REPUBLIC OF ZAMBIA

AGRICULTURAL AND PASTORAL PRODUCTION

(Small and Medium Scale Holdings)
1996-97

STRUCTURAL TYPE AND POST-HARVEST DATA

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PREFACE

The Agriculture, Environment and Fisheries Division of the Central Statistical Office (CSO) conducts, on an annual basis, censuses and sample surveys. These censuses and sample surveys are used in collecting information of agricultural and pastoral production covering both the large-scale holdings and, the small- and medium-scale farming households. The results of these censuses and surveys are published under the series: Agricultural and Pastoral Production reports.

Only the operations of the small and medium scale sub-sector of agriculture are covered in this report. Operations in the large-scale sub-sector are covered in a separate report that is currently under preparation. This report in the series of Agricultural and Pastoral Production data gives information relating to the 1996/97 agricultural season which started on 1st October, 1996 and ended on 30th September, 1997. The Agricultural and Pastoral Production 1996/97 report covers a section of the farming community that is responsible for well over sixty percent of food crop production.

Apart from providing information on the number of rural households and the type of agricultural activities they are engaged in, the report also gives an inventory of livestock and poultry, and the transactions undertaken during the 1996/97 agricultural season. Information on how much inputs were purchased and used, the value of these inputs is provided too. Furthermore, information on utilization of household members' labour and hired casual labour on various crop production tasks, use of animal draught power and mechanical power by and source is published in this report.

An inventory of draught animals and farm equipment, and their estimated value, purchases and sales of these items, was taken and the results are published here-in. In addition to the variables catalogued above, the questionnaire had to be redesigned in order to accommodate the concerns that arose from administering the 1995/96 Post-Harvest Survey questionnaire. The objective of the redesign was to cater for relevance in the variables and to have a free-flowing set of questions which could be administered with ease. Included among data items to be covered was cattle infections, treatment using modern medicines, and number of deaths resulting from infections. Alongside this, data on vaccination and tick control were also collected.

The Post-Harvest Survey covering the 1996/97 agricultural season was the second survey to be conducted under the auspices of the Agriculture Sector Investment Program (ASIP). The first survey covered the 1995/96 agricultural season, and the report has since been published.

Data analysis in this report concentrated on inter-season, inter-provincial, and to some extent intra-provincial comparisons. Since the information presented here-in is at district level, researchers, private individuals, and policy-makers at various levels of Government machinery will get a fuller understanding of the nature and organizational setup of the small and medium scale farming sub-sector of agriculture, through temporal comparison over the two years under ASIP.

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EXECUTIVE SUMMARY

The Post-Harvest Survey (PHS) which is conducted in rural areas at the end of each agricultural season has become an integral part of the annual work programme of the Central Statistical Office. Agricultural data obtained through these surveys are greatly relied upon by many users of such data. The agricultural sector, as one of the major sectors that contribute to the national economy, requires close monitoring through well structured, coordinated and timely executed surveys. Hence, post-harvest data have proved useful in evaluating the effect of agricultural projects in various provinces. Under the Agriculture Sector Investment Programme (ASIP), evaluation of the performance of the agricultural sector has necessitated inclusion of additional and pertinent data items in the Post-Harvest Survey questionnaire. This analytical report presents the findings from the Post-Harvest Survey covering the 1996/97 agricultural season.

The Post-Harvest Survey 1996/97 results cover a wide range of topics compared to pre-ASIP surveys of a similar nature. There is need for qualitative and quantitative information to assess the impact of agricultural policy, as articulated under the Agriculture Sector Investment Programme (ASIP), on the welfare of communities in Zambia.

Demographic Characteristics

During the 1996/97 agricultural season there were 915,307 households in the rural areas of the country. Female-headed households made up 24.2% of this number of households. Copperbelt, Eastern, Luapula, and Western provinces recorded proportions greater than 24.5% of female-headed households. Western Province recorded the highest percentage of 32.1% female-headed households.

Female heads of households were, on average, 4 years older than their male counterparts. The mean age among female heads of households was 48.3 years compared to 44.3 years for male heads. The mean age of female heads was on the elderly side in Central, Eastern, Luapula, Northern, and Western provinces. In these provinces, the mean ages of female heads of households were above 47 years. Male heads of households of a younger age were recorded in Copperbelt, Luapula, and Lusaka provinces. The mean age for male heads in these provinces was 42.9 years, 42.7 years, and 42.8 years, respectively. Western Province recorded the highest mean age for male heads at 47.0 years.

Rural Households by Sex of Head

At the national level, slightly over 33% of male-headed households, were headed by persons aged less than 35 years old. Among female heads, only 19.4% were below the age of 35 years. Luapula, Eastern, and Lusaka provinces recorded 37.0%, 36.2%, and 35.5%, respectively, of male heads to have been below 35 years. In Copperbelt, North-Western, and Western provinces less than 30% of male heads were below 35 years. In all the provinces, over 70% of female heads were aged 35 years or older. Central, Eastern, Lusaka, Northern, Northern, and Western provinces recorded above 80% of female heads to have been 35 years or older.

TABLE 1A: RURAL HOUSEHOLDS BY SEX OF HEAD AND AGE-GROUP DURING THE 1996/97 AGRICULTURAL SEASON, ZAMBIA

GEOGRAPHIC AREA	SEX OF HEAD AND AGE-GROUP			
	MALE		FEMALE	
	BELOW 35 YEARS (%)	35 YEARS AND OLDER (%)	BELOW 35 YEARS (%)	35 YEARS AND OLDER (%)
Central	33.9	66.1	15.0	85.0
Copperbelt	29.0	71.0	25.5	74.5
Eastern	36.2	63.8	15.4	84.6
Luapula	37.0	63.0	24.9	75.1
Lusaka	35.5	64.5	19.9	80.1
Northern	33.7	66.3	17.5	82.5
N-Western	28.3	71.7	28.5	71.5
Southern	31.8	68.2	23.9	76.1
Western	26.6	73.4	17.0	83.0
Zambia	**33.1**	**66.9**	**19.4**	**80.6**

Agricultural Households

A majority of rural households were engaged in one or other activity that constituted agricultural production during the 1996/97 agricultural season. In all, 97.8% of rural households were engaged in agriculture. Across the country, all provinces except Lusaka Province, had over 97% of the rural households engaging in agriculture. Lusaka Province recorded 86.0% of the households while in Eastern Province all the households interviewed were engaged in agriculture.

Only Central Province recorded less than 98% of the agricultural households to have been engaged in crop production. The other provinces had more than 98% of the households reporting crop production.

Livestock rearing was reported by relatively lower percentages of agricultural households except in Central, Southern, and Eastern provinces. These three provinces recorded 27.4%, 52.9%, and 54.5% of agricultural households, respectively, to have reared livestock. The lowest proportions of livestock rearing households were reported for Copperbelt Province (12.1%), and Luapula Province (14.5%).

Apart from 47.4% of the households in Lusaka Province, more than 50% of the agricultural households in each of the other provinces reported raising poultry. The highest percentages of households raising poultry were recorded in Central Province (74.6%), Northern Province (74.9%), and Southern Province (77.2%).

Fish farming is not a widespread activity, however, gaining ground in the provinces where it has been introduced and promoted. Indicatively, fish farming is being practiced in all provinces except Copperbelt, Lusaka, and Southern provinces. It is probable that these provinces have fish farmers who, unfortunately could not be captured due to their sparseness vis-à-vis the sampling scheme adopted for the survey.

TABLE 1B: AGRICULTURAL HOUSEHOLDS BY ACTIVITY DURING THE 1996/97 AGRICULTURAL SEASON

GEOGRAPHIC AREA	TOTAL RURAL HOUSEHOLDS	PERCENT AGRIC. HOUSEHOLDS	AGRICULTURAL HOUSEHOLDS ENGAGED IN…			
			CROPS (%)	LIVESTOCK (%)	POULTRY (%)	FISH FARMING (%)
Central	89,874	96.4	97.6	27.4	74.6	0.02
Copperbelt	38,752	98.6	99.6	12.1	56.5	0.0
Eastern	197,169	100.0	99.7	54.5	70.8	0.01
Luapula	116,183	97.3	99.1	14.5	69.3	0.1
Lusaka	23,288	86.0	98.2	23.0	47.4	0.0
Northern	166,891	97.4	99.0	22.4	74.9	0.9
N-Western	60,776	98.8	98.6	20.3	55.0	0.8
Southern	111,170	97.9	98.9	52.9	77.2	0.0
Western	111,204	97.5	99.1	17.0	52.6	0.02
Zambia	**915,307**	**97.8**	**99.0**	**31.2**	**68.1**	**0.2**

Crop-growing Households

There were large proportions of crop-growing households that grew maize, groundnuts, cassava, and millet during the 1996/97 agricultural season. Maize-growing households accounted for 75.5% of crop-growing households while those engaged in growing groundnuts were 39.7%, those growing cassava were 38.3%, and households growing millet accounted for 19.9%.

The total area planted to various crops was 1.21 million hectares. The area planted to maize accounted for 47.4% of the total area planted to crops that season. In second place was cassava, which accounted for 22.2%, and third came groundnuts under 9.4% of the total area under crops during the 1996/97 agricultural season.

The production of both burley and virginia tobacco is “localized” and the sampling scheme used is not adequate enough to capture comprehensive data on tobacco. Hence, the low acreage that appears in the report. Similarly, cow peas and ground beans, which in many instances are grown in mixture with other crops like maize and sorghum, tend to occupy small areas in the fields where they are grown.

Food crop production totaled 1.12 million metric tons, and the major component of this food stock was maize (66.6%), followed by cassava (16.9%), and millet (4.5%).

TABLE 2A: CROP-GROWING HOUSEHOLDS, AREA UNDER CROP, AND PRODUCTION

CROP	HOUSEHOLDS REPORTING	AREA UNDER CROP (Hectares)	AVARAGE CROP (Area) PER H/HOLD	PRODUCTION (Metric tons)	PRODUCTION Per Ha	AVERAGE PRODUCTION Per H/HOLD (MT)
Maize	669,063	571,320	0.85	748,888.7	1.31	1.12
Sorghum	84,844	37,124	0.44	23,604.5	0.63	0.28
Rice (Paddy)	20,447	6,869	0.34	8,164.6	1.19	0.40
Millet	176,474	65,266	0.37	50,401.3	0.77	0.29
Sunflower	19,432	14,003	0.72	6,222.2	0.44	0.32
Groundnuts	351,658	113,007	0.32	41,131.7	0.36	0.12
Soyabeans	9,333	4,180	0.45	3,649.2	0.87	0.39
Seed-cotton	85,514	74,279	0.87	58,050.6	0.78	0.68
Irish Potatoes	5,715	1,426	0.25	3,405.4	2.39	0.60
Sweet Potatoes	83,510	18,535	0.22	36,227.0	1.95	0.43
Tobacco (Virginia)	1,072	718	0.67	484.5	0.67	0.45
Tobacco (Burley)	4,056	2,557	0.63	3,258.5	1.27	0.80
Mixed Beans	78,644	21,799	0.28	9,722.1	0.45	0.12
Ground Beans	18,265	3,654	0.20	2,401.1	0.66	0.13
Cow peas	8,171	2,995	0.37	827.9	0.28	0.10
Cassava	339,295	268,327	0.79	189,491.7	-	-

Use of Chemical Fertilizers

Chemical fertilizer distribution, access and timely availability have been vexing issues for the farming community for some time now. The farming communities, particularly the small and medium scale farmers, have been unable to use chemical fertilizers satisfactorily due to three major reasons: lack of credit facility, lack of collateral, and lack of an organized marketing arrangement for the commodity.

During the 1996/97 agricultural season, only 14.9% of crop-growing households in the small and medium scale sector, used both types of chemical fertilizers. The effect of this reduced use of chemical fertilizers is low crop yields. A low yield of 15 bags (1,350 kilogrammes) per hectare was recorded for maize during the 1996/97 agricultural season. Like wise, only 7 (90Kg) bags of sorghum were realized per hectare. There are maize and sorghum varieties, dependent on chemical fertilizers, that can achieve yields of up to 100 (90Kg) bags or 9 metric tons per hectare for maize, and 15 (90Kg) bags or 1,350 kilogrammes per hectare for sorghum.

