FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
CENTRAL STATISTICAL AGENCY

AGRICULTURAL SAMPLE SURVEY
2018/19 [2011 E.C.]

VOLUME II

REPORT ON
LIVESTOCK AND LIVESTOCK CHARACTERISTICS
(PRIVATE PEASANT HOLDINGS)

ADDIS ABABA
MAY 2019

----
588   STATISTICAL BULLETIN   588

Table of Contents

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 2018/19 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, 2018 or Hidar 1, 2011 E.C.) and reference period (November 11, 2017 to November 10, 2018 or Hidar 2, 2009 E.C.to Hidar 1, 2011 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 level for the 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 areas at regional 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 2018/19 (2011 E.C.) Annual Livestock Sample Survey covered the rural agricultural population in all the regions of the country except the non-sedentary population of Somali region. For Somali region last year data has been used due to a reason beyond our control.

To be covered by the survey, a total of 1,539 enumeration areas (EAs) were selected other than the somali region. However, due to various reasons that are beyond control, in 86 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,453 EAs (94.41%) throughout the regions. The Livestock Sample Survey was conducted on the basis of 20 agricultural households selected from each EA. Regarding the ultimate sampling units, it was intended to cover a total of 30,780 agricultural households, however, 28,949 (94.05%) 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 cartographic frame prepared for the 4th round Population and Housing Census. The 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.

Regions are considered as domain of estimation for which major findings of the survey are reported.

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 cartographic frame prepared for the 4th round Population and Housing Census. Within each sample EA 20 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 region 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 11, 2017 to Nov 10, 2018.

***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 11, 2017 to Nov 10, 2018.

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 four 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 3. 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 Head Office. 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, 20 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, 2018 (Hidar 1/2011 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 2018/19 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, 2018), 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 61.51 million. Out of this total cattle population, the female cattle constitute about 55.67 percent and the remaining 44.33 percent are male cattle.

Regarding age groups, the majority of the cattle population (that is about 62.21 percent) is in the 3 years and less than 10 years age category, with about 26.83 percent male and about 35.38 percent female. Moreover, about 17.17 percent are between age one and three years and those with age category 10 years and over took small portion i.e. 2.02 percent of the total estimated number of cattle population (also see Fig III.1).

On the other hand, the results obtained indicated that 97.92 percent of the total cattle in the country are local breeds. The remaining are hybrid and exotic breeds that accounted for about 1.86 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 24 percent and the percentage share of beef cattle is the lowest that is about 0.93 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 - 2018/19

Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total .... …..	61,510,258	100	27,265,774	44.33	34,244,484	55.67
Under 6 months	5,879,824	9.56	2,806,403	4.56	3,073,421	5
6 months - under 1 year..................................	5,559,329	9.04	2,635,246	4.28	2,924,083	4.75
1 year – under 3 years	10,563,643	17.17	4,694,967	7.63	5,868,676	9.54
3 years – under 10 years...............................	38,266,009	62.21	16,501,218	26.83	21,764,791	35.38
10 years and older	1,241,453	2.02	627,940	1.02	613,513	1
Cattle by Breed						
Total	61,510,258	100	27,265,774	44.33	34,244,484	55.67
Indigenous	60,230,360	97.92	26,774,828	43.53	33,455,533	54.39
Hybrid	1,145,986	1.86	443,663	0.72	702,323	1.14
Exotic	133,911	0.22	47,283	0.08	86,628	0.14
Aged 3 – 10 Years by Purpose						
Total	38,266,009	62.21	16,501,218	26.83	21,764,791	35.38
Used for Milk	7,090,619	11.53			7,090,619	11.53
Used for Draught.....................................	14,763,093	24	14,652,012	23.82	111,081	0.18
Used for Beef	570,877	0.93	501,930	0.82	68,946	0.11
Used for Breeding	14,339,450	23.31	737,638	1.2	13,601,813	22.11
Used for Other...	1,501,970	2.44	609,638	0.99	892,332	1.45
Dairy Animals						
Dairy Cows	7,090,619	11.53			7,090,619	11.53
Milking Cows..	12,405,035	20.17			12,405,035	20.17

FIGURE III.1 DISTRIBUTION OF CATTLE BY AGE AND SEX
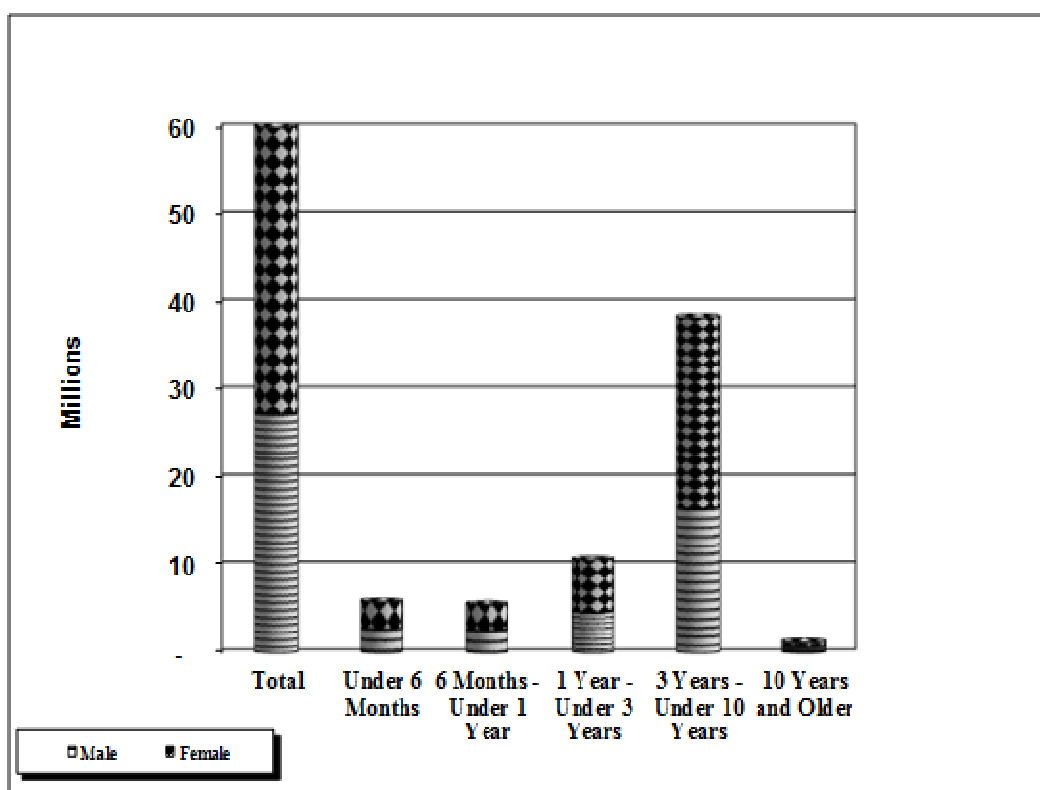
Dairy-cows[1] are estimated to be around 7.09 million and milking-cows[2] are about 12.41 million heads during the reference period.

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.

---

[1]A *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.*
[2]A *Milking Cow refers to any type of cow that actually milked during the reference period (Nov. 11, 2017 to Nov. 10, 2018).*
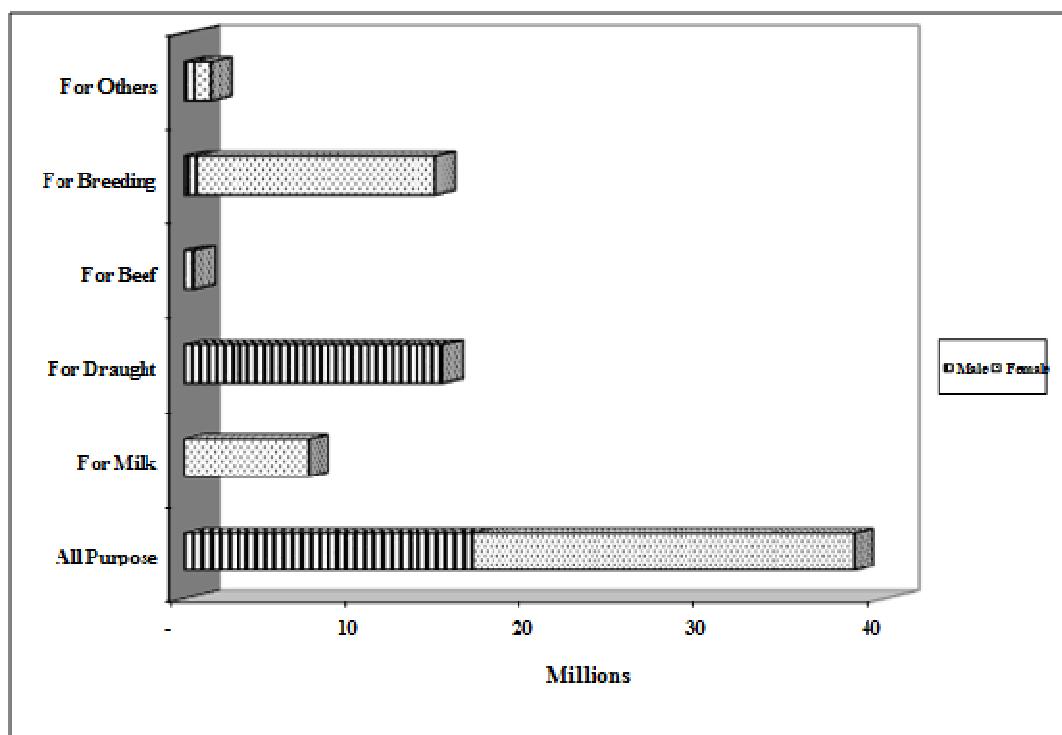
3.1.2 Sheep And Goat Populations

The estimated numbers and percentage distributions of sheep and goats in the rural areas of the country are given in Summary Table III.2. As pointed out in this table, about 33.02 million sheep are estimated to be found in the country, out of which about 72.86 percent are females, and about 27.14 percent are males. According to the survey result, the number of goats reported in the country is estimated to be about 38.96 million. Out of these total goats, 72.09 percent are females and about 27.91 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 - 2018/19

Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total Sheep	33,020,392	100	8,962,243	27.14	24,058,149	72.86
Under 6 months……………	7,921,181	23.99	3,837,027	11.62	4,084,154	12.37
6 months - under 1 year	3,642,192	11.03	1,608,261	4.87	2,033,931	6.16
1 year - under 2 years.......................	3,741,430	11.33	1,373,634	4.16	2,367,796	7.17
2 years and older...............................	17,715,589	53.65	2,143,322	6.49	15,572,268	47.16
Sheep by Breed						
Total..	33,020,392	100	8,962,243	27.14	24,058,149	72.86
Indigenous...................................	32,927,115	99.72	8,927,129	27.04	23,999,986	72.68
Hybrid...	89,597	0.27	32,140	0.1	57,457	0.17
Exotic..	3,681	0.01	*	*	*	*
Sheep Aged 2 Years and Older by Purpose						
Total..	17,715,589	53.65	2,143,322	6.49	15,572,268	47.16
Used for Mutton.........................	756,978	2.29	694,174	2.1	62,804	0.19
Used for Wool............................	130,748	0.4	22,325	0.07	108,423	0.33
Used for Breeding.......................	16,704,854	50.59	1,362,150	4.13	15,342,703	46.46
Used for Other	123,010	0.37	64,672	0.2	58,337	0.18
Total Goats	38,963,879	100	10,874,242	27.91	28,089,637	72.09
Under 6 months...	9,164,712	23.52	4,100,172	10.52	5,064,541	13
6 months - under 1 year	4,762,403	12.22	1,971,957	5.06	2,790,446	7.16
1 year - under 2 years.......................	4,853,643	12.46	1,758,898	4.51	3,094,745	7.94
2 years and older...............................	20,183,121	51.8	3,043,216	7.81	17,139,905	43.99
Goats by Breed						
Total..	38,963,879	100	10,874,242	27.91	28,089,637	72.09
Indigenous...................................	38,954,487	99.98	10,873,171	27.91	28,081,316	72.07
Hybrid...	*	*	*	*	*	*
Exotic..	*	*	-	-	*	*
Goats Aged 2 Years and Older by Purpose						
Total..	20,183,121	51.8	3,043,216	7.81	17,139,905	43.99
Used for Milk.............................	2,357,772	6.05			2,357,772	6.05
Used for Meat	1,012,548	2.6	946,857	2.43	65,691	0.17
Used for Breeding.......................	16,677,353	42.8	1,991,497	5.11	14,685,856	37.69
Used for Other	135,448	0.35	104,862	0.27	30,586	0.08

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 (53.65 percent and 51.8 percent, in that order). These are followed by the young stock under six months for both sheep and goats i.e. about 23.99 percent and 23.52 percent, correspondingly (see Figure III.3).

FIGURE III.3 DISTRIBUTION OF SHEEP AND GOATS BY AGE AND SEX
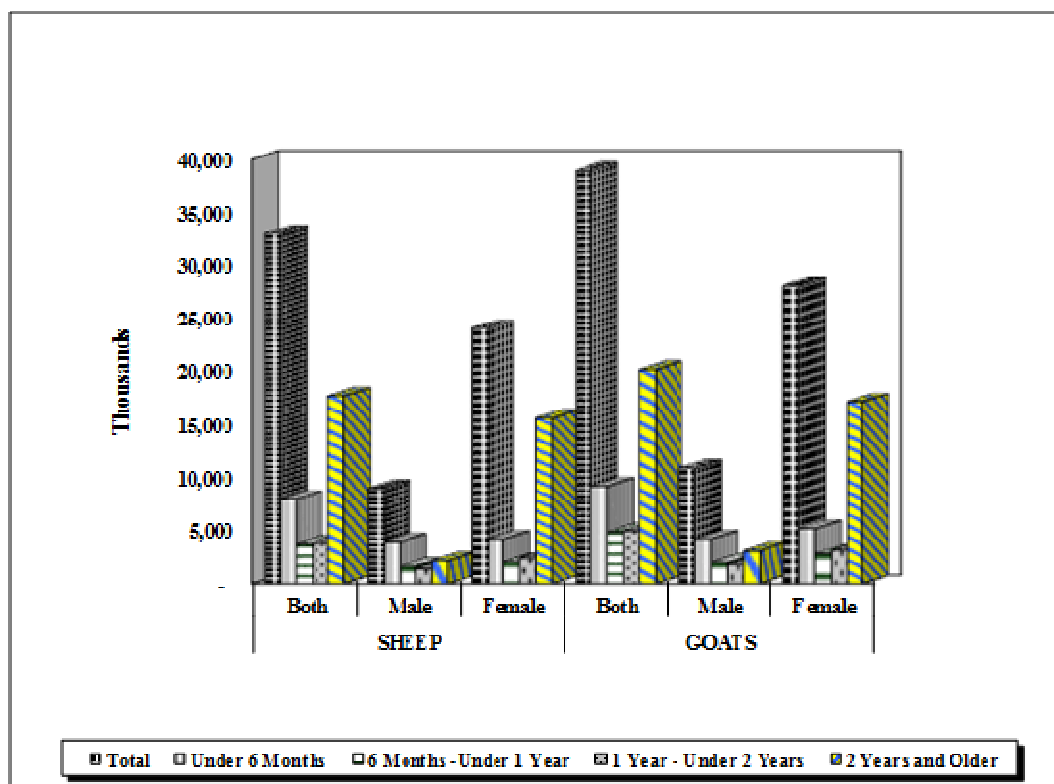
With respect to breed, almost all of the sheep and the goats are indigenous (99.72 percent and 99.98 percent, respectively).

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 (53.65 % of the total sheep), 50.59 percent are kept for breeding; about 2.29 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 (51.8 % of the total), goats kept for breeding accounted for about 42.8 percent while goats kept for meat accounted for 2.6 percent. The number of female goats kept for milk at country level is estimated to be about 2.36 million, which is 6.05 percent of the total goats aged two years and older (see Figures III.4 and III.5).

