

**FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
CENTRAL STATISTICAL AGENCY**

**AGRICULTURAL SAMPLE SURVEY
2017/18 [2010 E.C.]**

VOLUME II

**REPORT ON
LIVESTOCK AND LIVESTOCK CHARACTERISTICS
(PRIVATE PEASANT HOLDINGS)**



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Abbreviations

CSA	-	Central Statistical Agency
CV	-	Coefficient of Variation
E.C.	-	Ethiopian Calendar
EA	-	Enumeration Area
NA	-	Not Available
SE	-	Standard Error
SNNP	-	Southern Nation Nationalities and People's Region

CHAPTER I

INTRODUCTION AND OBJECTIVES OF THE SURVEY

1.1 INTRODUCTION

Ethiopia is believed to have the largest livestock population in Africa. This livestock sector has been contributing considerable portion to the economy of the country, and still promising to rally round the economic development of the country. It is eminent that livestock products and by-products in the form of meat, milk, honey, eggs, cheese, and butter supply etc. provide the needed animal protein that contribute to the improvement of the nutritional status of the people. Livestock also plays an important role in providing export commodities, such as live animals, hides, and skins to earn foreign exchanges to the country. On the other hand, draught animals provide power for the cultivation of the smallholdings and for crop threshing virtually all over the country and are also essential modes of transport to take holders and their families long-distances, to convey their agricultural products to the market places and bring back their domestic necessities. Livestock as well confer a certain degree of security in times of crop failure, as they are a “near-cash” capital stock. Furthermore, livestock provides farmyard manure that is commonly applied to improve soil fertility and also used as a source of energy.

Due to the very important role that the livestock sector plays in the economy of the country, formulation of development plan regarding the sector is indispensable. It is therefore imperative that livestock development plans should be formulated on the basis of reliable statistical data, and hence, timely and accurate livestock data are required for the formulation, implementation, monitoring, and evaluation of development plan and program in the sector. These livestock data can be generated usually using surveys and censuses. In this regard, subsequent surveys and a solitary agricultural census have been carried out by the Central Statistical Agency (CSA) to make available data on livestock though they were not comprehensive. The 2017/18 Annual Agricultural Sample Survey was also

conducted to produce these same data so as to keep hold of continuity and update users in general.

In this report: estimates of livestock that include cattle, sheep, goats, draught animals (horses, mules, donkeys and camels), poultry and beehives were made based on the information obtained from the holders within the sampled agricultural households in rural sedentary areas of the country as to the reference date (November 10, 2017 or Hidar 1, 2010 E.C.) and reference period (November 12, 2016 to November 10, 2017 or Hidar 2, 2009 E.C. to Hidar 1, 2010 E.C.). The report comprises the results obtained from the livestock survey as well as brief discussions made on the results. The survey results at regional and zonal levels for the sedentary rural areas are presented in Statistical Tables 3.1 - 3.30. The standard errors (SE) and coefficients of variation (CV) are given in Annex Tables 1 – 10, for some variables.

1.2 OBJECTIVES OF THE SURVEY

The general objective of the livestock survey is to produce data that could be used for development planning and policy formulation regarding the sector, and the specific objectives are to provide quantitative information on the size and characteristics of livestock in rural sedentary areas at zonal level. In order to meet these objectives, data on: livestock number by type, age, sex, purpose and breed; livestock products particularly milk, egg, and honey; livestock diseases and vaccination; and animal feed were collected from sampled agricultural households in rural sedentary areas.

CHAPTER II

SURVEY METHODOLOGY AND OPERATIONS

2.1 COVERAGE

The 2017/18 (2010 E.C.) Annual Livestock Sample Survey covered the rural agricultural population in all the regions of the country except the non-sedentary population of three zones of Afar & six zones of Somali region.

To be covered by the survey, a total of 1,600 enumeration areas (EAs) were selected. However, due to various reasons that are beyond control, in 35 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,565 EAs (97.81%) throughout the regions. The Livestock Sample Survey was conducted on the basis of 15 agricultural households selected from each EA. Regarding the ultimate sampling units, it was intended to cover a total of 23,452 agricultural households, however, 23,452 (97.72%) were actually covered by the survey.

2.2 SAMPLING FRAME

The list containing EAs of all regions and their respective agricultural households obtained from the 2007 (1999 E.C). Population and Housing Census Frame was used as the sampling frame in order to select EAs (Primary Sampling Units). Consequently, all sample EAs were selected from this frame based on the design proposed for the survey. Second stage sampling units households, on the other hand, were selected from a fresh list of households that were prepared for each EA at the beginning of the survey

2.3 SAMPLE DESIGN

A two stage stratified cluster sample design was used to select the sample in which the clusters or primary sampling units (PSUs) were enumeration areas and second stage sampling units were agricultural households. Each zones/special wereda of

the four regions (Tigray, Amahara, Oromiya and SNNP) was further stratified in to three agro-ecologies (Kolla, Dega and Weyina Dega). Except Harari and Dire Dawa, where each region as a whole is considered to be the domain of estimation.

Summery Table II.1: Total and covered Zones/Strata by Region

Region	Number of Zones/ Strata	
	Total	Covered
Tigray	5	5
Afar	5	2
Amhara	11	11
Oromiya	17	17
Somalie	9	3
Benishangul Gumuz	4	4
S.N.N.P.R	18	18
Gambela	4	4
Hareri	1	1
Dire Dawa	1	1
Total	75	66

2.4 SELECTION SCHEME

Enumeration areas from each stratum were selected systematically using probability proportional to size sampling technique; size being number of households of EAs obtained from the 2007 (1999 E.C) Population and Housing Census. Within each sample EA 15 agricultural households were selected systematically from the fresh list of households prepared at the beginning of the survey.

Distribution of sampling units (sampled and covered EAs) by stratum is also presented in Appendix-I. Moreover, estimation procedures of different estimates are provided in the Appendix II. Estimates of Standard Errors and Coefficient of Variations for selected estimates are also presented in the *Annex Tables 1-10*.

2.5 BASIC CONCEPTS AND DEFINITIONS

It is thought essential that the definitions used for some key terms in the survey should be laid open and these are given as follows.

Enumeration Area (EA): An enumeration area in rural parts of the Country is a locality that is less than or equal to a farmer's association area and usually consists of 150-200 households.

Households: A household may be either;

a) A one person household, that is a person who makes provision for his own food or other essentials for living without combining with any other person to form part of a multi person household or

b) A multi person household, that is, a group of two or more persons who live together and make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to greater or lesser extent. They may be related or unrelated persons, or a combination of both.

Agricultural Households: A household is considered an agricultural household when at least one member of the household is engaged in growing crops and /or breeding and raising livestock in private or in partnership with others.

Holder: A holder is a person who exercises management control over the operations of the agricultural holding and takes the major decision regarding the utilization of the available resources. He also has technical and economic responsibility for the holding. He may operate the holding directly as an owner or as a manager.

Under conditions of traditional agricultural holding the holder may be regarded as the person, who with or without help of others, operates land or raises livestock in

his own right, i.e. the person who decides on what, when, where and how to grow crops or raise livestock and has right to determine the utilization of the products.

Holding: A holding is all the land and/or livestock kept which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone, or with others, without regard to title, legal form, size or location.

Draught Animal: For this survey, it refers to animals that are engaged in activities such as ploughing, threshing... etc.

Dairy Cow: Refers to any type of cow used to give milk previously and/or provide milk currently or have never given milk before and pregnant now. Heifers are not included in this category.

Milking Cow: Refers to cows actually milked during the year, Nov 12, 2016 to Nov 12, 2017.

Meat Animals: Cattle, sheep, goats, and camels reared only for meat either for home consumption and/or for sale, are defined as meat animals.

Laying Hens: Refer to all hens and pullets of all types that laid eggs during the reference period, Nov 12, 2016 to Nov 12, 2017.

Other Purposes: Cattle which participate in activities such as transporting and the like other than animals kept for draught, milk and beef purposes are categorized as cattle for other purposes. Moreover, Sheep and Goats that are kept for other purposes other than breeding, wool, meat, and milk production are included in this category.

2.6 FIELD ORGANIZATION

Twenty five Statistical Branch Offices of the CSA participated in the survey undertaking, especially in organizing the second stage training, in deploying the field staff to their respective sites of assignment, and retrieving completed

questionnaires and submitting them to the head office for data processing. They were also responsible in administering the financial and logistic aspect of the survey within the areas of their assignment. In the data collection, enumerators and field supervisors were involved with an average supervisor-enumerator ratio of 1 to 4. To accomplish the data collection operation, all the enumerators were supplied with the necessary survey equipment at the completion of the training. To assist the data collection activities in deployment, supervision, and retrieval of completed questionnaires, reasonably adequate four-wheel vehicles were used.

2.7 TRAINING OF FIELD STAFF

The field staff-training program was carried out in two stages. The first-stage consisted of trainees from the head office, Branch Statistical Office heads, statistician and some of the field supervisors. The training was given for about six days at Adama town. Many of these personnel trained in the first-stage conducted similar training for field supervisors and enumerators for about three weeks in branch offices, which are distributed around the country. During the second-stage training, the field staff were given detailed classroom instruction on the objectives and uses of the survey, concepts and definitions of terms used, interviewing procedures, how to fill questionnaires, ...etc. The enumerators' training also includes a field practice to strengthen the concepts discussed in the classroom.

2.8 METHOD OF DATA COLLECTION

In each selected site, a fresh list of households was prepared and then agricultural households were identified from the list of households. From these identified agricultural households, 15 agricultural households were selected using systematic sampling techniques. Thus, all agricultural holders belonging to each selected agricultural households were interviewed and the appropriate data were collected. The reference date for enumerating livestock, poultry, & beehives was November 10, 2017 (Hidar 1/2010 E.C.).

2.9 DATA PROCESSING

2.9.1 Editing, Coding, and Verification

The editing and coding instruction manuals were prepared, and intensive training was given to the editor-coders. Those trained editors-coders were accomplished the editing and coding tasks. In due course, professional staff members were assigned to facilitate the editing and coding activities and the edited and coded questionnaires were verified by statistical technicians as well as by professionals.

2.9.2 Data Entry, Cleaning, and Processing

The data were entered in personal computers by data encoders using CSpro (Census and Survey Processing system) software. Then the data were checked and cleaned by regular staff members. Finally, the data processing activity was also done by personal computers (PCs) to produce results that were indicated in the tabulation plan.

CHAPTER III

SUMMARY OF THE SURVEY RESULTS

3.1 LIVESTOCK NUMBER BY BREED, AGE, SEX AND PURPOSE

The 2017/18 livestock survey has covered the rural sedentary areas of the country on sample basis. The total number of each type of livestock as well as the numbers disaggregated by breed, age, sex, and purpose possessed by holders on the reference date (November 10, 2017), irrespective of ownership, were recorded by interviewing each holder within the selected agricultural households in the sampled enumeration areas of the country. The numbers also include the livestock belonging to the holding but temporarily away or in transit at the time of the enumeration.

3.1.1 Cattle Population

The estimates of cattle for the rural sedentary areas at country level are presented in Summary Table III.1. As shown on the table, the total cattle population for the country is estimated to be about 60.39 million. Out of this total cattle population, the female cattle constitute about 54.68 percent and the remaining 45.32 percent are male cattle.

Regarding age groups, the majority of the cattle population (that is about 63.09 percent) is in the 3 years and less than 10 years age category, with about 28.15 percent male and about 34.94 percent female. Moreover, about 16.9 percent are between age one and three years and those with age category 10 years and over took small portion i.e. 2.03 percent of the total estimated number of cattle population (also see Fig III.1).

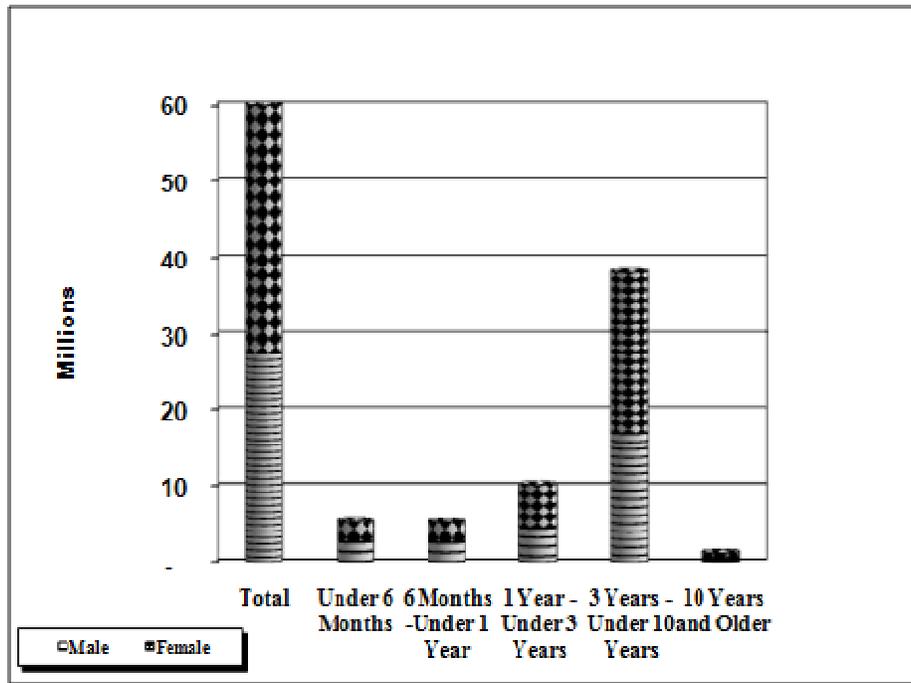
On the other hand, the results obtained indicated that 98.24 percent of the total cattle in the country are local breeds. The remaining are hybrid and exotic breeds that accounted for about 1.54 percent and 0.22 percent, respectively. Moreover,

distribution of cattle by purpose is given in the same table. Among cattle aged 3 years and less than 10 years, those used for draught purposes accounted for 25.77 percent and the percentage share of beef cattle is the lowest that is about 0.81 percent. Beef cattle here refer to all cattle reared exclusively for meat that is used either for home consumption or for sale.

SUMMARY TABLE III.1: Estimated Number of Cattle by Sex, Age, Breed and Purpose, Ethiopia - 2017/18

Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	60,392,019	100	27,367,840	45.32	33,024,179	54.68
Under 6 months	5,461,893	9.04	2,625,257	4.35	2,836,636	4.7
6 months - under 1 year	5,395,900	8.93	2,561,004	4.24	2,834,896	4.69
1 year – under 3 years	10,207,313	16.9	4,586,152	7.59	5,621,161	9.31
3 years – under 10 years	38,103,844	63.09	17,001,719	28.15	21,102,125	34.94
10 years and older	1,223,068	2.03	593,708	0.98	629,361	1.04
Cattle by Breed						
Total	60,392,019	100	27,367,840	45.32	33,024,179	54.68
Indigenous	59,328,849	98.24	26,989,156	44.69	32,339,693	53.55
Hybrid	928,065	1.54	327,913	0.54	600,153	0.99
Exotic	135,105	0.22	50,771	0.08	84,334	0.14
Aged 3 – 10 Years by Purpose						
Total	38,103,844	63.09	17,001,719	28.15	21,102,125	34.94
Used for Milk	6,659,362	11.03			6,659,362	11.03
Used for Draught	15,560,425	25.77	15,381,315	25.47	179,110	0.3
Used for Beef	486,753	0.81	411,074	0.68	75,679	0.13
Used for Breeding	13,744,563	22.76	570,805	0.95	13,173,757	21.81
Used for Other	1,652,741	2.74	638,525	1.06	1,014,217	1.68
Dairy Animals						
Dairy Cows	6,659,362	11.03			6,659,362	11.03
Milking Cows	12,392,707	20.52			12,392,707	20.52

FIGURE III.1 DISTRIBUTION OF CATTLE BY AGE AND SEX



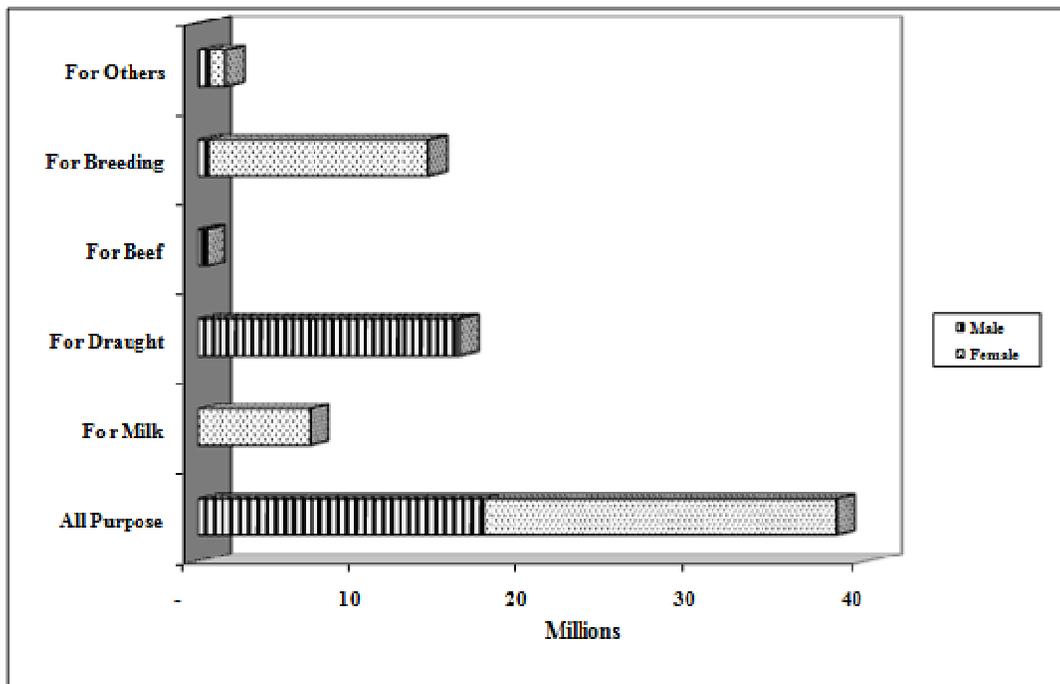
Dairy-cows¹ are estimated to be around 6.66 million and milking-cows² are about 12.39 million heads during the reference period.

Moreover, cattle population by sex, age, breed, and purpose are presented for each region in the Statistical Tables given at the end of this chapter.

¹A Dairy Cow refers to a cow that is primarily kept for milk and has been milked previously or was being milked at the time of enumeration or has never been milked before but expected to be milked in the future or pregnant at the time of enumeration.

²A Milking Cow refers to any type of cow that actually milked during the reference period (Nov. 12, 2016 to Nov. 10, 2017).

FIGURE III.2 - DISTRIBUTION OF CATTLE AGED 3 AND LESS THAN 10 YEARS BY PURPOSE AND SEX



3.1.2 Sheep And Goat Populations

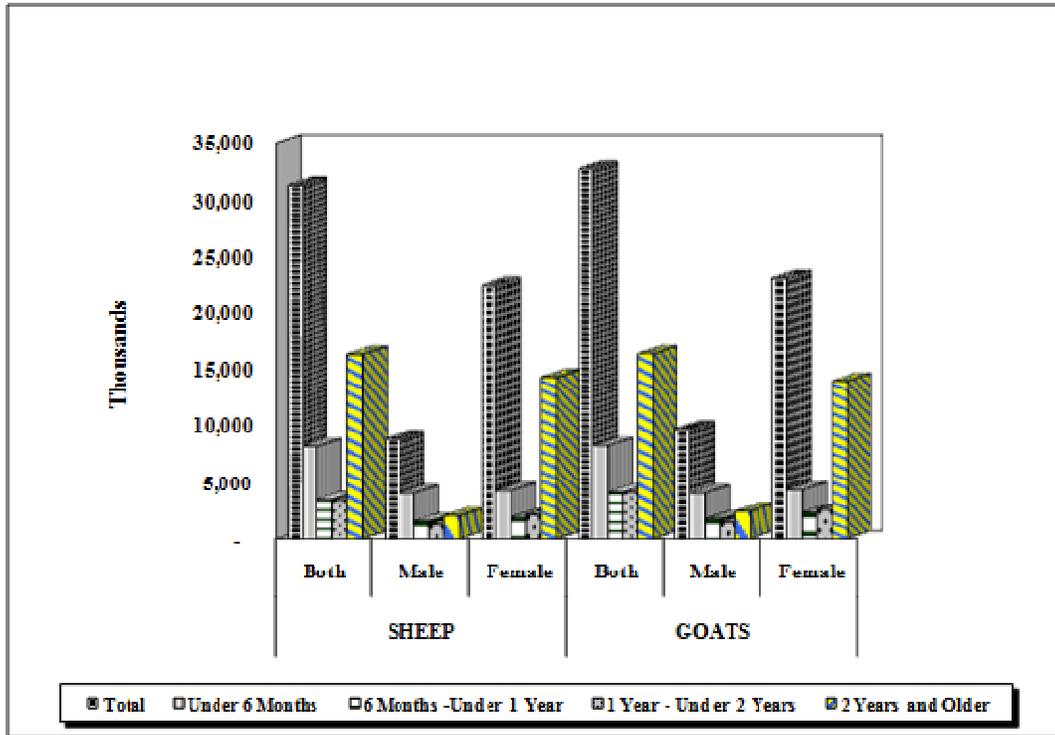
The estimated numbers and percentage distributions of sheep and goats in the rural sedentary areas of the country are given in Summary Table III.2. As pointed out in this table, about 31.30 million sheep are estimated to be found in the country, out of which about 71.82 percent are females, and about 28.18 percent are males. According to the survey result, the number of goats reported in the country is estimated to be about 32.74 million. Out of these total goats, 70.49 percent are females and about 29.51 percent are males (see Summary Table III. 2 and Figure III. 3).

