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REPORT

ON

UGANDA NATIONAL CENSUS

OF

AGRICULTURE AND LIVESTOCK

(1990 - 1991)

VOLUME III: CROP AREAS, YIELDS AND PRODUCTION

Ministry of Agriculture, Animal Industry and Fisheries

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iii - foreword from Ministry of Agriculture

Explanatory Notes

1. Rounding off:	After applying Sampling expansion factors to the values, the resulting estimates were rounded off to the nearest unit.
2. Area:	The area is reported in Hectares (Ha).
3. Yield:	This is an average quantity of produce from a unit area. It is expressed in tonnes per hectare (t/ha).
4. Production:	This refers to an estimated quantity of produce of a given crop. It was obtained by a product of estimated area and estimated yield, and is expressed in terms of tonnes (t).
5. Level of data aggregation:	The estimates are tabulated at the district level and summaries for 26 districts given. Due to the nature of the sample design, it is not possible to give estimates at lower administrative units e.g. a county.

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Chapter 1

INTRODUCTION

Importance of reliable crop production data

1.1. Reliable estimates of annual production of food crops and other agricultural commodities are a prerequisite for meaningful agricultural planning. This is particularly so in a predominantly agricultural developing country like Uganda. Good crop production data is required to assess the availability of food to feed the population and for export.

1.2 Prior to the agricultural census of 1990, production data were based on rough estimates of crop areas and yields as no viable annual agricultural surveys were undertaken from about 1975 due to the civil strife existing in the country. The 1963-65 census provided the baseline data which was augmented with data from a few follow-up surveys undertaken between 1967-1975. These estimates differed depending on the source and method used for estimation. While such data were published and used for various purposes, it was nonetheless difficult to verify their reliability in statistical terms. The data presented in this report were based on a probability sample while the data collection method involved objective measurements of both crop areas and yields. The data is therefore considered to be comparably better than estimates based on subjective or arbitrary methods.

Scope and Coverage

1.3 Whereas under normal circumstances, a census of agriculture usually seeks to collect data relating to the structure of agriculture and livestock, it was found necessary to collect data on crop areas and yields to enable the calculation of production estimate for main food crops and cash crops like cotton. However, as was noted in Vol. I: "Methodology of the census" the census was undertaken in only 26 districts.

The districts of Gulu, Kitgum, Kotido, Kumi, Moroto and Soroti representing about 11 percent of rural population in Uganda were not covered due to the then existing security situation. The district of Kampala is mainly urban and was also omitted in the census coverage. It is difficult to quantify the amount of agriculture omitted in these areas due to lack of reliable data from other sources. However, during the census reference period, there were very few agricultural activities in these areas due to insecurity. Data from the 1992/93 follow-up Annual Agriculture and Livestock Survey which covered all the 37 rural districts in Uganda should redress this gap.

1.4 Since 1990, five new districts were created, namely Kalangala, Kibaale, Kiboga, Kisoro and Palissa, which were at the time of the census parts of Masaka, Hoima, Mubende, Kabale and Tororo respectively. No adjustment for these changes was made as the sampling design was made for the subdivision of Uganda at the time of the census.

1.5 The nature of the sample design used ensured that the majority of the agricultural holdings which were covered were the typical small scale holdings operated mainly by peasant farmers. The number of large-scale progressive farms are few and far between and are best covered through a separate frame. Small scale agriculture is characterised by relatively small crop plots and a high incidence of mixed cropping. A close examination of the data will confirm this observation.

1.6 Data shown in tables in this Volume have been calculated and rounded by computer after applying sampling expansion factors. It is to be understood that the last digits have no significance because of sampling and other errors. This fact should be kept in mind when interpreting data.

Chapter 2

CROP AREAS

Concept of Crop Area

2.1 The concept of area is very important in crop statistics. This derives from the fact that production is obtained as a product of area under a crop and yield per unit area of that particular crop. However, this simple concept is subject to complex modifications when such factors as plant density, crop damage, partial harvest, etc are taken into account. The areas shown in the tables in this report are in hectares.

2.2. In the case of this census, crop area was taken as the planted area. Enumerators were instructed to measure a crop plot where a crop was already growing i.e. planting had been completed or the plot was at its final stage of planting. This approach ensured that there was little or no underestimation of area under a given crop. When measurement of crop areas is done too early during the planting season, there is high tendency to underestimate area since the farmer may continue to plant after the enumerator has already taken measurements.

2.3 A plot is defined as a piece of land within the holding on which a specific crop or crop mixture is cultivated. One or more adjacent plots operated by the same holder constitute a parcel which is any piece of land entirely surrounded by other land, water, road, forest, etc. not forming part of that holding. A holding consists of one or more parcels. The list of mean plot sizes is shown in Appendix 1.

Pure Crop Stand

2.4 This describes a crop plot containing a single homogeneous crop. The crop area data shows that the mean plot size of pure crop stand plots is generally smaller than the mean plot size devoted to crop mixtures.

For example the first season mean plot sizes for maize, finger millet and beans were respectively 0.21, 0.22 and 0.12 hectares. For the same season, the comparable mean plot sizes devoted to mixed crops but where the named crops were the main crops were 0.25, 0.29 and 0.19 hectares respectively.

Mixed Crop Stand

2.5 This describes a crop plot containing more than one crop, either as originally planted or as a result of subsequent planting. The mixed crops may be 2 or more different temporary crops or permanent crops grown simultaneously in the same plot. Where temporary crops are mixed with permanent crops e.g. beans and coffee, the term used is "associated" crops. Among crop mixtures, enumerators were instructed to identify the main crop by observing the density of each crop relative to the others. Where this concept proved difficult, the enumerator could designate a major crop depending on the relative value and importance of the crop to the holder. Provision was made in the questionnaire (see NCAL 4A in Appendix II) for one main crop and 3 constituent crops in any mixed crop plot. The method used in tabulating mixed crop areas involved assigning the area of a mixed plot to each of the crops found in the mixture - a maximum of 4 crops namely the main crop and 3 constituents - without regard to the relative proportions of the crops in the mixture. Total area under a crop includes, therefore, all plots where this crop is grown whether in pure stand, mixed as main or mixed as constituent crop. This approach leads to an over-estimation of areas. Thus, at the district level, for example, the total area for all crops would exceed the total cropped area for the district. The totals for the 26 districts would similarly exhibit this phenomenon.

2.6 As can be seen from tables at the end of the chapter almost all crops are grown much more rarely in pure stand than in mixtures. Related data for 11 temporary crops are shown below for both seasons:

Areas under pure stand as percent of total area

Crop	Percent	
	First season	Second season
Maize	10	18
Finger millet	5	22
Sorghum	27	34
Beans	8	8
Field Peas	80	43
Cow Peas	26	35
Groundnuts	7	14
Simsim	30	25
Soya Beans	24	14
Irish Potatoes	71	47
Sweet Potatoes	44	56

Similarly, perennial crops are also generally found less frequently in pure stand than mixed. Thus the areas of cassava, bananas (sweet type), cotton and coffee in pure stand represents respectively 50, 17, 36 and 20 percent of total area.

2.7 Seasonal Crop areas

The data for crop areas for most of the temporary crops is given separately for the first and second rains season. Notable exemptions are cassava and pigeon peas. Among the industrial crops, cotton areas are given for the second season when the crop is usually planted. During enumeration, the period between April, 1990 and September, 1990 was considered as the first season while the second season referred to the period between October, 1990 and March, 1991. For permanent crops e.g. coffee and bananas, annual crop areas are given. Tables 2.01-2.22 show the number and area of plots for 11 temporary crops separately for the first and second season while for tables 2.23-2.29 only annual data are shown.

2.8 The seasonal area data reveal the cropping pattern obtaining in the 26 districts covered. Cereals tend to predominate during the first season. For example, for maize, 69 percent of the area under maize were in the first season. Similar figures for finger millet and sorghum were 79 percent and 75 percent respectively. The area under beans show that the 54 percent of the area was devoted to first season crop. Other legumes were more dominant during the second season with field peas at 54 percent, cow peas 81 percent and soya beans 67 percent, of the annual areas devoted to these crops. Most of the area under sweet potatoes and irish potatoes were in the first season constituting 62 and 76 percent respectively. For groundnuts, the area was approximately evenly distributed with 55 percent of the area in the first season. Simsim on the other hand occupied most of the area during the second season. Only 20 percent of the total area under simsim were recorded for the first season.

TABLE 2.01 The Number and Area of Plots Under Maize First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	4457	936	7007	3052	11464	3988
Arua	6437	800	31738	6694	38175	7494
Bundibugyo	110	44	797	194	907	238
Bushenyi	2594	137	3874	775	6468	912
Hoima	1049	265	9166	1585	10215	1850
Iganga	16219	2297	103756	27040	119975	29337
Jinja	4176	837	29898	4826	34074	5663
Kabale	3457	373	47183	5662	50640	6035
Kabarole	1796	420	14320	2943	16116	3363
Kamuli	11114	3154	81976	23310	93090	26464
Kapchorwa	1552	454	32921	16529	34473	16983
Kasese	167	19	6916	2446	7083	2465
Lira	849	237	9864	4241	10713	4478
Luwero	744	155	10462	3055	11206	3210
Masaka	516	53	14563	2314	15079	2367
Masindi	4905	2141	13761	7854	18666	9995
Mbale	3245	448	68145	12866	71390	13314
Mbarara	2169	605	36448	9841	38617	10446
Moyo	1784	267	14429	4233	16213	4500
Mpigi	258	26	5264	938	5522	964
Mubende	4372	1498	21005	5255	25377	6753
Mukono	4431	542	27513	5094	31944	5636
Nebbi	6571	1261	28155	5453	34726	6714
Rakai	4564	1552	13826	3446	18390	4998
Rukungiri	866	105	11745	2159	12611	2264
Tororo	2678	312	12439	3202	15117	3514
TOTAL	91080	18938	657171	165007	748251	18394

TABLE 2.02 The Number and Area of Plots Under Maize Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	550	126	1866	872	2416	998
Arua	1970	370	12124	1126	14094	1496
Bundibugyo	748	188	1157	315	1905	503
Bushenyi	1520	75	2274	162	3794	237
Hoima	1258	265	5721	774	6979	1039
Iganga	15221	3213	76605	14872	91826	18085
Jinja	6198	818	17971	2186	24169	3004
Kabale	8013	648	49016	3773	57029	4421
Kabarole	1917	393	9350	1528	11267	1921
Kamuli	18910	2751	75881	14177	94791	16928
Kapchorwa	1655	678	1384	236	3039	914
Kasese	368	93	2472	587	2840	680
Lira	798	56	2646	536	3444	592
Luwero	891	103	10583	743	11474	846
Masaka	3912	494	9262	1652	13174	2146
Masindi	3847	1567	7699	3633	11546	5200
Mbale	1761	318	2338	446	4099	764
Mbarara	5704	824	7058	1301	12762	2125
Moyo	362	60	2844	616	3206	676
Mpigi	1741	101	12698	796	14439	897
Mubende	2203	210	27675	4989	29878	5199
Mukono	5374	629	46636	5622	52010	6251
Nebbi	1282	274	2833	418	4115	692
Rakai	2659	441	13560	3507	16219	3948
Rukungiri	754	102	2330	744	3084	846
Tororo	7066	615	13078	2516	20144	3131
TOTAL	96682	15412	417061	68127	513743	83539

TABLE 2.03 The Number and Area of Plots Under Finger Millet First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	1489	621	54091	24675	55580	25296
Arua	230	25	63105	9708	63335	9733
Bushenyi	763	384	575	322	1338	706
Hoima	885	166	9580	1555	10465	1721
Iganga	1407	238	89544	28343	90951	28581
Jinja	207	22	9604	1290	9811	1312
Kabale	2053	164	579	127	2632	291
Kabarole	1386	273	12884	2216	14270	2489
Kamuli	5340	841	52097	15978	57437	16819
Kapchorwa	511	46	1177	185	1688	231
Kasese	383	42	2664	218	3047	260
Lira	801	232	75969	33998	76770	34230
Luwero	112	3	1928	209	2040	212
Masaka	265	12	599	33	864	45
Masindi	306	32	2058	334	2364	366
Mbale	1398	136	25002	4324	26400	4460
Mbarara	760	35	8539	1076	9299	1111
Moyo	-	-	710	251	710	251
Mubende	399	38	4012	574	4411	612
Mukono	1777	172	23851	6207	25628	6379
Nebbi	293	91	1841	282	2134	373
Rakai	120	13	351	52	471	65
Rukungiri	1000	210	2856	543	3856	753
Tororo	22741	6038	182701	47441	205442	53479
TOTAL	44626	9834	626317	179941	670943	189775