A total of 14.7 thousand metric tons of basal dressing fertilizers and a total of 14.7 thousand metric tons of top dressing fertilizers were applied to crops during the season.

TABLE 2B: PURCHASE AND USE OF CHEMICAL FERTILIZERS BY TYPE

	Basal Dressing Fertilizers Used (Metric Tons)	Top Dressing Fertilizers Used (Metric Tons)
Purchased	12,824.2	12,770.3
Previous Stock	1,854.9	1,936.7
Total	**14,679.1**	**14,707.0**

Chemical Fertilizer Use by Household by Type

Out of the 669,063 households that grew maize during the 1996/97 agricultural season, only 16.9% used basal dressing fertilizers while 18.4% applied top dressing fertilizers to their maize crop. Of the total quantity of basal dressing fertilizers used up during the 1996/97 agricultural season, 91.5% was applied to maize, 4.6% was applied to burley tobacco, and 2.3% was applied to virginia tobacco. These three crops accounted for 98.4% of the basal dressing fertilizers used during the season.

On the other hand, top dressing fertilizers used during the season was applied to maize – 96.1%, burley tobacco – 3.2%, and virginia tobacco – 0.3%. Considerable proportions of households that grew the two kinds of tobacco used chemical fertilizers compared to those that grew the two kinds of tobacco used chemical fertilizers compared to those that grew maize.

TABLE 2C: CHEMICAL FERTILIZER APPLICATION BY HOUSEHOLDS AND CROP DURING THE 1996/97 AGRICULTURAL SEASON

CROP	HOUSEHOLDS GROWING CROP	APPLICATION OF CHEMICAL FERTILIZERS			
		BASAL DRESSING		TOP DRESSING	
		%HOUSEHOLDS APPLYING	QUANTITY APPLIED (KG)	%HOUSEHOLDS APPLYING	QUANTITY APPLIED (KG)
Maize	669,063	16.9	13,303,496	18.4	14,027,551
Sorghum	84,844	0.5	46,900	0.4	42,000
Rice	20,447	3.6	84,375	1.5	22,350
Millet	176,474	1.0	41,010	0.1	3,700
Sunflower	19,432	-	1,250	-	250
I/Potatoes	1,426	77.7	52,575	-	-
Tobacco (V)	1,072	84.9	330,000	39.9	42,150
Tobacco (B)	4,056	85.3	671,050	85.3	462,250
Mixed Beans	78,644	0.8	15,227	-	-

Household Members' Labour Input on Land Preparation, Planting, Weeding, and Harvesting for various Crops.

In most instances members of agricultural households get involved in agricultural production by providing their labour for no remuneration. Crop production is one activity that involves many tasks before yields are realized. The tasks related to crop production are land preparation, planting, weeding, and harvesting. Labour input by household members depends on the intensity of the task to be accomplished. For example, growing of maize and groundnuts turn out to be the most labour-demanding activities. From land preparation to harvesting a total of at least 2 million household members participated in the various tasks associated with maize production. For groundnuts, at least 990,000 members of households provided unpaid labour in all the production tasks.

During land preparation, females accounted for not less than 50% of the household members who participated for all crops except sunflower, soyabeans, seed-cotton, irish potatoes, sweet potatoes, burley tobacco, and cow peas.

Females presented higher participation in planting of all crops except for soyabeans, irish potatoes, and burley tobacco. The proportion of females among those who took part in planting these crops ranged from 44.9% for burley tobacco to 48.8% for irish potatoes. The highest female involvement was recorded for mixed beans and ground beans in which 63.3% and 63.1% of those who participated, respectively were females.

Weeding of millet, sorghum, groundnuts, sweet potatoes, mixed beans, ground beans, cow peas, and cassava was done by 55% or more female members of households.

Similarly over 50% of those who harvested the crops were female members of households. Among the crops, cassava, millet, and ground beans recorded particularly high percentages of female participation in harvesting of 69.9%, 69.8%, and 60.3%, respectively.

TABLE 3A: HOUSEHOLD MEMBERS' LABOUR INPUT ON LAND PREPARATION, PLANTING, WEEDING, AND HARVESTING

CROP	LAND PREPARATION		PLANTING		WEEDING		HARVESTING	
	TOTAL MEMBERS	FEMALES %	TOTAL MEMBERS	FEMALES %	TOTAL MEMBERS	FEMALES %	TOTAL MEMBERS	FEMALES %
Maize	2,142,901	51.6	2,079,245	53.8	2,142,015	53.0	2,154,731	52.9
Sorghum	261,883	52.3	246,594	55.8	232,557	55.0	254,437	56.3
Rice(Paddy)	66,521	51.7	63,905	51.3	56,568	54.7	64,065	52.8
Millet	517,663	52.2	513,937	55.1	367,373	58.5	428,145	69.8
Sunflower	76,879	49.7	78,808	55.4	69,512	48.8	74,461	54.8
Groundnuts	1,076,424	52.2	1,023,528	57.3	991,082	59.7	1,052,449	56.5
Soyabeans	31,988	48.0	32,042	48.3	30,392	49.2	32,150	49.5
Seed-cotton	285,394	48.5	282,384	50.5	294,009	49.7	288,912	50.8
Irish Potatoes	15,989	45.0	16,238	48.8	14,579	44.6	16,263	45.9
Sweet Potatoes	235,172	49.0	217,247	57.0	114,716	57.3	238,503	58.2
Tobacco (V)	3,717	53.5	3,235	54.0	3,717	53.5	3,717	53.5
Tobacco (B)	11,623	46.3	11,345	44.9	11,345	44.9	11,508	45.7
Mixed Beans	242,229	51.2	200,781	63.3	151,481	57.8	219,672	59.7
Ground Beans	49,314	53.7	43,025	63.1	45,277	62.5	48,323	60.3
Cow peas	30,323	40.9	26,985	57.9	27,088	55.5	28,036	54.5
Cassava	848,092	50.9	753,484	57.7	799,610	59.7	535,088	69.9

Hired Casual Labour on Crop Production

Like in previous surveys, the Post-Harvest Survey 1996/97 did not collect numbers of persons hired on piece-work basis to carry out agricultural operations during the season. The reasons for this are that previous attempts proved futile due to memory lapses, on the part of the respondents, as to who and how many people undertook the various crop production tasks. Furthermore, the complications of how to consider persons who made repeated appearances on the same task during the season. However, not to be without data on hired casual labour, the survey collected information on households that engaged casual labour and the expenses incurred on the hired casual labour.

At the land preparation stage, at least 17.0% of the households that grew cassava, irish potatoes, and virginia tobacco, hired casual labour to prepare land for these crops. As for land preparation for maize, sorghum, rice (paddy), millet, and groundnuts only 10.7%, 8.4%, 12.5%, 11.5% and 7.0% of the households growing the respective crops, hired casual labour for the task. The total expenditure on hired casual labour for land preparation was K3,803.5 million. Land preparation for maize accounted for 42.2% of the total cost. Cassava accounted for 28.2%, followed by groundnuts at 8.4%, and millet accounted for 6.7% of the total expenditure on land preparation for the 1996/97 crop season.

Only planting of virginia tobacco recorded a high percentage of households to have used hired casual labour. The proportion of virginia tobacco growing households that used hired casual labour during planting was 19.4%. For each of the rest of the crops less than 5% of the households employed casual labour to do the planting. A total of K392.8 million was spent on hired casual labour during planting of the crops. About 53.2% of the amount was paid to casual workers who planted maize, 12.9% to those who planted cassava, and 9.6% was paid to workers who planted groundnuts.

Use of hired casual labour during weeding was reported by 19.4% of the households that grew virginia tobacco, 17.3% of the households that grew seed-cotton, 12.3% of those that grew rice (paddy), and 11.2% of the maize growers. An estimated K8,256.9 million was spent on weeding of the various crops, with maize accounting for 18.8%, cassava 4.1%, seed-cotton 3.9%, and groundnuts 3.5%.

During harvesting, households that grew millet, rice (paddy), seed-cotton, and virginia tobacco reported at least 10% among them, to have hired casual labour. Hired casual labour during harvesting cost K1,362.2 million. About 34.5% of the amount was incurred on harvesting maize, 22.4%, on seed-cotton, 13.2% on millet, and 12.3% on harvesting groundnuts.

TABLE 3B: COSTS OF HIRED CASUAL LABOUR ON LAND PREPARATION, PLANTING, WEEDING, AND HARVESTING OF VARIOUS CROPS

CROP	TOTAL COST	HHOLDS GROWING CROP	LAND PREPARATION		PLANTING		WEEDING		HARVESTING	
			% H/HS	COSTS (K'MIL)	% H/HS	COSTS (K'MIL)	% H/HS	COSTS (K'MIL)	% H/HS	COSTS (K'MIL)
Maize		669,063	10.7	1,604.5	2.4	208.9	11.2	1,552.5	4.1	469.5
Sorghum		84,844	8.4	82.5	0.6	4.2	5.2	62.4	2.7	19.4
Rice (Paddy)		20,447	12.5	72.8	3.6	8.2	12.3	39.9	11.9	47.5
Millet		176,474	11.5	253.4	1.7	18.4	2.3	41.4	10.5	179.2
Sunflower		19,432	2.5	8.0	1.8	0.6	1.5	2.9	0.6	0.6
Groundnuts		351,658	7.0	318.6	1.6	37.9	7.7	290.4	4.5	167.1
Soyabeans		9,333	3.8	5.3	1.0	0.6	10.3	10.9	7.9	6.2
Seed-cotton		85,514	5.6	96.0	2.6	28.2	17.3	322.2	14.4	305.2
Irish Potatoes		5,715	18.5	10.4	-	-	4.2	2.9	4.5	0.8
Sweet Potatoes		83,510	10.4	111.4	0.8	5.3	0.8	5.4	0.6	2.6
Tobacco (V)		1,072	19.4	4.2	19.4	10.4	19.4	10.4	19.4	12.5
Tobacco (B)		4,056	8.4	11.9	4.2	2.4	0.8	1.3	8.6	14.3
Mixed Beans		78,644	12.7	140.2	2.1	16.1	1.8	12.5	3.5	91.3
Ground Beans		18,265	6.2	10.1	1.0	1.0	5.1	6.9	2.1	3.9
Cassava		339,295	17.5	1,074.2	2.0	50.6	8.9	336.4	1.1	42.1

Use of Animal Draught Power on Land Preparation

For the 1996/97 agricultural season, the largest number of households that reported to have used animal draught power during land preparation grew maize. These were 213,072 households representing 31.8% of maize growing housdeholds. In second place was groundnuts, with 82,767 households, 23.5% of those that grew the crop, having used animal draught power during land preparation. Households growing seed-cotton recorded the third highest number of households that used animal draught power during land preparation. There were 36,489 households, 42.7% of those who grew the crop, that used animal draught power on the task.

The majority of crop-growing households used oxen during land preparation for the various crops. For each of the crops not less than 70% of the households reported to have used oxen. No donkeys were reported to have been used during land preparation for any of the crops. Use of female cattle was more prominent among growers of ground beans, mixed beans, and irish potatoes. At least 15% of the households growing each of these crops used female cattle for land preparation. A combination of female cattle and oxen was used by households that grew sunflower (22.1%), seed-cotton (19.8%), sweet potatoes (19.4%), and 14.1% those who grew maize used this form of animal draught power during land preparation.

