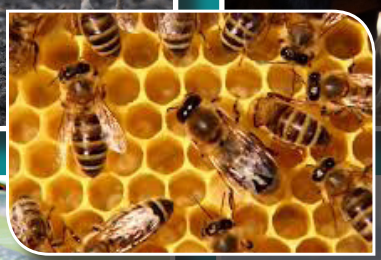
REPUBLIC OF ZAMBIA

MINISTRY OF FISHERIES AND LIVESTOCK

CENTRAL STATSISTICAL OFFICE

THE 2017/18 LIVESTOCK AND AQUACULTURE CENSUS REPORT

Summary report



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SUMMARY REPORT

The 2017/2018 Livestock and Aquaculture Census

Ministry of Fisheries and Livestock
Central Statsistical Office

Lusaka, 2019

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Foreword and Acknowledgement

Foreword

The Government of the Republic of Zambia has placed the Fisheries and Livestock sub sectors to be the main stay of agriculture. Fisheries and Livestock production have fared well in drought situations as compared to other forms of agriculture such as crop production. In time of crop failure, Fisheries and Livestock sub sectors have provided a robust food security providing food products, employment, income and draught power. In view of the importance of the fisheries and Livestock-sub sectors to the Zambian economy, it is very important that sound and informed agricultural policy making is based on credible and robust information.

For the past three decades Zambia has had no stand-alone comprehensive Livestock and Aquaculture Census besides the two Agriculture Censuses conducted in 1970/1971 and 1991/1992 Agricultural Seasons. Most of the surveys conducted in the Livestock and Fisheries sector, are skewed towards crop production and given this situation, sub-sector decisions and policies have been based on outdated statistics which do not reflect what is obtained on the ground. Thus, on this account a Livestock and Aquaculture Census was conducted in January 2018 as a baseline in order to facilitate smooth policy formulation and implementation in the sub-sectors.

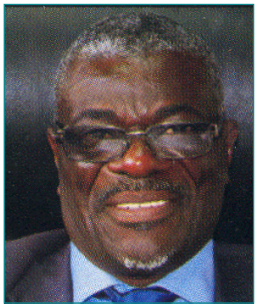
It is our sincere hope, therefore, that the results of the 2017/2018 Livestock and Aquaculture Census will be used to measure the performance of the economy as well as an input into gauging what kind of policy actions to be implemented in the future. This will assist policy makers to make informed decisions, allocate resources, justify investment in the sub-sectors and aid the development of fisheries and Livestock enterprises.

Hon. Kampamba Mulenga Chewe, MP
Minister of Fisheries and Livestock

Hon. Alexander Chiteme, MP
Minister of National Development Planning

May, 2019

Acknowledgement



The 2017/2018 Livestock and Aquaculture Census was conducted in January 2018. The Census was undertaken in recognition of the importance of robust and rigorous statistics for informed decision making and policy formulation. Since independence in 1964, two Agricultural censuses (both had crop and Livestock sections) have been conducted in Zambia, i.e. 1970/1971 agricultural season and 1991/1992 agricultural season and hence Sub-sector decisions and policy have been relying on old statistics which do not reflect what is obtaining on the ground.

The sample for the 2017/2018 Livestock and Aquaculture Census was drawn based on the 2010 Population and Housing Census, and it covered both Households and Establishments.

This report presents Summary Results of the 2017/2018 Livestock and Aquaculture Census. The Summary Results are on production and management of Livestock, Fish Farming, Honey and Poultry; Demographics of households involved in Livestock production, reproduction and management; and household assets and equipment. The success of the 2017/2018 Livestock and Aquaculture Census was attributed to availability of funds and other support and as such we would like to express our sincere thanks to all those who provided such assistance.

The Government of the Republic of Zambia is profoundly thanked for providing funds, through the Ministry of Finance, for conducting the 2017/2018 Livestock and Aquaculture Census. We wish also to appreciate the financial support from ADB, EU (PEP II) and IFAD for supporting the data processing of the 2017/2018 Livestock and Aquaculture Census. Our sincere appreciation also goes to all the professionals and consultants (University of Zambia, Indaba Agricultural Policy Research Institute, Zambia National Farmers Union, Zambia Institute of Policy Analysis and Research, and Veterinary Council of Zambia) who worked hard in shaping and fine-tuning the 2017/2018 Livestock and Aquaculture Census questionnaire.

Finally, our gratitude is extended to all the technical and support staff at both the Ministry of Fisheries and Livestock and the Central Statistical Office, the Provincial Administrators, and the Enumerators for their effort and diligence in producing a high quality data set and analysis presented in this report. It our my sincere hope that the statistics contained herein will help in improving decision making and policy formulation in the sub-sector of Livestock and fisheries.

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May, 2019

Chapter 1: Background

1. Introduction

In January 2018, the Government of the Republic of Zambia conducted a Sample Census of Livestock and Aquaculture following the increasing recognition of the importance of statistics in informed decision making and policy formulation. Zambia has had no stand-alone Livestock and Aquaculture Census besides the two Agriculture Censuses conducted in 1970/1971 and 1991/1992 agricultural seasons. Thus, for the past 25 years, informed decision and policy making were based on old statistics and, in many cases, inaccurate administrative data. With the policy emphasis on diversification of the agriculture sector into Livestock and Aquaculture production to enhance household food security, nutrition, income generation and employment, the need for up to date accurate Aquaculture and Livestock statistical data cannot be over emphasized.

The 2017/2018 Livestock and Aquaculture Census was conducted for both Households and Establishments (Commercial, Government and NGO entities) in the country. Thus this report gives a description of the total Livestock and Aquaculture Sub-Sector as at January 2018.

Chapter 2: Survey Methodology and Organization

This chapter explains the coverage and the target population and the sampling method used in conducting the 2017/2018 Livestock and Aquaculture census.

2.1 Coverage and Target Population

The 2017/2018 Livestock and Aquaculture Sample Census covered all household populations in both rural and urban areas of Zambia in the sampled areas. The design for the survey called for a representative probability sample that was large enough to produce reliable estimates at national, provincial, rural and urban, and district levels. Overall, a representative probability sample of at least 250,000 households was covered from 2,062 Enumeration Areas (EAs). All households in the selected EAs were interviewed.

2.2 Sample Design Specification

Stratified cluster sampling method was used in the selection of the sample. This meant that clusters or EAs were selected and each and every household in the selected cluster was enumerated. The method was appropriate as the probability of finding Livestock-raising, and fish farming households is increased. The other advantage of this was that the cost of listing the households in order to draw a sample of household as the final stage of sampling was cut.

During the selection of clusters, 2010 Census of Housing and Population information was used to stratify the EAs by livestock raising category. Three categories of clusters were created. The first category included EAs in which 45 % or more households were reported to be rearing livestock at the time of the 2010 census, the second category included EAs in which below 45 % of households were rearing livestock. The third category included EAs where there was no presence of livestock raising activity at the time of 2010 census. This kind of stratification was done to ensure that all Enumeration Areas where livestock raising was a predominant activity were well represented in the survey. This approach is similar to what is done in the Crop Forecast and Post-Harvest Surveys where certain crops are identified for special attention in the sampling frame because of their importance and localized geographic distribution in order to ensure their representativeness in the sample.

2.3 Sample size determination

The sample size was determined based on the minimum sample size that would be required for analysis at district level.

The main considerations that affect the size of the sample were: the expected estimate of an indicator of interest (proportion rearing livestock in this case), margin of error desired, level of confidence desired, design effect, expected response rate and number of domains (clusters of the population for which separate estimates are required).

Chapter 3: Characteristics of Agricultural Households

This chapter gives a summary of demographic and agricultural characteristics of Households and Establishments engaged in agricultural activities as at January 2018. The main agricultural characteristics include the number of households involved in various agricultural activities (i.e. Livestock/Poultry, Fish Farming, Bee Keeping and Crop Production). The main demographic characteristics highlighted are Gender, Education Level and Marital Status of household heads, as well as the Size of the Livestock/Bee keeping/Fish farming households.

3.1 Distribution of Agricultural Households

Agricultural Households are households that raise Livestock, Fish, keep Bees and/or grow Crops. Of a total 3,727,362 estimated households in Zambia, 2,267,999 (61%) households (both Rural and Urban households) were engaged in agricultural activities as at January 2018 while 1,459,393 (39%) were not engaged in any agricultural activities nationwide.

Table 3.1 shows the distribution of agricultural and non-agricultural households by Province. Eastern Province had the highest number of agricultural households in the country (349,980 households or 15.4% of the total agricultural households) followed by Southern Province which had 302,094 households representing 13.3% of the agricultural households. North-Western Province had the lowest number of agricultural households (147,712 households) representing 6.5% of the total agricultural households in the country.