TABLE 2.04 The Number and Area of Plots Under Finger Millet Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	-	-	1808	805	1808	805
Arua	3111	673	40926	6261	44037	6934
Bundibugyo	25	8	45	18	70	26
Bushenyi	26233	2861	60661	7651	86894	10512
Hoima	1817	264	16259	2198	18076	2462
Iganga	-	-	1331	47	1331	47
Jinja	-	-	163	13	163	13
Kabale	3125	192	5392	332	8517	524
Kabarole	6789	1521	64494	5105	71283	6626
Kamuli	684	52	7178	1203	7862	1255
Kapchorwa	-	-	83	20	83	20
Kasese	318	36	661	117	979	153
Lira	-	-	343	151	343	151
Luwero	338	28	1210	100	1548	128
Masaka	756	34	4108	160	4864	194
Masindi	1656	475	8415	2488	10071	2963
Mbarara	24523	2417	86171	7779	110694	10196
Moyo	-	-	1241	300	1241	300
Mpigi	198	10	-	-	198	10
Mubende	1732	223	4004	690	5736	913
Mukono	-	-	946	76	946	76
Nebbi	414	32	2973	408	3387	440
Rakai	925	61	3505	455	4430	516
Rukungiri	9521	2059	24949	3289	34470	5348
Tororo	-	-	837	50	837	50
TOTAL	82165	10946	337703	39716	419868	50662

TABLE 2.05 The Number and Area of Plots Under Sorghum
First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	747	199	8303	2740	9050	2939
Arua	3153	424	5946	918	9099	1342
Bundibugyo	44	11	45	15	89	26
Bushenyi	2699	297	8811	2379	11510	2676
Hoima	3347	498	3884	540	7231	1038
Iganga	966	108	2083	273	3049	381
Jinja	90	5	128	20	218	25
Kabale	53373	20009	135508	41405	188881	61414
Kabarole	2286	293	9363	1457	11649	1750
Kamuli	-	-	719	58	719	58
Kasese	577	37	704	62	1281	99
Lira	2741	807	30677	10737	33418	11544
Luwero	235	45	1959	507	2194	552
Masaka	2582	373	3637	581	6219	954
Mbale	-	-	602	117	602	117
Mbarara	8887	753	7917	1401	16804	2154
Moyo	721	173	860	342	1581	515
Mpigi	1555	198	6271	578	7826	776
Mubende	7269	857	9543	1554	16812	2411
Mukono	2169	402	3883	238	6052	640
Nebbi	1414	220	1196	153	2610	373
Rakai	2218	468	4325	1140	6543	1608
Rukungiri	1713	243	11309	3566	13022	3809
Tororo	6641	733	22714	2695	29355	3428
TOTAL	105427	27153	280387	73476	385814	100629

TABLE 2.06 The Number and Area of Plots Under Sorghum
Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	5523	1436	1081	268	6604	1704
Arua	5107	444	30835	4116	35942	4560
Bushenyi	2728	230	1817	174	4545	404
Hoima	1037	120	3886	387	4923	507
Iganga	-	-	3207	354	3207	354
Jinja	-	-	145	9	145	9
Kabale	2004	113	8849	600	10853	713
Kabarole	3391	423	16275	1859	19666	2282
Kamuli	278	15	1081	47	1359	62
Lira	10548	2773	11913	4121	22461	6894
Luwero	440	52	851	260	1291	312
Masaka	2520	728	1888	272	4408	1000
Mbarara	11000	719	11980	1138	22980	1857
Moyo	2379	441	12583	3421	14962	3862
Mpigi	3443	278	8541	470	11984	748
Mubende	6854	497	14859	952	21713	1449
Mukono	3211	382	4249	502	7460	884
Nebbi	1396	272	1372	182	2768	454
Rakai	4618	1053	4622	959	9240	2012
Rukungiri	3344	357	3894	374	7238	731
Tororo	7107	809	13276	1372	20383	2181
TOTAL	76928	11142	157204	21837	234132	32979

TABLE 2.07 The Number and Area of Plots Under Beans
First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	3692	1154	20316	8657	24008	9811
Arua	153	52	18222	2048	18375	2100
Bundibugyo	422	129	3506	931	3928	1060
Bushenyi	13856	781	42245	4228	56101	5009
Hoima	3551	375	78507	8142	82058	8517
Iganga	1728	113	42484	7730	44212	7843
Jinja	719	98	26186	2672	26905	2770
Kabale	35473	3647	67621	40961	103094	44608
Kabarole	3502	336	80870	10176	84372	10512
Kamuli	770	39	21519	2055	22289	2094
Kapchorwa	268	52	542	307	810	359
Kasese	736	93	14670	2658	15406	2751
Lira	3300	1674	17340	6706	20640	8380
Luwero	644	124	22325	5430	22969	5554
Masaka	4610	344	39541	5320	44151	5664
Masindi	1187	180	7203	786	8390	966
Mbale	3982	233	10356	1408	14338	1641
Mbarara	6608	421	68617	8834	75225	9255
Mpigi	1950	565	34181	3629	36131	4194
Mubende	5661	993	59941	11240	65602	12233
Mukono	2575	163	60834	10276	63409	10439
Nebbi	68	7	7282	823	7350	830
Rakai	2286	312	31523	5781	33809	6093
Rukungiri	8799	1747	27544	3930	36343	5677
Tororo	4623	221	3240	154	7863	375
TOTAL	111163	13853	806615	154882	917778	168735

TABLE 2.08 The Number and Area of Plots Under Beans
Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	844	192	3232	1233	4076	1425
Arua	3539	654	38018	6486	41557	7140
Bundibugyo	491	104	3258	735	3749	839
Bushenyi	3051	226	31358	4336	34409	4562
Hoima	1722	187	33298	3513	35020	3700
Iganga	2778	156	107161	14986	109939	15142
Jinja	2122	222	66760	6904	68882	7126
Kabale	32321	2503	98427	7281	130748	9784
Kabarole	4791	331	92040	9377	96831	9708
Kamuli	1717	95	62096	4598	63813	4693
Kapchorwa	454	49	173	9	627	58
Kasese	327	18	6429	819	6756	837
Lira	160	14	1805	422	1965	436
Luwero	3319	372	40144	3502	43463	3874
Masaka	5731	588	53728	5142	59459	5730
Masindi	1846	274	17892	3150	19738	3424
Mbale	6246	698	11233	1317	17479	2015
Mbarara	9052	648	80479	7007	89531	7655
Mpigi	5384	430	66786	4915	72170	5345
Mubende	8262	416	101532	9222	109794	9638
Mukono	11603	1009	200195	21631	211798	22640
Nebbi	3409	343	17909	1959	21318	2302
Rakai	3050	374	59909	8090	62959	8464
Rukungiri	6862	1123	38680	4663	45542	5786
Tororo	2024	369	2998	302	5022	671
TOTAL	121105	11395	1235540	131599	1356645	142994

TABLE 2.09 The Number and Area of Plots Under Field Peas
First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Bushenyi	1419	280	1319	146	2738	426
Kabale	3538	1406	801	54	4339	1460
Kabarole	508	32	352	112	860	144
Masaka	166	5	332	18	498	23
Mbarara	1775	137	1281	129	3056	266
Mpigi	-	-	549	60	549	60
Rakai	2325	186	-	-	2325	186
TOTAL	9731	2046	4634	519	14365	2565

TABLE 2.10 The Number and Area of Plots Under Field Peas
Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Bushenyi	527	63	320	6	847	69
Kabale	8682	703	5225	411	13907	1114
Kabarole	227	19	2688	491	2915	510
Kamuli	118	7	780	21	898	28
Masaka	349	6	1455	152	1804	158
Mbarara	3332	274	1940	78	5272	352
Mpigi	911	69	1488	155	2399	224
Mubende	-	-	921	191	921	191
Rakai	783	39	940	21	1723	60
Rukungiri	1165	41	-	-	1165	41
Tororo	791	58	1249	182	2040	240
TOTAL	16885	1279	17006	1708	33891	2987

TABLE 2.11 The Number and Area of Plots Under Cow Peas First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	129	57	-	-	129	57
Arua	-	-	278	133	278	133
Hoima	253	30	460	64	713	94
Iganga	-	-	1433	172	1433	172
Kabarole	682	43	541	27	1223	70
Lira	469	53	874	226	1343	279
MASAKA	83	6	-	-	83	6
Mbale	-	-	308	12	308	12
Mbarara	1547	119	1031	77	2578	196
Mpigi	314	104	-	-	314	104
Mukono	-	-	946	76	946	76
Rakai	-	-	253	25	253	25
Tororo	164	57	2120	530	2284	587
TOTAL	3641	469	8244	1342	11885	1811

TABLE 2.12 The Number and Area of Plots Under Cow Peas Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	2675	749	545	188	3220	937
Arua	331	98	1429	136	1760	234
Hoima	59	12	-	-	59	12
Iganga	1125	67	8639	587	9764	654
Jinja	-	-	837	22	837	22
Kabarole	379	34	-	-	379	34
Lira	-	-	639	252	639	252
Masaka	122	17	244	7	366	24
Mbale	350	16	-	-	350	16
Mbarara	-	-	685	7	685	7
Moyo	1393	219	3040	664	4433	883
Mpigi	596	12	1272	44	1868	56
Mukono	1646	17	8596	434	10242	451
Nebbi	1258	178	2515	493	3773	671
Tororo	11640	1216	21139	2097	32779	3313
TOTAL	21574	2635	49580	4931	71154	7566

TABLE 2.13 The Number and Area of Plots Under Groundnuts
First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	1037	201	7081	2330	8118	2531
Arua	2024	188	36797	7864	38821	8052
Bundibugyo	364	111	1979	464	2343	575
Bushenyi	4696	332	33296	11559	37992	11891
Hoima	1798	177	59230	6639	61028	6816
Iganga	881	46	35943	4226	36824	4272
Jinja	624	42	9795	652	10419	694
Kabale	259	31	1979	133	2238	164
Kabarole	3303	199	35823	5180	39126	5379
Kamuli	2962	215	44847	7519	47809	7734
Kapchorwa	161	23	-	-	161	23
Kasese	373	13	2990	146	3363	159
Lira	996	50	3457	821	4453	871
Luwero	1446	192	20764	3132	22210	3324
Masaka	2246	147	25486	3252	27732	3399
Masindi	959	286	9598	1646	10557	1932
Mbale	402	22	2728	549	3130	571
Mbarara	5654	536	35410	3544	41064	4080
Moyo	65	52	6284	2625	6349	2677
Mpigi	393	132	12950	1536	13343	1668
Mubende	3116	202	21787	1733	24903	1935
Mukono	3608	475	31623	2615	35231	3090
Nebbi	-	-	1082	144	1082	144
Rakai	1415	215	11068	1379	12483	1594
Rukungiri	5234	585	7909	1057	13143	1642
Tororo	10028	685	34313	2558	44341	3243
TOTAL	54044	5158	494219	73302	548263	78460

TABLE 2.14 The Number and Area of Plots Under Groundnuts Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	1032	255	2082	498	3114	753
Arua	1646	177	21055	2034	22701	2211
Bundibugyo	187	49	1539	325	1726	374
Bushenyi	3371	244	7011	723	10382	967
Hoima	1313	161	34635	4052	35948	4213
Iganga	2001	58	55774	3953	57775	4011
Jinja	1225	80	23833	1451	25058	1531
Kabale	778	32	1815	104	2593	136
Kabarole	2925	273	43666	4172	46591	4445
Kamuli	3378	3972	55066	8532	58444	12504
Kasese	-	-	2825	158	2825	158
Lira	410	12	1182	218	1592	230
Luwero	2805	175	29376	2010	32181	2185
Masaka	5684	367	45741	3610	51425	3977
Masindi	2894	756	13004	1923	15898	2679
Mbale	2612	171	609	106	3221	277
Mbarara	8121	470	27991	2337	36112	2807
Moyo	200	8	4259	1071	4459	1079
Mpigi	3457	167	42936	2530	46393	2697
Mubende	5756	464	60385	4953	66141	5417
Mukono	7432	272	91129	5960	98561	6232
Nebbi	3188	408	8460	1167	11648	1575
Rakai	3286	279	28929	2146	32215	2425
Rukungiri	2239	239	3831	329	6070	568
Tororo	5801	167	8938	403	14739	570
TOTAL	71741	9256	616071	54765	687812	64021

TABLE 2.15 The Number and Area of Plots Under Simsim First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	7258	2903	10677	4698	17935	7601
Arua	-	-	447	45	447	45
Iganga	-	-	1132	45	1132	45
Jinja	-	-	967	44	967	44
Kamuli	117	6	1078	23	1195	29
Lira	1929	748	12159	4007	14088	4755
Luwero	-	-	172	7	172	7
Masindi	112	27	114	13	226	40
Moyo	194	95	138	64	332	159
Mukono	473	38	2722	126	3195	164
Nebbi	141	14	-	-	141	14
TOTAL	10224	3831	29606	9072	39830	12903