FIGURE III.4 DISTRIBUTION OF SHEEP AGED 2 YEARS AND OLDER BY SEX, AND PURPOSE
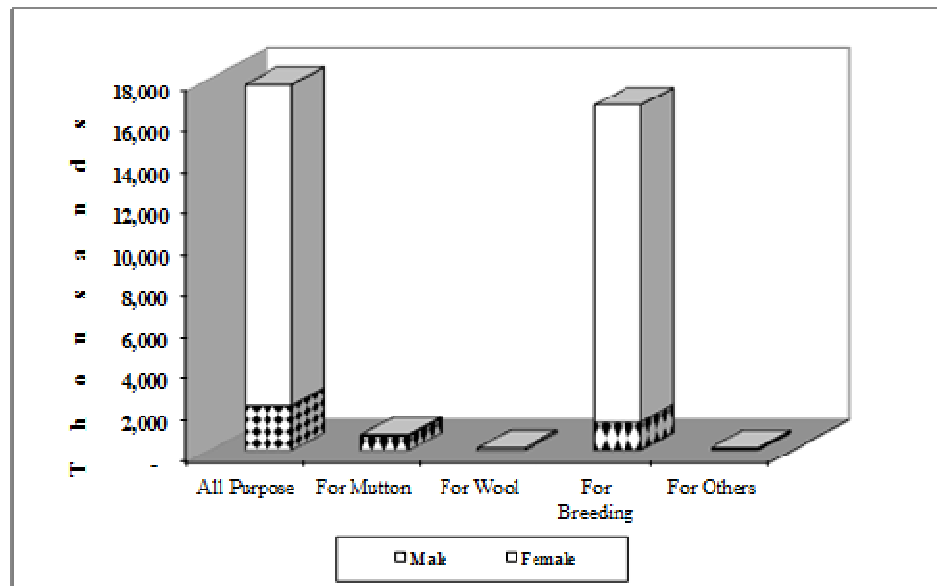
FIGURE III.5 DISTRIBUTION OF GOATS AGED 2 YEARS AND OLDER BY SEX, AND PURPOSE
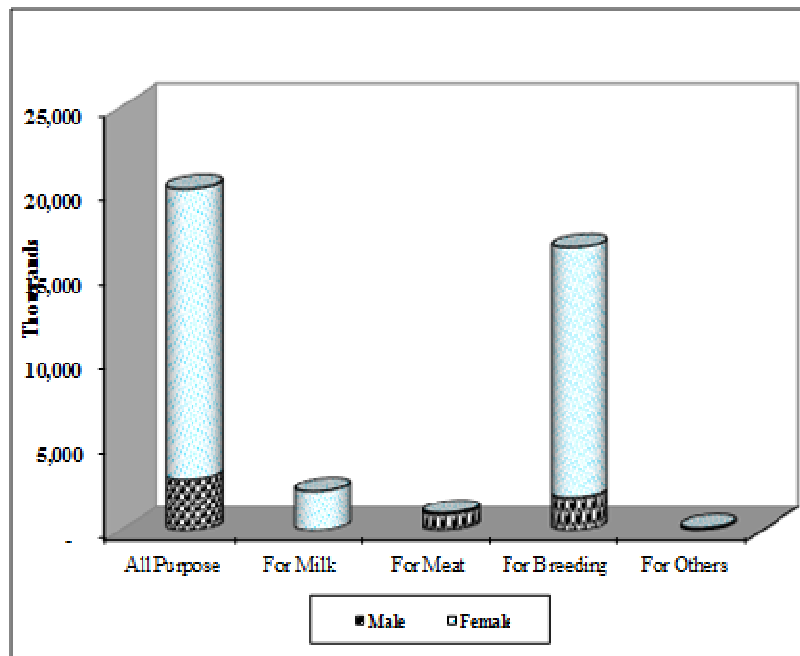
The numbers and percentage distributions of sheep and goats at regional level are given in the *Statistical Tables* and Figure III.9.

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 1.93 million horses, 9.66 million donkeys, 0.37 million mules, anda bout 1.76 million camels in the rural 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 54.39 percent are females and the remaining 45.61 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, 71.56 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 1.25 million were used for transportation, 0.23 million were for draught and the remaining 0.11 million were used for other purposes. With regard to donkeys, about 5.92 million were used for transportation whereas about 1.3 million and 0.19 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 - 2018/19

Age, Breed, and Purpose	Total		Male		Female	
	Number	%	Number	%	Number	%
Total Horses	1,930,808	100	1,010,125	52.32	920,684	47.68
Under 3 Years.........................	333,711	17.28	170,925	8.85	162,786	8.43
3 years and older.....................	1,597,097	82.72	839,199	43.46	757,898	39.25
Horses Aged 3 Years and Older by Purpose						
All Uses.............................	1,597,097	82.72	839,199	43.46	757,898	39.25
Transportation..............	1,254,431	64.97	705,160	36.52	549,271	28.45
Draught.......................	234,261	12.13	126,234	6.54	108,027	5.59
Other Uses	108,405	5.61	7,805	0.4	100,599	5.21
Total Donkeys	9,655,441	100	4,404,088	45.61	5,251,354	54.39
Under 3 Years.........................	2,235,901	23.16	1,130,591	11.71	1,105,310	11.45
3 years and older.....................	7,419,540	76.84	3,273,497	33.9	4,146,043	42.94
Donkeys Aged 3 Years and Older by Purpose						
All Uses.............................	7,419,540	76.84	3,273,497	33.9	4,146,043	42.94
Transportation..............	5,923,700	61.35	2,653,049	27.48	3,270,651	33.87
Draught.......................	1,301,909	13.48	560,576	5.81	741,333	7.68
Other Uses	193,931	2.01	59,872	0.62	134,059	1.39
Total Mules	370,552	100	180,121	48.61	190,431	51.39
Under 3 Years.........................	32,648	8.81	15,787	4.26	16,861	4.55
3 years and older.....................	337,904	91.19	164,334	44.35	173,570	46.84
Mules Aged 3 Years and Older by Purpose						
All Uses.............................	337,904	91.19	164,334	44.35	173,570	46.84
Transportation..............	295,075	79.63	143,279	38.67	151,796	40.96
Draught.......................	36,558	9.87	17,243	4.65	19,315	5.21
Other Uses	*	*	*	*	*	*
Total Camels	1,760,870	100	541,981	30.78	1,218,889	69.22
Under 4 Years.........................	500,789	28.44	207,280	11.77	293,509	16.67
4 years and older.....................	1,260,082	71.56	334,701	19.01	925,381	52.55
Camels Aged 4 Years and Older by Purpose						
All Uses.............................	1,260,082	71.56	334,701	19.01	925,381	52.55
Meat...........................	27,338	1.55	24,403	1.39	*	*
Milk	658,409	37.39			658,409	37.39
Transportation..............	353,036	20.05	275,950	15.67	77,087	4.38
Draught.......................	11,433	0.65	11,135	0.63	*	*
Other Uses	209,864	11.92	23,214	1.32	186,650	10.6

FIGURE III.6 DISTRIBUTION OF HORSES, DONKEYS, MULES, AND CAMELS BY AGE AND SEX
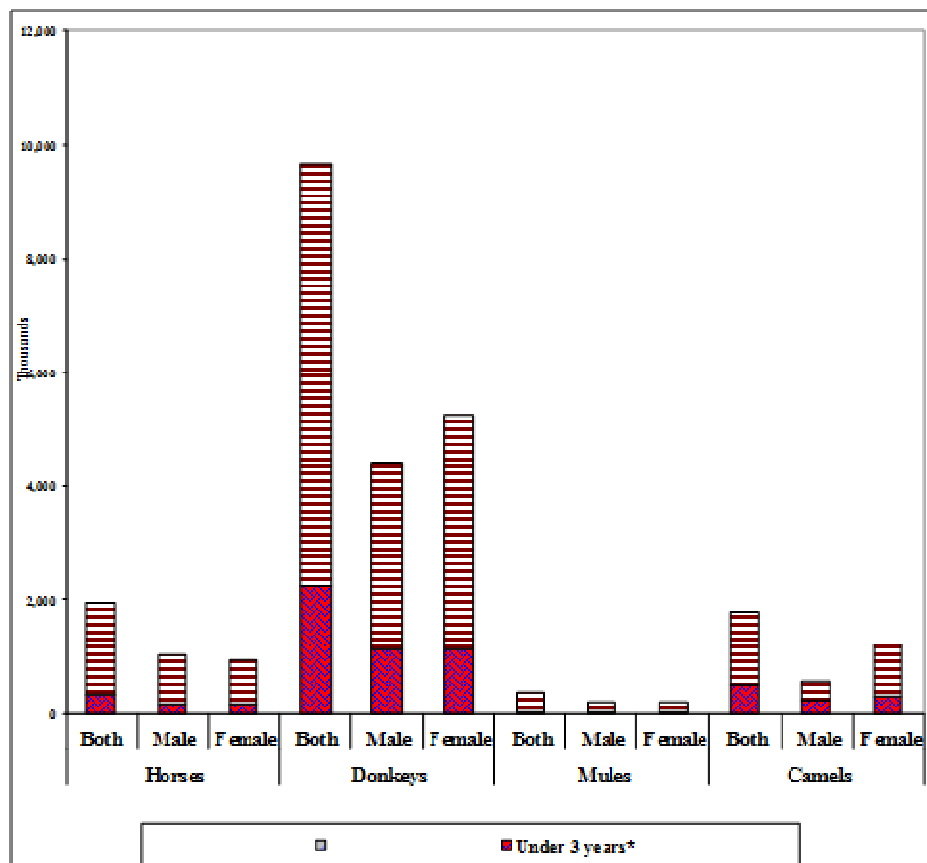
* Note that for camels the 'Age Categories' are under 4 years and 4 years & older

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

17
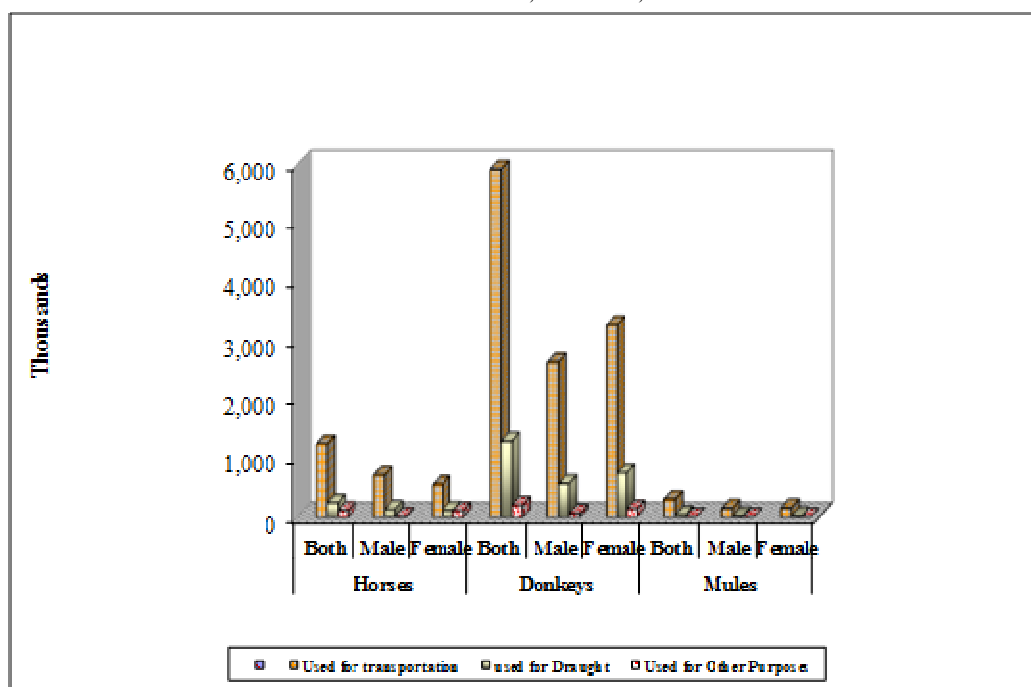
Considering the purpose of the mules, the data shows that the predominance (79.63%) was used for transportation and 9.87% were intended for draught. The survey result also indicates that 37.39 percent of the camels reported were kept for milk, 20.05 percent were for transportation, and only 0.65 percent was for draught purposes. On the other hand, the number of camels kept for meat was about 27.34 thousand heads (see also Figures III.6 to III.8).

FIGURE III.8 DISTRIBUTION OF CAMELS BY PURPOSE AND SEX
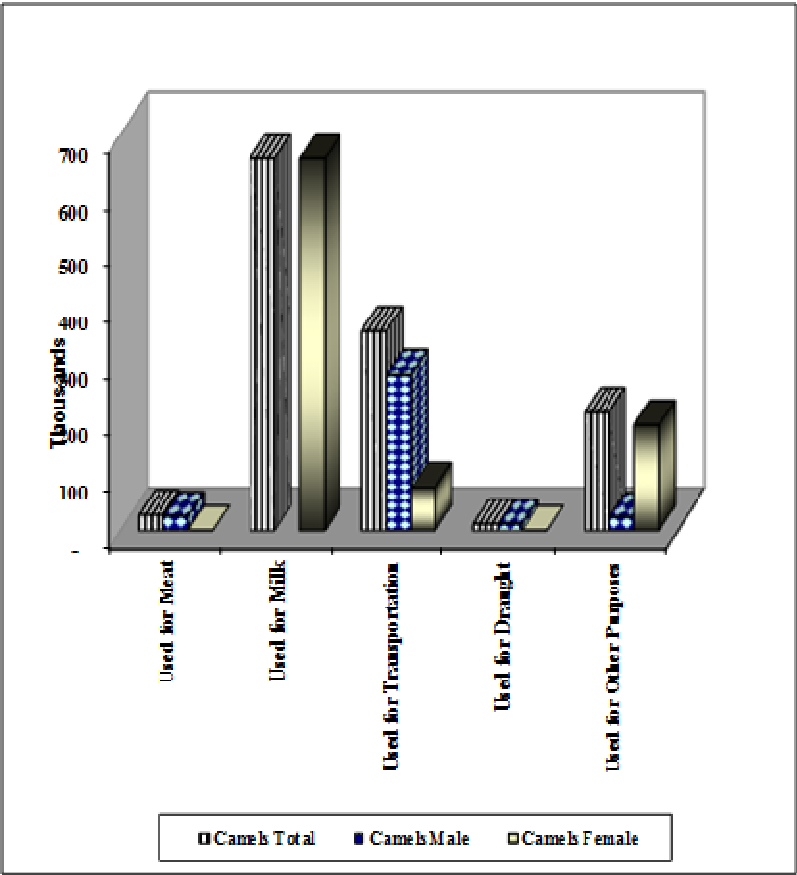
For the regional distributions of draught animals refer to the statistical tables presented at the end of this chapter.

FICURE III.9 DISTRIBUTION OF MAJOR LIVESTOCK TYPES BY RECION

	Cattle	Sheep	Goats
Tigray	4,850,412	2,282,746	4,232,680
Afar	1,791,565	4,474,903	9,975,247
Amhara	16,407,220	9,650,637	6,805,721
Oromia	24,508,504	9,776,459	9,082,745
Somali	589,503	1,360,703	2,826,424
B. Gumuz	626,343	143,664	524,316
SNNP	12,324,739	5,214,185	5,116,030
Gambella	290,616	41,026	133,246
Harari	69,933	5,661	81,466
Diredawa	51,422	70,408	186,002
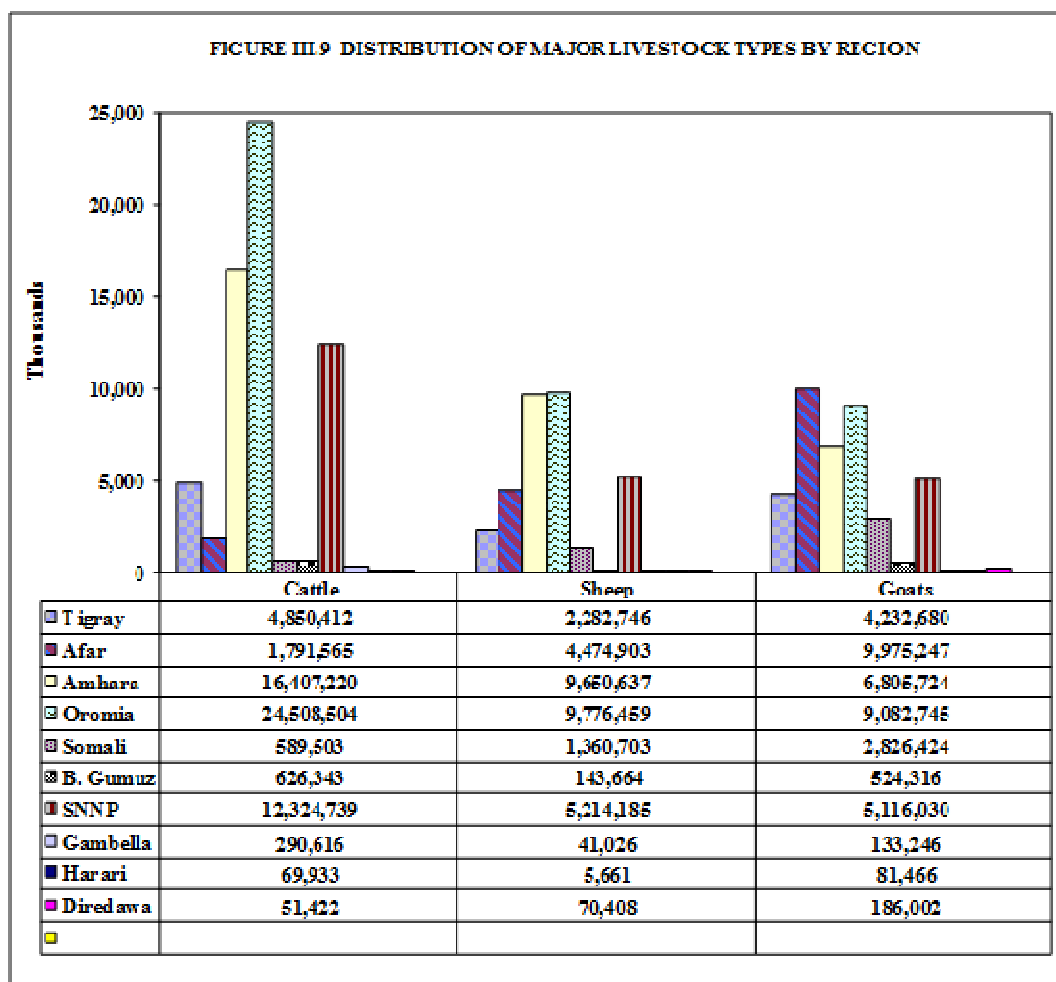
3.1.4 Poultry Population