Table 3.1: Distribution of Households by Type of Household and Province as at January 2018

Province	Total Number of Households		Total Agricultural Households		Total Non-Agricultural Households	
	Number	Percent	Number	Percent	Number	Percent
Central	365,330	9.8	252,716	11.1	112,614	7.7
Copperbelt	535,701	14.4	230,443	10.2	305,258	20.9
Eastern	399,974	10.7	349,980	15.4	49,994	3.4
Luapula	281,186	7.5	210,307	9.3	70,878	4.9
Lusaka	758,252	20.3	167,544	7.4	590,708	40.5
Muchinga	234,694	6.3	172,699	7.6	61,995	4.2
Northern	313,182	8.4	247,148	10.9	66,034	4.5
North-western	193,393	5.2	147,712	6.5	45,681	3.1
Southern	420,332	11.3	302,094	13.3	118,238	8.1
Western	225,318	6	187,356	8.3	37,962	2.6
Zambia	**3,727,362**	**100**	**2,267,999**	**100**	**1,459,363**	**100**

3.1.2 Type of Agricultural Household as at January 2018

Of the total number of agricultural households, 1,641,825 were involved in Livestock raising, Fish Farming or Bee keeping, representing 72% of the households involved in agriculture (Chart 3.1)

Figure 3.1: Percent of Argicultural Households by Livestock/Aquaculture/Bee Sector

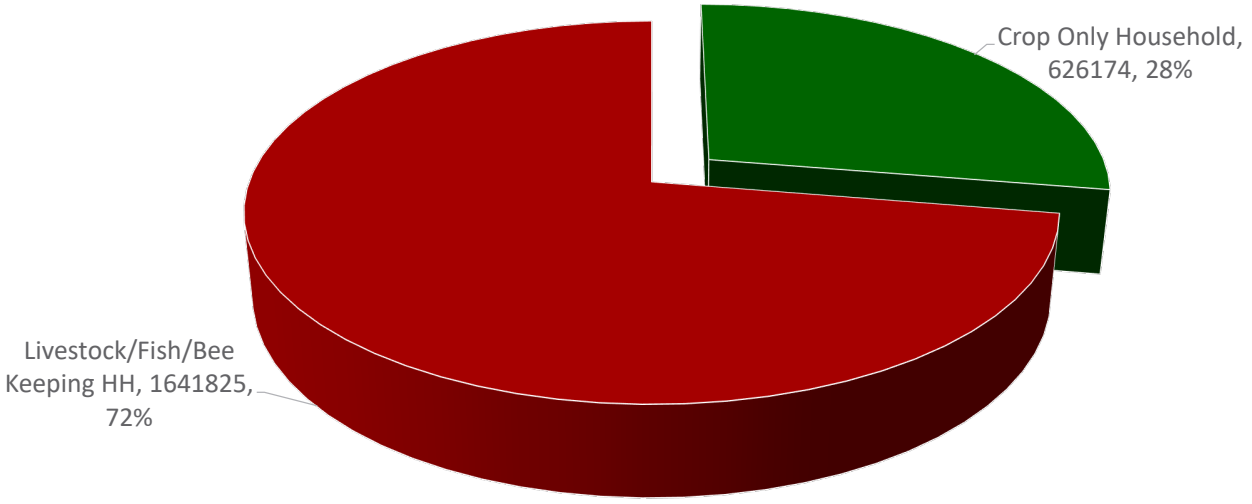


Table 3.2: Distribution of Agricultural Households by Type of Agricultural Activity and Province as at January 2018

Province	Total Agricultural Households		Households Participating in Livestock Raising		Households Participating in Bee Keeping		Households Participating in Fish Farming		Households Participating in Crop/Fodder Production	
	Number	%	Number	%	Number	%	Number	%	Number	%
Central	252,716	11.1	196,729	12	4,782	12.9	463	4.8	227,892	11.1
Copperbelt	230,443	10.2	143,002	8.7	2,760	7.4	902	9.4	181,362	8.8
Eastern	349,980	15.4	262,258	16	8,506	22.9	499	5.2	341,474	16.6
Luapula	210,307	9.3	128,329	7.8	122	0.3	1,111	11.6	201,551	9.8
Lusaka	167,544	7.4	121,403	7.4	925	2.5	542	5.6	114,372	5.6
Muchinga	172,699	7.6	127,045	7.8	4,153	11.2	1,017	10.6	164,622	8
Northern	247,148	10.9	166,741	10.2	1,518	4.1	3,255	33.9	232,764	11.3
North-western	147,712	6.5	97,782	6	9,642	26	1,394	14.5	142,564	6.9
Southern	302,094	13.3	264,197	16.1	3,757	10.1	288	3	268,412	13.1
Western	187,356	8.3	130,938	8	927	2.5	145	1.5	177,367	8.6
Zambia	2,267,999	100	1,638,423	100	37,092	100	9,615	100	2,052,379	100

Livestock Raising: A total of 1,638,423 households were involved in Livestock-raising as at January 2018, representing 72.2% of the total agricultural households in the country. Southern Province had the highest number of Livestock-raising households (16.1%), followed by Eastern Province (16.0%). Northern and Copperbelt Provinces accounted for 10.2% and 8.7% respectively while North-Western Province accounted for the lowest percentage at 6%.

Bee Keeping: A total of 37,092 households (accounting for 1.6% of the agricultural households) were involved in Bee Keeping as at January 2018. North-western Province had the highest number of households involved in Bee Keeping (26%), followed by Eastern Province (22.9%) while Luapula Province had the lowest number accounting for 0.3%.

Fish Farming: A total of 9,615 households (accounting for 0.42% of the agricultural households) were involved in Fish Farming as at January 2018. Northern Province had the highest number of Fish Farming households (33.9%) while Western Province had the lowest number accounting for 1.5%.

Crop/Fodder Production: A total of 2,052,379 households (accounting for 90.5% of the agricultural households) were involved in Crop/ Fodder Production as at January 2018. Eastern Province accounted for the highest percentage of these households at 16.6% while Lusaka Province accounted for the lowest percentage at 5.6%.

3.1.3 Gender disaggregation of Agriculture and Livestock keeping Household Heads

3.1.3.1 Gender of Head of Agricultural Households

Table 3.3 shows that out of the total agriculture households 1,729,518 (76.3%) were male-headed and 538,482 (23.7%) were female-headed as at January 2018. Female headed households represent around a quarter of the number of agricultural households in the country.

Muchinga Province had the highest percentage of male-headed agricultural households compared to female-headed households (80.2% compared to 19.8%) followed by Northern Province (79.3% compared to 20.7%).

Western Province had the lowest percentage of male-headed agriculture households compared to female-headed households (64.0% compared to 36.0%). The Province with next lowest percentage of male headed agricultural households was North-western at 73,2% representing 10% points less.

Table 3.3: Distribution of Agricultural Households by Gender as at January 2018

Province	Agricultural Household Heads				
	Male	Percent	Female	Percent	Total
	Number		Number		
Central	194,121	76.8	58,595	23.2	252,716
Copperbelt	181,847	78.9	48,596	21.1	230,443
Eastern	271,907	77.7	78,073	22.3	349,980
Luapula	163,628	77.8	46,679	22.2	210,307
Lusaka	126,216	75.3	41,329	24.7	167,544
Muchinga	138,587	80.2	34,112	19.8	172,699
Northern	196,039	79.3	51,108	20.7	247,148
North-western	108,108	73.2	39,604	26.8	147,712
Southern	229,244	75.9	72,850	24.1	302,094
Western	119,821	64	67,534	36	187,356
Zambia	**1,729,518**	**76.3**	**538,482**	**23.7**	**2,267,999**

3.1.3.2 Gender of Head of Livestock-raising Households

Table 3.4 shows that out of the estimated 1,729,518 male-headed households engaged in agricultural activities as at January 2018 nationwide, a total of 1,295,827 (74.9%) were engaged in Livestock-raising compared to 63.6% of 538,482 female headed households who were engaged in Livestock-raising.

