

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

AGRICULTURAL SAMPLE SURVEY

2011/12 (2004 E.C) VOLUME V



**REPORT ON AREA AND PRODUCTION OF
BELG SEASON CROPS FOR**

PRIVATE PEASANT HOLDINGS

**ADDIS ABABA
SEPTEMBER 2012**

532

STATISTICAL BULLETIN

532

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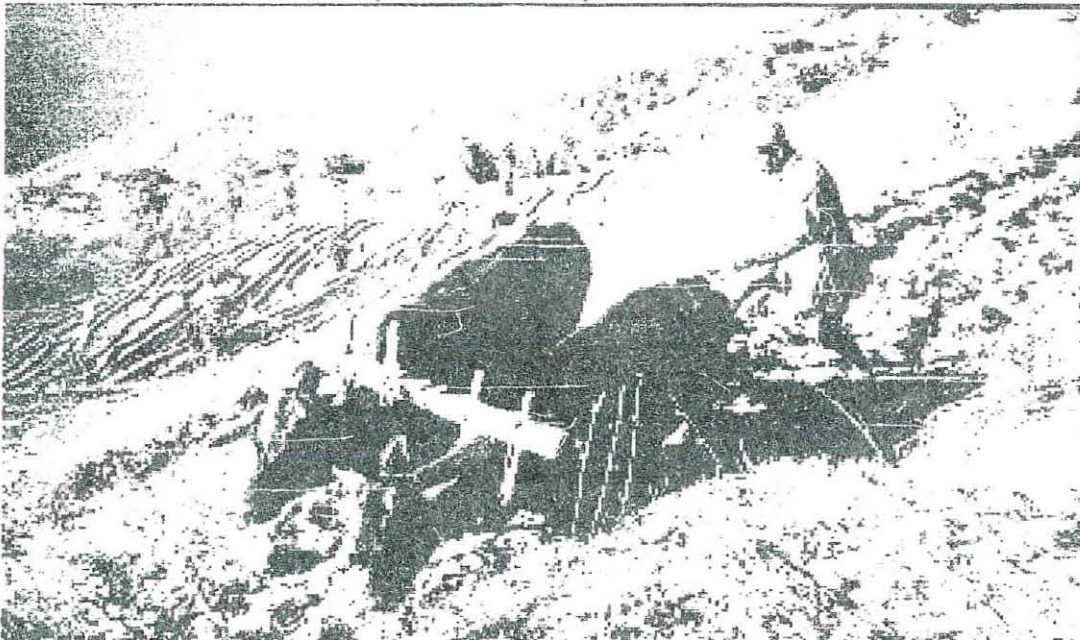
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PREPARED AND PRINTED BY
CENTRAL STATISTICAL AGENCY
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CHAPTER I

1. INTRODUCTION AND OBJECTIVES OF THE SURVEY

1.1 INTRODUCTION

As it is true in most developing countries, in Ethiopia, agriculture is the dominant sector of the economy. As a result, Agriculture contributes the lion share of the Gross Domestic Product (GDP) and foreign currency earnings of the country from the sell of agricultural outputs abroad. Moreover, the sector creates employment opportunity to the majority of the country's population and at present nearly about 84 percent of the country's population depends on agriculture to sustain their livelihood. Hence, as it had been for centuries in the past, still being the leading sector at present, it is believed to remain being the determinant sector to play a dominant role to bring about an overall sustainable economic growth to the country, for the years to come. This would be materialized if and only if strenuous efforts are made by the government and the concerned stakeholders including the farmer, to increase productivity through increased use of farm inputs such as improved seed, fertilizers and modernize the farm activity through increased use of modern and improved farm implements and farming systems as well as through the introduction of modern farming technology to the sector as a whole. In order to meet the goals mentioned above and pave the way for the concerned stakeholders to identify, plan, implement and monitor agricultural projects and developmental programs among others, the availability and regular supply of reliable, comprehensive and timely statistical information on the overall performance of the sector is considered essential for use as a primary input to their planning purpose and related activities.

To minimize the existing data gap and fulfill the demand of the stakeholders concerned, for the past three decades, the Central Statistical Agency (CSA) has been conducting annual agricultural sample survey under which four integrated sample surveys designed for the collection of agricultural information on the performances of the sector were launched all over the country and used to disseminate the survey results to ultimate users on annual basis. The 2011/12 (2004 E.C.), Belg Season Crop Production Sample Survey, for which this report is meant for, is among the four integrated sample surveys launched on annual basis under the umbrella of the agricultural sample survey all over the country.

This report, which is Volume V of the nine series of statistical reports on agriculture, presents quantitative results on crop land area, production, and yield of major Belg crops, grown during the 2011/12 Belg season by private peasant holdings as obtained from the results of the 2011/12 (2004 E.C.), Belg Season Crop Production Sample Survey.

1.2 Objectives of the Survey

The objectives of the 2011/12 (2004 E.C.), Belg Season Crop Production Sample Survey is to produce basic quantitative information on:-

- Cropland area, production and yield of major belg season crops, and
- The extent and use of different farm management practices on belg season crops such as fertilized crop land area and quantity of fertilizer used by crop and fertilizer type, irrigated crop land area, area under improved seed, pesticide treated cropland area ... etc.

The adequate and timely supply of this information to ultimate users is therefore, important for use as a primary input in the process of policy formulation, designing developmental agricultural projects and programmes. This report, therefore, presents quantitative information on the above-mentioned major variables at country and regional levels.

CHAPTER II

2. SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING

2.1 COVERAGE

The 2011/12 (2004 E.C.) Annual Agricultural Sample Survey (Belg season) covered the entire rural parts of the country except the non-sedentary population of three zones of Afar & six zones of Somali regions. Accordingly the survey took in to account of all parts of Harari, Dire Dawa, and actually 59 Zones / Special weredas (that are treated as zones) of other regions.

To be covered by the survey, a total of around 1,440 Enumeration Areas (EAs) were selected. However, due to some EAs weren't growing Belg season crops, in 201 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,239 EAs throughout the regions. The Annual Agricultural Sample survey (Belg season) data was collected from 30 agricultural households selected from each EA.

2.2 SAMPLING FRAME

The list containing EAs of all regions and their respective households obtained from the 2007 Population and housing Census Frame was used as the sampling frame in order to select the Primary Sampling Units (EAs). 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 agricultural household have were the Secondary Sampling Units (SSUs). The sample size for the 2011/12 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. Except Harari, and Dire Dawa each region as a whole was taken to be the domain of estimation. Each zone of a region / special wereda was adopted as a stratum 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 2007 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 Field Organization

The Central Statistical Agency (CSA) has 25 Branch Statistical Office which contains heads, field supervisors and enumerators, other supporting staff and drivers were all involved in the field operation activities of the 2011/12 (2004 E.C.) Belg season Crop Production Sample survey. To accomplish the data collection activities, all field enumerators were equipped with the necessary survey equipment (i.e. compass, programmable calculator, measuring tape ... etc). To assist with the field work and data collection activities all available four-wheel drive vehicles were used for supervision and collection of completed questionnaires.

2.6 Training of Field Staff

At the beginning of the survey year, 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, statisticians and some of the field supervisors for one week at Hawassa that lasted 7 days. Those trained in the first stage conducted similar training for field supervisors and enumerators for 17 days in the 24 Branch Statistical Offices, which are distributed all over the country. During the second stage training, the field staff were given detailed classroom instruction on the objectives and uses of the Agricultural Sample Survey (AgSS), concepts, and definitions of terms used, the method of area measurement, interviewing procedures, ... etc. The enumerators and supervisors training

also included a field practice to reinforce the procedures discussed in the classroom with regard to field area measurement, use of the programmable calculator, GPS, Compass rope and crop-cutting techniques.

2.7 Methods of Data Collection.

Except cropland area of Major Belg Season crop, the data of which collected objectively using compasses, GPS and measuring tape, the information on production of major Belg Season crops and agricultural practices (uses of fertilizer, pesticide, improved seed and irrigation) were subjectively collected by interviewing the holders of sampled households. Appendix II illustrates the total number of EAs and households reporting for the 2011/12 (2004 E.C.), Belg crop production by region.

A major characteristic of Ethiopian agriculture is the existence of two well-known crop production seasons referred to as the Meher (or main) and Belg(short rain) Seasons. The general accepted definition of the Meher season is that of the long rainy season, which normally occurs from June to September. The Belg Season most often refers to small but timely rainy season, which normally occurs from February to May but in limited areas of the country. Generally, the Meher Season rainy period provides ideal growing conditions for the longer maturing crops. Planting and harvest of Meher crops can extend to December or January in some areas. Most of the time holders rely on short maturing crops for planting during the Belg rainy period and harvest of the crops is in June or July.

A point of contention arises with respect to the pure definition of the Belg crop. Belg cropping practices are heterogeneous across different parts of the country. The nature of the sowing period also overlaps with some of the Meher Season crops. Consequently, the report on Belg Season crops in the past faced a problem of a clearly defined growing period. It is important not to overlook or miss agricultural practices performed all year round due to use of irrigation or soil moisture from **sufficiently dried areas that from time-to-time are swampy or marshy**. To help clarify the two-crop season, the following definition has been in use since 1987/88:

Belg Season Crops were defined as any crops that are harvested during the months of March to August, while those crops that are harvested during September to February are considered Meher (main) season crops.

This report consists of estimates of area, production and yield of major Belg Season crops for the year 2011/12 (2004 E.C.). The data collection period for obtaining the area, production and agricultural practices of the Belg season crops was from 'Sene' 1-15, 2004 E.C. (i.e. From June 8 to June 22, 2012). Data on area under Belg season crop are collected objectively using compass/GPS and measuring tapes, while data on production of belg season crops were using subjective method based on face-to-face interviewing of the holder by the enumerator. Data on production of belg season crops are calculated from the condition factor data that are collected directly from the sampled holders within household and development agents (DA). The enumerators were trained to systematically present the questions to the respondents on percentage changes using the local translation and meaning. The enumerators were also trained on how to use comparative associations to represent the concept of percentage changes and fill in the questionnaire.