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 59.42 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 (36.43 percent), followed by laying hens (32.9 percent). Pullets are estimated to be about 11.15 million in the country. Cocks and cockerels are also estimated separately, and are 10.09 million and about 6.37 million, respectively. The others are non-laying hens that make up about 3.05 percent (1.81 million) of the total poultry population in the country. With regard to breed, 85.68 percent, 7.32 percent

19

and 7 percent of the total poultry were reported to be indigenous, hybrid and exotic, respectively. For the regional 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 - 2018/19

Type of Poultry	All		Indigenous		Exotic		Hybrid	
	Number	%	Number	%	Number	%	Number	%
All Poultry	59,420,266	100	50,914,251	85.68	4,348,459	7.32	4,157,556	7
Cocks	5,998,092	10.09	5,170,449	8.7	383,596	0.65	444,048	0.75
Cockerels	3,786,969	6.37	3,172,096	5.34	269,810	0.45	345,063	0.58
Pullets	6,628,081	11.15	5,265,263	8.86	796,436	1.34	566,383	0.95
Non-Laying Hens...............	1,811,184	3.05	1,543,938	2.6	172,315	0.29	94,932	0.16
Chicks	21,646,111	36.43	20,145,480	33.9	494,891	0.83	1,005,740	1.69
Laying Hens.......................	19,549,829	32.9	15,617,027	26.28	2,231,411	3.76	1,701,391	2.86

FIGURE III.10 DISTRIBUTION OF POULTRY BY TYPE
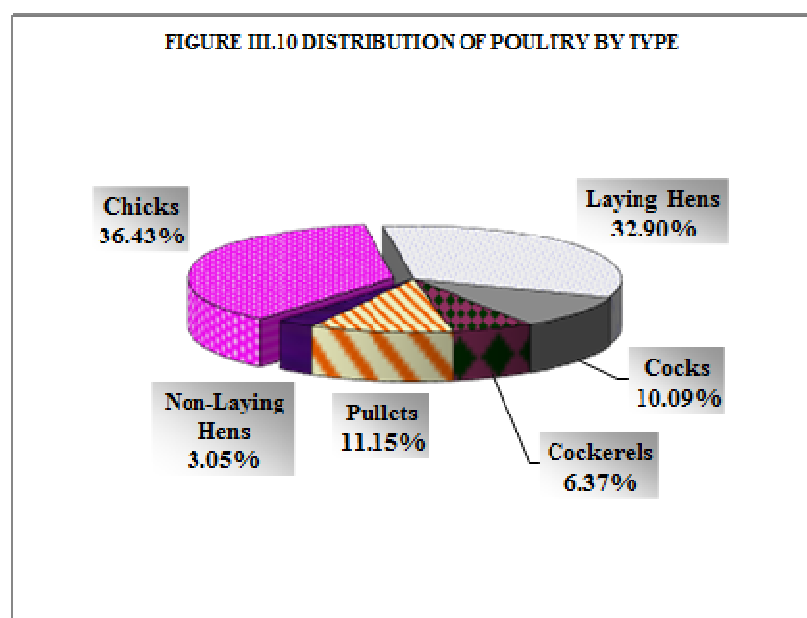
3.1.5 Beehive Population

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 11, 2017 to November 10, 2018). Accordingly, the result of the survey revealed that a total of about 7.08 million hives is estimated to be found in the rural areas of the country. From this total hives, the greater part (96.03 percent) is reported to be traditional (see Summary Table III.5).

SUMMARY TABLE III.5: Estimated Number of Beehives by Type,
Ethiopia - 2018/19

Type of Beehive	Number	%
All Beehives	7,075,188	100
Traditional Beehives	6,794,424	96.03
Intermediate Beehives	80,164	1.13
Modern Beehives	200,600	2.84

FIGURE III.11 DISTRIBUTION OF BEEHIVES BY TYPE
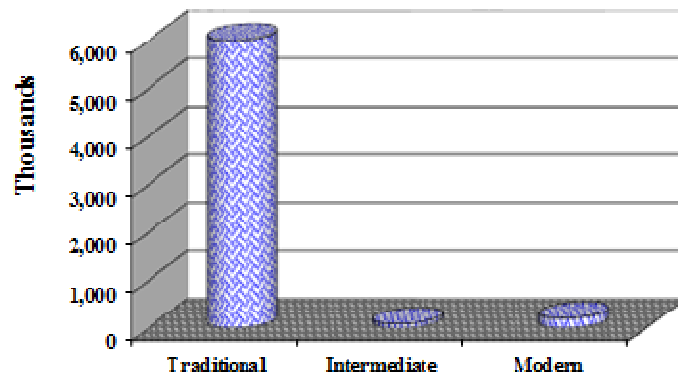
For the regional distributions refer to the statistical tables presented at the end of this chapter.

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

According to the survey result, about 84.37 million chickens, 14.06 million sheep, 15.78 million goats and 12.01 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 30.73 million animals (either to build their stock or for some other reasons) and acquired morethan 3.28 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 - 2018/19

Type of Livestock	Number of Births			Number of Purchases			Acquired by any Other Means		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Cattle …………	12,012,278	5,709,852	6,302,426	4,756,108	2,939,697	1,816,410	967,602	386,031	581,570
Sheep………...	14,055,263	6,657,126	7,398,138	5,336,218	2,813,838	2,522,380	712,193	158,491	553,702
Goats …..…….	15,775,541	6,965,212	8,810,329	2,864,132	1,149,225	1,714,907	574,460	108,722	465,738
Horses………..	148,205	68,736	79,469	197,327	117,635	79,691	17,950	3,997	13,953
Donkeys ….…..	911,013	471,455	439,558	862,668	497,502	365,165	73,365	26,512	46,853
Mules…………	29,734	17,988	11,746	66,228	30,669	35,559	*	*	*
Camels………..	315,137	129,907	185,230	59,174	43,268	15,905	4,516	*	*
Poultry ……….	84,368,731	40,181,658	44,187,074	16,589,837	6,621,940	9,967,896	927,799	199,603	728,195

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 14.82 million chickens, 7.78 million sheep, 7.05 million cattle and about 7.18 million goats were sold and about 21.74 million animals (chicken, cattle, sheep, goats and camels) were slaughtered by households during the reference period. The estimated number of deaths is about 80.12 million animals and households have also offered about 2.2 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 - 2018/19

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 …………	7,046,464	4,357,954	2,688,510	398,673	223,283	175,391	4,267,746	1,645,014	2,622,732	700,392	300,885	399,507
Sheep…………...	7,775,774	4,179,071	3,596,703	4,303,681	3,154,887	1,148,794	6,941,753	2,257,025	4,684,728	392,073	94,137	297,936
Goats …..……..	7,183,552	3,890,475	3,293,077	2,871,570	1,949,817	921,753	7,729,443	2,561,183	5,168,260	535,065	117,265	417,800
Horses.………..	141,616	89,725	51,891				204,954	95,871	109,083	14,229	7,454	6,775
Donkeys ……...	499,606	273,460	226,146				579,085	277,642	301,443	24,168	8,330	15,838
Mules…………	38,519	23,657	14,862				28,140	16,441	11,700	*	-	*
Camels………..	94,268	76,882	17,386	9,413	*	*	142,554	40,914	101,640	2,903	*	*
Poultry ……….	14,822,318	8,120,187	6,702,132	14,156,628	8,982,722	5,173,906	60,215,831	26,261,602	33,954,229	529,673	172,258	357,415

* 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 areas of the country during the reference period, is about 3.3 billion liters. On the other hand, the estimate of camel milk for the same areas of the country is about 282.17 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 1.364 liters. With regard to camel, the average lactation period is about *nine* months whereas the average daily milk yield is about 2.88 liters in the rural 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 areas of the country. As a result, the estimate of total honey production is about 58.59 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, 1.62, and 1.76 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 151.47 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, 5 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, 49 and 175 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, 40 and 144 eggs, correspondingly (see Summary Table III.8)

Item	Quantity Produced and Frequency		
Milk Production			
Cow Milk			
Average Daily Milk Production (Liters/Cow)...	1.364		
Average Lactation Period (Months)............	6		
Total Milk Production (Liters)................... .	3,284,452,075		
Camel Milk			
Average Daily Milk Production (Liters/Camel)...	2.877		
Average Lactation Period (Months)............	9		
Total Milk Production (Liters)...................	282,170,532		
Honey Production			
All Types of Beehives (Number)………………..	7,075,188		
Production (Kilograms).............................	58,588,152		
Average Frequency (Harvests/Year)...........	1.6		
Traditional Beehives (Number)……………	6,794,424		
Production (Kilograms).........................	54,367,925		
Average Frequency (Harvests/Year).....	1.59		
Intermediate Beehives (Number)………….	80,164		
Production (Kilograms).........................	951,706		
Average Frequency (Harvests/Year).....	1.62		
Modern Beehives (Number)……………….	200,600		
Production (Kilograms).........................	3,268,521		
Average Frequency (Harvests/Year).....	1.76		
Egg Production	Indigenous	Hybrid	Exotic
Average Number of Egg-laying Period/Year……..	4	5	-
Average Length of a Period (in days)……………	21	49	175
Average Number of Eggs/Hen/Period…………….	12	40	144
Total Egg Production (Number)………………………..	82,243,437	30,593,697	38,636,328

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 - 2018/19

Type of Livestock	Total Vaccinated	Vaccinated against:				
		Anthrax[3]	Blackleg[4]	Pleuro-Pneumonia[5]	Hemorrhagic Septicemia[6]	Others
Cattle.....................................	31,550,052	10,024,924	9,638,403	3,364,511	5,260,478	3,261,736
Sheep.....................................	8,560,869	1,343,694	912,911	1,789,922	2,292,028	2,222,315
Goats.....................................	8,654,647	954,324	689,823	2,293,365	2,778,738	1,938,397
Camels	91,940	7,667	30,179	*	8,723	*
Total	48,857,508	12,330,610	11,271,316	7,463,279	10,339,966	7,452,338

SUMMARY TABLE III.9b: Estimated Numbers of Livestock Afflicted and
Treated, Ethiopia - 2018/19

Item	Number	%
Total Afflicted...............................	65,872,188	100
Cattle	11,117,996	16.88
Sheep	8,122,059	12.33
Goats	8,474,242	12.86
Horses, Donkeys, and Mules .	1,549,286	2.35
Camels....................................	129,658	0.2
Poultry	36,478,947	55.38
Total Treated	19,290,160	100
Cattle	7,393,611	38.33
Sheep	3,410,066	17.68
Goats	2,402,822	12.46
Horses, Donkeys, and Mules .	914,627	4.74
Camels....................................	22,421	0.12
Poultry	5,146,612	26.68

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 48.86 million. Out of these animals, about 64.58 percent were cattle followed by goats, which took about 17.71 percent share. Sheep also accounted for about 17.52 percent of the total vaccinated animals. The survey results revealed that about 91.94 thousand camels was vaccinated during the reference period.

---

[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 couses swellings on the legs.
[5] Pleuro-pneumomia – is an infectious bacterial disease of animals mainly cattle that couses cough and fever and is transmittable to other animals easily.
[6] Hemorrhagic- septicaemia- is an infectious bacterial disease of animals.

As indicated in Summary Tabel III.9b, about 65.87 million animals were diseased / afflicted by different types of diseases during the reference period and only about 19.29 million of them were treated. The cattle constituted about 38.33 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
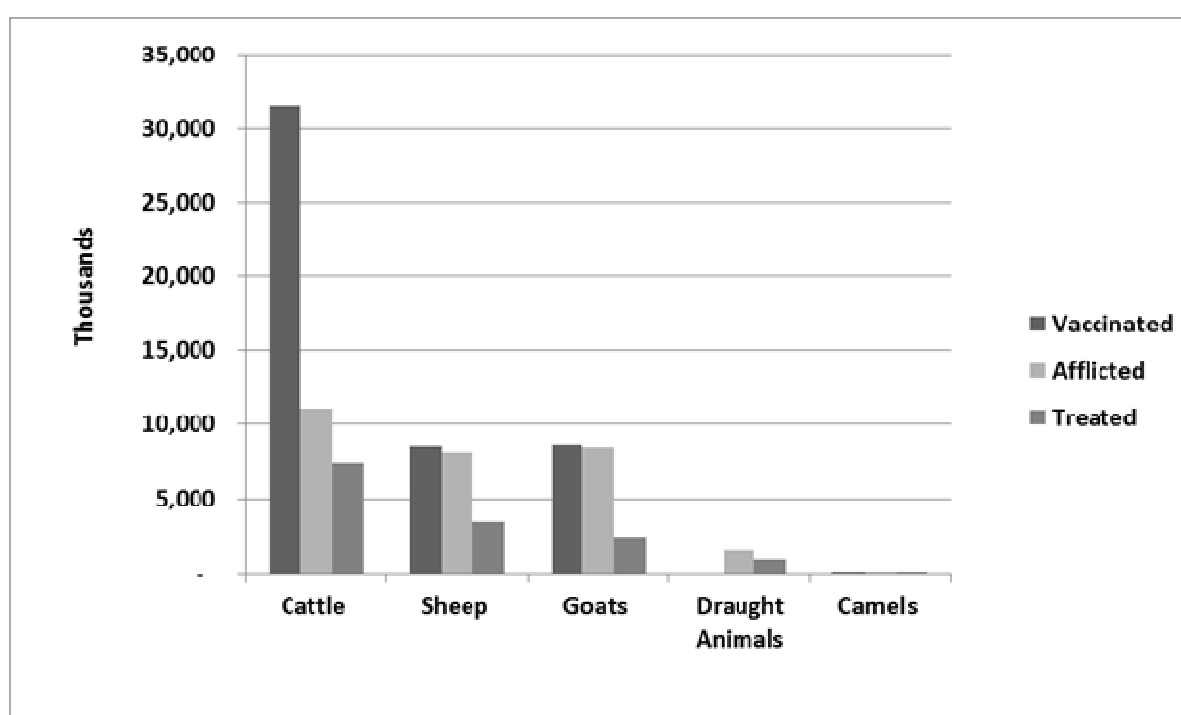
3.6 NUMBER OF HOLDINGS BY SIZE OF LIVESTOCK[7]

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).

---

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

Most of the holdings, about 51 percent, reported one to four cattle and considerable portion (20.06 percent) of the holdings possess five to nine cattle. About 22.43 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 - 2018/19

Size	Number of Holdings	%
All Holdings………………	17,273,301	100
Holdings with no Cattle…	3,874,285	22.43
1-2 Head…………………	4,434,550	25.67
3-4 Head…………………	4,374,869	25.33
5-9 Head…………………	3,558,291	20.6
10-19 Head………………	857,220	4.96
20-49 Head………………	142,140	0.82
50-99 Head………………	26,871	0.16
100-199 Head……………	4,542	0.03
>=200 Head……………..	533	*

The result of the survey also revealed that about 21.84 percent and 15.75 percent of the total holdings were with one to four head of sheep and goats, in that order. The majority of the holdings, about 64.52 percent and about 71.01 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 – 2018/19

	Sheep		Goats	
Size	Number Of Holdings	%	Number of Holdings	%
All Holdings…………………..	17,273,301	100	17,273,301	100
Holdings with no Sheep/Goats.	11,145,269	64.52	12,265,642	71.01
1-4 Head……………………..	3,773,280	21.84	2,720,277	15.75
5-9 Head……………………..	1,629,390	9.43	1,286,580	7.45
10-49 Head…………………..	694,452	4.02	914,096	5.29
50-99 Head…………………..	24,844	0.14	66,983	0.39
100-199 Head………………..	5,999	0.03	16,483	0.1
200-499 Head………………..	67	*	3,240	0.02
>=500 Head………………….	-	-	-	-

With regard to drought animals, from the holdings that owned draught animals, most of them were with one to two head. About 97.65 percent, 97.95 percent, 92.35 percent, and 63 percent of the total holdings were with no camel; no mule, no horse, and no donkey, respectively (see Summary Table III.10c).