TABLE 4A: USE OF ANIMAL DRAUGHT POWER BY HOUSEHOLDS ON LAND PREPARATION FOR THE 1996/97 AGRICULTURAL SEASON

CROP	HOUSEHOLDS GROWING CROP	FEMALE CATTLE %	OXEN %	DONKEYS %	OXEN AND FEMALE CATTLE %	TOTAL %	TOTAL HOUSEHOLDS	
							NUMBER	AS % OF GROWERS
Maize	669,063	7.9	78.0	-	14.1	100	213,072	31.8
Sorghum	84,844	2.5	87.9	-	9.6	100	21,817	25.7
Rice (Paddy)	20,447	-	97.6	-	2.4	100	6,207	30.4
Millet	176,474	4.1	90.7	-	5.2	100	19,244	10.9
Sunflower	19,432	1.6	76.3	-	22.1	100	13,897	71.5
Groundnuts	351,658	6.6	75.5	-	17.9	100	82,767	23.5
Soyabeans	9,333	3.6	96.4	-	-	100	2,800	30.0
Seed-cotton	85,514	4.5	75.7	-	19.8	100	36,849	42.7
Irish Potatoes	5,715	15.6	84.4	-	-	100	640	11.2
Sweet Potatoes	83,510	8.8	71.8	-	19.4	100	6,870	8.2
Tobacco (V)	1,072	-	100.0	-	-	100	254	23.7
Tobacco (B)	4,056	-	100.0	-	-	100	177	4.4
Mixed Beans	78,644	19.0	71.5	-	9.5	100	3,363	4.3
Ground Beans	18,265	23.8	76.2	-	-	100	2,517	13.8
Cow peas	8,171	12.0	80.6	-	7.4	100	5,622	68.8
Cassava	339,295	0.5	99.5	-	-	100	3,285	1.0

Costs of Animal Draught Power Hired during Land Preparation

A total of K1,430.3 million was used on hiring animal draught power for land preparation for the 1996/97 agricultural season. Hire of oxen cost K1,147.3 million (80.2% of the total cost of hiring animal draught power for land preparation). About K185.2 million (12.9% of the total) was spent on hiring oxen and female cattle, while K98.0 million (6.9% of the total) was spent on hire of female cattle.

The largest amount spent on hire of animal draught power was used on land preparation for maize. Land preparation for maize, using animal draught power, accounted for 69.8% of the total cost. Second was seed-cotton which accounted for 14.3%, and sorghum consumed 3.4% of the total expenditure on land preparation using animal draught power.

TABLE 4B: COSTS OF HIRED ANIMAL DRAUGHT POWER USED ON LAND PREPARATION FOR THE 1996/97 AGRICULTURAL SEASON

CROP	FEMALE CATTLE (K'MILLION)	OXEN (K'MILLION)	DONKEYS (K'MILLION)	OXEN AND FEMALE CATTLE (K'MILLION)	TOTAL (K'MILLION)
Maize	73.6	802.4	-	122.2	998.2
Sorghum	-	33.9	-	15.3	49.2
Rice (Paddy)	-	15.7	-	-	15.7
Millet	-	18.3	-	2.4	20.6
Sunflower	-	13.1	-	0.6	13.6
Groundnuts	16.3	78.3	-	13.4	108.0
Soyabeans	-	3.8	-	-	3.8
Seed-cotton	8.1	166.4	-	29.7	204.2
Irish Potatoes	-	-	-	-	-
Sweet Potatoes	-	1.5	-	-	1.5
Tobacco (V)	-	-	-	-	-
Tobacco (B)	-	-	-	-	-
Mixed Beans	-	6.5	-	1.6	8.1
Ground Beans	-	0.5	-	-	0.5
Cow peas	-	-	-	-	-
Cassava	-	6.9	-	-	-

Use of Animal draught Power During Weeding

A similar situation prevailed during weeding when at least 70 % of the households growing the various crops made use of oxen. An exception to this was millet where only 64.8% of the growers used oxen to weed the fields. Use of female cattle was prominent among households that grew sweet potatoes, 23.6% of the households used female cattle. A combination of oxen and female cattle was used mainly by households that grew maize, millet, sunflower, seed-cotton, and cow peas. Between 19% and 28% of the households that grew each of these crops used this form of animal draught power.

Maize recorded the highest number of households that used animal draught power during weeding. There were 117,361 households representing 17.5% of maize-growing households. Secondly, was seed-cotton where 26,014 households (30.4% of those that grew the crop) used animal draught power during weeding. Thirdly came groundnuts growers, 12,193 households representing 3.5%, used animal draught power. Sunflower growers who used animal power during weeding numbered 11,204 households representing 57.7% of those that grew the crop.

TABLE 4C: USE OF ANIMAL DRAUGHT POWER BY HOUSEHOLDS ON WEEDING DURING THE 1996/97 AGRICULTURAL SEASON

CROP	HOUSEHOLDS GROWING CROP	FEMALE CATTLE %	OXEN %	DONKEYS %	OXEN AND FEMALE CATTLE %	TOTAL %	TOTAL HOUSEHOLDS	
							NUMBER	AS % OF GROWERS
Maize	669,063	8.1	71.3	-	20.6	100	117,361	17.5
Sorghum	84,844	4.8	83.8	-	11.4	100	7,624	9.0
Millet	176,474	7.3	64.8	-	27.9	100	1,750	1.0
Sunflower	19,432	2.4	71.7	-	25.9	100	11,204	57.7
Groundnuts	351,658	2.7	96.7	-	0.6	100	12,193	3.5
Soyabeans	9,333	7.0	93.0	-	-	100	1,423	15.2
Seed-cotton	85,514	6.2	74.7	-	19.1	100	26,014	30.4
Sweet Potatoes	83,510	23.6	76.4	-	-	100	1,042	1.2
Tobacco (V)	1,072	-	100.0	-	-	100	254	23.7
Tobacco (B)	4,056	-	100.0	-	-	100	163	4.0
Mixed Beans	78,644	-	100.0	-	-	100	137	0.2
Ground Beans	18,265	-	100.0	-	-	100	24	0.1
Cow peas	8,171	2.0	78.8	-	19.2	100	2,048	25.1

Marketing of Produce

Food crops such as cassava, sorghum, millet, maize, and cow peas recorded low level of marketed produce. The proportion of marketed produce ranged from 7.2% for cassava to 23.6% for cow peas. These low percentages of marketed produce translated into increased retention for home consumption and in some cases for payment for hired casual labour during the following season. Similarly, less than 25% of the households that produced the named crops reported to have marketed some of the production. The reason for fewer households selling their food crops and the reduced quantity of sales may well lie in the unfavorable rain conditions that were experienced during the previous agricultural seasons.

For cash crops like sunflower, sorghum, soyabeans, seed-cotton, and tobacco, well over 70% of the households that grew each of these crops marketed some or all of their produce. In the same vein over 80% of the quantities produced of these crops were marketed.

A total of K64,035.1 million was realized by households from marketing of crops. Maize sales accounted for 39.6% of this agricultural income, followed by seed-cotton which accounted for 21.0%, and groundnuts made up for 14.0% of the total income from crop marketing. Processing produce for the market cost K192.3 million, out of which 51.4% was spent on processing maize, 11.3% was spent on processing groundnuts, while 7.6% was incurred on processing seed-cotton, and 7.5% on cassava.

The largest amount of money spent on transportation of produce to the market was reported for groundnuts, K196.0 million representing 20.7% of the total expense on transportation. In second place was sweet potatoes, K187.5 million which accounted for 19.8%, and K173.2 million (18.3% of the total) was spent on transporting maize to the market.

For crop marketing, several selling points were identified as possible market outlets. The most commonly reported selling points for all the crops, except sorghum, ground beans, cow peas, and cassava, was “Private Traders”. More than 58% of the households that grew each crop, off-loaded their produce at a private trader’s. Sorghum was sold to local households by 58.5% of the households that marketed their harvest, while 77.0% of those selling ground beans sold to local households. Similarly, for those who sold cow peas and cassava, 72.7% and 44.9%, respectively, sold their produce to local households.

TABLE 5A: HOUSEHOLDS REPORTING SALES OF PRODUCE, QUANTITY SOLD, VALUE OF SALES (K'MILLION), PROCESSING COSTS AND TRANSPORTATION COSTS

CROP	HOUSEHOLDS GROWING CROP	HOUSEHOLDS		QUANTITY SOLD (Metric Tons)		VALUE OF SALES	COSTS OF PROCESSING	TRANSPORT COSTS
		NUMBER	%	NUMBER	%	(K'MILLION)	(K'MILLION)	(K'MILLION)
Maize	669,063	159,739	23.9	165,843.6	22.1	25,358.2	98.9	173.2
Sorghum	84,844	13,155	15.5	2,339.9	9.9	420.6	1.7	3.5
Rice (Paddy)	20,447	11,125	54.4	3,206.6	39.3	944.4	-	11.0
Millet	176,474	42,898	24.3	5,972.1	11.8	1,330.9	0.9	8.5
Sunflower	19,432	14,264	73.4	5,148.8	82.7	824.2	2.3	9.0
Groundnuts	351,658	160,942	45.8	14,299.7	34.8	8,947.0	21.8	196.0
Soyabeans	9,333	7,377	79.0	3,153.2	86.4	753.9	9.1	10.8
Seed-cotton	85,514	81,706	95.5	57,424.5	98.9	13,457.8	14.6	49.0
Irish Potatoes	5,715	5,698	99.7	2,969.0	87.2	881.6	-	47.0
Sweet Potatoes	83,510	40,829	48.9	17,848.2	49.3	2,225.3	1.3	187.5
Tobacco (V)	1,072	1,072	100.0	476.2	98.3	480.8	-	6.2
Tobacco (B)	4,056	4,056	100.0	3,233.3	99.2	1,412.3	12.7	75.7
Mixed Beans	78,644	42,862	54.5	5,357.2	55.1	4,060.9	13.6	64.8
Ground Beans	18,265	7,181	39.3	1,360.9	56.7	426.0	1.0	28.8
Cow peas	8,171	1,957	24.0	195.6	23.6	50.7	-	1.0
Cassava	339,295	54,491	16.1	13,563.5	7.2	2,460.5	14.4	76.3

TABLE 5B: HOUSEHOLDS REPORTING SALES OF PRODUCE BY SELLING POINT

CROP	HOUSEHOLDS REPORTING	SELLING POINT						
		CO-OP SOCIETY %	PRIVATE TRADER %	AGRIC. PROCESSOR %	LOCAL HOUSEHOLDS %	NGO %	CREDIT CO-ORD %	OTHER %
Maize	159,739	-	63.2	0.5	34.4	-	1.5	0.4
Sorghum	13,155	-	40.0	-	58.5	-	-	1.5
Rice (Paddy)	11,125	-	69.3	-	30.7	-	-	-
Millet	42,898	-	59.7	0.4	39.8	-	-	-
Sunflower	14,264	-	65.2	8.1	26.6	-	-	-
Groundnuts	160,942	-	68.6	0.3	30.2	-	-	0.9
Soyabeans	7,377	-	94.1	1.4	3.8	-	0.8	-
Seed-cotton	81,706	-	80.0	12.3	0.5	-	3.9	3.3
Irish. Potatoes	5,698	-	68.3	-	29.5	-	-	2.2
Sweet Potatoes	40,829	-	58.2	-	36.0	-	-	5.8
Tobacco (V)	1,072	-	100.0	-	-	-	-	-
Tobacco (B)	4,056	-	100.0	-	-	-	-	-
Mixed Beans	42,862	-	78.6	0.1	19.8	-	-	1.5
Ground Beans	7,181	-	20.9	-	77.0	-	-	2.1
Cow peas	1,957	-	27.3	-	72.7	-	-	-
Cassava	54,491	-	53.3	-	44.9	-	0.1	1.7

Households Reporting Crop Stock Levels.

At the end of the 1996/97 agricultural season less than 20% of the households that grew each particular food crop had sufficient stocks to last them till the next harvest. Among these households, 16.8% of those that grew millet, 16.1% of cassava growers, and 14.1% of maize growers had stocks that would take them to the next harvest.

For all the food crops cultivated during the season, between 67% and 99% of the growers had run out of the stocks by the close of the 1996/97 agricultural season.