2.8 Data Processing

a. Editing, Coding and Verification

To insure the quality of the collected survey data an editing, coding, and verification instruction manual was written, and 27 editors, data coders and verifiers were trained for one day to edit, code and verify the data using the aforementioned manual as a reference and teaching aid. The enumerator completed edited and coded questionnaires sent to the head office were thoroughly verified by trained verifiers on a 100% basis before the questionnaires were sent to the data entry unit. The editing, coding, verification and manual cleaning of all questionnaires were completed in 15 days.

b. Data Entry, Cleaning and Tabulation

Before starting data entry computer edit specifications were prepared for use on personal computers, utilizing the CSPRO Software for data consistency checking purposes. The data on the coded questionnaires were then entered into the CSPRO software on personal computers. The data was then checked and cleaned using the computer edit specifications prepared earlier for this purpose. 77 data encoders and 3 supervisors were involved in this

total process and it took 16 days to complete the job. Finally, tabulation was done on personal computers to produce results as indicated in the tabulation plan.

2.9 Basic concepts and definitions

For better understanding and ultimate use of the data presented in this report, the definitions and concepts of technical terms and terminologies used for the collection of all types of data of the 2011/12 (2004 E.C.) Belg Seasons Crop Production Sample Survey is presented here below: -

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 it consists of 150-200 households.

Household:- 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 unrelated persons, or a combination of both.

Agricultural Household: - 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 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 helps, 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 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.

Parcel: - A parcel of holding is any piece of land entirely surrounded by land, Water, road, forest, etc. which is not part of the holding. It may consist of one or more cadastral units, plots or field 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 crop.

Belg Season Crops: - are defined as any crops that are harvested during the months of March (Megabit) to August (Nehase).

Meher Season Crops: - are those crops that are harvested during September (Meskerem) to February (Yekatit) are considered as main (Meher) season crops.

Irrigated area: - refers to the area of land purposely and actually provided with water, other than by rain, for improving the production of crops. The uncontrolled flooding of land by the over flow of rivers or streams is not categorized as irrigation practice although sometimes farmers use this incidence for production.

Improved Seed: is defined as crop variety, which gives significantly higher yield, better quality and/or better benefit compared to traditional varieties of seeds, and usually produced by the Ethiopian Seed Enterprise (ESE) in Ethiopia.

Fertilizer: - refers to anything added to the soil intended to increase the amount of plant nutrients available for crop growth. Usually fertilizers are divided into two parts, Natural and commercial. Examples of natural fertilizers are farmyard manure and wood ashes while commercial fertilizers are DAP (Di-Ammonium phosphate) and UREA (Ammonium Nitrate).

Pesticides: Pesticides are chemicals useful for the mitigation, control or elimination of pests which are troublesome or harmful to crop. Insecticides, herbicides and fungicides are all considered as pesticides.

CHAPTER III

3. SUMMARY OF THE MAJOR FINDINGS OF THE SURVEY.

As it has been forecasted earlier by the Ethiopian Metrological Agency and practically proved by farmers interviewed at their farm gate during the survey field work, the overall performance of the 2011/12 (2004 E.C.) Belg season crop production activity was not good in all Belg Crop producing areas across the country. The rain of Belg which was abnormal and inadequate in its amount and distribution is among the major factors that had negative effect on the land preparation and sowing activities, and resulted the decreased Belg crop production as a whole. Consequently, considerable number of Belg season dependent farmers was in worse position this year as compared to the previous year.

Based on the facts mentioned above, the main findings of the 2011/12 (2004 E.C.) Belg season crop production sample survey is presented as follows.

3.1. Grain Crops:- refer to the major crop category that included cereals, pulses and oilseeds, which not only constituted the major food crops for the majority of the country's population but also served as a source of income at household level and a contributor for the country's foreign currency earnings, among others. The results of the 2011/12 (2004E.C) bulg season crop production survey indicate that a total land area of about 1,170,935.84 hectares of land was estimated to be covered by major Belg crops from which a total production of 6,822,084.50 quintals was estimated to be harvested at country level. Out of the above mentioned total Belg season cropland area and total volume of production, cereals contributed the lion share both in cropped area coverage and volume of production i.e. about 891,169.42 hectares (76.12%) of the country total Belg cropland area) and about 5,801,702.24 quintals (85.04%) of the country total Production), followed by Pulses that covered about 261,966.22 hectares (22.37%), with a production of 1,014,812.93 quintals (14.88%). (For details see Summary Table 1).

Summary Table 1: Cropland Area and Production of Major Belg Crops:

Private Peasant Holdings, 2011/12 (2004 E.C.).

Country Level

Crop Category	Total Cropland Area		Total Production	
	in Hectare	%	In Quintals	%
<i>Cereal</i>	891,169.42	76.12	5,801,702.24	85.04
<i>Pulses</i>	261,966.22	22.37	1,014,812.93	14.88
<i>Oilseeds</i>	17,800.20	1.52	*	*
Grain Crops	1,170,935.84	100.00	6,822,084.50	100.00

To give bird's eye view on the performance of the 2011/12 Crop production Year, the total estimated Cropland Area and production of Major Crops for Private peasant holders and commercial farms of during Main (Meher) and Belg Seasons of the Year is presented as follows:-

	<u>Grain Cropped Area in Ha</u>	<u>Volume of Production in Qts</u>
Private holdings in 2011/12 Meher Season	12,086,604	218,570,430
Private holdings in 2011/12 Belg Season	1,170,935.84	6,822,084.50
Commercial farm 2011/12	<u>618,292.4</u>	<u>67,893,532.08</u>
Grand Total	13,875,832.24	293,286,046.58

3.2. Estimates of the 2011/12 (2004 E.C) Total Cropland Area and Production of Major Crops Both Seasons (Meher and Belg)

The year 2011/12(2004 E.C.) total cropland area and production of major crops during both seasons, was estimated to be 13,257,539.84 hectares and 225,392,514.5 quintals, respectively. Out of the above mentioned totals, cereals covered about 10,480,093.13

hectares (79.05%) of the total cropland area covered during both seasons) with a production of 193,901,319.19 quintals (86.03 %) of the total volume of production of the year); While Pulses and Oilseeds covered about 1,878,775.59; 898671.01 hectares which accounted for about 14.17% and 6.78% of the total cropland area, respectively. (For the details see Summary Tables 2 and 3).

**Summary Table 2. Cropland Area under Major Crops; Private Peasant Holdings
2011/12 (2004 E.C.), Both Seasons:**

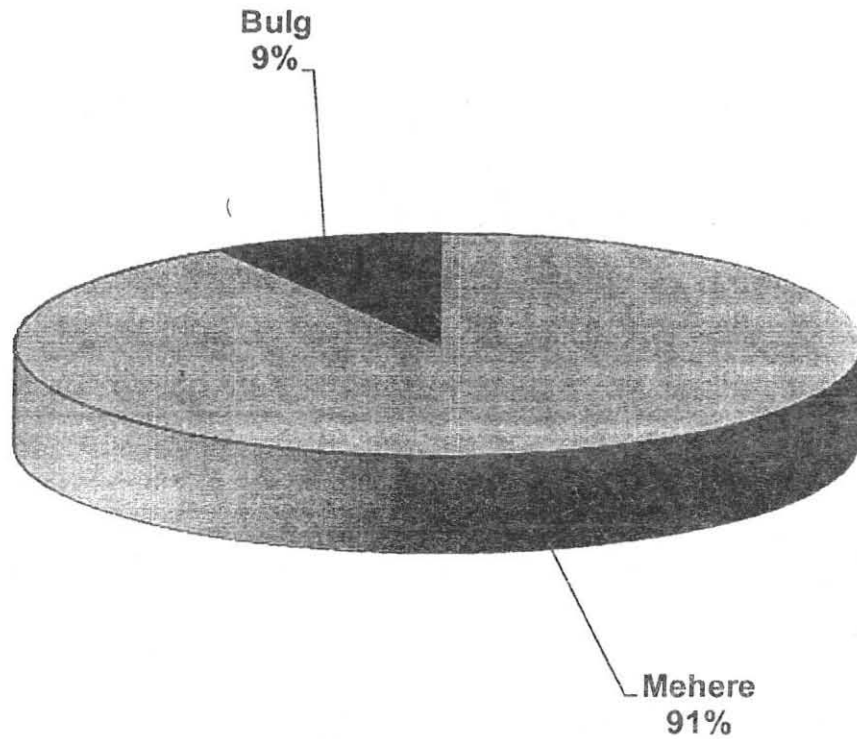
Country Level						
<i>Crop Type</i>	<i>Total Cropland Area in Hectares during</i>					
	<i>Meher Season</i>		<i>Belg Season</i>		<i>Both seasons</i>	<i>Total</i>
	<i>Area in Ha</i>	<i>%</i>	<i>Area in Ha</i>	<i>%</i>	<i>Area in Ha</i>	<i>%</i>
<i>Cereal</i>	9,588,923.71	79.34	891,169.42	76.11	10,480,093.13	79.05
<i>Pulses</i>	1,616,809.37	13.38	261,966.22	22.37	1,878,775.59	14.17
<i>Oilseeds</i>	880,870.81	7.29	17,800.20	1.52	898,671.01	6.79
<i>Total</i>	12,086,603.89	100.00	1,170,935.84	100.00	13,257,539.73	100.00

Moreover, since Meher is a long rainy season almost 80 to 90 % of the private peasant farmers perform their crop production activities during this season. As a matter this fact, out of the total cropland area cultivated under major crops during the 2011/12(2004 E.C.) production year, Cropland area cultivated under major crops during Meher Season was found to be the highest i.e, 12,086,603.89 hectares Contributing about 91.17% to the total cropland area coverage, with a

**Summary Table 3 Total Production of Major Crops Harvested by Private
Peasant Holdings; 2011/12 (2004 E.C.), Both Seasons:**