Size	Horses		Donkeys		Mules		Camels	
	Number of Holdings	%	Number of Holdings	%	Number of Holdings	%	Number of Holdings	%
All Holdings……………..	17,273,301	100	17,273,301	100	17,273,301	100	17,273,301	100
Holdings with no Animals.	15,952,139	92.35	10,882,538	63	16,919,966	97.95	16,868,147	97.65
1-2 Head………………..	1,194,925	6.92	5,766,328	33.38	352,173	2.04	220,535	1.28
3-4 Head………………..	117,410	0.68	568,597	3.29	1,110	0.01	60,863	0.35
5-9 Head………………..	8,827	0.05	53,409	0.31	52	*	75,980	0.44
>= 10 Head……………..	-	-	2,429	0.01	-	-	47,776	0.28

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 (45.37 percent) holdings were also without poultry (see Summary Table III.10d).

Summary Table III.10d: Number of Holdings by size of Poultry,
Ethiopia - 2018/19

Size	Number of Holdings	%
All Holdings………………..	17,273,301	100
Holdings with no Poultry…	7,837,114	45.37
1-9 Head……………………..	7,546,877	43.69
10-49 Head………………….	1,870,356	10.83
50-99 Head………………….	17,331	0.10
100-199 Head……………….	1,623	0.01
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 54.8 percent) followed by crops residue that is 31.53 percent. Hay and by-products were also used as animal feeds that comprise about 6.72 and 1.55 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 0.36 percent) was used as animal feed and other types of feed that accounted for about 5.05 percent were also used in the country.

SUMMARY TABLE III.11: Animal Feed Practices in Ethiopia - 2018/19

Item	Number of Holders Reporting	Percentage from the total feed utilized
Total		100
Green Fodder/Grazing...........	14,855,789	54.8
Crops Residue.......................	12,863,189	31.53
Improved Feed......................	360,936	0.36
Hay	5,016,899	6.72
By-products	1,833,317	1.55
Others	5,297,573	5.05

FIGURE III.13 ANIMAL FEED PRACTICES OF HOLDERS
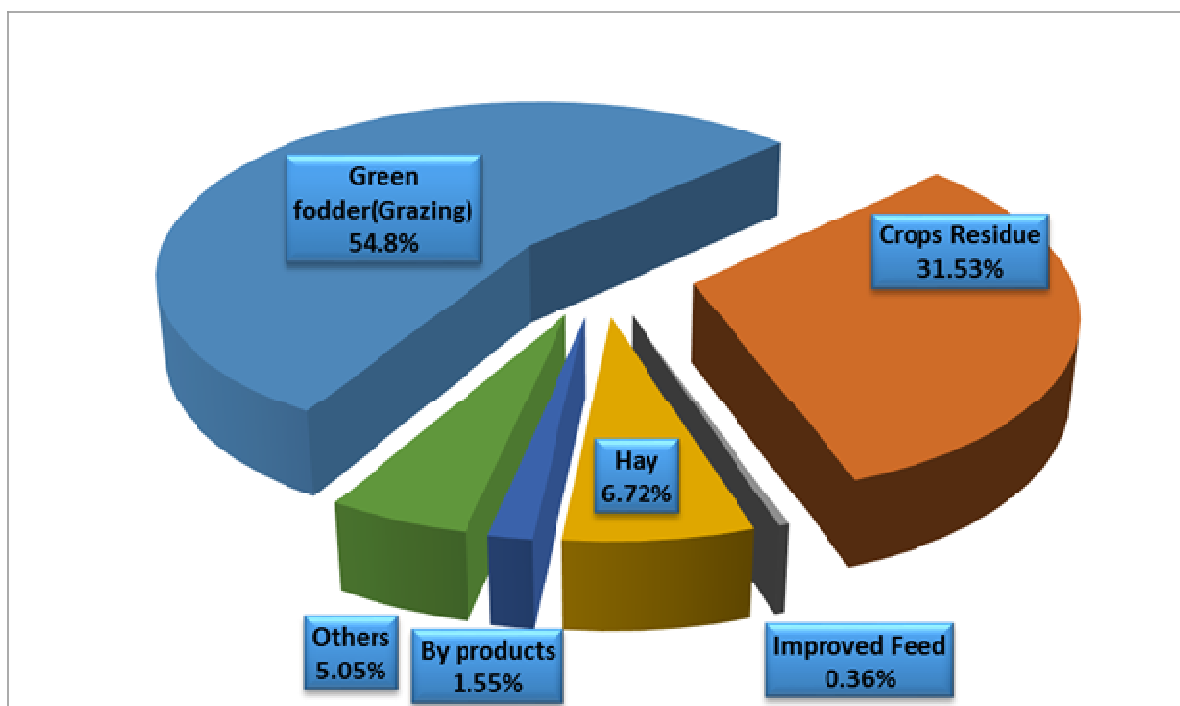
Summary Table III.12 also highlights the number of holders reported each type of feed. According to the data, about 14.86 million holders have used green fodder to feed their animals. Significant number of holders (about 12.86 million) in the rural areas of the country also reported that they used to feed crops residue for their animals. Moreover, about 5.02 million, and about 1.83 million holders have reported to use hay and by-products, respectively. Quite a number of holders (about 5.3 million) as well reported to use other types of feeds while about 361 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. Communual 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 - 2018/19

Source of Feed	Green fodder/ Grazing	Crops Residue	Improved Feed	Hay	By-products	Others
All Sources……………………….	14,855,789	12,863,189	360,937	5,016,900	1,833,317	5,297,573
Own Holding…………………….	6,797,213	11,251,958	239,946	3,163,219	501,125	3,848,129
Purchased……………………….	306,442	326,747	92,905	860,666	1,244,612	607,141
Communal Holdings/Government	3,434,239	108,858	2,939	90,784	2,720	34,428
From any Two or More Sources...	4,028,113	1,027,702	16,732	846,767	75,016	586,362
Other Sources…………………...	289,782	147,924	8,415	55,464	9,844	221,513

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 625 thousand holders were involved in livestock extension packages during the reference period. More than two third of these holders were involved in poultry development packages. About 11.15 and 6.25 of them were engaged in dairy and beef development and packages respectively. Whereas about 2.77 percent of them

have practiced honey and wax development package. Moreover, abou 2.48 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 – 2018/19

Type of Livestock Extension Packages	Number of Holders Practiced	%
Total ……………………………………………..	624,723	100
Dairy Development Package……………………..	69,632	11.15
Beef/Meat/Mutton Development Package……….	39,068	6.25
Poultry Development Package……………………	453,345	72.57
Honey and Wax Development Package………….	17,333	2.77
Two or More of the Packages…………………….	29,881	4.78
Others………………………………………	15,464	2.48

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	61,510,258	33,020,392	38,963,879	1,930,808	370,552	9,655,441	1,760,870	59,420,266	7,075,188
Tigray	4,850,412	2,282,746	4,232,680	1,237	12,026	978,642	52,905	6,032,251	331,407
Afar	1,791,565	4,474,903	9,975,247	375	101	446,904	1,118,981	185,372	21,143
Amhara	16,407,220	9,650,637	6,805,724	363,242	155,195	3,529,748	35,682	20,501,879	1,208,124
Oromia	24,508,504	9,776,459	9,082,745	1,199,659	139,439	3,641,131	294,110	20,766,720	3,634,008
Somale	589,503	1,360,703	2,826,424	-	-	200,639	249,475	250,418	720
Benshangul-Gumuz	626,343	143,664	524,316	3,174	1,522	88,533	-	1,480,468	574,134
SNNP	12,324,739	5,214,185	5,116,030	362,208	61,255	735,018	-	9,542,274	1,227,546
Gambela region	290,616	41,026	133,246	894	1,013	700	-	490,448	75,265
Harari	69,933	5,661	81,466	-	-	14,889	2,130	76,992	1,077
Dire Dawa	51,422	70,408	186,002	19	-	19,238	7,588	93,444	1,764

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	61,510,258	2,806,403	2,635,246	4,694,967	6,501,218	627,940	3,073,421	2,924,083	5,868,676	1,764,791	613,513
Tigray	4,850,412	243,562	170,926	352,923	1,532,976	85,107	254,219	203,972	404,837	1,533,920	67,970
Afar	1,791,565	132,214	59,607	67,750	118,897	*	203,876	109,378	118,217	975,044	3,334
Amhara	16,407,220	633,260	634,847	1,295,470	5,531,243	269,479	614,727	679,789	1,424,272	5,123,352	200,780
Oromia	24,508,504	1,120,877	1,088,188	1,883,303	6,561,079	181,359	1,255,074	1,159,290	2,304,849	8,733,555	220,930
Somale	589,503	51,150	24,727	44,639	90,961	-	42,933	29,547	52,763	251,256	*
Benshangul-	626,343	25,128	32,504	60,262	134,094	6,435	27,309	37,197	66,830	230,922	5,662
SNNP	12,324,739	578,189	600,226	962,812	2,483,354	*	652,584	674,126	1,451,632	4,734,380	107,959
Gambela region	290,616	15,755	17,662	16,294	31,954	*	16,632	22,555	29,681	132,808	4,535
Harari	69,933	2,776	4,042	6,728	9,586	*	3,168	5,235	9,344	28,495	487
Dire Dawa	51,422	3,492	2,518	4,786	7,075	*	2,899	2,995	6,251	21,059	*

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	33,020,392	3,837,027	1,608,261	1,373,634	2,143,322	4,084,154	2,033,931	2,367,796	15,572,268
Tigray	2,282,746	194,631	126,405	91,773	127,492	224,266	151,249	193,445	1,173,486
Afar	4,474,903	422,008	150,152	108,752	317,881	570,960	273,209	276,236	2,355,707
Amhara	9,650,637	1,130,728	440,446	392,994	538,933	1,192,097	586,628	625,459	4,743,350
Oromia	9,776,459	1,391,348	494,488	396,736	521,000	1,349,634	540,576	633,753	4,448,923
Somale	1,360,703	114,141	75,004	55,729	164,274	124,489	114,236	139,549	573,281
Benshangul-Gumuz	143,664	22,275	7,468	4,595	8,037	18,645	14,000	10,866	57,778
SNNP	5,214,185	547,948	308,356	318,252	456,938	590,304	346,062	478,784	2,167,540
Gambela region	41,026	6,010	2,108	2,092	3,524	5,056	3,331	3,029	15,876
Harari	5,661	465	772	*	*	*	*	793	2,555
Dire Dawa	70,408	7,473	3,063	2,465	*	8,203	4,473	5,882	33,771

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	38,963,879	4,100,172	1,971,957	1,758,898	3,043,216	5,064,541	2,790,446	3,094,745	7,139,905
Tigray	4,232,680	441,234	217,421	187,034	316,082	510,421	317,105	408,907	1,834,476
Afar	9,975,247	769,261	350,189	286,862	662,166	1,290,523	731,396	657,458	5,227,393
Amhara	6,805,724	891,497	413,880	315,512	595,957	927,889	454,485	449,767	2,756,737
Oromia	9,082,745	1,174,849	496,720	415,724	655,692	1,284,592	603,197	703,153	3,748,819
Somale	2,826,424	202,693	138,777	140,379	245,094	303,895	221,725	302,005	1,271,856
Benshangul-Gumuz	524,316	68,819	33,590	19,203	29,684	73,822	50,875	45,065	203,257
SNNP	5,116,030	508,241	296,408	373,285	511,664	626,329	379,808	494,913	1,925,381
Gambela region	133,246	15,991	7,749	7,575	8,878	18,093	10,286	10,159	54,515
Harari	81,466	8,045	6,920	5,084	5,596	7,689	7,784	7,718	32,630
Dire Dawa	186,002	19,542	10,303	8,239	12,404	21,289	13,784	15,601	84,839

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

Geographic Area	HORSES AND DONKEYS									
	HORSES					DONKEYS				
		MALE		FEMALE			MALE		FEMALE	
	ALL HORSES	< 3 Years	3 Yrs & more	< 3 Years	3 Yrs & more	ALL DONKEYS	< 3 Years	3 Yrs & more	< 3 Years	3 Yrs & more
Ethiopia	1,930,808	170,925	839,199	162,786	757,898	9,655,441	130,591	3,273,497	105,310	4,146,043
Tigray	*		*		-	978,642	120,544	404,817	95,659	357,622
Afar	*	*	*		-	446,904	54,775	127,994	47,743	216,392
Amhara	363,242	33,027	141,923	31,005	157,287	3,529,748	505,253	1,063,180	461,941	1,499,375
Oromia	1,199,659	111,716	529,800	105,610	452,533	3,641,131	356,745	1,236,052	407,577	1,640,758
Somale	-	-	-	-	-	200,639	25,537	87,054	17,604	70,444
Benshangul-Gumuz	*	*	1,675	*	*	88,533	10,113	45,819	6,818	25,783
SNNP	362,208	25,663	163,535	25,611	147,399	735,018	53,714	295,139	64,426	321,739
Gambela region	*	*	*		*	700	*	526	*	*
Harari	-	-	-		-	14,889	1,291	7,956	*	4,647
Dire Dawa	*	-	*		-	19,238	2,581	4,961	2,498	9,198

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

Geographic Area	MULES					CAMELS				
		MALE		FEMALE			MALE		FEMALE	
	All Mules	< 3 Years	3 Years and Older	< 3 Years	3 Years and Older	All Camels	< 4 Years	4 Years and Older	< 4 Years	4 Years and Older
Ethiopia	370,552	15,787	164,334	16,861	173,570	1,760,870	207,280	334,701	293,509	925,381
Tigray	12,026	*	7,448	-	4,099	52,905	2,629	46,765	*	*
Afar	*	-	*	-	-	1,118,981	128,010	155,478	198,301	637,193
Amhara	155,195	13,880	54,218	8,172	78,925	35,682	*	32,428	-	-
Oromia	139,439	*	69,398	*	64,395	294,110	38,633	40,739	62,450	152,289
Somale	-	-	-	-	-	249,475	33,471	55,575	30,428	130,001
Benshangul-Gumuz	1,522	-	*	-	*					
SNNP	61,255	*	31,960	3,441	24,824					
Gambela region	*	-	*	-	321					
Harari	-	-	-	-	-	*	*	*	*	*
Dire Dawa	-	-	-	-	-	7,588	1,066	3,452	946	2,124

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

Geographic Area	CATTLE AGED 3 – 10 YEARS									
		MALE				FEMALE				
	Total	Draught	Beef	Breeding	Other	Milk	Draught	Beef	Breeding	Other
Ethiopia	38,266,009	14,652,012	501,930	737,638	609,638	7,090,619	111,081	68,946	13,601,813	892,332
Tigray	3,066,896	1,492,541	*	28,275	10,874	46,328	12,421	*	1,462,498	10,774
Afar	1,093,941	39,343	7,419	65,643	6,492	358,342	-	*	614,245	*
Amhara	10,654,595	5,273,819	65,557	75,834	116,034	397,585	56,050	21,699	4,503,107	144,912
Oromia	15,294,634	5,834,477	287,956	273,563	165,083	2,789,712	26,141	30,018	5,674,335	213,350
Somale	342,216	61,059	10,931	18,204	*	104,479	*	-	146,445	-
Benshangul-Gumuz	365,016	128,423	*	4,392	*	50,331	8,862	-	170,507	*
SNNP	7,217,733	1,804,191	119,228	250,041	309,894	3,292,419	6,930	11,308	903,417	520,305
Gambela region	164,762	9,375	*	20,080	*	39,620	*	*	90,801	*
Harari	38,080	4,982	3,544	996	*	5,947	*	*	21,731	*
Dire Dawa	28,135	3,804	2,485	*	*	5,856	-	*	14,728	359

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

Geographic Area	SHEEP AGED 2 YEARS AND OLDER								
		MALE				FEMALE			
	Total	Mutton/Meat	Wool	Breeding	Other	Mutton/Meat	Wool	Breeding	Other
Ethiopia	17,715,589	694,174	22,325	1,362,150	64,672	62,804	108,423	15,342,703	58,337
Tigray	1,300,978	12,121	*	102,411	10,428	3,626	9,588	1,159,119	1,154
Afar	2,673,587	26,828	*	288,369	*	2,627	25,990	2,316,847	10,242
Amhara	5,282,284	233,389	*	266,542	33,756	21,944	22,568	4,678,640	20,199
Oromia	4,969,923	234,430	*	259,700	14,576	17,270	42,065	4,366,454	23,134
Somale	737,555	62,776	*	97,876	*	6,798	-	565,584	900
Benshangul-Gumuz	65,815	*	-	5,217	*	-	341	56,564	873
SNNP	2,624,479	120,107	*	336,381	-	10,174	7,277	2,148,428	1,662
Gambela region	19,400	946	*	2,081	*	38	507	15,176	155
Harari	2,719	*	-	-	-	-	-	2,555	-
Dire Dawa	38,849	*	-	*	-	328	88	33,336	19

