	147	121	36	-	73	188	99	30	29	1,013
1984	Total	77	19	37	118	77	21	73	127	60	75	179	56	918
	>13mm/d	57	-	19	14	34	16	14	103	20	53	87	23	440
Total	Total	244	379	562	776	671	274	334	407	691	583	611	400	5,932
	Mean	49	76	112	155	134	55	67	81	138	117	122	80	1,186
>13mm/d	Total	120	234	394	464	432	157	209	236	529	389	320	266	3,750
	Mean	24	47	79	93	86	31	42	47	106	78	64	53	750

(3) Classification of Soils (Soil Group)

Soil	Carbon	Proportion (%)					K	Remark
	%	Clay	Silt	Total	V.F.S	Sand	Factor	
[group 1]								
Mabira	4.76	46	6	52				
Nakabango	7.28	46	16	62				
Kifu	4.70	22	18	40				
Kaku	5.61	29	3	32				
Sesse	3.24	30	5	35				
Sub Total	25.59	173	48	221				
average	5.12	34.60	9.60	44.20	37.00	19.00	0.18*1.30=0.23	
[group 2]								
Buganda	2.66	32	8	40				
Buyaga	2.70	32	8	40				
Kabira	2.01	48	6	54				
Koki	2.61	28	13	41				
Bukora	2.07	24	28	52				
Sub Total	12.05	164	63	227				
Average	2.41	32.80	12.60	45.40	37.00	18.00	0.24*1.30=0.31	
[group 3]								
Mirambi	1.68	15	7	22				
Mawogola	1.41	23	4	27				
Lukaya	1.71	27	4	31				
Mulembo	1.68	5	0	5				
Makole	1.49	20	8	28				
Buganda/Mirambi	-	-	-	-				
Sub Total	7.97	90	23	113				
Average	1.59	18.00	4.60	22.60	51.00	26.00	0.36*1.30=0.47	
[group 4]								
Buruli	0.96	12	6	18				
Lwampanga	0.44	15	6	21				
Sango	1.08	0	0	0				
Tolero	-	-	-	-				
Sub Total	2.48	27	12	39				
Average	0.83	9.00	4.00	13.00	58.00	29.00	0.50*1.30=0.65	

Note: V.F.S: Very Fine Sand

Table A3.10.1.2 Land Classification by Soil Group and Gradient

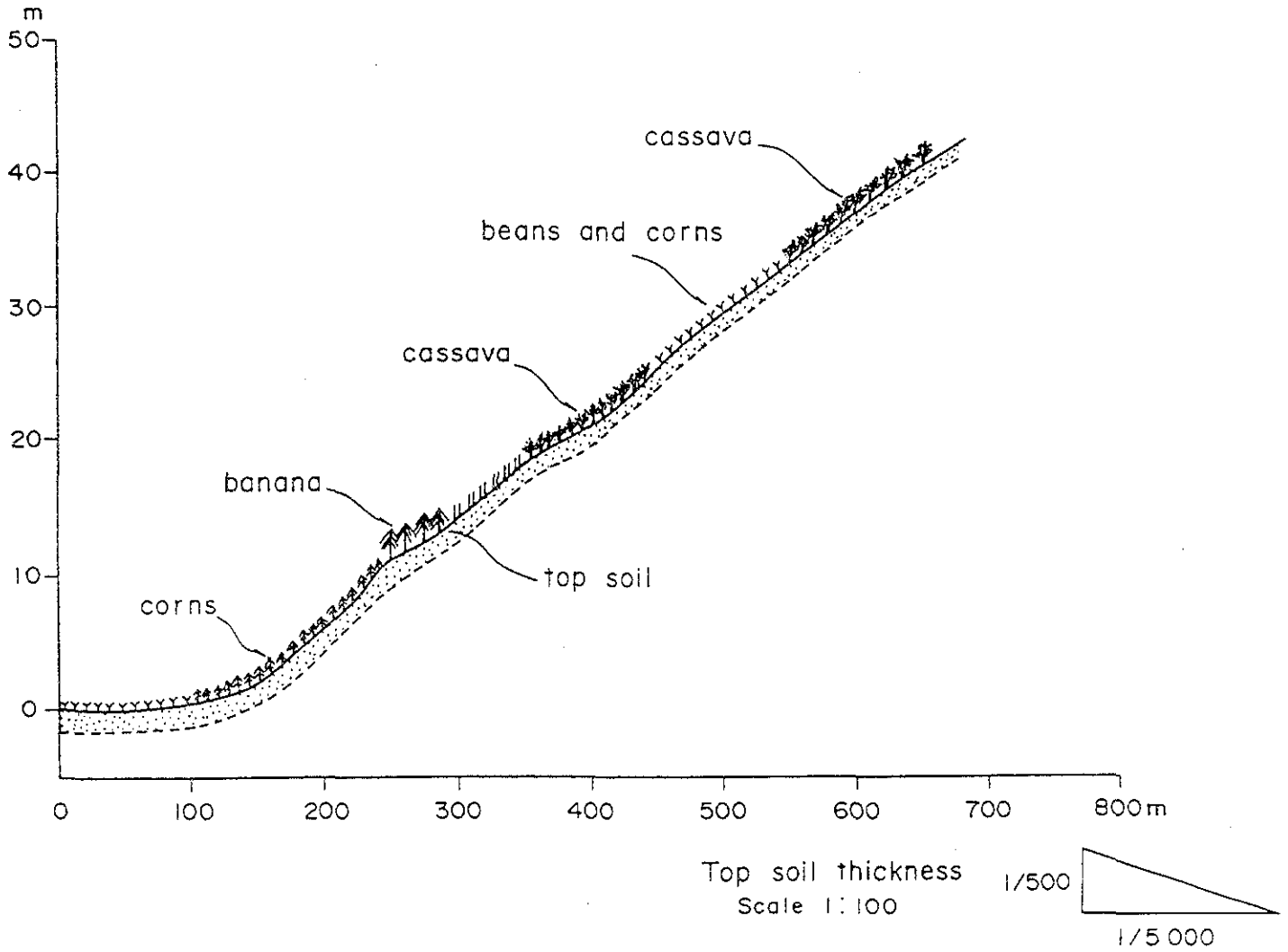
(sq.Km)