SUMMARY TABLE III.2: Estimated Numbers of Sheep and Goats by Sex, Age, Breed, and Purpose, Ethiopia - 2017/18

Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total Sheep.....	31,302,257	100	8,821,761	28.18	22,480,495	71.82
Under 6 months.....	8,188,239	26.16	3,990,676	12.75	4,197,563	13.41
6 months - under 1 year	3,431,410	10.96	1,541,246	4.92	1,890,164	6.04
1 year - under 2 years.....	3,339,151	10.67	1,249,301	3.99	2,089,850	6.68
2 years and older.....	16,343,456	52.21	2,040,538	6.52	14,302,918	45.69
Sheep by Breed						
Total.....	31,302,257	100	8,821,761	28.18	22,480,495	71.82
Indigenous.....	31,242,169	99.81	8,791,860	28.09	22,450,309	71.72
Hybrid.....	37,668	0.12	25,123	0.08	12,546	0.04
Exotic.....	*	*	*	*	*	*
Sheep Aged 2 Years and Older by Purpose						
Total.....	16,343,456	52.21	2,040,538	6.52	14,302,918	45.69
Used for Mutton.....	870,487	2.78	802,902	2.56	67,585	0.22
Used for Wool.....	92,573	0.3	15,989	0.05	76,584	0.24
Used for Breeding.....	15,251,976	48.72	1,148,509	3.67	14,103,468	45.06
Used for Other	128,419	0.41	73,138	0.23	*	*
Total Goats	32,738,385	100	9,659,683	29.51	23,078,702	70.49
Under 6 months...	8,262,371	25.24	3,996,826	12.21	4,265,544	13.03
6 months - under 1 year	4,047,045	12.36	1,756,390	5.36	2,290,655	7
1 year - under 2 years.....	4,038,242	12.33	1,480,255	4.52	2,557,987	7.81
2 years and older.....	16,390,727	50.07	2,426,212	7.41	13,964,515	42.65
Goats by Breed						
Total.....	32,738,385	100	9,659,683	29.51	23,078,702	70.49
Indigenous.....	32,730,068	99.97	9,657,416	29.5	23,072,652	70.48
Hybrid.....	*	*	*	*	*	*
Exotic.....	*	*	*	*	*	*
Goats Aged 2 Years and Older by Purpose						
Total.....	16,390,727	50.07	2,426,212	7.41	13,964,515	42.65
Used for Milk.....	891,357	2.72			891,357	2.72
Used for Meat	883,653	2.7	800,141	2.44	83,512	0.26
Used for Breeding.....	14,534,633	44.4	1,574,217	4.81	12,960,416	39.59
Used for Other	81,084	0.25	51,854	0.16	29,230	0.09

Pertaining to the age distribution of both the sheep and the goats, the largest portions are in the age group of two years and older (52.21 percent and 50.07 percent, in that order). These are followed by the young stock under six months for both sheep and goats i.e. about 26.16 percent and 25.24 percent, correspondingly (see Figure III.3).

FIGURE III.3 DISTRIBUTION OF SHEEP AND GOATS BY AGE AND SEX



With respect to breed, almost all of the sheep and the goats are indigenous (99.81 percent and 99.97 percent, respectively).

Summary Table III.2 also discloses the numbers and percentages of sheep and goats raised for different purposes in the country. The percentages of both sheep and goats kept for mutton and meat are higher for males. Moreover, the data reveals that female sheep and female goats are primarily kept for breeding purposes. Among the sheep flock two years and older (52.21 % of the total sheep), 48.72 percent are kept for breeding; about 2.78 percent for mutton and less than one percent of them were kept for wool production. Likewise, among the goat population aged two years and older (50.07 % of the total), goats kept for breeding accounted for about 44.4 percent while goats kept for meat accounted for 2.7 percent. The number of female goats kept for milk at country level is estimated to be about 0.89 million, which is 2.7 percent of the total goats (see Figures III.4 and III.5).

FIGURE III.4 DISTRIBUTION OF SHEEP AGED 2 YEARS AND OLDER BY SEX, AND PURPOSE

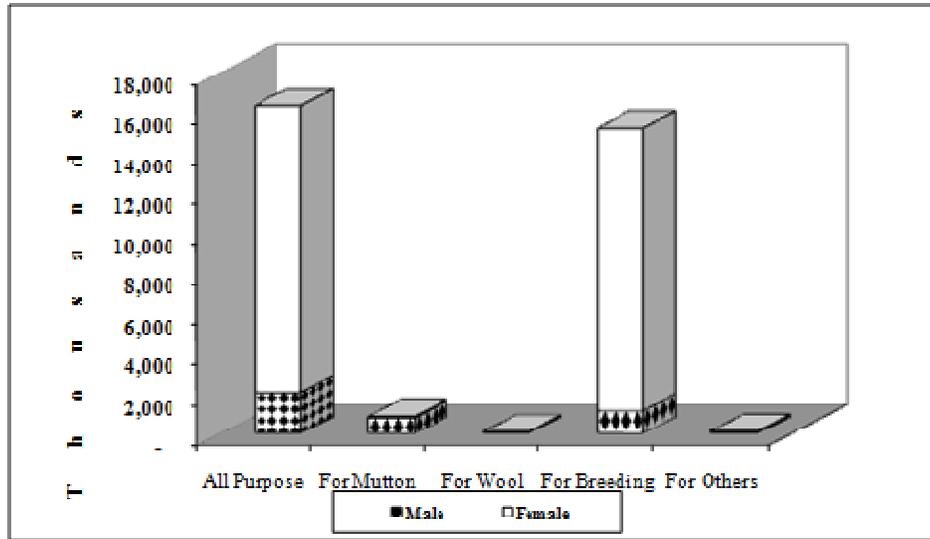
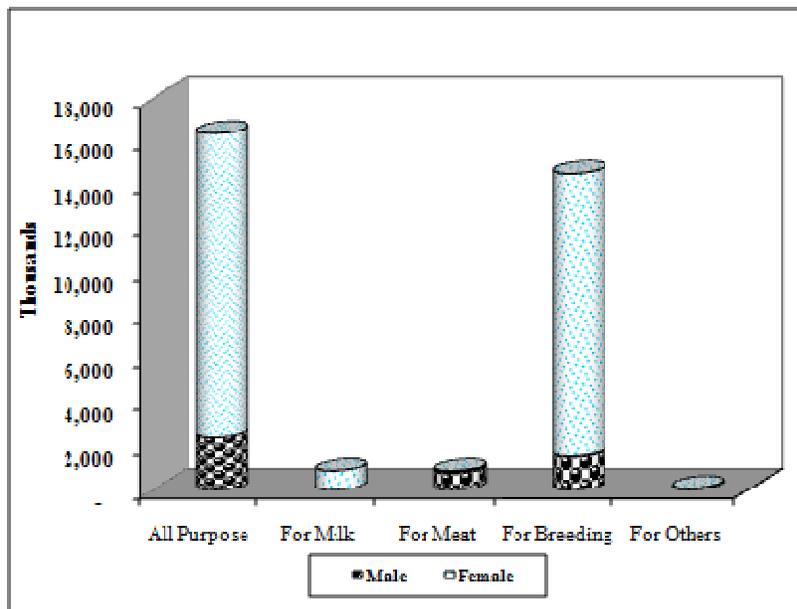


FIGURE III.5 DISTRIBUTION OF GOATS AGED 2 YEARS AND OLDER BY SEX, AND PURPOSE



The numbers and percentage distributions of sheep and goats at regional level are given in the *Statistical Tables* and Figure III.9.

3.1.3 Horse, Donkey, Mule And Camel Populations

Summary Table III.3 shows the estimates of horses, donkeys, mules, and camels for the rural sedentary areas of the country for private holdings. As per the survey results, there are about 2.01 million horses, 8.85 million donkeys, 0.46 million mules, and about 1.42 million camels in the sedentary areas of the country.

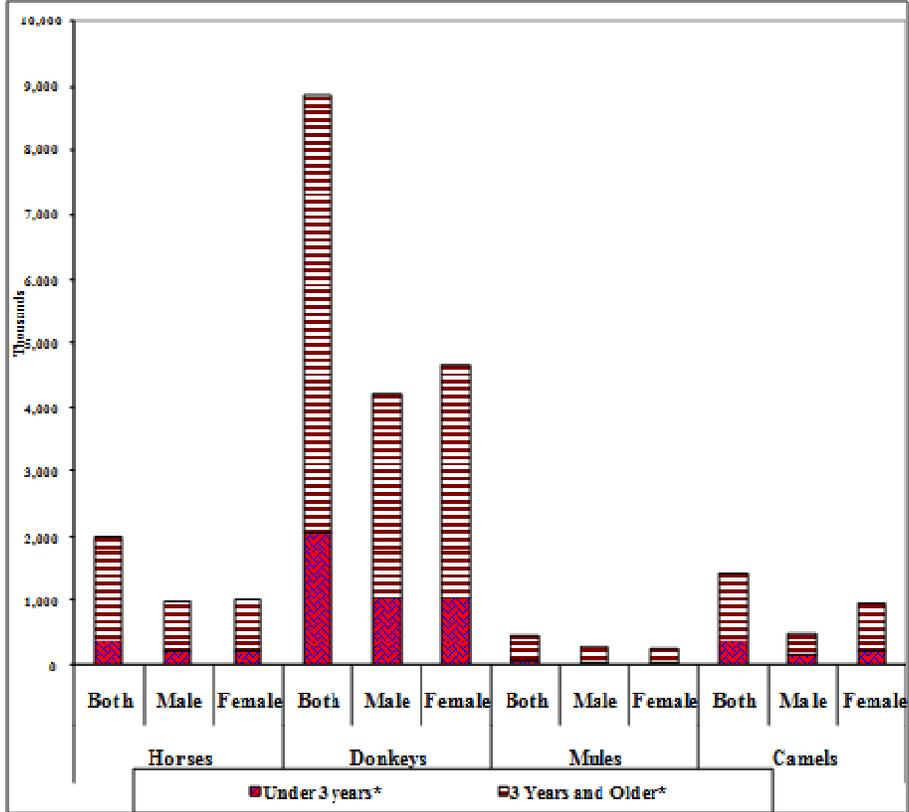
As indicated in the same table, donkeys are the overwhelming majority compared with the other draught animals. Out of the total donkey population in the country, about 52.61 percent are females and the remaining 47.39 percent are males. With respect to age distribution, the majorities of the horses, donkeys and mules are of the age group 3 years and older. Furthermore, 74.36 percent of the camels are of the age group 4 years and older.

The estimates of these animals by purpose are also given in Summary Table III.3. Among the horses aged 3 years and older, about 1.2 million were used for transportation, 0.27 million were for draught and the remaining 0.16 million were used for other purposes. With regard to donkeys, about 5.82 million were used for transportation whereas about 0.82 million and 0.15 million were used for draught and other purposes, respectively.

**SUMMARY TABLE III.3: Estimated Numbers of Horses, Donkeys, Mules,
and Camels by Sex, Age and Purpose, Ethiopia - 2017/18**

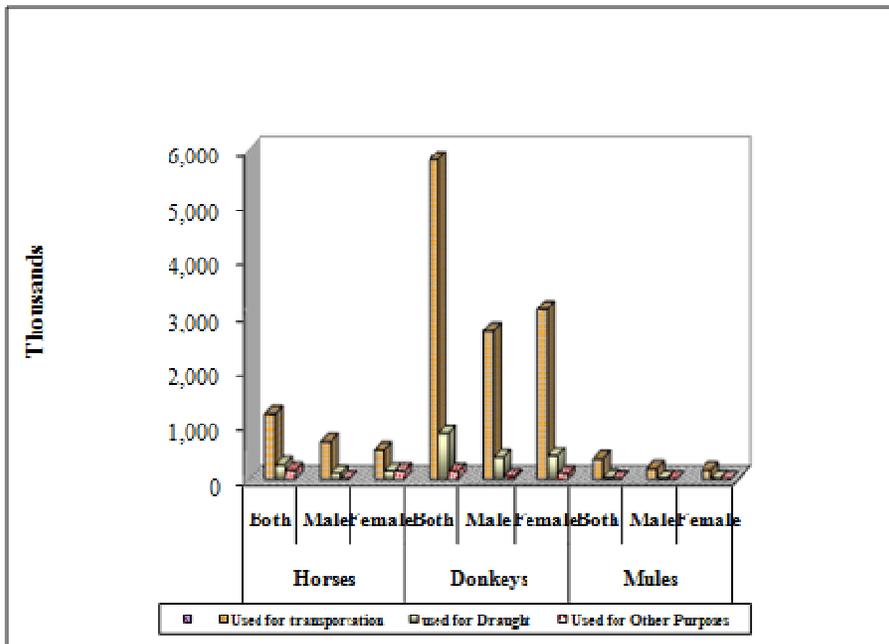
Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total Horses	2,007,829	100	984,927	49.05	1,022,902	50.95
Under 3 Years	381,758	19.01	192,285	9.58	189,473	9.44
3 years and older.....	1,626,071	80.99	792,642	39.48	833,430	41.51
Horses Aged 3 Years and Older by Purpose						
All Uses.....	1,626,071	80.99	792,642	39.48	833,430	41.51
Transportation.....	1,198,715	59.7	671,919	33.46	526,796	26.24
Draught.....	265,513	13.22	110,648	5.51	154,865	7.71
Other Uses	161,842	8.06	10,074	0.5	151,768	7.56
Total Donkeys	8,845,589	100	4,191,983	47.39	4,653,607	52.61
Under 3 Years.....	2,065,273	23.35	1,037,931	11.73	1,027,342	11.61
3 years and older.....	6,780,316	76.65	3,154,052	35.66	3,626,264	41
Donkeys Aged 3 Years and Older by Purpose						
All Uses.....	6,780,316	76.65	3,154,052	35.66	3,626,264	41
Transportation.....	5,817,359	65.77	2,715,235	30.7	3,102,124	35.07
Draught.....	817,150	9.24	394,248	4.46	422,902	4.78
Other Uses	145,807	1.65	44,568	0.5	101,239	1.14
Total Mules	461,665	100	243,939	52.84	217,726	47.16
Under 3 Years	54,167	11.73	27,033	5.86	27,134	5.88
3 years and older.....	407,498	88.27	216,906	46.98	190,592	41.28
Mules Aged 3 Years and Older by Purpose						
All Uses.....	407,498	88.27	216,906	46.98	190,592	41.28
Transportation.....	367,239	79.55	196,959	42.66	170,281	36.88
Draught.....	31,904	6.91	16,514	3.58	15,390	3.33
Other Uses	8,354	1.81	*	*	4,922	1.07
Total Camels	1,418,457	100	480,135	33.85	938,322	66.15
Under 4 Years	363,735	25.64	153,532	10.82	210,203	14.82
4 years and older.....	1,054,722	74.36	326,603	23.03	728,119	51.33
Camels Aged 4 Years and Older by Purpose						
All Uses.....	1,054,722	74.36	326,603	23.03	728,119	51.33
Meat.....	26,275	1.85	22,419	1.58	3,856	0.27
Milk	294,071	20.73			294,071	20.73
Transportation.....	286,040	20.17	244,412	17.23	41,629	2.93
Draught.....	26,584	1.87	24,083	1.7	*	*
Other Uses.....	421,752	29.73	35,689	2.52	386,063	27.22

FIGURE III.6 DISTRIBUTION OF HORSES, DONKEYS, MULES, AND CAMELS BY AGE AND SEX



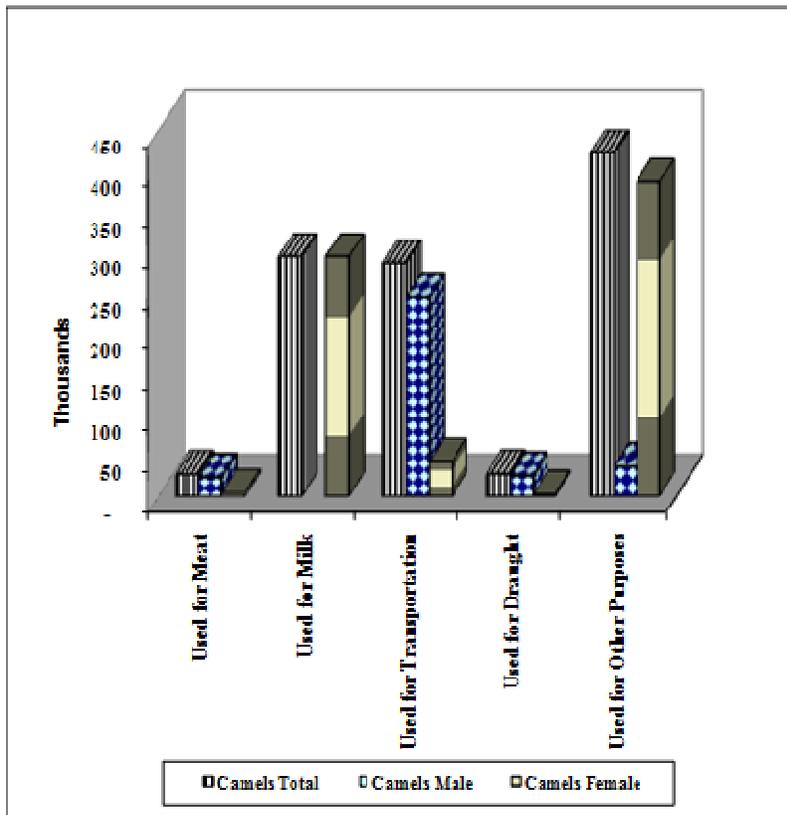
* Note that for camels the 'Age Categories' are under 4 years and 4 years & older

FIGURE III.7 DISTRIBUTION OF HORSES, DONKEYS, AND MULES BY PURPOSE AND SEX

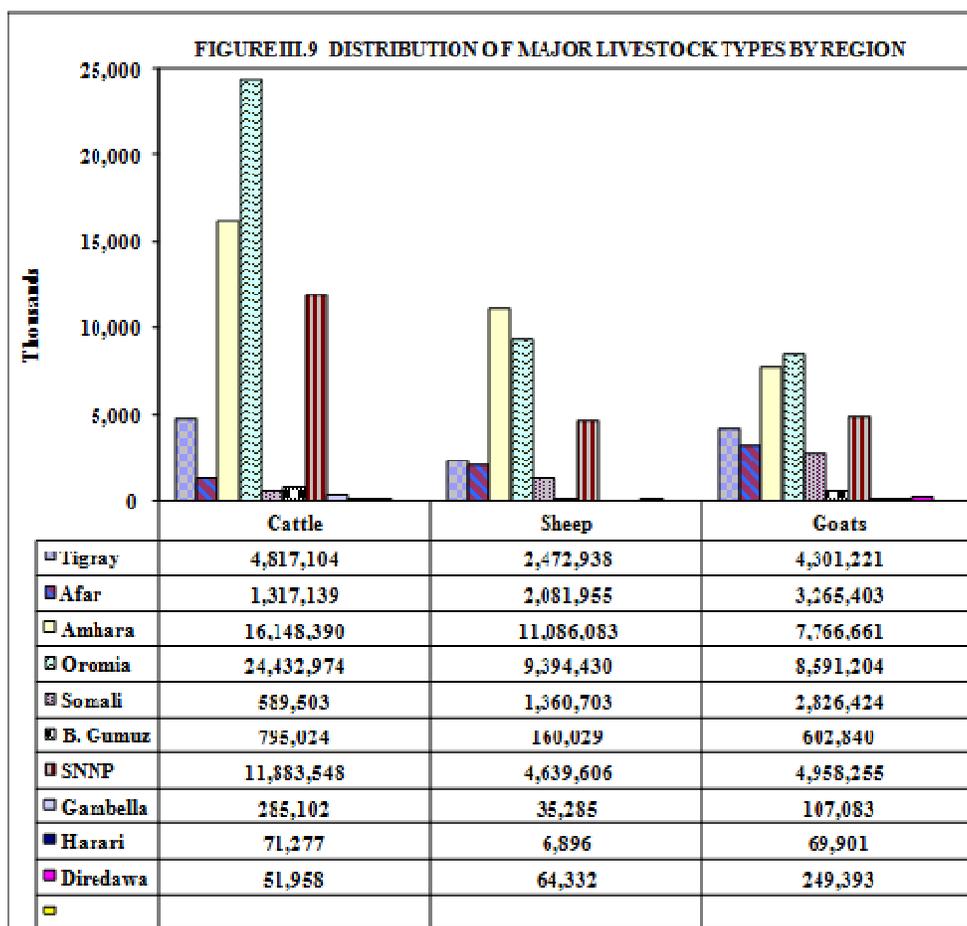


Considering the purpose of the mules, the data shows that the predominance (79.55%) was used for transportation and very few were intended for draught and other purposes. The survey result also indicates that 20.73 percent of the camels reported were kept for milk, 20.17 percent were for transportation, and only 1.87 percent was for draught purposes. On the other hand, the number of camels kept for meat was about 26.28 thousand heads (see also Figures III.6 to III.8).

FIGURE III.8 DISTRIBUTION OF CAMELS BY PURPOSE AND SEX



For the regional distributions of draught animals refer to the statistical tables presented at the end of this chapter.



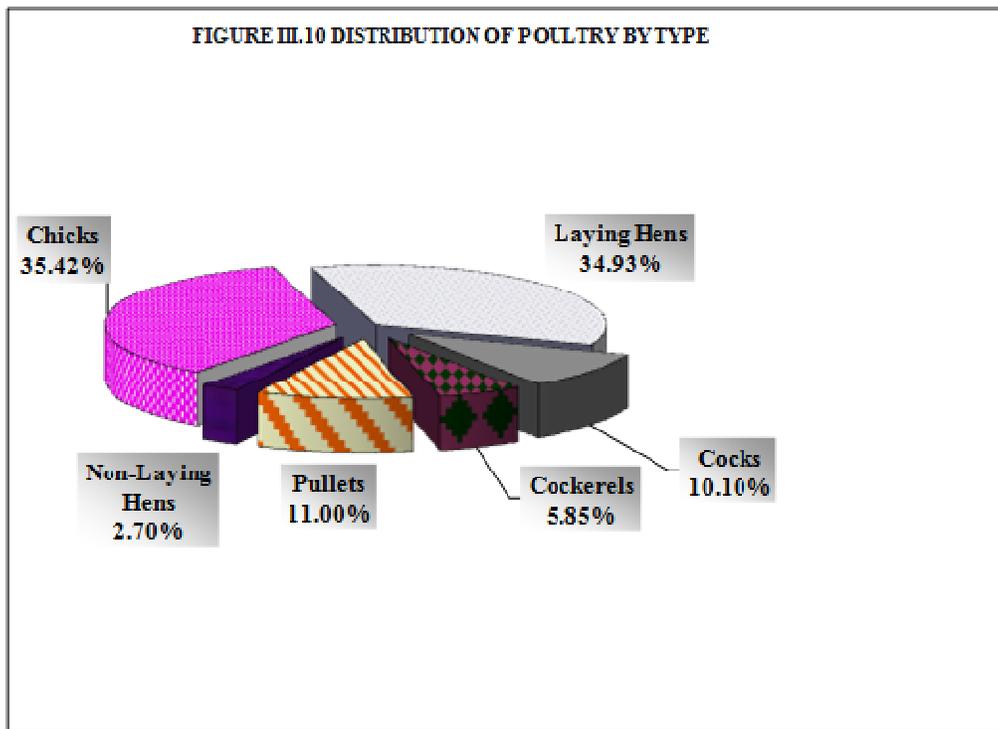
3.1.4 Poultry Population

Data on poultry population are collected as part of the livestock survey, and the total poultry population at country level is estimated to be about 56.06 million. In this report, poultry includes cocks, cockerels, pullets, laying hens, non-laying hens and chicks. Consequently, as shown in Summary Table III.4 and Figure III.10, most of the poultry are chicks (35.42 percent), followed by laying hens (34.93 percent). Pullets are estimated to be about 6.17 million in the country. Cocks and cockerels are also estimated separately, and are 5.66 million and about 3.28 million, respectively. The others are non-laying hens that make up about 2.7 percent (1.51 million) of the total poultry population in the country. With regard to breed, 88.19 percent, 6.45 percent and 5.36 percent of the total poultry were reported to be indigenous, hybrid and

exotic, respectively. For the regional and zonal distributions of poultry refer to the statistical tables presented at the end of this chapter.