TABLE 2.16 The Number and Area of Plots Under Simsim Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	13613	5661	38775	15394	52388	21055
Arua	4463	963	25176	6199	29639	7162
Iganga	184	7	12638	1462	12822	1469
Jinja	-	-	3461	145	3461	145
Kamuli	216	10	4731	218	4947	228
Lira	11608	4704	21774	8757	33382	13461
Luwero	-	-	651	40	651	40
Masindi	166	11	181	10	347	21
Moyo	5015	961	19722	5581	24737	6542
Mubende	-	-	798	47	798	47
Mukono	608	14	20847	1639	21455	1653
Nebbi	3121	797	2259	339	5380	1136
Tororo	3535	119	357	7	3892	126
TOTAL	42529	13247	151370	39838	193899	53085

TABLE 2.17 The Number and Area of Plots Under Soya Beans First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	-	-	286	31	286	31
Arua	-	-	921	111	921	111
Bundibugyo	211	54	2762	654	2973	708
Bushenyi	829	8	1527	133	2356	141
Hoima	120	10	1514	115	1634	125
Iganga	171	41	5804	850	5975	891
Jinja	94	8	3404	242	3498	250
Kamuli	338	29	2307	192	2645	221
Kasese	-	-	395	11	395	11
Lira	1059	366	1478	441	2537	807
Luwero	-	-	879	63	879	63
Masindi	59	33	-	-	59	33
Mbale	-	-	493	84	493	84
Mbarara	342	17	-	-	342	17
Mpigi	-	-	314	82	314	82
Mubende	101	6	-	-	101	6
Mukono	655	59	-	-	655	59
Nebbi	-	-	761	260	761	260
Tororo	3685	776	2835	1281	6520	2057
TOTAL	7664	1407	25680	4550	33344	5957

TABLE 2.18 The Number and Area of Plots Under Soya Beans Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	235	56	-	-	235	56
Arua	281	25	3329	703	3610	728
Bundibugyo	331	48	3115	581	3446	629
Bushenyi	523	12	-	-	523	12
Hoima	288	18	1081	124	1369	142
Iganga	349	10	13337	1656	13686	1666
Jinja	479	53	6523	610	7002	663
Kamuli	560	41	24918	3482	25478	3523
Kasese	-	-	122	5	122	5
Lira	954	161	1548	391	2502	552
Luwero	-	-	274	8	274	8
Masaka	193	10	-	-	193	10
Masindi	-	-	133	35	133	35
Mbale	1245	777	1777	315	3022	1092
Moyo	-	-	152	15	152	15
Mpigi	589	12	1119	180	1708	192
Mubende	297	10	976	210	1273	220
Mukono	192	8	10303	757	10495	765
Nebbi	339	35	905	120	1244	155
Rakai	106	74	238	276	344	350
Tororo	3076	267	2944	889	6020	1156
TOTAL	10037	1617	72794	10357	82831	11974

TABLE 2.19 The Number and Area of Plots Under Irish Potatoes First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Bundibugyo	234	11	152	7	386	18
Bushenyi	551	87	1743	861	2294	948
Hoima	994	36	5405	348	6399	384
Iganga	284	6	-	-	284	6
Kabale	27373	10128	8945	930	36318	11058
Kabarole	2474	135	4371	452	6845	587
Kapchorwa	44	8	-	-	44	8
Kasese	187	5	845	34	1032	39
Luwero	-	-	1435	59	1435	59
Masaka	448	19	881	37	1329	56
Mbarara	635	28	3817	603	4452	631
Mpigi	-	-	680	14	680	14
Mubende	2518	199	7844	760	10362	959
Rakai	875	264	1884	305	2759	569
TOTAL	36617	10926	38002	4410	74619	15336

TABLE 2.20 The Number and Area of Plots Under Irish Potatoes Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Bushenyi	623	29	1029	41	1652	70
Hoima	212	8	853	41	1065	49
Iganga	1171	34	604	6	1775	40
Kabale	2299	179	4414	307	6713	486
Kabarole	8267	774	11571	547	19838	1321
Kasese	-	-	710	30	710	30
Luwero	3228	183	1810	140	5038	323
Masaka	831	17	1792	44	2623	61
Mbale	-	-	405	113	405	113
Mbarara	6254	383	7825	382	14079	765
Mpigi	2804	42	3494	80	6298	122
Mubende	5381	218	11921	490	17302	708
Rakai	3041	266	3417	282	6458	548
Rukungiri	278	10	789	15	1067	25
Tororo	400	52	-	-	400	52
TOTAL	34789	2195	50634	2518	85423	4713

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TABLE 2.21 The Number and Area of Plots Under Sweet Potatoes First Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	4129	467	419	59	4548	526
Arua	1211	53	2158	341	3369	394
Bundibugyo	400	64	789	168	1189	232
Bushenyi	44266	5686	21942	2527	66208	8213
Iloima	19177	1944	45492	4517	64669	6461
Iganga	46300	4540	39028	5828	85328	10368
Jinja	14279	1171	14680	1070	28959	2241
Kabale	34978	8693	26490	1866	61468	10559
Kabarole	22739	2055	39528	3573	62267	5628
Kamuli	28112	2976	20181	1778	48293	4754
Kapchorwa	248	19	414	40	662	59
Kasese	1651	102	4510	196	6161	298
Lira	10954	1452	1062	306	12016	1758
Luwero	10481	2690	11301	2163	21782	4853
Masaka	17112	1000	24820	2244	41932	3244
Masindi	3278	309	3792	357	7070	666
Mbale	6432	376	2432	356	8864	732
Mbarara	19202	1203	16435	971	35637	2174
Moyo	1724	464	1899	312	3623	776
Mpigi	16249	2041	40342	16765	56591	18806
Mubende	20880	2468	56232	4625	77112	7093
Mukono	23282	2310	33729	4271	57011	6581
Nebbi	1732	82	1654	115	3386	197
Rakai	11560	1031	13043	1058	24603	2089
Rukungiri	17770	1087	20039	2239	37809	3326
Tororo	31199	2269	14654	1166	45853	3435
TOTAL	409345	46552	457065	58911	866410	105463

TABLE 2:22 The Number and Area of Plots Under Sweet Potatoes Second Season

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	4064	622	518	33	4582	655
Arua	11946	960	2480	120	14426	1080
Bundibugyo	728	175	338	39	1066	214
Bushenyi	24268	1961	3754	236	28022	2197
Hoima	8338	759	5590	379	13928	1138
Iganga	31414	2398	24052	2424	55466	4822
Jinja	15814	1129	12334	1056	28148	2185
Kabale	25951	1871	8390	705	34341	2576
Kabarole	26816	1701	45206	5452	72022	7153
Kamuli	48196	4652	31607	2683	79803	7335
Kapchorwa	185	15	-	-	185	15
Kasese	484	15	771	34	1255	49
Lira	13106	1452	2531	575	15637	2027
Luwero	14015	1145	7484	595	21499	1740
Masaka	13982	909	8434	331	22416	1240
Masindi	6585	445	5125	534	11710	979
Mbale	11134	655	2437	127	13571	782
Mbarara	17447	797	4592	257	22039	1054
Moyo	11454	1927	2610	344	14064	2271
Mpigi	27850	1629	33174	2472	61024	4101
Mubende	22750	1508	35421	1855	58171	3363
Mukono	39663	3576	59195	5184	98858	8760
Nebbi	3861	169	693	28	4554	197
Rakai	13857	1177	8349	799	22206	1976
Rukungiri	11164	722	9424	1066	20588	1788
Tororo	43931	3507	11122	855	55053	4362
TOTAL	449003	35876	325631	28183	774634	64059

TABLE 2.23 The Number and Area of Plots Under Cassava

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	24289	10709	19564	7070	43854	17779
Arua	71681	11917	50224	9561	121905	21478
Bundibugyo	3249	966	7971	2171	11220	3137
Bushenyi	3219	212	1800	221	5019	433
Hoima	6362	808	12907	1630	19269	2438
Iganga	31286	7475	43373	6990	74659	14465
Jinja	2004	188	5039	528	7043	716
Kabale	399	62	519	39	918	101
Kabarole	10004	704	31605	4193	41609	4897
Kamuli	27158	4105	44992	6944	72150	11049
Kapchorwa	312	19	83	10	395	29
Kasese	6283	532	8471	762	14754	1294
Lira	20741	7343	10078	2491	30819	9834
Luwero	15427	1699	14562	1502	29989	3201
Masaka	4541	422	5664	515	10205	937
Masindi	12806	3475	18501	4525	31307	8000
Mbale	27125	2575	33047	3742	60172	6317
Mbarara	2554	136	6568	688	9122	824
Moyo	8509	1633	23351	5248	31860	6881
Mpigi	22802	1375	33591	2500	56393	3875
Mubende	10011	906	17230	1316	27241	2222
Mukono	47486	6475	81460	11662	128946	18137
Nebbi	45302	11836	20266	4767	65568	16603
Rakai	6629	1145	16004	2197	22633	3342
Rukungiri	2686	387	2185	69	4871	456
Tororo	84341	14609	71614	10866	155955	25475
TOTAL	497206	91713	580670	92207	1077876	183920

TABLE 2.24 The Number and Area of Plots Under Pigeon Peas

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	266	119	2070	952	2336	1071
Arua	573	66	4355	440	4928	506
Hoima	-	-	321	14	321	14
Iganga	-	-	1096	56	1096	56
Lira	10033	3063	17387	6037	27420	9100
Masindi	-	-	344	36	344	36
Moyo	101	10	219	85	320	95
Mpigi	-	-	241	12	241	12
Mukono	-	-	684	14	684	14
Nebbi	53	15	-	-	53	15
TOTAL	11026	3273	26717	7646	37743	10919

TABLE 2.25 The Number and Area of Plots Under Bananas (Food Type)

DISTRICT	Number	Area
Apac	3,447	948
Bundibugyo	7,895	2,884
Bushenyi	242,449	105,504
Hoima	28,815	7,098
Iganga	79,483	23,291
Jinja	15,705	3,517
Kabale	67,296	8,287
Kabarole	81,214	29,044
Kamuli	55,735	10,878
Kapchorwa	22,240	4,323
Kasese	21,043	7,501
Lira	1,231	141
Luwero	37,958	10,995
Masaka	167,976	70,669
Masindi	9,518	1,858
Mbale	206,723	47,125
Mbarara	258,810	129,170
Mpigi	90,562	22,719
Mubende	138,713	54,558
Mukono	104,574	24,427
Nebbi	10,192	1,113
Rakai	101,643	49,922
Rukungiri	51,696	15,739
Tororo	40,546	10,455
TOTAL	1,845,464	642,166

TABLE 2.26 The Number and Area of Plots Under Banana (Beer Type)

DISTRICT	Number	Area
Bundibugyo	3,229	1,358
Bushenyi	6,689	2,596
Hoima	61,884	22,406
Iganga	29,118	8,685
Jinja	1,922	526
Kabale	38,705	7,326
Kabarole	50,479	27,753
Kamuli	12,121	1,335
Kasese	20,989	6,875
Luwero	13,556	4,319
Masaka	8,081	3,448
Masindi	8,982	2,232
Mbale	2,776	319
Mbarara	7,273	6,330
Mpigi	42,483	13,296
Mubende	84,981	36,922
Mukono	32,818	11,144
Rakai	14,128	5,508
Rukungiri	8,442	3,331
Tororo	24,803	5,926
TOTAL	473,459	171,635

TABLE 2.27 The Number and Area of Plots Under Bananas (Sweet Type)

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	2412	1075	3937	1988	6349	3063
Arua	1165	108	5102	1203	6267	1311
Bundibugyo	22	9	22	9	44	18
Bushenyi	-	-	56	50	56	50
Hoima	253	306	253	306	506	612
Iganga	112	15	3908	621	4020	636
Jinja	147	37	966	399	1113	436
Kabale	320	70	2100	265	2420	335
Kabarole	247	101	666	109	913	210
Kamuli	259	33	576	72	835	105
Kapchorwa	-	-	228	29	228	29
Kasese	137	11	481	47	618	58
Lira	1365	300	8324	3429	9689	3729
Luwero	102	57	3337	718	3439	775
Masaka	76	38	370	137	446	175
Masindi	-	-	136	35	136	35
Mbale	-	-	1006	82	1006	82
Moyo	123	17	1034	187	1157	204
Mpigi	-	-	521	48	521	48
Mubende	-	-	535	123	535	123
Mukono	298	263	4757	1808	5055	2071
Nebbi	204	48	831	252	1035	300
Rakai	92	7	922	153	1014	160
Rukungiri	-	-	253	63	253	63
Tororo	-	-	801	192	801	192
TOTAL	7334	2495	41122	12325	48456	14820