District	I < 6%					6% <= I < 12%					12% <= I					TOTAL				
County	GS1	GS2	GS3	GS4	Total	GS1	GS2	GS3	GS4	Total	GS1	GS2	GS3	GS4	Total	GS1	GS2	GS3	GS4	Total
Luwero																				
Buruli	4.0	30.4	533.5	2,254.0	2,821.9	0.0	0.0	5.1	8.2	13.3	0.0	0.0	0.0	9.2	9.2	4.0	30.4	538.6	2,271.4	2,844.4
Katikamu	64.8	415.9	242.4	70.0	793.1	12.0	8.4	65.5	0.0	85.9	3.0	4.8	6.9	0.0	14.7	79.8	429.1	314.8	70.0	893.7
Nakaseke	18.7	457.0	1,195.2	911.4	2,582.3	5.2	33.3	90.9	33.6	163.0	1.0	1.0	9.1	2.1	13.2	24.9	491.3	1,295.2	947.1	2,758.5
Wabusaana	210.4	279.0	104.9	323.3	917.6	5.3	24.1	10.7	7.0	47.1	1.0	13.0	1.9	1.0	16.9	216.7	316.1	117.5	331.3	981.6
Total	297.9	1,182.3	2,076.0	3,558.7	7,114.9	22.5	65.8	172.2	48.8	309.3	5.0	18.8	17.9	12.3	54.0	325.4	1,266.9	2,266.1	3,619.8	7,478.2
Masaka																				
Bukomansimbi	20.0	24.3	223.9	0.0	268.2	18.9	22.5	97.2	0.0	138.6	1.8	9.0	23.5	0.0	34.3	40.7	55.8	344.6	0.0	441.1
Bukoto	65.6	449.3	229.3	208.5	952.7	21.7	116.5	132.8	18.1	289.1	6.9	123.5	27.2	100.1	257.7	94.2	689.3	389.3	326.7	1,499.5
Kalungu	37.4	73.0	161.6	14.6	286.6	31.1	49.3	53.9	0.0	134.3	25.2	33.2	20.6	0.0	79.0	93.7	155.5	236.1	14.6	499.9
Lwemiyaga	0.0	0.0	382.0	0.0	382.0	0.0	0.0	205.1	0.0	205.1	0.0	0.0	57.0	0.0	57.0	0.0	0.0	644.1	0.0	644.1
Masaka Mun.	5.0	5.0	0.0	0.0	10.0	14.2	5.0	2.0	0.0	21.2	1.0	1.0	0.0	0.0	2.0	20.2	11.0	2.0	0.0	33.2
Mawoggola	7.0	0.0	754.8	16.1	777.9	0.0	0.0	188.4	0.0	188.4	0.0	0.0	25.1	0.0	25.1	7.0	0.0	968.3	16.1	991.4
Total	135.0	551.6	1,751.6	239.2	2,677.4	85.9	193.3	679.4	18.1	976.7	34.9	166.7	153.4	100.1	455.1	255.8	911.6	2,584.4	357.4	4,109.2
Mpigi																				
Busiro	61.2	136.3	51.2	0.0	248.7	23.6	101.1	12.2	1.0	137.9	22.6	47.9	4.1	0.0	74.6	107.4	285.3	67.5	1.0	461.2
Butambala	21.6	21.1	34.2	18.2	95.1	8.0	28.1	19.3	0.0	55.4	13.8	20.3	3.2	0.0	37.3	43.4	69.5	56.7	18.2	187.8
Entebbe Mun.	0.0	22.4	0.0	0.0	22.4	0.0	1.9	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	24.3	0.0	0.0	24.3
Gomba	20.7	81.0	563.1	108.1	772.9	4.0	54.3	218.9	19.2	296.4	8.9	50.7	72.4	1.0	133.0	33.6	186.0	854.4	128.3	1,202.3
Kyadondo	29.2	58.2	121.1	3.0	211.5	11.8	52.4	56.0	2.0	122.2	0.0	12.9	3.5	2.0	18.4	41.0	123.5	180.6	7.0	352.1
Mawokota	25.5	98.4	10.2	54.8	188.9	35.0	60.5	4.1	4.0	103.6	14.6	36.8	0.0	0.0	51.4	75.1	195.7	14.3	58.8	343.9
Total	158.2	417.4	779.8	184.1	1,539.5	82.4	1.9	310.5	26.2	717.4	59.9	168.6	83.2	3.0	314.7	300.5	884.3	1,173.5	213.3	2,571.6
Mukono																				
Bbale	130.6	123.5	27.8	573.6	855.5	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	130.6	124.5	27.8	573.6	856.5
Buikwe	51.1	159.9	2.1	0.0	213.1	49.8	115.7	0.0	0.0	165.5	13.2	67.7	0.0	0.0	80.9	114.1	343.3	2.1	0.0	459.5
Buvuma	105.6	0.0	0.0	0.0	105.6	57.2	1.9	0.0	0.0	59.1	22.4	0.0	0.0	0.0	22.4	185.2	1.9	0.0	0.0	187.1
Mukono	80.4	110.4	45.2	0.0	236.0	21.7	60.3	19.3	0.0	101.3	4.1	28.0	0.9	0.0	33.0	106.2	198.7	65.4	0.0	370.3
Nakifuma	146.3	287.6	28.3	0.0	462.2	3.0	5.1	3.0	0.0	11.1	0.0	0.0	1.0	0.0	1.0	149.3	292.7	32.3	0.0	474.3
Ntenjeru	18.1	412.7	19.1	11.8	461.7	0.0	1.1	2.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0	18.1	413.8	21.2	11.8	464.9
Total	532.1	1,094.1	122.5	585.4	2,334.1	131.7	185.1	24.4	0.0	341.2	39.7	95.7	1.9	0.0	137.3	703.5	1,374.9	148.8	585.4	2,812.6
Grand Total	1,123.2	3,245.4	4,729.9	4,567.4	13,665.9	322.5	742.5	1,186.5	93.1	2,344.6	139.5	449.8	256.4	115.4	961.1	1,585.2	4,437.7	6,172.8	4,775.9	16,971.6

Note: As for soil groups (GS) refer to Table 6.10.1.1

Figure A3.10.1.1 Topography and Top soil Thickness in Mpigi District

Slope ranges from 4 to 9%



Topography and Top-soil Thickness in Mpigi Slope II

Slope ranges from 4 to 9%

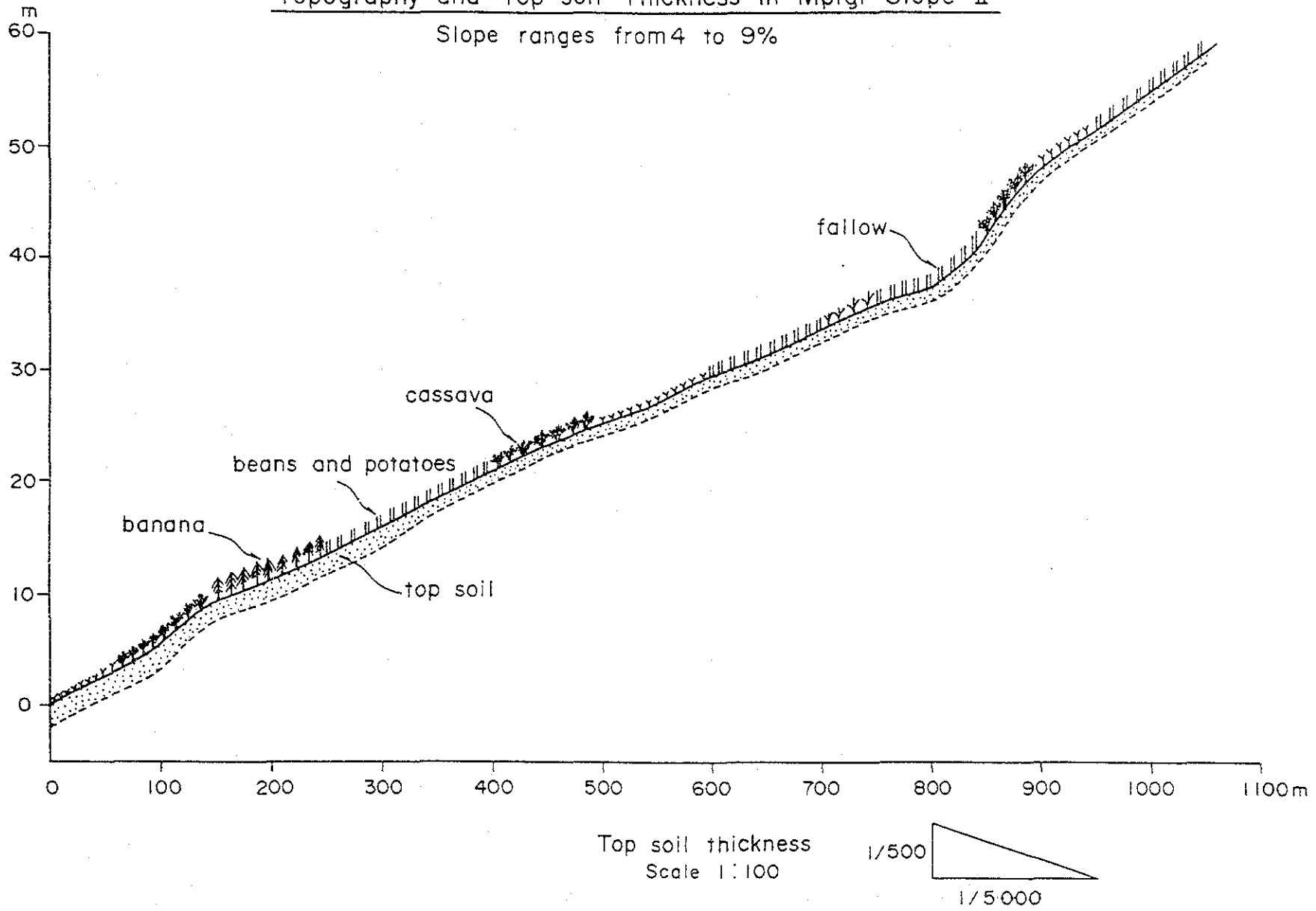


Figure A3.11.1 A Model of Small Scale Irrigation Scheme (Pump)