SUMMARY TABLE III.4: Estimated Number of Poultry by Type and Breed, Ethiopia - 2017/18

Type of Poultry	All		Indigenous		Exotic		Hybrid	
	Number	%	Number	%	Number	%	Number	%
All Poultry	56,056,778	100	49,436,720	88.19	3,616,039	6.45	3,004,020	5.36
Cocks	5,664,299	10.1	5,021,231	8.96	303,462	0.54	339,607	0.61
Cockerels	3,278,531	5.85	2,875,688	5.13	192,963	0.34	209,881	0.37
Pullets	6,167,785	11	5,226,780	9.32	537,435	0.96	403,570	0.72
Non-Laying Hens.....	1,512,500	2.7	1,362,429	2.43	89,647	0.16	60,424	0.11
Chicks	19,853,495	35.42	18,877,480	33.68	276,203	0.49	699,812	1.25
Laying Hens.....	19,580,169	34.93	16,073,113	28.67	2,216,330	3.95	1,290,727	2.3



3.1.5 Beehive Population

Information on beehives was also collected during the livestock survey. As stated by the Ministry of Agriculture, there are three types of beehives, and these are traditional, intermediate, and modern.

Traditional [Fixed comb] Hive is a hollow structure made of cheap materials like clay, straw, bamboo, false banana leaves, logs, barks of tree, and animal dung. The bees fill all the available space with honeycombs from the top to down wards. The honeycombs cannot be removed since they are attached to the top and the sides of the hive. The honey can be removed only by removing one wall of the hive and breaking or cutting out the honeycomb (Reihard Fichtl and Admasu, 1994; Gezahegn Taddesse, 1993 E.C.).

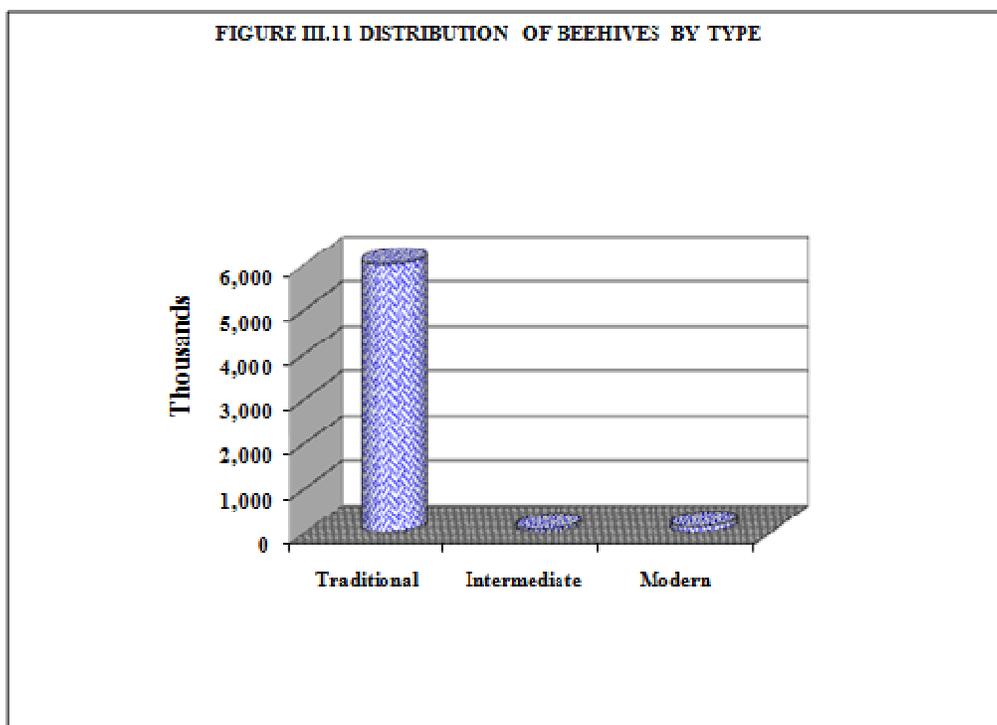
Intermediate [Transitional] Hive is a long trough-shaped box with sloping sidewalls covered with bars of a fixed width. The hive consists of a bottom board, two sidewalls and front and back walls. One opening is made in the front wall to serve as flight entrance. The cover of the hive can be made from any material, which gives adequate protection against light, sun, and rain (Gezahegn Taddesse, 1993 E.C.; P.Seegeren et al, 1996).

Modern Hive [Hive with Frames] is a brood (offspring) chamber (box) with a fixed bottom board and flight board. In the bottom board there is a ventilation hole of size (15cmx30cm), which can be covered with fine wire mesh or other suitable material. The brood chamber holds ten frames, which are kept separately at the right distance by means of side bar, or nails. Queen excluder (not necessary) placed horizontally on top of the brood chamber (Gezahegn Taddesse, 1993 E.C.; P.Seegeren et al, 1996).

Any type of the above beehives was enumerated if it produced honey at least once during the reference period (November 12, 2016 to November 10, 2017). Accordingly, the result of the survey revealed that a total of about 6.52 million hives is estimated to be found in the rural sedentary areas of the country. From this total hives, the greater part (96.98 percent) is reported to be traditional (see Summary Table III.5).

SUMMARY TABLE III.5: Estimated Number of Beehives by Type, Ethiopia - 2017/18

Type of Beehive	Number	%
All Beehives	6,523,969	100
Traditional Beehives	6,327,197	96.98
Intermediate Beehives	69,399	1.06
Modern Beehives	127,373	1.95



For the regional distributions refer to the statistical tables presented at the end of this chapter.

3.2 NUMBERS OF BIRTHS, PURCHASES AND ACQUIRED ANIMALS BY TYPE (ACQUISITION)

According to the survey result, about 89.4 million chickens, 14.28 million sheep, 14.14 million goats and 11.53 million cattle were born during the reference period in the rural sedentary areas of the country. Females accounted for the greater portions of most of the newly born animals (see Summary Table III.6).

With regard to other acquisitions, households have purchased about 33.17 million animals (either to build their stock or for some other reasons) and acquired more than 2.86 million animals through gifts or any other means during the reference period (see Summary Table III.6).

SUMMARY TABLE III.6 Estimated Numbers of Births, Purchases, and Acquired Animals
by Type during the Reference Period, Ethiopia - 2017/18

Type of Livestock	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Cattle	11,533,482	5,523,000	6,010,481	5,242,084	3,288,847	1,953,237	1,021,277	428,574	592,702
Sheep.....	14,282,855	6,955,218	7,327,637	5,409,726	2,888,284	2,521,442	534,479	114,294	420,186
Goats	14,143,952	6,722,240	7,421,712	3,072,545	1,311,871	1,760,674	480,925	100,202	380,723
Horses.....	170,581	87,155	83,426	232,087	136,176	95,911	19,016	5,750	13,266
Donkeys	805,965	388,222	417,743	895,456	501,442	394,014	56,353	26,704	29,649
Mules.....	*	*	*	108,576	52,634	55,942	*	*	*
Camels.....	222,991	90,111	132,880	65,515	53,025	12,490	*	*	*
Poultry	89,403,876	42,705,025	46,698,852	18,141,572	7,357,495	10,784,077	749,632	202,143	547,488

3.3 NUMBERS OF SALES, SLAUGHTERS, DEATHS AND OFFERINGS BY TYPE (ATTENUATION)

The estimated numbers of sales, slaughters, deaths and offered animals are indicated in Summary Table III.7. About 15.67 million chickens, 6.9 million sheep, 7.35 million cattle and about 6.72 million goats were sold and about 24.7 million animals (chicken, cattle, sheep, goats and camels) were slaughtered by households during the reference period. The estimated number of deaths is about 79.56 million animals and households have also offered about 2.29 million animals to their relatives or others as gifts.

SUMMARY TABLE III.7 Estimated Numbers of Sales, Slaughters, Deaths, and Offerings by Type during the Reference Period,
Ethiopia - 2017/18

Type of Livestock	Number of Sales			Number of Slaughters			Number of Deaths*			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Cattle	7,346,188	4,680,510	2,665,678	434,514	222,050	212,464	4,654,803	1,924,023	2,730,780	749,836	301,592	448,243
Sheep.....	6,902,463	3,726,452	3,176,011	4,520,293	3,301,596	1,218,697	4,963,594	1,658,090	3,305,503	380,333	99,272	281,061
Goats	6,717,799	3,594,216	3,123,582	2,828,561	1,890,944	937,617	5,171,123	1,905,523	3,265,601	534,144	164,085	370,059
Horses.....	128,862	81,715	47,147				167,042	70,764	96,278	7,801	*	6,745
Donkeys	529,658	296,359	233,298				480,772	223,126	257,646	29,183	9,991	19,192
Mules.....	73,985	34,434	39,551				53,016	26,254	26,763	*	-	*
Camels.....	81,364	66,968	14,396	6,742	4,749	*	59,829	17,434	42,395	*	*	*
Poultry	15,668,674	8,353,637	7,315,037	16,905,458	10,518,116	6,387,342	64,009,116	28,070,128	35,938,987	585,506	188,404	397,102

* Includes animals that died from diseases and other causes

3.4 LIVESTOCK PRODUCTS

This section summarizes results on livestock products at country level. The various animal products include milk and milk products, eggs, wool, meat, hides and skins. Although data on such livestock products are not easily obtainable in the Ethiopian traditional agricultural sector, an endeavor was made to collect data on milk and honey productions. The data were collected subjectively from the holders in the sampled households and the results obtained are briefly discussed below.

3.4.1 Milk Production

Estimation of milk production entails three components, namely number of milking cows, number of months milking cows actually milked within the reference period and average milk production per cow per day. Hence, data on these components have been collected and the total milk production in the sedentary areas of the country is estimated by multiplying these three components. However, two basic concepts about milk production should be mentioned here. “Gross production”, which includes whole fresh milk actually milked and milk sucked by young animals and also milk fed to other animals. “Net production” consists of whole milk actually milked and milk fed to other animals but excludes milk sucked by young animals. Therefore, in the case of this survey, milk production is estimated based on the concept of “net production”, and as indicated in Summary Table III.8, the estimate of total cow milk production for the rural sedentary areas of the country during the reference period, is about 3.32 billion liters. On the other hand, the estimate of camel milk for the same areas of the country is about 327.64 million liters.

Data on lactation period and average milk yield per cow per day were also collected. As a result, the average lactation period per cow during the reference period at country level is estimated to be about *six* months, and average milk yield per cow per day is about 1.371 liters. With regard to camel, the average lactation period is about *ten* months whereas the average daily milk yield is about 3.91 liters in the sedentary areas of the country.

3.4.2 Honey Production

To estimate honey production, number of hives, frequency of honey production and honey production per harvest are required. Therefore, these data were collected from the holders within sampled households in the rural sedentary areas of the country. As a result, the estimate of total honey production is about 66.22 million kilograms of which the greater portion is harvested from traditional hives (see Summary Table III.8).

As can be seen from the survey data, honey was harvested on average 1.59, 1.63, and 1.69 times during the reference period from traditional, intermediate and modern hives, respectively (see Summary Table III.8).

3.4.3 Egg Production

To estimate egg production, the average number egg laying periods per hen per annum, length of a single egg-laying period per hen, and average number of eggs laid per hen per egg-laying period are required. Therefore, these data were collected from the livestock holders within sampled livestock owned households. As a result, the estimate of total number of eggs produced during the year is about 136.76 million (Summary Table III.8). Average egg-laying period per hen and average number of eggs laid per hen during the reference period are also estimated for local, hybrid and exotic breeds. Consequently, the average number egg-laying period per hen per year is about 4, 4 and 1 for the local, hybrid and exotic breeds, respectively. The average length of a single egg-laying period per hen is estimated to be about 21, 45 and 169 days for local, hybrid and exotic breeds, in that order. The average number of eggs laid per hen per egg- laying period in the country is about 12, 38 and 133 eggs, correspondingly (see Summary Table III.8)

**SUMMARY TABLE III.8: Milk, Honey, and Egg Production,
Ethiopia - 2017/18**

Item	Quantity Produced and Frequency		
Milk Production			
Cow Milk			
Average Daily Milk Production (Liters/Cow)...	1.371		
Average Lactation Period (Months)	6		
Total Milk Production (Liters)	3,317,786,694		
Camel Milk			
Average Daily Milk Production (Liters/Camel)...	3.909		
Average Lactation Period (Months)	10		
Total Milk Production (Liters)	327,638,287		
Honey Production			
All Types of Beehives (Number)	6,523,969		
Production (Kilograms)	66,221,823		
Average Frequency (Harvests/Year)	1.59		
Traditional Beehives (Number)	6,327,197		
Production (Kilograms)	63,798,054		
Average Frequency (Harvests/Year)	1.59		
Intermediate Beehives (Number)	69,399		
Production (Kilograms)	497,337		
Average Frequency (Harvests/Year)	1.63		
Modern Beehives (Number)	127,373		
Production (Kilograms)	1,926,432		
Average Frequency (Harvests/Year)	1.69		
Egg Production			
Average Number of Egg-laying Period/Year	Indigenous	Hybrid	Exotic
Average Length of a Period (in days)	4	4	-
Average Number of Eggs/Hen/Period	21	45	169
Average Number of Eggs/Hen/Period	12	38	133
Total Egg Production (Number)	85,918,543	16,137,806	34,707,761

3.5 LIVESTOCK VACCINATION, DISEASE, AND TREATMENT

Diseases have numerous negative impacts on productivity of herds i.e. death of animals, loss of weights, slow down growth, poor fertility performance, decrease in physical power and the likes. There have been many ways of fighting against diseases and among these, vaccinations (preventive measures) and treatments (curative measures) are the major ones. However, no efficient fight against disease or disease prevention is possible if descriptive data on prevalence of diseases, vaccinations, and treatments are not available. The availability of these data is also very important to set-up strategies that can assist in preventing and controlling diseases, by and large in improving veterinary services of the country. Hence, it was considered desirable to collect information on vaccinations, treatments, diseases and deaths of animals.

SUMMARY TABLE III.9a: Estimated Number of Vaccinated Livestock by Type, Ethiopia - 2017/18

Type of Livestock	Total Vaccinated	Vaccinated against:				
		Anthrax ³	Blackleg ⁴	Pleuro-Pneumonia ⁵	Hemorrhagic Septicemia ⁶	Others
Cattle.....	38,739,149	12,958,536	11,858,794	4,297,028	6,159,435	3,465,355
Sheep.....	8,107,460	1,161,399	953,833	1,844,811	2,519,778	1,627,639
Goats.....	9,339,554	1,418,854	1,108,508	3,105,625	2,020,335	1,686,232
Camels.....	150,014	26,175	19,169	46,333	*	24,402
Total	56,336,177	15,564,964	13,940,304	9,293,797	10,699,548	6,803,628

SUMMARY TABLE III.9b: Estimated Numbers of Livestock Afflicted and Treated, Ethiopia - 2017/18

Item	Number	%
Total Afflicted.....	60,966,893	100
Cattle.....	11,173,254	18.33
Sheep.....	6,310,094	10.35
Goats.....	6,374,135	10.46
Horses, Donkeys, and Mules .	1,436,687	2.36
Camels.....	85,277	0.14
Poultry.....	35,587,447	58.37
Total Treated.....	19,785,767	100
Cattle.....	7,936,366	40.11
Sheep.....	3,146,686	15.9
Goats.....	2,444,609	12.36
Horses, Donkeys, and Mules .	849,564	4.29
Camels.....	34,205	0.17
Poultry.....	5,374,336	27.16

Data on these parameters specifically on numbers of vaccinated, afflicted, and treated animals were therefore collected and the results are shown in Summary Tables III.9a and III.9b. The estimated number of vaccinated animals within the reference period in the rural areas of the country is about 56.34 million. Out of these animals, about 68.76 percent were cattle followed by goats, which took about 16.58 percent share. Sheep also accounted for about 14.39 percent of the total vaccinated animals. The survey results revealed that about 150.01 thousand camels was vaccinated during the reference period.

As indicated in Summary Tabel III.9b, about 60.97 million animals were diseased / afflicted by different types of diseases during the reference period and only about 19.79

³ Anthrax- is an infectious disease of animals especially cattle and sheep that causes skin ulcers and is transmittable to humans by inhalation and through feces and infected meat.

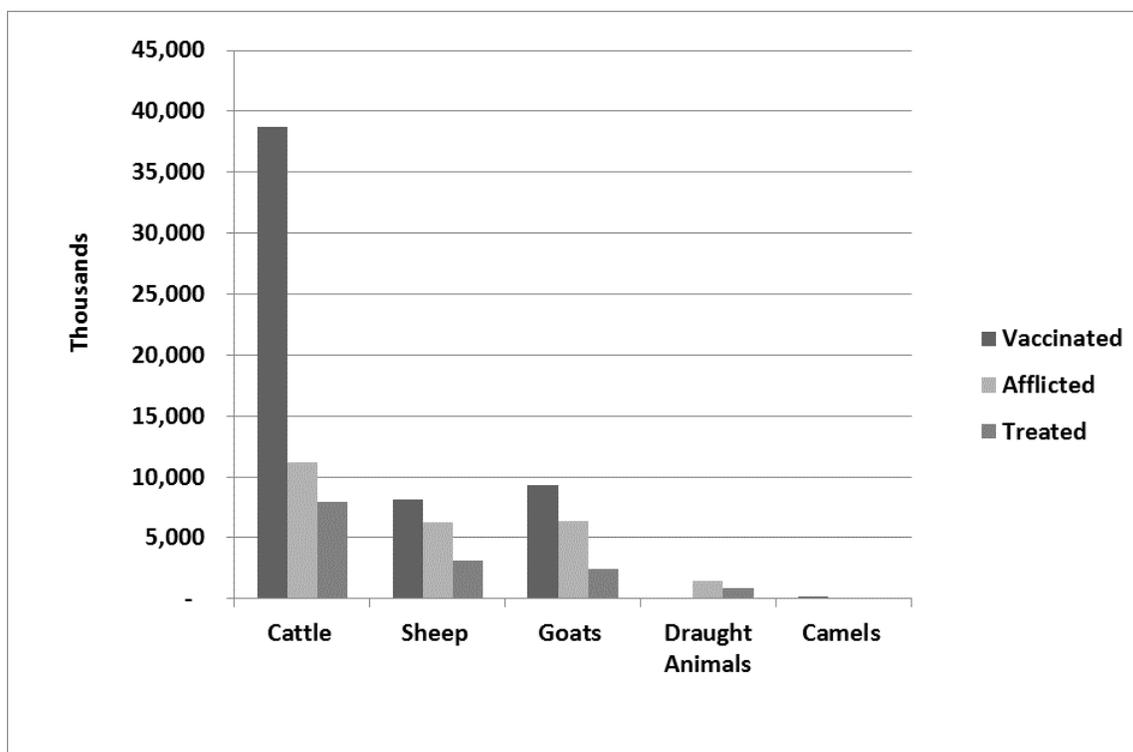
⁴ Blackleg- is an infectious bacterial disease of farm animals that causes swellings on the legs.

⁵ Pleuro-pneumonia – is an infectious bacterial disease of animals mainly cattle that causes cough and fever and is transmittable to other animals easily.

⁶ Hemorrhagic- septicemia- is an infectious bacterial disease of animals.

million of them were treated. The cattle constituted about 40.11 percent of the total treated animals in the country and substantial numbers of sheep and goats were treated as well (see Summary Table III.9b). For the regional distributions refer to the statistical tables presented at the end of this chapter.

FIGURE III.12 DISTRIBUTION OF ANIMALS VACCINATED, AFFLICTED, AND TREATED BY TYPE



3.6 NUMBER OF HOLDINGS BY SIZE OF LIVESTOCK⁷

Concerning the number of holdings by size of livestock, the summary results for cattle, sheep, goats, draught animals, and poultry are given in the following tables (Summary Table III.10a – d).

Most of the holdings, about 49.63 percent, reported one to four cattle and considerable portion (20.91 percent) of the holdings possess five to nine cattle. About 23.92 percent of the total holdings were also without cattle during the reference date (Summary Table III.10a).

Summary Table III.10a: Number of Holdings by Size of Cattle,
Ethiopia - 2017/18

Size	Number of Holdings	%
All Holdings.....	17,966,019	100
Holdings with no Cattle...	4,296,584	23.92
1-2 Head.....	4,482,510	24.95
3-4 Head.....	4,434,069	24.68
5-9 Head.....	3,756,170	20.91
10-19 Head.....	868,573	4.83
20-49 Head.....	122,518	0.68
50-99 Head.....	5,595	0.03
100-199 Head.....	-	-
>=200 Head.....	-	-

The result of the survey also revealed that about 20.93 percent and 15.46 percent of the total holdings were with one to four head of sheep and goats, in that order. The majority of the holdings, about 66.06 percent and about 72.33 percent have reported no sheep and no goat, correspondingly (see Summary Table III.10b).

Summary Table III.10b: Number of Holdings by Sizes of Sheep and Goats,
Ethiopia – 2017/18

Size	Sheep		Goats	
	Number Of Holdings	%	Number of Holdings	%
All Holdings.....	17,966,019	100	17,966,019	100
Holdings with no Sheep/Goats.	11,868,912	66.06	12,994,889	72.33
1-4 Head.....	3,760,600	20.93	2,777,244	15.46
5-9 Head.....	1,627,319	9.06	1,322,911	7.36
10-49 Head.....	695,353	3.87	823,733	4.58
50-99 Head.....	12,231	0.07	40,061	0.22
100-199 Head.....	1,604	0.01	6,403	0.04
200-499 Head.....	-	-	778	*
>=500 Head.....	-	-	-	-

With regard to draught animals, from the holdings that owned draught animals, most of them were with one to two head. About 98.15 percent, 97.65 percent, 92.84 percent, and 66.78 percent of the total holdings were with no camel; no mule, no horse, and no donkey, respectively (see Summary Table III.10c).