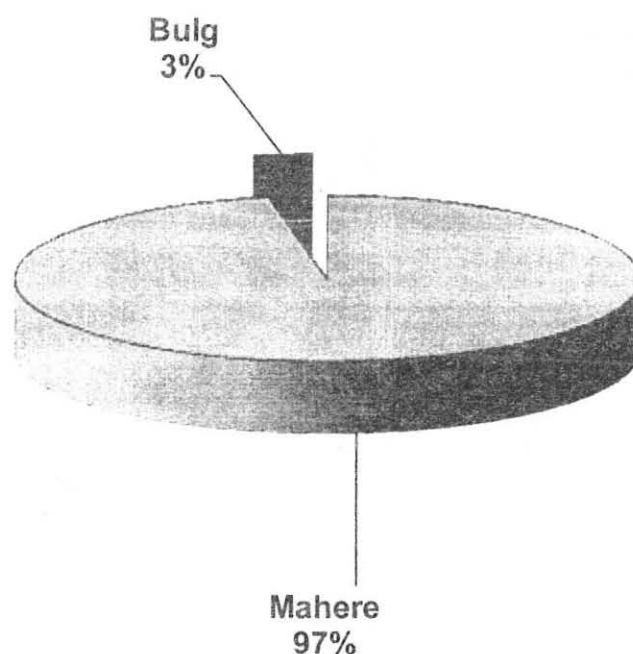
Country Level						
<i>Crop Type</i>	<i>Total Production in Quintals, Harvested during</i>					
	<i>Meher Season</i>		<i>Belg Season</i>		<i>Both seasons Total</i>	
	<i>Prod. in Qts</i>	<i>%</i>	<i>Prod. in Qts</i>	<i>%</i>	<i>in (000) Qts</i>	<i>%</i>
<i>Cereal</i>	188,099,616.95	86.06	5,801,702.24	85.11	193,901,319.19	86.03
<i>Pulses</i>	23,162,012.43	10.60	1,014,812.93	14.89	24,176,825.36	10.73
<i>Oilseeds</i>	7,308,800.29	3.34	*		7,308,800.29	3.24
<i>Total</i>	218,570,429.67	100.00	6822084.50	100.00	225,392,514.14	100.00

Figure1.Estimate of Total Area Under Major Crops for Private Holding in Ethiopia for both Seasons 2011/12 (2004E.C)



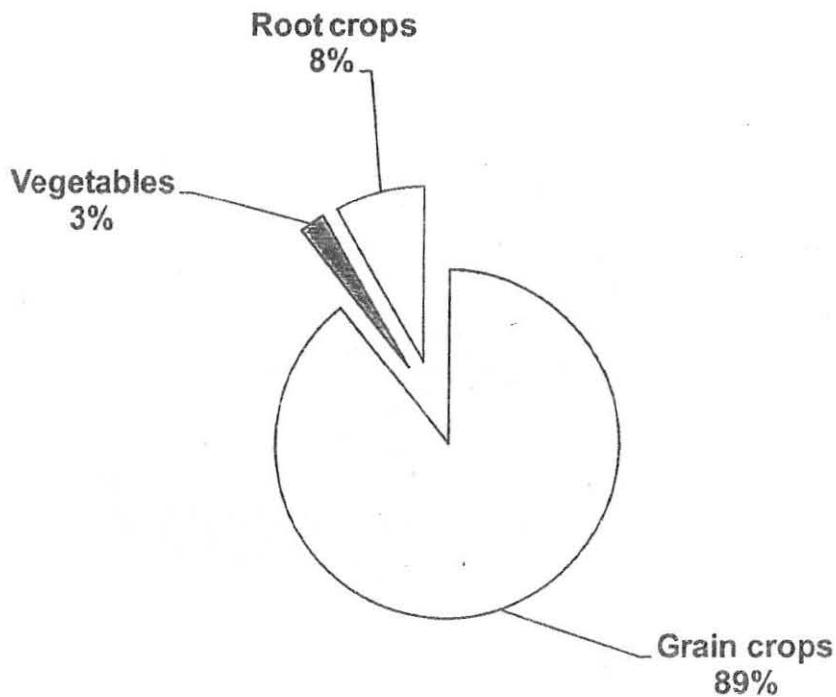
total production of 218,570,429.67quintals (96.98%) at country level. While belg season contributes the remaining about 9% (i.e. 1,170,935.84 hectares) to the total cropland area with about 3.02 % (i.e. 6,816,515.17quintal share from the total production volume reported at country level (For the details see Figs 1 and 2).

Figure 2. Estimates of Total Production of Major Crops for Private Holdings in Ethiopia for both Seasons 2011/12(2004 E.C)



3.2.2 Vegetables: - holders living near to urban centres largely practice vegetable farming. Most vegetables are not commonly practiced by the rural private peasant holders, hence the small volume of production recorded as well evidenced by the survey results. Figure 3 underlines this more in the report. Vegetables took up about 2.42% of the area under all crops at national level. Of all the area under vegetables 87.10% and 5.98% was under Ethiopian Cabbage and Tomato, respectively (See Statistical Table 5). As to production of vegetables, 88.54% and 7.05% was that of the same crops, in that order.

Figure3.Area Under Major Crops 2011/12(200 4E.C) Bulg Season



3.2.3. Root Crops: - Some root crops like onion and garlic are indispensable to improve the taste and scent of the food we eat. Others like potatoes, sweet potatoes and taro/ Godere are among the list of major food crops that are consumed across the country. These and other economic importance's prompt the peasant holders to grow many of the root crops as shown in the survey results. Table 2 substantiates this point in more details. Root crops covered more than 8.29% of the area under all crops in the country. Potatoes, sweet potatoes and Onion added 77.99%, 8.85% and 6.14% of the area to the root crops total. The same crops contributed 58.48%, 18.19% and 12.36% to the root crop production total in the same order.

NOTES: -

1. Some estimates in all reporting levels are excluded due to high coefficient of variations. Nevertheless, they are incorporated in the total estimates. Hence the sum of the specific estimates may not be equal to the total estimates.
2. Users are also advised to use those estimates with 30-50% coefficient of variation (CV) cautiously
3. Even though area is reported for some crops in some reporting levels, no production data is available such cases are designated by Not Stated (NS). On the other hand, in all tables "-" labeled for data not available totally.

National and Regional Statistical Tables

Table 5. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.) National

Crop Name	Number of Holders	Cropland Area		Production		Yield QT/Hec.
		in Hectares	%	in Quintals	%	
Grain Crops	4,952,873.00	1,170,935.84	100	6,822,084.50	100	5.83
Cereals.....	4,470,121.00	891,169.42	76.11	5,801,702.24	85.04	
Teff.....	305,006.00	74,143.56	6.33	310,109.70	4.55	4.18
Barley.....	832,911.00	149,377.40	12.76	862,726.33	12.65	5.78
Wheat.....	229,296.00	62,349.79	5.32	556,057.25	8.15	8.92
Maize.....	3,640,182.00	526,427.98	44.96	3,769,134.61	55.25	7.16
Sorghum.....	360,829.00	69,267.69	5.92	207,146.40	3.04	2.99
Finger millet...	9,808.00	803.10	0.07	*	*	*
Oats/'Aja'.....	59,684.00	6,921.36	0.59	48,832.86	0.72	7.06
Rice.....	*	*	*	*	*	*
Pulses.....	3,039,819.00	261,966.22	22.37	1,014,812.93	14.88	
Horse beans.....	81,022.00	5,320.66	0.45	10,145.33	0.15	1.91
Field peas.....	108,018.00	15,761.15	1.35	83,271.79	1.22	5.28
Haricot beans...	2,828,231.00	218,549.93	18.66	842,885.93	12.36	3.86
Chick-peas.....	63,046.00	7,213.51	0.62	71,423.43	1.05	9.9
Lentils.....	76,686.00	9,092.51	0.78	213.20	*	0.02
Vetch.....	27,690.00	*	*	*	*	*
Soya beans.....	*	*	*	-	-	-
Fenugreek.....	34,241.00	2,146.51	0.18	5,068.80	0.07	2.36
Gibto.....	*	*	*	-	-	-
Oilseeds.....	102,885.00	17,800.20	1.52	*	*	
Neug.....	2,007.00	*	*	-	-	-
Linseed.....	14,580.00	1,058.47	0.09	*	*	*
Groundnuts.....	38,970.00	4,339.07	0.37	*	*	*
Sunflower.....	5,037.00	240.97	0.02	-	-	-
Sesame.....	33,286.00	11,726.83	1	*	*	*
Rapeseed.....	10,769.00	*	*	-	-	-
Vegetables.....	1,937,216.00	31,687.36	100.00	1,625,659.42	100.00	51.30
Lettuce.....	4,396.00	*	*	*	*	*
Head Cabbage.....	51,919.00	669.94	2.11	33,880.88	2.08	50.57
Ethiopian Cabbage.....	1,814,813.00	27,600.64	87.10	1,439,382.22	88.54	52.15
Tomatoes.....	60,301.00	1,894.83	5.98	114,587.74	7.05	60.47
Green peppers.....	101,396.00	792.54	2.50	31,675.82	1.95	39.97
Red peppers.....	30,997.00	650.10	2.05	*	*	*
Swiss chard.....	5,837.00	*	*	*	*	*
Root Crops.....	1,999,004.00	108,768.60	100.00	8,640,063.28	100.00	79.44
Beetroot.....	39,554.00	296.91	0.27	5,978.95	0.21	20.14
Carrot.....	35,087.00	758.50	0.70	31,984.15	1.13	42.17
Onion.....	207,697.00	6,682.40	6.14	349,882.64	12.36	52.36
Potatoes.....	1,397,093.00	84,825.00	77.99	6,544,309.70	58.48	77.15
Garlic.....	297,141.00	3,521.48	3.24	232,907.32	8.23	66.14
Taro/'Godere'.....	167,675.00	3,059.04	2.81	39,732.68	1.40	12.99
Sweet potatoes.....	271,030.00	9,625.27	8.85	1,435,268.34	18.19	149.11