TABLE 2.28 The Number and Area of Plots Under Cotton

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Apac	8462	3036	17800	6636	26262	9672
Arua	1769	401	3743	733	5512	1134
Hoima	852	257	4006	815	4858	1072
Iganga	1270	137	13498	2331	14768	2468
Kamuli	6498	1672	23069	4049	29567	5721
Kasese	4922	1821	5967	2208	10889	4029
Lira	12857	4559	16320	7123	29177	11682
Luwero	510	69	1302	133	1812	202
Masindi	1389	547	2996	1021	4385	1568
Mbale	3314	346	6697	761	10011	1107
Moyo	2832	623	2105	842	4937	1465
Nebbi	4696	1528	1775	503	6471	2031
Tororo	26031	5246	41192	8624	67223	13870
TOTAL	75402	20242	140470	35779	215872	56021

TABLE 2.29 The Number and Area of Plots Under Coffee

DISTRICT	CROP STAND AS:				TOTAL	
	Pure		Mixed		Number	Area
	Number	Area	Number	Area		
Arua	416	25	416	25	832	50
Bundibugyo	3359	1531	16474	7904	20033	9435
Bushenyi	11905	1957	15259	3357	27164	5314
Hoima	14252	2978	37875	8609	52127	11587
Iganga	19954	5708	19874	5366	39828	11074
Jinja	3064	858	11636	3491	14700	4349
Kabale	265	33	2151	99	2416	132
Kabarole	2937	282	6862	919	9799	1201
Kamuli	9172	2149	11996	3479	21168	5628
Kapchorwa	504	49	2954	511	3458	560
Kasese	7156	1786	29818	6938	36974	8724
Luwero	9362	3640	49153	14451	58515	18091
Masaka	8939	3686	50957	23116	59896	26802
Masindi	547	114	1309	160	1856	274
Mbale	7925	1204	75101	23714	83026	24918
Mbarara	17850	3570	44180	8836	62030	12406
Mpigi	14478	4794	39381	13034	53859	17828
Mubende	20839	9883	58328	29171	79167	39054
Mukono	19355	7319	181394	48258	200749	55577
Nebbi	5006	1087	15122	3024	20128	4111
Rakai	6157	1738	23735	11834	29892	13572
Rukungiri	2075	391	11649	2511	13724	2902
Tororo	801	8	1359	41	2160	49
TOTAL	186518	54790	706983	218848	893501	273638

Chapter 3

CROP YIELDS

Concept of Yield

3.1 In agricultural statistics, crop yield refers to the average quantity of produce per unit crop area; for example a number of tonnes of sweet potatoes per hectare. There are several types of yields for example: biological yield, economic yield and harvested yield.

3.2 During the technical discussions that preceded field work on yield, it was agreed that harvested yield is the most appropriate type of yield for purposes of obtaining production estimate. Harvested yield is the actual quantity of the produce obtained after harvesting and it excludes any losses which may have taken place during harvesting or before but includes post-harvest losses. It is the most appropriate type of yield because it deals with the harvest as realised by the holders in their local habitat.

3.3. Yield estimate covered the following fifteen crops:

Cereals: maize, finger millet and sorghum;
Legumes: beans, field peas, cow peas and pigeon peas;
Oil seeds: groundnuts, simsim and soya beans;
Industrial crops: cotton;
Root crops: Irish potatoes, sweet potatoes and cassava;
Fruit crops: Bananas (matoke including roasting type).

3.4 The concept of harvested yield was applied to all the crops mentioned above in 3.3 except cassava and bananas. These two crops were exceptions in the sense that whereas for them only a small portion of the total produce in a sub-plot was harvested and weighed by the enumerators and holders, the entire produce in

the sub-plot was harvested and weighed in the case of the other crops. Because of continuing harvesting of cassava and bananas in the course of the year, it was impossible for enumerators to be present at every harvest; data collected during one visit had, therefore to be used for estimating the total yearly production. In view of this, the yield obtained for cassava and bananas may not necessarily reflect on the harvested yield realised by the holders. No attempt was made to carry out yield estimation for coffee due to its special characteristics. Because of its special importance in the Ugandan economy, it is strongly recommended that a special study in form of a module be carried out in order to obtain its yield rate.

3.5 To the extent possible, yield estimation exercises were carried out on crops which are fairly widely grown. It should be noted that there are other crops in Uganda which have recently assumed considerable export potential and big economic importance, and yet they were not covered, e.g. horticulture crops. The main reasons for this were:

(i) crops which are not grown widely, would be rare to come across in a sample design like for this census whose measure of size was taxpayers (or population) based, resulting in large sampling error and,

(ii) the workload of enumerators could have become so large that it would adversely affect data quality.

3.6 Yield estimation based on sub-plots has got its own weaknesses. Current thinking is that whole plots should be harvested in order to obtain fairly reliable estimates. This is difficult from the point of view of the associated workload to the enumerators and the inconvenience to the holders. The users of the yield rates should bear in mind the inherent weaknesses as a result of using very small sub-plots.

Yield Measurement

3.7 To arrive at the quantity of produce to be weighed, location of the sub-plot was first done. The details for such location are contained in the "Enumerators' Instructions Manual, Supplement I; Crop Yield Estimation, May, 1990". For each of the 15 crops an enumerator selected randomly two sub-plots in each of 20 Enumeration Areas resulting into a total of 40 sub-plots for a crop in the whole district which formed the domain of study. Where there were only two plots or less, there was no need to randomly select the plots; the enumerator just proceeded to select the location of the sub-plot and to demarcate it with pegs.

3.8 Depending on the density of crops, the sub-plot sizes varied as follows:

(i) Very densely populated crops: these included finger millet, sorghum, beans, field peas, cow peas, pigeon peas, groundnuts, simsim, soya beans, sweet potatoes and irish potatoes. The sub-plot size for these crops was 3m x 3m.

(ii) Sparsely populated crops: these included maize, cassava and cotton. Their sub-plot size was 5m x 5m.

(iii) Very sparsely populated crops: bananas (food type) fell in this category and the sub-plot size was 10m x 10m.

3.9 Each of the enumerators was supplied with a 25Kg weighing scale for taking the weight of the produce from the sub-plot. He was instructed to harvest in such a way that he conformed to the way the holder normally harvests. For some crops like beans, some holders may either harvest in green state at once or partially over time. On the other hand, a holder may wait for the crop to be dry and is harvested at once. When a holder harvested green and partially over time, the enumerator had to take the weights as many times as the holders harvests, summed them up to get one weight and recorded it appropriately.

For such weights, conversion factors were separately obtained by a group of statisticians and applied to get the dry weight equivalent. In the case of crops like finger millet, weight was obtained both 'at harvest' and 'after processing'. The term 'after processing' was loosely used to describe all the elementary steps taken to obtain the crop in seed form. On the other hand, for cassava, bananas, irish potatoes and sweet potatoes weight taken was for the wet produce.

3.10 There are problems which were faced during the yield measurement and may have affected the estimates in one way or another. It is important that they are mentioned so that the users of the yield rates in Table 3.1 know some of them:

(i) Difficulty in tracing the sub-plot demarcations. There were cases when some uncooperative holders or innocent children removed the pegs laid during the early stages of crop growth. Such pegs could not be easily re-established at harvest time due to tall crops.

(ii) Enumerator's late arrival for harvest: In some cases the Enumerator arrived late only to find the crop already harvested. He could have arrived late due to negligence on his part or due to misinformation from the respondent.

(iii) Insincerity of some enumerators: Some enumerators were not sincere and when caught during supervision were dismissed. For those who remained, there is no guarantee that they all did the work perfectly.

(iv) Very few plots: For some crops especially those which are not widely grown, there were very few sub-plots located. Cases of only one or two sub-plots out of the expected 40 sub-plots were observed.

3.11 Although the 1990/91 census year was generally regarded as a normal year, the yield rates obtained for that year may not necessarily be stable. To be stable, the yield rates need to be collected as part of current agricultural statistics system over time. Users of the census yield rates need to bear in mind the inherent shortcomings of the figures based on only one year. Plant agronomists are aware that yields are affected by many factors. Assuming that factors like: crop varieties, soil fertility level and technology remain constant, other variable factors like weather, diseases and pests can greatly influence the yields; the last three factors are singled out because they can vary in the short run.

Table 3.1 Yield Rates (t/ha)

DISTRICT	CROP							
	Maize	Finger Millet	Sorghum	Beans	Field Peas	Cow Peas	Pigeon Peas	Ground nuts
Apac	0.9	0.8	1.6	0.7	-	1.2	0.8	1.6
Arua	0.8	1.1	1.7	1.5	-	1.0	1.0	1.4
Bundibugyo	1.0	1.0	2.0	1.7	-	-	-	1.0
Bushenyi	1.5	2.0	2.5	2.3	0.7	-	-	1.0
Hoima	1.3	1.7	1.8	1.5	-	1.0	1.3	1.3
Iganga	1.5	0.5	1.9	0.9	-	0.8	0.6	0.6
Jinja	1.6	1.1	2.3	1.8	-	0.3	-	1.0
kabale	1.4	2.4	2.0	2.4	0.8	-	-	1.2
Kabarole	1.4	1.6	2.8	1.5	0.8	0.8	-	1.2
Kamuli	1.2	1.2	1.4	1.1	0.8	-	-	1.1
Kapchorwa	3.3	3.4	-	1.4	-	-	-	1.1
Kasese	1.3	1.8	2.0	1.6	-	-	-	0.8
Lira	1.2	1.8	1.7	0.8	-	1.1	1.2	1.2
Luwero	2.1	2.0	1.8	1.6	-	-	-	1.1
Masaka	1.1	1.1	2.0	1.2	0.5	0.5	-	1.4
Masindi	1.1	0.8	-	1.2	-	-	1.1	1.0
Mbale	2.8	1.6	2.8	1.4	-	0.1	-	1.2
Mbarara	2.3	2.4	2.5	2.3	0.7	0.6	-	1.0
Moyo	1.1	0.9	1.4	_	_	0.9	0.8	0.7
Mpigi	1.0	0.5	1.7	1.1	0.7	0.2	0.6	1.3
Mubende	2.2	2.5	2.4	1.8	0.8	-	-	1.4
Mukono	1.0	0.6	1.8	1.5	-	0.4	0.6	1.2
Nebbi	0.5	0.9	1.4	1.8	-	0.8	1.0	1.8
Rakai	2.4	1.4	1.5	1.2	0.4	0.6	-	0.9
Rukungiri	1.8	2.0	2.3	1.8	0.8	-	-	1.2
Tororo	1.8	1.8	1.6	0.6	0.8	0.8	-	0.8

Table 3.1 Yield Rates (t/ha): (continued)

DISTRICT	CROP						
	Simsim	Soya Beans	Cassava	Sweet Potatoes	Irish Potatoes	Banana (Food)	Cotton
Apac	0.7	1.0	34.8	5.1	-	2.4	0.9
Arua	0.7	1.3	24.5	6.9	-	-	0.6
Bundibugyo	-	2.0	23.4	5.4	7.2	4.2	-
Bushenyi	-	1.9	19.7	10.8	7.9	9.4	-
Hoima	-	1.9	27.2	7.1	8.4	3.7	0.7
Iganga	0.6	1.0	17.8	7.4	6.3	2.6	0.8
Jinja	0.4	1.8	23.4	5.9	-	7.0	-
Kabale	-	-	10.2	7.5	8.8	7.7	-
Kabarole	-	-	37.2	7.5	7.1	5.9	-
Kamuli	0.5	1.4	18.4	11.2	-	3.0	0.8
Kapchorwa	-	-	31.0	10.2	9.4	6.3	-
Kasese	-	0.8	36.1	9.9	9.6	5.8	0.8
Lira	0.7	1.3	18.7	9.6	-	2.4	0.6
Luwero	0.7	0.7	19.7	8.5	7.6	4.7	0.6
Masaka	-	1.1	33.6	10.0	10.6	6.7	-
Masindi	0.6	1.9	29.0	11.2	-	4.2	0.6
Mbale	-	1.2	21.6	10.3	8.3	7.6	0.8
Mbarara	-	1.1	18.9	8.8	9.9	8.3	-
Moyo	0.8	1.3	20.3	7.7	-	-	0.6
Mpigi	-	1.8	25.2	5.5	7.4	5.1	-
Mubende	0.7	1.8	24.2	11.2	8.7	9.0	-
Mukono	0.7	1.8	27.3	6.2	-	6.9	-
Nebbi	0.7	1.9	36.0	6.4	-	7.6	0.8
Rakai	-	1.1	29.1	9.3	10.3	6.7	-
Rukungiri	-	-	13.3	10.1	10.9	6.4	-
Tororo	0.6	1.3	33.6	7.6	5.0	7.5	0.9

CHAPTER 4

CROP PRODUCTION ESTIMATES

4.1 Crop production statistics is considered to be the most important part of agricultural statistics and perhaps the most difficult in view of inability of holders to provide good estimates and consequent requirement to collect data by use of objective measurements. Production data for fifteen main crops are given in fifteen tables 4.01 to 4.15 at the end of this chapter.

