

**THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**

CENTRAL STATISTICAL AGENCY

*AGRICULTURAL SAMPLE SURVEY*

**2017/2018 (2010 E.C.)**

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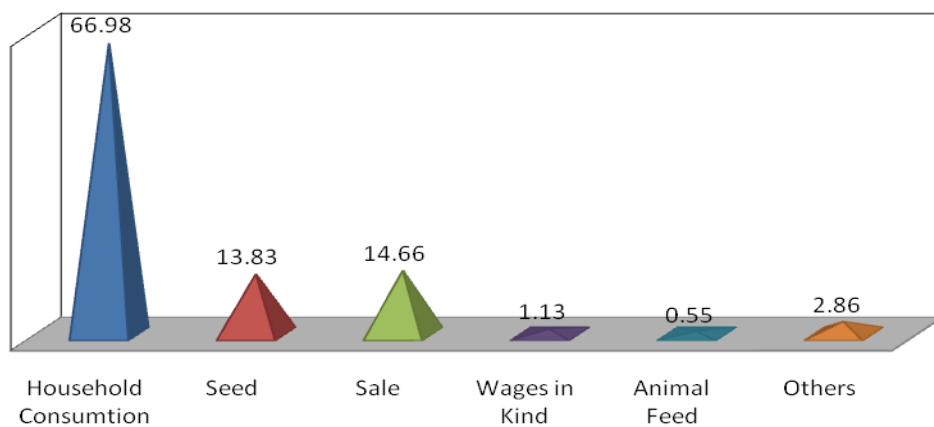
*REPORT ON*

**CROP AND LIVESTOCK PRODUCT UTILIZATION**

**(PRIVATE PEASANT HOLDINGS, MEHER SEASON)**

**Cereals Utilization (in Percent)**

■ Household Consumption ■ Seed ■ Sale ■ Wages in Kind ■ Animal Feed ■ Others



**ADDIS ABABA**

**Jun, 2018**

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## PART I

### INTRODUCTION AND OBJECTIVES OF THE SURVEY

#### 1.1 INTRODUCTION

Agriculture is the livelihood of the overwhelming majority of Ethiopians. It is the source of food and cash for those who are engaged in the sector and others. Most agricultural holders acquire the food they consume and the cash they need to cover other expenses only from farming activities. Since farming in Ethiopia is often precarious and usually at the mercy of nature, it is invariably an arduous struggle for the holders to make ends meet. This, it often transpires, is true to the frequent shortfalls in the volume of production that occur in the country.

It is often said that what most Ethiopian agricultural holders produce is only enough to live, hand to mouth. This would be better said if it was statistically substantiated. There is plenty of information on the volume of crops produced within the private peasant holdings. But there is hardly any information on how the peasants utilize the crops and livestock products they produce which will be indicative of the fact whether the holders have enough or little to sell in order to meet other expenses of living.

Data on crop and livestock product utilization were collected in the 2017/18(2010 E.C.) Agricultural Sample Survey. Thus, for use in the sample survey taking, crop and livestock product utilization was defined as the amount of agricultural produce used for own consumption, sale, seed, wages in kind, animal feed and other purposes. In light of this information gap, the CSA has collected some data on how holders use their agricultural produce in the agricultural year to provide some information on the subject. The data were collected by interviewing the holders. They were asked to quantify their yearly crop and livestock product utilization experience in percent based on common practice.

## **1.2. OBJECTIVES OF THE SURVEY**

The general objective of Central Statistical Agency's (CSA's) Agricultural Sample Survey (AgSS) is to collect basic quantitative information on the country's agriculture that is essential for planning, policy formulation, monitoring and evaluation of mainly food security and other agricultural activities. The AgSS is composed of four components: Crop Production Forecast Survey, Meher Season Post Harvest Survey, Livestock Survey and Belg Season Survey.

The specific objectives of Meher Season Post Harvest Survey are to estimate the crop and livestock product utilization for Meher Season agriculture in Ethiopia. The report is based on private peasant holdings in rural sedentary areas of the country and part of companion reports on the performance of agriculture in the country. The report is compiled at national, regional and zonal level.

## **PART II**

### **SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING**

#### **2.1. SCOPE AND COVERAGE OF THE SURVEY**

The range of data items that the 2017/18(2010 E.C.) Annual Agricultural Sample Survey (Meher Season) dealt with includes all cereals, pulses and oilseeds and the most commonly grown vegetables, root crops and permanent (perennial) crops. Holders growing at least one or more of these and / or other crops are enumerated and data on crop area and yield condition recorded, hence data on production of these crops acquired.

The 2017/18(2010 E.C.) Annual Agricultural Sample Survey (Meher season) covered the entire rural parts of the country except the non-sedentary population of three zones of Afar & six zones of Somali regions.

To be covered by the survey, a total of 1,600 Enumeration Areas (EAs) were selected. However, due to various reasons that are beyond control, in 17 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,583 EAs (98.94%) throughout the regions. Crop and livestock product utilization Sample Survey was conducted on the basis of 15 agricultural households selected from each EA. Regarding the ultimate sampling units, it was intended to cover a total of 24,000 agricultural households, however, 23,625 (98.44) were actually covered by the survey.

## **2.2 SAMPLING FRAME**

The list containing EAs of all regions and their respective households obtained from the 2009 (1999 E.C) Population and Housing Census Frame was used as the sampling frame in order to select EAs (Primary Sampling Units). Consequently, all sample EAs were selected from this frame based on the design proposed for the survey. The second stage sampling units, households, were selected from a fresh list of households that were prepared for each EA at the beginning of the survey.

## **2.3 SAMPLE DESIGN**

In order to select the sample a stratified two-stage cluster sample design was implemented. Enumeration areas (EAs) were taken to be the primary sampling units (PSUs) and the secondary sampling units (SSUs) were agricultural households.

The sample size for the 2017/18(2010 E.C.) agricultural sample survey was determined by taking into account of both the required level of precision for the most important estimates within each domain and the amount of resources allocated to the survey. In order to reduce non-sampling errors, manageability of the survey in terms of quality and operational control was also considered.

All regions were taken to be the 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 agricultural households. The sizes for EAs were obtained from the 2009 (1999 E.C) Population and Housing Census Frame. From the fresh list of households prepared at the beginning of the survey 30 agricultural households within each sample EA were selected systematically.

Estimation procedure of totals, ratios, sampling error and the measurement of precision of estimates (CV) are given in Appendix-I and II respectively.

## **2.5. ORGANIZATION OF FIELD WORK**

The conduct of a survey cannot be executed without the arrangement of fieldwork. In recognition of this, the organization of fieldwork has been entrusted to the Branch Offices and at head office Branch Office Desk that liaises between the Head Office and the 24 Branch Statistical Offices spread across the regions. All Branch Offices took part in the survey execution especially in recruiting the enumerators, organizing the 2<sup>nd</sup> stage training, assigning the field staff to their sites of enumeration, supervising the data collection and retrieving completed questionnaires and submitting them to the Head Office for data processing.

The Branch Offices were also responsible for administering the financial and logistic aspects of the survey within their areas of operation. A total of about 1,680 enumerators, 400 field supervisors, and more than 80 statisticians were involved in the data collection where on the average one supervisor was assigned to four enumeration areas for supervision of data collection. All the enumerators were supplied with the necessary survey equipment after the completion of the training to ensure the smooth operation of the survey. To facilitate the data collection activities, a total of more than 120 four-wheel drive vehicles were used.

## **2.6. TRAINING OF FIELD STAFF**

The execution of a survey and quality of data acquired from the survey highly depend on the type of training given to the enumerators and supervisors and the consequent understanding of the tasks to be performed and the standard procedures to be followed by the enumerators and supervisors in the survey undertaking. The quality and completeness of data are ensured when the training meets its objective of producing responsible and fervent enumerators and supervisors.

In light of this point, the training was given to the field staff in two stages. The first stage training, which took place at the Adama town arranged by Head Office of CSA and lasted 6 days targeted staff from the Branch Statistical Office (heads, statisticians and senior field supervisors). The staff that took part in the first stage

training was then assigned to conduct similar training for the enumerators and other supervisors for 18 days in all the twenty- four Branch Statistical Offices distributed across the country.

In the training the field staffs was given detailed classroom instruction on how to collect data, method of area measurement, interviewing procedures, etc. The training also included field practice to reinforce the understanding of concepts, definitions and theories discussed in the classroom with regard to field measurement, crop cutting, GPS reading and interviewing methods.

## **2.7. METHOD OF DATA COLLECTION**

Crop and livestock product utilization data for the year 2017/18(2010 E.C.) was collected from sedentary rural peasant households by interviewing the selected agricultural holders.

## **2.8. DATA PROCESSING**

### **a) Editing, Coding and Verification**

Statistical data editing plays an important role in ensuring the quality of the collected survey data. It minimizes the effects of errors introduced while collecting data in the field, hence the need for data editing, coding and verification. Although coding and editing are done by the enumerators and supervisors in the field, respectively, verification of this task is done at the Head Office.

An editing, coding and verification instruction manual was prepared and reproduced for this purpose. Then more than 30 editors-coders and verifiers were trained for one day in editing, coding and verification using the aforementioned manual as a reference and teaching aid. The completed questionnaires were edited, coded and later verified on a 100 % basis before the questionnaires were passed over to the data entry unit. The editing, coding and verification exercise of all questionnaires took 20 days.