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

Geographic Area	GOATS AGED 2 YEARS AND OLDER							
		MALE			FEMALE			
	Total	Meat	Breeding	Other	Meat	Milk	Breeding	Other
Ethiopia	20,183,121	946,857	1,991,497	104,862	65,691	2,357,772	14,685,856	30,586
Tigray	2,150,557	45,534	250,296	20,252	*	11,545	1,803,697	10,334
Afar	5,889,558	63,146	593,794	*	11,684	1,320,851	3,891,946	*
Amhara	3,352,694	310,671	259,498	25,788	6,047	15,101	2,727,679	7,911
Oromia	4,404,510	271,229	343,096	41,367	14,580	549,704	3,181,257	*
Somale	1,516,950	115,881	122,812	*	*	154,750	1,097,427	*
Benshangul-Gumuz	232,942	*	20,565	*	*	*	199,596	*
SNNP	2,437,046	123,189	384,622	*	3,566	282,090	1,635,855	3,870
Gambela region	63,393	1,046	7,774	*	*	7,763	44,312	*
Harari	38,226	3,380	2,023	*	*	1,799	30,745	-
Dire Dawa	97,243	5,347	*	*	*	11,058	73,341	*

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

Geographic Area	HORSES AGED 3 YEARS AND OLDER						
		MALE			FEMALE		
	Total	Transportation	Draught	Other	Transportation	Draught	Other
Ethiopia	1,597,097	705,160	126,234	7,805	549,271	108,027	100,599
Tigray	*	*	-	-	-	-	-
Afar	*	*	-	-	-	-	-
Amhara	299,210	49,339	92,583	-	37,469	90,422	29,396
Oromia	982,333	512,301	11,932	5,566	394,220	11,013	47,301
Somale	-	-	-	-	-	-	-
Benshangul-Gumuz	*	*	*	-	*	-	-
SNNP	310,935	139,928	21,369	*	116,904	6,593	23,902
Gambela region	*	*	-	-	*	-	-
Harari	-	-	-	-	-	-	-
Dire Dawa	*	*	-	-	-	-	-

41

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	7,419,540	2,653,049	560,576	59,872	3,270,651	741,333	134,059
Tigray	762,439	361,768	41,784	*	327,182	28,550	1,890
Afar	344,385	127,339	-	*	213,047	-	*
Amhara	2,562,555	716,340	335,824	11,016	913,200	539,221	46,955
Oromia	2,876,809	1,098,465	120,167	17,419	1,460,119	125,704	54,935
Somale	157,498	85,737	*	*	69,629	*	*
Benshangul-Gumuz	71,601	10,752	27,847	7,219	7,257	14,968	3,558
SNNP	616,878	240,704	32,787	21,648	266,823	31,746	23,171
Gambela region	613	526	-	-	*	-	-
Harari	12,603	6,571	1,223	*	4,265	*	-
Dire Dawa	14,158	4,847	*	-	9,044	*	*

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	337,904	143,279	17,243	*	151,796	19,315	*
Tigray	11,547	7,448	-	-	4,099	-	-
Afar	*	*					
Amhara	133,143	41,436	12,528	*	67,327	*	*
Oromia	133,793	65,854	*	*	61,894	*	-
Somale	-	-			-		
Benshangul-Gumuz	1,522	-	*	-	*	*	*
SNNP	56,784	27,850	*	*	17,933	5,346	*
Gambela region	*	*	*		321	-	-
Harari	-	-	-		-		
Dire Dawa	-	-	-		-		-

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

Geographic Area	TOTAL	MALE				FEMALE				
		Transportation	Meat	Draught	Other	Meat[8]	Transportation	Draught	Milk	Others
Ethiopia	1,260,082	275,950	24,403	11,135	23,214	*	77,087	*	658,409	186,650
Tigray	49,339	40,145	-	6,620	-	-	*	*	-	-
Afar	792,671	137,054	*	-	9,869	*	37,334	-	520,257	78,900
Amhara	32,428	30,253	-	*	-	-	-	-	-	-
Oromia	193,027	29,658	*	*	*	-	*	-	104,160	*
Somale	185,576	35,387	8,524	-	11,664	*	21,974	-	32,356	73,574
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	-	-	-	-	-	-	-
Gambela region	-	-	-	-	-	-	-	-	-	-
Harari	*	-	*			*	*		*	*
Dire Dawa	5,576	3,452	-	-	-	-	*	*	875	*

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

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	61,510,258	26,774,828	443,663	47,283	33,455,533	702,323	86,628
Tigray	4,850,412	2,334,182	46,989	4,323	2,408,546	44,153	12,219
Afar	1,791,565	381,716	-	-	1,409,849	-	-
Amhara	16,407,220	8,158,772	187,490	18,037	7,786,451	226,778	29,692
Oromia	24,508,504	10,635,803	176,168	22,835	13,350,702	285,456	37,540
Somale	589,503	211,477	-	-	378,026	-	-
Benshangul-Gumuz	626,343	258,253	*	-	367,750	*	-
SNNP	12,324,739	4,669,254	32,717	*	7,470,392	143,406	*
Gambela region	290,616	84,354	*	-	206,110	*	-
Harari	69,933	23,126	*	-	44,174	2,260	*
Dire Dawa	51,422	17,890	-	-	33,532	-	-

---

[8] The places for Meat and Transportation columns for this table has been switched in the previous years reports and should be corrected as it is in this table just by switching transportation as meat and vice versa.

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

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	33,020,392	8,927,129	32,140	*	23,999,986	57,457	*
Tigray	2,282,746	539,783	*	-	1,740,894	*	-
Afar	4,474,903	998,792	-	-	3,476,111	-	-
Amhara	9,650,637	2,472,804	27,584	*	7,099,950	47,585	-
Oromia	9,776,459	2,803,572	-	-	6,971,478	*	*
Somale	1,360,703	409,148	-	-	951,555	-	-
Benshangul-Gumuz	143,664	42,115	-	*	101,289	-	-
SNNP	5,214,185	1,627,455	*	-	3,575,073	7,618	-
Gambela region	41,026	13,734	-	-	27,292	-	-
Harari	5,661	1,648	-	-	4,012	-	-
Dire Dawa	70,408	18,078	-	-	52,331	-	-

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

Geographic Area	Total	MALE			FEMALE		
		Indigenous	Hybrid	Exotic	Indigenous	Hybrid	Exotic
Ethiopia	38,963,879	10,873,171	*	-	28,081,316	*	*
Tigray	4,232,680	1,161,233	*	-	3,064,394	*	*
Afar	9,975,247	2,068,477	-	-	7,906,769	-	-
Amhara	6,805,724	2,216,846	-	-	4,588,878	-	-
Oromia	9,082,745	2,742,984	-	-	6,339,761	-	-
Somale	2,826,424	726,943	-	-	2,099,481	-	-
Benshangul-Gumuz	524,316	151,297	-	-	372,844	-	175
SNNP	5,116,030	1,689,065	*	-	3,424,801	*	-
Gambela region	133,246	40,192	-	-	93,053	-	-
Harari	81,466	25,644	-	-	55,822	-	-
Dire Dawa	186,002	50,488	-	-	135,513	-	-

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	59,420,266	5,998,092	3,786,969	6,628,081	1,811,184	21,646,111	19,549,829
Tigray	6,032,251	454,633	388,264	747,999	265,747	2,036,688	2,138,920
Afar	185,372	22,090	9,459	21,151	8,200	65,421	59,051
Amhara	20,501,879	1,707,181	1,354,485	2,275,066	565,085	8,708,970	5,891,091
Oromia	20,766,720	2,532,410	1,174,038	2,037,559	661,683	6,701,260	7,659,771
Somale	250,418	*	21,874	*	12,687	48,964	78,930
Benshangul-Gumuz	1,480,468	125,975	126,398	203,239	30,290	674,281	320,284
SNNP	9,542,274	1,010,003	651,591	1,219,790	237,820	3,211,463	3,211,607
Gambela region	490,448	71,292	50,358	61,726	23,263	162,604	121,206
Harari	76,992	9,450	6,123	6,145	4,877	21,803	28,593
Dire Dawa	93,444	9,616	4,380	22,884	1,532	14,657	40,375

b. Indigenous Breeds

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	50,914,251	5,170,449	3,172,096	5,265,263	1,543,938	20,145,480	15,617,027
Tigray	4,153,375	331,745	290,894	481,035	193,183	1,634,772	1,221,746
Afar	174,506	21,791	9,459	20,989	8,200	65,421	48,646
Amhara	17,958,175	1,523,827	1,204,808	1,966,334	487,827	8,081,423	4,693,955
Oromia	18,298,132	2,217,855	996,938	1,652,975	579,438	6,396,758	6,454,167
Somale	248,611	*	21,874	*	12,687	48,964	77,123
Benshangul-Gumuz	1,467,128	122,063	125,041	202,339	30,141	673,615	313,929
SNNP	8,002,950	812,090	465,392	836,092	204,983	3,047,502	2,636,891
Gambela region	464,472	67,374	48,388	56,925	21,782	160,624	109,379
Harari	72,486	8,943	5,545	5,568	4,498	21,803	26,131
Dire Dawa	74,415	9,318	3,756	10,485	1,198	14,599	35,059

c. Hybrid

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	4,157,556	444,048	345,063	566,383	94,932	1,005,740	1,701,391
Tigray	618,801	57,527	38,220	62,959	25,533	191,032	243,531
Afar	*	*	-	*	-	-	*
Amhara	1,278,725	90,188	95,332	128,588	26,157	491,981	446,479
Oromia	1,307,354	175,423	99,185	159,859	24,238	195,433	653,217
Somale	*	-	-	-	-	-	*
Benshangul-Gumuz	9,454	2,481		-		-	3,901
SNNP	928,873	117,217	110,293	211,239	18,264	124,764	347,096
Gambela region	7,762	909	-	1,247	*	*	3,159
Harari	3,162	*	*	*	-	-	1,763
Dire Dawa	2,781	*	*	-	*	*	-

d. Exotic Breeds

Geographic Area	Total Poultry	Cocks	Cockerels	Pullets	Non-Laying Hens	Chicks	Laying Hens
Ethiopia	4,348,459	383,596	269,810	796,436	172,315	494,891	2,231,411
Tigray	1,260,075	65,362	59,150	204,006	47,030	210,884	673,643
Afar	*	-	-	-	-	-	*
Amhara	1,264,979	93,166	54,345	180,143	51,101	135,567	750,657
Oromia	1,161,235	139,132	77,914	224,725	58,007	109,069	552,387
Somale	-	-	-	-	-	-	
Benshangul-Gumuz	3,886	1,432	*	*	*	*	2,454
SNNP	610,451	80,696	75,906	172,459	14,573	39,198	227,620
Gambela region	18,213	-	1,551	3,554	*	*	8,669
Harari	-	*	*	*	*	-	-
Dire Dawa	16,248	*	-	11,323	-	*	3,715

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	7,075,188	58,588,152	6,794,424	2	54,367,925	80,164	2	951,706	200,600	2	3,268,521
Tigray	331,407	4,941,200	248,328	2	3,171,228	5,889	1	121,140	77,191	2	1,648,833
Afar	*	*	*	*	*	-	-	-	-	-	-
Amhara	1,208,124	10,629,137	1,155,503	2	9,986,915	8,464	1	62,414	44,157	1	579,808
Oromia	3,634,008	26,787,107	3,546,926	2	25,646,839	34,427	2	477,317	52,654	2	662,951
Somale	*	*	*	*	*	-	-	-	-	-	-
Benshangul-	574,134	2,909,490	572,748	2	2,896,224	864	2	7,606	*	*	*
SNNP	1,227,546	11,171,645	1,171,268	2	10,523,356	*	2	282,355	25,786	2	365,934
Gambela region	75,265	1,989,471	74,948	2	1,983,614	*	*	*	*	*	*
Harari	1,077	6,073	1,077	2	6,073	-	-	-	-	-	-
Dire Dawa	1,764	7,007	1,764	1	6,655	-	*	*	-	-	-

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	12,012,278	5,709,852	6,302,426	4,756,108	2,939,697	1,816,410	967,602	386,031	581,570
Tigray	920,636	442,735	477,901	333,238	233,863	99,375	*	*	*
Afar	545,574	209,092	336,483	24,742	7,614	17,128	2,226	*	*
Amhara	2,675,108	1,344,744	1,330,364	1,483,807	1,069,129	414,678	95,001	38,771	56,230
Oromia	4,813,765	2,267,807	2,545,958	1,826,446	1,088,092	738,355	458,364	166,585	291,779
Somale	155,030	79,178	75,852	6,253	3,553	2,700	6,295	*	5,224
Benshangul-Gumuz	125,675	59,002	66,673	51,056	23,082	27,974	1,535	*	1,258
SNNP	2,668,573	1,254,844	1,413,728	1,007,277	503,122	504,155	347,255	154,792	192,463
Gambela region	79,472	38,829	40,643	16,310	7,542	8,768	10,780	*	7,763
Harari	15,901	7,377	8,525	4,167	2,148	2,019	*	*	*
Dire Dawa	12,543	6,244	6,299	2,811	1,553	1,258	1,376	*	1,074

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	14,055,263	6,657,126	7,398,138	5,336,218	2,813,838	2,522,380	712,193	158,491	553,702
Tigray	827,298	385,053	442,245	343,154	158,784	184,370	*	*	*
Afar	1,645,798	656,886	988,911	80,086	30,402	49,683	39,770	5,806	33,964
Amhara	5,026,301	2,446,368	2,579,933	2,791,602	1,607,234	1,184,368	218,236	52,007	166,229
Oromia	4,067,667	2,006,824	2,060,843	1,399,316	674,403	724,913	238,157	56,846	181,310
Somale	431,943	189,736	242,207	22,150	10,438	11,712	10,244	*	*
Benshangul-Gumuz	75,453	34,017	41,436	26,822	12,503	14,319	*	-	*
SNNP	1,940,009	918,032	1,021,977	659,017	311,842	347,175	139,250	24,834	114,416
Gambela region	14,839	7,625	7,214	11,438	6,681	4,757	*	*	*
Harari	1,790	1,189	602	1,272	1,000	*	*	-	*
Dire Dawa	24,167	11,398	12,769	1,361	551	810	1,056	*	988

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	15,775,541	6,965,212	8,810,329	2,864,132	1,149,225	1,714,907	574,460	108,722	465,738
Tigray	1,663,062	753,727	909,335	343,923	123,227	220,696	*	*	*
Afar	3,585,152	1,328,663	2,256,488	130,366	38,674	91,692	51,846	5,646	46,200
Amhara	3,454,030	1,673,563	1,780,467	1,115,841	479,409	636,432	128,554	26,213	102,341
Oromia	3,854,474	1,819,911	2,034,563	705,630	278,024	427,605	135,393	18,437	116,956
Somale	907,050	356,280	550,770	39,311	21,788	17,523	*	*	*
Benshangul-Gumuz	315,008	139,138	175,870	74,317	20,253	54,064	-	-	-
SNNP	1,840,939	824,090	1,016,849	430,348	176,272	254,076	102,420	15,073	87,347
Gambela region	53,333	22,479	30,854	11,296	5,350	5,946	2,453	537	1,916
Harari	30,882	14,781	16,101	6,618	2,970	3,648	1,235	361	874
Dire Dawa	71,611	32,581	39,030	6,483	3,258	3,226	3,567	672	2,896

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	148,205	68,736	79,469	197,327	117,635	79,691	17,950	3,997	13,953
Tigray	*	-	*	*	*	*	*	*	-
Afar	*	-	*	*	*	*	-	-	-
Amhara	34,842	15,386	19,456	47,644	25,457	22,188	*	*	*
Oromia	91,174	44,552	46,622	96,155	59,521	36,633	6,579	*	5,811
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	-	-	-	*	-	*	-	-	-
SNNP	19,498	8,650	10,848	47,726	28,653	19,073	3,881	*	3,308
Gambela region	*	*	-	309	309	-	-	-	-
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	911,013	471,455	439,558	862,668	497,502	365,165	73,365	26,512	46,853
Tigray	75,521	42,764	32,757	102,238	71,054	31,184	*	*	*
Afar	57,093	27,861	29,232	6,128	2,651	3,477	*	*	*
Amhara	385,310	201,603	183,707	348,656	194,327	154,328	14,399	3,631	10,768
Oromia	310,346	157,667	152,678	290,189	154,515	135,675	24,377	8,852	15,525
Somale	14,461	9,633	4,829	*	*	*	5,279	*	*
Benshangul-Gumuz	11,023	5,764	5,259	24,192	16,887	7,305	*	*	-
SNNP	54,233	24,772	29,461	84,468	53,379	31,089	16,377	3,208	13,169
Gambela region	*	*	-	*	*	-	-	-	-
Harari	*	*	*	*	*	*	*	-	*
Dire Dawa	2,466	1,220	1,245	1,018	385	632	159	*	*