4.2 Crop production data were calculated by simple multiplication of crop areas described in chapter 2, and yield data described in chapter 3. The quality of production estimates depends obviously upon quality of data on areas and yields. While data on areas are considered to be of a good quality (except for sampling and other possible errors) because they were measured; the yield estimates, although also based on objective measurements, are subject to possible errors as explained in chapter 3. In particular, it is difficult to estimate yield of bananas and cassava because they are harvested continuously during the year. Firstly crop production data were calculated for each crop at the district level because the yield data were available on that level. After having calculated total production for all 26 districts, average yield at district level (actually weighted average) was obtained by dividing total production by total area. (Multiplying the yield so obtained by total area may result in a somewhat different total production because of rounding error).

4.3 As explained in chapter 3, the yield data refer to harvested yield. Consequently, the production estimated is harvested production, i.e. after preharvest losses already occurred but still subject to post harvest losses (transport, storage, processing losses, etc.)

4.4 Among fifteen crops, the largest production in terms of tonnes refers to root crops which are over 5 million tonnes estimated for cassava and almost 1.4 million tonnes of sweet potatoes. Production of bananas is estimated as 4.7 million tonnes. Largest production of cereals refers to maize with 433,000 tonnes and finger millet with 340,000 tonnes. Among legumes by far the most important are beans with production of over half a million tonnes.

4.5 Looking at individual crop tables one can notice great differences in crop production between districts. Regarding cereals, Iganga with 71,000 tonnes is the largest producer of maize, Tororo with 96,000 tonnes is the largest producer of finger millet, while Kabale is the largest producer of sorghum, with 124,000 tonnes. Kabale is also the largest producer of beans with the production of over 130,000 tonnes which may be explained by the fact that the largest yield of beans is also found in Kabale. Kamuli district with 22,000 tonnes is the main producer of groundnuts which is the main oilseed crop in terms of quantity produced. Concerning root crops the largest producer of cassava is Tororo with 850,000 tonnes, while the largest producer of sweet potatoes is Kamuli with 135,000 tonnes. The largest production of bananas (food type) was registered in Mbarara (1,072,000 tonnes) and in Bushenyi (991,000 tonnes) where the largest yield rate was also found.

TABLE 4.01 Area, Yield and Production of Maize

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	3,988	998	4,986	0.9	4,487
Arua	7,494	1,496	8,990	0.8	7,192
Bundibugyo	238	503	741	1.0	741
Bushenyi	912	237	1,149	1.5	1,724
Hoima	1,850	1,039	2,889	1.3	3,756
Iganga	29,337	18,085	47,422	1.5	71,133
Jinja	5,663	3,004	8,667	1.6	13,867
Kabale	6,035	4,421	10,456	1.4	14,638
Kabarole	3,363	1,921	5,284	1.4	7,398
Kamuli	26,464	16,928	43,392	1.2	52,070
Kapchorwa	16,983	914	17,897	3.3	59,060
Kasese	2,465	680	3,145	1.3	4,089
Lira	4,478	592	5,070	1.2	6,084
Luwero	3,210	846	4,056	2.1	8,518
Masaka	2,367	2,146	4,513	1.1	4,964
Masindi	9,995	5,200	15,195	1.1	16,715
Mbale	13,314	764	14,078	2.8	39,418
Mbarara	10,446	2,125	12,571	2.3	28,913
Moyo	4,500	676	5,176	1.1	5,694
Mpigi	964	897	1,861	1.0	1,861
Mubende	6,753	5,199	11,952	2.2	26,294
Mukono	5,636	6,251	11,887	1.0	11,887
Nebbi	6,714	692	7,406	0.5	3,703
Rakai	4,998	3,948	8,946	2.4	21,470
Rukungiri	2,264	846	3,110	1.8	5,598
Tororo	3,514	3,131	6,645	1.8	11,961
TOTAL	183,945	83,539	267,484	1.6	433,235

TABLE 4.02 Area, Yield and Production of Finger Millet

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	25,296	805	26,101	0.8	20,881
Arua	9,733	6,934	16,667	1.1	18,334
Bundibugyo	-	26	26	1.0	26
Bushenyi	706	10,512	11,218	2.0	22,436
Hoima	1,721	2,462	4,183	1.7	7,111
Iganga	28,581	47	28,628	0.5	14,314
Jinja	1,312	13	1,325	1.1	1,458
Kabale	291	524	815	2.4	1,956
Kabarole	2,489	6,626	9,115	1.6	14,584
Kamuli	16,819	1,255	18,074	1.2	21,689
Kapchorwa	231	20	251	3.4	853
Kasese	260	153	413	1.8	743
Lira	34,230	151	34,381	1.8	61,886
Luwero	212	128	340	2.0	680
Masaka	45	194	239	1.1	263
Masindi	366	2,963	3,329	0.8	2,663
Mbale	4,460	-	4,460	1.6	7,136
Mbarara	1,111	10,196	11,307	2.4	27,137
Moyo	251	300	551	0.9	496
Mpigi	-	10	10	0.5	5
Mubende	612	913	1,525	2.5	3,813
Mukono	6,379	76	6,455	0.6	3,873
Nebbi	373	440	813	0.9	732
Rakai	65	516	581	1.4	813
Rukungiri	753	5,348	6,101	2.0	12,202
Tororo	53,479	50	53,529	1.8	96,352
TOTAL	189,775	50,662	240,437	1.4	342,436

TABLE 4.03 Area, Yield and Production of Sorghum

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	2,939	1,704	4,643	1.6	7,429
Arua	1,342	4,560	5,902	1.7	10,033
Bundibugyo	26	-	26	2.0	52
Bushenyi	2,676	404	3,080	2.5	7,700
Hoima	1,038	507	1,545	1.8	2,781
Iganga	381	354	735	1.9	1,397
Jinja	25	9	34	2.3	78
Kabale	61,414	713	62,127	2.0	124,254
Kabarole	1,750	2,282	4,032	2.8	11,290
Kamuli	58	62	120	1.4	168
Kasese	99	-	99	2.0	198
Lira	11,544	6,894	18,438	1.7	31,345
Luwero	552	312	864	1.8	1,555
Masaka	954	1,000	1,954	2.0	3,908
Mbale	117	-	117	2.8	328
Mbarara	2,154	1,857	4,011	2.5	10,028
Moyo	515	3,862	4,377	1.4	6,128
Mpigi	776	748	1,524	1.7	2,591
Mubende	2,411	1,449	3,860	2.4	9,264
Mukono	640	884	1,524	1.8	2,743
Nebbi	373	454	827	1.4	1,158
Rakai	1,608	2,012	3,620	1.5	5,430
Rukungiri	3,809	731	4,540	2.3	10,442
Tororo	3,428	2,181	5,609	1.6	8,974
TOTAL	100,629	32,979	133,608	1.9	259,274

TABLE 4.04 Area, Yield and Production of Beans

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	9,811	1,425	11,236	0.7	7,865
Arua	2,100	7,140	9,240	1.5	13,860
Bundibugyo	1,060	839	1,899	1.7	3,228
Bushenyi	5,009	4,562	9,571	2.3	22,013
Hoima	8,517	3,700	12,217	1.5	18,326
Iganga	7,843	15,142	22,985	0.9	20,687
Jinja	2,770	7,126	9,896	1.8	17,813
Kabale	44,608	9,784	54,392	2.4	130,541
Kabarole	10,512	9,708	20,220	1.5	30,330
Kamuli	2,094	4,693	6,787	1.1	7,466
Kapchorwa	359	58	417	1.4	584
Kasese	2,751	837	3,588	1.6	5,741
Lira	8,380	436	8,816	0.8	7,053
Luwero	5,554	3,874	9,428	1.6	15,085
Masaka	5,664	5,730	11,394	1.2	13,673
Masindi	966	3,424	4,390	1.2	5,268
Mbale	1,641	2,015	3,656	1.4	5,118
Mbarara	9,255	7,655	16,910	2.3	38,893
Mpigi	4,194	5,345	9,539	1.1	10,493
Mubende	12,233	9,638	21,871	1.8	39,368
Mukono	10,439	22,640	33,079	1.5	49,619
Nebbi	830	2,302	3,132	1.8	5,638
Rakai	6,093	8,464	14,557	1.2	17,468
Rukungiri	5,677	5,786	11,463	1.8	20,633
Tororo	375	671	1,046	0.6	628
TOTAL	168,735	142,994	311,729	1.6	507,391

TABLE 4.05 Area, Yield and Production of Field Peas

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Bushenyi	426	69	495	0.7	347
Kabale	1,460	1,114	2,574	0.8	2,059
Kabarole	144	510	654	0.8	523
Kamuli	-	28	28	0.8	22
Masaka	23	158	181	0.5	91
Mbarara	266	352	618	0.7	433
Mpigi	60	224	284	0.7	199
Mubende	-	191	191	0.8	153
Rakai	186	60	246	0.4	98
Rukungiri		41	41	0.8	33
Tororo	-	240	240	0.8	192
TOTAL	2,565	2,987	5,552	0.7	4,150

TABLE 4.06 Area, Yield and Production of Cow Peas

DISTRICT	SEASON		TOTAL ha	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	57	937	994	1.2	1,193
Arua	133	234	367	1.0	367
Hoima	94	12	106	1.0	106
Iganga	172	654	826	0.8	661
Jinja	-	22	22	0.3	7
Kabarole	70	34	104	0.8	83
Lira	279	252	531	1.1	584
Masaka	6	24	30	0.5	15
Mbale	12	16	28	0.1	3
Mbarara	196	7	203	0.6	122
Moyo	-	883	883	0.9	795
Mpigi	104	56	160	0.2	32
Mukono	76	451	527	0.4	211
Nebbi	-	671	671	0.8	537
Rakai	25	-	25	0.6	15
Tororo	587	3,313	3,900	0.8	3,120
TOTAL	1,811	7,566	9,377	0.8	7,851

TABLE 4.07 Area, Yield and Production of Groundnuts

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	2,531	753	3,284	1.6	5,254
Arua	8,052	2,211	10,263	1.4	14,368
Bundibugyo	575	374	949	1.0	949
Bushenyi	11,891	967	12,858	1.0	12,858
Hoima	6,816	4,213	11,029	1.3	14,338
Iganga	4,272	4,011	8,283	0.6	4,970
Jinja	694	1,531	2,225	1.0	2,225
Kabale	164	136	300	1.2	360
Kabarole	5,379	4,445	9,824	1.2	11,789
Kamuli	7,734	12,504	20,238	1.1	22,262
Kapchorwa	23	-	23	1.1	25
Kasese	159	158	317	0.8	254
Lira	871	230	1,101	1.2	1,321
Luwero	3,324	2,185	5,509	1.1	6,060
Masaka	3,399	3,977	7,376	1.4	10,326
Masindi	1,932	2,679	4,611	1.0	4,611
Mbale	571	277	848	1.2	1,018
Mbarara	4,080	2,807	6,887	1.0	6,887
Moyo	2,677	1,079	3,756	0.7	2,629
Mpigi	1,668	2,697	4,365	1.3	5,675
Mubende	1,935	5,417	7,352	1.4	10,293
Mukono	3,090	6,232	9,322	1.2	11,186
Nebbi	144	1,575	1,719	1.8	3,094
Rakai	1,594	2,425	4,019	0.9	3,617
Rukungiri	1,642	568	2,210	1.2	2,652
Tororo	3,243	570	3,813	0.8	3,050
TOTAL	78,460	64,021	142,481	1.1	162,071

TABLE 4.08 Area, Yield and Production of Simsim

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	7,601	21,055	28,656	0.7	20,059
Arua	45	7,162	7,207	0.7	5,045
Iganga	45	1,469	1,514	0.6	908
Jinja	44	145	189	0.4	76
Kamuli	29	228	257	0.5	129
Lira	4,755	13,461	18,216	0.7	12,751
Luwero	7	40	47	0.7	33
Masindi	40	21	61	0.6	37
Moyo	159	6,542	6,701	0.8	5,361
Mubende	-	47	47	0.7	33
Mukono	164	1,653	1,817	0.7	1,272
Nebbi	14	1,136	1,150	0.7	805
Tororo	-	126	126	0.6	76
TOTAL	12,903	53,085	65,988	0.7	46,585