Table 6. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)

Tigray

Crop Name	Number of Holders	Cropland Area in Hectares	%	Production in Quintals	%	Yield QT/Hec
Grain Crops	15,357.00	4,624.10	100	*	*	*
Cereals.....	15,110.00	4,476.67	96.81	*	*	
Teff.....	8,440.00	*	*	-	-	-
Barley.....	*	*	*	*	*	*
Wheat.....	-	-	-	-	-	-
Maize.....	*	*	*	*	*	*
Sorghum.....	-	-	-	-	-	-
Finger millet...	-	-	-	-	-	-
Oats/'Aja'.....	-	-	-	-	-	-
Rice.....	-	-	-	-	-	-
Pulses.....	*	*	*	-	-	
Horse beans.....	-	-	-	-	-	-
Field peas.....	-	-	-	-	-	-
Haricot beans...	-	-	-	-	-	-
Chick-peas.....	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-
Vetch.....	*	*	*	-	-	-
Soya beans.....	-	-	-	-	-	-
Fenugreek.....	*	*	*	-	-	-
Gibto.....	-	-	-	-	-	-
Oilseeds.....	-	-	-	-	-	-
Neug.....	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-
Vegetables.....	*	*	*	*	*	*
Lettuce.....	-	-	-	-	-	-
Head Cabbage.....	*	*	*	*	*	*
Ethiopian Cabbage.....	-	-	-	-	-	-
Tomatoes.....	*	*	*	-	-	-
Green peppers.....	-	-	-	-	-	-
Red peppers.....	*	*	*	-	-	-
Swiss chard.....	-	-	-	-	-	-
Root Crops.....	*	*	*	*	*	*
Beetroot.....	-	-	-	-	-	-
Carrot.....	*	*	*	-	-	-
Onion.....	*	*	*	*	*	*
Potatoes.....	*	*	*	-	-	-
Garlic.....	*	*	*	*	*	*
Taro/'Godere'.....	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-

Table 7. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)

Afar

Crop Name	Cropland Area		Production		Yield QT/Hec	
	Number of Holders	in Hectares	%	In Quintals		%
Grain Crops	28,511.00	25,416.78	100	694,714.19	100	27.33
Cereals.....	28,511.00	25,274.21	99.44	694,714.19	100	
Teff.....	857.00	*	*	-	-	-
Barley.....	*	*	*	-	-	-
Wheat.....	1,685.00	124.29	0.49	-	-	-
Maize.....	25,757.00	24,637.91	96.94	694,714.19	100	28.2
Sorghum.....	*	*	*	-	-	-
Finger millet...	-	-	-	-	-	-
Oats/'Aja'.....	*	*	*	-	-	-
Rice.....	*	*	*	-	-	-
Pulses.....	*	*	*	-	-	-
Horse beans.....	-	-	-	-	-	-
Field peas.....	*	*	*	-	-	-
Haricot beans...	*	*	*	-	-	-
Chick-peas.....	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-
Soya beans.....	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-
Oilseeds.....	*	*	*	-	-	-
Neug.....	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-
Sesame.....	*	*	*	-	-	-
Rapeseed.....	-	-	-	-	-	-
Vegetables.....	1146	*	*	*	*	*
Lettuce.....	-	-	-	-	-	-
Head Cabbage.....	-	-	-	-	-	-
Ethiopian Cabbage.....	-	-	-	-	-	-
Tomatoes.....	744	*	*	*	*	*
Green peppers.....	*	*	*	*	*	*
Red peppers.....	*	*	*	*	*	*
Swiss chard.....	-	-	-	-	-	-
Root Crops.....	*	*	*	*	*	*
Beetroot.....	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-
Onion.....	*	*	*	*	*	*
Potatoes.....	-	-	-	-	-	-
Garlic.....	-	-	-	-	-	-
Taro/'Godere'.....	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-

Table 8. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)
Amhare

Crop Name	Number of		Cropland Area		Production		Yield
	Holder	holders	In Hectares	%	In Quintals	%	QT/Hec
Grain Crops		460,411.00	115,768.13	100	443,047.16	100	3.83
Cereals.....		394,466.00	81,283.48	70.21	311,850.30	70.39	
Teff.....		80,303.00	11,037.50	9.53	32,704.55	7.38	2.96
Barley.....		256,863.00	56,674.38	48.96	212,202.28	47.9	3.74
Wheat.....		48,511.00	4,452.97	3.85	14,797.80	3.34	3.32
Maize.....		80,299.00	8,135.63	7.03	51,247.96	11.57	6.3
Sorghum.....		*	*	*	-	-	-
Finger millet...		-	-	-	-	-	-
Oats/'Aja'.....		9,874.00	*	*	*	*	*
Rice.....		*	*	*	-	-	-
Pulses.....		178,891.00	33,870.92	29.26	131,196.86	29.61	
Horse beans.....		-	-	-	-	-	-
Field peas.....		14,859.00	860.64	0.74	*	*	*
Haricot beans...		68,014.00	15,752.21	13.61	51,657.01	11.66	3.28
Chick-peas.....		56,964.00	6,615.14	5.71	71,423.43	16.12	10.8
Lentils.....		50,761.00	5,725.33	4.95	*	*	*
Vetch.....		26,450.00	*	*	*	*	*
Soya beans.....		-	-	-	-	-	-
Fenugreek.....		21,208.00	1,195.15	1.03	5,068.80	1.14	4.24
Gibto.....		-	-	-	-	-	-
Oilseeds.....		10,952.00	*	*	-	-	-
Neug.....		*	*	*	-	-	-
Linseed.....		9,022.00	*	*	-	-	-
Groundnuts.....		-	-	-	-	-	-
Sunflower.....		*	*	*	-	-	-
Sesame.....		-	-	-	-	-	-
Rapeseed.....		*	*	*	-	-	-
Vegetables.....		55,015.00	829.28	100.00	42,857.92	100.00	51.68
Lettuce.....		*	*	*	*	*	*
Head Cabbage.....		4,000.00	*	*	*	*	*
Ethiopian Cabbage.....		21,906.00	91.51	11.03	7,617.70	17.77	83.24
Tomatoes.....		11,455.00	*	*	*	*	*
Green peppers.....		16,976.00	172.15	20.76	12,577.17	29.35	73.06
Red peppers.....		15,994.00	298.26	35.97	*	*	*
Swiss chard.....		*	*	*	*	*	*
Root Crops.....		271,430.00	19,829.63	100.00	669,183.71	100.00	33.75
Beetroot.....		*	*	*	*	*	*
Carrot.....		*	*	*	*	*	*
Onion.....		51,430.00	2,467.56	12.44	*	*	*
Potatoes.....		224,572.00	16,929.76	85.38	453,020.20	67.70	26.76
Garlic.....		20,343.00	*	*	*	*	*
Taro/'Godere'.....		-	-	-	-	-	-
Sweet potatoes.....		*	*	*	*	*	*

Table 9. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)

Oromia

Crop Name	Number of		Cropland Area		Production		Yield
	Holder		In Hectares	%	In Quintals	%	QT/Hec
Grain Crops	2,300,294.00		615,738.94	100	3,674,589.51	100	5.97
Cereals.....	2,065,871.00		493,765.19	80.19	3,177,992.44	86.49	
Teff.....	142,926.00		39,474.21	6.41	178,894.37	4.87	4.53
Barley.....	430,168.00		81,806.66	13.29	612,829.59	16.68	7.49
Wheat.....	168,132.00		56,723.08	9.21	537,976.93	14.64	9.48
Maize.....	1,639,231.00		266,466.09	43.28	1,719,566.79	46.8	6.45
Sorghum.....	197,550.00		42,909.14	6.97	*	*	*
Finger millet...	*		*	*	-	-	-
Oats/'Aja'.....	48,470.00		6,316.11	1.03	47,935.15	1.3	7.59
Rice.....	-		-	-	-	-	-
Pulses.....	1,316,210.00		114,574.25	18.61	496,031.66	13.5	
Horse beans.....	43,950.00		*	*	*	*	*
Field peas.....	75,024.00		14,294.94	2.32	81,091.23	2.21	5.67
Haricot beans...	1,230,625.00		91,259.68	14.82	406,086.07	11.05	4.45
Chick-peas.....	*		*	*	-	-	-
Lentils.....	24,833.00		*	*	*	*	*
Vetch.....	*		*	*	-	-	-
Soya beans.....	*		*	*	-	-	-
Fenugreek.....	10,527.00		912.68	0.15	-	-	-
Gibto.....	*		*	*	-	-	-
Oilseeds.....	46,805.00		7,399.51	1.2	*	*	
Neug.....	*		*	*	-	-	-
Linseed.....	4,220.00		*	*	*	*	*
Groundnuts.....	16,694.00		1,855.56	0.3	-	-	-
Sunflower.....	-		-	-	-	-	-
Sesame.....	14,976.00		*	*	-	-	-
Rapeseed.....	10,187.00		*	*	-	-	-
Vegetables.....	676,898.00		12,977.80	100.00	695,125.61	100.00	53.56
Lettuce.....	*		*	*	*	*	*
Head Cabbage.....	39,143.00		215.43	1.66	*	*	*
Ethiopian Cabbage.....	617,058.00		10,927.17	84.20	596,516.44	85.81	54.59
Tomatoes.....	33,459.00		*	*	*	*	*
Green peppers.....	52,958.00		432.95	3.34	14,247.95	2.05	32.91
Red peppers.....	6,544.00		*	*	*	*	*
Swiss chard.....	*		*	*	*	*	*
Root Crops.....	763,646.00		46,175.75	100.00	684,217.67	100.00	14.82
Beetroot.....	30,233.00		205.39	0.44	4,964.48	0.73	24.17
Carrot.....	12,840.00		*	*	*	*	*
Onion.....	91,789.00		3,427.38	7.42	86,262.41	12.61	25.17
Potatoes.....	534,458.00		36,181.36	78.36	379,186.04	55.42	10.48
Garlic.....	171,235.00		2,623.87	5.68	159,277.73	23.28	60.70
Taro/'Godere'.....	21,146.00		279.09	0.60	-	-	-
Sweet potatoes.....	55,135.00		3,056.14	6.62	38,683.91	5.65	12.66