#### **b) Data Entry, Cleaning and Tabulation**

Before data entry, the Agriculture, Natural Resources and Environment Statistics Directorate of the CSA prepared edit specification for the survey for use on personal computers for data consistency checking purposes. The data on the edited and coded questionnaires were then entered into personal computers. The data were then checked and cleaned using the edit specifications prepared earlier for this purpose. The data entry operation involved about 30 data encoders, 4 data encoder supervisors, 8 data cleaning operators. The data entered into the computers using the entry module of the CSPRO (Census and Survey Processing System) software, which is a software package developed by the United States Bureau of the Census. Following the data entry operations, the data was further reviewed for data inconsistencies, missing data ... etc. by the regular professional staff from Agriculture, Natural Resources and Environment Statistics Directorate. The final stage of the data processing was to summarizing the cleaned data and produce statistical tables that present the results of the survey using the tabulation component of the PC based CSPRO software produced by professional staff from Agriculture, Natural Resources and Environment Statistics Directorate.

### **2.9. CONCEPTS AND DEFINITIONS**

Data items of agriculture have to be distinctly defined and identified, so that the information about the items becomes useful. The correct way of stating data items and related terms is a prerequisite for making standards and definitions for the collection and compilation of agricultural data. The purpose of using standard concepts and definitions is not only to provide quality data but also to ensure that the right items are enumerated and measured accurately to reflect the agricultural situation.

Standard concepts and definitions used in the survey help to maintain consistent enumeration and measurement of variables of interest. To achieve this, CSA communicates concepts and definitions to the field staff through training and

instruction manuals. The concepts and definitions used in the survey included the following.

Enumeration Area (E.A): an enumeration area in the rural parts of the country is a locality that is, in most of the cases less than, and only in some cases equal to a farmers' association in geographical area and usually consists of 150-200 households.

Household: a household may be either:

a) a one person household, that is a person who makes provisions for his own 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 provisions for food and other essentials of living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent. They may be related or unrelated persons or a combination of both. These persons are taken as members of the household.

Agriculture: - The growing of crops and/or raising of animals for own consumption and /or sale.

Agricultural Household: - a household is considered an agricultural household when at least one member of the household is engaged in growing crops and/or raising livestock in private or in combination with others.

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 legal entity by one person alone, or with others with out regard to management, organization, size or location.

Holder: - a holder is a person who exercises management control over the operation of the agricultural holding and makes the major decision regarding the utilization of the available resources. He/she has primary technical and economic responsibility for the holding. He/she may operate the holding directly as an owner or a manager. Under conditions of traditional agricultural holding the holder may be regarded as

the person, who with or without the help of others, operates land and/or raises livestock in his/ her own right, i.e. the person who decides on which, where, when, and how to grow crops or raise livestock or both and has the right to determine the utilization of the products.

Parcel: - a parcel of holding is any piece of land entirely surrounded by land and/or water and/or road and/or forest etc., which is not part of the holding. It may consist of one or more cadastral units, plots or fields adjacent to each other.

Field: - a field is defined as any plot of land which is a parcel or part of a parcel under the same or mixed crops or any other form of land use (private holding).

Crop: includes cereals, pulses, oilseeds, vegetables, root crops, fruits, coffee, Enset, Chat, hops, sugarcane, cotton, tobacco, etc produced for food, making drinks, stimulation and making fabrics or clothing.

Crop production: - the process of growing and harvesting of the above crops for own consumption and/or sale.

Temporary/Annual Crops: - Annual/temporary crops are crops, which are grown in less than a year's time, sometimes only a few months with an objective to sow or replant again for additional production following the current harvest. Continuously grown crops planted in rotation are also considered as temporary crops since each is harvested and destroyed by ploughing in preparation for each successive crop.

Permanent (Perennial) Crops: - Crops, which are grown and occupy land for a long period of time, not requiring replanting for several years after each harvest, are considered as permanent crops. All fruit trees (i.e. oranges, mandarin, bananas, etc) and trees for beverages (i.e. coffee, tea, hops (Gesho), etc) are considered permanent crops but meadows and pastures are excluded.

Meher (Main) Season Crop: - any temporary crop harvested between the months of Meskerm (September) and Yekatit (February) is considered as meher season crop.

Belg Season Crop: - any temporary crop harvested between the months of Megabit (March) and Pagume (August) is considered to be Belg Season Crop.

Crop Utilization:- The amount of agricultural produce used for own consumption, sale, seed, wages in kind, animal feed and other purposes.

## **PART III**

### **SUMMARY OF SURVEY RESULTS**

#### **3.1 CROP UTILIZATION**

Crop and livestock product utilization data for the year 2017/18(2010 E.C.) was collected from sedentary rural peasant households by interviewing the selected agricultural holders

Summary Table 1 conveys the information to shed some light on how holders utilize their crop produces. Information was sought for each crop type produced during the survey year. The resulting data may help users to have some idea about crop usages by agricultural holders. In order to detect the differences in utilization of the various crops, it is better to look into the data by group of crops as categorized in the summary table for simplicity and analogy.

Needless to say, as Summary Table 1 points out, most of the cereal crops produced was used for household consumption. In Ethiopia 67.72 percent of the cereals produced were used for household consumption. Nearly 11.5 percent and 17.08 percent were used for seed and sale, respectively. The remaining 3.7 per cent of the cereals produced was used for other purposes like wages, animal feed, etc. When the utilization is considered by type of crops it is easy to realize that between 52 percent and 76 per cent of the crops in the cereals group were used for own consumption and between 11 per cent and 34 per cent of these crops were used for sale. Moreover, between 8 per cent and 17 per cent of the same crops in the same group were used for seed.

As shown in Summary Table 1, about 59 per cent of pulses were used for household consumption, 13 per cent for seed and about 25 per cent for sale. The remaining 3 per cent of pulses were used for wages, animal feed and others. Considering utilization by crop type within the pulses group, without considering Masho,

between 24 per cent and 70 per cent of the crops were utilized for household consumption and between 18 per cent and 60 per cent of crop were utilized for sale in the same crops in the same group were sold in 2017/18(2010 E.C.). Moreover, between 9 per cent and 17 per cent of these crops in the pulses group were also used for seed in the same year. The distribution of the utilization of pulses by region is shown in the statistical tables and it is more or less the same as the country level

The pattern of oilseeds utilization is distinctly different from that of cereals and pulses as portrayed in Summary Table 1. The data shows that 39 percent, 11 percent and about 48 percent were used for household consumption, seed, and sale, respectively. Taking utilization by crop type into account, between 24 per cent and nearly 70 percent of each crop type in the oilseeds category were used for household consumption, between 22 percent and nearly 63 percent for sale and about 7-14 per cent for seed. It may reasonably be summed up that more of the oilseeds produced are used for sale or as cash crops. Most of the regions show the same picture as the country and few regions consumed more of the oilseeds as indicated in the statistical tables.

The percentage of vegetables consumed at home at country level is even more than that of cereals and pulses. The data reveals that about 78 percent, 19 per cent and nearly 1 per cent of the vegetables produced were used for household consumption, sale, and seed, respectively. The remaining about 2 percent of the vegetables was used for wages, animal feed and others. The percent used by crop type within the vegetables group were 55 - 85 percent about percent for household consumption, nearly 12 percent – 44 percent for sale and about 0 –1.29 percent for seed. For details, refer to Summary Table 1.

The utilization of root crops for household consumption was about 74 percent, and 18 percent for sale and 7 per cent for seed. The ranges of percent utilized by crop type within the root crops category fall between 60 percent – 83 percent for

consumption, 8 percent – 39 percent for sale and about 0.24 - 13 percent for seed. The statistical table shows that root crop utilization in most of the regions is not different from that of the country level.

The survey data reveals that more than half of the permanent crops produced in the country were used for household consumption and the remaining for sale and other purposes. Summary Table 1 reveals that 55 percent of the permanent crops were used for consumption at home and about 42 percent for sale. The utilization by crop type within the permanent crop group ranges between about 27 percent and 71 percent for household consumption and between about 23 percent and 68 percent for sale. Permanent crops are also used as cash crops like oilseeds. In general, it is rational to conclude by looking at Summary Table 1 that the peasant farmers consume most of what they produce leaving little to sell. (For utilization of grain crops by purpose see Figure 1).

**Summary Table 1 - CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS**

Crop Types	Total Production (Quintals)	Percent Utilized for					
		Household Consumption	Seed	Sale	Wages in Kind	Animal Feed	Others
Grain Crops	306,126,383	63.3	11.79	21.69	0.66	0.41	2.15
Cereals	267,789,764	67.72	11.5	17.08	0.72	0.54	2.44
Pulses	29,785,881	59.33	12.92	25.42	0.49	0.17	1.67
Oilseeds	8,550,738	38.91	10.71	48.33	0.73	0.01	1.31
Vegetables	7,391,545	78.46	0.77	19.36	0.22	0.04	1.15
Root Crops	49,996,465	74.17	6.67	17.54	0.18	0.6	0.84
Permanent Crops	28,487,972	54.84	0.49	41.61	0.4	0.64	2.01
Enset	65,108,402	82.76	0.5	12.01	0.82	1.83	2.08