⁷ The measures of size used for classification were adapted from FAO recommendation (2005).

Summary Table III.10c: Number of Holdings by Size of Draught Animals,
Ethiopia - 2017/18

Size	Horses		Donkeys		Mules		Camels	
	Number of Holdings	%						
All Holdings.....	17,966,019	100	17,966,019	100	17,966,019	100	17,966,019	100
Holdings with no Animals.	16,678,982	92.84	11,997,670	66.78	17,543,697	97.65	17,634,263	98.15
1-2 Head.....	1,125,900	6.27	5,424,769	30.19	418,801	2.33	205,519	1.14
3-4 Head.....	142,553	0.79	494,986	2.76	3,521	0.02	43,772	0.24
5-9 Head.....	17,884	0.1	45,792	0.25	-	-	48,358	0.27
>= 10 Head.....	700	*	2,802	0.02	-	-	34,107	0.19

The size of poultry that most holdings reported is the one to nine size group followed by the ten to forty-nine size group. Sizeable (45.16 percent) holdings were also without poultry (see Summary Table III.10d).

Summary Table III.10d: Number of Holdings by size of Poultry,
Ethiopia - 2017/18

Size	Number of Holdings	%
All Holdings.....	17,966,019	100
Holdings with no Poultry...	8,113,854	45.16
1-9 Head.....	8,093,684	45.05
10-49 Head.....	1,755,911	9.77
50-99 Head.....	1,838	0.01
100-199 Head.....	732	*
200-499 Head.....	-	-

3.7 ANIMAL FEED

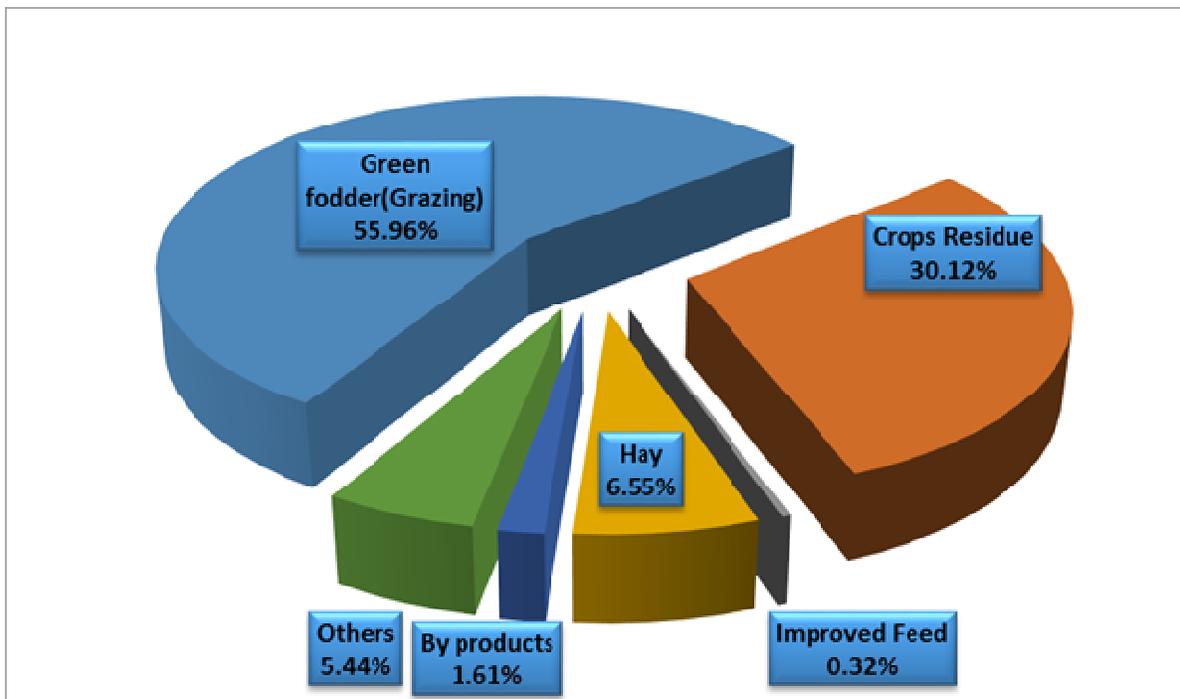
Data on animal feed practices of holders in the rural sedentary areas of the country were gathered to assess the feed utilization experience. For the purpose of this report, animal feeds are classified as green fodder (grazing), crop residue, improved feed, hay, industrial by-products, and other feeds. *Green fodder* is simply pasture grasses; *crop residue* includes harvested by-products (straw and chaff of cereals and pulses, etc.); *improved feed* is like alfalfa; *hay* includes any type of grass, clover etc. cut and dried as fodder; and finally industrial *by-products* are like oil cake (rapeseed cake, nueg cake, sunflower cake, etc.), bran, and brewery residue.

According to the information collected on feed usage experience of holders in the rural areas of the country, green fodder (grazing) is the major type of feed (about 54.59 percent) followed by crops residue that is 31.60 percent. Hay and by-products were also used as animal feeds that comprise about 6.81 and 1.53 percent of the total feeds, respectively. Moreover, as shown in Summary Table III.11 and Figure III.13, very small amount of improved feed (only 0.31 percent) was used as animal feed and other types of feed that accounted for about 5.11 percent were also used in the country.

SUMMARY TABLE III.11: Animal Feed Practices in Ethiopia - 2017/18

Item	Number of Holders Reporting	Percentage from the total feed utilized
Total		100
Green Fodder/Grazing	15,441,474	55.96
Crops Residue.....	13,094,354	30.12
Improved Feed.....	358,787	0.32
Hay	4,924,548	6.55
By-products	1,907,146	1.61
Others	5,487,796	5.44

FIGURE III.13 ANIMAL FEED PRACTICES OF HOLDERS



Summary Table III.11 also highlights the number of holders reported each type of feed. According to the data, about 15.44 million holders have used green fodder to feed their animals. Significant number of holders (about 13.09 million) in the rural areas of the

country also reported that they used to feed crops residue for their animals. Moreover, about 4.92 million, and about 1.91 million holders have reported to use hay and by-products, respectively. Quite a number of holders (about 5.44 million) as well reported to use other types of feeds while about 358 thousand holders used improved feed during the reference period.

Sources of animal feeds were also assessed and own holdings were the major source of all types of feeds for the majority of the holders during the reference period. Communal holdings were also observed as the main sources of green fodder for considerable number of holders. Substantial numbers of holders have also purchased different types of feed to nourish their animals (see Summary Table III.12).

SUMMARY TABLE III.12 Estimated Number of Holders
Reporting Animal Feed by Source and Type of Feed, Ethiopia - 2017/18

Source of Feed	Green fodder/ Grazing	Crops Residue	Improved Feed	Hay	By- products	Others
All Sources.....	15,441,475	13,094,354	358,787	4,924,548	1,907,145	5,487,796
Own Holding.....	6,385,254	11,131,003	254,246	3,037,155	575,091	3,927,026
Purchased.....	348,280	356,036	66,542	814,452	1,214,232	631,448
Communal Holdings/Government	3,731,757	153,388	1,619	138,823	11,154	28,186
From any Two or More Sources...	4,766,560	1,311,059	25,357	850,824	84,414	731,022
Other Sources.....	209,624	142,868	11,023	83,294	22,254	170,114

3.8 LIVESTOCK EXTENSION

This section of the survey results elicited information about livestock extension packages practiced by holders during the reference period. As can be seen from Summary Table III.13, a total of about 558 thousand holders (less than 1 percent of the total holders) were involved in livestock extension packages during the reference period. More than half of these holders were involved in beef and poultry development packages. About 9.63 percent of them were engaged in dairy development packages whereas about 1.98 percent of them have practiced honey and wax development package. Moreover, about 1.83 percent of the holders practiced at least two types of packages concurrently within the reference period.

SUMMARY TABLE III.13 Estimated Number of Holders Practiced Livestock
Extension Packages during the Reference Period by Type of Package,
Ethiopia – 2017/18

Type of Livestock Extension Packages	Number of Holders Practiced	%
Total	558,318	100
Dairy Development Package.....	53,751	9.63
Beef/Meat/Mutton Development Package.....	61,334	10.99
Poultry Development Package.....	412,140	73.82
Honey and Wax Development Package.....	11,056	1.98
Two or More of the Packages.....	10,237	1.83
Others.....	9,800	1.76

**STATISTICAL TABLES PRESENTING
RESULTS AT REGION LEVEL**

TABLE 3-1: NUMBER OF LIVESTOCK BY TYPE OF ANIMAL AND REGION

Geographic Area	ALL LIVESTOCK								
	CATTLE	SHEEP	GOATS	HORSES	MULES	DONKEYS	CAMELS	POULTRY	BEEHIVES
Ethiopia	60,392,019	31,302,257	32,738,385	2,007,829	461,665	8,845,589	1,418,457	56,056,778	6,523,969
Tigray	4,817,104	2,472,938	4,301,221	15,664	11,308	886,103	43,332	6,190,640	293,184
Afar	1,317,139	2,081,955	3,265,403	-	-	125,671	650,040	215,768	3,710
Amhara	16,148,390	11,086,083	7,766,661	488,626	220,940	3,279,179	151,143	17,705,026	1,154,094
Oromia	24,432,974	9,394,430	8,591,204	1,128,901	134,898	3,419,932	315,482	19,014,114	3,185,361
Somale	589,503	1,360,703	2,826,424	-	-	200,639	249,475	250,418	720
Benshangul-Gumuz	795,024	160,029	602,840	1,792	2,542	82,228	-	1,672,084	449,717
SNNP	11,883,548	4,639,606	4,958,255	371,298	91,461	811,105	-	10,491,131	1,335,541
Gambela region	285,102	35,285	107,083	904	100	2,150	-	301,531	98,422
Harari	71,277	6,896	69,901	-	-	14,356	779	97,690	1,226
Dire Dawa	51,958	64,332	249,393	644	416	24,226	8,207	118,376	1,994

TABLE 3-2: NUMBER OF CATTLE BY AGE AND SEX OF ANIMAL AND REGION

Geographic Area	CATTLE										
	ALL CATTLE	MALE					FEMALE				
		< 6 Months	6 Mo < 1yr	1yr - <3 yrs	3 - <10 yrs	10 yrs & Over	< 6 Months	6 Mo < 1yr	1yr - <3 yrs	3 - <10 yrs	10 yrs & Over
Ethiopia	60,392,019	2,625,257	5,561,004	4,586,152	7,001,719	5,593,708	2,836,636	2,834,896	6,621,161	1,102,125	629,361
Tigray	4,817,104	213,992	182,734	366,498	1,446,640	108,106	255,470	192,898	451,399	1,518,580	80,786
Afar	1,317,139	78,992	78,118	38,210	83,520	*	99,402	111,396	132,714	665,551	*
Amhara	16,148,390	685,633	537,791	1,294,457	5,442,020	257,361	673,662	577,389	3,353,577	5,096,560	229,939
Oromia	24,432,974	982,141	1,132,244	1,868,136	6,811,830	186,168	1,138,846	1,244,390	2,261,179	8,589,929	218,112
Somale	589,503	51,150	24,727	44,639	90,961	-	42,933	29,547	52,763	251,256	*
Benshangul-	795,024	34,152	35,805	80,964	203,912	3,452	31,167	39,974	86,563	273,556	5,480
SNNP	11,883,548	560,091	548,705	860,615	2,873,069	35,261	573,025	616,939	2,235,757	4,518,027	62,060
Gambela region	285,102	11,415	14,362	18,050	34,381	*	14,718	16,295	28,930	142,645	3,113
Harari	71,277	3,584	4,025	8,744	8,804	-	4,305	3,749	10,700	26,715	*
Dire Dawa	51,958	4,107	2,491	5,839	6,583	-	3,107	2,321	7,580	19,306	*

TABLE 3-3: NUMBER OF SHEEP BY AGE AND SEX OF ANIMAL AND REGION

Geographic Area	SHEEP								
	ALL SHEEP	MALE				FEMALE			
		< 6 Months	6 Mo < 1yr	1yr - <2 yrs	2 yrs &Over	< 6 Months	6 Mo < 1yr	1yr - <2 yrs	2 yrs &Over
Ethiopia	31,302,257	3,990,676	1,541,246	1,249,301	2,040,538	4,197,563	1,890,164	2,089,850	14,302,918
Tigray	2,472,938	331,267	132,153	79,882	86,437	324,527	176,475	183,093	1,159,102
Afar	2,081,955	196,993	81,147	85,657	157,006	260,056	120,955	199,813	980,326
Amhara	11,086,083	1,500,470	467,392	457,248	686,659	1,534,145	593,095	669,240	5,177,832
Oromia	9,394,430	1,269,266	514,373	342,907	594,577	1,327,962	591,999	559,058	4,194,288
Somale	1,360,703	114,141	75,004	55,729	164,274	124,489	114,236	139,549	573,281
Benshangul-Gumuz	160,029	22,352	12,518	3,638	4,721	29,692	9,398	15,478	62,233
SNNP	4,639,606	544,026	253,393	221,444	337,203	582,909	276,826	315,759	2,108,045
Gambela region	35,285	4,654	1,587	1,173	5,147	4,937	2,603	1,044	14,142
Harari	6,896	497	*	*	*	*	*	967	2,939
Dire Dawa	64,332	7,011	3,431	1,430	4,199	7,500	4,182	5,849	30,730

TABLE 3-4: NUMBER OF GOATS BY AGE AND SEX OF ANIMAL AND REGION

Geographic Area	GOATS								
	ALL GOATS	MALE				FEMALE			
		< 6 Months	6 Mo < 1yr	1yr - <2 yrs	2 yrs &Over	< 6 Months	6 Mo < 1yr	1yr - <2 yrs	2 yrs &Over
Ethiopia	32,738,385	3,996,826	1,756,390	1,480,255	2,426,212	4,265,544	2,290,655	2,557,987	3,964,515
Tigray	4,301,221	556,965	237,633	161,399	219,976	598,048	315,619	415,156	1,796,424
Afar	3,265,403	295,555	119,249	103,360	218,543	396,160	224,536	300,880	1,607,120
Amhara	7,766,661	1,104,285	403,208	492,378	630,646	1,080,591	461,576	526,191	3,067,785
Oromia	8,591,204	1,117,745	541,311	333,737	580,122	1,126,220	646,293	586,663	3,659,112
Somale	2,826,424	202,693	138,777	140,379	245,094	303,895	221,725	302,005	1,271,856
Benshangul-Gumuz	602,840	87,588	37,474	18,497	25,013	93,535	56,606	54,276	229,851
SNNP	4,958,255	583,477	253,854	208,372	481,967	613,375	332,280	332,817	2,152,114
Gambela region	107,083	13,854	7,555	4,423	4,655	15,544	7,895	7,756	45,401
Harari	69,901	8,287	4,566	4,395	4,531	8,031	5,499	5,983	28,610
Dire Dawa	249,393	26,377	12,763	13,315	15,665	30,145	18,627	26,259	106,243

TABLE 3-5: NUMBER OF HORSES AND DONKEYS BY AGE AND SEX OF ANIMAL AND REGION

Geographic Area	HORSES AND DONKEYS									
	ALL HORSES	HORSES				ALL DONKEYS	DONKEYS			
		MALE		FEMALE			MALE		FEMALE	
		< 3 Years	3 Yrs & more	< 3 Years	3 Yrs & more		< 3 Years	3 Yrs & more	< 3 Years	3 Yrs & more
Ethiopia	2,007,829	192,285	792,642	189,473	833,430	8,845,589	037,931	3,154,052	027,342	3,626,264
Tigray	*	*	*	*	*	886,103	94,555	370,861	101,641	319,047
Afar	-	-	-	-	-	125,671	13,182	41,787	21,118	49,584
Amhara	488,626	41,797	150,702	44,457	251,671	3,279,179	462,166	956,462	436,217	1,424,334
Oromia	1,128,901	113,570	482,257	109,098	423,975	3,419,932	371,085	1,277,551	377,098	1,394,198
Somale	-	-	-	-	-	200,639	25,537	87,054	17,604	70,444
Benshangul-Gumuz	*	*	*	*	*	82,228	9,378	50,406	7,039	15,405
SNNP	371,298	35,253	153,654	31,392	150,999	811,105	57,315	355,250	62,303	336,237
Gambela region	904	-	904	-	-	2,150	*	1,549	-	*
Harari	-	-	-	-	-	14,356	972	8,519	1,084	3,780
Dire Dawa	*	-	*	-	*	24,226	3,538	4,612	3,238	12,837

TABLE 3-6: NUMBER OF MULES AND CAMELS BY AGE AND SEX OF ANIMAL AND REGION

Geographic Area	MULES					CAMELS				
	All Mules	MALE		FEMALE		All Camels	MALE		FEMALE	
		< 3 Years	3 Years and Older	< 3 Years	3 Years and Older		< 4 Years	4 Years and Older	< 4 Years	4 Years and Older
Ethiopia	461,665	27,033	216,906	27,134	190,592	1,418,457	153,532	326,603	210,203	728,119
Tigray	11,308	*	6,464	*	3,621	43,332	*	39,829	-	*
Afar	-	-	-	-	-	650,040	73,260	61,757	105,618	409,406
Amhara	220,940	16,628	95,409	20,598	88,305	151,143	*	127,088	*	*
Oromia	134,898	3,143	65,167	3,426	63,162	315,482	29,507	38,430	*	*
Somale	-	-	-	-	-	249,475	33,471	55,575	30,428	130,001
Benshangul-Gumuz	2,542	-	*	-	*	-	-	-	-	-
SNNP	91,461	6,760	48,840	*	33,472	-	-	-	-	-
Gambela region	*	-	*	-	-	-	-	-	-	-
Harari	-	-	-	-	-	*	*	*	*	*
Dire Dawa	*	-	*	-	-	8,207	1,183	3,773	801	2,450

TABLE 3-7: CATTLE AGED 3 – 10 YEARS BY SEX, PURPOSE AND REGION

Geographic Area	CATTLE AGED 3 – 10 YEARS									
	Total	MALE				FEMALE				
		Draught	Beef	Breeding	Other	Milk	Draught	Beef	Breeding	Other
Ethiopia	38,103,844	15,381,315	411,074	570,805	638,525	6,659,362	179,110	75,679	13,173,757	1,014,217
Tigray	2,965,221	1,411,490	*	12,728	19,539	52,538	19,706	-	1,432,689	13,648
Afar	749,071	41,827	-	41,336	*	236,913	*	*	421,425	*
Amhara	10,538,579	5,153,512	66,904	65,055	156,549	228,922	105,853	20,526	4,564,242	177,017
Oromia	15,401,759	6,086,876	237,860	257,228	229,866	2,722,403	29,443	41,108	5,437,528	359,447
Somale	342,216	61,059	10,931	18,204	*	104,479	*	-	146,445	-
Benshangul-Gumuz	477,467	186,941	*	*	*	9,896	*	*	251,413	*
SNNP	7,391,096	2,418,557	83,310	149,194	222,007	3,285,624	10,841	12,342	751,042	458,178
Gambela region	177,026	12,924	3,332	18,028	*	14,025	*	*	128,015	*
Harari	35,519	4,413	*	*	-	2,236	-	-	24,479	-
Dire Dawa	25,890	3,715	2,358	*	-	2,326	-	*	16,480	*

TABLE 3-8: SHEEP AGED 2 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	SHEEP AGED 2 YEARS AND OLDER								
	Total	MALE				FEMALE			
		Mutton/Meat	Wool	Breeding	Other	Mutton/Meat	Wool	Breeding	Other
Ethiopia	16,343,456	802,902	15,989	1,148,509	73,138	67,585	76,584	14,103,468	55,281
Tigray	1,245,539	*	-	76,912	*	-	8,015	1,151,087	-
Afar	1,137,333	8,413	-	145,082	*	10,971	343	932,049	36,963
Amhara	5,864,491	377,518	*	279,856	20,036	22,291	31,700	5,117,974	5,866
Oromia	4,788,866	230,343	*	322,593	37,203	19,654	28,096	4,137,988	8,551
Somale	737,555	62,776	*	97,876	*	6,798	-	565,584	900
Benshangul-Gumuz	66,954	*	-	4,567	-	-	556	61,677	-
SNNP	2,445,248	111,928	*	218,490	5,555	7,872	7,775	2,089,398	3,001
Gambela region	19,289	*	-	1,716	*	-	98	14,043	-
Harari	3,252	*	-	*	-	-	-	2,939	-
Dire Dawa	34,929	*	-	*	-	-	-	30,730	-

TABLE 3-9: GOATS AGED 2 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	GOATS AGED 2 YEARS AND OLDER							
	Total	MALE			FEMALE			
		Meat	Breeding	Other	Meat	Milk	Breeding	Other
Ethiopia	16,390,727	800,141	1,574,217	51,854	83,512	891,357	12,960,416	29,230
Tigray	2,016,401	15,171	199,928	*	*	*	1,786,598	*
Afar	1,825,663	*	201,196	*	*	265,509	1,315,170	*
Amhara	3,698,431	328,356	291,440	10,850	16,646	*	3,042,371	*
Oromia	4,239,234	231,185	326,984	*	21,608	302,059	3,332,455	*
Somale	1,516,950	115,881	122,812	*	*	154,750	1,097,427	*
Benshangul-Gumuz	254,863	3,323	21,689	-	*	*	223,160	*
SNNP	2,634,081	75,052	400,354	*	*	155,046	1,985,375	5,514
Gambela region	50,056	*	3,269	*	-	-	45,401	-
Harari	33,141	1,808	2,429	*	-	*	27,933	-
Dire Dawa	121,907	11,549	*	-	*	*	104,526	-

TABLE 3-10: HORSES AGED 3 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	HORSES AGED 3 YEARS AND OLDER						
	Total	MALE			FEMALE		
		Transportation	Draught	Other	Transportation	Draught	Other
Ethiopia	1,626,071	671,919	110,648	10,074	526,796	154,865	151,768
Tigray	*	*	-	*	*	-	-
Afar	-	-	-	-	-	-	-
Amhara	402,372	59,005	91,697	-	51,145	128,241	72,285
Oromia	906,232	468,416	8,106	5,734	355,047	12,928	56,000
Somale	-	-	-	-	-	-	-
Benshangul-Gumuz	*	*	-	-	*	-	*
SNNP	304,652	139,347	10,844	*	114,266	13,696	23,037
Gambela region	904	904	-	-	-	-	-
Harari	-	-	-	-	-	-	-
Dire Dawa	*	*	-	-	*	-	-