TABLE 4.09 Area, Yield and Production of Soya Beans

DISTRICT	SEASON		TOTAL (ha)	YIEL (t/ha)	PRODUCTION (t)
	First	Second			
Apac	31	56	87	1.0	87
Arua	111	728	839	1.3	1,091
Bundibugyo	708	629	1,337	2.0	2,674
Bushenyi	141	12	153	1.9	291
Hoima	125	142	267	1.9	507
Iganga	891	1,666	2,557	1.0	2,557
Jinja	250	663	913	1.8	1,643
Kamuli	221	3,523	3,744	1.4	5,242
Kasese	11	5	16	0.8	13
Lira	807	552	1,359	1.3	1,767
Luwero	63	8	71	0.7	50
Masaka	-	10	10	1.1	11
Masindi	33	35	68	1.9	129
Mbale	84	1,092	1,176	1.2	1,411
Mbarara	17	-	17	1.1	19
Moyo	-	15	15	1.3	20
Mpigi	82	192	274	1.8	493
Mubende	6	220	226	1.8	407
Mukono	59	765	824	1.8	1,483
Nebbi	260	155	415	1.9	789
Rakai	-	350	350	1.1	385
Tororo	2,057	1,156	3,213	1.3	4,177
TOTAL	5,957	11,974	17,931	1.4	25,246

TABLE 4.10 Area, Yield and Production of Irish Potatoes

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Bundibugyo	18	-	18	7.2	130
Bushenyi	948	70	1,018	7.9	8,042
Hoima	384	49	433	8.4	3,637
Iganga	6	40	46	6.3	290
Kabale	11,058	486	11,544	8.8	101,587
Kabarole	587	1,321	1,908	7.1	13,547
Kapchorwa	8	-	8	9.4	75
Kasese	39	30	69	9.6	662
Luwero	59	323	382	7.6	2,903
Masaka	56	61	117	10.6	1,240
Mbale	-	113	113	8.3	938
Mbarara	631	765	1,396	9.9	13,820
Mpigi	14	122	136	7.4	1,006
Mubende	959	708	1,667	8.7	14,503
Rakai	569	548	1,117	10.3	11,505
Rukungiri	-	25	25	10.9	273
Tororo	-	52	52	5.0	260
TOTAL	15,336	4,713	20,049	8.7	174,418

TABLE 4.11 Area, Yield and Production of Sweet Potatoes

DISTRICT	SEASON		TOTAL (ha)	YIELD (t/ha)	PRODUCTION (t)
	First	Second			
Apac	526	655	1,181	5.1	6,023
Arua	394	1,080	1,474	6.9	10,171
Bundibugyo	232	214	446	5.4	2,408
Bushenyi	8,213	2,197	10,410	10.8	112,428
Hoima	6,461	1,138	7,599	7.1	53,953
Iganga	10,368	4,822	15,190	7.4	112,406
Jinja	2,241	2,185	4,426	5.9	26,113
Kabale	10,559	2,576	13,135	7.5	98,513
Kabarole	5,628	7,153	12,781	7.5	95,858
Kamuli	4,754	7,335	12,089	11.2	135,397
Kapchorwa	59	15	74	10.2	755
Kasese	298	49	347	9.9	3,435
Lira	1,758	2,027	3,785	9.6	36,336
Luwero	4,853	1,740	6,593	8.5	56,041
Masaka	3,244	1,240	4,484	10.0	44,840
Masindi	666	979	1,645	11.2	18,424
Mbale	732	782	1,514	10.3	15,594
Mbarara	2,174	1,054	3,228	8.8	28,406
Moyo	776	2,271	3,047	7.7	23,462
Mpigi	18,806	4,101	22,907	5.5	125,989
Mubende	7,093	3,363	10,456	11.3	118,153
Mukono	6,581	8,760	15,341	6.2	95,114
Nebbi	197	197	394	6.4	2,522
Rakai	2,089	1,976	4,065	9.3	37,805
Rukungiri	3,326	1,788	5,114	10.1	51,651
Tororo	3,435	4,362	7,797	7.6	59,257
TOTAL	105,463	64,059	169,522	8.1	1,371,054

TABLE 4.12 Area, Yield and Production of Cassava

DISTRICT	AREA (ha)	YIELD (t/ha)	PRODUCTION (t)
Apac	17,779	34.8	618,709
Arua	21,478	24.5	526,211
Bundibugyo	3,137	23.4	73,406
Bushenyi	433	19.7	8,530
Hoima	2,438	27.2	66,314
Iganga	14,465	17.8	257,477
Jinja	716	23.4	16,754
Kabale	101	10.2	1,030
Kabarole	4,897	37.2	182,168
Kamuli	11,049	18.4	203,302
Kapchorwa	29	31.0	899
Kasese	1,294	36.1	46,713
Lira	9,834	18.7	183,896
Luwero	3,201	19.7	63,060
Masaka	937	33.6	31,483
Masindi	8,000	29.0	232,000
Mbale	6,317	21.6	136,447
Mbarara	824	18.9	15,574
Moyo	6,881	20.3	139,684
Mpigi	3,875	25.2	97,650
Mubende	2,222	24.2	53,772
Mukono	18,137	27.3	495,140
Nebbi	16,603	36.0	597,708
Rakai	3,342	29.1	97,252
Rukungiri	456	13.3	6,065
Tororo	25,475	33.6	855,960
TOTAL	183,920	27.2	5,007,204

TABLE 4.13 Area, Yield and Production of Pigeon Peas

DISTRICT	AREA (ha)	YIELD (t/ha)	PRODUCTION (t)
Apac	1,071	0.8	857
Arua	506	1.0	506
Hoima	14	1.3	18
Iganga	56	0.6	34
Lira	9,100	1.2	10,920
Masindi	36	1.1	40
Moyo	95	0.8	76
Mpigi	12	0.6	7
Mukono	14	0.6	8
Nebbi	15	1.0	15
TOTAL	10,919	1.1	12,481

TABLE 4.14 Area, Yield and Production of Bananas (Food type)

DISTRICT	AREA (ha)	YIELD (t/ha)	PRODUCTION (t)
Apac	948	2.4	2,275
Bundibugyo	2,884	4.2	12,113
Bushenyi	105,504	9.4	991,738
Hoima	7,098	3.7	26,263
Iganga	23,291	2.6	60,557
Jinja	3,517	7.0	24,619
Kabale	8,287	7.7	63,810
Kabarole	29,044	5.9	171,360
Kamuli	10,878	3.0	32,634
Kapchorwa	4,323	6.3	27,235
Kasese	7,501	5.8	43,506
Lira	141	2.4	338
Luwero	10,995	4.7	51,677
Masaka	70,669	6.7	473,482
Masindi	1,858	4.2	7,804
Mbale	47,125	7.6	358,150
Mbarara	129,170	8.3	1,072,111
Mpigi	22,719	5.1	115,867
Mubende	54,558	9.0	491,022
Mukono	24,427	6.9	168,546
Nebbi	1,113	7.6	8,459
Rakai	49,922	6.7	334,477
Rukungiri	15,739	6.4	100,730
Tororo	10,455	7.5	78,413
TOTAL	642,166	7.3	4,717,186

TABLE 4.15 Area, Yield and Production of Cotton

DISTRICT	AREA (ha)	YIELD (t/ha)	PRODUCTION (t)
Apac	9,672	0.9	8,705
Arua	1,134	0.6	680
Hoima	1,072	0.7	750
Iganga	2,468	0.8	1,974
Kamuli	5,721	0.8	4,577
Kasese	4,029	0.8	3,223
Lira	11,682	0.6	7,009
Luwero	202	0.6	121
Masindi	1,568	0.6	941
Mbale	1,107	0.8	886
Moyo	1,465	0.6	879
Nebbi	2,031	0.8	1,625
Tororo	13,870	0.9	12,483
TOTAL	56,021	0.8	43,853

APPENDIX I

CROPS MEAN PLOT SIZES

Maize mean plot size
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.21	0.44	0.35
Arua	0.12	0.21	0.20
Bundibugyo	0.40	0.24	0.26
Bushenyi	0.05	0.20	0.14
Hoima	0.25	0.17	0.18
Iganga	0.14	0.26	0.24
Jinja	0.20	0.16	0.17
Kabale	0.11	0.12	0.12
Kabarole	0.23	0.21	0.21
Kamuli	0.28	0.28	0.28
Kapchorwa	0.29	0.50	0.49
Kasese	0.11	0.35	0.35
Lira	0.28	0.43	0.42
Luwero	0.21	0.29	0.29
Masaka	0.10	0.16	0.16
Masindi	0.44	0.57	0.54
Mbale	0.14	0.19	0.19
Mbarara	0.28	0.27	0.27
Moyo	0.15	0.29	0.28
Mpigi	0.10	0.18	0.17
Mubende	0.34	0.25	0.27
Mukono	0.12	0.19	0.18
Nebbi	0.19	0.19	0.19
Rakai	0.34	0.25	0.27
Rukungiri	0.12	0.18	0.18
Tororo	0.12	0.26	0.23
TOTAL	0.21	0.25	0.25

Maize mean plot sizes
for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.23	0.47	0.41
Arua	0.19	0.09	0.11
Bundibugyo	0.25	0.27	0.26
Bushenyi	0.05	0.07	0.06
Hoima	0.21	0.14	0.15
Iganga	0.21	0.19	0.20
Jinja	0.13	0.12	0.12
Kabale	0.08	0.08	0.08
Kabarole	0.21	0.16	0.17
Kamuli	0.15	0.19	0.18
Kapchorwa	0.41	0.17	0.30
Kasese	0.25	0.24	0.24
Lira	0.07	0.20	0.17
Luwero	0.12	0.07	0.07
Masaka	0.13	0.18	0.16
Masindi	0.41	0.47	0.45
Mbale	0.18	0.19	0.19
Mbarara	0.14	0.18	0.17
Moyo	0.17	0.22	0.21
Mpigi	0.06	0.06	0.06
Mubende	0.10	0.18	0.17
Mukono	0.12	0.12	0.12
Nebbi	0.21	0.15	0.17
Rakai	0.17	0.26	0.24
Rukungiri	0.14	0.34	0.27
Tororo	0.09	0.19	0.16
TOTAL	0.16	0.14	0.16

Finger millet mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.42	0.46	0.46
Arua	0.11	0.15	0.15
Bushenyi	0.50	0.56	0.53
Hoima	0.19	0.16	0.16
Iganga	0.17	0.31	0.31
Jinja	0.11	0.13	0.13
Kabale	0.08	0.22	0.11
Kabarole	0.20	0.17	0.17
Kamuli	0.16	0.31	0.29
Kapchorwa	0.09	0.16	0.14
Kasese	0.11	0.08	0.09
Lira	0.29	0.45	0.45
Luwero	0.03	0.11	0.10
Masaka	0.05	0.06	0.05
Masindi	0.10	0.16	0.15
Mbale	0.10	0.17	0.17
Mbarara	0.05	0.13	0.12
Moyo	-	0.36	0.36
Mubende	0.10	0.14	0.14
Mukono	0.10	0.26	0.25
Nebbi	0.31	0.15	0.17
Rakai	0.11	0.15	0.14
Rukungiri	0.21	0.19	0.20
Tororo	0.27	0.26	0.26
TOTAL	0.22	0.29	0.28

Finger millet mean plot sizes
for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	-	0.45	0.45
Arua	0.22	0.15	0.16
Bundibugyo	0.32	0.40	0.37
Bushenyi	0.11	0.13	0.12
Hoima	0.15	0.14	0.14
Iganga	-	0.04	0.04
Jinja	-	0.08	0.08
Kabale	0.06	0.06	0.06
Kabarole	0.22	0.08	0.09
Kamuli	0.08	0.17	0.16
Kapchorwa	-	0.24	0.24
Kasese	0.11	0.18	0.16
Lira	-	0.44	0.44
Luwero	0.08	0.08	0.08
Masaka	0.04	0.04	0.04
Masindi	0.29	0.30	0.29
Mbarara	0.10	0.09	0.09
Moyo	-	0.24	0.24
Mpigi	0.05	-	0.05
Mubende	0.13	0.17	0.16
Mukono	-	0.08	0.08
Nebbi	0.08	0.14	0.13
Rakai	0.07	0.13	0.12
Rukungiri	0.22	0.13	0.16
Tororo	-	0.06	0.06
TOTAL	0.13	0.12	0.12

Sorghum mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.27	0.33	0.32
Arua	0.13	0.15	0.15
Bundibugyo	0.25	0.33	0.29
Bushenyi	0.11	0.27	0.23
Hoima	0.15	0.14	0.14
Iganga	0.11	0.13	0.12
Jinja	0.06	0.16	0.11
Kabale	0.37	0.31	0.33
Kabarole	0.13	0.16	0.15
Kamuli	-	0.08	0.08
Kasese	0.06	0.09	0.08
Lira	0.29	0.35	0.35
Luwero	0.19	0.26	0.25
Masaka	0.14	0.16	0.15
Mbale	-	0.19	0.19
Mbarara	0.08	0.18	0.13
Moyo	0.24	0.40	0.33
Mpigi	0.13	0.09	0.10
Mubende	0.12	0.16	0.14
Mukono	0.19	0.06	0.11
Nebbi	0.16	0.13	0.14
Rakai	0.21	0.26	0.25
Rukungiri	0.14	0.32	0.29
Tororo	0.11	0.12	0.12
UGANDA	0.26	0.26	0.26