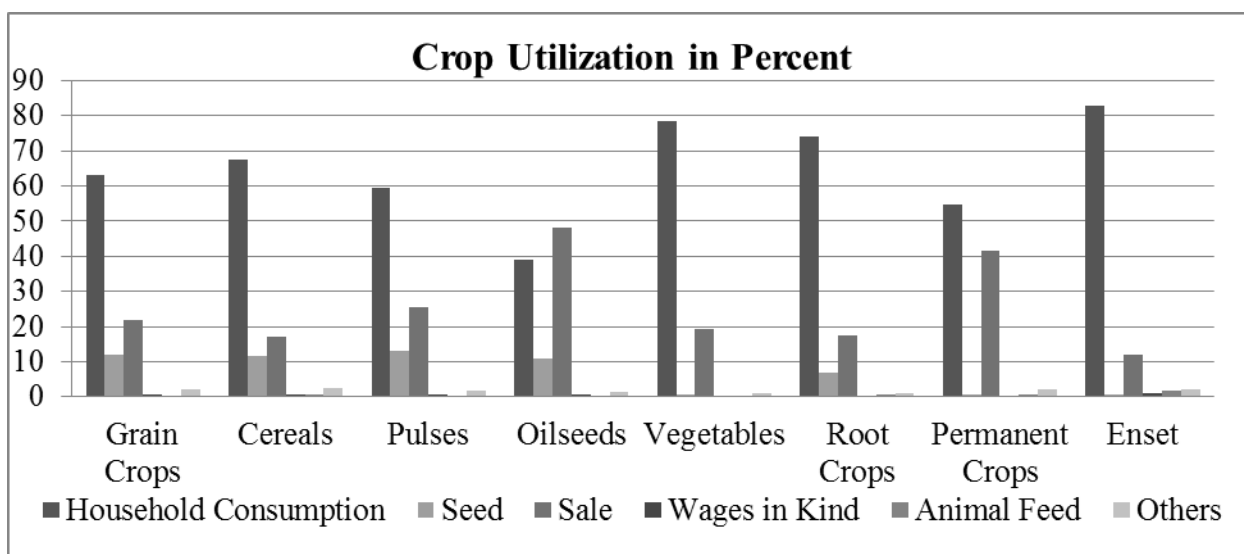


Figure 1 Percentage of Crops Utilization

**STATISTICAL TABLES PRESENTING  
RESULTS AT  
COUNTRY, REGIONAL AND ZONAL LEVELS**

TABLE 1- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Ethiopia

Type of Crop	Total Production (Quintal)	Percent Utilized		For			
		Household Consumption	Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	306,126,383	63.3	11.79	21.69	0.66	0.41	2.15
<b>Cereals</b>	267,789,764	67.72	11.5	17.08	0.72	0.54	2.44
Teff	52,834,012	51.77	12.9	31.7	0.96	0.05	2.62
Barley	20,529,964	66.7	17.33	12.49	0.61	0.56	2.3
Wheat	46,429,657	58.59	16.67	20.57	1	0.09	3.08
Maize	83,958,872	76.32	7.66	12.37	0.55	1.08	2.02
Sorghum	51,692,525	75.16	10.19	11.05	0.54	0.55	2.51
Finger millet	10,308,232	74.83	9.87	11.07	1.08	0.13	3.02
Oats "Aja"	526,319	58.86	15.34	23.14	0.13	0.58	1.95
Rice	1,510,183	53.07	10.39	34.37	0.6	0.13	1.44
<b>Pulses</b>	29,785,881	59.33	12.92	25.42	0.49	0.17	1.67
Horse beans white	9,217,615	64.71	13.57	19.57	0.5	0.05	1.6
Horse beans red	3,685,191	58.61	15.11	23.83	0.68	0.04	1.75
Field peas	1,482,128	62.28	12.06	23.28	0.36	0.27	1.74
Haricot beans	3,727,665	69.77	10.17	18.47	0.32	0.19	1.08
Chick – peas	4,994,256	48.74	14.7	33.27	0.8	0.01	2.48
Lentils	1,751,436	36.48	16.54	44.83	0.44	0.05	1.66
Vetch	2,866,016	47.88	13.63	32.02	1.22	1.86	3.39
Soya beans	864,679	24.37	13.72	59.96	0.32	0.05	1.59
Fenugreek	436,374	54.73	11.57	32.19	0.29	0.06	1.16
Masho	514,227	16.9	9.76	68.94	0.19	0.12	4.1
Gibto	246,294	39	8.9	50.48	0.63	-	1
<b>Oilseeds</b>	8,550,738	38.91	10.71	48.33	0.73	0.01	1.31
Neug	3,233,449	23.69	10.38	63.47	1.34	-	1.11
Linseed	882,097	60.23	12.66	25.15	0.64	-	1.32
Groundnuts	1,451,728	24.58	13.88	59.49	0.5	-	1.55
Safflower	95,769	69.82	6.8	21.69	0.02	-	1.67
Sesame	2,559,034	25.42	9.04	63.47	0.81	0.01	1.25
Rapeseed	328,662	59.75	8.58	30.04	0.27	0.05	1.31
<b>Vegetables</b>	7,391,545	78.46	0.77	19.36	0.22	0.04	1.15
Lettuce	1,530	54.64	-	43.57	-	-	1.79
Head cabbage	365,129	71.93	0.42	26.69	0.06	0.04	0.85
Ethiopian cabbage	3,449,918	82.08	0.61	15.61	0.28	0.06	1.36
Tomatoes	277,745	71.73	1.18	25.77	0.08	0.03	1.22
Green peppers	632,405	82.22	0.53	16.16	0.13	0.01	0.95
Red peppers	2,647,225	71.31	1.29	26.24	0.25	0.01	0.9
Swiss chard	17,592	85.34	-	11.55	0.27	-	2.84
<b>Root Crops</b>	49,996,465	74.17	6.67	17.54	0.18	0.6	0.84
Beetroot	256,385	77.35	0.37	21.11	0.08	0.06	1.04
Carrot	173,334	59.89	0.24	38.77	0.12	0.04	0.93
Onion	2,938,876	62.59	3.03	33.25	0.25	0.01	0.87
Potatoes	9,689,696	65.23	12.96	20.69	0.02	0.09	1.01
Yam	4,874,048	78.53	7.77	13.12	0.2	0.11	0.26
Garlic	1,782,219	66.17	11.27	21.96	0.08	*	0.52
Taro / 'Godere'	11,797,769	82.58	7.34	8.11	0.27	0.75	0.95
Sweet potatoes	18,484,137	82.14	0.83	13.74	0.26	1.98	1.04
<b>Permanent crops</b>	28,487,972	54.84	0.49	41.61	0.4	0.64	2.01
Avocados	814,318	53.35	0.32	44.47	0.24	0.23	1.4
Bananas	4,936,022	51.22	0.37	46.41	0.2	0.24	1.57
Guavas	31,998	71.22	0.29	22.73	0.04	-	5.72
Lemons	79,250	40.2	0.07	54.83	0.58	0.09	4.23
Mangoes	1,049,808	58.83	0.06	38.36	0.26	0.08	2.4
Oranges	305,615	53.34	0.31	44.09	0.11	-	2.15
Papayas	543,550	71.15	0.2	26.3	0.21	0.29	1.85
Pineapples	13,746	41.05	1.32	56.84	-	-	0.79
Chat	2,354,538	27.18	1	67.77	0.28	0.02	3.75
Coffee	4,492,298	47.56	0.45	50.05	0.55	0.02	1.37
Hops (Gesho)	396,479	56.96	0.58	41.03	0.14	0.03	1.27
Sugar cane	13,470,350	48.42	0.94	41.78	0.33	6.68	1.85
<b>Enset</b>	65,108,402	82.76	0.5	12.01	0.82	1.83	2.08

TABLE 1.1: CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Tigray

Type of Crop	Total Production (Quintal)	Percent Utilized		For			
		Household Consumption	Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	18,589,665	70.46	10.9	15.09	0.45	0.68	2.42
<b>Cereals</b>	17,135,452	74.8	11.23	9.81	0.5	0.85	2.8
Teff	2,579,061	66.74	11.56	18.33	0.25	0.01	3.1
Barley	1,694,180	72.62	16.7	7.59	0.34	0.59	2.15
Wheat	2,140,031	69.47	17.74	8.25	1.1	0.16	3.29
Maize	1,590,561	82.82	7.32	4.87	0.3	2.3	2.39
Sorghum	7,262,718	75.55	9.61	11.16	0.61	0.71	2.37
Finger millet	1,858,265	75.76	9.29	9.81	0.69	0.13	4.31
Oats "Aja"	270	78.33	11.67	10	-	-	-
Rice	10,366	90	10	-	-	-	-
<b>Pulses</b>	567,698	72.46	10.71	15.22	0.19	0.05	1.37
Horse beans white	173,354	76.74	9.76	12.2	0.24	-	1.06
Horse beans red	80,649	65.16	14.38	18.36	0.11	-	2
Field peas	27,613	87.32	6.45	2.42	0.53	-	3.29
Haricot beans	15,957	89.9	4.38	4.76	-	-	0.95
Chick – peas	111,612	70.35	10.74	17.31	-	-	1.6
Lentils	70,124	56.93	12.71	29.59	0.1	-	0.67
Vetch	84,970	68.68	16.23	11.42	0.47	-	3.21
Soya beans	320	96.5	1	2.5	-	-	-
Fenugreek	3,098	72.74	6.41	19.95	-	0.9	-
Masho	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	886,516	26	7.99	65.16	0.39	0.01	0.45
Neug	78,310	36.03	9.02	54.2	0.04	-	0.71
Linseed	52,631	68.79	8.83	21.2	-	-	1.18
Groundnuts	9,157	22.7	17.1	60.2	-	-	-
Safflower	276	93.75	3.75	2.5	-	-	-
Sesame	746,143	6.59	6.99	85.6	0.69	0.02	0.12
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	116,894	88.85	1.03	9.46	0.12	-	0.54
Lettuce	160	46.67	-	48.33	-	-	5
Head cabbage	6,600	29.44	-	70.56	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	40,467	69.03	3.19	25.83	-	-	1.95
Green peppers	40,571	84.77	-	15.04	-	-	0.19
Red peppers	29,095	95.66	0.92	2.91	0.18	-	0.34
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	111,913	67.28	6.27	25.59	0.04	-	0.82
Beetroot	-	-	-	-	-	-	-
Carrot	1,398	37.5	-	62.5	-	-	-
Onion	29,034	86.75	-	12.83	-	-	0.42
Potatoes	42,353	67.03	0.91	30.24	-	-	1.82
Yam	-	-	-	-	-	-	-
Garlic	39,128	65.07	8.16	26.02	0.06	-	0.7
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-
<b>Permanent crops</b>	129,154	60.86	0.79	35.74	0.14	0.03	2.44
Avocados	-	-	-	-	-	-	-
Bananas	6,494	31.5	-	67	-	-	1.5
Guavas	6,832	64.36	-	30.33	-	-	5.31
Lemons	3,981	29.97	0.57	64.09	0.57	0.43	4.37
Mangoes	5,363	49.55	-	47.09	-	-	3.36
Oranges	7,715	43.53	3.23	50.4	-	-	2.83
Papayas	3,602	62.83	-	34.61	-	-	2.56
Pineapples	-	-	-	-	-	-	-
Chat	-	-	-	-	-	-	-
Coffee	-	-	-	-	-	-	-
Hops (Gesho)	95,166	65.63	0.77	31.59	0.13	-	1.87
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.2- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Afar

Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed		Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	207,924	53.28	8.17	30.44	1.61	0.67	5.83
<b>Cereals</b>	188,989	63.75	7.72	19.26	1.1	0.88	7.28
Teff	12,481	50	10	35	-	-	5
Barley	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-
Maize	138,009	62.24	7.35	20.61	0.41	1.22	8.16
Sorghum	38,499	80.45	7.73	1.82	5	-	5
Finger millet	-	-	-	-	-	-	-
Oats "Aja"	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-
<b>Pulses</b>	17,393	7.14	9.64	80	2.5	-	0.71
Horse beans white	-	-	-	-	-	-	-
Horse beans red	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-
Chick – peas	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-
Masho	17,393	7.14	9.64	80	2.5	-	0.71
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	1,542	45	9.38	38.75	4.38	-	2.5
Neug	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-
Sesame	1,542	45	9.38	38.75	4.38	-	2.5
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	-	-	-	-	-	-	-
Lettuce	-	-	-	-	-	-	-
Head cabbage	-	-	-	-	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	-	-	-	-	-	-	-
Green peppers	-	-	-	-	-	-	-
Red peppers	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	-	-	-	-	-	-	-
Beetroot	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-
Onion	-	-	-	-	-	-	-
Potatoes	-	-	-	-	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-
<b>Permanent crops</b>	-	-	-	-	-	-	-
Avocados	-	-	-	-	-	-	-
Bananas	-	-	-	-	-	-	-
Guavas	-	-	-	-	-	-	-
Lemons	-	-	-	-	-	-	-
Mangoes	-	-	-	-	-	-	-
Oranges	-	-	-	-	-	-	-
Papayas	-	-	-	-	-	-	-
Pineapples	-	-	-	-	-	-	-
Chat	-	-	-	-	-	-	-
Coffee	-	-	-	-	-	-	-
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.3- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Amhara Region							
Type of Crop	Total Production (Quintal)	Household Consumption	Percent Utilized		For		
			Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	100,520,274	62.48	11.44	21.08	1.18	0.21	3.61
<b>Cereals</b>	86,213,639	68.58	10.79	15.23	1.32	0.23	3.86
Teff	20,394,483	54.58	10.79	28.46	1.62	*	4.54
Barley	6,394,524	68.57	17.66	8.37	1.09	0.18	4.13
Wheat	14,047,075	64.88	15.27	13.46	1.52	0.12	4.74
Maize	20,718,658	80.39	5.72	10.33	0.86	0.61	2.09
Sorghum	17,812,032	72.15	9.85	11.18	1.33	0.16	5.33
Finger millet	5,604,665	72.34	9.12	13.23	2.17	0.08	3.07
Oats “Aja”	61,894	66.04	17.74	15.06	-	-	1.16
Rice	1,180,309	54.56	9.16	33.47	0.58	-	2.23
<b>Pulses</b>	11,755,650	50.71	13.9	30.8	0.92	0.24	3.42
Horse beans white	2,836,913	68.5	13.64	14.28	0.93	0.02	2.64
Horse beans red	1,252,803	60.36	15.62	19.48	1.05	-	3.49
Field peas	608,848	41.98	15.39	36.07	1.21	0.42	4.94
Haricot beans	520,911	55.78	10.46	28.34	0.98	0.09	4.36
Chick – peas	2,512,880	49.13	14.41	31.9	1.08	-	3.48
Lentils	969,028	29.79	18.37	48.51	0.57	-	2.75
Vetch	1,848,868	43.63	12.33	35.36	1.74	2.37	4.58
Soya beans	340,412	5.37	16.95	72.2	0.98	-	4.51
Fenugreek	217,414	52.35	10.43	34.57	0.47	-	2.17
Masho	403,015	7.25	8.81	77.95	-	0.18	5.81
Gibto	244,559	33.19	9.19	56.08	0.69	-	0.83
<b>Oilseeds</b>	2,550,984	53	8.99	34.7	0.95	-	2.37
Neug	730,103	37.25	7.53	52.25	1.08	-	1.89
Linseed	183,756	66.87	12.64	16.94	1.07	-	2.48
Groundnuts	102,975	34	13.08	46.83	2.5	-	3.58
Safflower	77,827	67.37	7.64	22.89	-	-	2.11
Sesame	1,237,278	36.71	7.68	50.97	1.18	-	3.46
Rapeseed	219,045	65.09	5.26	28.04	0.36	-	1.25
<b>Vegetables</b>	1,308,808	82.45	0.95	15.6	0.29	-	0.72
Lettuce	-	-	-	-	-	-	-
Head cabbage	65,221	71.13	-	28.29	-	-	0.59
Ethiopian cabbage	69,755	93.67	0.93	4.7	0.13	-	0.57
Tomatoes	89,805	67.7	0.28	30.44	0.46	-	1.11
Green peppers	108,408	86.8	0.58	12.15	0.16	-	0.31
Red peppers	973,547	79.1	1.23	18.35	0.41	-	0.9
Swiss chard	2,073	91.11	-	8.89	-	-	-
<b>Root Crops</b>	5,357,987	70.92	8.54	19.63	0.06	0.04	0.82
Beetroot	15,906	76.67	-	21.67	-	0.51	1.15
Carrot	16,930	60.91	0.45	36.82	-	-	1.82
Onion	1,584,718	65	0.61	33.2	0.1	-	1.1
Potatoes	2,878,019	78.37	8.68	11.82	0.03	0.14	0.97
Yam	-	-	-	-	-	-	-
Garlic	752,017	69.22	11.28	18.94	0.06	-	0.51
Taro / ‘Godere’	-	-	-	-	-	-	-
Sweet potatoes	110,397	83.33	2.14	7.38	-	-	7.14
<b>Permanent crops</b>	2,440,873	61.66	0.76	36.1	0.12	-	1.36
Avocados	-	-	-	-	-	-	-
Bananas	25,742	48.41	2.85	47.35	-	-	1.4
Guavas	6,918	63.4	0.57	30.53	0.24	-	5.26
Lemons	42,141	34.92	-	63.25	-	-	1.83
Mangoes	70,156	56.51	-	41.6	0.15	-	1.73
Oranges	94,142	42.71	-	55.58	0.23	-	1.49
Papayas	70,759	54.73	-	44.54	-	-	0.74
Pineapples	-	-	-	-	-	-	-
Chat	78,579	20.05	3.71	74.54	0.37	-	1.34
Coffee	30,068	75.18	0.52	23.37	0.06	-	0.87
Hops (Gesho)	206,234	72.41	0.33	25.86	0.09	-	1.31
Sugar cane	1,816,135	37.23	-	61.62	0.13	-	1.03
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.4- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Oromia Region							
Type of Crop	Total Production (Quintal)	Household Consumption	Percent Utilized		For		
			Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	151,080,011	61.88	12.62	22.74	0.52	0.39	1.85
<b>Cereals</b>	133,797,762	66.35	12.3	18	0.58	0.54	2.22
Teff	25,814,578	53.17	14.75	29.26	0.85	0.07	1.89
Barley	10,884,877	64.61	18.06	14.46	0.34	0.93	1.61
Wheat	26,699,178	54.36	17.65	25.04	0.63	0.05	2.26
Maize	46,767,441	73.92	7.96	14.04	0.62	0.92	2.54
Sorghum	20,810,667	75.84	10.75	10.35	0.36	0.5	2.2
Finger millet	2,195,374	77.14	11.32	8.34	0.34	0.22	2.64
Oats "Aja"	459,137	53.75	14.78	28.17	0.2	0.71	2.38
Rice	166,511	50.52	13.28	35.17	0.34	-	0.69
<b>Pulses</b>	13,022,349	58.85	13.6	25.95	0.33	0.13	1.15
Horse beans white	4,832,017	60.52	14.91	22.83	0.31	0.01	1.43
Horse beans red	1,578,702	55.43	16.1	26.59	0.66	-	1.22
Field peas	717,880	63.03	12.46	23.27	0.1	0.21	0.92
Haricot beans	1,597,865	71.28	9.6	17.72	0.22	0.18	1
Chick – peas	2,165,837	39.37	17.01	41.27	0.74	0.04	1.56
Lentils	706,006	36.81	14.94	47.35	0.21	0.13	0.56
Vetch	922,906	49.15	15.26	32.5	0.45	1.48	1.15
Soya beans	223,007	49.43	12.76	36.34	0.43	-	1.03
Fenugreek	214,599	54.33	13.1	31.75	0.22	-	0.61
Masho	63,531	12.29	14.14	70.71	0.57	-	2.29
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	4,259,899	34.68	12.41	51.43	0.57	0.02	0.89
Neug	2,338,153	16.18	12.72	68.69	1.43	-	0.98
Linseed	635,444	45.08	14.65	40.07	0.11	-	0.08
Groundnuts	830,153	22.3	15.85	60.52	0.2	-	1.13
Safflower	8,501	73.83	4.57	21.28	0.11	-	0.21
Sesame	349,067	31.31	13.05	55.05	0.18	-	0.42
Rapeseed	98,580	58.07	8.43	31.73	0.3	0.09	1.39
<b>Vegetables</b>	2,734,435	77.24	0.86	20.35	0.12	0.03	1.4
Lettuce	1,370	56.82	-	42.27	-	-	0.91
Head cabbage	188,788	76.54	0.8	21.45	0.03	0.02	1.16
Ethiopian cabbage	912,286	81.31	0.99	15.72	0.21	0.07	1.7
Tomatoes	118,772	72.36	2.23	24.59	-	-	0.82
Green peppers	359,944	84.81	0.4	13.55	0.07	-	1.17
Red peppers	1,137,756	62.02	1.16	35.62	0.06	0.01	1.13
Swiss chard	15,520	82.02	-	13.09	0.43	-	4.47
<b>Root Crops</b>	18,613,782	72.64	5.95	19.79	0.09	0.22	1.3
Beetroot	196,182	77.49	0.45	20.82	0.06	-	1.18
Carrot	122,622	50.3	-	48.51	-	0.1	1.09
Onion	1,049,813	65.39	4.56	28.82	0.25	0.03	0.95
Potatoes	4,848,312	53.72	11.4	33.22	0.03	0.13	1.5
Yam	-	-	-	-	-	-	-
Garlic	870,685	65.8	12.04	21.49	0.06	0.01	0.61
Taro / 'Godere'	1,170,874	89.62	3.67	4.54	0.04	0.11	2.02
Sweet potatoes	10,355,295	85	0.91	11.16	0.16	0.9	1.87
<b>Permanent crops</b>	9,339,003	53.25	0.69	42.57	0.38	0.28	2.82
Avocados	209,753	57.35	1.06	39.25	0.16	0.03	2.15
Bananas	881,327	57.73	0.52	39.38	0.1	0.04	2.23
Guavas	15,018	78.68	0.34	13.19	-	-	7.79
Lemons	8,393	40.63	0.09	53.54	-	-	5.75
Mangoes	418,067	68.91	0.16	27.24	0.08	0.12	3.48
Oranges	41,918	61.72	0.28	35.69	-	-	2.31
Papayas	119,182	77.09	0.67	19.89	-	0.23	2.13
Pineapples	8	65.83	-	32.5	-	-	1.67
Chat	1,291,718	31.53	1.05	62.89	0.14	0.04	4.35
Coffee	3,101,927	42.94	0.67	53.45	0.9	0.03	2.01
Hops (Gesho)	89,452	40.71	0.92	57.1	0.17	0.13	0.97
Sugar cane	3,162,239	55.39	0.91	37.69	0.06	3.45	2.5
<b>Enset</b>	22,620,420	82.44	0.55	12.3	0.64	0.98	3.09