TABLE 6: HOUSEHOLDS REPORTING CROP STOCK LEVELS AT THE END OF THE 1996/97 AGRICULTURAL SEASON

CROP	TOTAL HOUSEHOLDS		HOUSEHOLDS WITH STOCKS UP TO NEXT HARVEST %	HOUSEHOLDS WITH INSUFFICIENT STOCKS %	HOUSEHOLDS WITHOUT STOCKS %
	NUMBER	%			
Maize	669,063	100	14.1	13.6	72.3
Sorghum	84,844	100	5.6	8.3	86.1
Rice (Paddy)	20,447	100	9.1	12.1	78.8
Millet	176,474	100	16.8	15.5	67.7
Sunflower	19,432	100	8.2	4.9	86.9
Groundnuts	351,658	100	6.6	5.4	88.0
Soyabeans	9,333	100	4.7	2.2	93.1
Irish Potatoes	5,715	100	0.4	1.1	98.5
Sweet Potatoes	83,510	100	2.6	1.3	96.1
Ground Beans	18,265	100	1.3	2.2	96.5
Cow peas	8,171	100	1.4	-	98.6
Cassava	339,295	100	16.1	83.9	-

Households Raising Livestock and Change in Number Held over the Season

A total of 111,085 households (39.8% of livestock-raising households) raised cattle during the 1996/97 agricultural season. The total cattle population at the end of the season was estimated at 1.1 million herds. This cattle population was 10.9% smaller than the number reported to have been held at the start of the agricultural season. There were an average of 9.9 cattle per household that raised cattle during the season.

Pigs were raised by 112,211 households (40.2% of livestock-raising households). There were 526,783 pigs in the small and medium scale sub-sector of agriculture at the end of the season. There were 9.2% more pigs at the close of the season, and each pig-raising household held 4.7 pigs on average.

Goats are quite widely reared in this country, and 160,857 households (57.6% of livestock raisers) reported to have a total of 969,079 goats at the end of the agricultural season. The goat population declined by 1.9% during the season. About 6 goats were raised by each household.

Rearing of sheep is sparse and the number of households raising sheep is very small at 8,366 or 3% of all livestock-raising households. At the end of the agricultural season there were 36,470 sheep reported. The population of sheep had reduced by 2.5% over the season, and on average, 4.4 sheep were raised per household.

TABLE 7A: NUMBER OF HOUSEHOLDS RAISING LIVESTOCK, CHANGE IN NUMBER HELD OVER THE PERIOD, AND AVERAGE NUMBER HELD PER HOUSEHOLD

LIVESTOCK TYPE	HOUSEHOLDS REPORTING	AS % OF LIVESTOCK RAISING HOUSEHOLDS	NUMBER HELD ON 30 SEPT 1997	% CHANGE IN NUMBER HELD	NUMBER HELD PER HOUSEHOLD
Cattle	111,085	39.8	1,099,006	(10.9)	9.9
Pigs	112,211	40.2	526,783	9.2	4.7
Goats	160,857	57.6	969,079	(1.9)	6.0
Sheep	8,366	3.0	36,470	(2.5)	4.4

Number of Households Raising Cattle by Type and Change in Number Held over the Season.

About 83.1% of the households that raised cattle during the season reported to have 386,901 cows at the end of the agricultural season. A 20.5% decline in the population of cows occurred over the season due to various factors. The average number of cows per households was estimated at 4.2. The next popularly raised type of cattle was trained oxen which were reported by 77.5% of cattle raisers. Trained oxen numbered 234,158 (19.3% fewer than at the beginning of the season), and were reported at an average of 2.7 animals per household, calves numbering 179,100 were reported to have been raised by 55.6% of the households. The number of calves had risen by 88.5% compared to the number raised at the beginning of the agricultural season. There were 2.9 calves per household that reported them.

A small proportion of 30.2% of the cattle-raising households reported to have 39,036 bulls among their herds of cattle. This number of bulls was 20% less than what was held at the start of the agricultural season. Households reporting bulls had, on average, 1.2 bulls per household.

The largest decline in the number of the type of cattle held was reported for untrained oxen (30.6%), followed by cows (20.5%), then bulls (20%), and trained oxen (19.3%). The least decline of 14.7% was recorded for tollies/steers. The overall situation is that cattle population declined by 10.9% over the 1996/97 agricultural season.

TABLE 7B: NUMBER OF HOUSEHOLDS RAISING CATTLE BY TYPE, CHANGE IN NUMBER HELD OVER THE PERIOD, AND AVERAGE NUMBER HELD PER HOUSEHOLD

CATTLE TYPE	HOUSEHOLDS REPORTING	AS % OF CATTLE RAISING HOUSEHOLDS	NUMBER HELD ON 30 SEPT 1997	% CHANGE IN NUMBER HELD	NUMBER HELD PER HOUSEHOLD
Cows	92,349	83.1	386,901	(20.5)	4.2
Heifers	49,559	44.6	147,533	(13.8)	3.0
Bulls	33,581	30.2	39,036	(20.0)	1.2
Oxen (Untrained)	18,402	16.6	36,871	(30.6)	2.0
Oxen (Trained)	86,131	77.5	234,158	(19.3)	2.7
Tollies/Steers	26,703	24.0	75,407	(14.7)	2.8
Calves	61,762	55.6	179,100	88.5	2.9

Households Raising Poultry

A total of 609,548 households raised poultry during the 1996/97 agricultural season. Among these households, 605,985 households (99.4%) raised chickens. The total number of chickens raised at the end of the agricultural season was 5.1 million, and each household had 8.5 chickens on average.

Only 4.7% poultry-raising households reported to have guinea fowls. There were 134,497 guinea fowls reported at the end of the season. Each of the households raised 4.7 guinea fowls.

Ducks and geese were raised by 36,914 households (6.1% of poultry-raising households). The total number of ducks and geese reported was 176,629 and an average of 4.8 birds were raised per household.

Very few households , 2,479 (0.4% of those raising poultry), raised rabbits during the 1996/97 agricultural season. There were 8,466 rabbits raised at the close of the 1996/97 agricultural season. An average of 3.4 rabbits were reported per household.

TABLE 8: NUMBER OF HOUSEHOLDS RAISING POULTRY, NUMBER HELD AND AVERAGE NUMBER PER HOUSEHOLD

POULTRY TYPE	HOUSEHOLDS REPORTING	AS % OF POULTRY RAISING HOUSEHOLDS	NUMBER HELD ON 30 SEPT 1997	NUMBER HELD PER HOUSEHOLD
Chickens	605,985	99.4	5,138,005	8.5
Guinea fowls	28,896	4.7	134,497	4.7
Ducks and Geese	36,914	6.1	176,629	4.8
Rabbits	2,479	0.4	8,466	3.4

Production of Vegetables for Sale

Growing of vegetables for sale was reported by 107,634 households, representing 12.1% of crop-growing households. The most popular vegetable grown by these households was rape, which was reported to have been grown by 33.2% of the vegetable growers. Tomatoes were the next commonly grown vegetable and was reported by 24.4% of the households. Cabbage was grown by only 14.3% of the vegetables-growing households.

A total of K4,938.4 million was realized from vegetable sales during the 1996/97 agricultural season. The largest income from sales of vegetables was recorded for tomatoes (28.3% of the total), followed by cabbage (21.9%), and rape (21.0%).

TABLE 9: HOUSEHOLDS GROWING VEGETABLES FOR SALE

VEGETABLE TYPE	HOUSEHOLDS REPORTING	% HOUSEHOLDS REPORTING	VALUE OF SALES (K'MILLION)	% VALUE OF SALES
Cabbage	15,436	14.3	1,079.9	21.9
Rape	35,775	33.2	1,035.3	21.0
Spinach	2,192	2.0	94.9	1.9
Tomatoes	26,290	24.4	1,396.8	28.3
Onions	7,488	7.0	384.8	7.8
Okra	2,589	2.4	233.1	4.7
Egg plant	1,727	1.6	59.4	1.2
Pumpkins	792	0.7	21.4	0.4
Chillies	300	0.3	181.5	3.7
Chomolia	1,339	1.2	39.4	0.8
Cauliflower	588	0.5	3.6	0.1
Carrots	235	0.2	2.4	0.1
Lettuce	234	0.2	5.8	0.1
Green beans	508	0.5	20.1	0.4
Green Maize	2,123	2.0	102.0	2.1
Other Vegies	10,018	9.3	277.7	5.6
Total	107,634	-	4,938.4	100.0

Households Engaged in Fish Farming

Fish farming is not very common activities among rural households. The activity requires abundance of water which occurs naturally for ponds to be set up. However, seeing that this is a pre-requisite for successful fish farming to be undertaken, the location of fish farms is dependant on availability of water, and hence fish farmers tend to be far apart within the districts where the activity has been promoted. This situation renders it difficult for the current post-harvest survey sampling frame to adequately capture data on fish farming activities.

During the 1996/97 agricultural season, an estimated 2,145 households reported to have been involved in fish farming. Northern Province accounted for 66.6% of the fish farming households, followed by North-Western Province with 23.6% of the households, and Luapula Province accounted for 6.9% of the households reporting fish farming.

A total of 4,249 ponds were operated during the season, out of which 84.6% were still operational at the end of the agricultural season. Most of the fish ponds operated during the season were in Northern Province (60.0%), followed by North-Western Province (33.9%), and Luapula Province (3.5%). All the ponds operated in Central, Eastern, Luapula, and Western provinces during the season were still operational at the close of the agricultural season. In Northern and North-Western provinces some of the ponds had ceased being operated. In Northern Province there were 89.1% of the ponds that were reported to be operational at the end of the season, while fish farmers in North-western Province had 74.0% operational ponds.

Income accruing from fish sales was estimated at K60.0 million, and 98.8% of this amount was reported by farmers in Northern Province while 1.2% was reported from Luapula Province.

TABLE 10: HOUSEHOLDS ENGAGED IN FISH FARMING, PONDS OPERATED AND INCOME FROM FISH SALES

GEOGRAPHIC AREA	% HOUSEHOLDS REPORTING	% PONDS OPERATED	% PONDS OPERATIONAL	% HOUSEHOLDS RECEIVING INCOME	% INCME RECEIVED
ZAMBIA	100.0	100.0	84.6	100.0	100.0
CENTRAL	0.7	0.3	100.0	-	-
EASTERN	1.1	0.6	100.0	-	-
LUAPULA	6.9	3.5	100.0	26.4	1.2
NORTHERN	66.6	60.0	89.1	73.6	98.8
NORTH-WESTERN	23.6	33.9	74.0	-	-
WESTERN	1.1	1.7	100.0	-	-

Households Engaging Permanent Employees During the 1996/97 Agricultural Season.

An estimated 3,839 households, representing 0.4% of agricultural households, had permanent employees working on their holdings during the 1996/97. Eastern Province had 39.8% of the households with permanent agricultural employees, followed by Central Province reporting 21.3%, and Western Province reported 16.9% of the households.

There were 5,846 permanent employees working for small and medium scale agricultural households. Of this number of employees only 2.7% were females. The largest number of permanent employees was recorded in Eastern Province (33.4%), followed by Central Province (27.9%), and Western Province (14.7%), There were no female agricultural permanent employees reported in Copperbelt, Eastern, North-Western, and Southern provinces. Lusaka Province recorded the highest proportion of females among permanent employees at 10.9%. Western Province recorded the next highest proportion at 9.5%, and Northern Province recorded only 2.6% of the permanent workers to have been females.

TABLE 11A: HOUSEHOLDS EMPLOYING PERMANENT AGRICULTURAL WORKERS DURING THE 1996/97 AGRICULTURAL SEASON.

GEOGRAPHIC AREA	HOUSEHOLDS REPORTING	% HOUSEHOLDS	TOTAL EMPLOYEES	% MALES	% FEMALES
ZAMBIA	**3,839**	**100.0**	**5,846**	**97.3**	**2.7**
CENTRAL	819	21.3	1,633	98.4	1.6
COPPERBELT	16	0.4	64	100.0	0.0
EASTERN	1,526	39.8	1,953	100.0	0.0
LUSAKA	270	7.0	357	89.1	10.9
NORTHERN	205	5.3	383	97.4	2.6
NORTH-WESTERN	231	6.0	387	100.0	0.0
SOUTHERN	125	3.3	210	100.0	0.0
WESTERN	647	16.9	859	90.5	9.5

Average Salaries/Wages Paid to Permanent Agricultural Employees by Sex

Permanent agricultural employees earned a total of K578.2 million cash in salaries and wages during the 1996/97 agricultural season. A further K67.3 million cash equivalent was paid to the workers in form of commodities.