TABLE 3-11: DONKEYS AGED 3 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	DONKEYS AGED 3 YEARS AND OLDER						
	TOTAL	MALE			FEMALE		
		Transportation	Draught	Other	Transportation	Draught	Other
Ethiopia	6,780,316	2,715,235	394,248	44,568	3,102,124	422,902	101,239
Tigray	689,908	315,736	55,125	-	293,700	23,391	*
Afar	91,371	40,883	-	*	45,882	-	*
Amhara	2,380,796	788,331	163,198	*	1,121,719	240,895	61,721
Oromia	2,671,749	1,178,857	78,160	*	1,251,681	114,051	28,466
Somale	157,498	85,737	*	*	69,629	*	*
Benshangul-Gumuz	65,811	16,706	32,596	1,105	4,801	9,043	*
SNNP	691,487	276,408	62,698	16,144	297,894	34,763	*
Gambela region	1,947	*	-	*	*	-	*
Harari	12,299	6,878	1,641	-	3,680	*	-
Dire Dawa	17,450	4,404	-	*	12,837	-	-

TABLE 3-12: MULES AGED 3 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	MULES AGED 3 YEARS AND OLDER						
	TOTAL	MALE			FEMALE		
		Transportation	Draught	Other	Transportation	Draught	Other
Ethiopia	407,498	196,959	16,514	*	170,281	15,390	4,922
Tigray	10,085	*	*	-	3,621	-	-
Afar	-	-	-	-	-	-	-
Amhara	183,714	83,756	9,412	*	75,399	8,247	4,660
Oromia	128,329	64,192	*	-	62,294	*	-
Somale	-	-	-	-	-	-	-
Benshangul-Gumuz	2,542	*	-	*	*	*	*
SNNP	82,311	43,541	*	*	28,374	5,097	-
Gambela region	*	*	-	-	-	-	-
Harari	-	-	-	-	-	-	-
Dire Dawa	*	*	-	-	-	-	-

TABLE 3-13: CAMELS AGED 4 YEARS AND OLDER BY SEX, PURPOSE AND REGION

Geographic Area	CAMELS AGED 4 YEARS AND OLDER									
	TOTAL	MALE				FEMALE				
		Transportation	Meat	Draught	Other	Transportation	Meat	Draught	Milk	Others
Ethiopia	1,054,722	244,412	22,419	24,083	35,689	3,856	41,629	*	294,071	386,063
Tigray	42,561	32,532	-	*	-	-	*	-	-	*
Afar	471,163	41,658	*	-	17,125	-	4,583	-	196,941	207,882
Amhara	134,714	113,063	-	*	*	-	*	*	*	-
Oromia	214,238	17,846	*	*	*	*	*	*	58,154	*
Somale	185,576	35,387	8,524	-	11,664	*	21,974	-	32,356	73,574
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	-	-	-	-	-	-	-
Gambela region	-	-	-	-	-	-	-	-	-	-
Harari	*	*	-	-	-	-	-	-	*	-
Dire Dawa	6,222	3,773	-	-	-	-	921	-	1,394	*

TABLE 3-14: NUMBER OF CATTLE BY SEX, BREED AND REGION

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	60,392,019	26,989,156	327,913	50,771	32,339,693	600,153	84,334
Tigray	4,817,104	2,264,816	40,402	12,752	2,437,928	51,900	9,305
Afar	1,317,139	281,007	-	-	1,035,446	*	-
Amhara	16,148,390	8,090,027	116,657	*	7,731,652	175,608	*
Oromia	24,432,974	10,842,044	115,561	22,914	13,214,937	194,305	43,213
Somale	589,503	211,477	-	-	378,026	-	-
Benshangul-Gumuz	795,024	358,285	-	-	436,739	-	-
SNNP	11,883,548	4,819,117	54,427	4,196	6,824,265	174,089	7,454
Gambela region	285,102	79,402	-	-	205,700	-	-
Harari	71,277	23,962	*	*	42,284	*	*
Dire Dawa	51,958	19,020	-	-	32,715	*	*

TABLE 3-15 NUMBERS OF SHEEP BY SEX, BREED AND REGION

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	31,302,257	8,791,860	25,123	*	22,450,309	12,546	*
Tigray	2,472,938	629,740	-	-	1,843,198	-	-
Afar	2,081,955	520,804	-	-	1,561,151	-	-
Amhara	11,086,083	3,086,987	20,004	*	7,951,575	*	*
Oromia	9,394,430	2,721,123	-	-	6,671,048	*	-
Somale	1,360,703	409,148	-	-	951,555	-	-
Benshangul-Gumuz	160,029	43,229	-	-	116,800	-	-
SNNP	4,639,606	1,350,948	*	-	3,278,352	*	*
Gambela region	35,285	12,560	-	-	22,725	-	-
Harari	6,896	1,251	-	-	5,645	-	-
Dire Dawa	64,332	16,070	-	-	48,261	-	-

TABLE 3-16: NUMBER OF GOATS BY SEX, BREED AND REGION

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	32,738,385	9,657,416	*	*	23,072,652	*	*
Tigray	4,301,221	1,175,973	-	-	3,125,248	-	-
Afar	3,265,403	736,707	-	-	2,528,696	-	-
Amhara	7,766,661	2,630,517	-	-	5,136,143	-	-
Oromia	8,591,204	2,572,916	-	-	6,018,288	-	-
Somale	2,826,424	726,943	-	-	2,099,481	-	-
Benshangul-Gumuz	602,840	168,572	-	-	434,269	-	-
SNNP	4,958,255	1,525,403	*	*	3,424,535	*	*
Gambela region	107,083	30,487	-	-	76,596	-	-
Harari	69,901	21,779	-	-	48,123	-	-
Dire Dawa	249,393	68,119	-	-	181,274	-	-

TABLE 3-17: POULTRY INVENTORY BY TYPE AND REGION

a. All

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	56,056,778	5,664,299	3,278,531	6,167,785	1,512,500	19,853,495	19,580,169
Tigray	6,190,640	497,931	468,966	831,624	153,699	2,029,699	2,208,722
Afar	215,768	20,883	12,234	17,610	*	94,137	57,766
Amhara	17,705,026	1,496,610	879,476	1,955,970	358,673	6,971,590	6,042,707
Oromia	19,014,114	2,304,658	1,085,177	1,890,865	612,275	6,252,471	6,868,667
Somale	250,418	*	21,874	*	12,687	48,964	78,930
Benshangul-Gumuz	1,672,084	142,073	135,042	217,660	16,879	788,133	372,296
SNNP	10,491,131	1,086,585	640,488	1,145,788	331,299	3,503,672	3,783,298
Gambela region	301,531	34,388	23,520	37,558	9,082	118,072	78,911
Harari	97,690	14,239	5,999	10,543	2,287	22,077	42,545
Dire Dawa	118,376	11,489	5,756	*	*	24,680	46,325

b. Indigenous Breeds

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	49,436,720	5,021,231	2,875,688	5,226,780	1,362,429	18,877,480	16,073,113
Tigray	4,396,781	366,178	339,340	567,449	128,241	1,738,319	1,257,254
Afar	203,919	17,356	12,234	16,146	*	93,777	51,268
Amhara	15,541,443	1,342,087	809,623	1,702,942	292,415	6,619,630	4,774,746
Oromia	17,695,926	2,135,220	984,884	1,702,622	581,689	6,094,358	6,197,152
Somale	248,611	*	21,874	*	12,687	48,964	77,123
Benshangul-Gumuz	1,628,598	139,394	130,506	206,908	16,879	769,698	365,214
SNNP	9,251,424	911,475	543,596	942,651	304,306	3,350,702	3,198,693
Gambela region	286,859	31,739	22,648	33,371	8,413	117,183	73,505
Harari	84,543	12,189	5,227	9,604	2,180	20,526	34,817
Dire Dawa	98,616	10,150	5,756	12,565	*	24,322	43,341

c. Hybrid

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	3,004,020	339,607	209,881	403,570	60,424	699,812	1,290,727
Tigray	582,693	53,438	51,780	98,840	12,663	173,222	192,750
Afar	*	*	-	*	-	-	*
Amhara	874,507	74,970	36,804	97,411	-	270,851	382,985
Oromia	753,237	93,468	58,062	86,875	19,918	139,587	355,328
Somale	*	-	-	-	-	-	*
Benshangul-Gumuz	28,420	-	2,727	3,753	-	*	3,663
SNNP	746,990	112,352	59,838	113,998	16,271	96,671	347,860
Gambela region	-	-	-	-	*	*	-
Harari	-	-	*	-	*	*	*
Dire Dawa	*	*	-	*	-	-	*

d. Exotic Breeds

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	3,616,039	303,462	192,963	537,435	89,647	276,203	2,216,330
Tigray	1,211,166	78,315	77,847	165,334	12,794	118,157	758,718
Afar	*	*	-	-	-	*	*
Amhara	1,289,076	79,552	33,050	155,616	54,773	-	884,976
Oromia	564,952	75,971	42,231	101,368	10,668	18,526	316,187
Somale	-	-	-	-	-	-	-
Benshangul-Gumuz	15,065	1,543	-	7,000	-	*	3,420
SNNP	492,718	62,758	37,054	89,140	10,722	56,299	236,745
Gambela region	10,017	1,448	872	2,522	*	*	4,118
Harari	3,458	629	*	*	-	*	*
Dire Dawa	*	*	-	*	-	*	*

TABLE 3-18: BEEHIVE INVENTORY AND PRODUCTION OF HONEY BY TYPE AND REGION

Geographic Area	All Beehives		Traditional Beehives		Intermediate Beehives			Modern Beehives			
	Number of hives	Total annual honey production	Number of hives	Avg. frequency of production	Total annual honey production	Number of hives	Avg. frequency of production	Total annual honey production	Number of hives	Avg. frequency of production	Total annual honey production
Ethiopia	6,523,969	66,221,823	6,327,197	2	63,798,054	69,399	2	497,337	127,373	2	21,926,432
Tigray	293,184	3,293,394	244,401	2	2,315,668	6,668	2	*	42,116	2	917,206
Afar	*	*	*	*	*	-	-	-	-	-	-
Amhara	1,154,094	*	1,115,835	2	*	5,986	2	117,720	32,273	2	212,829
Oromia	3,185,361	21,403,404	3,100,768	2	20,490,146	40,416	1	138,599	44,176	2	774,659
Somale	*	*	*	*	*	-	-	-	-	-	-
Benshangul-SNNP	449,717	2,231,380	448,422	1	2,179,596	*	*	*	-	-	-
Gambela region	1,335,541	9,471,625	1,311,698	2	9,329,298	15,035	2	120,590	*	*	*
Harari	98,422	*	98,422	2	*	-	*	*	-	-	-
Dire Dawa	1,226	*	1,226	*	*	-	-	-	-	-	-
	1,994	8,857	1,994	2	8,857	-	-	-	-	-	-

TABLE 3 – 19: ESTIMATED NUMBERS OF BIRTHS, PURCHASES, AND ACQUIRED ANIMALS DURING THE REFERENCE PERIOD BY REGION

a. Cattle

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	11,533,482	5,523,000	6,010,481	5,242,084	3,288,847	1,953,237	021,277	428,574	592,702
Tigray	864,429	409,103	455,326	293,116	205,183	87,933	41,338	20,325	21,012
Afar	403,867	173,402	230,465	22,940	13,044	9,897	*	*	*
Amhara	2,571,557	1,285,756	1,285,801	1,676,082	1,201,836	474,246	166,496	69,374	97,122
Oromia	4,706,974	2,213,812	2,493,163	1,898,979	1,167,710	731,270	434,168	181,755	252,413
Somale	155,030	79,178	75,852	6,253	3,553	2,700	6,295	*	5,224
Benshangul-Gumuz	153,558	75,142	78,416	86,896	43,261	43,635	2,587	*	*
SNNP	2,587,724	1,244,063	1,343,661	1,224,428	638,773	585,655	352,124	150,769	201,355
Gambela region	60,910	27,206	33,704	27,103	12,424	14,679	5,955	1,683	4,272
Harari	16,073	7,856	8,218	3,097	1,282	1,815	2,104	*	1,823
Dire Dawa	13,359	7,482	5,877	3,189	1,782	1,408	*	*	*

b. Sheep

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	14,282,855	6,955,218	7,327,637	5,409,726	2,888,284	2,521,442	534,479	114,294	420,186
Tigray	1,141,235	557,168	584,067	398,053	215,019	183,034	21,535	*	*
Afar	854,539	347,671	506,868	47,876	28,747	19,129	13,297	*	10,368
Amhara	5,914,142	2,979,011	2,935,131	2,710,695	1,532,195	1,178,500	172,867	39,376	133,491
Oromia	4,036,364	1,966,418	2,069,946	1,420,532	735,163	685,369	181,476	26,844	154,633
Somale	431,943	189,736	242,207	22,150	10,438	11,712	10,244	*	*
Benshangul-Gumuz	95,813	47,230	48,583	32,077	13,006	19,071	1,868	*	*
SNNP	1,758,643	844,271	914,372	762,374	343,067	419,307	129,802	37,455	92,346
Gambela region	15,485	7,326	8,159	13,143	8,990	4,153	819	*	576
Harari	2,547	546	2,001	*	*	-	*	*	*
Dire Dawa	32,144	15,841	16,303	2,591	1,423	1,168	2,350	*	*

c. Goats

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	14,143,952	6,722,240	7,421,712	3,072,545	1,311,871	1,760,674	480,925	100,202	380,723
Tigray	1,925,850	889,987	1,035,863	347,075	151,924	195,151	19,960	3,603	16,357
Afar	1,284,080	554,274	729,806	96,901	*	44,036	27,276	*	23,401
Amhara	3,957,023	2,005,096	1,951,927	1,266,798	610,215	656,583	117,123	41,736	75,387
Oromia	3,650,299	1,763,818	1,886,480	781,986	277,465	504,521	130,792	21,938	108,854
Somale	907,050	356,280	550,770	39,311	21,788	17,523	*	*	*
Benshangul-Gumuz	376,802	170,174	206,628	98,862	26,100	72,762	3,383	*	*
SNNP	1,863,644	897,363	966,281	411,790	155,753	256,037	121,714	24,836	96,878
Gambela region	51,266	24,147	27,118	13,867	4,843	9,024	4,347	1,247	3,100
Harari	26,724	13,012	13,712	5,579	2,931	2,648	*	*	*
Dire Dawa	101,215	48,089	53,127	10,378	7,989	2,390	*	*	*

d. Horses

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	170,581	87,155	83,426	232,087	136,176	95,911	19,016	5,750	13,266
Tigray	*	*	*	*	*	-	-	-	-
Afar	-	-	-	-	-	-	-	-	-
Amhara	44,320	22,960	21,360	81,308	38,022	43,286	*	-	*
Oromia	101,870	51,758	50,112	91,989	60,120	31,869	9,804	4,464	*
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	*	*	*	*	*	*	-	-	-
SNNP	21,253	11,493	9,760	57,228	36,694	20,533	4,017	*	2,732
Gambela region	-	-	-	*	*	-	-	-	-
Harari	-	-	-	-	-	-	-	-	-
Dire Dawa	-	-	-	-	-	-	-	-	-

e. Donkeys

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	805,965	388,222	417,743	895,456	501,442	394,014	56,353	26,704	29,649
Tigray	73,698	31,289	42,409	95,209	60,448	34,761	*	-	*
Afar	13,496	*	9,799	*	*	3,044	*	*	*
Amhara	378,267	188,229	190,039	338,712	172,495	166,217	15,915	9,201	6,715
Oromia	271,395	133,602	137,793	308,572	165,621	142,951	22,659	10,944	11,715
Somale	14,461	9,633	4,829	*	*	*	5,279	*	*
Benshangul-Gumuz	7,287	2,957	4,330	24,807	18,831	5,976	*	-	*
SNNP	42,755	16,473	26,281	113,425	74,863	38,562	9,015	3,539	5,476
Gambela region	*	*	-	998	998	-	-	-	-
Harari	*	*	*	*	*	*	-	-	-
Dire Dawa	4,128	1,953	*	*	-	*	-	-	-

f. Mules

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	*	*	*	108,576	52,634	55,942	*	*	*
Tigray	*	*	-	*	*	-	-	-	-
Afar	-	-	-	-	-	-	-	-	-
Amhara	*	*	*	73,484	31,634	41,849	*	-	*
Oromia	*	*	*	16,935	9,157	7,779	*	*	*
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	-	-	-	*	*	*	-	-	-
SNNP	*	*	*	16,240	10,080	6,160	*	*	*
Gambela region	-	-	-	-	-	-	-	-	-
Harari	-	-	-	-	-	-	-	-	-
Dire Dawa	-	-	-	*	*	-	-	-	-

g. Camels

Geographic Area	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	222,991	90,111	132,880	65,515	53,025	12,490	*	*	*
Tigray	-	-	-	11,391	11,391	-	-	-	-
Afar	138,816	59,826	78,990	*	*	*	*	*	-
Amhara	*	-	*	34,914	34,914	-	-	-	-
Oromia	49,657	12,531	*	*	*	*	*	*	*
Somale	32,338	17,282	15,056	*	*	*	*	-	*
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	*	*	*	-	-	-
Gambela region	*	*	*	-	-	-	-	-	-
Harari	-	-	-	-	-	-	*	-	*
Dire Dawa	509	*	*	*	*	*	*	*	-

h. Poultry

Geographic Area	Total Number of Births	Total Number of Purchases	Total Acquired by any Other Means
Ethiopia	89,403,876	18,141,572	749,632
Tigray	10,629,174	3,171,735	129,412
Afar	212,659	25,325	*
Amhara	33,625,521	7,052,824	240,896
Oromia	25,480,124	4,068,495	190,642
Somale	156,787	7,398	*
Benshangul-Gumuz	3,544,776	483,271	11,418
SNNP	14,995,379	3,235,034	159,899
Gambela	527,866	69,112	7,953
Harari	123,611	4,813	*
Dire Dawa	107,979	*	6,080

TABLE 3 – 20: ESTIMATED NUMBERS OF SALES, SLAUGHTERS, DEATHS, AND OFFERED ANIMALS DURING THE REFERENCE PERIOD BY REGION

a. Cattle

Geographic Area	Number of Sales			Number of Slaughters			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	7,346,188	4,680,510	665,678	434,514	2,050	12,464	1,654,803	924,023	730,780	49,836	01,592	48,243
Tigray	603,529	413,298	190,232	56,559	6,359	30,200	213,379	102,599	110,780	40,805	18,229	22,575
Afar	87,473	47,393	40,080	14,044	8,662	*	190,849	49,335	141,514	3,038	*	2,533
Amhara	2,182,377	1,455,890	726,487	124,043	6,938	67,106	600,619	267,990	332,628	87,792	33,196	54,596
Oromia	2,816,376	1,784,281	032,095	116,317	4,602	61,715	1,757,039	723,121	1,033,919	19,664	34,792	84,872
Somale	24,349	16,154	8,195	2,174	*	*	80,492	26,187	54,304	*	*	*
Benshangul-Gumuz	112,716	69,375	43,341	4,110	2,900	1,210	79,544	32,985	46,559	*	*	*
SNNP	1,481,374	870,095	611,279	115,369	9,892	45,477	1,680,491	703,801	976,690	62,974	04,232	58,743
Gambela	24,698	16,516	8,182	818	489	328	42,050	14,379	27,671	24,980	6,612	18,368
Harari	8,071	4,173	3,898	*	*	-	5,540	2,050	3,490	1,660	*	1,271
Dire Dawa	5,224	3,337	1,888	*	*	-	4,800	1,575	3,225	964	424	540

b. Sheep

Geographic Area	Number of Sales			Number of Slaughters			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	6,902,463	2,726,452	1,76,011	520,293	201,596	18,697	63,594	58,090	05,503	10,333	9,272	81,061
Tigray	591,017	289,422	301,595	500,243	63,687	36,556	49,667	33,348	16,319	6,958	5,455	*
Afar	307,118	209,684	97,434	95,659	59,713	35,947	63,237	12,117	51,119	6,857	5,031	11,826
Amhara	3,089,817	1,664,742	1,25,075	795,024	83,337	11,686	62,802	86,748	76,054	6,778	6,257	20,521
Oromia	2,001,307	1,166,205	835,102	729,545	63,522	66,023	45,001	21,632	23,370	3,201	5,513	77,688
Somale	145,528	96,343	49,185	91,039	71,510	19,529	03,985	98,081	05,904	4,603	*	12,091
Benshangul-Gumuz	33,193	18,574	14,618	20,931	15,514	5,418	51,791	20,070	31,721	*	*	*
SNNP	719,183	371,511	347,672	724,985	33,029	41,956	61,081	78,004	83,077	7,877	3,021	54,856
Gambela	7,129	4,263	2,866	3,488	2,891	*	9,007	2,997	6,010	*	*	*
Harari	*	*	*	2,691	2,343	*	*	-	*	*	*	-
Dire Dawa	6,858	5,282	1,576	6,688	6,049	*	16,707	5,094	11,613	3,037	*	2,027

c. Goats

Geographic Area	Number of Sales			Number of Slaughters			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	6,717,799	3,594,216	3,123,582	2,828,561	890,944	937,617	1,171,123	95,523	1,265,601	534,144	164,085	70,059
Tigray	956,624	506,178	450,447	574,099	388,910	185,189	603,510	86,307	417,203	25,120	12,409	12,711
Afar	546,838	336,478	210,360	137,717	85,103	52,614	529,571	57,615	361,956	51,967	*	37,651
Amhara	1,990,351	1,001,601	988,749	1,316,139	336,467	479,672	1,477,861	13,640	874,222	157,162	58,006	99,156
Oromia	1,918,959	1,025,180	893,780	416,071	309,294	106,777	1,076,883	13,166	673,717	99,307	27,110	72,197
Somale	347,818	219,210	128,608	134,917	97,095	37,821	415,917	54,508	261,409	*	*	*
Benshangul-Gumuz	104,475	49,811	54,663	57,654	32,947	24,707	219,476	78,793	140,683	3,888	1,147	*
SNNP	805,157	426,062	379,095	168,447	120,255	48,191	765,799	80,839	484,960	79,885	23,843	56,042
Gambela	11,786	5,769	6,017	3,414	2,216	1,197	31,570	12,210	19,360	1,704	*	1,411
Harari	7,757	3,864	3,893	10,428	9,553	875	5,472	2,585	2,886	1,847	*	1,518
Dire Dawa	28,034	20,063	7,971	9,676	9,102	*	45,064	15,860	29,204	6,241	2,417	3,824