TABLE 1.5- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Somale Region							
Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	1,665,621	74.09	12.31	10.83	0.37	1.38	1.03
<b>Cereals</b>	1,616,665	77.77	12	7.24	0.4	1.49	1.11
Teff	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-
Wheat	91,001	57.67	12.67	28.33	0.67	-	0.67
Maize	574,831	77.73	12.09	4.77	0.87	2.97	1.57
Sorghum	950,833	80.51	11.83	6.31	-	0.54	0.81
Finger millet	-	-	-	-	-	-	-
Oats "Aja"	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-
<b>Pulses</b>	2,518	65	2.5	32.5	-	-	-
Horse beans white	-	-	-	-	-	-	-
Horse beans red	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-
Haricot beans	2,518	65	2.5	32.5	-	-	-
Chick – peas	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-
Masho	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	46,438	16.92	20.38	62.69	-	-	-
Neug	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-
Groundnuts	46,438	16.92	20.38	62.69	-	-	-
Safflower	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	4,867	40.33	0.67	56.67	-	1.67	0.67
Lettuce	-	-	-	-	-	-	-
Head cabbage	-	-	-	-	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	4,047	40	0.83	57.5	-	0.83	0.83
Green peppers	820	41.67	-	53.33	-	5	-
Red peppers	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	123,399	26.91	1.32	71.47	-	-	0.29
Beetroot	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-
Onion	123,399	26.91	1.32	71.47	-	-	0.29
Potatoes	-	-	-	-	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-
<b>Permanent crops</b>	214,914	24.64	0.16	69.36	0.48	0.08	5.28
Avocados	-	-	-	-	-	-	-
Bananas	34,091	29.29	2.86	62.14	-	1.43	4.29
Guavas	292	46.67	-	43.33	-	-	10
Lemons	8,744	21.32	-	73.95	-	-	4.74
Mangoes	44,436	27.67	-	69	-	-	3.33
Oranges	72,648	15.12	-	80.28	-	-	4.6
Papayas	7,368	31.25	-	57.5	-	-	11.25
Pineapples	-	-	-	-	-	-	-
Chat	47,334	27.18	-	66.09	1.09	-	5.64
Coffee	-	-	-	-	-	-	-
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.6- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Benshangul-Gumuz

Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed		Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	5,818,801	56.83	10.71	30.62	0.59	0.27	0.98
<b>Cereals</b>	4,648,688	68.91	10.78	18.28	0.44	0.45	1.13
Teff	328,697	48.99	13.07	35.24	0.49	-	2.21
Barley	10,641	54.05	23.81	18.57	1.19	0.48	1.9
Wheat	59,084	54.46	16.22	29.05	-	0.27	-
Maize	2,033,751	72.15	9.76	16.1	0.4	0.68	0.91
Sorghum	1,580,028	73.44	11.26	14.17	-	0.41	0.72
Finger millet	577,713	66.91	9.61	19.44	1.69	0.1	2.24
Oats "Aja"	-	-	-	-	-	-	-
Rice	58,774	78.33	8.33	13.33	-	-	-
<b>Pulses</b>	445,233	55.97	10.87	32.24	0.18	0.02	0.72
Horse beans white	16,835	68.19	13.94	16.91	0.74	-	0.21
Horse beans red	10,576	64.32	19.77	15.23	0.45	-	0.23
Field peas	38,436	62.01	10.17	27.69	-	-	0.13
Haricot beans	54,889	69.31	8.8	20.45	0.22	-	1.22
Chick – peas	3,949	54	6.4	39.6	-	-	-
Lentils	94	92.5	7.5	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	300,940	16.49	13.22	69.41	-	0.1	0.78
Fenugreek	113	72.5	7.5	20	-	-	-
Masho	18,541	46.54	10.26	43.21	-	-	-
Gibto	861	87.5	12.5	-	-	-	-
<b>Oilseeds</b>	724,881	27	10.41	60.54	1.27	-	0.78
Neug	86,882	14.4	9.17	73.6	2.44	-	0.39
Linseed	4,844	68.55	8.71	20.27	1.87	-	0.6
Groundnuts	412,100	25.89	11.43	60.6	0.71	-	1.36
Safflower	5,183	73.64	7.82	13.09	-	-	5.45
Sesame	213,687	20.5	10.47	67.82	1.07	-	0.14
Rapeseed	2,186	65.95	12.14	21.9	-	-	-
<b>Vegetables</b>	54,471	77.02	1.23	20.82	-	0.02	0.92
Lettuce	-	-	-	-	-	-	-
Head cabbage	3,103	68.85	-	30.96	-	0.19	-
Ethiopian cabbage	3,347	77.62	0.16	21.07	-	-	1.15
Tomatoes	1,041	84.29	-	13.57	-	-	2.14
Green peppers	893	78.7	0.95	19.81	-	-	0.54
Red peppers	46,087	76.43	2.14	20.56	-	-	0.86
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	229,097	76.68	2.07	20.72	0.14	-	0.39
Beetroot	1,244	74.88	1.88	23.25	-	-	-
Carrot	11	68.33	-	31.67	-	-	-
Onion	18,946	65.17	0.93	33.9	-	-	-
Potatoes	27,229	73.43	8.33	18.24	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	350	67.87	10.25	21.48	-	-	0.41
Taro / 'Godere'	23,441	94.75	-	3.93	-	-	1.31
Sweet potatoes	157,877	77.69	0.45	21.29	0.25	-	0.31
<b>Permanent crops</b>	207,604	51.4	0.05	47.27	-	0.02	1.26
Avocados	-	-	-	-	-	-	-
Bananas	60,120	51.2	-	48.26	-	-	0.54
Guavas	-	-	-	-	-	-	-
Lemons	1,205	31.03	-	61.28	-	0.38	7.31
Mangoes	68,008	50.77	-	47.85	-	-	1.38
Oranges	3,642	45.15	-	53.31	-	-	1.54
Papayas	9,162	63.39	-	35.41	-	-	1.2
Pineapples	-	-	-	-	-	-	-
Chat	29,382	36.31	-	62.39	-	-	1.31
Coffee	6,221	61.9	0.35	37.67	-	-	0.08
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	29,864	42.86	-	55.71	-	-	1.43
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.7- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