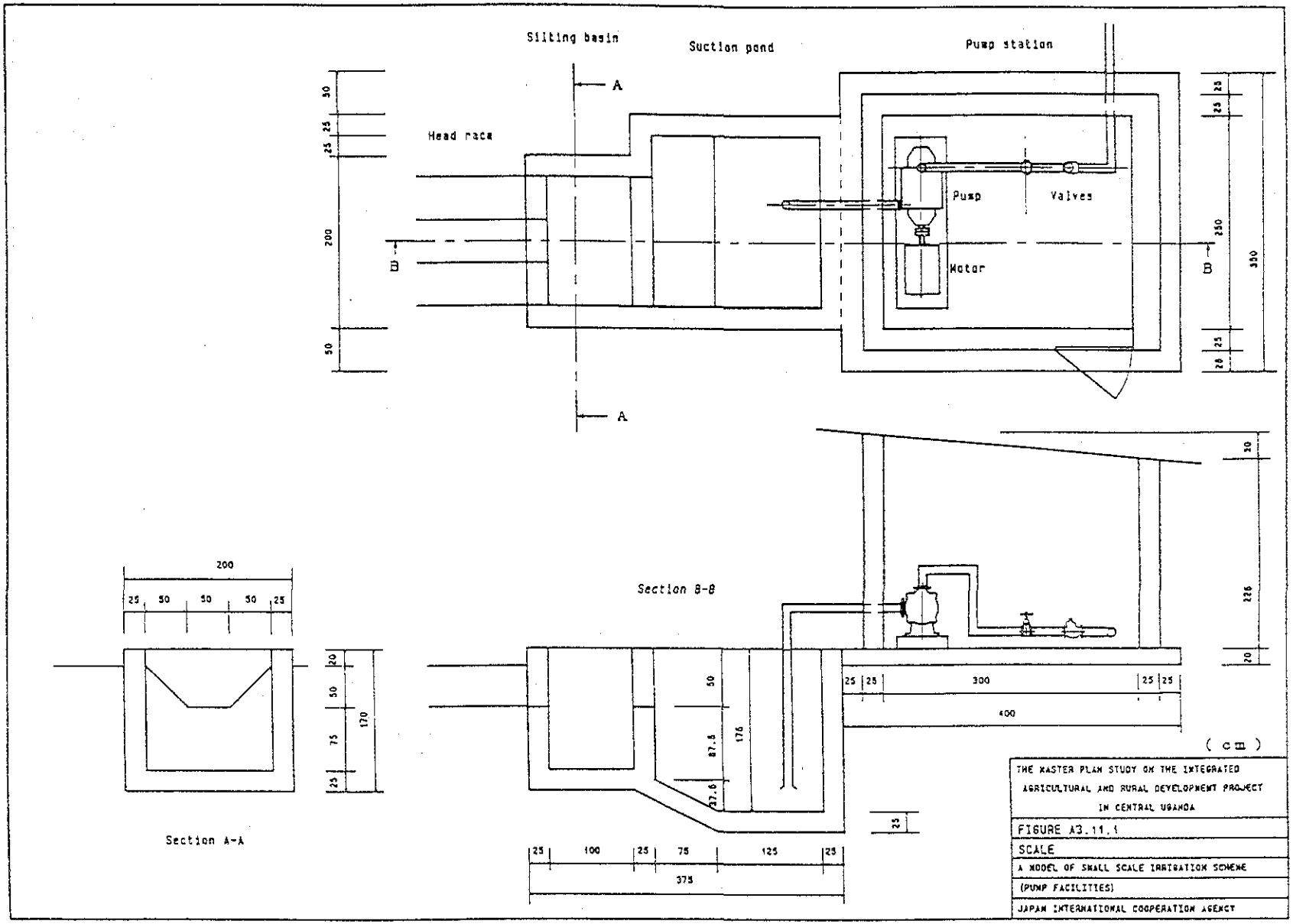


Figure A3.11.2 A Model of Small Scale Irrigation Scheme (Farm Pond)

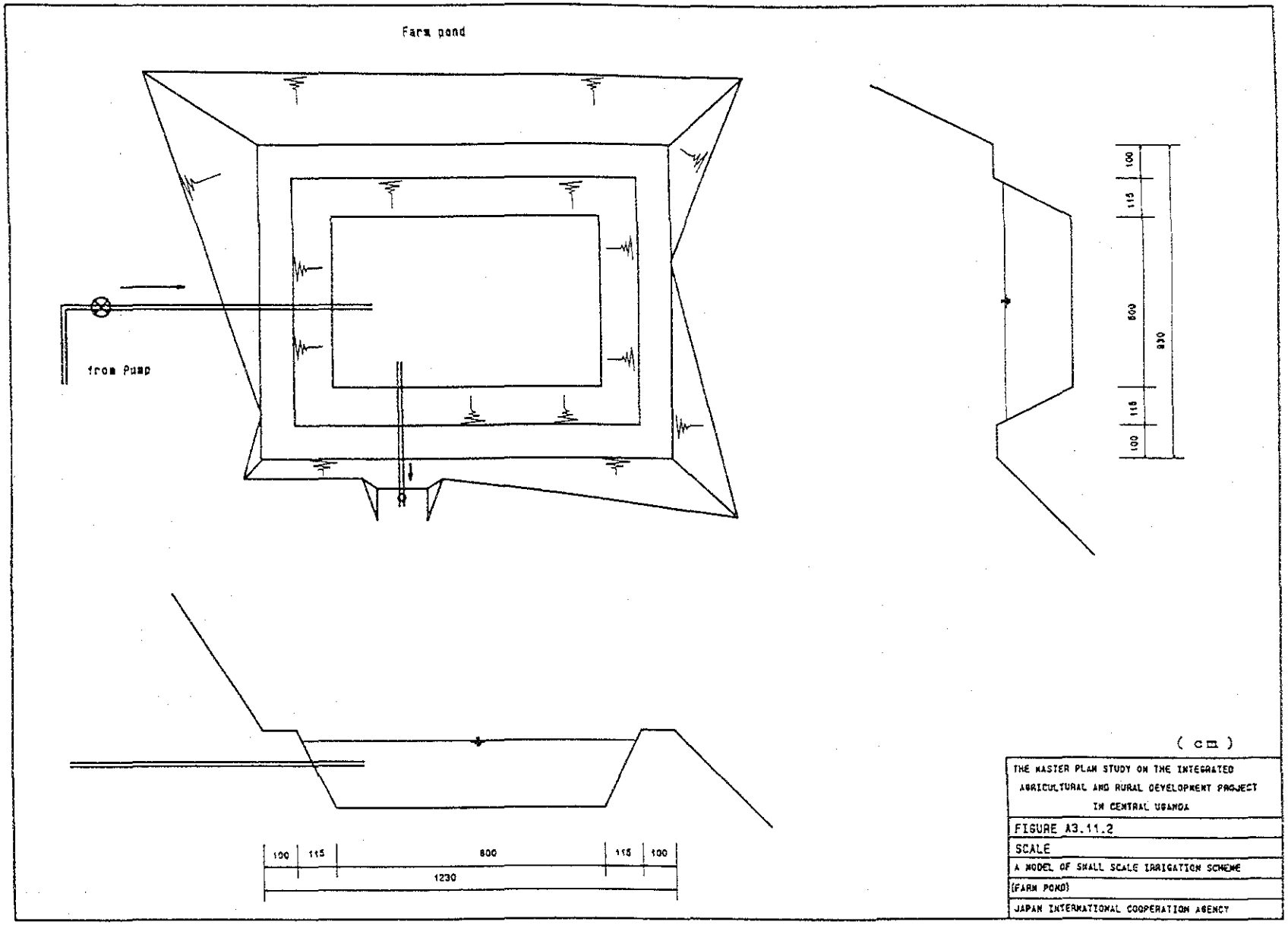


Figure A3.11.3 A Model of Wetland Utilization Scheme (Intake)