**Table 10. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)
Somale**

Crop Name	Cropland Area		Production		Yield QT/Hec
	Number of Holders	In Hectares	%	In Quintals	
Grain Crops	18,675.00	4,466.72	100	*	*
Cereals.....	17,922.00	4,104.78	91.9	*	*
Teff.....	-	-	-	-	-
Barley.....	*	*	*	-	-
Wheat.....	*	*	*	-	-
Maize.....	17,873.00	4,058.40	90.86	*	*
Sorghum.....	47.00	0.17	*	-	-
Finger millet...	-	-	-	-	-
Oats/'Aja'.....	-	-	-	-	-
Rice.....	-	-	-	-	-
Pulses.....	7,933.00	361.95	8.1	*	*
Horse beans.....	-	-	-	-	-
Field peas.....	-	-	-	-	-
Haricot beans...	7,933.00	361.95	8.1	*	*
Chick-peas.....	-	-	-	-	-
Lentils.....	-	-	-	-	-
Vetch.....	-	-	-	-	-
Soya beans.....	-	-	-	-	-
Fenugreek.....	-	-	-	-	-
Gibto.....	-	-	-	-	-
Oilseeds.....	-	-	-	-	-
Neug.....	-	-	-	-	-
Linseed.....	-	-	-	-	-
Groundnuts.....	-	-	-	-	-
Sunflower.....	-	-	-	-	-
Sesame.....	-	-	-	-	-
Rapeseed.....	-	-	-	-	-
Vegetables.....	955	65.32	100	*	*
Lettuce.....	-	-	-	-	-
Head Cabbage.....	-	-	-	-	-
Ethiopian Cabbage.....	*	*	*	-	-
Tomatoes.....	926	63.14	96.66	*	*
Green peppers.....	*	*	*	-	-
Red peppers.....	-	-	-	-	-
Swiss chard.....	*	*	*	-	-
Root Crops.....	652	42.24	100	*	*
Beetroot.....	-	-	-	-	-
Carrot.....	-	-	-	-	-
Onion.....	605	40.81	96.61	*	*
Potatoes.....	-	-	-	-	-
Garlic.....	-	-	-	-	-
Taro/'Godere'.....	-	-	-	-	-
Sweet potatoes.....	*	*	*	-	-

Table 11. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.) BenshangulGumuz

Crop Name	Number of Holders	Cropland Area		Production		Yield QT/Hec
		In Hectares	%	In Quintals	%	
Grain Crops	37,987.00	5,717.57	100	33,965.44	100	5.94
Cereals.....	31,690.00	2,434.23	42.57	13,891.96	40.9	
Teff.....	-	-	-	-	-	-
Barley.....	693.00	65.40	1.14	-	-	-
Wheat.....	-	-	-	-	-	-
Maize.....	31,262.00	2,254.64	39.43	13,891.96	40.9	6.16
Sorghum.....	1,563.00	113.67	1.99	-	-	-
Finger millet...	-	-	-	-	-	-
Oats/'Aja'.....	*	*	*	-	-	-
Rice.....	-	-	-	-	-	-
Pulses.....	34,670.00	3,283.18	57.42	20,073.48	59.1	
Horse beans.....	*	*	*	-	-	-
Field peas.....	-	-	-	-	-	-
Haricot beans...	34,670.00	3,242.44	56.71	20,073.48	59.1	6.19
Chick-peas.....	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-
Soya beans.....	*	*	*	-	-	-
Fenugreek.....	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-
Oilseeds.....	*	*	*	-	-	-
Neug.....	-	-	-	-	-	-
Linseed.....	*	*	*	-	-	-
Groundnuts.....	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-
Vegetables.....	15,663.00	271.92	100.00	21,142.60	100.00	77.75
Lettuce.....	-	-	-	-	-	-
Head Cabbage.....	325.00	*	*	*	*	*
Ethiopian Cabbage.....	10,628.00	182.93	67.27	*	*	*
Tomatoes.....	6,105.00	70.37	25.88	11,836.25	55.98	168.20
Green peppers.....	2,826.00	15.95	5.87	1,121.81	5.31	70.33
Red peppers.....	*	*	*	-	-	-
Swiss chard.....	-	-	-	-	-	-
Root Crops.....	8,065.00	118.32	100.00	1,887.30	100.00	15.95
Beetroot.....	483.00	*	*	*	*	*
Carrot.....	*	*	*	*	*	*
Onion.....	*	15.72	13.29	*	*	*
Potatoes.....	4,966.00	92.16	77.89	-	-	-
Garlic.....	*	4.59	3.88	-	-	-
Taro/'Godere'.....	*	*	*	-	-	-
Sweet potatoes.....	*	*	*	-	-	-

Table 12. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)
SNNP

Crop Name	Cropland Area			Production		Yield QT/Hec
	Number of Holders	In Hectares	%	In Quintals	%	
Grain Crops	2,056,045.00	390,550.31	100	1,874,005.45	100	4.8
Cereals.....	1,882,607.00	272,406.69	69.75	1,508,578.72	80.5	
Teff.....	72,338.00	19,538.56	5	98,510.78	5.26	5.04
Barley.....	144,597.00	10,520.43	2.69	37,435.54	2	3.56
Wheat.....	10,855.00	1,018.67	0.26	*	*	*
Maize.....	1,807,356.00	213,297.91	54.61	1,195,298.00	63.78	5.6
Sorghum.....	152,875.00	25,454.79	6.52	126,356.78	6.74	4.96
Finger millet...	9,150.00	722.65	0.19	*	*	*
Oats/'Aja'.....	1,226.00	*	*	-	-	-
Rice.....	*	*	*	*	*	*
Pulses.....	1,492,817.00	109,295.91	27.99	365,421.29	19.5	
Horse beans.....	36,588.00	1,049.48	0.27	1,393.41	0.07	1.33
Field peas.....	18,074.00	603.99	0.15	1,048.15	0.06	1.74
Haricot beans...	1,478,299.00	107,507.30	27.53	362,979.73	19.37	3.38
Chick-peas.....	*	*	*	-	-	-
Lentils.....	1,092.00	32.86	0.01	-	-	-
Vetch.....	*	*	*	-	-	-
Soya beans.....	*	*	*	-	-	-
Fenugreek.....	2,260.00	8.94	*	-	-	-
Gibto.....	*	*	*	-	-	-
Oilseeds.....	42,663.00	8,847.71	2.27	*	*	
Neug.....	*	*	*	-	-	-
Linseed.....	1,318.00	19.99	0.01	-	-	-
Groundnuts.....	22,052.00	2,431.19	0.62	*	*	*
Sunflower.....	4,032.00	*	*	-	-	-
Sesame.....	15,990.00	6,260.57	1.6	-	-	-
Rapeseed.....	*	*	*	-	-	-
Vegetables.....	1,179,787.00	17,117.23	100.00	860,976.94	100.00	50.30
Lettuce.....	792.00	*	*	-	-	-
Head Cabbage.....	8,166.00	*	*	*	*	*
Ethiopian Cabbage.....	1,163,386.00	16,369.61	95.63	824,746.39	95.79	50.38
Tomatoes.....	5,375.00	*	*	*	*	*
Green peppers.....	27,493.00	*	*	3,687.81	0.43	*
Red peppers.....	4,713.00	13.73	0.08	91.78	0.01	6.68
Swiss chard.....	2,555.00	*	*	*	*	*
Root Crops.....	947,632.00	42,282.26	100.00	7,242,673.43	100.00	171.29
Beetroot.....	6,772.00	*	*	624.70	0.04	*
Carrot.....	18,050.00	*	*	*	*	*
Onion.....	57,573.00	*	*	*	*	*
Potatoes.....	631,080.00	31,570.60	74.67	5,709,543.01	57.17	180.85
Garlic.....	103,505.00	535.77	1.27	45,422.55	3.16	84.78
Taro/'Godere'.....	146,297.00	2,778.28	6.57	39,616.11	2.75	14.26
Sweet potatoes.....	211,927.00	6,521.38	15.42	1,390,423.43	32.91	213.21

Table 13. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.) Gambela

Crop Name	Number of		Cropland Area		Production		Yield
	Holder	Holders	In Hectares	%	In Quintals	%	QT/Hec
Grain Crops		28,123.00	7,805.59	100	53,515.95	100	6.86
Cereals.....		26,529.00	6,730.68	86.23	47,933.05	89.57	
Teff.....		*	*	*	-	-	-
Barley.....		91.00	*	*	-	-	-
Wheat.....		-	-	-	-	-	-
Maize.....		26,443.00	6,639.64	85.06	47,933.05	89.57	7.22
Sorghum.....		*	*	*	-	-	-
Finger millet...		*	*	*	-	-	-
Oats/'Aja'.....		-	-	-	-	-	-
Rice.....		*	*	*	-	-	-
Pulses.....		4,490.00	249.40	3.2	584.41	1.09	
Horse beans.....		-	-	-	-	-	-
Field peas.....		-	-	-	-	-	-
Haricot beans...		4,490.00	249.40	3.2	584.41	1.09	2.34
Chick-peas.....		-	-	-	-	-	-
Lentils.....		-	-	-	-	-	-
Vetch.....		-	-	-	-	-	-
Soya beans.....		-	-	-	-	-	-
Fenugreek.....		-	-	-	-	-	-
Gibto.....		-	-	-	-	-	-
Oilseeds.....		2,266.00	825.51	10.58	*	*	
Neug.....		-	-	-	-	-	-
Linseed.....		-	-	-	-	-	-
Groundnuts.....		*	*	*	-	-	-
Sunflower.....		-	-	-	-	-	-
Sesame.....		2,142.00	773.18	9.91	*	*	*
Rapeseed.....		-	-	-	-	-	-
Vegetables.....		1,876.00	31.47	100.00	2,855.32	100.00	90.73
Lettuce.....		*	*	*	-	-	-
Head Cabbage.....		-	-	-	-	-	-
Ethiopian Cabbage.....		1,806.00	29.34	93.23	2,530.53	88.63	86.25
Tomatoes.....		*	*	*	*	*	*
Green peppers.....		*	*	*	*	*	*
Red peppers.....		-	-	-	-	-	-
Swiss chard.....		-	-	-	-	-	-
Root Crops.....		805.00	13.39	100.00	589.11	100.00	44.00
Beetroot.....		-	-	-	-	-	-
Carrot.....		-	-	-	-	-	-
Onion.....		82.00	*	*	-	-	-
Potatoes.....		*	*	*	-	-	-
Garlic.....		204.00	*	*	*	*	*
Taro/'Godere'.....		*	*	*	*	*	*
Sweet potatoes.....		225	*	*	*	*	*