S.N.N.P.Region							
Type of Crop	Total Production (Quintal)	Household Consumption	Percent Utilized		For		
			Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	27,640,228	63.11	11.69	23.14	0.44	0.56	1.06
<b>Cereals</b>	23,631,257	62.12	11.4	24.02	0.49	0.78	1.18
Teff	3,704,149	38.07	13.23	46.91	0.66	0.1	1.02
Barley	1,545,047	64.03	16.05	17.75	0.54	0.5	1.13
Wheat	3,391,960	49.34	16.29	31.45	0.84	0.06	2.03
Maize	11,969,671	74.19	7.67	15.07	0.37	1.44	1.27
Sorghum	2,852,641	73.1	10.1	14.77	0.27	1.05	0.71
Finger millet	72,050	84.24	9.34	5.79	-	0.04	0.59
Oats "Aja"	5,019	81.5	11.5	4	-	2	1
Rice	90,720	34.57	11.96	51.52	0.22	0.87	0.87
<b>Pulses</b>	3,965,849	65.35	12.1	21.16	0.38	0.19	0.83
Horse beans white	1,358,497	63.05	12.95	22.31	0.44	0.13	1.13
Horse beans red	762,460	58.8	13.78	26.17	0.44	0.11	0.7
Field peas	86,187	79.08	7.82	10.97	0.42	0.64	1.06
Haricot beans	1,529,627	69.71	10.95	18.05	0.32	0.24	0.73
Chick – peas	199,977	54.07	13.61	32.31	-	-	-
Lentils	6,184	50.42	16.5	31.92	1	0.17	-
Vetch	9,272	67	19	14	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	1,151	54.32	12.57	33.11	-	-	-
Masho	11,620	55.77	11	32.26	0.32	-	0.65
Gibto	874	95	-	-	-	-	5
<b>Oilseeds</b>	43,122	54.6	13.71	30.62	0.04	-	1.02
Neug	-	-	-	-	-	-	-
Linseed	5,422	62.28	13.04	24.43	0.13	-	0.13
Groundnuts	14,981	33.79	13.45	52.41	-	-	0.34
Safflower	3,982	69.81	6.54	22.88	-	-	0.77
Sesame	9,887	30	12	50	-	-	8
Rapeseed	8,851	52.72	16.98	28.95	-	-	1.36
<b>Vegetables</b>	3,160,434	77.07	0.55	20.8	0.32	0.05	1.2
Lettuce	-	-	-	-	-	-	-
Head cabbage	101,416	66.31	-	32.85	0.17	0.07	0.59
Ethiopian cabbage	2,464,530	81.35	0.42	16.53	0.33	0.06	1.3
Tomatoes	11,979	83.99	-	15.14	-	-	0.87
Green peppers	121,769	74.79	0.81	23.09	0.26	-	1.05
Red peppers	460,740	44.03	1.77	52.78	0.47	0.03	0.92
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	25,546,487	76.62	7.07	14.32	0.29	1.11	0.59
Beetroot	43,052	77.48	0.13	21.37	0.13	0.07	0.82
Carrot	32,374	68	0.43	30.62	0.26	-	0.69
Onion	132,967	56.34	4.18	38.04	0.58	-	0.86
Potatoes	1,893,784	63.36	20.05	16	0.01	0.01	0.55
Yam	4,874,048	78.53	7.77	13.12	0.2	0.11	0.26
Garlic	120,039	56.67	11.1	31.83	0.22	-	0.18
Taro / 'Godere'	10,603,454	80.52	8.44	9.1	0.33	0.93	0.68
Sweet potatoes	7,846,769	81.47	0.87	13.7	0.32	3.04	0.6
<b>Permanent crops</b>	16,004,026	55.53	0.35	41.06	0.48	1.05	1.52
Avocados	604,564	52.18	0.11	46	0.26	0.28	1.18
Bananas	3,927,212	47.4	0.21	50.54	0.28	0.39	1.19
Guavas	2,939	68.65	0.18	27.88	-	-	3.29
Lemons	14,785	50.52	-	44.4	1.34	-	3.73
Mangoes	443,491	56.59	0.02	41.18	0.53	0.09	1.6
Oranges	85,550	57.28	0.25	40.15	0.18	-	2.14
Papayas	325,562	75.34	0.07	21.74	0.43	0.48	1.95
Pineapples	13,738	38.14	1.47	59.71	-	-	0.69
Chat	764,614	18.55	0.58	77.77	0.23	0.01	2.87
Coffee	1,353,832	47.47	0.3	50.74	0.41	0.01	1.07
Hops (Gesho)	5,627	23.7	0.75	74.31	0.24	-	1.01
Sugar cane	8,462,112	46.8	1	41.99	0.42	8.08	1.69
<b>Enset</b>	42,487,982	82.87	0.49	11.91	0.88	2.14	1.71

TABLE 1.8- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Gambela Region							
Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed		Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	168,777	79.37	11.42	8.35	0.21	0.09	0.56
<b>Cereals</b>	168,517	78.55	11.91	8.64	0.23	0.09	0.59
Teff	564	10	10	80	-	-	-
Barley	530	30	10	60	-	-	-
Wheat	-	-	-	-	-	-	-
Maize	125,828	79.08	13.32	6.77	0.13	0.07	0.63
Sorghum	37,930	81.55	4.72	12.89	0.19	0.19	0.47
Finger millet	164	30	10	60	-	-	-
Oats "Aja"	-	-	-	-	-	-	-
Rice	3,502	43.75	13.25	35.5	7.5	-	-
<b>Pulses</b>	259	94.44	2.5	3.06	-	-	-
Horse beans white	-	-	-	-	-	-	-
Horse beans red	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-
Haricot beans	132	96.88	1.25	1.88	-	-	-
Chick – peas	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-
Masho	128	75	12.5	12.5	-	-	-
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	-	-	-	-	-	-	-
Lettuce	-	-	-	-	-	-	-
Head cabbage	-	-	-	-	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	-	-	-	-	-	-	-
Green peppers	-	-	-	-	-	-	-
Red peppers	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	-	-	-	-	-	-	-
Beetroot	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-
Onion	-	-	-	-	-	-	-
Potatoes	-	-	-	-	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-
<b>Permanent crops</b>	-	-	-	-	-	-	-
Avocados	-	-	-	-	-	-	-
Bananas	-	-	-	-	-	-	-
Guavas	-	-	-	-	-	-	-
Lemons	-	-	-	-	-	-	-
Mangoes	-	-	-	-	-	-	-
Oranges	-	-	-	-	-	-	-
Papayas	-	-	-	-	-	-	-
Pineapples	-	-	-	-	-	-	-
Chat	-	-	-	-	-	-	-
Coffee	-	-	-	-	-	-	-
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.9- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Harari							
Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed	Sale	Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	206,235	73.3	11.99	11.98	-	0.48	2.25
<b>Cereals</b>	173,699	85.31	11.69	0.27	-	0.61	2.12
Teff	-	-	-	-	-	-	-
Barley	166	55	45	-	-	-	-
Wheat	1,329	73.81	26.19	-	-	-	-
Maize	33,828	87.49	10.35	-	-	0.64	1.52
Sorghum	138,377	85.22	10.88	0.49	-	0.65	2.76
Finger millet	-	-	-	-	-	-	-
Oats "Aja"	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-
<b>Pulses</b>	121	85	5	8	-	-	2
Horse beans white	-	-	-	-	-	-	-
Horse beans red	-	-	-	-	-	-	-
Field peas	67	75	5	20	-	-	-
Haricot beans	54	91.67	5	-	-	-	3.33
Chick – peas	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-
Masho	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	32,416	24	13.58	59.63	-	-	2.79
Neug	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-
Groundnuts	32,059	19.37	14.08	63.68	-	-	2.87
Safflower	-	-	-	-	-	-	-
Sesame	357	74.38	8.13	15.63	-	-	1.88
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	-	-	-	-	-	-	-
Lettuce	-	-	-	-	-	-	-
Head cabbage	-	-	-	-	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	-	-	-	-	-	-	-
Green peppers	-	-	-	-	-	-	-
Red peppers	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	13,800	88.67	-	2	-	6.67	2.67
Beetroot	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-
Onion	-	-	-	-	-	-	-
Potatoes	-	-	-	-	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	13,800	88.67	-	2	-	6.67	2.67
<b>Permanent crops</b>	149,260	34.65	0.18	58.31	0.73	-	6.13
Avocados	-	-	-	-	-	-	-
Bananas	1,036	72.17	-	20.5	-	-	7.33
Guavas	-	-	-	-	-	-	-
Lemons	-	-	-	-	-	-	-
Mangoes	287	34.7	-	59.64	-	-	5.66
Oranges	-	-	-	-	-	-	-
Papayas	7,915	38.75	-	58.54	-	-	2.71
Pineapples	-	-	-	-	-	-	-
Chat	139,884	27.01	0.32	64.39	1.27	-	7.01
Coffee	138	53.75	-	44.79	-	-	1.46
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

TABLE 1.10- CROP PRODUCTION AND PERCENT OF UTILIZATION  
ALL HOLDINGS

Dire Dawa

Type of Crop	Total Production (Quintal)	Percent		Utilized	For		
		Household Consumption	Seed		Wages In kind	Animal Feed	Others
<b>Grain Crops</b>	228,848	86.42	7.2	4.38	0.03	0.35	1.62
<b>Cereals</b>	215,096	89.86	7.09	0.26	0.04	0.54	2.21
Teff	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-
Maize	6,296	92.04	5.51	0.21	-	1.32	0.91
Sorghum	208,800	89.33	7.47	0.27	0.05	0.35	2.52
Finger millet	-	-	-	-	-	-	-
Oats "Aja"	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-
<b>Pulses</b>	8,811	90.21	6.35	3.35	-	-	0.08
Horse beans white	-	-	-	-	-	-	-
Horse beans red	-	-	-	-	-	-	-
Field peas	3,098	89.14	10	0.81	-	-	0.05
Haricot beans	5,713	91.04	3.54	5.31	-	-	0.1
Chick – peas	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-
Masho	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-
<b>Oilseeds</b>	4,941	59.63	9.44	29.53	-	-	1.4
Neug	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-
Groundnuts	3,867	29.95	12.15	55.25	-	-	2.65
Safflower	-	-	-	-	-	-	-
Sesame	1,074	85.43	7.09	7.17	-	-	0.3
Rapeseed	-	-	-	-	-	-	-
<b>Vegetables</b>	11,636	52.28	-	46.72	-	-	1
Lettuce	-	-	-	-	-	-	-
Head cabbage	-	-	-	-	-	-	-
Ethiopian cabbage	-	-	-	-	-	-	-
Tomatoes	11,636	52.28	-	46.72	-	-	1
Green peppers	-	-	-	-	-	-	-
Red peppers	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-
<b>Root Crops</b>	-	-	-	-	-	-	-
Beetroot	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-
Onion	-	-	-	-	-	-	-
Potatoes	-	-	-	-	-	-	-
Yam	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Taro / 'Godere'	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-
<b>Permanent crops</b>	3,140	49.16	-	48.45	0.31	-	2.09
Avocados	-	-	-	-	-	-	-
Bananas	-	-	-	-	-	-	-
Guavas	-	-	-	-	-	-	-
Lemons	-	-	-	-	-	-	-
Mangoes	-	-	-	-	-	-	-
Oranges	-	-	-	-	-	-	-
Papayas	-	-	-	-	-	-	-
Pineapples	-	-	-	-	-	-	-
Chat	3,027	54.98	-	42.24	0.38	-	2.41
Coffee	113	21.67	-	77.78	-	-	0.56
Hops (Gesho)	-	-	-	-	-	-	-
Sugar cane	-	-	-	-	-	-	-
<b>Enset</b>	-	-	-	-	-	-	-