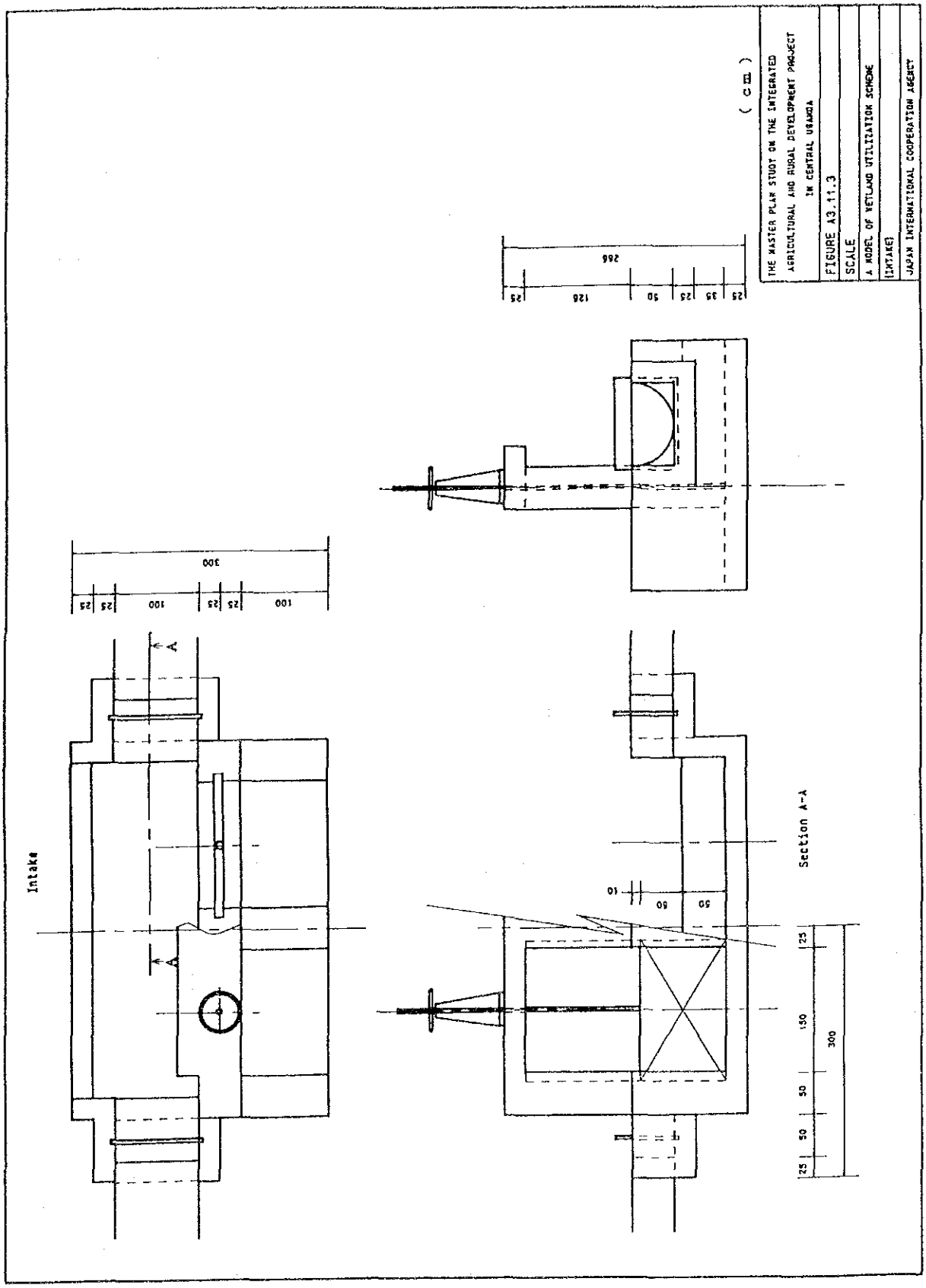
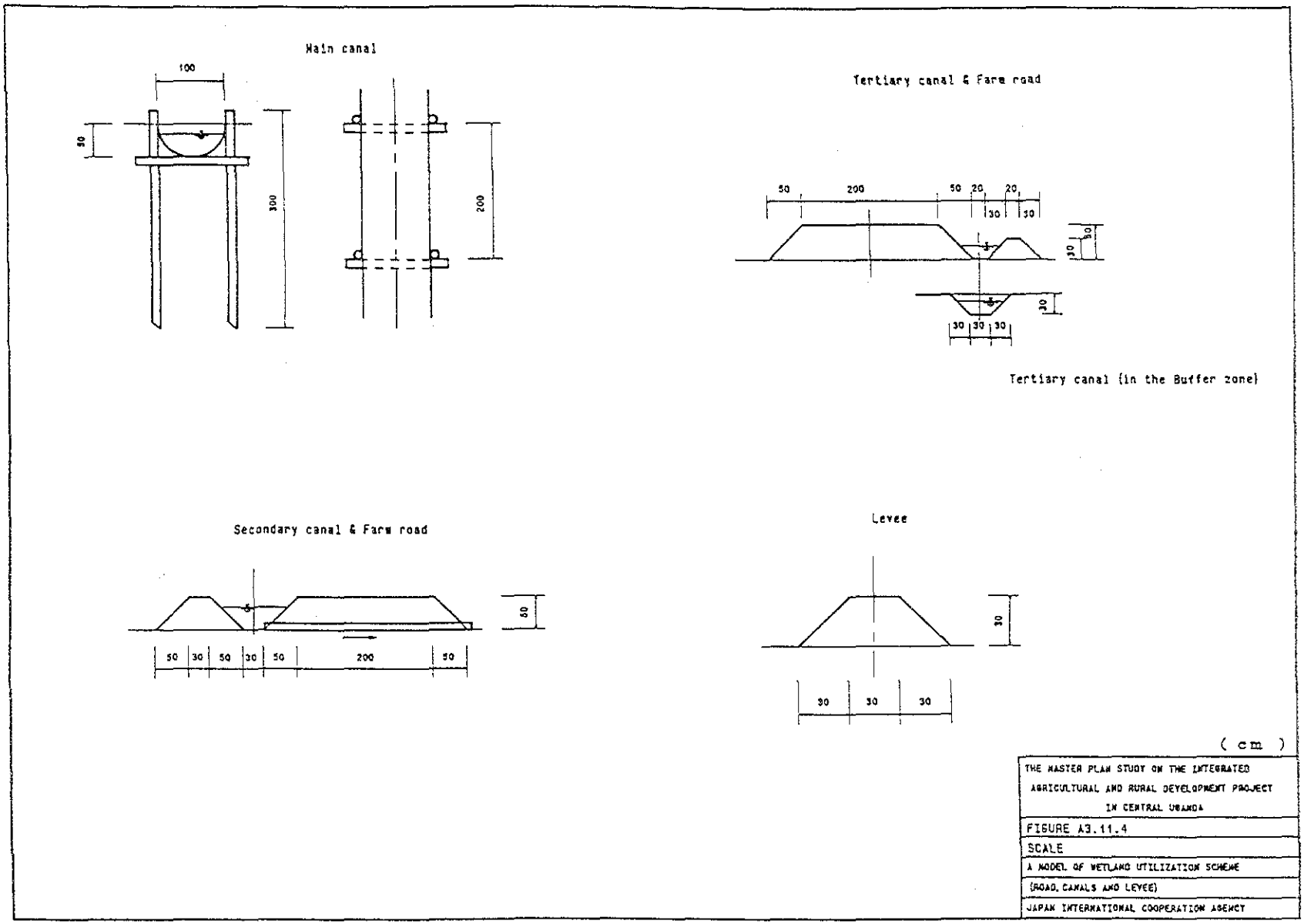


Figure A3.11.4 A Model of Wetland Utilization Scheme (Road, Canal, Levee)



Appendix 4

Project Implementation

Appendix 4.1 Project Cost Estimates
Table A 4.1.1 Project Costs
(1) Agricultural Infrastructure

Item	Unit	Q'ty	Unit Price	Amount('000US$)
I.Investment cost				
1.Agricultural infrastructure				
1)Farm land reclamation				86,118
Farm Land reclamation	ha	93,300	901	84,065
Farm road	km	6,375	322	2,053
2)Farm land improvement				35,825
Farm land improvement	ha	43,200	805	34,787
Farm road	km	3,225	322	1,038
3)Grass land development				6,926
Clearing & burning	ha	29,440	25	736
Tillage & land grading	ha	29,440	90	2,650
Soil amendment	ha	26,496	60	1,590
Fartilizing & seeding	ha	26,496	70	1,855
Farm road	km	294	322	95
4)Grass land improvement				9,901
Tillage & land grading	ha	47,100	90	4,239
Soil amendment	ha	42,390	60	2,543
Fartilizing & seeding	ha	42,390	70	2,967
Farm road	km	471	322	152
5)Small scale irrigation (only facilitiy)	ha	2,500	3,119	7,798
6)Paddy field development	ha	5,900	3,134	18,493
7)Livestock facility				18,480
Fence (A) 3-lines	km	4,860	420	2,041
Fence (B) 4-lines	km	2,700	480	1,296
Dipping & scale facility	place	1,310	745	976
Reservoir	place	1,310	1,320	1,729
Hay storage	place	10,480	250	2,620
House	place	10,480	800	8,384
Valley dam	place	36	22,220	800
Dipping facility	place	36	9,310	335
Bee hive	set	5,000	26	130
Bee protective	set	200	67	13
Processing & packaging material	set	16	2,010	32
Station wagon	car	4	31,000	124
Sub-Total				183,541

(2) Agricultural Support

Item	Unit	Q'ty	Unit Price	Amount('000US$)
2.Agricultural support				
1)Research				
(1) NARO Headquarters				3,135
Buildings	set	1	2,823,000	2,823
Equipment	set	1	312,000	312
(2) Kawanda agri. research institute				3,944
Building	set	1	2,960,000	2,960
Equipment	set	1	784,000	784
Farm improvement	set	1	200,000	200
(3) Namulonge agricultural & animal production research institute				2,740
Building	set	1	1,236,125	1,236
Equipment	set	1	1,128,160	1,128
Farm improvement	set	1	16,189	16
Access road	km	9	40,000	360
(4)Kifu forestry research institute				1,659
Building	set	1	1,280,000	1,280
Equipment	set	1	379,000	379
2)Extension				
(1) Bukalasa agri. college				3,235
Building	set	1	1,461,779	1,462
Equipment	set	1	593,386	593
Farm improvement	set	1	779,806	780
Access road	km	10	40,000	400
(2) Establishment of DFI				3,510
Building	set	2	994,150	1,988
Equipment	set	2	211,000	422
Farm improvement	set	2	350,000	700
Access road	km	10	40,000	400
(3) Rehabilitation of DFI				2,445
Building(Masaka)	set	1	526,665	527
Equipment(Masaka)	set	1	254,150	254
Farm improvement(Masaka)	set	1	444,037	444
Access road(Masaka)	km	10	40,000	400
Building(Mukono)	set	1	248,739	249
Equipment(Mukono)	set	1	160,150	160
Farm improvement(Mukono)	set	1	331,039	331
Access road(Mukono)	km	2	40,000	80
(4) Branch extension office				4,113
Building	place	225	12,500	2,813
Equipment	set	225	4,000	900
Farm improvement	place	400	1,000	400

Cont.