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	29,734	17,988	11,746	66,228	30,669	35,559	*	*	*
Tigray	*	*	-	2,965	2,568	*	-	-	-
Afar	-	-	-	*	*	-	*	-	*
Amhara	24,903	15,858	*	38,925	14,974	23,951	*	*	-
Oromia	*	*	*	14,662	8,075	6,587	*	*	-
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	-	-	-	*	*	*	-	-	-
SNNP	*	-	*	7,702	3,387	4,315	-	-	-
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	315,137	129,907	185,230	59,174	43,268	15,905	4,516	*	*
Tigray	*	*	*	15,620	15,620	-	-	-	-
Afar	223,463	90,829	132,634	12,906	6,785	6,121	*	*	*
Amhara	-	-	-	13,510	12,838	*	-	-	-
Oromia	57,554	20,824	36,730	13,521	5,161	8,360	*	-	*
Somale	32,338	17,282	15,056	*	*	*	*	-	*
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	*	*	*	-	-	-
Gambela region	-	-	-	-	-	-	-	-	-
Harari	*	*	*	-	-	-	-	-	-
Dire Dawa	643	363	*	*	*	*	*	*	-

h. Poultry

Geographic Area	Total Number of Births	Total Number of Purchases	Total Acquired by any Other Means
Ethiopia	84,368,731	16,589,837	927,799
Tigray	8,150,103	2,633,991	134,567
Afar	119,368	10,455	*
Amhara	35,874,140	6,036,921	359,344
Oromia	24,124,372	4,540,898	249,293
Somale	156,787	7,398	*
Benshangul-Gumuz	2,809,964	267,811	4,976
SNNP	12,513,655	3,006,264	142,191
Gambela	463,811	77,200	4,834
Harari	75,080	5,721	*
Dire Dawa	81,452	3,178	20,288

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	7,046,464	4,357,954	688,510	398,673	3,283	75,391	1,267,746	,645,014	,622,732	00,392	00,885	99,507
Tigray	571,366	374,486	196,880	47,489	6,105	21,383	250,079	102,983	147,095	31,526	15,913	15,613
Afar	182,971	94,832	88,138	14,810	6,920	7,890	537,776	122,940	414,836	8,743	3,096	5,646
Amhara	2,118,682	1,364,552	754,130	139,736	1,918	67,818	843,995	366,272	477,723	14,428	51,572	62,855
Oromia	2,686,913	1,662,588	024,326	114,597	3,781	50,815	,621,429	661,748	959,681	81,584	16,778	64,806
Somale	24,349	16,154	8,195	2,174	*	*	80,492	26,187	54,304	*	*	*
Benshangul-Gumuz	62,942	35,887	27,055	3,632	2,109	1,522	52,839	19,977	32,861	2,685	*	1,337
SNNP	1,376,283	795,210	581,073	75,310	0,697	24,613	838,878	331,703	507,175	45,620	08,050	37,569
Gambela	14,595	9,019	5,576	617	377	*	35,002	10,511	24,491	10,640	2,192	8,448
Harari	3,871	1,961	1,910	*	*	*	3,268	1,356	1,912	422	*	275
Dire Dawa	4,492	3,267	1,226	*	*	-	3,989	1,335	2,654	496	200	295

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	7,775,774	179,071	96,703	03,681	54,887	48,794	41,753	57,025	84,728	2,073	4,137	97,936
Tigray	437,450	242,494	94,955	17,638	09,946	07,691	41,724	36,671	05,053	1,630	4,400	7,230
Afar	1,052,152	507,150	45,002	59,639	60,466	99,173	89,462	07,753	81,709	4,186	4,890	59,296
Amhara	3,071,756	545,840	25,916	93,539	66,361	27,178	80,654	62,029	18,625	9,761	7,848	11,913
Oromia	2,301,227	299,775	001,452	18,142	64,142	54,000	21,296	62,762	58,533	5,874	7,048	58,826
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	34,754	18,860	15,895	11,027	9,313	1,715	35,809	14,695	21,114	*	*	*
SNNP	719,952	359,935	360,018	03,612	64,689	38,923	55,255	70,358	84,897	2,713	6,095	46,618
Gambela	6,588	4,305	2,283	3,447	3,033	414	5,378	2,515	2,863	*	*	*
Harari	*	*	*	1,437	1,377	*	*	*	*	-	-	-
Dire Dawa	6,047	4,309	1,739	4,161	4,050	*	7,861	1,894	5,967	1,695	568	1,128

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	7,183,552	3,890,475	3,293,077	,871,570	49,817	21,753	729,443	1,183	168,260	35,065	17,265	7,800
Tigray	825,279	430,571	394,707	513,065	64,507	48,558	817,396	6,168	571,228	15,221	4,025	11,196
Afar	2,080,551	1,140,476	940,074	479,260	49,887	29,373	800,443	4,122	986,320	57,122	27,038	30,084
Amhara	1,570,613	763,337	807,277	,114,373	73,858	40,515	469,329	7,620	911,709	84,522	20,123	64,399
Oromia	1,738,368	1,007,156	731,212	403,895	98,624	05,271	420,664	3,342	927,322	15,820	29,830	85,990
Somale	347,818	219,210	128,608	134,917	97,095	37,821	415,917	4,508	261,409	*	*	*
Ben-Gumuz	98,936	49,705	49,231	50,081	35,780	14,301	225,192	9,064	146,129	2,072	*	1,715
SNNP	477,938	251,885	226,053	161,060	17,163	43,897	517,731	6,271	321,461	46,648	9,635	37,013
Gambela	12,284	7,024	5,260	3,687	2,633	1,054	28,498	0,553	17,945	1,406	467	938
Harari	6,743	3,480	3,263	5,149	4,569	580	6,069	2,160	3,909	1,377	*	1,173
Dire Dawa	25,021	17,629	7,392	6,083	5,700	383	28,204	7,375	20,829	3,854	1,371	2,483

d. Horses

Geographic Area	Number of Sales			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	141,616	89,725	51,891	204,954	95,871	109,083	14,229	7,454	6,775
Tigray	*	*	-	*	-	*	-	-	-
Afar	-	-	-	*	*	*	-	-	-
Amhara	46,476	27,608	18,868	48,760	22,391	26,368	*	*	*
Oromia	67,955	43,333	24,622	106,371	50,114	56,257	*	*	*
Somale	-	-	-	*	*	*	*	*	-
Benshangul-Gumuz	*	-	*	*	-	*	-	-	-
SNNP	26,566	18,362	8,204	39,311	19,480	19,831	6,929	3,479	3,450
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	499,606	273,460	226,146	579,085	277,642	301,443	24,168	8,330	15,838
Tigray	43,567	27,068	16,500	36,799	17,984	18,814	*	*	*
Afar	9,643	6,590	3,053	63,146	24,795	38,351	*	-	*
Amhara	237,100	124,993	112,107	211,252	84,817	126,436	8,175	*	5,878
Oromia	157,884	87,180	70,704	203,791	115,103	88,688	9,106	*	*
Somale	*	*	-	5,934	*	*	2,004	*	1,624
Benshangul-Gumuz	6,892	5,246	1,646	15,548	8,282	7,266	-	-	-
SNNP	42,544	20,578	21,965	41,351	25,517	15,834	*	*	*
Gambela	*	*	-	*	*	*	-	-	-
Harari	*	*	*	517	451	*	*	-	*
Dire Dawa	*	*	*	575	*	499	*	*	-

f. Mules

Geographic Area	Number of Sales			Number of Deaths			Offerings		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ethiopia	38,519	23,657	14,862	28,140	16,441	11,700	*	-	*
Tigray	1,973	1,973	-	*	*	-	-	-	-
Afar	*	*	-	*	-	*	-	-	-
Amhara	22,956	14,460	8,496	15,388	8,899	6,489	-	-	-
Oromia	*	*	*	4,997	*	*	*	-	*
Somale	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	*	*	-	*	-	*	-	-	-
SNNP	6,410	4,156	*	4,938	2,090	2,848	-	-	-
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	94,268	76,882	17,386	9,413	*	*	142,554	40,914	101,640	2,903	*	*
Tigray	9,410	9,132	*	-	-	-	7,519	4,189	*	*	*	-
Afar	51,282	38,150	13,132	*	*	*	103,211	26,273	76,939	2,347	*	*
Amhara	10,148	10,148	-	*	*	-	*	*	-	-	-	-
Oromia	19,180	15,841	*	*	*	-	20,823	*	16,942	-	-	-
Somale	*	*	*	*	*	*	7,207	*	4,167	-	-	-
Benshangul-Gumuz	-	-	-	-	-	-	-	-	-	-	-	-
SNNP	-	-	-	-	-	-	-	-	-	-	-	-
Gambela	-	-	-	-	-	-	-	-	-	-	-	-
Harari	*	-	*	-	-	-	*	*	-	*	*	*
Dire Dawa	222	*	*	-	-	-	*	*	*	-	-	-

h. Poultry

Geographic Area	Total Number of Sales	Total Number of Slaughters	Total Number of Deaths	Offerings
Ethiopia	14,822,318	14,156,628	60,215,831	529,673
Tigray	1,884,924	2,847,628	5,802,747	91,916
Afar	13,029	*	95,951	*
Amhara	6,523,562	7,138,832	22,461,167	118,520
Oromia	4,140,630	2,725,772	19,276,424	179,308
Somale	14,373	*	144,882	-
Benshangul-Gumuz	305,031	425,008	2,085,281	9,716
SNNP	1,871,046	962,511	9,914,689	115,816
Gambela	51,440	37,457	293,399	3,736
Harari	7,005	2,478	65,075	1,463
Dire Dawa	11,279	350	76,216	3,861

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	7,090,619	12,405,035	1.364	6	3,284,452,075	658,409	465,198	2.877	9	282,170,532
Tigray	46,328	884,552	1.239	6	222,423,725	-	*	*	*	*
Afar	358,342	541,829	1.535	5	134,936,790	520,257	272,969	2.938	8	187,934,504
Amhara	397,585	2,891,417	1.197	6	672,983,493	-	*	-	-	-
Oromia	2,789,712	5,015,413	1.447	6	1,387,939,498	104,160	141,561	2.496	10	57,290,291
Somale	104,479	149,639	1.93	5	45,213,521	32,356	43,550	3.608	8	35,830,379
Benshangul-Gumuz	50,331	140,554	1.251	6	35,276,534	-	-	-	-	-
SNNP	3,292,419	2,675,549	1.399	6	744,452,452	-	-	-	-	-
Gambela	39,620	75,786	1.847	6	31,303,491	-	-	-	-	-
Harari	5,947	16,911	1.899	6	6,329,807	*	*	*	*	*
Dire Dawa	5,856	13,384	1.686	5	3,592,764	875	882	2.137	7	467,416

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	15,617,027	4	21	12	82,243,437
Tigray	1,221,746	4	22	13	7,969,275
Afar	48,646	4	21	12	228,494
Amhara	4,693,955	4	23	12	26,023,293
Oromia	6,454,167	4	21	12	33,387,667
Somale	77,123	4	19	12	443,519
Benshangul-Gumuz	313,929	3	18	12	1,330,901
SNNP	2,636,891	3	20	11	12,113,130
Gambela	109,379	3	16	11	469,942
Harari	26,131	3	20	11	119,391
Dire Dawa	35,059	4	20	11	157,825

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	1,701,391	5	49	40	30,593,697
Tigray	243,531	5	35	26	3,387,532
Afar	645	*	20	20	*
Amhara	446,479	4	41	33	4,020,118
Oromia	653,217	5	60	54	12,230,939
Somale	-	*	*	*	*
Benshangul-Gumuz	3,901	*	*	*	*
SNNP	347,096	5	48	38	*
Gambela	3,159	4	37	24	31,535
Harari	1,763	*	*	*	*
Dire Dawa	*	5	20	14	*

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	2,231,411	-	175	144	38,636,328
Tigray	673,643	-	209	178	12,798,981
Afar	*	-	*	*	*
Amhara	750,657	-	197	154	13,215,589
Oromia	552,387	-	133	114	9,745,673
Somale	*	-	*	*	*
Benshangul-Gumuz	2,454	-	*	*	*
SNNP	227,620	-	113	95	2,565,444
Gambela	8,669	-	89	77	98,094
Harari	*	-	*	*	*
Dire Dawa	3,715	-	22	22	7,739

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	31,550,052	*	9,638,403	3,364,511	5,260,478	3,261,736
Tigray	4,352,594	1,340,602	1,247,963	857,525	582,420	324,084
Afar	29,278	*	*	13,402	*	-
Amhara	7,213,565	2,887,745	2,207,322	564,261	843,775	710,462
Oromia	12,594,800	3,377,383	3,921,871	1,022,095	3,038,720	1,234,731
Somale	44,986	*	-	*	-	*
Benshangul-Gumuz	490,001	67,688	72,086	136,534	135,453	*
SNNP	6,804,928	2,342,930	2,182,722	735,183	643,094	900,999
Gambela	10,584	*	2,032	*	3,406	2,723
Harari	*	*	*	*	*	-
Dire Dawa	4,866	*	*	-	3,753	*

b. Sheep

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	8,560,869	1,343,694	912,911	1,789,922	2,292,028	2,222,315
Tigray	1,874,278	305,182	158,896	182,427	959,223	268,550
Afar	340,239	-	*	239,249	*	*
Amhara	3,956,816	850,319	487,390	561,221	679,541	1,378,344
Oromia	1,291,815	84,097	147,736	364,394	353,197	342,391
Somale	152,869	*	-	82,519	-	*
Benshangul-Gumuz	88,821	*	*	*	*	67,043
SNNP	849,491	88,511	114,879	340,347	200,197	105,556
Gambela	926	-	*	*	*	*
Harari	-	-	-	-	-	-
Dire Dawa	5,614	-	*	*	4,241	*

c. Goats

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	8,654,647	954,324	689,823	2,293,365	2,778,738	1,938,397
Tigray	2,822,630	398,890	266,550	299,177	1,493,314	364,701
Afar	898,599	-	*	594,031	*	*
Amhara	1,481,955	279,086	186,565	215,193	323,196	477,915
Oromia	1,829,944	102,549	96,775	643,263	537,370	449,987
Somale	388,873	*	-	114,430	-	*
Benshangul-Gumuz	259,351	-	-	109,721	*	145,872
SNNP	951,535	*	*	316,871	148,994	228,432
Gambela	*	-	-	*	*	*
Harari	*	*	-	*	*	*
Dire Dawa	17,706	-	*	*	14,318	*

d. Camels

Geographic Area	Total Vaccinated	Vaccinated against:				
		Anthrax	Blackleg	Pleuro-Pneumonia	Hemorrhagic Septicemia	Others
Ethiopia	91,940	7,667	30,179	*	8,723	*
Tigray	21,974	4,133	9,884	*	*	*
Afar	*	-	*	*	-	*
Amhara	*	*	*	-	*	*
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	*	8,122,059	8,474,242	1,549,286	129,658	36,478,947
Tigray	580,519	445,753	1,017,221	55,566	7,403	3,984,726
Afar	432,397	1,347,749	2,423,826	39,494	78,227	*
Amhara	2,810,752	2,726,178	1,758,385	547,513	*	14,375,632
Oromia	4,700,797	2,397,326	1,782,870	682,175	27,754	11,578,329
Somale	65,814	125,054	308,123	*	7,985	18,733
Benshangul-Gumuz	322,500	70,186	341,904	45,490	-	1,557,149
SNNP	2,151,063	996,538	774,963	171,110	-	4,686,082
Gambela	39,518	5,604	30,539	662	-	170,100
Harari	7,401	*	5,855	766	*	32,785
Dire Dawa	7,236	7,458	30,555	1,240	709	35,995

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

Geographic Area	Cattle	Sheep	Goats	Draught Animals	Camels	Poultry
Ethiopia	7,393,611	3,410,066	2,402,822	914,627	22,421	5,146,612
Tigray	259,370	191,575	337,791	25,001	4,003	551,861
Afar	20,277	86,653	173,226	*	2,659	*
Amhara	1,901,192	1,477,231	666,560	332,053	*	1,824,627
Oromia	3,406,135	1,188,436	642,254	430,052	5,729	1,773,854
Somale	23,702	*	77,196	*	*	-
Benshangul-Gumuz	309,803	53,553	223,386	27,524	-	350,541
SNNP	1,453,060	378,981	265,365	95,980	-	627,229
Gambela	11,049	1,733	5,226	*	-	13,033
Harari	4,095	*	1,424	*	*	*
Dire Dawa	4,927	1,827	10,395	538	269	1,745

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

Geographic Area	Cattle	Sheep	Goats	Horses	Donkeys	Mules	Camels	Poultry
Ethiopia	3,250,603	5,361,391	5,741,207	174,340	441,620	24,299	62,579	33,625,665
Tigray	161,077	361,747	614,815	*	25,987	*	*	3,163,734
Afar	363,585	1,133,709	1,915,362	*	27,288	-	41,565	*
Amhara	629,366	1,669,389	1,207,262	40,287	160,999	13,397	*	13,626,684
Oromia	1,262,482	1,413,083	1,139,201	89,408	174,424	4,997	14,807	10,791,484
Somale	33,313	76,098	167,208	*	*	-	*	*
Benshangul-Gumuz	44,360	27,371	196,423	*	14,289	*	-	1,470,953
SNNP	722,980	670,622	450,240	37,247	35,686	4,430	-	4,292,781
Gambela	26,816	3,631	24,075	*	*	-	-	158,716
Harari	3,119	*	5,237	-	*	-	*	28,393
Dire Dawa	3,506	5,617	21,385	*	555	*	*	31,812