Table 3.4: Distribution of Livestock Raising Households by Gender of Household Head and Province as at January 2018

Province	Agricultural Households		Livestock raising Households				
	Male	Female	Male Headed		Female Headed		Percent Point Difference
	Number	Number	Number	Percent	Number	Percent	
Central	194,121	58,595	154,949	79.8	41,780	71.3	8.5
Copperbelt	181,847	48,596	116,243	63.9	26,759	55.1	8.8
Eastern	271,907	78,073	211,713	77.9	50,545	64.7	13.2
Luapula	163,628	46,679	103,744	63.4	24,586	52.7	10.7
Lusaka	126,216	41,329	92,464	73.2	28,939	70	3.2
Muchinga	138,587	34,112	104,022	75	23,022	67.5	7.5
Northern	196,039	51,108	136,546	69.6	30,195	59.1	10.5
North-western	108,108	39,604	77,278	71.5	20,504	51.8	19.7
Southern	229,244	72,850	205,918	89.8	58,278	80	9.8
Western	119,821	67,534	92,949	77.6	37,988	56.2	21.4
Zambia	**1,729,518**	**538,482**	**1,295,827**	**74.9**	**342,597**	**63.6**	**11.3**

3.1.3.3 Gender of Head of Bee Keeping Households

Table 3.5 shows that out of the estimated 1,729,518 male-headed households engaged in agricultural activities as at January 2018 nationwide, a total of 34,880 (2.0 percent) were engaged in Bee-keeping compared to 0.4 percent of the 538,482 female-headed households who were engaged in Bee keeping.

Table 3.5 Distribution of Bee-keeping household Heads by Gender of Household Head and Province as at January 2018

Province	Agricultural Households		Bee-Keeping Households				
	Male	Female	Male Headed		Female Headed		Percent Point Difference
	Number	Number	Number	Percent	Number	Percent	
Central	194,121	58,595	4,513	2.3	269	0.4	1.9
Copperbelt	181,847	48,596	2,440	1.3	320	0.6	0.7
Eastern	271,907	78,073	7,840	2.9	666	0.8	2.1
Luapula	163,628	46,679	122	0.1	-	0	0.1
Lusaka	126,216	41,329	850	0.7	75	0.2	0.5
Muchinga	138,587	34,112	3,994	2.9	159	0.5	2.4
Northern	196,039	51,108	1,432	0.7	86	0.2	0.5
North-western	108,108	39,604	9,175	8.5	468	1.2	7.3
Southern	229,244	72,850	3,628	1.6	129	0.2	1.4
Western	119,821	67,534	886	0.7	41	0.1	0.6
Zambia	**1,729,518**	**538,482**	**34,880**	**2**	**2,212**	**0.4**	**1.6**

3.1.3.4 Gender of Head of Fish Farming Households.

Table 3.6 shows that out of the estimated 1,729,518 male-headed households engaged in agricultural activities as at January 2018 nationwide, 0.51 percent were engaged in Fish Farming. Of the estimated 538,482 female-headed households engaged in agricultural activities, 0.13% were engaged in Fish Farming. Northern Province had the highest percentage of male-headed households involved in Fish Farming at 1.60 percent while Southern Province had the lowest at 0.05 percent. Northern Province had the highest percentage of female-headed Fish Farming households at 0.25 percent while Western Province had the lowest at 0.01 percent.

Table 3.6: Percentage distribution of Fish Farming Households by Gender of Household Head and Province as at January 2018

Province	Agricultural Households		Fish Farming Households				
	Male	Female	Male	Percent	Female	Percent	Percent Point Difference
	Number	Number	Number		Number		
Central	194,121	58,595	408	0.21	55	0.09	0.12
Copperbelt	181,847	48,596	877	0.48	25	0.05	0.43
Eastern	271,907	78,073	434	0.16	65	0.08	0.08
Luapula	163,628	46,679	1,048	0.64	63	0.13	0.51
Lusaka	126,216	41,329	479	0.38	63	0.15	0.23
Muchinga	138,587	34,112	970	0.7	47	0.14	0.56
Northern	196,039	51,108	3,129	1.6	126	0.25	1.35
North-western	108,108	39,604	1,308	1.21	86	0.22	0.99
Southern	229,244	72,850	114	0.05	174	0.24	-0.19
Western	119,821	67,534	140	0.12	5	0.01	0.11
Zambia	**1,729,518**	**538,482**	**8,906**	**0.51**	**709**	**0.13**	**0.38**

3.1.3.5 Gender of Head of Crop/Fodder Production Households

Table 3.7 shows that out of the estimated 1,729,518 male-headed households engaged in agricultural activities as at January 2018 nationwide, a total of 1,568,604 (90.7%) were engaged in Crop/Fodder Production while 483,775 (89.8%) of the 538,482 female-headed households were involved in the same activity.

Table 3.7: Percentage distribution of Crop/Fodder Production Households by Gender of Household Head and Province as at January 2018

Province	Agricultural Households		Crop/Fodder Production Households				
	Male	Female	Male headed		Female headed		Percent Point Difference
	Number	Number	Number	Percent	Number	Percent	
Central	194,121	58,595	175,753	90.5	52,139	89	1.5
Copperbelt	181,847	48,596	143,393	78.8	37,969	78.1	0.7
Eastern	271,907	78,073	265,558	97.7	75,915	97.2	0.5
Luapula	163,628	46,679	157,706	96.4	43,845	93.9	2.5
Lusaka	126,216	41,329	86,433	68.5	27,939	67.6	0.9
Muchinga	138,587	34,112	132,524	95.6	32,098	94.1	1.5
Northern	196,039	51,108	185,185	94.5	47,579	93.1	1.4
North-western	108,108	39,604	104,347	96.5	38,217	96.5	0
Southern	229,244	72,850	204,849	89.4	63,563	87.2	2.2
Western	119,821	67,534	112,856	94.2	64,510	95.5	-1.3
Zambia	**1,729,518**	**538,482**	**1,568,604**	**90.7**	**483,775**	**89.8**	**0.9**

3.1.8 Household Heads by Highest Level of Education Completed

Out of the 1.641,825 Livestock, Fish Farming and Bee Keeping household heads, the most common level of education attainment was Primary representing 839,958 households (51.2 percent), followed by secondary education at 209,535 (12.8 percent), while167, 510 (10.2 %) had never been to school.

Eastern Province had the highest percentage of livestock raising household heads that had completed Primary Education accounting for 13.9 percent. Lusaka Province had the highest percentage of household heads that had not been to school at 18.0%. The highest percentage of household heads that had Bachelor's Degree level of education was in Lusaka Province at 43.1 percent.(Table 3.8).

Table 3.8: Distribution of Livestock, Fish Farming and Bee Keeping Household Heads by Level of Education Completed and Province as at January 2018

Province	Total Livestock/ Fish /Bee Households	None	Primary	Junior Sec	Senior Sec	A level	College/ Under Graduate	Certificate/ Diploma	Bachelors Degree	Masters degree & above
Central	196,927	15,322	103,189	39,688	28,667	231	719	6,377	2,303	430
Copperbelt	143,494	8,780	51,195	30,260	30,629	296	448	15,917	5,371	599
Eastern	262,741	49,220	144,102	39,737	22,092	223	564	5,316	1,221	265
Luapula	128,562	11,909	70,874	26,279	15,023	45	242	3,224	797	169
Lusaka	121,536	9,512	42,250	21,386	22,827	132	1,158	13,781	7,377	3,113
Muchinga	127,251	6,798	73,353	27,029	13,836	217	250	4,265	1,317	185
Northern	167,099	14,293	96,285	33,766	16,035	-	409	4,990	1,250	70
North Western	98,900	11,318	47,102	19,741	14,837	146	349	4,004	1,222	180
Southern	264,251	19,588	140,469	56,775	33,556	203	695	10,095	2,299	570
Western	131,065	20,768	71,140	22,778	12,031	89	137	3,122	955	44
Zambia	**1,641,825**	**167,510**	**839,958**	**317,441**	**209,535**	**1,581**	**4,970**	**71,092**	**24,112**	**5,625**

3.1.9 Household Size of Livestock, Fish Farming and Bee Keeping Households

The national average household size for male headed households involved in livestock, fish and bee keeping was 5.8, while that of female-headed households was 4.6.

North Western Province had the largest average household size (6.2) for male-headed households and Northern Province had the smallest average household size (5.5).

Copperbelt Province had the largest average household size (5.1) for female-headed households while Northern Province had the smallest average household size (4.1).

Table 3.9: Average Household Size of Livestock, Fish Farming and Bee Keeping Households by Gender and Province as at January 2018

Province	Average Household Size - (Livestock + Fish Farming + Bees Keeping) Households		
	Male-headed	Female-headed	Total
Central	5.6	4.7	5.4
Copperbelt	5.9	5.1	5.8
Eastern	5.7	4.6	5.5
Luapula	5.9	4.3	5.6
Lusaka	5.6	4.9	5.5
Muchinga	5.7	4.3	5.5
Northern	5.5	4.1	5.3
North Western	6.2	4.8	5.9
Southern	6.0	4.6	5.7
Western	5.7	4.7	5.4
Zambia	**5.8**	**4.6**	**5.5**

Chapter 4: Livestock and Poultry Population

This chapter gives summary results of the population of both Livestock and Poultry in the country as at January 2018. The number of households raising livestock and Poultry are also estimated. The chapter further presents the average number of Livestock per household.