Table 14. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)
Hareri

Crop Name	Number of		Cropland Area		Production		Yield
	Holder	Holders	In Hectares	%	In Quintals	%	QT/Hec
Grain Crops		5,595.00	642.45	100	2,131.22	100	3.32
Cereals.....		5,539.00	488.49	76.04	*	*	
Teff.....		-	-	-	-	-	-
Barley.....		-	-	-	-	-	-
Wheat.....		-	-	-	-	-	-
Maize.....		3,661.00	264.33	41.14	*	*	*
Sorghum.....		2,744.00	224.16	34.89	-	-	-
Finger millet...		-	-	-	-	-	-
Oats/'Aja'.....		-	-	-	-	-	-
Rice.....		-	-	-	-	-	-
Pulses.....		4,103.00	153.95	23.96	1,459.36	68.48	
Horse beans.....		-	-	-	-	-	-
Field peas.....		*	*	*	-	-	-
Haricot beans...		4,022.00	148.79	23.16	1,459.36	68.48	9.81
Chick-peas.....		-	-	-	-	-	-
Lentils.....		-	-	-	-	-	-
Vetch.....		*	*	*	-	-	-
Soya beans.....		-	-	-	-	-	-
Fenugreek.....		-	-	-	-	-	-
Gibto.....		*	*	*	-	-	-
Oilseeds.....		-	-	-	-	-	-
Neug.....		-	-	-	-	-	-
Linseed.....		-	-	-	-	-	-
Groundnuts.....		-	-	-	-	-	-
Sunflower.....		-	-	-	-	-	-
Sesame.....		-	-	-	-	-	-
Rapeseed.....		-	-	-	-	-	-
Vegetables.....		*	*	*	-	-	-
Lettuce.....		-	-	-	-	-	-
Head Cabbage.....		*	*	*	-	-	-
Ethiopian Cabbage...		-	-	-	-	-	-
Tomatoes.....		*	*	*	-	-	-
Green peppers.....		-	-	-	-	-	-
Red peppers.....		-	-	-	-	-	-
Swiss chard.....		-	-	-	-	-	-
Root Crops.....		716	*	*	*	*	*
Beetroot.....		-	-	-	-	-	-
Carrot.....		-	-	-	-	-	-
Onion.....		-	-	-	-	-	-
Potatoes.....		491	*	*	-	-	-
Garlic.....		-	-	-	-	-	-
Taro/'Godere'.....		-	-	-	-	-	-
Sweet potatoes.....		253	*	*	*	*	*

Table 15. Cropland Area, Production and Yield of Major Belg Crops For Private Peasant Holdings For Belg Season 2011/12 (2004 E.C.)
Diredawa

Crop Name	Number of		Cropland Area		Production		Yield
	Holder	Holders	In Hectares	%	In Quintals	%	QT/Hec
Grain Crops		*	*	*	-	-	-
Cereals.....		*	*	*	-	-	-
Teff.....		-	-	-	-	-	-
Barley.....		-	-	-	-	-	-
Wheat.....		-	-	-	-	-	-
Maize.....		*	*	*	-	-	-
Sorghum.....		*	*	*	-	-	-
Finger millet...		-	-	-	-	-	-
Oats/'Aja'.....		-	-	-	-	-	-
Rice.....		-	-	-	-	-	-
Pulses.....		*	*	*	-	-	-
Horse beans.....		-	-	-	-	-	-
Field peas.....		-	-	-	-	-	-
Haricot beans...		*	*	*	-	-	-
Chick-peas.....		-	-	-	-	-	-
Lentils.....		-	-	-	-	-	-
Vetch.....		-	-	-	-	-	-
Soya beans.....		-	-	-	-	-	-
Fenugreek.....		-	-	-	-	-	-
Gibto.....		-	-	-	-	-	-
Oilseeds.....		*	*	*	-	-	-
Neug.....		-	-	-	-	-	-
Linseed.....		-	-	-	-	-	-
Groundnuts.....		-	-	-	-	-	-
Sunflower.....		-	-	-	-	-	-
Sesame.....		*	*	*	-	-	-
Rapeseed.....		-	-	-	-	-	-
Vegetables.....	1,860.00		67.76	100.00	-	-	-
Lettuce.....		-	-	-	-	-	-
Head Cabbage.....		-	-	-	-	-	-
Ethiopian Cabbage.....		-	-	-	-	-	-
Tomatoes.....	1,632.00		51.80	76.45	-	-	-
Green peppers.....	*		*	*	-	-	-
Red peppers.....		-	-	-	-	-	-
Swiss chard.....		-	-	-	-	-	-
Root Crops.....	1,123.00		28.11	100.00	-	-	-
Beetroot.....		-	-	-	-	-	-
Carrot.....		-	-	-	-	-	-
Onion.....	*		*	*	-	-	-
Potatoes.....	559.00		14.91	53.04	-	-	-
Garlic.....		-	-	-	-	-	-
Taro/'Godere'.....		-	-	-	-	-	-
Sweet potatoes.....	*		*	*	-	-	-

APPENDIX I

Estimation Procedures of Totals, Ratios and Sampling Errors

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^{th} stratum.
- M_h is the measure of size of the h^{th} stratum as obtained from the sampling frame.
- m_{hi} is the measure of size of the i^{th} sample EA in the h^{th} stratum obtained from the sampling frame.
- H_{hi} is the total number of agricultural households of the i^{th} sample EA in the h^{th} stratum.
- h_{hi} is the number of sample agricultural households successfully covered in the i^{th} sample EA in the h^{th} stratum.
- a_{hij} is the value of area for agricultural household j , in the i^{th} EA in the h^{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, $\bar{Y}_{hi} = \frac{\bar{Y}_{hi}}{4C_{hi}}$ is average yield per square meter of a specific crop in the i^{th} EA in the h^{th} stratum.

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

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

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

4. 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^{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^{th} EA and h^{th} stratum.

$\hat{A}_{hij}, \hat{P}_{hij}$ are weighted values of area and production, respectively, from j^{th} agricultural household in the

i^{th} EA and h^{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:

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

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

Standard Errors and Coefficient of Variation for Area and Expected Production

Appendix. Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops, 2011/12(2004 E.C) Agricultural Sample Survey, Belg Season

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	4,952,873	77,811.87	1.57	1,170,935.84	40,462.57	3.46	6,822,084.50	498,420.23	7.31
Cereals.....	4,470,121	78,705.78	1.76	891,169.42	34,810.13	3.91	5,801,702.24	475,502.48	8.20
Teff.....	305,006	29,963.09	9.82	74,143.56	8,482.59	11.44	310,109.70	60,858.42	19.62
Barley.....	832,911	48,717.21	5.85	149,377.40	13,496.93	9.04	862,726.33	137,976.97	15.99
Wheat.....	229,296	25,213.25	11.00	62,349.79	13,402.63	21.50	556,057.25	223,660.61	40.22
Maize.....	3,640,182	79,648.76	2.19	526,427.98	27,631.96	5.25	3,769,134.61	342,744.61	9.09
Sorghum.....	360,829	28,713.61	7.96	69,267.69	9,404.03	13.58	207,146.40	52,086.71	25.14
Finger millet.....	9,808	2,606.98	26.58	803.10	248.41	30.93	920.32	477.42	51.88
Oats/'Aja'.....	59,684	9,472.21	15.87	6,921.36	1,369.15	19.78	48,832.86	13,387.73	27.42
Rice.....	4,050	2,203.72	54.42	1,878.53	1,291.34	68.74	46,774.77	45,168.01	96.56
Pulses.....	3,039,819	78,950.03	2.60	261,966.22	13,518.47	5.16	1,014,812.93	74,281.30	7.32
Horse beans.....	81,022	10,233.57	12.63	5,320.66	2,358.28	44.32	10,145.33	4,619.67	45.53
Field peas.....	108,018	16,072.02	14.88	15,761.15	2,932.09	18.60	83,271.79	24,457.27	29.37
Haricot beans.....	2,828,231	76,630.08	2.71	218,549.93	11,608.20	5.31	842,885.93	60,279.98	7.15
Chick-peas.....	63,046	11,948.48	18.95	7,213.51	1,638.38	22.71	71,423.43	32,728.11	45.82
Lentils.....	76,686	16,577.16	21.62	9,092.51	3,191.00	35.09	213.20	83.37	39.10
Vetch.....	27,690	9,879.97	35.68	3,847.82	1,952.08	50.73	1,804.45	1,311.44	72.68
Soya beans.....	457	298.36	65.26	10.85	8.27	76.19	-	-	-
Fenugreek.....	34,241	5,942.01	17.35	2,146.51	638.78	29.76	5,068.80	2,462.32	48.58
Gibto.....	577	319.50	55.34	23.27	16.62	71.41	-	-	-
Oilseeds.....	102,885	13,929.25	13.54	17,800.20	3,922.86	22.04	5,569.34	4,341.44	77.95
Neug.....	2,007	709.06	35.32	102.29	72.30	70.68	-	-	-
Linseed.....	14,580	4,831.24	33.14	1,058.47	469.39	44.35	565.41	417.95	73.92
Groundnuts.....	38,970	9,331.51	23.95	4,339.07	1,302.20	30.01	5.44	2.79	51.23
Sunflower.....	5,037	1,130.80	22.45	240.97	94.93	39.39	-	-	-
Sesame.....	33,286	7,883.01	23.68	11,726.83	3,663.67	31.24	4,998.49	4,321.27	86.45
Rapeseed.....	10,769	4,693.43	43.58	332.56	191.92	57.71	-	-	-
Vegetables.....	1,937,216	56,782.12	2.93	31,687.36	1,761.09	5.56	1,625,659.42	140,010.85	8.61
Lettuce.....	4,396	1,644.66	37.41	13.76	7.80	56.69	86.11	62.01	72.01
Head Cabbage.....	51,919	10,808.32	20.82	669.94	231.24	34.52	33,880.88	12,653.13	37.35
Ethiopian Cabbage	1,814,813	54,588.12	3.01	27,600.64	1,533.72	5.56	1,439,382.22	126,798.34	8.81
Tomatoes.....	60,301	9,383.58	15.56	1,894.83	657.46	34.70	114,587.74	53,183.88	46.41
Green peppers.....	101,396	14,108.33	13.91	792.54	153.08	19.31	31,675.82	7,796.80	24.61
Red peppers.....	30,997	6,827.48	22.03	650.10	194.30	29.89	5,657.26	3,036.17	53.67
Swiss chard.....	5,837	1,735.00	29.72	65.55	56.91	86.82	389.39	224.80	57.73
Root Crops.....	1,999,004	72,627.39	3.63	108,768.60	7,400.07	6.80	2,830,079.10	235,202.29	8.31
Beetroot.....	39,554	6,856.74	17.34	296.91	100.11	33.72	5,978.95	1,845.57	30.87
Carrot.....	35,087	8,789.07	25.05	758.50	352.76	46.51	31,984.15	15,368.98	48.05
Onion.....	207,697	21,273.31	10.24	6,682.40	1,429.02	21.38	349,882.64	148,032.89	42.31
Potatoes.....	1,397,093	67,671.26	4.84	84,825.00	7,103.23	8.37	1,654,930.50	156,953.06	9.48
Garlic.....	297,141	27,125.65	9.13	3,521.48	572.82	16.27	232,907.32	51,952.80	22.31
Taro/'Godere'.....	167,675	16,131.20	9.62	3,059.04	448.47	14.66	39,732.68	12,697.85	31.96
Sweet potatoes.....	271,030	27,335.68	10.09	9,625.27	1,348.94	14.01	514,662.86	74,963.69	14.57