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	1,017,144	1,580,362	1,988,236	30,614	137,465	3,842	79,974	26,590,166
Tigray	89,002	79,977	202,581	-	10,812	-	*	2,639,013
Afar	174,191	555,753	885,081	*	35,858	*	61,646	54,279
Amhara	214,629	311,266	262,067	8,473	50,253	*	*	8,834,483
Oromia	358,948	308,213	281,463	16,964	29,367	-	*	8,484,940
Somale	47,179	227,886	248,709	*	*	-	6,277	125,445
Benshangul-Gumuz	8,479	8,438	28,770	-	1,260	-	-	614,327
SNNP	115,898	84,633	67,492	*	5,664	*	-	5,621,909
Gambela	8,186	*	4,423	*	-	-	-	134,683
Harari	*	*	832	-	*	-	-	36,682
Dire Dawa	483	2,244	6,819	-	*	-	-	44,405

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	3,874,285	4,434,550	4,374,869	3,558,291	857,220	142,140	26,871	4,542	533
Tigray	374,023	360,142	375,034	282,110	77,205	10,863	-	-	-
Afar	208,004	34,824	45,588	52,960	48,964	17,448	2,415	160	-
Amhara	924,933	1,360,610	1,382,612	1,030,235	182,235	25,974	1,341	-	-
Oromia	1,395,053	1,515,298	1,525,246	1,530,434	438,461	55,842	1,692	-	-
Somale	63,056	33,626	38,878	41,202	9,925	1,068	-	-	-
Benshangul-Gumuz	154,124	25,888	23,052	30,244	15,287	4,547	-	-	-
SNNP	690,469	1,067,130	965,565	581,106	78,388	22,697	20,937	4,382	533
Gambela	43,659	7,676	4,104	6,187	6,521	3,701	486	-	-
Harari	13,996	18,189	8,564	1,809	132	-	-	-	-
Dire Dawa	6,966	11,167	6,226	2,006	102	-	-	-	-

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	11,145,269	3,773,280	1,629,390	694,452	24,844	5,999	67	-
Tigray	1,126,732	158,677	123,795	69,761	412	-	-	-
Afar	143,243	52,162	61,941	138,494	9,991	4,465	67	-
Amhara	3,044,559	1,017,866	639,339	204,706	1,470	-	-	-
Oromia	4,220,094	1,496,168	572,414	172,462	888	-	-	-
Somale	76,101	31,332	27,573	50,292	1,990	467	-	-
Benshangul-Gumuz	220,153	20,374	10,717	1,898	-	-	-	-
SNNP	2,195,184	981,796	188,799	54,368	9,993	1,067	-	-
Gambela	65,336	3,916	1,858	1,224	-	-	-	-
Harari	40,484	1,884	322	-	-	-	-	-
Dire Dawa	13,383	9,106	2,632	1,248	98	-	-	-

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	12,265,642	2,720,277	1,286,580	914,096	66,983	16,483	3,240	-
Tigray	1,014,362	164,052	142,593	154,424	3,534	412	-	-
Afar	38,176	37,389	47,761	242,510	31,994	9,826	2,707	-
Amhara	3,775,403	578,845	377,039	174,381	2,272	-	-	-
Oromia	4,584,027	1,190,181	489,558	195,390	2,870	-	-	-
Somale	44,335	26,281	30,599	73,569	10,969	2,002	-	-
Benshangul-Gumuz	165,835	44,897	28,740	13,483	187	-	-	-
SNNP	2,569,973	637,621	152,936	51,262	14,797	4,085	533	-
Gambela	52,570	8,946	6,136	4,682	-	-	-	-
Harari	16,806	21,440	4,084	360	-	-	-	-
Dire Dawa	4,153	10,625	7,135	4,036	361	157	-	-

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	15,952,139	1,194,925	117,410	8,827	-	10,882,538	5,766,328	568,597	53,409	2,429
Tigray	1,478,140	1,237	-	-	-	814,634	600,420	60,877	3,446	-
Afar	410,091	272	-	-	-	174,721	183,472	42,926	8,140	1,104
Amhara	4,639,614	256,174	11,519	633	-	2,554,532	2,138,817	204,519	10,072	-
Oromia	5,694,534	668,890	92,044	6,558	-	4,097,588	2,122,034	217,924	23,689	791
Somale	187,755	-	-	-	-	73,652	94,045	17,042	3,016	-
Benshangul-Gumuz	250,740	2,205	197	-	-	195,141	51,529	5,549	923	-
SNNP	3,150,532	265,441	13,599	1,635	-	2,856,416	551,908	18,406	3,944	533
Gambela	71,595	687	52	-	-	71,864	390	80	-	-
Harari	42,690	-	-	-	-	30,266	12,016	339	69	-
Dire Dawa	26,448	19	-	-	-	13,725	11,698	934	110	-

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	16,919,966	352,173	1,110	52	-	16,868,147	220,535	60,863	75,980	47,776
Tigray	1,467,830	11,547	-	-	-	1,434,398	43,579	1,122	278	-
Afar	410,262	101	-	-	-	220,002	73,840	33,632	47,745	35,144
Amhara	4,754,771	153,169	-	-	-	4,878,796	29,144	-	-	-
Oromia	6,333,008	127,908	1,110	-	-	6,372,621	49,482	17,362	18,175	4,386
Somale	187,755	-	-	-	-	140,694	21,174	8,254	9,492	8,141
Benshangul-Gumuz	251,620	1,522	-	-	-	253,142	-	-	-	-
SNNP	3,373,929	57,278	-	-	-	3,431,207	-	-	-	-
Gambela	71,634	648	-	52	-	72,334	-	-	-	-
Harari	42,690	-	-	-	-	42,287	239	67	69	28
Dire Dawa	26,467	-	-	-	-	22,665	3,078	426	221	77

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	7,837,114	7,546,877	1,870,356	17,331	1,623	-
Tigray	518,887	776,435	182,256	1,511	288	-
Afar	380,015	23,926	6,422	-	-	-
Amhara	1,800,003	2,439,467	657,104	10,575	791	-
Oromia	3,141,901	2,647,885	668,314	3,926	-	-
Somale	163,308	18,713	5,248	-	486	-
Benshangul-Gumuz	90,436	102,461	60,056	189	-	-
SNNP	1,670,062	1,491,023	269,611	511	-	-
Gambela	35,262	19,468	16,927	619	58	-
Harari	28,797	11,709	2,184	-	-	-
Dire Dawa	8,442	15,791	2,234	-	-	-

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	54.8	31.53	0.36	6.72	1.55	5.05
Tigray	100	35.81	42.89	0.38	13.63	1.53	5.76
Afar	100	94.34	2.86	-	0.55	1.48	0.77
Amhara	100	36.26	41.04	0.21	14.24	1.4	6.85
Oromia	100	62.93	27.96	0.26	2.3	1.89	4.67
Somale	100	78.31	18.16	0.53	0.64	1.16	1.2
Benshangul-Gumuz	100	86.11	10.65	0.16	1.8	0.47	0.8
SNNP	100	65.74	25.57	0.8	2.8	1.12	3.97
Gambela	100	93.17	3.15	0.05	0.09	0.32	3.22
Harari	100	30	55.85	1.35	2.25	7.51	3.04
Dire Dawa	100	65.31	26.28	-	0.04	7.65	0.72

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	14,855,789	12,863,189	360,936	5,016,899	1,833,317	5,297,573
Tigray	1,207,233	1,172,755	23,344	903,615	205,656	441,667
Afar	405,093	43,641	-	5,721	27,757	8,993
Amhara	4,297,038	4,191,350	61,128	2,785,782	532,399	1,888,414
Oromia	5,440,290	4,628,046	79,546	750,670	741,189	1,872,681
Somale	183,463	113,455	5,631	5,040	17,966	15,604
Benshangul-Gumuz	190,371	92,342	2,809	20,233	7,867	14,684
SNNP	3,037,052	2,557,312	185,277	542,660	279,168	1,038,890
Gambela	43,547	5,529	140	213	750	5,383
Harari	27,250	36,794	3,061	2,895	10,001	10,832
Dire Dawa	24,451	21,964	-	71	10,563	423

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

1. Green Fodder

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	6,797,213	306,442	3,434,239	4,028,113	289,782
Tigray	290,717	7,797	488,963	415,530	4,227
Afar	5,709	1,478	353,489	3,031	41,386
Amhara	1,333,436	105,960	1,185,525	1,606,816	65,301
Oromia	2,978,944	149,937	862,139	1,331,177	118,093
Somale	14,908	88	121,169	45,564	1,735
Benshangul-Gumuz	12,610	359	154,349	23,053	-
SNNP	2,121,707	40,346	224,230	592,635	58,133
Gambela	13,105	244	27,130	2,225	843
Harari	22,751	142	2,023	2,270	64
Dire Dawa	3,326	89	15,223	5,813	-

2. Crop Residue

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	11,251,958	326,747	108,858	1,027,702	147,924
Tigray	981,370	24,786	5,770	148,475	12,355
Afar	39,547	1,749	1,652	693	-
Amhara	3,550,124	104,464	14,385	474,271	48,106
Oromia	4,138,724	119,344	68,493	240,749	60,736
Somale	94,248	12,105	1,681	3,738	1,683
Benshangul-Gumuz	84,460	1,907	3,313	2,662	-
SNNP	2,303,617	60,853	13,194	154,828	24,820
Gambela	4,754	584	191	-	-
Harari	35,333	380	126	890	64
Dire Dawa	19,781	574	52	1,397	160

3. Improved Feed

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	239,946	92,905	2,939	16,732	8,415
Tigray	11,854	9,941	858	278	413
Afar	-	-	-	-	-
Amhara	34,943	19,576	588	1,610	4,410
Oromia	29,394	39,583	821	7,418	2,330
Somale	1,534	3,790	143	-	164
Benshangul-Gumuz	2,809	-	-	-	-
SNNP	156,623	19,688	529	7,425	1,012
Gambela	54	-	-	-	86
Harari	2,734	327	-	-	-
Dire Dawa	-	-	-	-	-

4. Hay

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	3,163,219	860,666	90,784	846,767	55,464
Tigray	667,922	74,840	17,294	136,777	6,782
Afar	1,439	360	1,965	346	1,610
Amhara	1,625,115	516,328	54,345	554,735	35,259
Oromia	480,360	164,600	10,865	86,646	8,199
Somale	2,156	1,948	-	164	772
Benshangul-Gumuz	12,880	342	2,748	4,113	149
SNNP	370,502	102,043	3,567	63,935	2,613
Gambela	161	-	-	52	-
Harari	2,631	185	-	-	80
Dire Dawa	52	19	-	-	-

5. By-Product

Geographic Area	Own Holding	Purchased	Communal/ Government Holding	From any Two or More Sources	Others
Ethiopia	501,125	1,244,612	2,720	75,016	9,844
Tigray	104,280	84,349	401	15,861	766
Afar	853	26,343	-	-	561
Amhara	192,402	313,047	-	21,585	5,365
Oromia	150,146	556,279	1,540	31,545	1,680
Somale	415	16,648	-	-	904
Benshangul-Gumuz	7,339	346	182	-	-
SNNP	43,260	228,911	533	5,894	569
Gambela	705	45	-	-	-
Harari	1,640	8,297	64	-	-
Dire Dawa	85	10,346	-	132	-

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	69,632	39,068	453,345	17,333	29,881
Tigray	11,187	7,183	95,162	7,821	4,041
Afar	-	283	449	-	517
Amhara	27,309	19,590	142,421	3,254	15,721
Oromia	25,314	8,697	135,429	1,392	8,525
Somale	-	772	772	-	-
Benshangul-Gumuz	-	-	993	-	-
SNNP	5,700	2,358	77,011	4,866	1,078
Gambela	-	-	119	-	-
Harari	103	185	21	-	-
Dire Dawa	19	-	968	-	-

**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	61,510,258	1,571,381	2.55	33,020,392	1,316,568	3.99	38,963,879	2,019,452	5.18
Tigray..	4,850,412	186,345	3.84	2,282,746	189,697	8.31	4,232,680	328,863	7.77
Afar	1,791,565	253,137	14.13	4,474,903	644,754	14.41	9,975,247	1,356,932	13.6
Amhara	16,407,220	503,906	3.07	9,650,637	549,490	5.69	6,805,724	451,142	6.63
Oromia	24,508,504	722,651	2.95	9,776,459	514,659	5.26	9,082,745	693,622	7.64
Somali	589,503	59,748	10.14	1,360,703	154,723	11.37	2,826,424	407,203	14.41
Benshangul-Gumuz..................	626,343	61,140	9.76	143,664	22,375	15.57	524,316	64,896	12.38
SNNP	12,324,739	1,259,152	10.22	5,214,185	830,584	15.93	5,116,030	1,127,774	22.04
Gambella..................................	290,616	37,687	12.97	41,026	6,870	16.75	133,246	20,775	15.59
Harari	69,933	7,353	10.51	5,661	1,445	25.52	81,466	5,918	7.26
Dire Dawa	51,422	6,601	12.84	70,408	22,047	31.31	186,002	41,986	22.57

Annex Table 1-Cont'd

Geographic Area	HORSES			MULES			DONKEYS			CAMELS		
	Number	SE	CV	Number	SE	CV	Number	SE	CV	Number	SE	CV
Ethiopia	1,930,808	134,864	6.98	370,552	29,182	7.88	9,655,441	199,469	2.07	1,760,870	180,700	10.26
Tigray......................................	1,237	928	75	12,026	4,108	34.16	978,642	42,019	4.29	52,905	9,509	17.97
Afar	375	266	70.91	101	101	99.41	446,904	47,251	10.57	1,118,981	150,931	13.49
Amhara.....................................	363,242	52,158	14.36	155,195	18,364	11.83	3,529,748	111,386	3.16	35,682	10,120	28.36
Oromia	1,199,659	116,354	9.7	139,439	20,558	14.74	3,641,131	143,257	3.93	294,110	87,257	29.67
Somali	-	-	-	-	-	-	200,639	20,608	10.27	249,475	45,385	18.19
Benshangul-Gumuz..................	3,174	1,619	51.01	1,522	724	47.57	88,533	9,473	10.7	-	-	-
SNNP	362,208	43,882	12.12	61,255	8,602	14.04	735,018	48,265	6.57	-	-	-
Gambella	894	555	62.15	1,013	564	55.65	700	243	34.77	-	-	-
Harari	-	-	-	-	-	-	14,889	2,791	18.74	2,130	1,214	56.99
Dire Dawa	19	19	98.1	-	-	-	19,238	2,906	15.11	7,588	2,079	27.4

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	2,806,403	89,218	3.18	2,635,246	86,777	3.29	4,694,967	175,432	3.74	16,501,218	318,070	1.93	627,940	62,136	9.9
Tigray	243,562	17,644	7.24	170,926	11,926	6.98	352,923	17,537	4.97	1,532,976	55,090	3.59	85,107	9,036	10.62
Afar	132,214	21,254	16.08	59,607	10,778	18.08	67,750	11,737	17.32	118,897	21,507	18.09	3,248	2,148	66.13
Amhara	633,260	41,769	6.6	634,847	34,333	5.41	1,295,470	51,729	3.99	5,531,243	151,956	2.75	269,479	26,285	9.75
Oromia......................................	1,120,877	53,814	4.8	1,088,188	49,380	4.54	1,883,303	81,487	4.33	6,561,079	197,888	3.02	181,359	29,746	16.4
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	25,128	3,600	14.33	32,504	3,700	11.38	60,262	6,669	11.07	134,094	14,574	10.87	6,435	2,675	41.56
SNNP..	578,189	49,735	8.6	600,226	60,166	10.02	962,812	144,660	15.02	2,483,354	187,142	7.54	79,479	46,789	58.87
Gambella	15,755	2,616	16.6	17,662	2,491	14.1	16,294	2,869	17.61	31,954	4,820	15.08	2,740	1,577	57.57
Harari.......................................	2,776	514	18.52	4,042	923	22.84	6,728	1,076	16	9,586	2,110	22.01	74	73	98.65
Dire Dawa...............................	3,492	591	16.93	2,518	584	23.21	4,786	819	17.11	7,075	1,499	21.18	19	19	98.1