At the national level, male employees earned an average of K99,300 per person for the season compared to K85,00 paid to their females counterparts. Male employees in Lusaka Province were paid much more than in the other provinces. A male employee in Lusaka Province received K260,300 during the season compared to K134,400 paid in Central Province. For the other provinces, a male employee received less than K90,000, with North-Western Province recording the least amount of K45,900 per male employee. Female employees were better paid in Central Province where they earned an average of K480,000 (345,600 more than males) compared to K35,000 paid in Northern Province and K13,300 paid in Lusaka Province. The disparities in the wages/salaries paid may be due to the length of time one remains in agricultural employment during the season. A worker was regarded as a permanent employee if he/she worked on the holding continuously for at least four months. There were no payments in kind reported to have been made to female employees, However, males received payments in kind that averaged an equivalent of K11,800 at the national level. The highest value of payments in kind was reported in North-Western Province at K50,200, followed by Eastern Province at K16,400, and Southern Province at K11,700.

TABLE 11B: AVERAGE SALARIES/WAGES PAID TO PERMANENT EMPLOYEES BY SEX

GEOGRAPHIC AREA	AVERAGE CASH PAYMENT (K)		AVERAGE IN KIND PAYMENTS (K)	
	MALE	FEMALE	MALE	FEMALE
ZAMBIA	**99,300**	**85,000**	**11,800**	**-**
CENTRAL	134,400	480,000	5,400	-
COPPERBELT	60,000	-	-	-
EASTERN	66,900	-	16,400	-
LUSAKA	260,300	13,300	3,500	-
NORTHERN	87,100	35,00	9,700	-
NORTH-WESTERN	45,900	-	50,200	-
SOUTHERN	70,800	-	11,700	-
WESTERN	85,500	-	-	-

Households Owning Farm Assets and Number As on the Survey Day

An estimated 115,338 households (12.9% of agricultural households) owned ploughs during the 1996/97 agricultural season. There were 172,727 ploughs owned as at the end of the agricultural season. Of this number of ploughs owned, 88.0% were in serviceable condition. The total value of ploughs reported was K16,095.5 million.

Draught animals were owned by 89,168 households, representing 10.0% of agricultural households. There were 257,651 draught animals owned and these were valued at K25,641.7 million.

Transport equipment was the third common asset owned. Households reporting owning transport equipment were 59,901 and they represented 6.7% of all agricultural households. An estimated 70,731 units of transport equipment valued at K12,138.5 million were reported at the end of the agricultural season.

More than 80% of the farm assets reported, except for tractors, were in serviceable condition. Only 65.3% of the tractors reported were serviceable.

TABLE 12: OWNERSHIP OF FARM ASSETS BY HOUSEHOLDS AS ON 30/09/97

FARM ASSET	HOUSEHOLDS REPORTING	% HOUSEHOLDS REPORTING	NUMBER HELD	% SERVICEABLE	VALUE (K'MILLION)
Plough	115,338	12.9	172,727	88.0	16,095.5
Harrow	24,986	2.8	29,549	85.8	2,862.0
Tractor	1,277	0.1	1,281	65.3	1,237.3
Other	43,719	4.9	62,816	92.8	5,428.5
Transport	59,901	6.7	70,731	84.4	12,138.5
Draught animal	89,168	10.0	257,651	-	25,641.7

Access to Agricultural Credit from the Formal Sector, 1996/97 agricultural season

Only 14.0% of the 894,940 agricultural households applied for loans from the formal sector. Across the provinces, Eastern Province recorded the highest percentage of agricultural households applying for loans at 30.0%. The second highest percentage was recorded in Central Province (19.7%) followed by Copperbelt Province (14.2%), and Southern Province (13.0%). The rest of the provinces recorded percentages below 10%. North-Western Province had the lowest percentage of households applying for loans for the 1996/97 agricultural season. Only 3.3% of the agricultural households in North-western Province applied for loans.

A total of 143,640 loan applications were lodged with the formal sector and 62.8% of them were approved and disbursed. The loan recipient households obtained the loans from various sources. Eastern Province recorded the highest percentage of households that received loans from the formal sector. About 85.2% of the loan applicants in Eastern Province had their loans approved, followed by Central Province with an approval rate of 67.1%, and Southern Province where 56.0% of the loan applications were approved. In the rest of the provinces, the approval rate was below 50% of the applications, with Copperbelt and North-Western provinces recording 6.0% and 7.7%, respectively.

At national level 73.8% of the households that received loans obtained them from "other" sources. The category "other" encompasses out-grower arrangements through which many households obtain agricultural inputs on credit. The main contributors to the response "other" are seed-cotton and tobacco growers. These crops are promoted by private companies such as Lonrho, Clark Cotton, National Tobacco Company to ensure raw material supplies for their plants through such schemes. This aspects had not been recognized prior to data collection for the 1996/97 agricultural season, it has however, been taken care of in the survey instruments for the 1997/98 Post-harvest survey. The next common source of agricultural loans was the "Private Credit Co-ordinator" from which 23.1% of the households obtained their loans. Another 2.7% of the households were availed agricultural credit by Agricultural Finance Institutions.

Private credit agents were the major source of agricultural financing in North-Western, Luapula, Copperbelt, and Northern provinces. In these provinces, 100%, 79.0%, 76.3%, and 54.0% of the households receiving loans, respectively, obtained their loans from private credit agents. In Central Province 69.6% of the households received loans from "Other" sources while Eastern Province 80.2% received loans from these sources, and, Southern and Western provinces recorded 71.8% and 88.6% of the households, respectively, having benefited from "Other" sources. Lusaka Province recorded 50.5% of the households as having obtained loans from Agricultural Financial Institutions while 42.2% accessed agricultural credit from private credit agents.

TABLE 13A: HOUSEHOLDS APPLYING FOR LOANS FROM THE FORMAL SECTOR, LOANS FOR, LOANS APPROVED AND SOURCE OF LOANS

Geographic Area	Agric Hholds	% Applying	Loans Applied For	% Approved	SOURCE OF LOANS					
					Agric. Financial Institution	Co-operative Society	Commercial Bank	Private Credit Agent	NGO	Other
Zambia	**894,940**	**14.0**	**143,640**	**62.8**	**2.7**	**0.7**	**0.1**	**23.1**	**0.2**	**73.8**
Central	86,671	19.7	20,259	67.1	2.2	4.1	-	25.3	-	69.6
Copperbelt	38,202	14.2	6,506	6.0	-	23.7	-	76.3	-	-
Eastern	197,169	30.0	69,300	85.2	2.5	-	0.1	17.9	-	80.2
Luapula	113,008	5.9	6,848	16.7	21.0	-	-	79.0	-	-
Lusaka	20,021	4.7	1,586	12.1	50.5	-	-	42.2	7.3	-
Northern	162,559	8.1	13,735	40.7	-	-	1.5	54.0	-	44.6
N/Western	60,061	3.3	2,544	7.7	-	-	-	100.0	-	-
Southern	108,821	13.0	15,347	56.0	3.5	-	-	25.1	-	71.8
Western	108,428	6.2	7,515	19.1	-	-	-	-	11.4	88.6

Households That Did Not Apply for Agricultural Loans and Reasons Why

All together 790,000 rural households did not apply for agricultural loans from the formal sector for the 1996/97 agricultural season. The majority of these households (42.1%) cited lack of interest as the reason why they did not apply for agricultural loans. The second major reason why households did not apply for agricultural loans was non-availability of funds for down payment. This reason was given by 20.7% of the households while another 10.0% bemoaned the high interest rates charged on the loans.
Not less than 30% of the households in each province, except in Western Province, gave lack of interest as the main reason for not applying for agricultural loans. In Western Province 28.5% of the households had no interest.

More than 20% of the households in Central, Luapula, North-Western, Southern, and Western provinces lacked funds for down payment on the loans.

Copperbelt and Northern provinces had 11.0% and 12.0% of the households, respectively, saying banks were too far.

High interest rates was of major concern to 18.6% of the households in Copperbelt Province, 12.7% of the households in Northern Province, 11.3% in Western Province, and 11.0% of the households in Southern Province.

Apart from Copperbelt Province where 11.0% of the households reported to have defaulted on earlier loan(s), the rest of the provinces recorded percentages below 3.5%.

TABLE 13B: HOUSEHOLDS NOT APPLYING FOR AGRICULTURAL LOANS FROM THE FORMAL SECTOR BY REASON

GEOGRAPHIC AREA	HOUSEHOLDS REPORTING	% HOUSEHOLDS GIVING REASON AS...					
		NOT INTERESTED	BANK IS TOO FAR	INTEREST TOO HIGH	DEFAULTED ON EARLIER LOAN(S)	NO FUNDS FOR DOWN PAYMENT	OTHER
Zambia	790,000	42.1	7.5	10.0	1.8	20.7	18.0
Central	72,744	46.3	2.8	9.9	0.2	24.8	16.0
Copperbelt	33.324	32.2	11.0	18.6	11.0	15.1	12.4
Eastern	138,002	55.9	7.9	9.5	1.5	9.6	15.6
Luapula	109,557	49.7	7.4	5.8	0.5	26.6	10.0
Lusaka	22,356	47.3	4.7	8.7	0.9	17.1	21.3
Northern	153,666	37.4	12.0	12.7	1.3	18.4	18.2
North-Western	58,797	34.0	6.7	3.7	3.3	22.7	29.5
Southern	97,037	39.8	6.1	11.0	3.3	22.8	17.0
Western	104,487	28.5	4.6	11.3	0.8	29.0	25.9

Households Receiving Agricultural Extension Advice During the 1996/97 Agricultural Season

There are several aspects of agricultural production and productivity on which the farming community needs information and advice. The purpose of agricultural extension services is to keep this community abreast with technological advances in the agricultural sector through regular/frequent provision of information and advice on agricultural operations.

During the 1996/97 agricultural season, advice on crop husbandry, crop diversification, marketing, and storage of farm produce, was given to between 15% and 25% of the households in the rural areas of the country. Among these aspects of agriculture, 25% of the households were advised on crop husbandry, 19.8% on crop diversification, 19.6% received advice on marketing, and 15% of the households were advised on storage of farm produce. Clearly, with such low percentages of extension services outreach, the agricultural sector may not improve to the levels expected for food self-sustainability. As if to confirm this assertion, only 12.5% of the households received advice on household food security.

Central and Copperbelt provinces recorded the lowest percentages of extension services outreach. Apart from advice on crop husbandry where the two provinces recorded 21.6% and 20.2% of the households, respectively, to have been advised, less than 16% of the households in both provinces received advice on the rest of the aspects of agriculture.

In Eastern Province, 20% or more of the households received advice on storage of farm produce, credit, crop diversification, marketing, and crop husbandry.

In Luapula Province emphasis seems to have been on advising the farming community on crop husbandry, marketing, and crop diversification. The proportion of households that received advice on these three areas were 26.1%, 24.0%, and 19.1%, respectively.

Lusaka Province recorded 33.6% of the households having been advised on marketing, 28.4% were advised on storage of farm produce, and 19.5% on credit.

Extension advice in Northern Province appears to have concentrated on crop husbandry and crop diversification, where 26.8% and 24.9% of the households, respectively, received advice. North-Western Province had 28.9% of the households were advised on crop husbandry, while 26.1% were advised on marketing, and 19.7% received advice on crop diversification and animal husbandry.

Three major areas of advice emerged from Southern Province. The farming community was advised mainly on crop husbandry (34.3% of the households), crop diversification (30.2%), and 23.2% of the households were advised on marketing.

The picture in Western Province was very gloomy in that on none of the aspects of agriculture were more than 9% of the households advised. The highest percentage of 8.5% was recorded for crop husbandry, followed by 3.8% for marketing, and 2.8% on crop diversification.