4.1 Livestock Raising Household

As at January 2018, the number of households raising cattle was 347,031, 481,968 raised goats, 19,909 raised sheep and 178,848 raised pigs. Establishments accounted for 1,049 raising cattle, 588 raising goats, 285 raising sheep and 263 raising pigs.

Table 4.1 further indicates that Cattle raising households were predominant in Southern and Eastern Provinces, goat raising households were predominant in Southern, Eastern and Central Provinces; sheep raising households were predominant in Eastern and Southern Provinces and Pig raising households were most common in Eastern and Southern Provinces.

Table 4.1: Number of Households by Type of Livestock Raised as at January 2018

Livestock Raising Households as at January 2018								
Province	**Cattle**	**Percent**	**Goat**	**Percent**	**sheep**	**Percent**	**Pigs**	**Percent**
Central	50,462	14.5	63,382	13.2	2,000	10	14,841	8.3
Copperbelt	7,589	2.2	21,246	4.4	1,234	6.2	8,455	4.7
Eastern	104,989	30.3	68,571	14.2	6,021	30.2	58,691	32.8
Luapula	1,868	0.5	40,913	8.5	544	2.7	6,030	3.4
Lusaka	13,436	3.9	29,346	6.1	1,277	6.4	3,464	1.9
Muchinga	10,132	2.9	32,610	6.8	681	3.4	14,893	8.3
Northern	10,126	2.9	50,128	10.4	1,014	5.1	15,014	8.4
North Western	11,777	3.4	38,437	8	891	4.5	8,306	4.6
Southern	104,677	30.2	124,887	25.9	6,150	30.9	34,833	19.5
Western	31,974	9.2	12,447	2.6	97	0.5	14,321	8
Zambia	**347,031**	**100**	**481,968**	**100**	**19,909**	**100**	**178,848**	**100**
Establishments	**1,049**		**588**		**285**		**263**	

4.2 Population of Different Types of Livestock

The total number of Livestock kept as at January 2018 is presented in table 4.2.

The contribution of establishments to the total herd and flock sizes in the country were small, especially for Cattle, Sheep and Goats.

4.2.1 Cattle Population

The Cattle population as of January 2018 was 3,714,667 (3,474,095 from smallholder households and 240,572 from establishments). Southern Province accounted for the highest number of Cattle (1,315,238), at 35.4 percent of the total national herd, followed by Central Province at 22.5 percent. Luapula Province accounted for the lowest percentage of cattle population at 0.3 percent of the total national stock as shown in table 4.2.

Table 4.2: Number of Livestock by Type and Province as at January 2018

	Cattle				Goats				Sheep				Pigs			
Province	**From HHs**	**From Estab**	**Total**	**Percent**	**From HHs**	**From Estab**	**Total**	**Percent**	**From HHs**	**From Estab**	**Total**	**Percent**	**From HHs**	**From Estab**	**Total**	**Percent**
Central	743,595	92,025	835,620	22.3	578,825	9,873	588,698	16.4	23,462	6,461	29,772	17.5	93,225	9,105	102,330	9.4
Copperbelt	74,628	18,801	93,429	2.5	163,903	2,600	166,503	4.6	11,979	2,196	14,141	8.3	106,545	5,783	112,303	10.4
Eastern	597,149	4,772	601,921	16.2	357,761	1,486	359,247	10	30,196	328	30,524	17.9	305,956	571	306,527	28.3
Luapula	10,789	1,597	12,386	0.3	165,292	383	165,675	4.6	1,897	80	1,977	1.2	20,861	269	21,130	2
Lusaka	147,574	25,186	172,760	4.7	334,759	2,918	337,677	9.4	15,265	2,676	17,941	10.5	67,664	25,183	92,847	8.6
Muchinga	81,829	3,333	85,162	2.3	159,187	511	159,698	4.5	3,151	604	3,755	2.2	66,807	550	67,357	6.2
Northern	47,841	689	48,530	1.3	215,317	203	215,520	6	3,771	10	3,781	2.2	52,929	328	53,250	4.9
North Western	95,484	3,188	98,672	2.7	230,185	575	230,760	6.4	5,056	459	5,496	3.2	52,420	177	52,597	4.9
Southern	1,225,090	90,148	1,315,238	35.4	1,284,510	6,346	1,290,856	36	53,880	8,706	62,586	36.8	176,021	5,762	181,783	16.8
Western	450,116	833	450,949	12.1	68,875	187	69,062	1.9	289	21	289	0.2	92,630	5	92,635	8.6
Zambia	**3,474,095**	**240,572**	**3,714,667**	**100**	**3,558,614**	**25,082**	**3,583,696**	**100**	**148,946**	**21,539**	**170,262**	**100**	**1,035,057**	**47,708**	**1,082,765**	**100**
Note: HH = Household, Estab = Establishment(registered entity)																

4.2.2 Goat Population

The total Goat population in the country (from both Household and Establishment) as of January 2018 was 3,583,696 (3,558,614 from households and 25,082 from establishments). Southern Province accounted for the highest number at 36.0 percent of the total national herd, followed by Central Province at 16.4 percent. Western Province accounted for the lowest percentage of goat population at1.9% of the total national stock (Table 4.2).

4.2.3 Sheep Population

The total Sheep population (from both Household and Establishment) was 170,262 of which Southern Province accounted for the highest percentage, at 36.8 percent of the total national stock, followed by Eastern and Central provinces at 17.9 and 17.5 percent, respectively. Western Province accounted for the lowest percentage of sheep population at 0.2 percent. Establishments made moderate contribution to the sheep stocks of Southern and Central Provinces but minimal or no contribution to other provinces (Table 4.2).

4.2.4 Pig Population

The Pig population from both Household and Establishment as at January 2018 was 1,082,765 of which Eastern Province accounted for the highest percentage, at 28.3 percent of the total national stock, followed by Southern Province at 16.8 percent. Luapula Province accounted for the lowest percentage of pig population at 2.0percent. Establishments contributed 47,708 heads to the national pig stock and Lusaka province contributed more than half of the national stock at 53 percent. In other provinces, Establishments made little or no contribution (Table 4.2).

4.3 Herd and Flock Size of Different Types of Livestock

4.3.1 Average Number of Cattle

The average number of Cattle per household as at January 2018 was 10 heads, however this varied from between 14.7 per household in Central Province to 4.7 per household in Northern Province (Table 4.3).The average number of Cattle per establishment was 223 heads.

4.3.2 Average Number of Goats

The average number of Goats per household as at January 2018 was 7.4 heads. However this varied from 11.4 per household in Lusaka Province to 4 per household in Luapula Province (Table 4.3). The average number of goats per establishment was 42 heads.

4.3.3 Average Number of Sheep

The average number of Sheep per household as at January 2018 was 7.5 heads, however this varied from 12 per household in Lusaka Province to 3 per household in Western Province as shown in Table 4.3. The average number of Sheep per establishment was 76 heads.

4.3.4 Average Number of Pigs

The average number of Pigs per household as at January 2018 was 5.8, however this ranged from 19.5 per household in Lusaka Province to 2.5 per household in Northern and Luapula Provinces respectively (Table 4.3). The average number of Pigs per establishment was 181 heads.

Table 4.3: Average Herd/Flock Size of Livestock Type per Household by Province as at January 2018.

Herd/flock size per household by livestock type								
Province	Number of Head per Household				Number of Head per Establishment			
	Cattle	Goats	Sheep	Pigs	Cattle	Goats	Sheep	Pigs
Central	14.7	9.1	11.7	6.3	240	43	83	154
Copperbelt	9.8	7.7	9.7	12.6	101	27	36	81
Eastern	5.7	5.2	5	5.2	63	27	21	16
Luapula	5.8	4	3.5	3.5	64	21	11	30
Lusaka	11	11.4	12	19.5	314	108	116	1325
Muchinga	8.1	4.9	4.6	4.5	95	18	121	25
Northern	4.7	4.3	3.7	3.5	51	18	5	30
North Western	8.1	6	5.7	6.3	131	36	46	22
Southern	11.7	10.3	8.8	5.1	388	66	106	206
Western	14.1	5.5	3	6.5	41	19	21	5
Zambia	**10**	**7.4**	**7.5**	**5.8**	**223**	**42**	**76**	**181**

4.4 Herd Composition

4.4.1 Cattle herd composition

Of the total 3,714,667 cattle raised in the country as at January, 2018 (from households and establishments), cows accounted for the largest category of cattle raised at 43.2%, followed by trained oxen at 18% and Heifers at 12.5% . The percentage of calves was 12%, bulls was 4.9% and untrained oxen contributed 4% (table 4.4).