d. Horses

Geographic Area	Number of Sales			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	128,862	81,715	47,147	167,042	70,764	96,278	7,801	*	6,745
Tigray	*	*	*	-	-	-	-	-	-
Afar	*	*	-	*	-	*	-	-	-
Amhara	35,390	24,788	10,602	33,403	10,506	22,897	*	-	*
Oromia	64,119	39,594	24,524	97,831	42,589	55,241	4,394	-	4,394
Somale	-	-	-	*	*	*	*	*	-
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-
SNNP	26,040	15,657	10,383	32,549	16,409	16,141	*	*	*
Gambela	-	-	-	*	*	-	-	-	-
Harari	-	-	-	*	*	-	-	-	-
Dire Dawa	-	-	-	-	-	-	-	-	-

e. Donkeys

Geographic Area	Number of Sales			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	529,658	296,359	233,298	480,772	223,126	257,646	29,183	9,991	19,192
Tigray	48,254	24,388	23,865	46,449	29,873	16,576	-	-	-
Afar	4,265	2,479	*	17,950	*	10,496	-	-	-
Amhara	273,595	144,913	128,683	145,757	62,562	83,195	10,041	*	9,057
Oromia	149,862	85,445	64,416	169,178	76,414	92,764	10,127	5,063	5,065
Somale	*	*	-	5,934	*	*	2,004	*	1,624
Benshangul-Gumuz	9,249	8,688	*	14,383	6,379	8,004	-	-	-
SNNP	42,583	28,683	13,900	77,768	37,430	40,338	6,078	*	*
Gambela	*	*	-	*	*	-	-	-	-
Harari	-	-	-	2,129	1,619	*	*	*	*
Dire Dawa	*	-	*	683	353	*	*	*	*

f. Mules

Geographic Area	Number of Sales			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	73,985	34,434	39,551	53,016	26,254	26,763	*	-	*
Tigray	*	*	-	*	*	*	-	-	-
Afar	*	*	-	*	*	-	-	-	-
Amhara	58,420	24,723	33,697	*	*	*	-	-	-
Oromia	6,424	4,642	*	*	*	*	*	-	*
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	*	-	*	*	-	*	-	-	-
SNNP	7,839	4,029	*	9,210	*	3,590	-	-	-
Gambela	-	-	-	-	-	-	-	-	-
Harari	-	-	-	-	-	-	-	-	-
Dire Dawa	-	-	-	-	-	-	-	-	-

g. Camels

Geographic Area	Number of Sales			Number of Slaughters			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	81,364	66,968	14,396	6,742	4,749	*	59,829	17,434	42,395	*	*	*
Tigray	*	*	-	-	-	-	-	-	-	-	-	-
Afar	27,646	19,349	8,297	*	*	*	31,234	8,155	23,080	*	*	*
Amhara	22,284	22,284	-	-	-	-	*	-	*	-	-	-
Oromia	21,012	15,371	*	*	*	-	18,918	5,890	*	-	-	-
Somale	*	*	*	*	*	*	7,207	*	4,167	-	-	-
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	*	*	*	-	-	-	-	-	-
Gambela	-	-	-	-	-	-	-	-	-	-	-	-
Harari	-	-	-	-	-	-	-	-	-	-	-	-
Dire Dawa	*	*	-	-	-	-	*	*	-	-	-	-

h. Poultry

Geographic Area	Total Number of Sales	Total Number of Slaughters	Total Number of Deaths	Offerings
Ethiopia	15,668,674	16,905,458	64,009,116	585,506
Tigray	1,974,174	3,523,927	7,032,832	82,155
Afar	31,931	35,342	195,514	*
Amhara	6,449,405	7,797,828	21,877,976	163,328
Oromia	4,564,977	3,453,855	19,846,081	175,981
Somale	14,373	*	144,882	-
Benshangul-Gumuz	452,301	503,777	2,559,625	15,519
SNNP	2,089,490	1,535,682	11,780,116	135,835
Gambela	60,632	50,505	385,801	7,205
Harari	19,746	*	95,548	1,483
Dire Dawa	11,643	*	90,740	2,581

TABLE 3-21: NUMBER OF DAIRY ANIMALS, MILK PRODUCTION, AND LACTATION PERIOD BY REGION

Geographic Area	Number of Dairy Cows	Number of Milking Cows	Average Daily Milk Prod.	Average Lactation Period (Months)	Total Milk Production (Lt)	Number of Dairy Camels	Number of Milking Camels	Average Daily Milk Prod.	Average Lactation Period (Months)	Total Milk Production (Lt)
Ethiopia	6,659,362	12,392,707	1.371	6	3,317,786,694	294,071	372,505	3.909	10	327,638,287
Tigray	52,538	884,407	1.273	6	207,848,903	-	-	-	-	-
Afar	236,913	393,966	2.006	6	151,860,862	196,941	146,138	4	9	141,942,638
Amhara	228,922	2,914,021	1.194	6	643,347,132	*	*	*	*	*
Oromia	2,722,403	4,997,927	1.475	6	1,473,195,406	58,155	155,373	3.91	12	148,331,917
Somale	104,479	149,639	1.93	5	45,213,521	32,356	43,550	3.608	8	35,830,379
Benshangul-Gumuz	9,897	176,511	1.206	6	45,076,652	-	-	-	-	-
SNNP	3,285,624	2,779,945	1.365	6	721,021,219	-	*	*	*	-
Gambela	14,025	65,708	1.608	6	20,743,364	-	-	-	-	-
Harari	2,236	17,027	1.973	6	6,080,238	*	*	*	*	*
Dire Dawa	2,326	13,556	1.576	5	3,399,395	1,394	*	2.87	10	470,858

TABLE 3-22: TOTAL EGG PRODUCTION BY REGION

a. Indigenous Breeds

Geographic Area	Total Laying Hens	Average Number of Egg-laying period/Year	Average Length of a Period	Average Number of Eggs /Hen /Period	Total Egg Production (Number)
Ethiopia	16,073,113	4	21	12	85,918,543
Tigray	1,257,254	4	22	12	8,713,979
Afar	51,268	4	21	11	300,548
Amhara	4,774,746	4	22	12	27,366,500
Oromia	6,197,152	4	21	12	32,208,440
Somale	77,123	4	19	12	443,519
Benshangul-Gumuz	365,214	3	18	11	1,504,410
SNNP	3,198,693	3	19	11	14,635,695
Gambela	73,505	4	16	11	349,324
Harari	34,817	4	21	11	190,786
Dire Dawa	43,341	4	19	10	205,342

b. Hybrid

Geographic Area	Total Laying Hens	Average Number of Egg-laying period/Year	Average Length of a Period	Average Number of Eggs /Hen /Period	Total Egg Production (Number)
Ethiopia	1,290,727	4	45	38	16,137,806
Tigray	192,750	5	31	22	2,274,050
Afar	*	*	*	*	*
Amhara	382,985	4	39	32	3,906,535
Oromia	355,328	4	61	54	4,195,738
Somale	-	*	*	*	*
Benshangul-Gumuz	3,663	3	19	17	9,759
SNNP	347,860	5	45	40	5,636,541
Gambela	*	4	19	18	*
Harari	*	*	*	*	*
Dire Dawa	*	*	*	*	*

c. Exotic Breeds

Geographic Area	Total Laying Hens	Average Number of Egg-laying period/Year	Average Length of a Period	Average Number of Eggs /Hen /Period	Total Egg Production (Number)
Ethiopia	2,216,330	-	169	133	34,707,761
Tigray	758,718	-	232	174	15,535,571
Afar	*	-	*	*	*
Amhara	884,976	-	163	131	13,396,184
Oromia	316,187	-	88	76	3,050,525
Somale	*	-	*	*	*
Benshangul-Gumuz	3,420	-	111	90	28,920
SNNP	236,745	-	132	108	2,605,012
Gambela	4,118	-	51	44	16,767
Harari	*	-	*	*	*
Dire Dawa	*	-	*	*	*

TABLE 3-23: ESTIMATED NUMBER OF VACCINATED LIVESTOCK BY ZONE AND REGION

a. Cattle

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	38,739,149	*	*	4,297,028	6,159,435	3,465,355
Tigray	5,481,294	1,958,729	1,499,212	983,340	791,172	248,841
Afar	112,370	-	*	*	-	*
Amhara	6,930,546	2,181,600	2,705,418	607,111	612,775	823,643
Oromia	16,467,378	5,016,604	4,209,692	1,870,124	3,809,535	1,561,423
Somale	44,986	*	-	*	-	*
Benshangul-Gumuz	600,456	108,937	129,586	120,653	141,192	100,088
SNNP	9,002,137	3,666,230	3,256,623	601,396	796,407	681,482
Gambela	35,901	*	*	*	5,665	9,096
Harari	53,727	19,472	21,042	-	*	*
Dire Dawa	10,353	*	*	*	1,801	*

b. Sheep

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	8,107,460	1,161,399	953,833	1,844,811	2,519,778	1,627,639
Tigray	1,972,462	436,405	190,938	196,603	913,587	234,929
Afar	268,634	-	-	125,977	*	*
Amhara	2,554,300	318,842	315,219	530,709	564,454	825,076
Oromia	1,841,568	236,297	258,958	600,871	425,867	319,576
Somale	152,869	*	-	82,519	-	*
Benshangul-Gumuz	51,551	-	*	7,865	*	42,139
SNNP	1,235,599	152,726	166,357	300,267	493,528	122,720
Gambela	*	*	-	-	-	-
Harari	*	*	*	-	*	-
Dire Dawa	*	*	*	-	*	4,482

c. Goats

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	9,339,554	1,418,854	1,108,508	3,105,625	2,020,335	1,686,232
Tigray	3,019,654	632,798	446,412	460,223	1,154,415	325,806
Afar	319,675	-	-	197,438	*	*
Amhara	1,827,265	306,113	330,566	462,918	270,315	457,353
Oromia	1,911,526	333,794	220,558	715,958	340,660	300,556
Somale	388,873	*	-	114,430	-	*
Benshangul-Gumuz	230,097	*	*	48,390	*	165,320
SNNP	1,546,007	90,818	57,145	1,104,296	149,813	143,935
Gambela	*	-	*	*	-	*
Harari	15,952	4,344	*	-	*	*
Dire Dawa	77,430	*	*	-	*	21,341

d. Camels

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	150,014	26,175	19,169	46,333	*	24,402
Tigray	*	*	*	*	-	*
Afar	*	-	-	*	-	*
Amhara	60,330	15,963	*	*	*	*
Oromia	*	*	*	*	*	*
Somale	*	-	-	*	-	-
Benshangul-Gumuz	*	-	-	*	-	-
SNNP	*	-	-	-	*	-
Gambela	-	-	-	-	-	-
Harari	*	-	*	-	-	-
Dire Dawa	*	*	-	-	*	*

TABLE 3-24: ESTIMATED NUMBER OF LIVESTOCK AFFLICTED/DISEASED BY REGION

Geographic Area	Cattle	Sheep	Goats	Draught Animals	Camels	Poultry
Ethiopia	*	6,310,094	6,374,135	1,436,687	85,277	35,587,447
Tigray	486,227	405,928	751,294	50,407	4,905	3,911,544
Afar	201,787	461,719	593,911	*	34,283	*
Amhara	2,400,948	2,353,400	1,948,563	460,420	21,029	13,450,669
Oromia	5,095,360	1,862,562	1,438,597	621,540	15,613	11,268,820
Somale	65,814	125,054	308,123	*	7,985	18,733
Benshangul-Gumuz	344,067	80,737	338,288	39,934	-	1,718,835
SNNP	2,504,581	999,682	916,374	214,940	-	4,771,616
Gambela	58,220	6,917	31,528	*	-	225,314
Harari	10,697	*	7,524	3,627	*	29,504
Dire Dawa	5,552	13,485	39,933	1,084	1,214	39,697

TABLE 3-25: ESTIMATED NUMBER OF LIVESTOCK TREATED BY REGION

Geographic Area	Cattle	Sheep	Goats	Draught Animals	Camels	Poultry
Ethiopia	7,936,366	3,146,686	2,444,609	849,564	34,205	5,374,336
Tigray	254,415	143,524	232,289	19,845	*	415,748
Afar	37,446	95,839	83,029	*	3,776	*
Amhara	1,739,938	1,301,784	730,554	268,464	16,823	2,076,944
Oromia	3,885,467	1,090,884	658,184	404,412	*	1,873,000
Somale	23,702	*	77,196	*	*	-
Benshangul-Gumuz	296,670	58,558	230,063	28,660	-	344,658
SNNP	1,672,330	420,428	415,779	124,654	-	639,969
Gambela	19,864	3,145	5,482	*	-	*
Harari	5,320	*	3,751	1,346	*	*
Dire Dawa	1,214	*	*	*	*	*

TABLE 3-26- a: ESTIMATED NUMBER OF LIVESTOCK DIED FROM DISEASE
BY REGION

Geographic Area	Cattle	Sheep	Goats	Horses	Donkeys	Mules	Camels	Poultry
Ethiopia	3,176,731	3,744,317	3,773,789	138,669	374,321	32,057	33,108	33,220,235
Tigray	119,489	286,451	425,020	-	21,655	*	-	3,479,128
Afar	109,722	252,008	347,691	-	13,108	*	17,357	*
Amhara	406,147	1,402,206	1,203,457	27,833	115,123	*	*	12,729,578
Oromia	1,390,438	1,030,742	851,755	83,687	144,516	9,391	*	10,410,041
Somale	33,313	76,098	167,208	*	*	-	*	*
Benshangul-Gumuz	59,766	44,729	180,588	-	13,151	*	-	1,659,371
SNNP	1,022,409	635,321	532,824	25,355	61,898	*	-	4,484,525
Gambela	26,791	4,197	26,405	*	*	-	-	226,265
Harari	4,503	*	4,898	*	1,982	-	*	29,981
Dire Dawa	4,154	12,249	33,944	-	*	-	*	39,435

TABLE 3-26- b: ESTIMATED NUMBER OF LIVESTOCK DIED FROM OTHER CAUSES
BY REGION

Geographic Area	Cattle	Sheep	Goats	Horses	Donkeys	Mules	Camels	Poultry
Ethiopia	1,478,072	1,219,277	1,397,334	28,373	106,451	*	26,721	30,788,881
Tigray	93,890	163,217	178,491	-	24,794	*	-	3,553,704
Afar	81,127	111,228	181,880	*	4,842	-	13,877	53,040
Amhara	194,472	260,596	274,405	*	30,634	*	-	9,148,398
Oromia	366,601	214,259	225,128	14,143	24,662	*	6,567	9,436,039
Somale	47,179	227,886	248,709	*	*	-	6,277	125,445
Benshangul-Gumuz	19,778	7,062	38,888	-	1,232	-	-	900,254
SNNP	658,082	225,760	232,975	7,195	15,869	*	-	7,295,591
Gambela	15,260	*	5,165	-	-	-	-	159,536
Harari	1,037	-	*	-	*	-	-	65,567
Dire Dawa	*	4,458	11,120	-	*	-	-	51,305

TABLE 3 -27- a: NUMBER OF HOLDINGS BY SIZE OF CATTLE

Geographic Area	Holdings with no cattle	1-2 Head	3-4 Head	5-9 Head	10-19 Head	20-49 Head	50-99 Head	100-199 Head	>=200 Head
Ethiopia	4,296,584	4,482,510	4,434,069	3,756,170	868,573	122,518	5,595	-	-
Tigray	442,607	340,153	386,559	252,417	73,316	16,945	724	-	-
Afar	49,143	20,448	28,131	37,633	33,370	14,743	1,517	-	-
Amhara	1,218,998	1,465,628	1,457,606	1,067,471	145,644	13,121	1,026	-	-
Oromia	1,435,448	1,400,994	1,381,239	1,579,696	471,997	52,709	788	-	-
Somale	62,935	33,626	38,878	41,202	9,925	1,068	-	-	-
Benshangul-Gumuz	186,311	41,807	32,678	39,820	17,983	4,909	-	-	-
SNNP	839,871	1,147,818	1,086,103	727,920	109,590	15,067	1,393	-	-
Gambela	40,653	9,166	6,739	4,774	6,574	3,956	146	-	-
Harari	8,461	11,942	9,143	3,432	174	-	-	-	-
Dire Dawa	12,160	10,927	6,992	1,805	-	-	-	-	-

TABLE 3 -27- b: NUMBER OF HOLDINGS BY SIZE OF SHEEP

Geographic Area	Holdings with no Sheep	1-4 Head	5-9 Head	10-49 Head	50-99 Head	100-199 Head	200-499 Head	>=500 Head
Ethiopia	11,868,912	3,760,600	1,627,319	695,353	12,231	1,604	-	-
Tigray	1,133,088	146,439	152,936	80,258	-	-	-	-
Afar	62,029	25,952	25,449	65,342	5,772	441	-	-
Amhara	3,487,779	955,294	631,607	291,739	3,075	-	-	-
Oromia	4,205,775	1,410,228	539,736	167,132	-	-	-	-
Somale	75,980	31,332	27,573	50,292	1,990	467	-	-
Benshangul-Gumuz	285,757	23,317	12,162	2,272	-	-	-	-
SNNP	2,507,760	1,148,987	232,521	36,404	1,393	697	-	-
Gambela	64,040	5,631	1,745	592	-	-	-	-
Harari	31,123	1,629	247	153	-	-	-	-
Dire Dawa	15,580	11,791	3,343	1,170	-	-	-	-

TABLE 3 -27- c: NUMBER OF HOLDINGS BY SIZE OF GOATS

Geographic Area	Holdings with no Goats	1-4 Head	5-9 Head	10-49 Head	50-99 Head	100-199 Head	200-499 Head	>=500 Head
Ethiopia	12,994,889	2,777,244	1,322,911	823,733	40,061	6,403	778	-
Tigray	1,057,122	162,880	144,834	143,414	3,625	846	-	-
Afar	47,404	15,871	21,065	86,566	10,448	2,853	778	-
Amhara	4,083,562	671,957	404,179	201,965	7,831	-	-	-
Oromia	4,615,739	1,043,490	455,955	204,960	2,727	-	-	-
Somale	44,214	26,281	30,599	73,569	10,969	2,002	-	-
Benshangul-Gumuz	215,677	61,526	29,516	16,789	-	-	-	-
SNNP	2,861,389	759,017	217,136	85,404	4,130	686	-	-
Gambela	54,473	8,520	5,608	3,407	-	-	-	-
Harari	11,455	17,162	4,074	461	-	-	-	-
Dire Dawa	3,855	10,541	9,945	7,198	330	15	-	-

TABLE 3 -27- d: NUMBER OF HOLDINGS BY SIZES OF HORSES AND DONKEYS

Geographic Area	Horses					Donkeys				
	Holdings with no Horses	1-2 Head	3-4 Head	5-9 Head	>=10 Head	Holdings with no Donkeys	1-2 Head	3-4 Head	5-9 Head	>=10 Head
Ethiopia	16,678,982	1,125,900	142,553	17,884	700	11,997,670	5,424,769	494,986	45,792	2,802
Tigray	1,504,603	5,578	2,540	-	-	898,495	557,967	53,757	2,502	-
Afar	184,985	-	-	-	-	122,049	45,992	15,038	1,655	251
Amhara	5,040,381	295,389	33,724	-	-	3,169,458	2,003,674	188,153	8,209	-
Oromia	5,648,666	568,187	88,051	17,267	700	4,069,770	2,033,715	190,693	26,839	1,854
Somale	187,634	-	-	-	-	73,531	94,045	17,042	3,016	-
Benshangul-Gumuz	322,522	695	291	-	-	268,699	48,266	6,149	394	-
SNNP	3,654,697	254,502	17,946	617	-	3,287,099	614,239	22,631	3,096	697
Gambela	71,104	904	-	-	-	70,244	1,714	50	-	-
Harari	33,152	-	-	-	-	21,315	11,562	275	-	-
Dire Dawa	31,240	644	-	-	-	17,006	13,596	1,200	82	-

TABLE 3 -27- e: NUMBER OF HOLDINGS BY SIZES OF MULES AND CAMELS

Geographic Area	Mules					Camels				
	Holdings with no Mules	1-2 Head	3-4 Head	5-9 Head	>=10 Head	Holdings with no Camels	1-2 Head	3-4 Head	5-9 Head	>=10 Head
Ethiopia	17,543,697	418,801	3,521	-	-	17,634,263	205,519	43,772	48358	34107
Tigray	1,501,916	10,805	-	-	-	1,479,058	31,839	1,246	578	-
Afar	184,985	-	-	-	-	112,538	22,205	12,670	17633	19939
Amhara	5,159,905	207,583	2,006	-	-	5,271,835	88,862	4,880	3917	-
Oromia	6,200,732	121,154	985	-	-	6,246,545	37,638	16,137	16540	6011
Somale	187,634	-	-	-	-	140,573	21,174	8,254	9492	8141
Benshangul-Gumuz	320,966	2,542	-	-	-	323,508	-	-	-	-
SNNP	3,851,032	76,200	530	-	-	3,927,762	-	-	-	-
Gambela	71,908	100	-	-	-	72,008	-	-	-	-
Harari	33,152	-	-	-	-	32,734	321	97	-	-
Dire Dawa	31,468	416	-	-	-	27,703	3,481	488	197	15

TABLE 3 -27- f: NUMBER OF HOLDINGS BY SIZE OF POULTRY

Geographic Area	Holdings with no poultry	1-9 Head	10-49 Head	50-99 Head	100-199 Head	>=200 Head
Ethiopia	8,113,854	8,093,684	1,755,911	1,838	732	-
Tigray	489,075	832,644	191,002	-	-	-
Afar	160,133	17,009	7,410	433	-	-
Amhara	2,056,661	2,764,765	547,238	830	-	-
Oromia	3,149,518	2,563,958	609,395	-	-	-
Somale	163,187	18,713	5,248	-	486	-
Benshangul-Gumuz	128,809	122,929	71,093	431	246	-
SNNP	1,899,551	1,721,873	306,338	-	-	-
Gambela	37,080	22,945	11,839	144	-	-
Harari	17,961	12,518	2,673	-	-	-
Dire Dawa	11,879	16,329	3,676	-	-	-

TABLE 3-28: ANIMAL FEED PRACTICES OF PEASNT HOLDERS – PERCENTAGE USED BY TYPE OF FEED REGION

Geographic Area	Total (%)	Green Fodder	Crop Residue	Improved Feed	Hay	By-Product	Others
Ethiopia	100	55.96	30.12	0.32	6.55	1.61	5.44
Tigray	100	39.95	40.97	0.24	12.43	1.95	4.47
Afar	100	85.61	8.52	0.34	3.18	1.82	0.52
Amhara	100	35.89	40.46	0.21	13.28	1.27	8.88
Oromia	100	65.97	24.94	0.11	2.53	1.87	4.57
Somale	100	78.31	18.16	0.53	0.64	1.16	1.2
Benshangul-Gumuz	100	83.52	11.57	0.02	1.45	0.88	2.57
SNNP	100	68.9	23.28	0.77	2.45	1.44	3.15
Gambela	100	95.59	1.99	0.15	0.06	0.13	2.08
Harari	100	24.8	51.01	6.97	2.66	7.89	6.67
Dire Dawa	100	66.38	18.01	-	0.12	15.12	0.38