### 3.2 UTILIZATION OF LIVESTOCK PRODUCTS

Data on the utilization of animal products were also collected during the survey to assess product usage experience of holders. The products for which utilization data intended to be collected were milk, egg, honey, meat, hides and skins, wool and by-products such as butter, cheese, and bees wax. It is commonly accepted that these products are often used for household consumption and/or sold to finance the purchase of basic household commodities such as coffee, salt, cooking oil, sugar, etc. The products are sometimes used as payments and gifts to others. The survey data on the utilization of animal products in the rural areas are presented in Summary Table 2 and it reveals that of the total annual milk production, 38.97 percent was used for household consumption, 5.84 percent was sold, only 0.21 percent was used for wages in kind and the rest 54.98 percent was used for other purposes (could be for the production of butter, Cheese, and the likes). With respect to the utilization of butter, 59.43 percent of the produce was used for household consumption although considerable portion (35.4 percent) was sold. Most of the total Cheese produced was used for household consumption that is about 80.07 percent, 15.35 percent was sold and the rest 4.58 percent was used for wage in kind and other purposes, which are indicated in the table.

Of the total honey production, about 43.94 percent was used for household consumption, about 52.69 percent was sold, and less than 1 percent of the honey production was used as payment (wage) in the country. On the other hand, 40.19 percent of the wax produced in the country was used as household consumption while 21.98 percent was used for sale.

Concerning utilization of egg production, 28.5 percent of the total egg production was used for household consumption while 42.17 percent of the total egg production was used for sale. About near one-third of the egg production in the country (that is about 29.18 percent) was used for other purposes and that could be for hatching. Holder's utilization practices on hides and skins were also assessed and the results showed that the products are mainly used for sale and household consumption (See Summary Table 2).

SUMMARY TABLE 2: Livestock Product Utilization, 2017/18(2010 E.C)

National

Type of Product	Total %	Percent of Product Utilized for:			
		Household Consumption	Sale	Wages in Kind	Other
Milk	100	38.97	5.84	0.21	54.98
Butter	100	59.43	35.4	0.28	4.89
Cheese	100	80.07	15.35	0.22	4.36
Beef	100	54.69	27.05	0.84	17.43
Mutton/Goat Meat	100	92.36	1.79	0.19	5.67
Eggs	100	28.5	42.17	0.16	29.18
Honey	100	43.94	52.69	0.31	3.06
Bees Wax	100	40.19	21.98	0.34	37.48
Sheep hair	100	62.61	26.14	2.27	8.98
Skin	100	54.44	33.87	0.08	11.61
Hide	100	53.12	38.48	0.11	8.3
Arera	100	56.9	2.41	0.27	40.41
Camel Meat	100	46.49	17.3	-	36.22

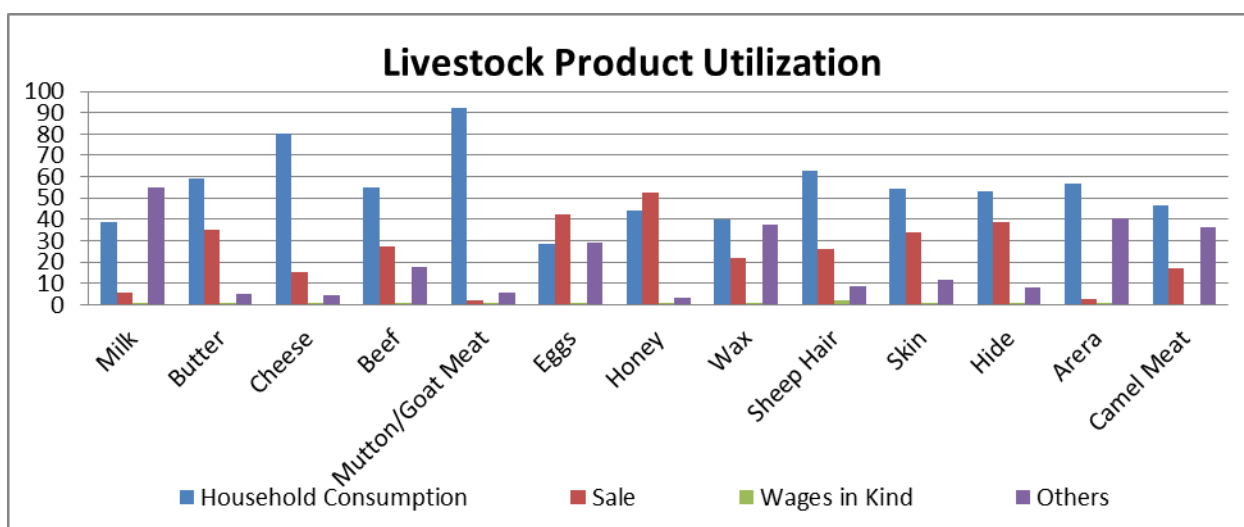


Figure 2: Percentages of Livestock product utilization

Table 2.1 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## Tigray Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	17.3	1.39	0.24	81.08
Butter.....	100	74.53	18.01	0.36	7.1
Cheese.....	100	93.69	0.11	0.29	5.91
Beef.....	100	37.22	32.13	0.43	30.22
Mutton/Goat Meat....	100	94.07	3.17	0.13	2.62
Eggs.....	100	36.41	40.7	0.21	22.68
Honey.....	100	49.33	46.03	0.71	3.93
Wax.....	100	54.86	15.78	0.53	28.83
Sheep Hair.....	100	93.75	6.25	-	-
Skin.....	100	53.41	45.87	-	0.72
Hide.....	100	54.64	42.36	0.18	2.83
Arera.....	100	57.16	0.23	0.51	42.1
Camel Meat.....	100	45	38.33	-	16.67

Table 2.2 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## Afar Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	78.05	2.45	-	19.49
Butter.....	100	75.6	16.58	-	7.82
Cheese.....	100	90	8.95	-	1.05
Beef.....	100	38.75	-	-	61.25
Mutton/Goat Meat....	100	90.8	-	-	9.2
Eggs.....	100	50.2	19.76	-	30.05
Honey.....	100	-	-	-	-
Wax.....	-	-	-	-	-
Sheep Hair.....	100	-	-	-	-
Skin.....	100	82.35	-	-	17.65
Hide.....	100	88.56	5.21	0.21	6.02
Arera.....	100	93.96	-	-	6.04
Camel Meat.....	100	70	-	-	30

Table 2.3 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)  
Amhara Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	28.3	0.69	0.26	70.75
Butter.....	100	63.51	31.01	0.15	5.32
Cheese.....	100	95.3	0.15	0.06	4.5
Beef.....	100	42.18	32.66	2.17	22.98
Mutton/Goat Meat....	100	97.09	0.48	0.11	2.32
Eggs.....	100	22.52	46.64	0.06	30.78
Honey.....	100	42.46	54.85	0.18	2.51
Wax.....	100	39.32	33.33	1.32	26.03
Sheep Hair.....	100	78.39	9.92	-	11.69
Skin.....	100	60.09	35.23	0.06	4.62
Hide.....	100	56.63	41.69	0.03	1.65
Arera.....	100	46.48	0.09	0.15	53.27
Camel Meat.....	100	-	50	-	50

Table 2.4 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

Oromia Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	42	7.45	0.1	50.45
Butter.....	100	56.06	38.81	0.17	4.96
Cheese.....	100	83.75	10.12	0.15	5.98
Beef.....	100	47.8	36.48	0.24	15.47
Mutton/Goat Meat....	100	90.5	3.04	0.2	6.26
Eggs.....	100	28.62	43.97	0.21	27.2
Honey.....	100	45.14	51.22	0.16	3.49
Wax.....	100	32.11	23.8	-	44.08
Sheep Hair.....	100	5.88	94.12	-	-
Skin.....	100	51.09	44.1	0.09	4.73
Hide.....	100	44.46	46.26	0.01	9.26
Arera.....	100	64.35	2.32	0.12	33.21
Camel Meat.....	100	58.33	16.9	-	24.76

Table 2.5 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)  
Somali Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	66.18	29.52	0.09	4.21
Butter.....	100	54.38	45.38	-	0.25
Cheese.....	100	-	-	-	-
Beef.....	100	68	32	-	-
Mutton/Goat Meat....	100	80.87	0.9	0.31	17.93
Eggs.....	100	46.59	45.79	-	7.62
Honey.....	100	20	80	-	-
Wax.....	-	-	-	-	-
Sheep Hair.....	100	-	-	-	-
Skin.....	100	44.44	-	-	55.56
Hide.....	100	35.71	27.61	-	36.69
Arera.....	100	77.19	20.94	-	1.88
Camel Meat.....	100	-	-	-	100