Item	Unit	Q'ty	Unit Price	Amount('000US$)
(5)Improvement of working condition				4,756
Building	set	1	3,600,000	3,600
Training	set	1	984,000	984
Equipment	set	1	172,000	172
(6)Improvement for plant protection				99
Training	set	1	68,200	68
Equipment	set	1	30,800	31
(7)Tannary & foot wear training school				751
Leather production section	set	1	714,000	714
Leather goods production section	set	1	37,000	37
3)Animal improvement				
(1)Breed importation				6,267
Beef cattle	head	1,000	1,650	1,650
Milk cattle	head	4,000	600	2,400
Goat (milk)	head	500	400	200
Goat (meat)	head	3,000	300	900
Sheep (meat)	head	2,000	250	500
Pig (meat)	head	500	250	125
Poultry (for farming)(layer)	head	70,000	4	28
Poultry (for farming)(broiler)	head	70,000	2	14
Poultry (for hatchery)(layer)	head	45,000	5	225
Poultry (for hatchery)(broiler)	head	45,000	5	225
(2)ABC(Artificial breeding centre)				202
Infrastructure	set	1	41,250	41
Semen production equipment	set	1	13,000	13
Office equipment	set	1	16,660	17
Vehicle	set	1	41,660	42
Dairy bull calves	head	20	600	12
Beef bull calves	head	20	600	12
Semen staff residential house	house	3	21,700	65
(3)AISC(Artificial insemination sub-centre)				
Rehabilitation				181
Accommodation	place	10	6,670	67
Office building	place	10	4,170	42
Equipment	place	10	1,500	15
AI kit	place	10	660	7
Vehicle	car	10	5,050	51
Construction				387
Accommodation	place	11	18,000	198
Office building	place	11	10,000	110
Equipment	place	11	1,500	17
AI kit	place	11	660	7
Vehicle	car	11	5,050	56

Cont.

Item	Unit	Q'ty	Unit Price	Amount('000US$)
(4)Veterinary centre				
Rehabilitation				139
Accommodation	place	8	6,670	53
Office building	place	8	4,170	33
Equipment	place	8	1,500	12
Vehicle	car	8	5,050	40
Veterinary centre				
Construction				346
Accommodation	place	10	18,000	180
Office building	place	10	10,000	100
Equipment	place	10	1,500	15
Vehicle	car	10	5,050	51
(5)Vaccine production laboratory				250
Office building	place	1	100,000	100
Viral unit	set	1	50,000	50
Bacterial unit	set	1	100,000	100
4)Machinary service				
(1)AA (Agricultural association)				9,151
Tractor (75HP)	set	225	18,120	4,077
Disk plow (3disks)	set	225	2,550	574
Truck (2t)	car	225	20,000	4,500
(2)IA (Irrigation association)				11,382
Tractor (80HP)	set	247	18,120	4,476
Disk plow (3disks)	set	247	2,550	630
Disk harrow	set	247	3,310	818
Sprayer (back type)	set	2,470	210	519
Truck (2t)	car	247	20,000	4,940
(3)LA (Livestock association)				14,820
Tractor (75HP)	set	609	18,120	11,035
Disk plow (3disk)	set	87	2,550	222
Disk harrow	set	87	3,310	288
Packer	set	87	2,260	197
Rotary mower	set	87	3,600	313
Tedder	set	87	3,600	313
Rake	set	87	3,860	336
Trailer	set	87	4,320	376
Truck (2t)	car	87	20,000	1,740
Sub-Total				73,510

(3) Processing and Marketing

Item	Unit	Q'ty	Unit Price	Amount('000US$)
3.Processing and marketing				
1)Slaughter slab	place	35	15,926	557
2)Slaughter house	place	2	63,636	127
3)Milk collection centre				415
Milik collection centre	place	6	4,218	25
Cooler(5,000l)	set	6	45,000	270
Vehicle	car	6	20,000	120
4)Livestock market(10,200sq.m)	place	10	80,165	802
5)Cereal warehouse(60t)				2,257
Coffee	ton	3,304	227	750
Grain	ton	2,922	227	663
Cotton	ton	1,189	710	844
6)Rice processing facility				662
Rice processing facility	place	47	9,547	449
Rice mill(5t/day)	set	47	4,545	214
7)Agricultural product collection centre				24,000
Collection centre unit	place	225	60,000	13,500
Juice factory	place	2	4,000,000	8,000
Processing factory	place	50	50,000	2,500
8)Rehabilitation of				
Masaka fruits factory	place	1	3,500,000	3,500
Sub-Total				32,321

(4) Rural and Social Infrastructure

	Item	Unit	Q'ty	Unit Price	Amount('000US$)
4.Rural & social infrastructure					
1)	Bore hole				27,236
	Construction	place	3,981	6,800	27,071
	Rehabilitation	place	57	2,900	165
2)	Spring				31,059
	Protection	place	3,280	1,700	5,576
	Dug well	place	3,081	4,400	13,556
	Augered well	place	3,727	3,200	11,926
3)	Primary school				1,720
	Building	place	60	20,273	1,216
	Equipment	set	60	7,096	426
	Accommodation	house	14	5,573	78
4)	Secondary school				709
	Building	place	19	24,785	471
	Equipment	set	19	9,914	188
	Dormitory	place	5	5,573	28
	Accommodation	house	4	5,573	22
5)	Feeder road				17,341
	Establishment(IV)	km	2,096	6,000	12,576
	Equipment(I~IV)	set	4	1,191,200	4,765
6)	Community centre				5,417
	Building	place	225	16,050	3,611
	Equipment	set	225	8,025	1,806
7)	Electrification				40,740
	Establishment(11KV)	km	110	13,273	1,460
	Establishment(433V)	km	2,096	14,112	29,579
	Establishment(240V)	km	950	10,178	9,669
	Transformer(11KV~433V)	place	3	10,736	32
	Sub-Total				124,222

(5) Integrated Developmemt Center (DIC)

Item	Unit	Q'ty	Unit Price	Amount('000US$)
5.Integrated development centre				
1) IDC				106
Improvement	place	1	20,000	20
Personal computer	set	1	2,800	3
Copy machine	set	1	2,520	3
Office material	set	1	1,500	2
Vehicle(van)	car	2	14,500	29
Vehicle(station wagon)	car	1	31,000	31
Accommodation	house	5	3,500	18
2) IDSC				169
Improvement	place	4	10,000	40
Personal computer	set	4	2,800	11
Copy machine	set	4	2,520	10
Office material	set	4	1,500	6
Vehicle(van)	car	4	14,500	58
Vehicle(motorbike,125cc)	car	4	5,050	20
Accommodation	house	8	3,000	24
3) DAO,DVO,DCO				439
Improvement	place	12	8,000	96
Copy machine	set	12	2,520	30
Office material	set	12	1,500	18
Vehicle(van)	car	12	14,500	174
Vehicle(motorbike,125cc)	car	12	5,050	61
Accommodation	house	24	2,500	60
Sub-Total				714
I.Investment cost total				414,308
II.Administration cost				105,400
III.Physical contingency				41,431
IV.Engineering service				62,146
Total				623,284
V.Price contingency				288,814
Grand total				912,098

Table A 4.1.2 Project Costs and Foreign Currency

(1/2) ('000US$)

Item	Amount	F/C
I.Investment cost		
1.Agricultural infrastructure		
1)Farm land reclamation	86,118	62,292
2)Farm land improvement	35,825	31,506
3)Grass land development	6,925	4,341
4)Grass land improvement	9,901	6,828
5)Small scale irrigation	7,798	6,628
6)Paddy field development	18,493	13,315
7)Livestock facility	18,481	10,129
Sub-Total	183,541	135,039
2.Agricultural support		
1)Research		
(1) NARO Headquarters	3,135	1,975
(2) Kawanda agri. research institute	3,944	2,602
(3) Namulonge agricultural & animal production research institute	2,740	2,076
(4)Kifu forestry research institute	1,659	1,109
2)Extension		
(1) Bukalasa agri. college	3,235	2,223
(2) Establishment of DFI	3,510	2,337
(3) Rehabilitation of DFI	2,445	1,716
(4) Branch extension office	4,113	2,738
(5)Improvement of working condition	4,756	2,580
(6)Improvement for plant protection	99	92
(7)Tannary & foot wear training school	751	526
3)Animal improvement		
(1)Breed importation	6,267	5,640
(2)ABC(Artificial breeding centre)	202	144
(3)AI(Artificial insemination)	181	124
AISC(Artificial ins'tion sub-centre)	387	244
(4)Veterinary center(Rehabilitation)	139	95
Veterinary center(Construction)	346	215
(5)Vaccine production laboratory	250	185
4)Machinary service		
(1)AA (Agricultural association)	9,151	8,178
(2)IA (Irrigation association)	11,382	10,099
(3)LA (Livestock association)	14,820	13,249
Sub-Total	73,510	58,146

(2/2) ('000US$)