TABLE 3-29 - a: ANIMAL FEED PRACTICES OF PEASANT HOLDERS – NUMBER OF HOLDERS REPORTING BY TYPE OF FEED AND REGION

Geographic Area	Green Fodder	Crop Residue	Improved Feed	Hay	By-Product	Others
Ethiopia	15,441,474	13,094,354	358,787	4,924,548	1,907,146	5,487,796
Tigray	2,499,132	2,320,758	47,640	1,752,130	536,742	1,010,891
Afar	356,291	126,581	2,620	39,038	28,210	9,494
Amhara	9,138,493	8,636,892	114,440	5,454,983	1,025,895	4,255,569
Oromia	10,862,252	8,784,124	99,767	1,518,889	1,419,950	3,567,785
Somale	366,927	226,910	11,261	10,079	35,933	31,208
Benshangul-Gumuz	482,482	226,869	548	50,812	37,010	95,209
SNNP	6,986,088	5,750,108	419,557	1,014,262	669,870	1,952,945
Gambela	88,155	11,437	1,351	339	705	10,097
Harari	45,278	60,318	20,391	7,576	23,847	41,299
Dire Dawa	57,850	44,709	-	988	36,131	1,094

TABLE 3-29 - b: NUMBER OF HOLDERS REPORTING ANIMAL FEED BY SOURCE OF FEED, ZONE, AND REGION

1. Green Fodder

Geographic Area	Source of Feed				
	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	6,385,254	348,280	3,731,757	4,766,560	209,624
Tigray	439,953	9,020	757,016	1,291,712	1,431
Afar	9,940	1,965	300,202	44,184	-
Amhara	2,596,755	206,520	2,416,167	3,813,175	105,876
Oromia	5,192,747	365,796	2,509,033	2,581,467	213,208
Somale	29,817	175	242,338	91,128	3,470
Benshangul-Gumuz	28,930	1,035	368,058	82,814	1,645
SNNP	4,422,577	111,364	754,818	1,608,580	88,750
Gambela	26,501	134	55,897	756	4,868
Harari	20,849	549	15,770	8,110	-
Dire Dawa	2,439	-	44,215	11,197	-

2. Crop Residue

Geographic Area	Source of Feed				
	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	11,131,003	356,036	153,388	1,311,059	142,868
Tigray	1,808,115	68,431	11,562	419,438	13,212
Afar	100,037	2,975	3,785	18,051	1,733
Amhara	7,166,576	206,905	30,207	1,104,039	129,165
Oromia	7,546,658	282,146	171,811	691,997	91,512
Somale	188,496	24,211	3,362	7,475	3,366
Benshangul-Gumuz	210,283	4,371	4,007	7,900	308
SNNP	5,132,479	122,642	81,650	368,965	44,371
Gambela	9,557	390	-	170	1,321
Harari	57,386	-	194	2,739	-
Dire Dawa	42,419	-	199	1,344	748

3. Improved Feed

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	254,246	66,542	1,619	25,357	11,023
Tigray	19,753	8,716	1,921	13,818	3,433
Afar	466	714	-	-	1,440
Amhara	66,441	32,722	-	10,591	4,685
Oromia	47,134	46,585	-	6,048	-
Somale	3,067	7,581	286	-	327
Benshangul-Gumuz	-	-	-	-	548
SNNP	355,551	35,695	1,031	19,988	7,292
Gambela	509	-	-	-	842
Harari	15,572	1,072	-	268	3,479
Dire Dawa	-	-	-	-	-

4. Hay

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	3,037,155	814,452	138,823	850,824	83,294
Tigray	1,289,648	120,055	29,548	304,949	7,931
Afar	1,542	2,838	2,975	3,799	27,884
Amhara	3,148,770	995,378	165,592	1,078,085	67,158
Oromia	895,200	330,738	50,677	185,762	56,511
Somale	4,312	3,896	-	327	1,544
Benshangul-Gumuz	33,457	11,273	5,505	577	-
SNNP	694,278	163,878	23,349	127,892	4,865
Gambela	339	-	-	-	-
Harari	5,776	847	-	257	696
Dire Dawa	988	-	-	-	-

5. By-Product

Geographic Area	By-Product				
	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	575,091	1,214,232	11,154	84,414	22,254
Tigray	278,784	222,308	-	32,057	3,593
Afar	-	26,402	-	-	1,808
Amhara	447,721	518,473	13,453	37,647	8,602
Oromia	251,799	1,059,566	8,855	74,832	24,899
Somale	830	33,295	-	-	1,807
Benshangul-Gumuz	30,383	5,530	-	-	1,097
SNNP	134,169	512,681	-	21,753	1,266
Gambela	705	-	-	-	-
Harari	1,770	20,856	-	-	1,220
Dire Dawa	4,021	29,354	-	2,540	216

TABLE 3 – 30: ESTIMATED NUMBER OF HOLDERS PRACTICED LIVESTOCK EXTENSION PACKAGES DURING THE REFERENCE PERIOD BY REGION

Geographic Area	Number of Holders Practiced				
	Dairy Development Package	Beef/Meat/Mutton Development Package	Poultry Development Package	Honey and Wax Development Package	Any Two or More Packages
Ethiopia	53,751	61,334	412,140	11,056	10,237
Tigray	24,990	9,770	179,874	6,147	3,123
Afar	686	-	1,464	-	-
Amhara	22,405	59,349	212,842	7,689	2,335
Oromia	26,000	42,191	205,105	8,017	6,087
Somale	-	1,544	1,544	-	-
Benshangul-Gumuz	-	497	2,956	259	-
SNNP	33,420	9,319	217,293	-	8,929
Gambela	-	-	152	-	-
Harari	-	-	1,210	-	-
Dire Dawa	-	-	1,839	-	-

**ANNEX TABLES PRESENTING
ESTIMATES, STANDARD ERRORS, AND COEFFICIENTS OF
VARIATION
FOR
SELECTED LIVESTOCK VARIABLES**

[Annex Tables 1 –10]

Annex Table 1- Estimates of Livestock, Standard Errors and Coefficients of Variation by Type, and Region

Geographic Area	CATTLE			SHEEP			GOATS		
	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	60,392,019	985,024	1.63	31,302,257	1,006,098	3.21	32,738,385	1,301,762	3.98
Tigray.....	4,817,104	260,284	5.4	2,472,938	243,534	9.85	4,301,221	387,287	9
Afar	1,317,139	210,513	15.98	2,081,955	326,438	15.68	3,265,403	556,296	17.04
Amhara	16,148,390	485,393	3.01	11,086,083	711,672	6.42	7,766,661	552,613	7.12
Oromia	24,432,974	712,322	2.92	9,394,430	457,985	4.88	8,591,204	698,073	8.13
Somali	589,503	59,748	10.14	1,360,703	154,723	11.37	2,826,424	407,203	14.41
Benshangul-Gumuz.....	795,024	70,959	8.93	160,029	22,967	14.35	602,840	67,922	11.27
SNNP	11,883,548	324,404	2.73	4,639,606	324,791	7	4,958,255	519,642	10.48
Gambella.....	285,102	34,758	12.19	35,285	7,924	22.46	107,083	13,839	12.92
Harari	71,277	10,615	14.89	6,896	2,142	31.06	69,901	6,524	9.33
Dire Dawa	51,958	6,038	11.62	64,332	10,545	16.39	249,393	41,834	16.77

Annex Table 1-Cont'd

Geographic Area	HORSES			MULES			DONKEYS			CAMELS		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	2,007,829	139,088	6.93	461,665	32,771	7.1	8,845,589	188,174	2.13	1,418,457	233,937	16.49
Tigray.....	15,664	8,747	55.84	11,308	4,208	37.21	886,103	50,860	5.74	43,332	12,121	27.97
Afar	-	-	-	-	-	-	125,671	22,897	18.22	650,040	169,801	26.12
Amhara.....	488,626	79,709	16.31	220,940	26,792	12.13	3,279,179	114,687	3.5	151,143	30,439	20.14
Oromia	1,128,901	107,036	9.48	134,898	14,512	10.76	3,419,932	128,421	3.76	315,482	150,855	47.82
Somali	-	-	-	-	-	-	200,639	20,608	10.27	249,475	45,385	18.19
Benshangul-Gumuz.....	1,792	1,072	59.8	2,542	1,176	46.27	82,228	10,087	12.27	-	-	-
SNNP	371,298	38,175	10.28	91,461	11,235	12.28	811,105	45,803	5.65	-	-	-
Gambella.....	904	323	35.77	100	97	97.83	2,150	854	39.73	-	-	-
Harari	-	-	-	-	-	-	14,356	2,687	18.72	779	447	57.32
Dire Dawa	644	581	90.2	416	410	98.55	24,226	4,577	18.89	8,207	1,855	22.6

Annex Table 2- Estimates of Cattle, Standard Errors and Coefficients of Variation by Age group, and Region

Male Cattle

Geographic Area	<6MONTHS			6MONTHS <1YEAR			1-<3YEARS			3-<10YEARS			10YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	2,625,257	74,532	2.84	2,561,004	73,202	2.86	1,586,152	96,895	2.11	17,001,719	270,820	1.59	593,708	42,167	7.1
Tigray	213,992	20,733	9.69	182,734	28,633	15.67	366,498	25,067	6.84	1,446,640	59,611	4.12	108,106	12,717	11.76
Afar	78,992	16,569	20.98	78,118	13,827	17.7	38,210	8,101	21.2	83,520	16,354	19.58	2,166	2,131	98.36
Amhara	685,633	39,540	5.77	537,791	33,359	6.2	1,294,457	57,105	4.41	5,442,020	159,548	2.93	257,361	28,381	11.03
Oromia.....	982,141	48,638	4.95	1,132,244	50,164	4.43	1,868,136	63,852	3.42	6,811,830	177,945	2.61	186,168	26,847	14.42
Somali	51,150	7,888	15.42	24,727	3,688	14.91	44,639	5,829	13.06	90,961	12,509	13.75	-	-	-
Benshangul-Gumuz	34,152	5,564	16.29	35,805	4,271	11.93	80,964	8,807	10.88	203,912	20,083	9.85	3,452	1,470	42.57
SNNP.....	560,091	28,706	5.13	548,705	26,120	4.76	860,615	35,116	4.08	2,873,069	108,672	3.78	35,261	9,111	25.84
Gambella	11,415	1,643	14.4	14,362	1,838	12.8	18,050	2,870	15.9	34,381	5,120	14.89	1,193	640	53.67
Harari.....	3,584	882	24.61	4,025	750	18.63	8,744	1,689	19.31	8,804	2,370	26.92	-	-	-
Dire Dawa.....	4,107	963	23.44	2,491	572	22.95	5,839	896	15.34	6,583	1,138	17.29	-	-	-

Annex Table 2- Cont'd

Female Cattle

Geographic Area	<6MONTHS			6MONTHS <1YEAR			1-<3YEARS			3-<10YEARS			10YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	2,836,636	103,921	3.66	2,834,896	81,869	2.89	1,621,161	123,198	2.19	21,102,125	413,114	1.96	629,361	50,780	8.07
Tigray	255,470	25,791	10.1	192,898	22,213	11.52	451,399	37,795	8.37	1,518,580	97,703	6.43	80,786	13,695	16.95
Afar	99,402	22,111	22.24	111,396	19,278	17.31	132,714	30,763	23.18	665,551	107,775	16.19	27,069	19,104	70.58
Amhara	673,662	46,539	6.91	577,389	37,427	6.48	1,353,577	61,598	4.55	5,096,560	177,632	3.49	229,939	29,525	12.84
Oromia.....	1,138,846	81,921	7.19	1,244,390	58,356	4.69	1,261,179	79,969	3.54	8,589,929	315,787	3.68	218,112	31,050	14.24
Somali	42,933	7,344	17.11	29,547	5,512	18.65	52,763	8,782	16.64	251,256	25,186	10.02	1,528	1,203	78.73
Benshangul-Gumuz	31,167	5,038	16.16	39,974	7,322	18.32	86,563	9,022	10.42	273,556	27,614	10.09	5,480	1,908	34.82
SNNP.....	573,025	26,117	4.56	616,939	30,689	4.97	1,235,757	49,380	4	4,518,027	128,146	2.84	62,060	13,554	21.84
Gambella	14,718	2,311	15.7	16,295	2,099	12.88	28,930	3,287	11.36	142,645	19,733	13.83	3,113	1,076	34.57
Harari.....	4,305	1,086	25.23	3,749	930	24.81	10,700	1,800	16.83	26,715	3,807	14.25	651	351	53.91
Dire Dawa.....	3,107	767	24.67	2,321	462	19.91	7,580	1,564	20.63	19,306	2,389	12.37	623	418	67.11

Annex Table 3- Estimates of Sheep, Standard Errors and Coefficients of Variation by Age group, and Region

Male Sheep

Geographic Area	<6MONTHS			6MONTHS - <1YEAR			1-<2YEARS			2 YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	3,990,676	133,190	3.34	1,541,246	66,425	4.31	1,249,301	68,507	5.48	2,040,538	123,585	6.06
Tigray	331,267	36,099	10.9	132,153	18,799	14.23	79,882	12,664	15.85	86,437	16,411	18.99
Afar	196,993	33,650	17.08	81,147	15,533	19.14	85,657	21,312	24.88	157,006	29,136	18.56
Amhara	1,500,470	98,642	6.57	467,392	41,829	8.95	457,248	48,732	10.66	686,659	83,028	12.09
Oromia.....	1,269,266	64,134	5.05	514,373	36,587	7.11	342,907	31,145	9.08	594,577	64,377	10.83
Somali	114,141	15,093	13.22	75,004	12,096	16.13	55,729	10,488	18.82	164,274	26,612	16.2
Benshangul-Gumuz	22,352	4,459	19.95	12,518	3,208	25.63	3,638	1,583	43.53	4,721	1,518	32.16
SNNP.....	544,026	34,775	6.39	253,393	23,904	9.43	221,444	24,920	11.25	337,203	48,970	14.52
Gambella	4,654	1,364	29.31	1,587	537	33.85	1,173	414	35.3	5,147	2,071	40.23
Harari.....	497	236	47.48	247	174	70.37	194	183	94.54	314	216	68.8
Dire Dawa.....	7,011	1,377	19.64	3,431	1,021	29.76	1,430	478	33.42	4,199	2,053	48.91

Annex Table 3-Cont'd

Female Sheep

Geographic Area	<6MONTHS			6MONTHS - <1YEAR			1-<2YEARS			2 YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	4,197,563	144,640	3.45	1,890,164	85,473	4.52	2,089,850	102,699	4.91	14,302,918	467,769	3.27
Tigray	324,527	35,610	10.97	176,475	23,479	13.3	183,093	28,062	15.33	1,159,102	116,289	10.03
Afar	260,056	47,049	18.09	120,955	23,918	19.77	199,813	44,283	22.16	980,326	145,285	14.82
Amhara	1,534,145	100,936	6.58	593,095	56,549	9.53	669,240	64,856	9.69	5,177,832	337,690	6.52
Oromia.....	1,327,962	71,093	5.35	591,999	40,871	6.9	559,058	39,295	7.03	4,194,288	220,736	5.26
Somali	124,489	14,486	11.64	114,236	18,388	16.1	139,549	25,876	18.54	573,281	62,972	10.98
Benshangul-Gumuz	29,692	5,630	18.96	9,398	2,203	23.44	15,478	3,589	23.19	62,233	9,211	14.8
SNNP.....	582,909	44,171	7.58	276,826	31,134	11.25	315,759	36,938	11.7	2,108,045	131,622	6.24
Gambella	4,937	1,332	26.98	2,603	900	34.58	1,044	448	42.9	14,142	3,592	25.4
Harari.....	1,346	824	61.23	394	220	55.82	967	463	47.87	2,939	1,001	34.07
Dire Dawa.....	7,500	1,331	17.74	4,182	954	22.8	5,849	963	16.46	30,730	5,360	17.44

Annex Table 4- Estimates of Goats, Standard Errors and Coefficients of Variation by Age group, and Region

Male Goats

Geographic Area	<6MONTHS			6MONTHS - <1YEAR			1-<2YEARS			2 YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	3,996,826	148,020	3.7	1,756,390	76,988	4.38	1,480,255	127,593	8.62	2,426,212	144,782	5.97
Tigray	556,965	52,827	9.48	237,633	35,100	14.77	161,399	24,221	15.01	219,976	26,733	12.15
Afar	295,555	57,431	19.43	119,249	24,584	20.62	103,360	24,325	23.53	218,543	40,896	18.71
Amhara	1,104,285	82,866	7.5	403,208	36,573	9.07	492,378	113,802	23.11	630,646	64,591	10.24
Oromia.....	1,117,745	72,972	6.53	541,311	40,664	7.51	333,737	33,755	10.11	580,122	67,579	11.65
Somali	202,693	28,922	14.27	138,777	20,524	14.79	140,379	18,262	13.01	245,094	37,957	15.49
Benshangul-Gumuz	87,588	10,827	12.36	37,474	4,990	13.32	18,497	3,225	17.44	25,013	7,091	28.35
SNNP.....	583,477	51,509	8.83	253,854	25,370	9.99	208,372	25,675	12.32	481,967	91,229	18.93
Gambella	13,854	2,191	15.81	7,555	1,450	19.19	4,423	1,242	28.09	4,655	951	20.43
Harari.....	8,287	1,517	18.3	4,566	796	17.44	4,395	906	20.61	4,531	901	19.89
Dire Dawa.....	26,377	3,876	14.7	12,763	2,659	20.83	13,315	2,402	18.04	15,665	4,505	28.76

Annex Table 4 – Cont'd

Female Goats

Geographic Area	<6MONTHS			6MONTHS - <1YEAR			1-<2YEARS			2 YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	4,265,544	176,159	4.13	2,290,655	121,239	5.29	2,557,987	144,786	5.66	13,964,515	618,220	4.43
Tigray	598,048	59,011	9.87	315,619	42,107	13.34	415,156	51,527	12.41	1,796,424	149,206	8.31
Afar	396,160	70,720	17.85	224,536	49,233	21.93	300,880	63,424	21.08	1,607,120	277,713	17.28
Amhara	1,080,591	78,154	7.23	461,576	50,819	11.01	526,191	62,225	11.83	3,067,785	241,776	7.88
Oromia.....	1,126,220	98,359	8.73	646,293	68,868	10.66	586,663	70,660	12.04	3,659,112	345,629	9.45
Somali	303,895	53,419	17.58	221,725	37,706	17.01	302,005	58,970	19.53	1,271,856	208,051	16.36
Benshangul-Gumuz	93,535	16,027	17.14	56,606	8,291	14.65	54,276	7,968	14.68	229,851	29,975	13.04
SNNP.....	613,375	60,221	9.82	332,280	40,811	12.28	332,817	42,861	12.88	2,152,114	245,514	11.41
Gambella	15,544	2,383	15.33	7,895	1,360	17.23	7,756	1,362	17.56	45,401	6,532	14.39
Harari.....	8,031	1,124	14	5,499	1,417	25.76	5,983	1,204	20.13	28,610	3,029	10.59
Dire Dawa.....	30,145	4,676	15.51	18,627	4,069	21.84	26,259	6,248	23.79	106,243	19,513	18.37

Annex Table 5- Estimates of Horses, Standard Errors and Coefficients of Variation by Age group, and Region

Geographic Area	MALE						FEMALE					
	<3YEARS			3YEARS & OLDER			<3YEARS			3YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	192,285	19,725	10.26	792,642	53,062	6.69	189,473	21,261	11.22	833,430	70,553	8.47
Tigray.....	1,441	1,432	99.36	4,555	2,542	55.81	3,943	2,507	63.58	5,725	3,838	67.04
Afar	-	-	-	-	-	-	-	-	-	-	-	-
Amhara.....	41,797	10,004	23.93	150,702	25,147	16.69	44,457	11,060	24.88	251,671	49,094	19.51
Oromia.....	113,570	15,643	13.77	482,257	43,456	9.01	109,098	17,207	15.77	423,975	47,031	11.09
Somali	-	-	-	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz.....	223	223	99.89	248	245	98.81	583	575	98.72	738	510	69.17
SNNP.....	35,253	6,496	18.43	153,654	16,974	11.05	31,392	5,196	16.55	150,999	18,453	12.22
Gambella	-	-	-	904	323	35.77	-	-	-	-	-	-
Harari.....	-	-	-	-	-	-	-	-	-	-	-	-
Dire Dawa.....	-	-	-	322	311	96.58	-	-	-	322	311	96.58

Annex Table 6- Estimates of Donkeys, Standard Errors and Coefficients of Variation by Age group, and Region

Geographic Area	MALE						FEMALE					
	<3YEARS			3YEARS & OLDER			<3YEARS			3YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	1,037,931	41,855	4.03	3,154,052	96,802	3.07	1,027,342	41,723	4.06	3,626,264	99,957	2.76
Tigray.....	94,555	11,630	12.3	370,861	30,604	8.25	101,641	12,903	12.69	319,047	28,357	8.89
Afar	13,182	3,184	24.16	41,787	8,291	19.84	21,118	5,500	26.04	49,584	10,551	21.28
Amhara.....	462,166	31,150	6.74	956,462	58,662	6.13	436,217	27,419	6.29	1,424,334	63,824	4.48
Oromia.....	371,085	23,093	6.22	1,277,551	64,429	5.04	377,098	26,441	7.01	1,394,198	65,378	4.69
Somali	25,537	5,116	20.03	87,054	9,698	11.14	17,604	3,706	21.05	70,444	8,521	12.1
Benshangul-Gumuz.....	9,378	2,285	24.37	50,406	6,577	13.05	7,039	1,894	26.9	15,405	3,806	24.71
SNNP.....	57,315	8,365	14.6	355,250	25,112	7.07	62,303	8,626	13.85	336,237	25,170	7.49
Gambella	202	190	94.13	1,549	687	44.36	-	-	-	398	231	57.98
Harari.....	972	375	38.53	8,519	1,936	22.73	1,084	397	36.63	3,780	1,135	30.02
Dire Dawa.....	3,538	1,120	31.66	4,612	961	20.83	3,238	1,107	34.19	12,837	2,502	19.49