Table 4.4: Distribution of Cattle Population by Category of Cattle as at January 2018.

	Cattle	Cows	Heifers	Bulls	Untrained Oxen	Trained Oxen	Tollies/ Steers	Calves
Number	3,714,667	1,603,078	464,175	180,749	146,269	660,667	218,364	441,365
Percent	100	43.2	12.5	4.9	4.0	18.0	6.0	12.0

Table 4.5 shows that of the total 1,603,078 cows in the country, Southern Province had the highest number (contributing 36% of the total stock in the country). This was followed by Central Province with 25%. The Provinces with the smallest number of cows were Luapula and Northern Provinces with 1% each.

Table 4.5: Cattle Population by category of Cattle as at January 2018.

Province	Cattle	Cows		Heifers		Bulls		Untrained Oxen		Trained Oxen		Tollies /Steers		Calves	
	Number	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Central	835,620	393,663	25	124,092	27	32,873	18	29,201	20	91,396	14	68,771	31	95,623	22
Copperbelt	93,429	49,189	3	7,818	2	8,229	5	4,263	3	12,413	2	3,423	2	8,093	2
Eastern	601,921	197,970	12	77,183	17	36,036	20	17,796	12	172,986	26	35,014	16	64,935	15
Luapula	12,386	8,334	1	1,305	0	1,040	1	73	0	134	0	840	0	661	0
Lusaka	172,760	80,749	5	22,878	5	12,923	7	4,451	3	23,325	4	8,567	4	19,867	5
Muchinga	85,162	38,803	2	12,475	3	11,117	6	1,640	1	5,079	1	4,282	2	11,767	3
Northern	48,530	16,454	1	4,811	1	6,072	3	1,190	1	14,213	2	2,307	1	3,484	1
North Western	98,672	41,270	3	12,548	3	13,358	7	1,789	1	13,100	2	5,271	2	11,335	3
Southern	1,315,238	580,047	36	151,454	33	39,055	22	63,944	44	252,957	38	65,476	30	162,304	37
Western	450,949	196,599	12	49,611	11	20,046	11	21,921	15	75,064	11	24,413	11	63,295	14
Zambia	**3,714,667**	**1,603,078**	**100**	**464,175**	**100**	**180,749**	**100**	**146,269**	**100**	**660,667**	**100**	**218,364**	**100**	**441,365**	**100**

Southern Province followed by Eastern Province had the highest percentages of trained oxen at 38 percent and 26 percent, respectively. Muchinga and Luapula had the lowest percentages at 1 percent and 0 percent, respectively.

A total of 180,749 bulls were recorded as at January, 2018. Southern and Eastern Provinces recorded the highest numbers at 22 % and 20% of the total number of bulls respectively. This was followed by Central and Western Provinces at 18 and 11 percent, respectively. Northern and Luapula Provinces recorded the lowest percentage of bulls at 3 percent and 1 percent, respectively.

The highest number of steers were found in Central and Southern Provinces accounting for 31 percent and 30 percent, respectively of the total steers population in the country respectively.

4.4.3 Cattle Herd Size

Of the 347,031 cattle raising households as at January, 2018, (190,056) had a herd size of 1-5 cattle followed by households with 6-10 cattle (77,551). The results indicate that 3,3 % of households raising cattle had a herd size greater than 40 heads. Households with herd sizes above 150 were 951 and these were found in Central, Lusaka, Southern and Western Provinces (476, 29, 362 and 84 households respectively) (Table 4.6).

Table 4.6: Cattle Herd Size Distribution by Province as at January 2018

Province	Number of Households										
	1 - 5 Heads	6 - 10 Heads	11 - 15 Heads	16 - 20 Heads	21 - 30 Heads	31 - 40 Heads	41 - 50 Heads	51 - 60 Heads	61 - 100 Heads	101 - 150 Heads	Above 150 Heads
Central	24,285	12,048	5,530	2,762	2,200	993	708	294	855	311	476
Copperbelt	4,683	1,135	819	207	203	47	85	235	107	69	-
Eastern	69,658	22,477	6,632	2,803	2,472	611	216	51	70	-	-
Luapula	1,395	286	108	33	-	1	-	-	44	-	-
Lusaka	5,850	3,604	1,508	886	895	294	158	59	73	80	29
Muchinga	5,773	2,242	787	487	555	108	78	30	68	3	-
Northern	7,629	1,740	379	137	124	56	45	-	17	-	-
North Western	7,512	2,076	634	512	408	267	169	21	139	39	-
Southern	48,608	26,230	10,971	6,153	6,259	2,288	1,326	873	1,153	454	362
Western	14,664	5,712	2,795	2,188	2,424	1,493	964	686	823	143	84
Zambia	**190,056**	**77,551**	**30,162**	**16,167**	**15,540**	**6,159**	**3,748**	**2,249**	**3,349**	**1,099**	**951**

4.4.4 Goat Herd size

Most households (271,872) that raised goats had a herd size of between 1–5 heads as at January 2018. Herd sizes greater than 30 heads were only found in 10,000 households in the country. Southern Province had the largest number of households (50,964) raising between 1–5 goats representing 18.7 percent. Western province had the smallest number of households (8,352) with a flock size ranging between 1-5 goats representing 3 percent.

Southern Province had the highest number of Households with a flock size of over 50 heads (1,309 households) (Table 4.7).

Table 4.7: Goat Herd Size Distribution by Province as at January 2018

Province	Number of Goat Raising Households										
	1 - 5 Heads	6 - 10 Heads	11 - 15 Heads	16 - 20 Heads	21 - 30 Heads	31 - 40 Heads	41 - 50 Heads	51 - 60 Heads	61 - 100 Heads	101 - 150 Heads	Above 150 Heads
Central	27,997	18,365	7,703	3,979	3,335	1,236	374	175	177	41	-
Copperbelt	11,364	5,601	1,743	1,256	629	538	64	25	26	-	-
Eastern	46,668	15,437	3,873	1,374	974	194	28	24	-	-	-
Luapula	31,836	7,260	1,341	327	94	38	4	14	-	-	-
Lusaka	11,165	8,049	3,725	2,467	2,190	751	519	262	160	20	41
Muchinga	23,122	7,281	1,493	334	281	-	73	19	-	-	8
Northern	37,048	10,733	1,842	342	139	19	-	-	6	-	-
North Western	23,357	10,230	3,210	791	456	204	122	32	33	3	-
Southern	50,964	36,124	15,537	9,553	7,731	2,529	1,137	344	647	203	115
Western	8,352	2,956	677	190	118	63	40	4	47	-	-
Zambia	**271,872**	**122,036**	**41,143**	**20,614**	**15,945**	**5,572**	**2,359**	**900**	**1,095**	**267**	**165**

4.4.5 Sheep Herd size

Most households (11,941) had a flock size of between 1-5 sheep (table 4.7). Only a small number of households (681) raised more than 30 sheep. Eastern and Southern Provinces had the largest number of households with a flock size ranging between 1-5 sheep. Western province had 97 households that raised 1-5 heads per household.

Table 4.8: Sheep Herd Size Distribution by Province as at January 2018

Province	Number of Sheep Raising Households									
	1-5 Heads	6-10 Heads	11-15 Heads	16-20 Heads	21-30 Heads	31-40 Heads	41-50 Heads	51-60 Heads	61-100 Heads	101-150 Heads
Central	938	449	216	22	229	56	-	56	34	-
Copperbelt	538	350	49	56	203	35	-	-	3	-
Eastern	4,258	1,417	154	74	5	59	53	-	-	-
Luapula	451	73	20	-	-	-	-	-	-	-
Lusaka	583	295	130	27	121	48	52	-	8	13
Muchinga	551	91	27	11	-	-	-	-	-	-
Northern	827	188	-	-	-	-	-	-	-	-
North Western	538	231	71	36	16	-	-	-	-	-
Southern	3,161	1,696	448	347	235	124	-	93	47	-
Western	97	-	-	-	-	-	-	-	-	-
Zambia	11,941	4,789	1,115	573	810	322	105	149	92	13

4.4.6 Pig Herd Size

A total of 178,848 households raised pigs as at January, 2018. The highest number of households (116,080) had between 1 and 5 pigs. Pig raising households with over 150 pigs were 140 in the country.

Lusaka and Copperbelt Provinces had the highest proportion of households with a herd size of over 50 pigs (190 and 260 households respectively) (Table4.9).