Table 2.6 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

Benshangule-Gumuz Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	36.94	1.14	0.47	61.45
Butter.....	100	57.71	39.24	0.13	2.92
Cheese.....	100	95.23	1.08	0.16	3.54
Beef.....	100	85.49	3.73	0.69	10.1
Mutton/Goat Meat....	100	92.64	2.11	0.37	4.88
Eggs.....	100	16.85	15.63	0.07	67.45
Honey.....	100	31.65	66.34	0.15	1.86
Wax.....	100	29.44	13.02	-	57.54
Sheep Hair.....	-	-	-	-	100
Skin.....	100	79.31	15.42	-	5.28
Hide.....	100	52.18	12.28	-	35.53
Arera.....	100	51.53	-	0.08	48.39
Camel Meat.....	100	-	-	-	-

Table 2.7 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## S.N.N.P. Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	32.2	2.24	0.31	65.24
Butter.....	100	55.17	40.32	0.5	4.01
Cheese.....	100	59.75	37.57	0.4	2.29
Beef.....	100	75.99	19.14	1.11	3.77
Mutton/Goat Meat....	100	92.21	3.77	0.65	3.38
Eggs.....	100	32.34	42.65	0.21	24.81
Honey.....	100	42.82	54.08	0.48	2.62
Wax.....	100	56.23	16.71	0.36	26.71
Sheep Hair.....	100	-	-	100	-
Skin.....	100	48.41	24.21	0.19	27.2
Hide.....	100	47.52	42.13	0.61	9.75
Arera.....	100	51.67	4.72	0.5	43.11
Camel Meat.....	100	45	35	-	20

Table 2.8 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## Gambela Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	81.86	10.45	0.73	6.96
Butter.....	100	80.79	15.13	-	4.08
Cheese.....	100	85	10	-	5
Beef.....	100	42.5	32.5	-	25
Mutton/Goat Meat....	100	77.69	22.31	-	-
Eggs.....	100	27.08	18.3	0.12	54.5
Honey.....	100	34.78	61.06	0.56	3.61
Wax.....	100	33.33	-	-	66.67
Sheep Hair.....	100	35	65	-	-
Skin.....	100	-	-	-	100
Hide.....	100	30	40	-	30
Arera.....	100	69.14	1.43	-	29.43
Camel Meat.....	100	60	-	-	40

Table 2.9 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## Harai Region

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	60.67	31.3	0.21	7.82
Butter.....	100	93.91	6.09	-	-
Cheese.....	-	-	-	-	-
Beef.....	100	56.67	-	-	43.33
Mutton/Goat Meat....	100	66.71	-	-	33.29
Eggs.....	100	39.96	36.26	-	23.78
Honey.....	100	67	26	-	7
Wax.....	-	-	-	-	-
Sheep Hair.....	-	-	-	-	-
Skin.....	100	-	-	-	100
Hide.....	100	6.38	-	-	93.62
Arera.....	100	100	-	-	-
Camel Meat.....	-	-	-	-	-

Table 2.10 Livestock Product percent of Utilization-Private peasant Holders, 2017/18(2010 E.C)

## Dire Dawa

Type of Livestock Product	Total %	Percent Utilized for			
		Household Consumption	Sale	Wages in Kind	Others
Milk.....	100	73.42	25.51	0.05	1.02
Butter.....	100	42.5	48.33	-	9.17
Cheese.....	-	98.33	-	-	1.67
Beef.....	-	-	-	-	-
Mutton/Goat Meat....	100	90.49	0.11	-	9.4
Eggs.....	100	15.47	68.37	-	16.16
Honey.....	100	78.93	15.71	-	5.36
Wax.....	100	-	-	-	-
Sheep Hair.....	-	-	-	-	-
Skin.....	100	-	-	-	-
Hide.....	100	89.29	-	-	10.71
Arera.....	100	96	-	-	4
Camel Meat.....	100	-	-	-	-

**APPENDIX I**  
**ESTIMATION PROCEDURES OF TOTALS, RATIOS AND**  
**SAMPLING ERRORS**

The following formulas were used to estimate total area of land under specific crop, production and yield of specific crop in a stratum.

### 1. For estimating Total Area of Land under Specific Crop:

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

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

Where:

- $h$  represents the stratum
- $n_h$  is the total number of sample EAs successfully covered in the  $h^{\text{th}}$  stratum.
- $M_h$  is the measure of size of the  $h^{\text{th}}$  stratum as obtained from the sampling frame.
- $m_{hi}$  is the measure of size of the  $i^{\text{th}}$  sample EA in the  $h^{\text{th}}$  stratum obtained from the sampling frame.
- $H_{hi}$  is the total number of agricultural households of the  $i^{\text{th}}$  sample EA in the  $h^{\text{th}}$  stratum.
- $h_{hi}$  is the number of sample agricultural households successfully covered in the  $i^{\text{th}}$  sample EA in the  $h^{\text{th}}$  stratum.
- $a_{hij}$  is the value of area for agricultural household  $j$ , in the  $i^{\text{th}}$  EA in the  $h^{\text{th}}$  stratum under a specific crop.
- $a_{hi}$  is the sample total area under specific crop for EA  $i$  in stratum  $h$
- $\hat{A}_h$  estimate of total area under specific crop in stratum  $h$

### 2. For estimating Total Production under Specific Crop:

$$\hat{P}_h = \sum_{i=1}^{n_h} W_{hi} P_{hi}$$

in which,  $P_{hi} = a_{hi} * \bar{Y}_{hi}$

Where,  $\bar{Y}_{hi} = \frac{Y_{hi}}{16C_{hi}}$  is average yield per square meter of a specific crop in the  $i^{\text{th}}$  EA in

the  $h^{\text{th}}$  stratum.

$\hat{P}_h$  is estimate of total quantity of production of a specific crop in the  $h^{\text{th}}$  stratum.

$Y_{hi}$  is sample total quantity of production of a specific crop from defined area of land for crop cutting of a crop in the  $i^{\text{th}}$  EA in the  $h^{\text{th}}$  stratum.

$P_{hi}$  is estimate of total quantity of production under specific crop for EA  $i$  in stratum  $h$ .

$C_{hi}$  is the number of crop cutting of a specific crop in the  $i^{\text{th}}$  EA in the  $h^{\text{th}}$  stratum.

### 3. For estimating yield of a specific crop in stratum $h$ :

$$\hat{Y}_h = \frac{\hat{P}_h}{\hat{A}_h}$$

### 4. For estimating ratios in stratum $h$

$$\hat{R}_h = \frac{\hat{Z}_h}{\hat{X}_h},$$

Where,

$\hat{Z}_h$  and  $\hat{X}_h$  are estimates of domain totals for characteristic  $Z$  and  $X$ , respectively.

### 5. Sampling Variance of Estimates:

Sampling variance for the estimate of stratum total of area, production and yield for a specific crop are estimated by the following formulas.

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

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

$$Var(\hat{Y}_h) = \frac{1}{\hat{A}_h^2} \left[ Var(\hat{P}_h) + \hat{Y}_h^2 Var(\hat{A}_h) - 2\hat{Y}_h Cov(\hat{P}_h, \hat{A}_h) \right]$$

Where,

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

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

$f_{hi} = \frac{h_{hi}}{H_{hi}}$  = average second stage probability of selection within the  $i^{\text{th}}$  sample EA in

stratum  $h$ .

$\hat{A}_{hi}, \hat{P}_{hi}$  are weighted total area and production, respectively, of a specific crop in the  $i^{\text{th}}$  EA and  $h^{\text{th}}$  stratum.

$\hat{A}_{hij}, \hat{P}_{hij}$  are weighted values of area and production, respectively, from  $j^{\text{th}}$  agricultural household in the  $i^{\text{th}}$  EA and  $h^{\text{th}}$  stratum under a specific crop.

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.

$$Var(\hat{A}) = \sum_h^L Var(\hat{A}_h), Var(\hat{P}) = \sum_h^L Var(\hat{P}_h) \text{ and } Var(\hat{Y}) = \sum_h^L Var(\hat{Y}_h)$$

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.

## 5. Coefficient of Variation (CV) of Estimates:

Coefficient of Variation (CV) in percentage of estimate of stratum total of area, production and yield for a specific crop are given by:

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

**6. Ninety-five percent confidence interval (CI) of stratum total of area:**

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

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

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

**APPENDIX II**  
**QUESTIONNAIRE**

CENTRAL STATISTICAL AGENCY  
ETHIOPIAN AGRICULTURAL SAMPLE SURVEY 2017/18(2010 E.C)

PART1- IDENTIFICATION PARTICULARS

1	2	3	4	5	6	7	8	9	10	11
Region	Zone	Woreda	PA	EA	HH Id	HOLDER Id	HOLDERS			FARMING TYPE
							NAME	AGE	SEX M=1 F=2	Crop = 1 Livestock = 2 Both = 3

Part II-Crop Usage Proportions (percentages)

1	2	3	4	5	6	7	8	9
SR.NO	Name of Crop Code	Proportions of Total Product for						
		Household consumption	Seed	Sale*	Wages in Kind	Animal feed	Others	Total
0	1							
0	2							
0	3							
0	4							
0	5							
0	6							
0	7							
0	8							
0	9							
1	0							
1	1							
1	2							
1	3							
1	4							
1	5							

Part III-Livestock Product Usage Proportions

1	2	3	4	5	6	7
Sr No	Name of livestock and Livestock product	Proportions in Percentage				
		Household consumption	Sale*	Wages in Kind	Others	Total
0	1	Milk				
0	2	Butter				
0	3	Cheese				
0	4	Beef				
0	5	Mutton/Goat Meat				
0	6	Camel Meat				
0	7	Eggs				
0	8	Honey				
0	9	Wax				
1	0	Sheep Hair				
1	1	Skin				
1	2	Hide				
1	3	Arera				
1	4	Aguate				
1	5	Others (Specify)				

\*For sale includes the part of products that the holder sold for purchase of agricultural inputs, family clothing etc.