TABLE 14A: PERCENT HOUSEHOLDS RECEIVING AGRICULTURAL EXTENSION ADVICE BY TYPE OF ADVICE DURING THE 1996/97 AGRICULTURAL SEASON

Type of Advice	PERCENT HOUSEHOLDS RECEIVING EXTENSION ADVICE									
	Zambia	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	North-Western	Southern	western
Total Households	**915,307**	**89,874**	**38,752**	**197,169**	**116,183**	**23,288**	**166,891**	**60,776**	**111,170**	**111,204**
Crop Husbandry	25.1	21.6	20.2	29.6	26.1	17.6	26.8	28.9	34.3	8.5
Crop Diversification	19.8	15.2	11.8	24.8	19.1	8.8	24.9	19.7	30.2	2.8
Animal Husbandry	11.8	8.5	7.6	13.8	8.6	11.8	12.1	19.7	19.7	2.7
Marketing	19.6	11.2	12.1	27.7	24.0	33.6	17.2	26.1	23.2	3.8
Credit	13.0	9.6	5.4	21.3	12.7	19.5	10.7	17.6	15.8	0.9
Conservation Farming	9.4	7.8	3.1	13.9	6.7	9.8	11.8	16.7	6.5	2.9
Fruits and Vegetables	6.4	5.1	4.0	7.1	4.1	6.8	10.2	10.7	7.5	0.6
Irrigation	4.7	3.8	3.6	5.5	3.6	6.4	6.8	5.9	5.9	0.3
Fish Farming	4.3	3.0	1.3	6.4	3.2	1.7	5.1	13.3	2.7	0.1
Hhold Food Security	12.5	6.5	9.3	14.9	14.5	18.7	18.8	14.0	11.9	0.6
Farm Management	9.2	4.3	6.3	12.0	8.6	12.8	11.9	13.7	9.3	1.8
Farm Power	4.9	3.8	1.3	7.4	3.0	5.5	4.7	9.1	7.3	-
Post harvest Processing	7.5	4.2	7.1	11.8	6.6	7.2	10.4	10.3	5.3	-
Storage of Produce	15.0	6.8	13.5	20.8	15.1	28.4	18.8	15.7	15.7	2.0

Households Receiving Agricultural Extension Advice by Source, Zambia

The most popular source of agricultural extension advice was "Fellow Farmer". More than 40% of the households reported having been advised by fellow farmers on various aspects of agriculture, except on animal husbandry where 35.7% of the households received advice from fellow farmers. The next popular source of agricultural extension advice was individual contact with Agricultural Extension Officers. Between 13% and 24% of the households reported individual contact to have been their main source of advice. Thirdly, came the "Radio" through which between 12% and 26% of the households obtained advice on agricultural operations.

Non-Governmental Organizations, publications, and field days recorded very low percentages, generally below 10%, as sources of agricultural extension advice. Marketing agents scored highly in providing advice on marketing (15.6% of the households benefited) and credit (20.3% of the households). Less than 0.7% of the households reported to have had advice from "Other" sources.

TABLE 14B: HOUSEHOLDS RECEIVING AGRICULTURAL EXTENSION ADVICE BY SOURCE DURING THE 1996/97 AGRICULTURAL SEASON, ZAMBIA

Type of Advice	H/Holds Receiving Extension Services	PERCENT HOUSEHOLDS RECEIVING AGRICULTURAL EXTENSION ADVICE FROM . . .								
		Individual Contact	Farmer Group	Field Days	Radio	Publications	Marketing Agents	NGO	Fellow Farmers	Other
Crop Husbandry	229,838	20.0	4.5	5.4	21.0	1.6	3.5	1.0	42.5	0.6
Crop Diversification	181,617	18.4	4.9	5.6	21.5	0.7	2.0	1.6	45.1	0.3
Animal Husbandry	107,610	23.9	4.6	5.4	26.4	2.6	0.3	0.9	35.7	0.3
Marketing	179,675	14.3	2.8	2.7	18.4	1.3	15.6	0.4	44.1	0.5
Credit	119,190	14.9	3.0	3.0	14.1	1.3	20.3	1.4	41.8	0.3
Conservation Farming	86,038	20.0	5.0	7.9	16.3	3.9	0.7	0.9	45.2	0.1
Fruits and Vegetables	59,017	17.3	7.5	6.5	15.1	2.2	0.4	1.4	49.4	0.2
Irrigation	43,275	12.7	8.7	5.3	18.4	1.5	0.3	1.9	51.2	-
Fish Farming	39,741	15.6	7.2	6.8	19.8	2.6	-	2.0	45.7	0.3
Hhold Food Security	114,071	15.5	4.1	8.1	12.2	1.0	0.4	1.4	57.2	0.3
Farm Management	83,448	18.7	4.7	10.5	13.3	2.1	3.2	1.2	46.2	-
Farm Power	44,732	15.4	6.8	8.2	19.1	1.1	0.1	2.2	46.5	0.6
Post harvest Processing	68,820	13.3	6.1	8.5	13.0	1.5	6.5	1.6	49.2	0.1
Storage of Produce	137,177	14.3	4.8	5.9	14.2	1.0	2.2	1.1	56.3	-

LIVESTOCK SERVICES

Households Raising Cattle, Ownership of Grazing Land and Over-grazing Conditions

Only 4.5% of cattle-raising households reported to graze their cattle on own land while 93.9% used communal grazing land. About 1.1% of the households grazed their cattle on rented land. Over-grazing was reported by 17.7% of the cattle-raising households.

The highest proportion of households with own grazing land was reported in Copperbelt and Lusaka provinces. There were 26.8% of the households who owned grazing land in Copperbelt Province while Lusaka Province recorded 22.5%. There were no households reporting own grazing land in Luapula Province.

More than 85% of the households in each of Northern, Central, Eastern, Southern, North-western, Western, and Luapula provinces grazed their cattle on communal land.

Over-grazing of land was reported mainly in Lusaka, Luapula, and North-Western provinces. In these three provinces, 32.9%, 30.6%, and 29.7% of cattle-raising households, respectively, reported over-grazing in their areas. Fewer than 15% of the households in Southern and Western provinces said there was over-grazing in their areas.

TABLE 15A: OWNERSHIP OF GRAZING LAND AND OVER-GRAZING CONDITIONS

GEOGRAPHIC AREA	HOUSEHOLDS RAISING CATTLE	% REPORTING GRAZING LAND AS . . .				% REPORTING OVER-GRAZING
		OWN LAND	RENTED	COMMUNAL LAND	OTHER	
Zambia	**111,085**	**4.5**	**1.1**	**93.9**	**0.5**	**17.7**
Central	12,284	8.3	-	91.7	-	22.8
Copperbelt	865	26.8	2.7	70.5	-	-
Eastern	32,617	2.6	2.4	95.0	-	23.4
Luapula	510	-	-	100.0	-	30.6
Lusaka	2,391	22.5	13.0	64.5	-	32.9
Northern	8,558	10.1	0.5	89.5	-	21.2
North-Western	3,681	0.6	-	95.6	3.8	29.7
Southern	38,979	3.3	0.3	95.3	1.2	12.4
Western	11,200	1.5	-	98.5	-	5.2

Households Vaccinating Cattle and Practicing Tick Control

Country-wide, an estimated 21.2% of cattle raising households vaccinated their cattle against disease during the 1996/97 agricultural season. Households that practised tick control during the same period were 37.7%.

Lusaka Province recorded the highest percentage of households vaccinating their cattle at 63.2%. In second place was Copperbelt Province with 38.5%, followed by Central Province with 36.2%, and Southern Province with 25.3% of the households.

In Eastern, Northern, and North-Western provinces, only 17.2% of the households, respectively, practised tick control during the 1996/97 agricultural season. In the rest of the provinces, apart from Luapula and Western provinces, well over 50% of the households undertook tick control measures during the season.

TABLE 15B: HOUSEHOLDS VACCINATING CATTLE AND PRACTICING TICK CONTROL

GEOGRAPHIC AREA	HOUSEHOLDS RAISING CATTLE	% VACCINATING CATTLE	% PRACTISING TICK CONTROL
Zambia	**111,085**	**21.2**	**37.7**
Central	12,284	36.2	55.5
Copperbelt	865	38.5	68.4
Eastern	32,617	13.6	17.2
Luapula	510	24.1	34.7
Lusaka	2,391	63.2	77.7
Northern	8,558	8.1	17.2
North-Western	3,681	4.4	17.2
Southern	38,979	25.3	56.6
Western	11,200	17.5	23.8

Households Practicing Tick Control by Type of Control

Of the 41,887 households that reported practising tick control, 72.7% sprayed their animals while 23.1% dipped the cattle, and 4.2% practiced other forms of tick control. Dipping, as a tick control measure, was mainly reported in copperbelt and Lusaka provinces. There were 95.4% and 41.2% of the households in Copperbelt and Lusaka provinces, respectively that practised dipping. Southern Province recorded 26.1%, Central Province 20.2% and Eastern Province had 19.2% of the households reporting dipping. More than 55% of the households in each province, except in Copperbelt Province, Sprayed their cattle against ticks during the 1996/97 agricultural season. “Other” forms of tick control were practised by 29.5% of the households in Western Province, 21.0% of the households in North-Western Province, and 10.3% of the households in Eastern Province. About 0.4% of the households in Southern Province reported to have applied other forms of tick control on their cattle.

Ownership of Dip-tanks

The majority of the 9,691 households that dipped their cattle reported using privately-owned dip-tanks (36.9% of the households), followed by 28.6% that used Government dip-tanks, and 18.3% of the households used communal dip-tanks. Only 4.6% of the households owned the dip-tanks they used.

In Central Province 10.2% of the households used own dip-tanks compared to 5.2% of the households in Southern Province. All the households in Northern Province reported having used privately-owned dip-tanks while in the other provinces, between 23% and 50% of the households used private dip-tanks. In Copperbelt and Western provinces, all households raising cattle used communal dip-tanks while Lusaka Province recorded 28.7% and Southern Province 13.2%. Only 4.4% of the households in Eastern Province and 6.0% in Central Province used community-owned dip-tanks.

"Other" types of tick control were reported by 10.5% of the households in Southern Province and 24.8% of the households in Central Province.

TABLE 15C: HOUSEHOLDS PRACTISING TICK CONTROL BY TYPE OF CONTROL

GEOGRAPHIC AREA	HOUSEHOLDS PRACTISING TICK CONTROL	% HOUSEHOLDS APPLYING . . .		
		DIPPING	SPRAYING	OTHER
Zambia	**41,887**	**23.1**	**72.7**	**4.2**
Central	6,813	20.2	79.8	-
Copperbelt	592	95.4	4.6	-
Eastern	5,624	19.2	70.5	10.3
Luapula	177	-	100.0	-
Lusaka	1,857	41.2	58.8	-
Northern	1,469	2.7	76.3	21.0
North-Western	632	-	100.0	-
Southern	22,053	26.1	73.5	0.4
Western	2,670	3.6	66.9	29.5

TABLE 15D: HOUSEHOLDS PRACTISING DIPPING BY OWNERSHIP OF DIP-TANK

GEOGRAPHIC AREA	HOUSEHOLDS PRACTISING DIPPING	% REPORTING OWNERSHIP OF DIP-TANK AS . . .				
		SELF	PRIVATE	GOVT	COMMUNITY	OTHER
Zambia	**9,691**	**4.6**	**36.9**	**28.6**	**18.3**	**9.8**
Central	1,378	10.2	23.9	35.1	6.0	24.8
Copperbelt	565	-	-	-	100.0	-
Eastern	1,082	-	25.9	69.7	4.4	-
Lusaka	766	-	26.9	44.4	28.7	-
Northern	40	-	100.0	-	-	-
Southern	5,764	5.2	50.3	20.7	13.2	10.5
Western	96	-	-	-	100.0	-

Percent Households Reporting Cattle Disease and Consulting Veterinary Officers

An estimated 58.1% of cattle raising households reported some of their herd to have been infected by diseases during the 1996/97 agricultural season. Out of the total number of households some of whose cattle had been infected, only 38.3% consulted a veterinary Extension officer.

Over 50% of the cattle-raising households in Western, Eastern, Central, and Southern provinces had some of their cattle infected with disease during the season. Less than 40% of the households in Copperbelt and Lusaka provinces reported cattle diseases while between 42% and 49% of the households in Northern, Luapula, and North-Western provinces reported cattle infections.

Consultation with veterinary Extension Officers was very low in Northern and Luapula provinces. Only 4.9% of the households with infected cattle in Northern Province and 9.1% in Luapula Province consulted Veterinary Officers. Copperbelt and Lusaka provinces recorded 84.5% and 58.9% of the households with infected cattle, respectively, to have consulted Veterinary Extension Officers. In the other provinces, between 35.0% and 48% of the households consulted.