Table 4.9: Distribution of Pig raising Households by Pig herd size as at January 2018

Province	Number of Households										
	1 - 5 Heads	6 - 10 Heads	11 - 15 Heads	16 - 20 Heads	21 - 30 Heads	31 - 40 Heads	41 - 50 Heads	51 - 60 Heads	61 - 100 Heads	101 - 150 Heads	Above 150 Heads
Central	9,496	3,279	758	604	476	116	91	-	11	6	3
Copperbelt	4,258	1,972	670	268	559	317	152	4	55	189	12
Eastern	36,295	16,559	4,078	1,047	482	111	41	77	-	-	-
Luapula	4,993	805	113	83	1	21	-	-	14	-	-
Lusaka	1,454	803	357	171	258	195	37	26	20	44	100
Muchinga	10,351	3,555	690	140	119	30	-	-	-	-	8
Northern	11,929	2,471	401	113	93	8	-	-	-	-	-
North Western	4,865	2,405	514	325	112	27	3	26	30	-	-
Southern	24,337	6,624	2,201	868	609	42	85	12	46	-	9
Western	8,103	4,383	957	482	194	90	46	22	37	-	8
Zambia	**116,080**	**42,856**	**10,738**	**4,102**	**2,901**	**956**	**456**	**167**	**213**	**239**	**140**

4.5 Poultry Production

4.5. 1 Chicken Population

The Village Chicken population from both Household and Establishment was 15,391,150 as at January 2018. Southern Province accounted for the highest number (3,157,432), at 20.5 percent of the total national stock, followed by Central Province at 17.1 percent. North-Western Province accounted for the lowest percentage at 4.9 percent (Table 4.10). The contribution from establishments was very small in all Provinces.

The Broiler population from both Household and Establishment was 6,769,921as at January, 2018 of which Lusaka Province accounted for the highest number (2,554,752), at 37.7 percent of the total national stock, followed by Copperbelt Province at 27.8 percent. Western Province accounted for the lowest proportion of broiler population at 0.5 percent. Establishments made a considerable contribution in Central, Lusaka, Copperbelt, Southern and Eastern Provinces. The Establishment contribution from other provinces was very small (Table 4.10).

The Layer population from both Household and Establishment was 1,672,954. Lusaka Province account for the highest percentage of 52.3% of the total national stock, followed by Central Province at 22.2 percent. Luapula Province accounted for the lowest at 0.3 percent of the total national stock. The Number of layers from Establishments was greater than the layers from households (929,973 against 742,981 respectively). Establishments contributed above 50 percent of the layers in Lusaka province (Table 4.10).

Table 4.10: Numbers of Poultry by Province as at january 2018

Province	Village Chickens				Broiler Chickens				Layer Chickens			
	From HHs	From Estab	Total	Percent	From HHs	From Estab	Total	Percent	From HHs	From Estab	Total	Percent
Central	2,618,909	11,332	2,630,241	17.1	409,017	220,849	629,866	9.3	56,670	315,550	372,220	22.2
Copperbelt	1,377,544	43,336	1,420,880	9.2	1,795,154	84,859	1,880,013	27.8	48,284	211,527	259,811	15.5
Eastern	2,011,608	1,913	2,013,521	13.1	322,271	44,069	366,340	5.4	9,237	12,007	21,244	1.3
Luapula	796,075	906	796,981	5.2	160,328	9,778	170,106	2.5	1,237	4,335	5,572	0.3
Lusaka	1,254,527	7,731	1,262,258	8.2	2,282,752	272,000	2,554,752	37.7	557,679	316,491	874,170	52.3
Muchinga	1,148,255	3,427	1,151,682	7.5	172,853	5,701	178,554	2.6	16,140	6,081	22,221	1.3
Northern	1,299,368	848	1,300,216	8.4	141,943	1,610	143,553	2.1	8,196	-	8,196	0.5
North Western	755,366	601	755,967	4.9	354,068	2,955	357,023	5.3	10,433	27,040	37,473	2.2
Southern	3,150,184	7,248	3,157,432	20.5	409,691	49,407	459,098	6.8	17,538	36,942	54,480	3.3
Western	901,944	28	901,972	5.9	30,615	-	30,615	0.5	17,566	-	17,566	1.1
Zambia	**15,313,780**	**77,370**	**15,391,150**	**100**	**6,078,693**	**691,228**	**6,769,921**	**100**	**742,981**	**929,973**	**1,672,954**	**100**

Note: HH = Household, Estab = Establishment (Registered entity)

4.6 Dogs and Cats Population

4.6.1 The Dog Population

The Dog population as at January 2018 from both Household and Establishment was 968,372. Of the national total, Southern Province accounted for the highest number (229,886), at 23.7 percent, followed by Central Province at 16.7 percent. Luapula Province had the lowest dog population at 2.3 percent. The contribution from establishments at National and provincial levels were very small.

Table 4.11: Numbers of Dogs Raised by Province as at January 2018

Province	From Estab	From HH	Total	Percent
Central	658	161,175	161,833	16.7
Copperbelt	72	67,882	67,954	7
Eastern	57	122,022	122,079	12.6
Luapula	28	22,300	22,328	2.3
Lusaka	193	97,403	97,596	10.1
Muchinga	25	56,624	56,649	5.8
Northern	27	51,076	51,103	5.3
North-western	22	42,453	42,475	4.4
Southern	506	229,380	229,886	23.7
Western	4	116,465	116,469	12
Zambia	**1,592**	**966,780**	**968,372**	**100**

4.6.2 The Cat Population

The Cat population from both Household and Establishment was 411,221. Southern Province accounted for the highest number (154,876), at 37.7 percent of the national total followed by Central Province at 15.7 percent. North-western Province accounted for the lowest cat population at 1.9 percent of the national total. The contribution from establishments at National and provincial levels were very small.

Table 4.12: Numbers of Cats Raised by Province as at January 2018

Province	From Estab	From HH	Total	Percent
Central	290	64,339	64,629	15.7
Copperbelt	62	17,505	17,567	4.3
Eastern	12	53,739	53,751	13.1
Luapula	7	8,613	8,620	2.1
Lusaka	119	30,501	30,620	7.4
Muchinga	10	18,465	18,475	4.5
Northern	4	11,111	11,115	2.7
North-western	17	7,873	7,890	1.9
Southern	168	154,708	154,876	37.7
Western	-	43,678	43,678	10.6
Zambia	**689**	**410,532**	**411,221**	**100**

4.6.3 Population of Other Livestock and Poultry

Table 4.13 shows the population of the other livestock and Poultry raised in the country as at January 2018. The total numbers were: 1,138,797 Pigeons, 928,980 Ducks, 848,091 Guinea Fowls and 550,790 Rabbits. Other livestock were raised in small numbers (Table 4.13).

Table 4.13: Population of other Livestock and Poultry as at January 2018

Population of Other Livestock and Poultry	
Other Livestock/Poultry	**Number**
Other Poultry	
Pigeons	1,138,797
Quails	171,731
Turkeys	93,848
Ducks	928,980
Ostriches	1,262
Guinea fowls	848,091
Other Livestock	
Rabbits	550,790
Horses	493
Donkeys	13,967

Chapter5: Honey Production

This chapter highlights the results of the 2017 production year on: bee keeping, honey production and sales in Zambia as recorded in the 2017/2018 Livestock and Aquaculture census.

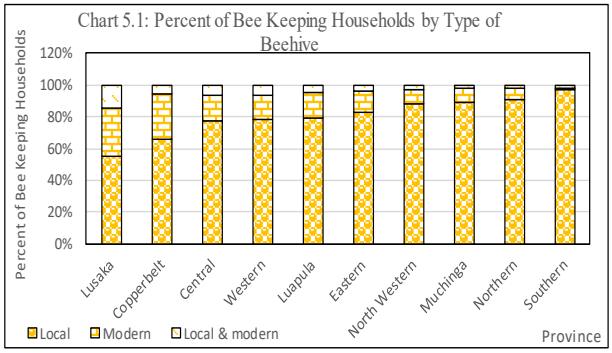
5.1 Types of beehives kept by Households

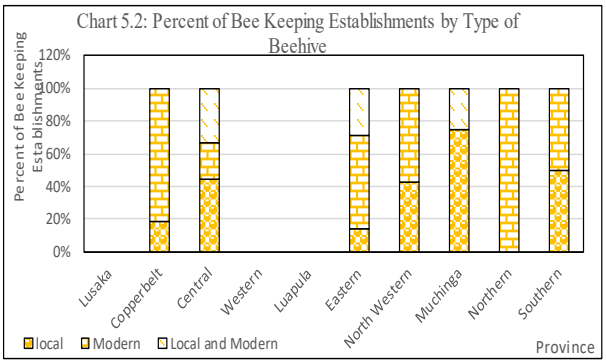
Table 5.1 shows the percentage of households and Establishment by types of beehives as at January 2018. Of 37,082 bee keeping households in the country, 83% used the local type, while 13.1% used the modern beehives and 4% used a combination of the local and modern beehives. The most common beehive type used by establishments was the modern beehive at 54.3%, followed by the local beehive at 32.6% and a combination of Local and Modern beehive at 13%.