Sorghum mean plot sizes
for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.26	0.24	0.26
Arua	0.09	0.13	0.13
Bushenyi	0.08	0.10	0.09
Hoima	0.12	0.10	0.10
Iganga	-	0.11	0.11
Jinja	-	0.06	0.06
Kabale	0.06	0.07	0.07
Kabarole	0.12	0.11	0.12
Kamuli	0.05	0.04	0.05
Lira	0.26	0.35	0.31
Luwero	0.12	0.31	0.24
Masaka	0.29	0.14	0.23
Mbarara	0.07	0.09	0.08
Moyo	0.19	0.27	0.26
Mpigi	0.08	0.06	0.06
Mubende	0.07	0.06	0.07
Mukono	0.12	0.12	0.12
Nebbi	0.19	0.13	0.16
Rakai	0.23	0.21	0.22
Rukungiri	0.11	0.10	0.10
Tororo	0.11	0.10	0.11
UGANDA	0.14	0.14	0.14

Beans mean plot sizes
first season

DISTRICT	PURE	MIXED	COMBINED
Apac	0.31	0.43	0.41
Arua	0.34	0.11	0.11
Bundibugyo	0.31	0.27	0.27
Bushenyi	0.06	0.10	0.09
Hoima	0.11	0.10	0.18
Iganga	0.07	0.18	0.18
Jinja	0.14	0.10	0.10
Kabale	0.10	0.61	0.43
Kabarole	0.10	0.13	0.12
Kamuli	0.05	0.10	0.09
Kapchorwa	0.19	0.57	0.44
Kasese	0.13	0.18	0.18
Lira	0.21	0.39	0.33
Luwero	0.19	0.13	0.13
Masaka	0.07	0.13	0.13
Masindi	0.15	0.11	0.12
Mbale	0.06	0.14	0.11
Mbarara	0.06	0.013	0.12
Mpigi	0.29	0.11	0.12
Mubende	0.18	0.19	0.19
Mukono	0.06	0.17	0.16
Nebbi	0.10	0.11	0.11
Rakai	0.14	0.18	0.18
Rukungiri	0.20	0.14	0.16
Tororo	0.05	0.05	0.05
UGANDA	0.12	0.19	0.18

Beans mean plot sizes
second season

DISTRICT	PURE	MIXED	COMBINED
Apac	0.23	0.38	0.35
Arua	0.18	0.17	0.17
Bundibugyo	0.21	0.23	0.22
Bushenyi	0.07	0.14	0.13
Hoima	0.11	0.11	0.11
Iganga	0.06	0.14	0.14
Jinja	0.10	0.10	0.10
Kabale	0.08	0.07	0.07
Kabarole	0.07	0.10	0.10
Kamuli	0.06	0.07	0.07
Kapchorwa	0.11	0.05	0.09
Kasese	0.06	0.13	0.12
Lira	0.09	0.23	0.22
Luwero	0.11	0.09	0.09
Masaka	0.10	0.09	0.09
Masindi	0.15	0.18	0.17
Mbale	0.11	0.12	0.12
Mbarara	0.07	0.09	0.09
Mpigi	0.08	0.07	0.07
Mubende	0.05	0.09	0.07
Mukono	0.09	0.11	0.11
Nebbi	0.10	0.11	0.11
Rakai	0.12	0.14	0.13
Rukungiri	0.16	0.12	0.13
Tororo	0.18	0.10	0.13
UGANDA	0.09	0.10	0.11

Field peas mean plot sizes
for first season

DISTRICT	PURE	MIXED	COMBINED
Bushenyi	0.20	0.11	0.16
Kabale	0.40	0.07	0.34
Kabarole	0.06	0.32	0.17
Masaka	0.03	0.05	0.05
Mbarara	0.08	0.10	0.09
Mpigi	-	0.11	0.11
Rakai	0.08	-	0.08
UGANDA	0.20	0.11	0.18

Field peas mean plot sizes
for second season

DISTRICT	PURE	MIXED	COMBINED
Bushenyi	0.12	0.02	0.08
Kabale	0.08	0.08	0.08
Kabarole	0.08	0.18	0.17
Kamuli	0.06	0.03	0.03
Masaka	0.2	0.10	0.09
Mbarara	0.08	0.04	0.07
Mpigi	0.08	0.10	0.09
Mubende	-	0.21	0.16
Rakai	0.05	0.02	0.04
Rukungiri	0.04	-	0.04
Tororo	0.07	0.15	0.12
UGANDA	0.08	0.10	0.09

Cow peas mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.44	-	0.44
Arua	-	0.48	0.48
Hoima	0.12	0.14	0.13
Iganga	-	0.12	0.12
Kabarole	0.06	0.05	0.06
Lira	0.11	0.26	0.21
Masaka	0.07	-	0.07
Mbale	-	0.04	0.04
Mbarara	0.08	0.04	0.04
Mpigi	0.33	-	0.33
Mukono	-	0.08	0.08
Rakai	-	0.10	0.10
Tororo	0.35	0.25	0.26
UGANDA	0.13	0.16	0.15

Cowpeas mean plot sizes
for second season

DISTRICT	PURE	MIXED	COMBINED
Apac	0.28	0.34	0.29
Arua	0.30	0.10	0.13
Hoima	0.20	-	0.20
Iganga	0.06	0.07	0.07
Jinja	-	0.03	0.03
Kabarole	0.09	-	0.09
Lira	-	0.39	0.39
Masaka	0.14	0.03	0.07
Mbale	0.05	-	0.05
Mbarara	-	0.01	0.01
Moyo	0.16	0.22	0.20
Mpigi	0.02	0.03	0.03
Mukono	0.01	0.05	0.04
Nebbi	0.14	0.20	0.18
Tororo	0.10	0.10	0.10
UGANDA	0.12	0.10	0.11

Pigeon peas mean plot sizes

DISTRICT	PURE	MIXED	COMBINED
Apac	0.64	0.46	0.46
Arua	0.16	0.10	0.10
Hoima	-	0.04	0.04
Iganga	-	0.05	0.05
Lira	0.31	0.34	0.33
Masindi	-	0.10	0.10
Moyo	0.10	0.39	0.30
Mpigi	-	0.05	0.05
Mukono	-	0.02	0.02
Nebbi	0.28	-	0.28
UGANDA	0.30	0.29	0.29

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Groundnuts mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.19	0.33	0.31
Arua	0.09	0.21	0.07
Bundibugyo	0.30	0.23	0.25
Bushenyi	0.07	0.35	0.31
Hoima	0.10	0.11	0.11
Iganga	0.05	0.12	0.12
Jinja	0.07	0.07	0.07
Kabale	0.12	0.07	0.07
Kabarole	0.06	0.14	0.14
Kamuli	0.07	0.17	0.16
Kapchorwa	0.14	-	0.14
Kasese	0.03	0.05	0.05
Lira	0.05	0.24	0.20
Luwero	0.13	0.15	0.15
Masaka	0.07	0.13	0.12
Masindi	0.30	0.17	0.18
Mbale	0.05	0.20	0.18
Mbarara	0.09	0.10	0.10
Moyo	0.8	0.42	0.42
Mpigi	0.34	0.12	0.12
Mubende	0.06	0.08	0.08
Mukono	0.13	0.08	0.09
Nebbi	-	0.13	0.13
Rakai	0.15	0.12	0.13
Rukungiri	0.11	0.13	0.12
Tororo	0.07	0.07	0.07
UGANDA	0.10	0.15	0.14

Groundnuts mean plot sizes
for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.25	0.24	0.24
Arua	0.11	0.10	0.10
Bundibugyo	0.26	0.21	0.22
Bushenyi	0.07	0.10	0.09
Hoima	0.12	0.12	0.11
Iganga	0.03	0.07	0.07
Jinja	0.07	0.06	0.06
Kabale	0.04	0.06	0.05
Kabarole	0.09	0.10	0.10
Kamuli	1.18	0.15	0.21
Kasese	-	0.06	0.05
Lira	0.03	0.18	0.14
Luwero	0.06	0.07	0.07
Masaka	0.06	0.08	0.08
Masindi	0.26	0.15	0.17
Mbale	0.07	0.17	0.07
Mbarara	0.06	0.08	0.08
Moyo	0.04	0.25	0.24
Mpigi	0.05	0.06	0.06
Mubende	0.08	0.08	0.08
Mukono	0.04	0.07	0.06
Nebbi	0.13	0.14	0.14
Rakai	0.08	0.08	0.08
Rukungiri	0.11	0.09	0.09
Tororo	0.03	0.05	0.04
UGANDA	0.13	0.09	0.09

Simsim mean plot sizes for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.40	0.44	0.42
Arua	-	0.10	0.10
Iganga	-	0.04	0.04
Jinja	-	0.05	0.04
Kamuli	0.05	0.02	0.02
Lira	0.39	0.33	0.34
Luwero	-	0.04	0.04
Masindi	0.24	0.11	0.17
Moyo	0.49	0.46	0.48
Mukono	0.08	0.05	0.05
Nebbi	0.10	-	0.10
UGANDA	0.37	0.31	0.32

Simsim mean plot sizes for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.42	0.40	0.40
Arua	0.22	0.25	0.24
Iganga	0.04	0.12	0.11
Jinja	-	0.04	0.04
Kamuli	0.05	0.05	0.05
Lira	0.41	0.40	0.40
Luwero	0.04	0.06	0.06
Masindi	-	0.06	0.06
Moyo	0.19	0.28	0.003
Mubende	-	0.06	0.06
Mukono	0.02	0.08	0.08
Nebbi	0.26	0.15	0.21
Tororo	0.03	0.02	0.03
UGANDA	0.31	0.26	0.27

p71-5/c-K

Soya beans mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Apac	-	0.11	0.11
Arua	-	0.12	0.12
Bundibugyo	0.26	0.24	0.24
Bushenyi	0.01	0.09	0.06
Hoima	0.08	0.08	0.08
Iganga	0.24	0.14	0.15
Jinja	0.09	0.07	0.07
Kamuli	0.09	0.08	0.08
Kasese	-	0.03	0.03
Lira	0.35	0.30	0.32
Luwero	-	0.07	0.07
Masindi	0.56	-	0.56
Mbale	-	0.17	0.17
Mbarara	0.05	-	0.05
Mpigi	-	0.26	0.26
Mubende	0.06	-	0.06
Mukono	0.09	-	0.09
Nebbi	-	0.34	0.34
Tororo	0.21	0.45	0.31
TOTAL	0.18	0.18	0.18

Soya bean mean plot sizes
for second season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.24	-	0.24
Arua	0.09	0.21	0.20
Bundibugyo	0.15	0.19	0.18
Bushenyi	0.02	-	0.02
Hoima	0.06	0.11	0.10
Iganga	0.03	0.12	0.12
Jinja	0.11	0.09	0.09
Kamuli	0.07	0.14	0.14
Kasese	-	0.04	0.04
Lira	0.17	0.25	0.22
Luwero	-	0.03	0.03
Masaka	0.05	-	0.05
Masindi	-	0.26	0.26
Mbale	0.62	0.18	0.36
Moyo	-	0.10	0.08
Mpigi	0.02	0.16	0.11
Mubende	0.03	0.22	0.17
Mukono	0.04	0.07	0.07
Nebbi	0.10	0.13	0.12
Rakai	0.70	1.16	1.02
Tororo	0.09	0.30	0.19
TOTAL	0.16	0.14	0.14

Cotton mean plot sizes.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.36	0.37	0.37
Arua	0.23	0.20	0.21
Hoima	0.30	0.20	0.22
Iganga	0.11	0.17	0.17
Kamuli	0.26	0.18	0.19
Kasese	0.37	0.37	0.37
Lira	0.35	0.44	0.40
Luwero	0.14	0.10	0.11
Masindi	0.39	0.34	0.36
Mbale	0.10	0.11	0.11
Moyo	0.22	0.40	0.30
Nebbi	0.33	0.28	0.31
Tororo	0.20	0.21	0.21
TOTAL	0.27	0.25	0.26

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Irish potatoes mean plot sizes
for first season.

DISTRICT	PURE	MIXED	COMBINED
Bundibugyo	0.05	0.05	0.05
Bushenyi	0.16	0.49	0.41
Hoima	0.04	0.06	0.06
Iganga	0.02	-	0.02
Kabale	0.37	0.10	0.30
Kabarole	0.05	0.10	0.09
Kapchorwa	0.18	-	0.18
Kasese	0.03	0.04	0.04
Luwero	-	0.04	0.04
Masaka	0.04	0.04	0.04
Mbarara	0.04	0.16	0.14
Mpigi	-	0.02	0.02
Mubende	0.08	0.10	0.09
Rakai	0.30	0.16	0.21
TOTAL	0.30	0.12	0.21

Irish potatoes mean plot sizes for second season.