TABLE 15E: HOUSEHOLDS REPORTING CATTLE DISEASE AND PERCENTAGE CONSULTING VETERINARY OFFICERS

GEOGRAPHIC AREA	HOUSEHOLDS RAISING CATTLE	HOUSEHOLDS REPORTING CATTLE DISEASES	% REPORTING CATTLE DISEASES	HOUSEHOLDS CONSULTING VET. OFFICERS	% CONSULTING VET. OFFICERS
Zambia	**111,085**	**64,585**	**58.1**	**24,742**	**38.3**
Central	12,284	7,740	63.0	3,127	40.4
Copperbelt	865	330	38.2	279	84.5
Eastern	32,617	19,780	60.6	9,373	47.4
Luapula	510	231	45.3	21	9.1
Lusaka	2,391	745	31.2	439	58.9
Northern	8,558	3,617	42.3	179	4.9
North-Western	3,681	1,773	48.2	603	34.0
Southern	38,979	24,685	63.3	8,647	35.0
Western	11,200	5,684	50.8	2,074	36.5

Cattle Infections, Treatment, and Death

A total of 267,174 cattle, (21.7% of the number held at the beginning of the agricultural season) were infected by diseases during the 1996/97 agricultural season. The highest percentage of infected cattle was recorded in Central Province (29.2%), followed by Copperbelt Province (27.8%), Southern Province (23.1%), Eastern Province (23.0%), and Northern Province (22.9%).

Treatment with modern medicine was recorded at 27.7% of the infected cattle. In Eastern Province 40.5% of the cattle were treated with modern medicine, followed by 29.1% of cattle in North-Western Province, and 28.7% in Southern Province. The least proportion of cattle treated with modern medicine were in Northern Province (2.4%) and in Copperbelt Province (0.6%).

A total of 220,634 cattle, representing 82.6% of the total number infected and 17.9% of the number held at the beginning of the agricultural season, died from disease during the season. The lowest percentages of deaths from disease were 37.6% in Lusaka Province and 63.9% in Eastern Province. In the remaining provinces, more than 70% of the infected cattle died, with Southern Province recording 91.3% of the cattle to have died, followed by Northern Province where 89.2% of the cattle died, Western Province recorded 86.3% deaths, and Copperbelt Province recorded 85.4%.

TABLE 15F: NUMBER OF CATTLE INFECTED WITH DISEASE, PERCENT TREATED WITH MODERN MEDICINE, AND PERCENT DEATHS

GEOGRAPHIC AREA	CATTLE RAISED ON 1/10/96	CATTLE INFECTED WITH DISEASE	% INFECTED	% TREATED WITH MODERN MEDICINE	% DIED
Zambia	**1,233,252**	**267,174**	**21.7**	**27.7**	**82.6**
Central	127,206	37,164	29.2	20.0	83.8
Copperbelt	5,631	1,553	27.8	0.6	85.4
Eastern	248,171	57,017	23.0	40.5	63.9
Luapula	5,895	1,011	17.2	-	84.6
Lusaka	44,040	4,262	9.7	23.5	37.6
Northern	64,622	14,819	22.9	2.4	89.2
North-Western	39,970	5,346	13.4	29.1	75.5
Southern	520,582	120,037	23.1	28.7	91.3
Western	177,135	25,965	14.7	23.2	86.3

Treatment of Cattle With Modern Medicine and Source of the Medicine

Out of the 21,145 households that reported to have treated their infected cattle with modern medicine, 64.3% obtained the medicine from Veterinary Extension Officers, while 32.2% bought the medicine from town. Households that obtained medicine from neighbors/friends amounted to 1.3% while those that bought from a local trader were 1.0%, and households that used other sources to obtain the medicine were 1.2%.

Less than 50% of the households in Northern, Central, and Western provinces benefited from the Veterinary Extension Officer's services in acquiring modern medicine for cattle. At least 67% of the households in each of the other provinces obtained medicine from Veterinary Extension Officers. In Central Province 63.8% of the households procured cattle medicine by purchasing from town while 46.1% of the households in Western Province, and 30.5% in Lusaka Province used similar sources.

Northern Province recorded the highest percentage (49.3%) of households that obtained medicine from neighbors/friends. Similarly, quite a substantial proportion (38.5%) of the households in Northern Province reported to have acquired medicine via other sources. Purchases of medicine from local traders were reported only in Central Province (2.9% of the households) and in Southern Province (1.9% of the households).

TABLE 15G: HOUSEHOLDS TREATING CATTLE WITH MODERN MEDICINE AND SOURCE OF THE MEDICINE

GEOGRAPHIC AREA	HOUSEHOLDS TREATING CATTLE	% REPORTING MAIN SOURCE				
		NEIGHBORS/FRIENDS	VETERINARY OFFICER	BOUGHT IN TOWN	BOUGHT FROM LOCAL TRADER	OTHER
Zambia	**21,145**	**1.3**	**64.3**	**32.2**	**1.0**	**-**
						-
Central	2,498	-	33.3	63.8	2.9	-
Copperbelt	121	-	95.9	4.1	-	-
Eastern	8,869	0.1	73.5	26.4	-	-
Lusaka	236	-	69.5	30.5	-	-
Northern	361	49.3	6.9	5.3	-	38.5
North-Western	603	-	100.0	-	-	-
Southern	6,829	0.6	67.2	29.5	1.9	0.9
Western	1,628	3.6	47.7	46.1	-	3.6

Households With Infected Cattle Not Consulting Veterinary Extension Offices and Reasons Why

A total of 39,810 households whose cattle had been infected during the season did not consult a Veterinary Extension Officer for various reasons. While 49.2% of them did not have money to buy the medicine that would be recommended, 42.4% reported that there was no Veterinary Extension Officer in their area, and only 8.4% reported to have had no transport to go and see the Veterinary Extension Officer.

All the responding households in Luapula Province bemoaned the lack of money to buy medicine. In Copperbelt Province 90.2% of the households gave the same reason, followed by 76.1% in Lusaka Province, and 57.1% in Eastern Province

Non-existing of a Veterinary Extension Officer was cited as a reason for not consulting by 64.8% of the households in Central Province, followed by 59.3% in North-Western Province, and 46.2% of the households in Northern Province.

Lusaka Province recorded the highest percentage of households that did not have transport to go and consult a Veterinary Extension Officer at 23.9%. Northern Province was second with 13.1% and third was Central Province with 13.0% of the households having had no transport.

TABLE 15H: HOUSEHOLDS NOT CONSULTING VETERINARY EXTENSION OFFICERS

GEOGRAPHIC AREA	HOUSEHOLDS NO CONSULTING VET. OFFICER	% HOUSEHOLDS REPORTING……		
		NO TRANSPORT TO SEE HIM	NO MONEY TO BUY MEDICINE	NO VET. OFFICER IN THE AREA
Zambia	**39,810**	**8.4**	**49.2**	**42.4**
Central	4,613	13.0	22.2	64.8
Copperbelt	51	-	90.2	9.8
Eastern	10,374	2.5	57.1	40.4
Luapula	210	-	100.0	-
Lusaka	306	23.9	76.1	-
Northern	3,438	13.1	40.8	46.2
North-Western	1,170	-	40.7	59.3
Southern	16,038	10.6	50.0	39.4
Western	3,610	7.5	62.3	30.2

Market Prices Information Reaching Households by Main Source

Information on market prices of commodities was received by 323,307 households during the 1996/97 agricultural season. The majority of the households (33.8%) received market price information from fellow farmers, while 26.2% received it through radio, and 13.1% obtained information on market prices from Agricultural Extension Officers. The newspaper and AMIC recorded the lowest percentages of households obtaining market prices information from them. There were 0.2% of the households who reported the newspaper and 0.7% that reported AMIC as the main source of information on market prices.

Only Eastern and Northern provinces recorded less than 25% of the households having benefited from agricultural programs on radio concerning market prices. There was more interaction with fellow farmers on market prices in all provinces except in Lusaka and North-Western provinces, where less than 20% of the households obtained information from fellow farmers. Extension Officers appear to have been more effective in disseminating market prices information in Eastern Province, 25% of the households were advised on market prices by Agricultural Extension Officers.

TABLE 16A: HOUSEHOLDS RECEIVING MARKET PRICES INFORMATION BY MAIN SOURCE

GEOGRAPHIC AREA	HOUSEHOLDS RECEIVING INFORMATION	% HOUSEHOLDS REPORTING SOURCE OF INFORMATION AS….							
		Radio	Newspaper	AMIC	Traders at Market	Traders at Farm	Fellow Farmers	Extension Officers	Other
Zambia	**323,307**	**26.2**	**0.2**	**0.7**	**10.0**	**14.1**	**33.8**	**13.1**	**1.8**
Central	27,677	27.3	0.1	1.0	13.6	12.6	37.4	3.7	4.3
Copperbelt	13,253	35.0	0.3	-	8.7	6.5	44.6	5.0	-
Eastern	87,780	16.7	0.2	0.8	9.6	18.5	28.1	25.0	1.1
Luapula	55,175	25.1	-	0.2	11.6	8.3	45.0	5.2	4.4
Lusaka	8,546	73.1	-	2.6	5.9	0.9	16.0	-	1.5
Northern	56,166	22.1	0.1	0.4	13.4	16.3	36.6	10.6	0.4
North-Western	14,767	43.9	1.8	1.6	6.8	9.0	18.5	15.7	2.9
Southern	40,869	30.8	0.5	1.3	8.0	16.0	30.0	11.9	1.5
Western	19,074	33.0	-	-	1.2	17.5	34.3	14.0	-

Households Not Satisfied With Market Prices Information and Reasons Why

A total of 98,513 households were unsatisfied with the market prices information disseminated during the 1996/97 agricultural season for various reasons. The majority of the households (23.5%) expressed dissatisfaction were in Eastern Province followed by Northern Province (18.6% of the total), and Southern Province (14.2% of the total). The main reason why the information was said to be unsatisfactory was that it was inaccurate: 48.5% of the households cited inaccuracy of the information. On the other hand, 18.8% of the households felt the information was disseminated infrequently, and 24.0% claimed the information did not cover their interests.

Infrequency of market prices information was expressed by 31.3% of the households in Copperbelt Province, followed by 21.5% of the households in Eastern Province, and 21.1% of the households in Northern Province.

Only Lusaka, Luapula, and North-Western provinces had less than 40% of the households reporting information as inaccurate. Lusaka Province recorded the highest proportion (75.4%) of the households that said the information did not cover their areas of interest. The next highest proportion was reported in Luapula Province (35.1%), followed by Western Province (33.0%), and 26.7% of the households in each of the Eastern and North-Western provinces.

TABLE 16B: HOUSEHOLDS REPORTING MARKET PRICES INFORMATION AS UNSATISFACTORY AND REASONS

GEOGRAPHIC AREA	HOUSEHOLDS NOT SATISFIED	% HOUSEHOLDS REPORTING REASON AS….				
		INFORMATION IS INFREQUENT	INFORMATION IS INACCURATE	DOES NOT COVER INTEREST	DOES NOT COVER LIVESTOCK	TOO COMPLEX
Zambia	**98,513**	**18.8**	**48.5**	**24.0**	**1.0**	**7.6**
Central	8,197	18.7	66.2	14.3	0.8	-
Copperbelt	5,183	31.3	42.8	11.9	-	14.0
Eastern	23,119	21.5	46.4	26.7	0.6	4.8
Luapula	10,658	19.3	31.1	35.1	2.4	12.1
Lusaka	3,342	13.5	3.2	75.4	-	8.0
Northern	18,281	21.1	51.9	15.6	2.1	9.3
North-Western	7,345	13.9	39.3	26.7	-	20.0
Southern	14,015	17.2	63.6	13.3	0.3	5.6
Western	8,373	7.9	56.3	33.0	1.4	1.4

Households Reporting Method of Acquiring Agricultural Inputs

At the national level, 67.4% of the rural households reported using agricultural inputs from own retention. Use of agricultural inputs from own retention is with respect to seed used, while the other methods of acquiring agricultural inputs relate to seed, chemical fertilizers, pesticides, etc. The next common method of acquiring agricultural inputs was purchases from input markets which was reported by 25.4% of the households. Households purchasing inputs from traders at the farm-stead accounted for 1.7% of the total while 3.6% of the households reported not to use any agricultural inputs.