Table 5.1: Bee Keeping Households and Establishment by type of bee hive and Province as January 2018

Province	Households				Establishments			
	Total HH	Local	Modern	Local & modern	Total Establishments	Local	Modern	Local & Modern
	Number	Percent	Percent	Percent	Number	Percent	Percent	Percent
Central	4,781	77.3	15.8	6.9	9	44.4	22.2	33.3
Copperbelt	2,757	59.2	34.5	6.3	16	18.8	81.3	-
Eastern	8,507	81.7	14.6	3.7	7	14.3	57.1	28.6
Luapula	122	79	16.4	4.6	-	-	-	-
Lusaka	925	51.5	33.3	15.2	-	-	-	-
Muchinga	4,145	88.7	9.1	2.1	4	75	-	25
Northern	1,519	89.8	8.4	1.8	1	-	100	-
North Western	9,642	88	9.3	2.7	7	42.9	57.1	-
Southern	3,757	97.2	0.9	1.9	2	50	50	-
Western	927	78.4	14.9	6.7	-	-	-	-
Zambia	**37,082**	**83**	**13.1**	**4**	**46**	**32.6**	**54.3**	**13**

Figure 5.1 and 5.2 Percent of Households and Establishments by Type of beehive and province





5.2 Number of beehives

The number of beehives country wide was 802,385 as at January 2018 (Table 5.2). North Western Province had the highest number of beehives 553,095 (68.9% of the national total), followed by Eastern Province with 81,051 (10.1%) and Muchinga Province with 75,199 (9.4%). Luapula Province had the lowest number of beehives 556 (0.1%). Out of the total beehives in the country 487,270 (60.7%) were colonized. North Western Province recorded the highest number of colonized beehives of 309,890 while Luapula Province had the least with 411. On average, each bee keeping household had 22 Beehives (Table 5.2)

Table 5.2: Distribution of number of beehives by Household, Establishment and province as at January 2018

Province	Number of beehives owned							
	Total beehives		Households			Establishments		
	Number	%	Number of beehives	Colonized	Average number of beehives per HH	Number of beehives	Colonized	Average number of Beehives per Establishment
Central	25,518	3.2	25,383	17,727	5	135	80	15
Copperbelt	31,126	3.9	30,394	20,890	11	732	387	46
Eastern	81,051	10.1	80,866	63,417	10	185	120	26
Luapula	556	0.1	556	411	5	0	0	-
Lusaka	5,236	0.7	5,236	3,745	6	-	-	-
Muchinga	75,199	9.4	75,123	51,511	18	76	50	19
Northern	4,361	0.5	4,357	3,430	3	4	4	4
North Western	553,095	68.9	552,373	309,437	57	722	453	103
Southern	12,236	1.5	12,225	8,878	3	11	11	6
Western	14,007	1.7	14,007	6,719	15	-	-	-
Zambia	**802,385**	**100**	**800,520**	**486,165**	**22**	**1,865**	**1,105**	**40.5**

5.3 Comb Honey production and sales

5.3.1 Quantity of Comb Honey Produced

Table 5.3 shows that a total of 9,014.2 tonnes of comb honey were produced country wide during the 2017 production year. North-Western Province produced the largest quantity of comb honey amounting to 4,228 tonnes (46.9 % of the total national comb honey produced) followed by Eastern Province which produced 1,723 tonnes (representing 19.1 % of the national total comb honey). Of the total 9,014 tonnes produced, 4,671 tonnes (51%) were sold.

Table 5.3: Quantity of Comb Honey Produced and Sold by Province in 2017

Province	Comb Honey Production (MTs)		Comb Honey Sold (MTs)	
	Sum (MTs)	Percent	Sum (MT)	Percent
Central	1,266.40	14	515.5	40.7
Copperbelt	484	5.4	323	66.7
Eastern	1,722.90	19.1	551.9	32
Luapula	3.7	0	2.2	60.1
Lusaka	388.2	4.3	187.5	48.3
Muchinga	356.4	4	100.9	28.3
Northern	191.3	2.1	84.8	44.3
North Western	4,228.10	46.9	2,708.70	64.1
Southern	294.1	3.3	131.6	44.7
Western	79.2	0.9	65.1	82.2
Zambia	**9,014.20**	**100**	**4,671.00**	**51.8**

Chapter 6: Fish Farming

This chapter covers data collected from households and establishments that reported to have been engaged in fish farming. At household level, data collected ranges from number of households engaged in fish farming, gender of household head, and source of water for fish farming facility to challenges faced in fish farming. As for establishments, information pertaining to the fish farming facility and production details were collected as well as the management aspects of their fish farming business.

6.1 Number of Households and Establishment Involved in Fish Farming

Table 6.1 shows that a total of 9,615 households and 126 establishments were involved in fish farming countrywide as at January 2018. Out of the total 9,615 households involved in fish farming, Northern Province had the highest proportion, 33.9 percent. Northern Province also had the highest proportion of Establishments involved in fish production at 19.8 percent.

Table 6.1: Distribution of Fish Farming households and Establishment by Province as at January 2018

Province	Households		Establishment	
	Number	Percent	Number	Percent
Central	463	4.8	9	7.1
Copperbelt	902	9.4	14	11.1
Eastern	499	5.2	5	4
Luapula	1,111	11.6	10	7.9
Lusaka	542	5.6	13	10.3
Muchinga	1,017	10.6	18	14.3
Northern	3,255	33.9	25	19.8
North Western	1,394	14.5	21	16.7
Southern	288	3	11	8.7
Western	145	1.5	0	0
Zambia	**9,615**	**100**	**126**	**100**

6.2 Facilities used for Fish farming

Table 6.2 shows that households had 35,744 Fish Farming Facilities and out of this number 18,213 were stocked. Establishments had 4,050 stocked facilities. In total there were 22,263 stocked fish farming facilities in the country. The average number of fish farming facilities per household and establishment was 4 and 32 respectively.

Further, information on the number of stocked facilities in Table 6.2 reveals that ponds were the most used fish farming facility (18,582) at 83.5% followed by tanks (2,567) at 11.5 percent, dams (796) at 3.6 percent and cages (314) at 1.4 percent of the total number of fish farming households (Table 6.2).

Table 6.2: Distribution of fish Farming Facilities as at January 2018

Fish farming facility	From Household					From Establishments		Total Stocked Facilities	
	Stocked & Unstocked facilities		Stocked facilities		Percent of stocked area	Stocked Facilities			
	Number	Area/ Volume (m2/m3)	Number	Area/ Volume (m2/m3)		Number	Area/ Volume Stocked (m2/m3)	Number	%
Ponds (m2)	34,334	11,958,334	17,234	8,114,572	68	1,348	3,843,434	18,582	83.5
Cages (m3)	190	13,368	175	13,368	100	139	190,115	314	1.4
Tanks (m3)	30	3,393	8	429	13	2,537	10,694	2,567	11.5
Pens (m2)	4	99	4	99	100	0	-	4	0.02
Dams (m2)	1,140	988,838	770	-	70	26	298,907	796	3.6
Weir (m2)	46	1,671	22	117	7	0		22	0.1
Total	**35,744**		**18,213**			**4,050**		**22,263**	**100**