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Tigray

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	15,357	3920.53	25.53	4624.1	2050.82	44.35	647.21	424.33	65.56
Cereals.....	15,110	3749.13	24.81	4476.67	2068.92	46.22	647.21	424.33	65.56
Teff.....	8,440	3731.54	44.21	3981.75	2184.31	54.86	-	-	-
Barley.....	212	210.79	99.46	21.81	21.7	99.46	258.92	257.52	99.46
Wheat.....	-	-	-	-	-	-	-	-	-
Maize.....	6,458	4204.37	65.1	473.1	330.69	69.9	388.29	381.98	98.37
Sorghum.....	-	-	-	-	-	-	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/Aja ¹	-	-	-	-	-	-	-	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses.....	493	486.72	98.75	147.43	146.25	99.2	-	-	-
Horse beans.....	-	-	-	-	-	-	-	-	-
Fieid peas.....	-	-	-	-	-	-	-	-	-
Haricot beans.....	-	-	-	-	-	-	-	-	-
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	493	486.72	98.75	117.68	116.65	99.12	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	246	245.41	99.59	29.75	29.63	99.59	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	-	-	-	-	-	-	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables.....	3,906	2370.36	60.69	192.57	115.77	60.12	946.59	941.13	99.42
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	202	201.05	99.42	7.4	7.36	99.42	946.59	941.13	99.42
Ethiopian Cabbage.....	-	-	-	-	-	-	-	-	-
Tomatoes.....	493	486.72	98.75	21.39	21.14	98.83	-	-	-
Green peppers.....	-	-	-	-	-	-	-	-	-
Red peppers.....	3,457	2313.18	66.91	163.78	105.39	64.35	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	4,424	2540.63	57.43	212.16	131.09	61.79	26180.33	18616.33	71.11
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	246	245.41	99.59	11.31	11.26	99.59	-	-	-
Onion.....	3,369	2336.1	69.35	179.34	126.67	70.63	25524.72	17992.83	70.49
Potatoes.....	809	795.11	98.3	17.07	16.8	98.37	-	-	-
Garlic.....	405	399.96	98.87	4.43	4.39	98.99	655.61	648.99	98.99
Taro/Godere ¹	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-	-	-	-

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Afar

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	28,511	3831.77	13.44	25416.78	5026.99	19.78	694714.19	182114.61	26.21
Cereals.....	28,511	3831.77	13.44	25274.21	5028.69	19.9	694714.19	182114.61	26.21
Teff.....	857	311.03	36.31	90.64	68.45	75.51	-	-	-
Barley.....	258	141.68	54.83	246.77	150.62	61.04	-	-	-
Wheat.....	1,685	548.17	32.53	124.29	44.13	35.5	-	-	-
Maize.....	25,757	3898.19	15.13	24637.91	5056.79	20.52	694714.19	182114.61	26.21
Sorghum.....	273	226.42	83.04	93.52	82.88	88.63	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/'Aja'.....	94	63.33	67.49	80.1	53.41	66.68	-	-	-
Rice.....	33	33.32	100.1	0.99	0.99	100.1	-	-	-
Pulses.....	179	120.96	67.52	29.11	26.88	92.35	-	-	-
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	33	33.32	100.1	1.09	1.09	100.1	-	-	-
Haricot beans.....	146	98.59	67.59	28.02	26.89	95.97	-	-	-
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	142	108.92	76.72	113.45	111.19	98	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	142	108.92	76.72	113.45	111.19	98	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables.....	1,146	463.49	40.46	128.47	100.14	77.95	1282.2	714.3	55.71
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage . . .	-	-	-	-	-	-	-	-	-
Tomatoes.....	744	291.07	39.13	109.87	92.13	83.85	994.01	599.22	60.28
Green peppers.....	213	138.91	65.1	7.91	5.91	74.71	40.29	40.21	99.81
Red peppers.....	268	181.43	67.81	10.69	8.68	81.22	247.9	241.34	97.36
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	511	303.5	59.44	39.67	34.24	86.31	7598.66	6729.24	88.56
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	511	303.5	59.44	39.67	34.24	86.31	7598.66	6729.24	88.56
Potatoes.....	-	-	-	-	-	-	-	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere'.....	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-	-	-	-

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Amhara

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	460,411	26180.44	5.69	115768.13	11063.13	9.56	443047.16	65614.33	14.81
Cereals.....	394,466	27133.51	6.88	81283.48	9031.13	11.11	311850.3	48809.65	15.65
Teff.....	80,303	18629.96	23.2	11037.5	3220.03	29.17	32704.55	14117.12	43.17
Barley.....	256,863	29355.47	11.43	56674.38	9417.41	16.62	212202.28	48769.62	22.98
Wheat.....	48,511	10657.12	21.97	4452.97	1063.61	23.89	14797.8	4106.19	27.75
Maize.....	80,299	15733.81	19.59	8135.63	1938.45	23.83	51247.96	13467.02	26.28
Sorghum.....	5,542	2778.71	50.14	465.89	236.68	50.8	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/'Aja'.....	9,874	4339.84	43.95	497.93	286.79	57.6	897.71	489.22	54.5
Rice.....	322	321.07	99.84	19.17	19.14	99.84	-	-	-
Pulses.....	178,891	21669.36	12.11	33870.92	7175.53	21.18	131196.86	41972.37	31.99
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	14,859	6284.56	42.3	860.64	393.38	45.71	1132.41	846.99	74.8
Haricot beans.....	68,014	14516.94	21.34	15752.21	6145.44	39.01	51657.01	25129.9	48.65
Chick-peas.....	56,964	11685.88	20.51	6615.14	1597.68	24.15	71423.43	32728.11	45.82
Lentils.....	50,761	12679.78	24.98	5725.33	2560.55	44.72	110.76	63.16	57.03
Vetch.....	26,450	9849.42	37.24	3722.44	1948.58	52.35	1804.45	1311.44	72.68
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	21,208	5199.11	24.52	1195.15	454.79	38.05	5068.8	2462.32	48.58
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	10,952	4507	41.15	613.73	354.82	57.81	-	-	-
Neug.....	513	351.08	68.46	2.96	2.65	89.8	-	-	-
Linseed.....	9,022	4458.04	49.42	442.55	344.41	77.82	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	1,005	544.56	54.17	113.87	65.87	57.85	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	412	411.64	99.94	54.36	54.33	99.94	-	-	-
Vegetables.....	55,015	11604.45	21.09	829.28	256.19	30.89	42857.92	14101.71	32.9
Lettuce.....	1,128	825.02	73.15	7.99	7.36	92.19	51.52	51.36	99.69
Head Cabbage.....	4,000	1944.27	48.61	23.62	14.73	62.37	2519.77	1770.4	70.26
Ethiopian Cabbage	21,906	7304.44	33.35	91.51	27.7	30.27	7617.7	2635.41	34.6
Tomatoes.....	11,455	4867.09	42.49	230.56	129.95	56.36	14748.9	10378.85	70.37
Green peppers.....	16,976	5518.68	32.51	172.15	78.2	45.42	12577.17	6145.08	48.86
Red peppers.....	15,994	5982.66	37.41	298.26	120.44	40.38	5104.2	3020.18	59.17
Swiss chard.....	2,135	1206.41	56.5	5.18	3.32	64.18	238.67	206.45	86.5
Root Crops.....	271,430	26108.93	9.62	19829.63	3155.62	15.91	669183.71	165391.42	24.72
Beetroot.....	2,066	1056.32	51.12	6.51	3.58	54.99	232.25	232.15	99.96
Carrot.....	3,830	2288.73	59.76	58.7	44.37	75.59	2143.19	1547.21	72.19
Onion.....	51,430	9808.82	19.07	2467.56	1102.41	44.68	185367.68	140668.67	75.89
Potatoes.....	224,572	26021.5	11.59	16929.76	2918.07	17.24	453020.2	84124.37	18.57
Garlic.....	20,343	4648.67	22.85	352.36	187.37	53.18	27489.94	19687.1	71.62
Taro/'Godere'.....	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	2,643	1744.44	65.99	14.74	8.12	55.12	930.46	586.4	63.02