More than 55% of the households in Southern and Lusaka provinces purchase their agricultural inputs from input markets. In Northern, Eastern, Central, and Copperbelt provinces between 20% and 37% of the households bought their agricultural inputs from input markets. Less than 9% of the households in each of the remaining provinces bought inputs from this source.

More than 44% of the households in all provinces, except in Lusaka and Southern provinces, used agricultural inputs (seed) from own retention.

TABLE 17A: HOUSEHOLDS BY METHOD OF ACQUIRING AGRICULTURAL INPUTS

GEOGRAPHIC AREA	TOTAL HOUSEHOLDS	% HOUSEHOLDS REPORTING ….						
		DO NOT USE ANY	BUY FROM INPUT MARKET	BUY FROM TRADER AT FARM	OUT-GROWING ARRANGE	OWN RETENTION	GIFTS	OTHER
Zambia	**915,807**	**3.6**	**25.4**	**1.7**	**0.2**	**67.4**	**1.2**	**0.4**
Central	89,874	6.1	36.1	4.1	2.0	48.9	1.4	1.4
Copperbelt	38,752	16.7	37.3	1.8	-	44.2	0.1	-
Eastern	197,169	0.1	23.5	0.8	-	74.2	0.8	0.6
Luapula	116,183	3.5	8.8	2.2	-	84.4	1.1	-
Lusaka	23,288	15.5	64.8	2.5	-	15.4	1.5	0.3
Northern	166,891	3.6	20.9	1.2	-	73.1	1.0	0.2
N/Western	60,776	2.6	7.7	0.3	-	88.7	0.8	-
Southern	111,170	2.1	58.3	1.9	0.3	33.5	3.6	0.4
Western	111,204	3.0	8.2	2.2	-	85.8	0.6	0.2

Households Reporting Method of Financing Agricultural Inputs.

The majority of the households in the various provinces, save for Lusaka and Southern provinces, reported financing of agricultural inputs as not applicable. Inductively, these are the households that acquired agricultural inputs through own retention. In the particular provinces, between 56% and 96% of the households did not finance their agricultural inputs. However, 55.8% of the households in Southern and 61.4% in Lusaka Province financed their agricultural inputs through cash purchases. In Copperbelt and Central provinces 34.5% and 36.9% of the households, respectively, made cash purchases of their agricultural inputs.

Other forms of financing agricultural inputs recorded very low percentages throughout the provinces. There were 2.0% at the most reporting out-grower arrangements, less than 3% reported obtaining inputs on credit and paying back in kind. Households obtaining agricultural inputs on credit and repaying in cash never exceeded 8% in any province, while those that obtained inputs by paying for them in kind did not exceed 5% in any particular province.

TABLE 17B: HOUSEHOLDS BY METHOD OF FINANCING AGRICULTURAL INPUTS

GEOGRAPHIC AREA	TOTAL HOUSEHOLDS	% HOUSEHOLDS REPORTING….					
		PAY IN CASH	PAY IN KIND	ON CREDIT PAY CASH	ON CREDIT PAY IN KIND	OUT-GROWER	NOT APPLICABLE
Zambia	**915,307**	**21.8**	**1.5**	**1.9**	**2.1**	**0.2**	**72.5**
Central	89,874	36.9	1.1	1.0	2.3	2.0	56.7
Copperbelt	38,752	34.5	2.5	-	1.7	0.6	60.7
Eastern	197,169	9.4	1.5	7.5	6.0	-	75.7
Luapula	116,183	9.1	1.0	0.1	0.9	-	88.9
Lusaka	23,288	61.4	4.3	0.1	1.5	-	32.8
Northern	166,891	19.9	1.8	0.3	0.3	-	77.7
N/Western	60,776	6.9	1.0	-	-	-	92.1
Southern	111,170	55.8	2.7	1.2	1.2	-	39.1
Western	11,240	8.8	-	0.2	1.4	-	89.6

Households Reporting Option of Individual Investment Desired

At the national level, the majority of households (47.9% of the total) preferred to invest in livestock as opposed to other forms of investment, as individuals. The next most preferred investment by individual households was farm implements which was reported by 15.5% of the households. Investment in additional land was preferred by 12.3% of the households.

In Luapula, Lusaka, Northern and Western provinces, less than 40% of the households, respectively, desired to invest in livestock. In the other provinces, more than 50% of the households were for investing in livestock.

Investment in farm implements was chiefly preferred by 42.2% of the households in Western Province, 26.2% of the households in Lusaka Province, and 18.3% of the households in Copperbelt Province.

The highest percentage of households wishing to invest in additional land were recorded in Northern, Lusaka, and Luapula provinces. Northern Province recorded 18.7% of its households wishing to have additional land, followed by 20.5% of the households in Lusaka Province, and 37.5% of the households in Luapula Province.

TABLE 18A: HOUSEHOLDS REPORTING MOST IMPORTANT INVESTMENT INTERESTED IN AS INDIVIDUALS

Geographic Area	Total households	% HOUSEHOLDS EXPRESSING INTEREST TO INVEST IN..								
		Fish Ponds	Small Irrigation	Orchard/ Plantation	Livestock	Farm Implements	Vehicles For Produce	Addition land	Dip-tank	Other
Zambia	**915,307**	**4.6**	**4.8**	**3.5**	**47.9**	**15.5**	**4.6**	**12.3**	**0.5**	**6.3**
Central	89,874	2.2	4.2	2.3	67.1	11.4	2.7	4.9	0.7	4.5
Copperbelt	38,752	2.3	4.0	1.6	52.0	18.3	7.8	8.3	-	5.7
Eastern	197,169	3.1	4.9	4.6	62.1	10.0	2.9	8.5	0.8	3.1
Luapula	116,183	4.3	2.5	6.3	21.0	9.2	3.3	37.5	-	15.8
Lusaka	23,288	3.5	11.6	1.0	31.6	26.2	3.0	20.5	1.5	0.9
Northern	166,891	9.0	5.8	2.7	35.4	13.5	7.9	18.7	0.4	6.7
N/Western	60,776	9.2	1.6	6.3	51.3	14.7	5.2	3.5	-	8.1
Southern	111,170	2.5	5.0	3.4	64.2	8.6	4.4	3.3	0.6	7.8
Western	111,204	3.6	6.7	0.4	37.6	42.2	5.1	2.9	0.3	1.2

Households Reporting Preferred Investment for Their Community

The most sought after community investment was marketing center, which was indicated by 42.2% of the households. Luapula, Northern, and Southern provinces recorded less than 40% of the households, respectively, desiring the community to invest in marketing centers. In Northern Province 24.9% of the households preferred their communities to invest in feeder-roads, while feeder-roads were preferred by 17.2% of the households in Luapula Province. Southern Province recorded the highest percentage of households (34.9%) needing the community to invest in dip-tanks. In second place was Lusaka Province with 14.4%, and third came Central Province where 13.0% of the households wished community investment in dip-tanks.

Investment in fish ponds was popular in North-Western Province, 14.3% of the households were for investing in fish ponds.

At least 10% of the households in Eastern , Western, Southern, Copperbelt, Central, and Lusaka provinces were interested in the community investing in small irrigation.

TABLE 18B: HOUSEHOLDS REPORTING MOST IMPORTANT COMMUNITY INVESTMENT INTERESTED IN

GEOGRAPHIC AREA	TOTAL HOUSEHOLDS	% HOUSEHOLDS WISHING COMMUNITY TO INVEST IN…					
		FEEDER ROADS	SMALL IRRIGATION	FISH PONDS	DIP-TANKS	MARKETING CENTER	OTHER
Zambia	**915,307**	**12.3**	**9.7**	**5.2**	**10.7**	**42.2**	**20.0**
Central	89,874	4.7	12.7	2.5	13.0	42.9	24.1
Copperbelt	38,752	16.0	12.3	4.3	2.3	42.7	22.5
Eastern	197,169	8.6	10.4	4.5	7.7	55.4	13.4
Luapula	116,183	17.2	6.8	5.9	2.9	35.3	31.9
Lusaka	23,288	8.0	22.0	3.4	14.4	41.9	10.2
Northern	166,891	24.9	7.2	8.5	8.7	38.7	12.2
N/Western	60,776	12.1	4.2	14.3	1.9	41.7	425.9
Southern	111,170	4.3	11.9	2.0	34.9	20.6	26.4
Western	111,204	8.7	10.4	1.9	7.9	52.1	19.0

Households Expressing Knowledge of Rural Investment Fund (RIF) and Membership of Formal Groups

Existence of the Rural Investment Fund (RIF) was known by about 127,142 households, representing 13.9% of the total number of rural households. Out of the number of households having knowledge of RIF, only 8.4% were members of formal groups some of which were working on projects .

The Rural Investment Fund was more known in Copperbelt Province where 30.4% of the households expressed knowledge of its existence. The second province where RIF was quite common knowledge was Lusaka Province (20.1% of the households) followed by North-Western Province (189.7% of the households), and Luapula Province (15.7% of the households). However, only Eastern and Western provinces had less than 10% of the households, respectively, with knowledge of the RIF.

Membership of formal groups was highest in Central Province, 21.6% of the households that knew about the RIF were members of formal groups. The next highest percentage of membership was recorded in North-Western Province (21.2%), followed by Eastern Province (11.4%), and Northern Province (6.7%). There were no households that reported to be members of formal groups in Western Province.

TABLE 19A: HOUSEHOLDS WITH KNOWLEDGE OF RURAL INVESTMENT FUND (RIF) AND MEMBERSHIP OF FORMAL GROUPS

GEOGRAPHIC AREA	TOTAL HOUSEHOLDS	HOUSEHOLDS WITH KNOWLEDGE OF RIF	% WITH KNOWLEDGE OF RIF	HOUSEHOLDS MEMBERS OF FORMAL GROUP	% MEMBERSHIP
Zambia	**915,307**	**127,142**	**13.9**	**10,714**	**8.4**
Central	89,874	9,779	10.9	2,116	21.6
Copperbelt	38,752	11,783	30.4	755	6.4
Eastern	197,169	16,760	8.5	1,903	11.4
Luapula	116,183	18,221	15.7	1,025	5.6
Lusaka	23,288	4,683	20.1	81	1.7
Northern	166,891	25,928	15.5	1,725	6.7
N-Western	60,776	11,984	19.7	2,545	21.2
Southern	111,170	17,088	15.4	564	3.3
Western	111,240	10,916	9.8	-	-

Households Not Members of Formal Groups and Reasons Why

A total of 116,428 households that knew about the RIF, representing 91.6% of those that knew of the RIF, were not members of formal groups. The majority of these households (74.8%) said there was not enough information on the fund while 12.1% were not interested in being members of formal groups. The remaining 13.1% of the households gave numerous other reasons.

Over 70% of the households in each province, except in Central Province, cited inadequate information on the Fund as the main reason why they were not members of formal groups.

Lack of interest was expressed by 25.5% of the households in North-Western Province, 21.4% of the households in Luapula Province, and 14.5% of the households in Western Province.

TABLE 19B: HOUSEHOLDS NOT MEMBERS OF FORMAL GROUPS AND REASONS WHY

GEOGRAPHIC AREA	HOUSEHOLDS NOT MEMBERS	% REPORTING REASON AS….		
		NOT INTERESTED	NOT ENOUGH INFORMATION	OTHER
Zambia	**116,428**	**12.1**	**74.8**	**13.1**
Central	7,663	10.1	68.1	21.7
Copperbelt	11,028	12.4	70.6	17.0
Eastern	14,857	6.7	71.1	22.2
Luapula	17,196	21.4	70.8	7.8
Lusaka	4,602	4.7	81.8	13.5
Northern	24,203	5.6	85.0	9.4
N-Western	9,439	25.5	70.8	3.7
Southern	16,524	10.5	74.4	15.0
Western	10,916	14.5	73.6	11.9