	PURE	MIXED	COMBINED
Bushenyi	0.05	0.04	0.04
Hoima	0.04	0.05	0.05
Iganga	0.03	0.01	0.02
Kabale	0.08	0.07	0.07
Kabarole	0.09	0.05	0.07
Kasese	-	0.04	0.04
Luwero	0.06	0.08	0.06
Masaka	0.02	0.02	0.02
Mbale	-	0.28	0.28
Mbarara	0.06	0.05	0.05
Mpigi	0.01	0.02	0.02
Mubende	0.04	0.04	0.04
Rakai	0.09	0.08	0.08
Rukungiri	0.04	0.02	0.02
Tororo	0.13	-	0.13
TOTAL	0.06	0.05	0.06

Sweet potatoes mean plot sizes
for first seasom.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.11	0.14	0.12
Arua	0.04	0.16	0.12
Bundibugyo	0.16	0.21	0.19
Bushenyi	0.13	0.12	0.12
Hoima	0.10	0.10	0.10
Iganga	0.10	0.15	0.12
Jinja	0.08	0.07	0.08
Kabale	0.25	0.07	0.17
Kabarole	0.09	0.09	0.09
Kamuli	0.11	0.09	0.10
Kapchorwa	0.08	0.10	0.09
Kasese	0.06	0.04	0.05
Lira	0.13	0.29	0.15
Luwero	0.26	0.19	0.22
Masaka	0.06	0.09	0.08
Masindi	0.09	0.09	0.09
Mbale	0.06	0.15	0.08
Mbarara	0.06	0.06	0.06
Moyo	0.27	0.16	0.21
Mpigi	0.13	0.42	0.33
Mubende	0.12	0.08	0.09
Mukono	0.10	0.13	0.12
Nebbi	0.05	0.07	0.06
Rakai	0.09	0.08	0.08
Rukungiri	0.06	0.11	0.09
Tororo	0.07	0.08	0.07
TOTAL	0.11	0.13	0.12

Sweet potatoes mean plot sizes for secomd season.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.15	0.06	0.14
Arua	0.08	0.05	0.07
Bundibugyo	0.24	0.11	0.20
Bushenyi	0.08	0.06	0.09
Hoima	0.09	0.07	0.08
Iganga	0.08	0.10	0.09
Jinja	0.07	0.09	0.08
Kabale	0.07	0.08	0.08
Kabarole	0.06	0.12	0.10
Kamuli	0.10	0.08	0.09
Kapchorwa	0.08	-	0.08
Kasese	0.03	0.04	0.04
Lira	0.11	0.23	0.13
Luwero	0.08	0.08	0.08
Masaka	0.07	0.04	0.06
Masindi	0.07	0.10	0.08
Mbale	0.06	0.05	0.06
Mbarara	0.05	0.06	0.05
Moyo	0.17	0.13	0.16
Mpigi	0.06	0.07	0.07
Mubende	0.07	0.05	0.06
Mukono	0.09	0.09	0.09
Nebbi	0.04	0.04	0.04
Rakai	0.08	0.10	0.09
Rukungiri	0.06	0.11	0.09
Tororo	0.08	0.08	0.08
TOTAL	0.08	0.09	0.08

Cassava mean plot sizes.

DISTRICT	PURE	MIXED	COMBINED
Apac	0.44	0.36	0.41
Arua	0.17	0.19	0.18
Bundibugyo	0.30	0.27	0.28
Bushenyi	0.06	0.12	0.08
Hoima	0.13	0.13	0.13
Iganga	0.24	0.16	0.19
Jinja	0.09	0.10	0.10
Kabale	0.16	0.08	0.11
Kabarole	0.07	0.13	0.12
Kamuli	0.15	0.15	0.15
Kapchorwa	0.06	0.12	0.07
Kasese	0.08	0.8	0.08
Lira	0.35	0.25	0.32
Luwero	0.11	0.10	0.11
Masaka	0.09	0.09	0.09
Masindi	0.27	0.24	0.25
Mbale	0.09	0.11	0.10
Mbarara	0.05	0.10	0.09
Moyo	0.19	0.22	0.22
Mpigi	0.06	0.07	0.07
Mubende	0.09	0.08	0.08
Mukono	0.14	0.14	0.14
Nebbi	0.26	0.24	0.25
Rakai	0.17	0.14	0.15
Rukungiri	0.14	0.03	0.09
Tororo	0.17	0.15	0.16
UGANDA	0.18	0.16	0.17

Banana (Food, Beer, Sweet Types)
Mean plot sizes.

DISTRICT	BANANA TYPE: Food	Beer	Sweet
Apac	0.28	-	0.48
Arua	-	-	0.21
Bundibugyo	0.37	0.42	0.41
Bushenyi	0.44	0.39	0.89
Hoima	0.25	0.36	1.21
Iganga	0.29	0.30	0.15
Jinja	0.22	0.27	0.39
Kabale	0.12	0.19	0.14
Kabarole	0.36	0.55	0.23
Kamuli	0.20	0.11	0.13
Kapchorwa	0.19	-	0.13
Kasese	0.36	0.33	0.09
Lira	0.11	-	0.39
Luwero	0.29	0.32	0.23
Masaka	0.42	0.43	0.39
Masindi	0.21	0.25	0.26
Mbale	0.23	0.11	0.08
Mbarara	0.50	0.87	-
Moyo	-	-	0.17
Mpigi	0.25	0.31	0.09
Mubende	0.39	0.43	0.23
Mukono	0.23	0.34	0.41
Nebbi	0.11	-	0.28
Rakai	0.49	0.39	0.16
Rukungiri	0.30	0.39	0.25
Tororo	0.26	0.24	0.24
UGANDA	0.35	0.36	0.31

Coffeé mean plot sizes.

DISTRICT	PURE	MIXED	COMBINED
Arua	0.06	0.06	0.06
Bundibugyo	0.43	0.48	0.47
Bushenyi	0.16	0.22	0.20
Hoima	0.21	0.23	0.22
Iganga	0.29	0.27	0.28
Jinja	0.28	0.30	0.30
Kabale	0.12	0.05	0.05
Kabarole	0.10	0.13	0.12
Kamuli	0.23	0.29	0.27
Kapchorwa	0.10	0.17	0.16
Kasese	0.25	0.23	0.24
Luwero	0.39	0.29	0.31
Masaka	0.41	0.45	0.45
Masindi	0.21	0.12	0.15
Mbale	0.15	0.32	0.30
Mbarara	0.20	0.20	0.20
Mpigi	0.33	0.33	0.33
Mubende	0.47	0.50	0.49
Mukono	0.38	0.27	0.28
Nebbi	0.22	0.20	0.20
Rakai	0.28	0.50	0.45
Rukungiri	0.19	0.22	0.21
Tororo	0.01	0.03	0.02
UGANDA	0.29	0.31	0.31

APPENDIX II

SELECTED QUESTIONNAIRES

CONFIDENTIAL

FORM NCAL 4A

PAGE....OF....

THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE
NATIONAL CENSUS OF AGRICULTURE AND LIVESTOCK 1987-1991
CROP AREAS (TEMPORARY CROPS)

4A.0 IDENTIFICATION

ZONE	REGION	DISTRICT	COUNTY	SUB-COUNTY	PARISH	SUB-PARISH	HOLDING NUMBER	CHECK DIGIT
1	2	3	4	5	6	7	8	9
|	|	|	|	|	|	|	| | |	

ENUMERATOR'S NAME ..... CODE: 10 DATE: 11

SUPERVISOR'S NAME ..... CODE: 12 DATE: 13

SUPERVISOR'S SIGNATURE .....

4A.1 HOLDER

4A.1.1 HOLDER'S NAME ..... 4A.1.2 NAME OF PERSON INTERVIEWED .....

4A.1.3 RELATIONSHIP TO HOLDER : 14

RELATIONSHIP :
Holder = 1 Father/Mother = 4
Wife/Husband = 2 Other Rel. = 5
Son/Daughter = 3 No Relation = 6

4A.2 SEASON 15

First Rains = 1
Second Rains = 2

4A.4 CROP AREAS (TEMPORARY CROPS)

PARCEL NUMBER	PLOT NUMBER	AREA		MAIN CROP		YEAR PLANTED	CONSTITUENT CROPS					
		Holder's Est.(Acres)	Measured (Ha)	NAME	CODE		NAME	CODE	NAME	CODE	NAME	CODE
1	2	3	4		6	7		8		9		10
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		.	.									
		.	.									

YEAR PLANTED : This Year = 1 ; Last Year = 2

PLEASE TURN OVER

4A.5 PLOT AREA MEASUREMENTS

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

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FORM NCAL 4B

PAGE...OF...

THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE
NATIONAL CENSUS OF AGRICULTURE AND LIVESTOCK 1987-1991
TREE CROPS AND BANANAS

4B.0 IDENTIFICATION

ZONE	REGION	DISTRICT	COUNTY	SUB-COUNTY	PARISH	SUB-PARISH	HOLDING NUMBER	CHECK DIGIT
1	2	3	4	5	6	7	8	9

ENUMERATOR'S NAME ..... CODE: 10 DATE: 11

SUPERVISOR'S NAME ..... CODE: 12 DATE: 13

SUPERVISOR'S SIGNATURE .....

4B.1 HOLDER
4B.1.1 HOLDER'S NAME .....
4B.1.2 NAME OF PERSON INTERVIEWED .....
4B.1.3 RELATIONSHIP TO HOLDER [14]

RELATIONSHIP :
Holder = 1 Father/Mother = 4
Wife/Husband = 2 Other Rel. = 5
Son/Daughter = 3 No Relation = 6

4B.2 SEASON : [15]
First Rains = 1
Second Rains = 2

4B.4 CROP AREA

PARCEL NUMBER	PLOT NO.	CROP		AREA		YEAR OF ESTABLISHMENT	CROP STAND P = 1 D = 2 L = 3	NUMBER OF TREES OR STOOLS	CONSTITUENT CROPS					
		NAME	CODE	HOLDER'S ESTIMATE (Acres)	MEASURED (Ha)				NAME	CODE	NAME	CODE	NAME	CODE
1	2		3	4	5	6	7	8		9		10		11

CROP STAND: P = Pure crop stand; D = Perennial/annual crop stand; L = Long permanent crop stand

4B.5 PLOT AREA MEASUREMENTS

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

PARCEL NUMBER	PLOT NUMBER	SIDE	1	2	3	4	5	6	7	8	9
		METERS									
		F.B.									
		B.B.									
		DIFF.									

4B.6 SCATTERED TREE CROPS

NAME	CODE	NUMBER OF TREES
Mangoes	7 9	
Oranges/Lemons	7 1	
Pawpaws	7 2	
Jackfruit	0 1	
Casnewnut	7 4	
Avocado	0 7	
Guava	0 3	
Passion fruit	0 4	
Bamboo	9 7	
Natural forest trees	9 5	
Plantation trees	9 6	

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THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE
NATIONAL CENSUS OF AGRICULTURE AND LIVESTOCK 1987-1991.
CROP DENSITY COUNT AND YIELD ESTIMATION

5A.0 IDENTIFICATION

ZONE	REG-ION	DIST-RICT	COUNTY	SUB-COUNTY	PARISH	SUB-PARISH	HOLDING NUMBER	CHECK DIGIT
1	2	3	4	5	6	7	8	9
|	|	|	|	|	|	|	| | |	

ENUMERATOR'S NAME ..... CODE: 10 \| \|

DATES OF VISITS

First 11 \| \| \| \| \| \| \|

Harvest 12 \| \| \| \| \| \| \|

HOLDER'S NAME .....

SUPERVISOR'S NAME ..... CODE: 13 \| \| DATE: 14 \| \| \| \| \| \|

SUPERVISOR'S SIGNATURE .....

5A.4 HARVESTED WEIGHT - MAIN CROP:

AT HARVEST(Wet/Green)		AFTER 'PROCESSING'		REMARKS
MEASURED WEIGHT FOR SUB-PLOT [Kilograms]	STATE OF CROP	MEASURED WEIGHT FOR SUB-PLOT [Kilograms]	STATE OF CROP	
1	2	3	4	
| | |		| | |		

5A.4.1 PROBABLE PERIOD OR DATE OF HARVEST:
.....

STATE: With shell = 1; Without shell = 2; With stalk = 3; Without stalk = 4;
In the cob = 5; Seeds = 6; Other (Specify) ..... = 7.

5A.4.2 FOR BANANAS ONLY: NUMBER OF BUNCHES HARVESTED FROM THE SUB-PLOT DURING THE LAST SIX (6) MONTHS ----------> 5 \| \|

5A.4.3 HOW DOES THE HOLDER HARVEST THE CROP IN THE PLOT? 6 \| Green/Fresh = 1; Dry = 2. 7 \| Continuously = 1; All at once = 2.

5A.5 CROP DENSITY:

CROPS (Main crop first)	CODE	NUMBER OF PLANTS/STOOLS	REMARKS
	1	2	
	|	| | | |	
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