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	3,073,421	122,144	3.97	2,924,083	124,088	4.24	5,868,676	251,507	4.29	21,764,791	586,050	2.69	613,513	59,334	9.67
Tigray	254,219	19,366	7.62	203,972	13,520	6.63	404,837	23,573	5.82	1,533,920	63,765	4.16	67,970	9,421	13.86
Afar	203,876	28,723	14.09	109,378	19,287	17.63	118,217	18,967	16.04	975,044	139,850	14.34	3,334	1,128	33.83
Amhara	614,727	42,653	6.94	679,789	34,538	5.08	1,424,272	63,234	4.44	5,123,352	191,332	3.73	200,780	21,724	10.82
Oromia......................................	1,255,074	59,108	4.71	1,159,290	56,603	4.88	2,304,849	93,637	4.06	8,733,555	287,543	3.29	220,930	35,512	16.07
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	27,309	4,462	16.34	37,197	4,431	11.91	66,830	8,944	13.38	230,922	25,309	10.96	5,662	1,632	28.82
SNNP..	652,584	91,239	13.98	674,126	101,886	15.11	1,451,632	222,245	15.31	4,734,380	446,015	9.42	107,959	41,117	38.09
Gambella	16,632	2,647	15.91	22,555	3,819	16.93	29,681	4,663	15.71	132,808	17,909	13.48	4,535	1,607	35.43
Harari.......................................	3,168	600	18.95	5,235	831	15.88	9,344	1,097	11.75	28,495	2,984	10.47	487	231	47.46
Dire Dawa...............................	2,899	530	18.29	2,995	447	14.93	6,251	883	14.12	21,059	2,764	13.13	327	206	63.01

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	3,837,027	137,518	3.58	1,608,261	79,904	4.97	1,373,634	119,643	8.71	2,143,322	153,445	7.16
Tigray	194,631	17,362	8.92	126,405	13,404	10.6	91,773	14,191	15.46	127,492	19,517	15.31
Afar	422,008	56,621	13.42	150,152	24,673	16.43	108,752	19,159	17.62	317,881	57,540	18.1
Amhara....................................	1,130,728	68,768	6.08	440,446	32,975	7.49	392,994	52,499	13.36	538,933	56,655	10.51
Oromia.....................................	1,391,348	78,397	5.63	494,488	34,106	6.9	396,736	42,870	10.81	521,000	61,735	11.85
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	22,275	4,012	18.01	7,468	2,126	28.46	4,595	1,113	24.23	8,037	1,995	24.82
SNNP.......................................	547,948	65,431	11.94	308,356	56,512	18.33	318,252	95,077	29.87	456,938	110,049	24.08
Gambella	6,010	1,113	18.51	2,108	516	24.47	2,092	701	33.51	3,524	895	25.38
Harari.......................................	465	175	37.69	772	282	36.53	247	179	72.4	164	113	69.16
Dire Dawa...............................	7,473	1,508	20.18	3,063	915	29.86	2,465	844	34.25	5,078	2,981	58.7

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	4,084,154	166,748	4.08	2,033,931	104,840	5.15	2,367,796	158,909	6.71	15,572,268	581,219	3.73
Tigray	224,266	21,844	9.74	151,249	18,391	12.16	193,445	21,586	11.16	1,173,486	101,703	8.67
Afar	570,960	91,322	15.99	273,209	42,811	15.67	276,236	45,727	16.55	2,355,707	338,418	14.37
Amhara....................................	1,192,097	78,942	6.62	586,628	43,943	7.49	625,459	55,982	8.95	4,743,350	270,722	5.71
Oromia.....................................	1,349,634	82,369	6.1	540,576	39,945	7.39	633,753	49,221	7.77	4,448,923	253,102	5.69
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	18,645	3,707	19.88	14,000	2,939	20.99	10,866	2,177	20.03	57,778	10,117	17.51
SNNP.......................................	590,304	75,755	12.83	346,062	70,322	20.32	478,784	128,302	26.8	2,167,540	267,185	12.33
Gambella	5,056	1,058	20.92	3,331	767	23.02	3,029	845	27.89	15,876	2,963	18.66
Harari.......................................	499	262	52.48	166	119	71.55	793	307	38.7	2,555	710	27.78
Dire Dawa...............................	8,203	2,858	34.84	4,473	1,158	25.89	5,882	1,473	25.03	33,771	11,344	33.59

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	4,100,172	170,496	4.16	1,971,957	111,196	5.64	1,758,898	159,295	9.06	3,043,216	207,966	6.83
Tigray	441,234	37,857	8.58	217,421	20,790	9.56	187,034	21,516	11.5	316,082	45,912	14.53
Afar	769,261	90,069	11.71	350,189	56,476	16.13	286,862	51,149	17.83	662,166	110,395	16.67
Amhara....................................	891,497	68,058	7.63	413,880	37,057	8.95	315,512	28,745	9.11	595,957	58,505	9.82
Oromia.....................................	1,174,849	80,943	6.89	496,720	49,807	10.03	415,724	54,531	13.12	655,692	75,628	11.53
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	68,819	7,364	10.7	33,590	5,599	16.67	19,203	3,556	18.52	29,684	7,414	24.98
SNNP..	508,241	86,177	16.96	296,408	66,547	22.45	373,285	134,697	36.08	511,664	135,255	26.43
Gambella	15,991	2,580	16.14	7,749	1,731	22.33	7,575	1,393	18.39	8,878	1,632	18.38
Harari.......................................	8,045	1,147	14.26	6,920	820	11.85	5,084	1,094	21.51	5,596	963	17.21
Dire Dawa................................	19,542	3,798	19.44	10,303	2,036	19.76	8,239	1,755	21.3	12,404	4,395	35.43

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	5,064,541	237,447	4.69	2,790,446	194,852	6.98	3,094,745	224,150	7.24	17,139,905	919,510	5.36
Tigray	510,421	43,279	8.48	317,105	29,315	9.24	408,907	39,421	9.64	1,834,476	144,790	7.89
Afar	1,290,523	151,047	11.7	731,396	142,209	19.44	657,458	106,285	16.17	5,227,393	727,082	13.91
Amhara....................................	927,889	70,615	7.61	454,485	46,256	10.18	449,767	40,845	9.08	2,756,737	183,154	6.64
Oromia.....................................	1,284,592	108,918	8.48	603,197	62,551	10.37	703,153	94,814	13.48	3,748,819	265,686	7.09
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	73,822	9,367	12.69	50,875	8,638	16.98	45,065	6,665	14.79	203,257	27,563	13.56
SNNP..	626,329	108,887	17.38	379,808	96,558	25.42	494,913	152,306	30.77	1,925,381	383,674	19.93
Gambella	18,093	3,680	20.34	10,286	1,918	18.64	10,159	1,711	16.84	54,515	9,066	16.63
Harari.......................................	7,689	1,096	14.25	7,784	1,027	13.2	7,718	1,143	14.81	32,630	2,372	7.27
Dire Dawa................................	21,289	5,576	26.19	13,784	2,795	20.28	15,601	3,364	21.56	84,839	20,344	23.98

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	170,925	18,181	10.64	839,199	59,871	7.13	162,786	17,610	10.82	757,898	61,853	8.16
Tigray	-	-	-	1,237	928	75	-	-	-	-	-	-
Afar	103	103	99.77	272	197	72.6	-	-	-	-	-	-
Amhara...................................	33,027	6,726	20.36	141,923	24,218	17.06	31,005	7,178	23.15	157,287	25,450	16.18
Oromia....................................	111,716	16,081	14.39	529,800	50,199	9.48	105,610	15,394	14.58	452,533	51,786	11.44
Somali	-	-	-	-	-	-	-	-	-	-	-	-
Benshangul-Gumuz	364	248	68.3	1,675	826	49.3	561	306	54.51	574	411	71.49
SNNP.......................................	25,663	5,162	20.11	163,535	21,824	13.35	25,611	4,639	18.11	147,399	22,272	15.11
Gambella	52	51	98.69	738	417	56.51	-	-	-	103	102	98.69
Harari......................................	-	-	-	-	-	-	-	-	-	-	-	-
Dire Dawa...............................	-	-	-	19	19	98.1	-	-	-	-	-	-

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	1,130,591	39,872	3.53	3,273,497	99,655	3.04	1,105,310	40,087	3.63	4,146,043	112,088	2.7
Tigray	120,544	10,298	8.54	404,817	22,594	5.58	95,659	8,905	9.31	357,622	23,144	6.47
Afar	54,775	7,007	12.79	127,994	15,866	12.4	47,743	6,575	13.77	216,392	24,590	11.36
Amhara...................................	505,253	29,148	5.77	1,063,180	54,637	5.14	461,941	26,257	5.68	1,499,375	62,684	4.18
Oromia....................................	356,745	22,426	6.29	1,236,052	72,812	5.89	407,577	26,614	6.53	1,640,758	80,999	4.94
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	10,113	2,042	20.19	45,819	5,676	12.39	6,818	1,510	22.14	25,783	4,128	16.01
SNNP.......................................	53,714	7,148	13.31	295,139	27,415	9.29	64,426	8,372	13	321,739	28,976	9.01
Gambella	39	39	100.96	526	196	37.25	48	47	98.66	87	62	70.81
Harari......................................	1,291	561	43.46	7,956	1,860	23.38	994	555	55.77	4,647	1,201	25.85
Dire Dawa...............................	2,581	584	22.62	4,961	811	16.35	2,498	487	19.52	9,198	1,575	17.13

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	15,787	3,932	24.91	164,334	18,750	11.41	16,861	4,903	29.08	173,570	17,207	9.91
Tigray	479	477	99.54	7,448	3,133	42.07	-	-	-	4,099	1,715	41.83
Afar	-	-	-	101	101	99.41	-	-	-	-	-	-
Amhara....................................	13,880	3,744	26.98	54,218	12,084	22.29	8,172	2,890	35.36	78,925	12,018	15.23
Oromia....................................	398	397	99.97	69,398	12,806	18.45	5,249	3,596	68.51	64,395	11,216	17.42
Somali												
Benshangul-Gumuz	-	-	-	517	284	54.95	-	-	-	1,006	532	52.86
SNNP.......................................	1,030	1,026	99.59	31,960	5,607	17.55	3,441	1,660	48.24	24,824	4,754	19.15
Gambella	-	-	-	693	429	61.87	-	-	-	321	155	48.43
Harari......................................	-	-	-	-	-	-	-	-	-	-	-	-
Dire Dawa..............................	-	-	-	-	-	-	-	-	-	-	-	-

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	207,280	23,611	11.39	334,701	30,482	9.11	293,509	36,722	12.51	925,381	107,685	11.64
Tigray	2,629	1,143	43.48	46,765	8,382	17.92	937	543	57.95	2,574	1,438	55.86
Afar	128,010	19,163	14.97	155,478	18,755	12.06	198,301	31,675	15.97	637,193	93,118	14.61
Amhara....................................	3,253	1,909	58.69	32,428	9,623	29.68	-	-	-	-	-	-
Oromia....................................	38,633	10,756	27.84	40,739	17,136	42.06	62,450	17,569	28.13	152,289	47,549	31.22
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......................................	219	123	56.12	263	201	76.35	447	293	65.55	1,202	657	54.69
Dire Dawa..............................	1,066	323	30.33	3,452	969	28.07	946	278	29.43	2,124	828	38.99

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	59,420,266	1,367,393	2.3	5,998,092	149,126	2.49	3,786,969	172,392	4.55	6,628,081	211,808	3.2	1,811,184	107,381	5.93	21,646,111	785,332	3.63	9,549,829	339,583	1.74
Tigray	6,032,251	267,896	4.44	454,633	27,779	6.11	388,264	34,380	8.85	747,999	63,023	8.43	265,747	30,315	11.41	2,036,688	125,166	6.15	2,138,920	89,535	4.19
Afar	185,372	62,779	33.87	22,090	7,870	35.63	9,459	4,061	42.93	21,151	8,180	38.68	8,200	3,545	43.23	65,421	25,629	39.18	59,051	19,323	32.72
Amhara............................	20,501,879	1,048,660	5.11	1,707,181	80,026	4.69	1,354,485	129,265	9.54	2,275,066	136,291	5.99	565,085	69,114	12.23	8,708,970	561,299	7.59	5,891,091	189,851	3.22
Oromia............................	20,766,720	684,878	3.3	2,532,410	102,409	4.04	1,174,038	80,136	6.83	2,037,559	120,026	5.89	661,683	66,683	10.08	6,701,260	336,107	5.02	7,659,771	235,935	3.08
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	1,480,468	110,827	7.49	125,975	10,386	8.24	126,398	13,422	10.62	203,239	19,116	9.41	30,290	6,923	22.85	674,281	64,562	9.57	320,284	21,839	6.82
SNNP..............................	9,542,274	445,709	4.67	1,010,003	59,219	5.86	651,591	70,958	10.89	1,219,790	84,335	6.91	237,820	35,867	15.08	3,211,463	212,690	6.62	3,211,607	114,552	3.57
Gambella	490,448	62,501	12.74	71,292	10,288	14.43	50,358	7,809	15.51	61,726	9,243	14.97	23,263	4,845	20.83	162,604	23,524	14.47	121,206	17,720	14.62
Harari..............................	76,992	12,339	16.03	9,450	1,797	19.01	6,123	1,729	28.23	6,145	1,345	21.89	4,877	1,521	31.2	21,803	4,952	22.71	28,593	4,195	14.67
Dire Dawa.......................	93,444	10,705	11.46	9,616	1,462	15.21	4,380	1,111	25.37	22,884	3,531	15.43	1,532	648	42.32	14,657	3,086	21.05	40,375	4,414	10.93

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	7,075,188	471,587	6.67	6,794,424	467,744	6.88	80,164	21,792	27.18	200,600	32,862	16.38
Tigray..................................	331,407	37,930	11.45	248,328	25,451	10.25	5,889	2,511	42.65	77,191	23,640	30.63
Afar	21,143	10,338	48.9	21,143	10,338	48.9	-	-	-	-	-	-
Amhara................................	1,208,124	87,391	7.23	1,155,503	84,827	7.34	8,464	4,187	49.47	44,157	12,939	29.3
Oromia	3,634,008	410,289	11.29	3,546,926	409,846	11.55	34,427	13,066	37.95	52,654	14,528	27.59
Somali	720	714	99.14	720	714	99.14	-	-	-	-	-	-
Benshangul-Gumuz..............	574,134	139,317	24.27	572,748	139,277	24.32	864	338	39.17	522	383	73.28
SNNP	1,227,546	157,806	12.86	1,171,268	151,330	12.92	30,493	16,740	54.9	25,786	11,934	46.28
Gambella	75,265	23,690	31.48	74,948	23,677	31.59	26	27	101.66	291	207	71.1
Harari	1,077	362	33.58	1,077	362	33.58	-	-	-	-	-	-
Dire Dawa	1,764	646	36.65	1,764	646	36.65	-	-	-	-	-	-

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 2018/19(20111 E.C.), Livestock Sample Survey

Region	Enumeration Areas		Households	
	Planned	Covered	Planned	Covered
Tigray	188	188	3760	3755
Afar	70	67	1400	1306
Amhara	335	327	6700	6526
Oromia	391	372	7,820	7428
Somali	52	41	780	614
Benishangul-Gumuz	103	63	2060	1260
S.N.N.P	316	307	6,320	6126
Gambella	76	69	1520	1380
Harari	30	30	600	571
Dire Dawa	30	30	600	597
COUNTRY TOTAL	1,591	1,494	31,560	29,563

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

Where:

h represents the stratum

n_h is the total number of sample EAs successfully covered in the hth stratum.

M_h is the measure of size of the hth stratum as obtained from the sampling frame.

m_{hi} is the measure of size of the ith sample EA in the hth stratum obtained from the sampling frame.

H_{hi} is the total number of agricultural households of the ith sample EA in the hth stratum.

h_{hi} is the number of sample agricultural households successfully covered in the ith sample EA in the hth stratum.

y_{hij} is the value of a specific livestock(its products) for agricultural households j, in the ith EA in the hth 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:

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

  for characteristic z and x, respectively.

81

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 ith 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 ith EA and hth 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 jth agricultural household in the ith EA and hth 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 - 2018/19 (2011 E.C.)

Part I - Identification Particulars

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

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	

87

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	

Poultry	None	Total		Indigenous		Hybrid		Exotic	
8. Poultry total on **Nov 10, 2018**		201		202		223		204	
a. Laying hens _____		205		206		207		208	
b. Non-Laying hens _____		209		210		211		212	
c. Cocks _____		213		214		215		216	
d. Cockerels _____		217		218		219		220	
e. Pullets _____		221		222		223		224	
f. Chicks _____		225		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

	None	Total	
9. Total Beehives (produced honey during the reference period)		229	
a. Traditional Beehives _____		230	
b. Intermediate Beehives _____		231	
c. Modern Beehives _____		232	

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

a. Average honey production/ Traditional hive/harvest _____	233
Number of harvests/Traditional hive/year _____	234 ▮
b. Average honey production/ Intermediate hive/harvest _____	235
Number of harvests/Intermediate hive/year _____	236 ▮
c. Average honey production/ Modern hive/harvest _____	237
Number of harvests/Modern hive/year _____	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	2	4			5		
		Afflicted/Diseased			Total Treated		
Sr. No.	Livestock Type	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	2	3			4			5			6			7			8			9			10		
Sr. No.	Livestock Type	Births			Purchases			Acquired			Sales			Slaughters			Offered			Died from Diseases			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	2	3			4			5			6			7			8			9		
		Total Vaccinated			Vaccinated against																
					Anthrax			Blackleg			Pleuro-Pneumonia			Hemorrhagic Septicemia			Renderpest			Others		
Sr. No.	Livestock Type	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	Camels																						

91

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

92