Item	Amount	F/C
3.Processing and marketing		
1)Slaughter slab	557	334
2)Slaughter house	127	76
3)Milk collection centre	415	305
4)Livestock market(10,200sq.m)	802	240
5)Cereal warehouse(60t)	2,257	677
6)Rice processing facility	662	372
7)Agricultural product collection centre	24,000	11,950
8)Rehabilitation of Masaka fruits factory	3,500	2,800
Sub-Total	32,321	16,755
4.Rural & social infrastructure		
1) Borehole	27,236	21,789
2) Spring	31,059	24,847
3) Primary school	1,720	694
4) Secondary school	709	293
5) Feeder road	17,341	8,842
6) Community centre	5,417	3,070
7) Electrification	40,740	28,518
Sub-Total	124,222	88,053
5.Integrated development centre		
1) IDC	104	75
2) IDSC	169	119
3) DAO,DVO,DCO	439	313
Sub-Total	713	508
I.Investment cost total	414,307	298,501
II.Administration cost	105,400	75,788
III.Physical contingency	41,431	29,850
IV.Engineering service	62,146	44,775
Total	623,284	448,914
V.Price contingency	288,814	106,971
Grand total	912,098	555,884

Table A4.1.3 Cost of Agricultural Support Plan

1) Costs of NARO Headquaters Construction Plan

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Houses	unit	62,500	20	1,250,000	125sq.m
		unit	40,000	25	1,000,000	80sq.m
	Offices	unit	8,000	17	136,000	16sq.m
		unit	4,000	14	56,000	8sq.m
		unit	2,000	15	30,000	4sq.m
	Visiter's rooms	unit	8,000	4	32,000	16sq.m
	Conference room	unit	58,000	1	58,000	115sq.m
	Committee room	unit	15,000	2	30,000	30sq.m
	Libr. & Doc. center	unit	50,000	1	50,000	100sq.m
	Storage room	unit	60,000	1	60,000	120sq.m
	Contingency	unit	50,000	1	50,000	100sq.m
	Circul./Recep. etc	unit	71,000	1	71,000	143sq.m
	Subtotal Buildings				2,823,000	
Equipment	Cars	car	20,000	3	60,000	2,000cc
	Pick up	car	30,000	3	90,000	2,000cc
	Motorcycle	car	3,000	2	6,000	125cc
	Microphone set	set	1,000	1	1,000	
	Computer	set	5,000	10	50,000	
	Xerox	set	5,000	3	15,000	
	Typewriter	set	3,000	5	15,000	
	Furnitures	set	1,000	50	50,000	
	Others	set	25,000	1	25,000	
	Subtotal				312,000	
Total					3,135,000	

2) Costs of Improvement Plan for Kawanda Agricultural Research Institute

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Houses	unit	62,500	16	1,000,000	125sq.m
	Dormitory	unit	500,000	1	500,000	50 bedroomd gesthouse with catering and recreation facilities
	Offices	unit	8,000	0	0	16sq.m
	Laboratory	unit	500,000	1	500,000	
	Repair (house)	set	500,000	1	500,000	
	Repair (laboratory)	set	50,000	1	50,000	
	Conference room	unit	200,000	1	200,000	100 participants with audio-visual facility, canteen, etc.
	Emargency Power Generator	set	50,000	1	50,000	
	Water supply	set	160,000	1	160,000	
	Subtotal Buildings				2,960,000	
Farm improvement	Irrigation facility	set	200,000	1	200,000	
					200,000	
Equipment	Cental Fax system	set	4,000	1	4,000	
	Repair (Agri. machine)	set	80,000	1	80,000	
	Crawler Tractor	car	150,000	1	150,000	With heavy duty plough
	Tractor implements	set	20,000	1	20,000	2 plought, 2 disk harrows, 1 planter, 1 spray
	Mowing tractor	set	30,000	1	30,000	With 2 sets of Gang mowers
	Sericulture laboratory	set	500,000	1	500,000	Vehicles, Equipment, Chemicals
	Subtotal Equipment				784,000	
Total					3,944,000	

3) Costs of Improvement Plan for Namulonge Agricultural and Animal Production Research Institute

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Houses	unit	62,500	10	625,000	125sq.m
	Laboratory, Library,	unit	512,000	1	512,000	1,024sq.m
	Conference room complex				0	
	Repair (house)	set		1	0	
	Water supply & Sewage	set	42,735	1	42,735	
	Communication facility	set	45,000	1	45,000	Fax, phone, telex facilities
	Emargency Power Generator	set	11,400	1	11,400	
	Subtotal Buildings				1,236,135	
Access road		km	40,000	9	360,000	
Farm improvement	Irrigation facility	set	16,189	1	16,189	
					16,189	
Equipment	Plant protection lab.	set	792,452	1	792,452	
	Livestock laboratory	set	122,043	1	122,043	
	4 wheel drive double cabin	car	23,000	3	69,000	
	Motor cycle	car	3,000	10	30,000	
	5 t lorry	car	40,000	1	40,000	
	Tractor	car	23,069	2	46,138	83 HP
	Tractor imolements	set	28,527	1	28,527	Disc harrow, 5 ton tipping trailor, 4 row planter, boom sprayer 400l
	Subtotal Equipment				1,128,160	
Total					2,740,484	

4) Costs of Establishment Plan for Kifu Forestry Research Institute

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	House	unit	100,000	1	100,000	200sq.m
		unit	25,000	7	175,000	125sq.m
		unit	40,000	12	480,000	80sq.m
	Laboratory	unit	250,000	1	250,000	500sq.m
	Workshop	unit	100,000	1	100,000	200sq.m
	Offices	unit	125,000	1	125,000	250sq.m
	Others	unit	50,000	1	50,000	100sq.m
	Subtotal Buildings				1,280,000	
Equipment	*Trucks*	*car*	30,000	2	60,000	
	Car/Pick up	car	20,000	5	100,000	
	Tractor+Implements	car	15,000	1	15,000	
	Irrigation equipment	set	15,000	1	15,000	
	Others	set	1,000	15	15,000	
	Computer	set	6,000	4	24,000	
	Xerox	set	6,000	1	6,000	
	Typewriter	set	3,000	3	9,000	
	Lab. Equipment	set	100,000	1	100,000	
	Furniture	set	1,000	35	35,000	
	Subtotal Equipment				379,000	
Total					1,659,000	

5) Costs of Rehabilitation Plan for Bukalasa Agricultural College

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Water supply and Sewage	set	189,700	1	189,700	water tanks, boreholes, plumbing
	Library	unit	14,987	1	14,987	Rehabilitation(repair, shelves, air condition, toilets)
	Laboratory(Home economics)	unit	6,922	1	6,922	
	Classrooms	unit	56,102	1	56,102	6 Blocks
	Audio-Visual Centre	unit	515	1	515	
	Workshop	unit	53,442	1	53,442	
	House	set	625,000	1	625,000	Rehabilitation of 36 units
	House	set	400,000	1	400,000	Newly constructed 10 houses
	Dispensary	set	218	1	218	Rehabilitation
	Assembly Hall	unit	19987	1	19,987	Rehabilitation
	Offices	set	48,906	1	48,906	Rehabilitation (Administration, lecturers' office, staff room)
	Recreation	set	46,000	1	46,000	Rehabilitation(students centre, swimming pool, staff canteen)
	Stores	unit	11,452	1	11,452	Rehabilitation
	Security lights	set	2,800	1	2,800	
	Subtotal Buildings				1,461,779	
Farm improvement	Crop section	set	465,700	1	465,700	Ox-traction system, fertilizer, herbicides, equipments, Irrigation facilities, stores, etc.
	Livestock unit	set	314,106	1	314,106	Dairy unit, Piggery unit, Poultry unit, Rabbit unit, Goat unit, Fish pond, Others
	Subtotal				779,806	
Access Road		km	40,000	10	400,000	Tarmac
Equipment	Library(books)	set	8,000	1	8,000	400books
	Library(furniture)	set	4,335	1	4,335	200 chairs & 30 big tables
	Laboratory	set	76,184	1	76,184	Biology, chemistry, Physics/soil, Home Economics, Furniture
	Classrooms(furniture)	set	4,200	1	4,200	
	Audio-Visual	set	5,470	1	5,470	TV, Video deck, Video camera, Slides projector, OHP
	Workshop	set	208,442	1	208,442	Mechanical, electrical, carpentry, brick making workshop
	House(furniture)	set	126,250	1	126,250	For rehabilitated houses
	House(furniture)	set	59,100	1	59,100	Fro newly established houses
	Dispensary	set	850	1	850	Beds, mattresses and drugs
	Assembly Hall	set	7,500	1	7,500	500 chairs
	Offices	set	21,255	1	21,255	Chairs, desks, fans, carpets, cabinets
	Recreation	set	15,000	1	15,000	
	Bicycles	car	220	80	17,600	
	Motorcycles	car	3,000	6	18,000	
	Van	car	21,200	1	21,200	14 seats
	Subtotal Equipment				593,386	
Total					3,234,971	