Annex Table 7- Estimates of Mules, Standard Errors and Coefficients of Variation by Age group, and Region

Geographic Area	MALE						FEMALE					
	<3YEARS			3YEARS & OLDER			<3YEARS			3YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	27,033	6,533	24.16	216,906	19,098	8.8	27,134	6,089	22.44	190,592	18,948	9.94
Tigray	502	505	100.58	6,464	3,217	49.77	720	722	100.21	3,621	1,650	45.56
Afar	-	-	-	-	-	-	-	-	-	-	-	-
Amhara	16,628	5,972	35.91	95,409	14,983	15.7	20,598	5,672	27.54	88,305	15,510	17.56
Oromia.....	3,143	1,419	45.16	65,167	8,988	13.79	3,426	1,711	49.94	63,162	8,649	13.69
Somali	-	-	-	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	-	-	-	510	348	68.23	-	-	-	2,032	1,094	53.83
SNNP.....	6,760	2,178	32.22	48,840	6,987	14.31	2,390	1,208	50.53	33,472	6,304	18.83
Gambella	-	-	-	100	97	97.83	-	-	-	-	-	-
Harari.....	-	-	-	-	-	-	-	-	-	-	-	-
Dire Dawa.....	-	-	-	416	410	98.55	-	-	-	-	-	-

Annex Table 8- Estimates of Camels, Standard Errors and Coefficients of Variation by Age group, and Region

Geographic Area	MALE						FEMALE					
	<4YEARS			4YEARS & OLDER			<4YEARS			4YEARS & OLDER		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	153,532	24,574	16.01	326,603	37,446	11.47	210,203	52,237	24.85	728,119	146,315	20.09
Tigray	771	771	99.96	39,829	11,478	28.82	-	-	-	2,732	1,608	58.85
Afar	73,260	16,342	22.31	61,757	18,008	29.16	105,618	27,208	25.76	409,406	113,866	27.81
Amhara	15,147	9,195	60.7	127,088	26,275	20.67	1,282	1,286	100.27	7,626	5,416	71.03
Oromia.....	29,507	13,492	45.72	38,430	11,596	30.17	71,738	44,164	61.56	175,808	88,030	50.07
Somali	33,471	8,336	24.91	55,575	10,950	19.7	30,428	6,006	19.74	130,001	25,711	19.78
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-	-	-	-
SNNP.....	-	-	-	-	-	-	-	-	-	-	-	-
Gambella	-	-	-	-	-	-	-	-	-	-	-	-
Harari.....	194	193	99.48	153	154	100.86	336	335	99.49	97	96	99.48
Dire Dawa.....	1,183	360	30.4	3,773	1,199	31.79	801	257	32.07	2,450	708	28.89

Annex Table 9- Estimates of Poultry, Standard Errors and Coefficients of Variation by Type, and Region

Geographic Area	Total Poultry			Cocks			Cockerels			Pullets			Non-laying Hens			Chicks			Laying Hens		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	56,056,778	1,023,790	1.83	5,664,299	35,234	2.39	3,278,531	127,965	3.9	6,167,785	185,177	3.0	5,512,500	95,523	6.32	9,853,495	547,843	2.76	9,580,169	310,768	1.59
Tigray	6,190,640	299,867	4.84	497,931	36,196	7.27	468,966	53,066	11.32	831,624	65,056	7.82	153,699	31,729	20.64	2,029,699	145,610	7.17	2,208,722	116,156	5.26
Afar	215,768	51,046	23.66	20,883	4,941	23.66	12,234	4,577	37.41	17,610	7,131	40.49	13,138	8,395	53.89	94,137	24,963	26.52	57,766	14,650	25.36
Amhara	17,705,026	647,441	3.66	1,496,610	65,568	4.38	879,476	76,339	8.68	1,955,970	121,587	6.22	358,673	44,327	12.36	6,971,590	378,336	5.43	6,042,707	187,270	3.1
Oromia	19,014,114	572,312	3.01	2,304,658	89,840	3.9	1,085,177	69,680	6.42	1,890,865	97,643	5.16	612,275	67,525	11.03	6,252,471	294,521	4.71	6,868,667	180,348	2.63
Somali	250,418	100,968	40.32	55,443	28,057	50.6	21,874	10,443	47.74	32,521	16,284	50.07	12,687	3,893	30.69	48,964	12,121	24.75	78,930	35,609	45.11
Benshangul-Gumuz	1,672,084	121,746	7.28	142,073	13,330	9.38	135,042	13,507	10	217,660	18,164	8.34	16,879	5,222	30.94	788,133	67,767	8.6	372,296	30,309	8.14
SNNP	10,491,131	427,281	4.07	1,086,585	59,947	5.52	640,488	50,430	7.87	1,145,788	69,763	6.09	331,299	38,376	11.58	3,503,672	208,422	5.95	3,783,298	113,966	3.01
Gambella	301,531	25,553	8.47	34,388	3,173	9.23	23,520	3,728	15.85	37,558	4,709	12.54	9,082	2,268	24.97	118,072	14,126	11.96	78,911	5,913	7.49
Harari	97,690	14,001	14.33	14,239	3,237	22.73	5,999	1,996	33.27	10,543	2,894	27.45	2,287	962	42.06	22,077	4,758	21.55	42,545	5,849	13.75
Dire Dawa	118,376	21,577	18.23	11,489	2,053	17.87	5,756	1,620	28.15	27,645	14,044	50.8	2,481	1,284	51.75	24,680	4,978	20.17	46,325	5,552	11.99

Annex Table 10- Estimates of Beehives, Standard Errors and Coefficients of Variation by Type, and Region

Geographic Area	ALL BEEHIVES			TRADITIONAL			INTERMEDIATE			MODERN		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	6,523,969	333,462	5.11	6,327,197	330,581	5.22	69,399	13,203	19.02	127,373	22,768	17.87
Tigray	293,184	32,089	10.95	244,401	28,658	11.73	6,668	3,159	47.38	42,116	10,696	25.4
Afar	3,710	3,664	98.78	3,710	3,664	98.78	-	-	-	-	-	-
Amhara	1,154,094	91,807	7.95	1,115,835	90,353	8.1	5,986	2,710	45.27	32,273	9,137	28.31
Oromia	3,185,361	258,518	8.12	3,100,768	256,700	8.28	40,416	11,186	27.68	44,176	16,856	38.16
Somali	720	714	99.14	720	714	99.14	-	-	-	-	-	-
Benshangul-Gumuz	449,717	85,691	19.05	448,422	85,688	19.11	1,295	1,299	100.37	-	-	-
SNNP	1,335,541	159,089	11.91	1,311,698	157,503	12.01	15,035	5,494	36.54	8,808	6,030	68.46
Gambella	98,422	47,324	48.08	98,422	47,324	48.08	-	-	-	-	-	-
Harari	1,226	501	40.83	1,226	501	40.83	-	-	-	-	-	-
Dire Dawa	1,994	820	41.14	1,994	820	41.14	-	-	-	-	-	-

Erratum

There was some problem while producing the tabulation for table 3-21. Hence some correction has been made on the number of dairy and milking cows as well as on the number of dairy and milking camels for the regions in Table 3-21. The national level figures for these items and also other columns of the table has not been changed.

TABLE 3-21: NUMBER OF DAIRY ANIMALS, MILK PRODUCTION, AND LACTATION PERIOD BY REGION

Geographic Area	Number of Dairy Cows	Number of Milking Cows	Average Daily Milk Prod.	Average Lactation Period (Months)	Total Milk Production (Lt)	Number of Dairy Camels	Number of Milking Camels	Average Daily Milk Prod.	Average Lactation Period (Months)	Total Milk Production (Lt)
Ethiopia	6,659,362	12,392,707	1.371	6	3,317,786,694	294,071	372,505	3.909	10	327,638,287
Tigray	52,538	884,407	1.273	6	207,848,903	-	-	-	-	-
Afar	236,913	393,966	2.006	6	151,860,862	196,941	146,138	4	9	141,942,638
Amhara	228,922	2,914,021	1.194	6	643,347,132	*	*	*	*	*
Oromia	2,722,403	4,997,927	1.475	6	1,473,195,406	58,155	155,373	3.91	12	148,331,917
Somale	104,479	149,639	1.93	5	45,213,521	32,356	43,550	3.608	8	35,830,379
Benshangul-Gumuz	9,897	176,511	1.206	6	45,076,652	-	-	-	-	-
SNNP	3,285,624	2,779,945	1.365	6	721,021,219	-	*	*	*	-
Gambela	14,025	65,708	1.608	6	20,743,364	-	-	-	-	-
Harari	2,236	17,027	1.973	6	6,080,238	*	*	*	*	*
Dire Dawa	2,326	13,556	1.576	5	3,399,395	1,394	*	2.87	10	470,858

APPENDIX I

Number of Planned and Actually Covered Sampling Units

APPENDIX-I (a). Number of Planned and Actually Covered Sampling Units
(EAs & Households) of the 2017/18(2010 E.C.), Livestock Sample Survey

<i>Region</i>	<i>Enumeration Areas</i>		<i>Households</i>	
	<i>Planned</i>	<i>Covered</i>	<i>Planned</i>	<i>Covered</i>
<i>Tigray</i>	131	113	1,965	1693
<i>Afar</i>	35	35	525	525
<i>Amhara</i>	317	304	4,755	4556
<i>Oromia</i>	499	498	7,485	7468
<i>Somali</i>	21	41	315	614
<i>Benishangul-Gumuz</i>	54	67	810	1005
<i>S.N.N.P</i>	437	416	6,555	6231
<i>Gambella</i>	39	57	585	850
<i>Harari</i>	36	17	540	255
<i>Dire Dawa</i>	31	17	465	255
<i>COUNTRY TOTAL</i>	1,600	1,565	24,000	23,452

APPENDIX II

Estimation Procedures of Totals, Ratios, and Sampling Errors

APPENDIX II: Estimation Procedures of Totals, Ratios and Sampling Errors

The following formulas were used to estimate total livestock & its products, and ratio of specific characteristics in a stratum.

1. For Estimating Total livestock and products:

$$\hat{Y}_h = \sum_{i=1}^{n_h} W_{hi} \sum_{j=1}^{h_{hi}} y_{hij} = \sum_{i=1}^{n_h} W_{hi} y_{hi}$$

in which, $W_{hi} = \frac{M_h H_{hi}}{n_h m_{hi} h_{hi}}$ is the basic weight.

Where:

h represents the stratum

n_h is the total number of sample EAs successfully covered in the h^{th} stratum.

M_h is the measure of size of the h^{th} stratum as obtained from the sampling frame.

m_{hi} is the measure of size of the i^{th} sample EA in the h^{th} stratum obtained from the sampling frame.

H_{hi} is the total number of agricultural households of the i^{th} sample EA in the h^{th} stratum.

h_{hi} is the number of sample agricultural households successfully covered in the i^{th} sample EA in the h^{th} stratum.

y_{hij} is the value of a specific livestock(its products) for agricultural households j , in the i^{th} EA in the h^{th} stratum.

y_{hi} is the sample total values of a specific livestock(its products) for EA i in stratum h

\hat{Y}_h is estimated total of specific livestock and its products in stratum h

2. For Estimating Ratios in stratum h :

$$\hat{R}_h = \frac{\hat{Z}_h}{\hat{X}_h}, \text{ where the numerator and denominator are estimates of domain totals}$$

for characteristic z and x , respectively.

3. Sampling Variance of Estimates:

Sampling variance for the estimate of stratum total of livestock and its products, and ratios are estimated by the following formulas.

$$Var(\hat{Y}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h} \right)^2 + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{j=1}^{h_{hi}} \left(\hat{Y}_{hij} - \frac{\hat{Y}_{hi}}{h_{hi}} \right)^2$$

$$Var(\hat{R}_h) = \frac{1}{\hat{X}_h^2} \left[Var(\hat{Z}_h) + \hat{R}_h^2 Var(\hat{X}_h) - 2\hat{R}_h Cov(\hat{Z}_h, \hat{X}_h) \right]$$

Where,

$$Cov(\hat{Z}_h, \hat{X}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Z}_{hi} - \frac{\hat{Z}_h}{n_h} \right) \left(\hat{X}_{hi} - \frac{\hat{X}_h}{n_h} \right) + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{j=1}^{h_{hi}} \left(\hat{Z}_{hij} - \frac{\hat{Z}_{hi}}{h_{hi}} \right) \left(\hat{X}_{hij} - \frac{\hat{X}_{hi}}{h_{hi}} \right)$$

f_h = average first stage probability of selection of EAs within stratum h .

$f_{hi} = \frac{h_{hi}}{H_{hi}}$ = Average second stage probability of selection within the i^{th} sample EA in stratum h .

$\hat{Y}_{hi}, \hat{Z}_{hi}, \hat{X}_{hi}$ are weighted total livestock and its products of characteristic y, z and x , respectively, in the i^{th} EA and h^{th} stratum.

$\hat{Y}_{hij}, \hat{Z}_{hij}, \hat{X}_{hij}$ are weighted value of livestock and its products of characteristic y, z and x , respectively, from j^{th} agricultural household in the i^{th} EA and h^{th} stratum.

Since all strata are independent, the total variance at regional and country level is computed by aggregating the result obtained at Zone/Special Wereda level, i.e.

$$Var(\hat{Y}) = \sum_h^L Var(\hat{Y}_h), Var(\hat{R}) = \sum_{i=1}^L Var(\hat{R}_h)$$

Where, L is the number of strata (Zone/Special Wereda).

In estimating the sampling variance by the above formula, selection of EAs within a stratum is assumed to be with replacement. By so doing the variance estimate may be slightly over estimated but it greatly simplifies the estimation procedure.

4. Coefficient of Variation (CV) of Estimates:

Coefficient of Variation (CV) in percentage of estimate of stratum total of livestock and its products is given by:

$$CV(\hat{Y}_h) = \frac{\sqrt{Var(\hat{Y}_h)}}{\hat{Y}_h} * 100, CV(\hat{R}_h) = \frac{\sqrt{Var(\hat{R}_h)}}{\hat{R}_h} * 100$$

5. Ninety-five percent confidence interval (CI) of stratum total of Livestock (its product):

$$\hat{Y}_h \pm 1.96 * SE(\hat{Y}_h) \quad ,$$

Where $SE(\hat{Y}_h) = \sqrt{Var(\hat{Y}_h)}$ is standard error of the estimate of the stratum total.

Estimates of standard error and confidence interval for the ratio estimate can also be calculated by adopting the above formulas.

APPENDIX III
Survey Questionnaire

**Annual Agricultural Sample Survey
Livestock and Beehives Population - 2017/18 (2010 E.C.)**

Part I - Identification Particulars

Region	Zone	Wereda	Farmers' Association	Enumeration Area	Household Number	Holder Number	Holder				Type of Holding Crop=1 Livestock=2 Both=3	
							Name	Age	Sex M=1 F=2	Edu. Status (Highest Grade Completed)		Family Size

PART II - LIVESTOCK POPULATION AND PRODUCTS

QST I - Did You Have Livestock and/or Beehives on November 10, 2018?

Yes Complete questions below

No – Skip to QST II

Number of Cattle by Age and Purpose on Nov 10, 2018

	None	Total	Male	Female
1. Cattle of all ages _____		1	2	3
a. Cattle less than 6 months _____		4	5	6
b. Cattle 6 months and less than 1 year _____		7	8	9
c. Cattle 1 year and less than 3 years _____		10	11	12
d. Cattle 3 years and less than 10 years _____		13	14	15
1. Beef Cattle _____		16	17	18
2. Cattle for breeding _____		19	20	21
3. Dairy cows _____		22		23
4. Cows that gave milk for the last 12 months _____		24		25
5. Draft cattle _____		26	27	28
6. Cattle for other purposes _____		29	30	31
e. Cattle 10 years and older _____		32	33	34
f. Grand Total _____		35	36	37
1. Local breed _____		38	39	40
2. Exotic _____		41	42	43
3. Hybrid _____		44	45	46

Number of Sheep by Age and Purpose on Nov 10, 2018

	None	Total	Male	Female
2. Sheep of all ages		47	48	49
a. Sheep less than 6 months		50	51	52
b. Sheep 6 months and less than 1 year		53	54	55
c. Sheep 1 year and less than 2 years		56	57	58
d. Sheep 2 years and older		59	60	61
1. Sheep for mutton		62	63	64
2. Sheep for wool		65	66	67
3. Sheep for breeding		68	69	70
4. Sheep for other purposes		71	72	73
e. Grand Total		74	75	76
1. Local breed		77	78	79
2. Exotic		80	81	82
3. Hybrid		83	84	85

Number of Goats by Age and Purpose on Nov 10, 2018

	None	Total	Male	Female
3. Goats of all ages		86	87	88
a. Goats less than 6 months		89	90	91
b. Goats 6 months and less than 1 year		92	93	94
c. Goats 1 year and less than 2 years		95	96	97
d. Goats 2 years and older		98	99	100
1. Goats for meat		101	102	103
2. Dairy Goats		104		105
3. Goats for breeding		106	107	108
4. Goats for other purposes		109	110	111
e. Grand Total		112	113	114
1. Local breed		115	116	117
2. Exotic		118	119	120
3. Hybrid		121	122	123

Number of Horses, Mules, Donkeys and Camels by age and Purpose on Nov 10, 2018

Horses	None	Total	Male	Female
4. Horses of all ages _____		124	125	126
a. Horses less than 3 years _____		127	128	129
b. Horses 3 years and older _____		130	131	132
1. Horses used primary for draft purposes _____		133	134	135
2. Horses for transportation _____		136	137	138
3. Horses for other purposes _____		139	140	141
Mules	None	Total	Male	Female
5. Mules of all ages _____		142	143	144
a. Mules less than 3 years _____		145	146	147
b. Mules 3 years and older _____		148	149	150
1. Mules used primary for draft purposes _____		151	152	153
2. Mules for transportation _____		154	155	156
3. Mules for other purposes _____		157	158	159
Donkeys	None	Total	Male	Female
6. Donkeys of all ages _____		160	161	162
a. Donkeys less than 3 years _____		163	164	165
b. Donkeys 3 years and older _____		166	167	168
1. Donkeys used for draft purposes _____		169	170	171
2. Donkeys for transportation _____		172	173	174
3. Donkeys for other purposes _____		175	176	177
Camels	None	Total	Male	Female
7. Camels of all ages _____		178	179	180
a. Camels less than 4 years _____		181	182	183
b. Camels 4 years and older _____		184	185	186
1. Camels for slaughter _____		187	188	189
2. Camels for draft purposes _____		190	191	192
3. Camels for milk _____		193	209	194
4. Camels for transportation _____		195	196	197
5. Camels for other purposes _____		198	199	200

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Poultry

8. Poultry total on Nov 10, 2018

- a. Laying hens _____
- b. Non-Laying hens _____
- c. Cocks _____
- d. Cockerels _____
- e. Pullets _____
- f. Chicks _____

None	Total
	201
	205
	209
	213
	217
	221
	225

Indigenous		Hybrid		Exotic	
202		223		204	
206		207		208	
210		211		212	
214		215		216	
218		219		220	
222		223		224	
226		227		228	

QST II- Did You Have Livestock During The Reference Period (Nov 11, 2017 to Nov 10, 2018)?

Yes=1 No=2

Yes Complete questions below

No – End of the question

9. Total Beehives (produced honey during the reference period)
- a. Traditional Beehives _____
 - b. Intermediate Beehives _____
 - c. Modern Beehives _____

None	Total
	229
	230
	231
	232

10. Honey production per beehive in kg during the reference period

- a. Average honey production/ Traditional hive/harvest _____
Number of harvests/Traditional hive/year _____
- b. Average honey production/ Intermediate hive/harvest _____
Number of harvests/Intermediate hive/year _____
- c. Average honey production/ Modern hive/harvest _____
Number of harvests/Modern hive/year _____

233	
234	
235	
236	
237	
238	

Milk, Egg, and Honey Production during the reference period

11. Dairy cows and Camels	None	
a. Cows that gave milk during the reference Period _____		239
b. Average number of months cows actually milked _____		240
c. Average lactation period of cows in months _____		241
d. Milk production per day per cow in liters _____		242
e. Camels that gave milk during the reference period _____		243
f. Average number of months camels actually milked _____		244
g. Average lactation period of camels in months _____		245
h. Milk production per day per camel _____		246

	None	Indigenous	Hybrid	Exotic
12. Egg production per hen per clutch _____		247	248	249
13. Average number of days per clutch _____		250	251	252
14. Total Number of clutch during the reference period _____		253	254	255

15. Livestock Diseases and Treatments during the Reference Period

1 Sr. No.	2 Livestock Type	4 Afflicted/Diseased			5 Total Treated		
		Total	Male	Female	Total	Male	Female
1	Cattle						
2	Sheep						
3	Goats						
4	Horses						
5	Donkeys						
6	Mules						
7	Camel						
8	Poultry						

16. Number of Births, Purchases, Sales, Slaughters, and Deaths during the Reference Period

1 Sr. No.	2 Livestock Type	3 Births			4 Purchases			5 Acquired			6 Sales			7 Slaughters			8 Offered			9 Died from Diseases			10 Died from other Reasons		
		T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
		1	Cattle																						
2	Sheep																								
3	Goats																								
4	Horses																								
5	Donkeys																								
6	Mules																								
7	Camels																								
8	Poultry																								

17. Livestock diseases, treatment and Vaccination during the Reference Period

1 Sr. No.	2 Livestock Type	3 Total Vaccinated			4 Vaccinated against																				
					5 Anthrax			6 Blackleg			7 Pleuro-Pneumonia			8 Hemorrhagic Septicemia			9 Renderpest			10 Others					
		T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F						
1	Cattle																								
2	Sheep																								
3	Goats																								
4	Camels																								

18. Livestock Feeds utilized during the reference period

1	2	3	4	5	5	6
Sr. No.	Type of Livestock Feed	Code	Utilized yes=1 no=2	Percent from the total feed Utilized	Source of Feed	Code
1	Green fodder/Grazing	1				
2	Crop Residue	2				
3	Improved Feed	3				
4	Hay	4				
5	Bi-products	5				
6	Others	7				
Total				100		

Own Holding=1 Purchased=2 Communal Holding=3
 1 & 2 =4 1 & 3=5 2 & 3=6 1, 2, & 3=7 Others=8

19. Did you participate in any Livestock Extension Program during the reference period?

Yes=1 No=2

20. If yes to 19, what was the type of the package?

- Dairy development package =1
- Beef/Meat/Mutton development package =2
- Poultry development package =3
- Honey and Wax development Package =4
- Any two or more of the above packages =5
- Any other livestock package =6