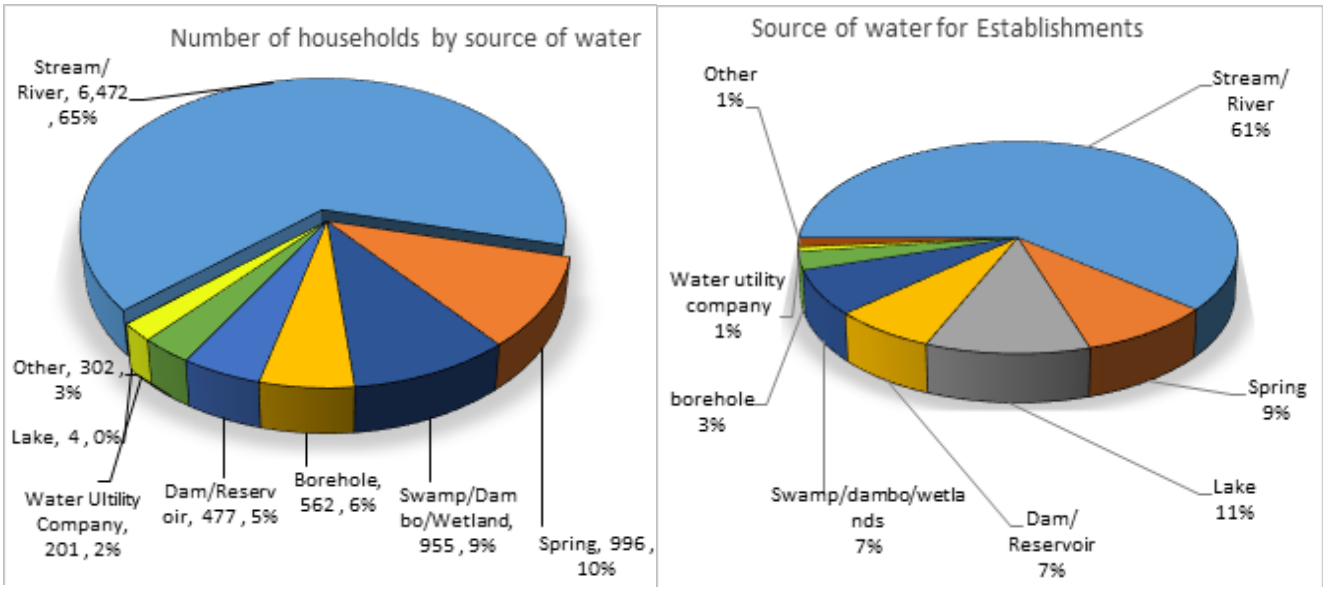
The highest number of fish farming facilities as shown in table 6.3 were recorded in Lusaka Province constituting mainly of fish ponds (9,769) and Recirculation Tanks (2,521) followed by Northern Province using 8,254 fish ponds and 305 dams. The lowest number of fish farming facilities were reported in Western Province.

Table 6.3: Distribution of facilities used in fish farming by Province as at January 2018

Province	Number of Facilities under Households						Number of Facilities under Establishments						Totals					
	Ponds	Cages	Tanks	Pens	Dams	Weir	Ponds	Cages	Tanks	Pens	Dams	Weir	Ponds	Cages	Tanks	Pens	Dams	Weir
Central	511	18	8	4	102	4	11	0	0	0	2	0	522	18	8	4	104	4
Copperbelt	3,371	15			277	7	139	5	0	0	4	0	3,510	20	0	0	281	7
Eastern	602	10			1		53	0	0	0	1	0	655	10	0	0	2	0
Luapula	2,856	94			122		60	0	8	0	0	0	2,916	94	8	0	122	0
Lusaka	9,465				16		304	16	2,521	0	3	0	9,769	16	2,521	0	19	0
Muchinga	2,792				88		213	0	0	0	0	0	3,005	0	0	0	88	0
Northern	8,092	4			295		162	37	8	0	10	0	8,254	41	8	0	305	0
North Western	4,209	13			229		192	2	0	0	2	0	4,401	15	0	0	231	0
Southern	290	35	23			33	255	38	0	0	4	0	545	73	23	0	4	33
Western	254				10	2	0	0	0	0	0	0	254	0	0	0	10	2
Total	**32,442**	**190**	**30**	**4**	**1140**	**46**	**1389**	**98**	**2,537**	**0**	**26**	**0**	**33,831**	**288**	**2,567**	**4**	**1,166**	**46**

Chart 6.1 below indicates that the most common source of water for fish farming were streams or rivers supplying water to 65 percent and 61 percent facilities at household and establishment levels, respectively. Springs and Swamps/dambos were the next most common water source for fish farming for households at 10 percent and 9 percent, respectively. Lakes and springs were the next most important water source for Establishments at11 percent and 9 percent, respectively. Lakes, Dams and Water Utility companies were among the least fish farming water sources for both households and establishments.

Figure 6.1: Water Source for Fish Farming facilities



6.3 Type of Fish Produced by Households and Establishment

At household level, table sized fish producers were prominent accounting for 71 percent followed by those producing a combination of table-size and fingerlings (21 percent) and fingerling producers (7.7 percent). Out of 126 establishments covered, the majority (42.9 percent) produced both table sized fish and fingerlings followed by those producing table sized fish only (41.3 percent) and the least were fingerlings producers accounting for 15.9 percent.

Table 6.4: Number and Percentage of Households and Establishments by Type of Fish Produced as at January 2018

Type of Fish	Households		Establishment		Total	
	Number	Percent	Number	Percent	Number	Percent
Table-Size	6,830	71	52	41.3	6,882	70.6
Fingerlings	737	7.7	20	15.9	757	7.8
Table-Size and fingerling	2,049	21.3	54	42.9	2,103	21.6
Zambia	**9,615**	**100**	**126**	**100**	**9,741**	**100**

6.4 Quantity of fish harvested and sold

6.4.1 Quantity of Fish Harvested by Households and Establishment

Table 6.5 shows the quantity of fish produced in each province in 2017 from both Households and Establishments. A total of 21,567.1 metric tonnes of fish were produced out of which establishments contributed 15,997 metric tonnes (74 percent of total production) while households contributed 5,570 metric tonnes.

At Household level, Northern Province contributed the highest quantity of 2,118.5 metric tonnes representing 38 percent of the total household production followed by Luapula and Lusaka Provinces at 15.1 percent and 11.5 percent, respectively. The lowest production at household level was recorded in Eastern Province (30.6 metric tonnes) accounting for 0.5 percent of the total household production.

The highest production from establishments was recorded in Southern Province accounting for 76.1 percent of total establishment production followed by Lusaka Province and Northern Province at 8.4 percent and 7.3 percent, respectively (Table 6.5).

Table 6.5: Fish production by province in 2017

Province	Households		Establishments		Total	
	MT	(%)	MT	(%)	(MT)	(%)
Central	237.4	4.3	0.9	0	238.3	1.1
Copperbelt	411.7	7.4	881.1	5.5	1,292.70	6
Eastern	30.6	0.5	0.4	0	31	0.1
Luapula	843	15.1	0.8	0	843.8	3.9
Lusaka	641.9	11.5	1,341.90	8.4	1,983.80	9.2
Muchinga	571	10.3	403.3	2.5	974.3	4.5
Northern	2,118.50	38	1,173.50	7.3	3,291.90	15.3
North Western	493.6	8.9	28	0.2	521.7	2.4
Southern	171.3	3.1	12,167.30	76.1	12,338.60	57.2
Western	51	0.9	-		51	0.2
Zambia	**5,570.00**	**100**	**15,997.00**	**100**	**21,567.10**	**100**

6.4.2 Quantity of Fish Species Harvested by Households and Establishment

The major fish species raised in aquaculture in Zambia were bream (Nile Tilapia, Three Spotted tilapia, Green headed tilapia, Tanganyika bream and Red Breasted tilapia), Carp fish and Cat fish (table 6.6).

Table 6.6: Fish Production by Species for Households and Establishments in 2017

Fish Species	Households		Establishment		Total	
	(MT)	(Percent)	(MT)	(Percent)	(MT)	(Percent)
Three spotted tilapia	407	7.3	1,646.60	10.3	2,053.60	9.5
Green headed tilapia	1,793.50	32.2	9.5	0.1	1,802.90	8.4
Red breasted tilapia	1,087.20	19.5	3	0	1,090.20	5.1
Nile tilapia	742.5	13.3	14,132.90	88.3	14,875.30	69
Carp fish	94.7	1.7	5	0	99.7	0.5
Cat fish	5.9	0.1	-	0	5.9	0
Tanganyika Bream	1,439.30	25.8	200.1	1.3	1,639.50	7.6
Zambia	**5,570.00**	**100**	**15,997.00**	**100**	**21,567.10**	**100**

Green headed tilapia was the most common fish species produced at household level accounting for 32.2 percent of the household production as indicated by table 6.6. The second and third most important were Tanganyika bream and Red breasted bream representing 25.8 percent and 19.5 percent of the total fish farming production, respectively.

At Establishment level, the major fish species produced was Nile Tilapia accounting for 88.3 percent of total production of 15,997 Metric Tonnes. The second most important species was the Three Spotted Tilapia at 10.3 percent.

Overall, Nile Tilapia was the most produced fish species in Zambia at 69.0 percent of the total production of 21,567.1 Metric Tonnes. The second, third and fourth species were Three spotted tilapia, Green headed tilapia and Tanganyika bream accounting for 9.5 percent, 8.4 percent and 7.6 percent, respectively (Table 6.6).

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