6) Costs of Established Plan for District Farm Institute

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Admi'n Block & Classroom	unit	156,000	2	312,000	312sq.m
	Assembly Hall	unit	131,000	2	262,000	262sq.m
	Dining Hall	unit	124,500	2	249,000	249sq.m
	Dormitories	unit	73,500	4	294,000	147sq.m
	House(two bedroom)	unit	40,000	8	320,000	80sq.m
	House(one bedroom)	unit	15,000	10	150,000	30sq.m
	Electrical Installation	set	73,400	2	146,800	
	Water supply & sewage	set	42,000	2	84,000	
	Soil & Waste water Drainage	set	44,300	2	88,600	
	Surface water Drainage	set	8300	2	16,600	
	Roads & car park	set	32,650	2	65,300	
	2-Stance Pit Latrines	set	15,900	2	31,800	
	Subtotal Buildings				1,988,300	
Farm improvement	Crop section	set	200,000	2	400,000	Ox-traction system, fertilizer, herbicides, equipments, Paddy field, stores, etc.
	Livestock unit	set	150,000	2	300,000	Dairy unit, Piggery unit, Poultry unit, Rabbit unit, Goat unit, Fish pond, Others
	Subtotal				700,000	
Access Road		km	40,000	10	400,000	Tarmac
Equipment	Trucks	car	30,000	2	60,000	
	Car/Pick up	car	20,000	2	40,000	
	Tractor+Implements	car	15,000	2	30,000	
	Others	set	1,000	30	30,000	
	Computer	set	6,000	4	24,000	
	Xerox	set	6,000	2	12,000	
	Typewriter	set	3,000	2	6,000	
	Agrometeorological station	set	30,000	2	60,000	
	Furniture	set	1,000	70	70,000	
	Motorcycles	car	3,000	10	30,000	
	Van	car	30,000	2	60,000	30 seats
	Audio-Visual	set	5,470	2	10,940	TV, Video deck, Video camera, Slides projector, OHP
	Soil analysis	set	10,000	2	20,000	
	Subtotal Equipment				422,000	
Total					3,510,300	

7) Costs of Rehabilitation Plan for District Farm Institute (Masaka)

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Administration Block	set	20,000	1	20,000	
	Training Block	set	100,000	1	100,000	Classroom, library, recreation
	Dormitories	set	35,000	1	35,000	Rehabitation includes furniture
	Dormitories	unit	55,000	2	110,000	Newly established 2 blocks include furniture
	Kitchen and Dinning hall	set	64,000	1	64,000	
	Houses(principles)	set	5,000	1	5,000	
	Houses(Family staff)	set	10,000	1	10,000	
	Houses(Single staff)	set	6,000	1	6,000	
	Houses(Group employee)	set	61,700	1	61,700	
	Fencing	set	19,495	1	19,495	
	Water supply	set	60,970	1	60,970	
	Telecomunication	set	22,000	1	22,000	
	Power supply	set	12,500	1	12,500	
	Subtotal Buildings				526,665	
Farm improvement	Crop & animal section	set	444,037	1	444,037	Ox-traction system, fertilizer, herbicides, equipments, Paddy field, stores, etc. Dairy unit, Piggery unit, Poultry unit, Rabbit unit, Goat unit, Fish pond, Others
	Subtotal				444,037	
Access Road		km	40,000	10	400,000	Tarmac
Equipment	Trucks	car	30,000	1	30,000	
	Car/Pick up	car	20,000	1	20,000	
	Tractor+Implements	car	58,150	1	58,150	
	Others	set	1,000	20	20,000	
	Computer	set	6,000	2	12,000	
	Xerox	set	6,000	1	6,000	
	Typewriter	set	3,000	1	3,000	
	Agrometeorological station	set	30,000	1	30,000	
	Furniture	set	1,000	30	30,000	
	Motorcycles	car	3,000	5	15,000	
	Van	car	30,000	1	30,000	30 seats
	Audio-Visual	set	5,470	1	5,470	TV, Video deck, Video camera, Slides projector, OHP
	Soil analysis	set	10,000	1	10,000	
	Subtotal Equipment				254,150	
Total					1,624,852	

8) Costs of Rehabilitation Plan for District Farm Institute (Mukono)

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	All building	set	203,322	1	203,322	3 classrooms, Kitchen, Dormitories, Staff quaters, Pit latrin
	Water supply system	set	45,417	1	45,417	
	Subtotal Buildings				248,739	
Farm improvement	Crop & animal section	set	331,039	1	331,039	Ox-traction system, fertilizer, herbicides, equipments, Paddy field, stores, etc. Dairy unit, Piggery unit, Poultry unit, Rabbit unit, Goat unit, Fish pond, Others
	Subtotal				331,039	
Access Road		km	40,000	2	80,000	Tarmac
Equipment	Lorry	car	40,000	1	40,000	7 ton
	Van	car	30,000	1	30,000	30 seats
	Tractor+Implements	car	58,150	1	58,150	
	Others	set	1,000	20	20,000	
	Computer	set	6,000	2	12,000	
	Xerox	set	6,000	1	6,000	
	Typewriter	set	3,000	1	3,000	
	Agrometeorological station	set	30,000	1	30,000	
	Furniture	set	1,000	30	30,000	
	Motorcycles	car	3,000	5	15,000	
	Van	car	30,000	1	30,000	30 seats
	Audio-Visual	set	5,470	1	5,470	TV, Video deck, Video camera, Slides projector, OHP
	Soil analysis	set	10,000	1	10,000	
	Subtotal Equipment				160,150	
Total					819,928	

9) Costs of Construction Plan for Branch Extension Office

(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	Branch Office	unit	12,500	225	2,812,500	25sq.m
	Subtotal Buildings				2,812,500	
Farm improvement	Demonstration Farm	place	1,000	400	400,000	Fartiliser, pesticide, seeds, panel, advertisement panel
	Subtotal				400,000	
Equipment	Furniture	set	1,000	225	225,000	Desk, chair, shelves
	Audio-Visual	set	3,000	225	675,000	TV, Video deck,
	Subtotal Equipment				900,000	
Total					4,112,500	

10) Costs of improvement of working condition

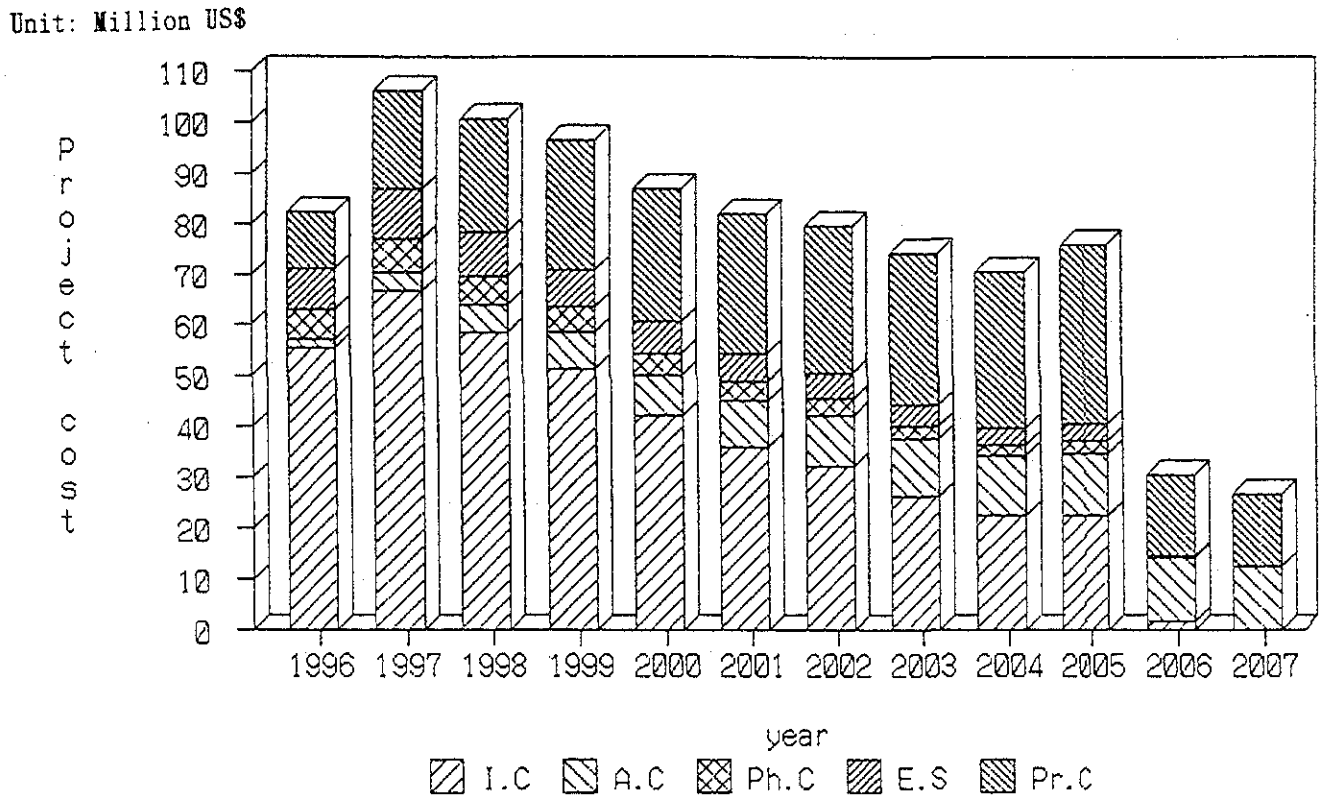
(values in US$)

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	House	unit	40,000	90	3,600,000	80sq.m
	Subtotal Buildings				3,600,000	
Salaries increase	Salaries	person	3,600	200	720,000	300$/Month*12month/year=3,600$
	Training	person	22,000	12	264,000	2person/year*6year=12
	Subtotal				984,000	
Equipment	Bicycle	car	220	100	22,000	Desk, chair, shelves
	Motorcycles	car	3,000	50	150,000	125cc
	Subtotal Equipment				172,000	
Total					4,756,000	

11) Costs of improvement for Plant protection unit

Category	Item	Unit	Unit Cost	Q'ty	Sub Total	Remarks
Buildings	House	unit			0	
	Subtotal Buildings				0	
Salaries increase	Chief Technical Adviser	M/M	10,700	6	64,200	
	In service training	M/M	500	8	4,000	
	Subtotal				68,200	
Equipment	Bicycle	car			0	
	Motorcycles	car	3,000	4	12,000	125cc
	Laboratory equipment	set	4,700	4	18,800	Dissecting microscope, Dissectiong set, scale, etc.
	Subtotal Equipment				30,800	
Total					99,000	

Figure A4.1.3.1 Project Cost Disbursement



Note: I.C (Investment Cost)
A.C (Administration Cost)
Ph.C (Physical Contingency)
E.S (Engineering Service)
Pr.C (Price Contingency)

Appendix 4.2 Selection of Priority Sub-County for Feasibility Study

Table A 4.2.1 Priority Sub-County by District

(1) Luwero District

County	Sub-county	C1	C2	C3	C4	C5	Total	Mean	Order
Wabusana	Kikyusa	2	2	4	1	3	12	2.4	15
	Zirobwe	2	2	4	4	2	14	2.8	10
	Bamunanika	3	3	4	4	3	17	3.4	4
	Kalangala	2	2	4	2	2	12	2.4	15
	Kamira	2	1	4	4	2	13	2.6	13
Buruli	Nabiswera	4	3	4	4	2	17	3.4	4
	Lwampanga	2	2	4	4	2	14	2.8	10
	Wabinyonyi	4	4	3	2	3	16	3.2	6
	Kakooge	4	4	3	2	3	16	3.2	6
	Kalungi	1	1	4	2	2	10	2.0	19
Katikamu	Butuntumula	4	4	4	4	4	20	4.0	1
	Luwero	4	4	3	3	4	18	3.6	2
	Katikamu	4	4	3	4	3	18	3.6	2
	Nyimbwa	4	4	3	1	4	16	3.2	6
	Makulubita	3	3	4	2	3	15	3.0	9
Nakaseke	Ngoma	1	1	4	4	1	11	2.2	17
	Wakyato	1	1	4	4	1	11	2.2	17
	Kikamuro	2	2	4	4	1	13	2.6	13
	Kapeeka	1	1	4	1	3	10	2.0	19
	Nakaseke	3	3	4	1	3	14	2.8	10
	Semuto	1	1	4	1	2	9	1.8	21

Note: Scores determined from criteria(C1 - C5),
interviews with Sub-county chiefs
and other considerations

(2) Masaka District

County	Sub-county	C1	C2	C3	C4	C5	Total	Mean	Order
Masaka Muni.	Katwe-Butego	4	4	3	1	4	16	3.2	3
	Kimanya-Kyabakuza	4	4	3	1	4	16	3.2	3
	Nyendo-Ssenyange	4	4	3	1	4	16	3.2	3
Bukoto	Bukakata	4	3	3	4	2	16	3.2	3
	Mukungwe	4	4	3	2	3	16	3.2	3
	Buwunga	2	3	3	3	3	14	2.8	10
	Kyanamukaka	2	2	3	4	2	13	2.6	13
	Kaswa	4	4	4	1	3	16	3.2	3
	Kisekka	4	4	4	2	2	16	3.2	3
	Lwengo	4	3	4	4	2	17	3.4	2
	Malango	4	3	4	4	3	18	3.6	1
Bukomansimbi	Bigasa	2	2	3	4	2	13	2.6	13
	Kitanda	2	2	3	1	2	10	2.0	19
	Butenga	2	2	3	1	2	10	2.0	19
	Kibinge	3	4	3	1	3	14	2.8	10
Kalungu	Lwabenge	2	2	3	2	2	11	2.2	17
	Kyamulibwa	2	2	3	1	2	10	2.0	19
	Bukulula	3	3	3	2	3	14	2.8	10
	Kalungu	3	3	3	1	2	12	2.4	15
Lwemiyaga	Lwemiyaga	1	1	4	4	1	11	2.2	17
	Ntuusi	1	1	4	2	1	9	1.8	23
Mawogola	Mijwala	2	1	4	4	1	12	2.4	15
	Mateete	2	1	4	1	1	9	1.8	23
	Lwebitakuli	1	1	4	3	1	10	2.0	19

(3) Mpigi District

County	Sub-county	C1	C2	C3	C4	C5	Total	Mean	Order
Entebbe Muni.		4	4	1	1	3	13	2.6	19
Busiro	Masulita	2	2	3	2	2	11	2.2	25
	Namayumba	3	3	3	2	3	14	2.8	16
	Kakiri	3	3	3	3	3	15	3.0	7
	Wakiso	3	3	3	1	3	13	2.6	19
	Nsangi	4	4	3	3	2	16	3.2	2
	Ssisa	4	3	3	3	3	16	3.2	2
	Kasanje	2	3	3	3	3	14	2.8	16
	Katabi	4	4	3	2	3	16	3.2	2
Butambala	Kalamba	1	3	4	3	3	14	2.8	16
	Kibibi	1	2	4	3	2	12	2.4	23
	Budde	4	4	3	3	3	17	3.4	1
	Bulo	1	2	4	1	2	10	2.0	29
	Sabaddu-Ngando	1	2	4	1	2	10	2.0	29
Gomba	Mpenja	1	1	4	4	1	11	2.2	25
	Kegonza	1	1	4	3	1	10	2.0	29
	Kabulasoke	1	1	4	4	1	11	2.2	25
	Maddu	1	1	4	4	1	11	2.2	25
Kyadondo	Busukuma	2	3	4	1	3	13	2.6	19
	Gombe	4	4	3	1	3	15	3.0	7
	Nanagabo	2	4	3	1	3	13	2.6	19
	Kira	4	4	3	1	3	15	3.0	7
	Nabweru	4	4	3	1	3	15	3.0	7
	Makindye	4	4	3	1	3	15	3.0	7
Mawokota	Muduuma	4	3	4	1	3	15	3.0	7
	Kiringente	4	4	4	1	3	16	3.2	2
	Mpigi	4	4	3	1	4	16	3.2	2
	Kammengo	4	4	3	1	3	15	3.0	7
	Buwama	4	4	3	1	3	15	3.0	7
	Kituntu	2	3	3	1	3	12	2.4	23
	Nkozi	4	3	4	1	3	15	3.0	7

(4) Mukono District

County	Sub-county	C1	C2	C3	C4	C5	Total	Mean	Order
Bbaale	Galiraya	1	2	4	4	3	14	2.8	19
	Bbaale	1	2	4	4	3	14	2.8	19
	Kayonza	1	2	4	4	3	14	2.8	19
	Kitimbwa	1	2	4	4	3	14	2.8	19
Buikwe	Wakisi	4	3	3	4	3	17	3.4	6
	Najjembe	4	4	3	4	3	18	3.6	2
	Nyenga	4	4	3	4	3	18	3.6	2
	Kawolo	4	4	3	4	3	18	3.6	2
	Buikwe	2	3	3	4	3	15	3.0	15
	Ngogwe	1	2	3	4	3	13	2.6	24
Buvuma	Busamuzi	1	2	4	1	2	10	2.0	26
	Bweema	1	2	4	1	2	10	2.0	26
	Nairambi	1	2	4	1	2	10	2.0	26
	Bugaya	1	2	4	1	2	10	2.0	26
Mukono	Kyampisi	4	4	3	4	3	18	3.6	2
	Goma	4	4	3	3	3	17	3.4	6
	Kauga	4	4	3	3	3	17	3.4	6
	Nakisunga	3	3	4	4	3	17	3.4	6
	Ntenjeru	1	3	4	4	3	15	3.0	15
	Kome	1	2	4	1	2	10	2.0	26
Nakifuma	Seta-Namuganga	2	3	3	4	3	15	3.0	15
	Kasawo	4	3	3	2	3	15	3.0	15
	Ntunda	2	3	3	3	3	14	2.8	19
	Nabbaale	3	3	3	4	3	16	3.2	10
	Nakifuma	3	3	3	4	3	16	3.2	10
	Nagojje	3	4	3	3	3	16	3.2	10
Ntenjeru	Busaana	2	2	3	3	3	13	2.6	24
	Kayunga	4	4	4	3	4	19	3.8	1
	Nazigo	4	3	3	3	3	16	3.2	10
	Kangulumira	4	3	3	3	3	16	3.2	10

Appendix 5

Project Evaluation