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Oromia

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E	C.V.	Estimate	S.E	C.V.	Estimate	S.E	C.V.
GRAIN CROPS	2,300,294	50038.39	2.18	615738.94	29314.22	4.76	3674589.51	408832.87	11.13
Cereals.....	2,065,871	48594.61	2.35	493765.19	24739.11	5.01	3177992.44	387043.28	12.18
Teff.....	142,926	20180.78	14.12	39474.21	6257.66	15.85	178894.37	50286.11	28.11
Barley.....	430,168	34936.43	8.12	81806.66	9545.82	11.67	612829.59	128872.33	21.03
Wheat.....	168,132	22746.37	13.53	56723.08	13357.61	23.55	537976.93	223614.25	41.57
Maize.....	1,639,231	53163.31	3.24	266466.09	18974.45	7.12	1719566.79	229749.04	13.36
Sorghum.....	197,550	23911.64	12.1	42909.14	8759.87	20.41	80789.62	43957.59	54.41
Finger millet.....	618	379.54	61.4	69.9	66.64	95.33	-	-	-
Oats/'Aja'.....	48,470	8401.5	17.33	6316.11	1337.61	21.18	47935.15	13378.79	27.91
Rice.....	-	-	-	-	-	-	-	-	-
Pulses.....	1,316,210	53407.55	4.06	114574.25	9678.6	8.45	496031.66	55296.41	11.15
Horse beans.....	43,950	8112.4	18.46	4238.46	2349.45	55.43	8751.91	4609.6	52.67
Field peas.....	75,024	13970.57	18.62	14294.94	2901.36	20.3	81091.23	24440.14	30.14
Haricot beans.....	1,230,625	52321.91	4.25	91259.68	7725.3	8.47	406086.07	48005.72	11.82
Chick-peas.....	4,729	2387.8	50.5	508.55	359.37	70.67	-	-	-
Lentils.....	24,833	10670.14	42.97	3334.31	1904.18	57.11	102.44	54.41	53.11
Vetch.....	600	596.24	99.32	7.27	7.23	99.39	-	-	-
Soya beans.....	233	230.9	99.23	2.32	2.31	99.23	-	-	-
Fenugreek.....	10,527	2785.85	26.46	912.68	447.57	49.04	-	-	-
Gibto.....	175	174.81	99.71	16.01	15.96	99.71	-	-	-
Oilseeds.....	46,805	10047.82	21.47	7399.51	2478.92	33.5	565.41	417.95	73.92
Neug.....	729	430.63	59.1	91.05	71.96	79.04	-	-	-
Linseed.....	4,220	1800.02	42.66	595.77	318.83	53.52	565.41	417.95	73.92
Groundnuts.....	16,694	6781.19	40.62	1855.56	907.61	48.91	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	14,976	5658.06	37.78	4579.51	2305.97	50.35	-	-	-
Rapeseed.....	10,187	4674.31	45.89	277.63	184.06	66.3	-	-	-
Vegetables.....	676,898	34499.71	5.1	12977.8	1237.32	9.53	695125.61	92750.8	13.34
Lettuce.....	2,457	1370.76	55.8	2.85	1.77	62.07	34.59	34.75	100.5
Head Cabbage.....	39,143	10345.08	26.43	215.43	69.35	32.19	11640.45	6116.9	52.55
Ethiopian Cabbage	617,058	32151.36	5.21	10927.17	968.31	8.86	596516.44	73555.84	12.33
Tomatoes.....	33,459	7488.62	22.38	1234.73	632.55	51.23	72439.3	51078.94	70.51
Green peppers.....	52,958	10708.38	20.22	432.95	102.24	23.62	14247.95	4637.03	32.55
Red peppers.....	6,544	2030.03	31.02	163.48	109.73	67.12	213.39	191.47	89.73
Swiss chard.....	1,122	642.61	57.29	1.19	0.77	64.69	33.48	23.89	71.36
Root Crops.....	763,646	54024.85	7.07	46175.75	5738.7	12.43	684217.67	86797.7	12.69
Beetroot.....	30,233	6479.67	21.43	205.39	89.46	43.56	4964.48	1812.57	36.51
Carrot.....	12,840	4791.76	37.32	402.53	240.7	59.8	15843.11	9636.75	60.83
Onion.....	91,789	14600.93	15.91	3427.38	853.8	24.91	86262.41	28844.11	33.44
Potatoes.....	534,458	48472.17	9.07	36181.36	5525.17	15.27	379186.04	62128.44	16.38
Garlic.....	171,235	23637.39	13.8	2623.87	531.39	20.25	159277.73	46332.57	29.09
Taro/'Godere'.....	21,146	5625.26	26.6	279.09	113.43	40.64	-	-	-
Sweet potatoes.....	55,135	12132.07	22	3056.14	993.67	32.51	38683.91	16188.31	41.85

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Somale

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	18,675	3156.96	16.91	4466.72	1193.18	26.71	45468.36	29800.96	65.54
Cereals.....	17,922	3107.89	17.34	4104.78	1183.66	28.84	45422.5	29757.51	65.51
Teff.....	-	-	-	-	-	-	-	-	-
Barley.....	28	27.16	98.65	15.42	15.21	98.65	-	-	-
Wheat.....	112	111.12	99.02	30.78	30.53	99.19	-	-	-
Maize.....	17,873	3110.99	17.41	4058.4	1156.08	28.49	45422.5	29757.51	65.51
Sorghum.....	47	19.58	41.61	0.17	0.08	43.5	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/'Aja'.....	-	-	-	-	-	-	-	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses	7,933	2707.17	34.12	361.95	104.32	28.82	45.86	45.5	99.22
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	-	-	-	-	-	-	-	-	-
Haricot beans.....	7,933	2707.17	34.12	361.95	104.32	28.82	45.86	45.5	99.22
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	-	-	-	-	-	-	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables	955	183.68	19.23	65.32	24.17	37	472.24	471.36	99.81
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage	29	28.57	98.41	0.08	0.08	98.41	-	-	-
Tomatoes.....	926	183.86	19.85	63.14	23.92	37.88	472.24	471.36	99.81
Green peppers.....	260	144.46	55.51	2	1.3	65.03	-	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	26	25.09	98.03	0.1	0.1	98.03	-	-	-
Root Crops	652	203.07	31.14	42.24	20.39	48.28	353.61	352.95	99.81
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	605	201.32	33.27	40.81	20.35	49.87	353.61	352.95	99.81
Potatoes.....	-	-	-	-	-	-	-	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere'.....	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	98	51.03	51.95	1.43	1.21	84.75	-	-	-

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Benishangul Gumuz

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	37,987	4562.43	12.01	5717.57	1148.58	20.09	33965.44	10119.05	29.79
Cereals.....	31,690	3942.89	12.44	2434.23	428.52	17.6	13891.96	5817.91	41.88
Teff.....	-	-	-	-	-	-	-	-	-
Barley.....	693	262.54	37.87	65.4	24.28	37.12	-	-	-
Wheat.....	-	-	-	-	-	-	-	-	-
Maize.....	31,262	3965.89	12.69	2254.64	432.25	19.17	13891.96	5817.91	41.88
Sorghum.....	1,563	467.8	29.94	113.67	32.53	28.62	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/Aja'.....	21	20.92	101.3	0.52	0.52	101.3	-	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses.....	34,670	5183.5	14.95	3283.18	984.45	29.98	20073.48	6390.59	31.84
Horse beans.....	485	254.66	52.56	32.72	17.52	53.54	-	-	-
Field peas.....	-	-	-	-	-	-	-	-	-
Haricot beans.....	34,670	5183.5	14.95	3242.44	986.09	30.41	20073.48	6390.59	31.84
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-	-	-	-
Soya beans.....	188	185.78	98.92	8.01	7.93	98.92	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	21	19.83	95.47	0.16	0.16	95.47	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	21	19.83	95.47	0.16	0.16	95.47	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables.....	15,663	3106.86	19.84	271.92	66.62	24.5	21142.6	7382.77	34.92
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	325	148.72	45.72	2.51	1.63	65.17	213.37	139.02	65.16
Ethiopian Cabbage	10,628	2585.56	24.33	182.93	62.95	34.41	7971.17	6041.96	75.8
Tomatoes.....	6,105	2250.13	36.86	70.37	29.05	41.29	11836.25	4920.51	41.57
Green peppers.....	2,826	1106.99	39.18	15.95	6.06	38.02	1121.81	523.58	46.67
Red peppers.....	21	21.21	99.35	0.16	0.16	99.35	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	8,065	1699.45	21.07	118.32	40.9	34.57	1887.3	940.79	49.85
Beetroot.....	483	225.07	46.64	1.45	1.05	72.58	157.53	113.7	72.18
Carrot.....	121	101.43	83.87	0.34	0.3	86.26	5.82	5.69	97.69
Onion.....	2,130	1086.06	50.98	15.72	7.57	48.19	1723.95	913.75	53
Potatoes.....	4,966	1286.11	25.9	92.16	40.41	43.85	-	-	-
Garlic.....	1,449	807.53	55.71	4.59	1.84	40.11	-	-	-
Taro/'Godere'.....	41	28.19	68.74	0.23	0.16	71.34	-	-	-
Sweet potatoes.....	323	278.75	86.4	3.83	3.65	95.29	-	-	-

Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season

SNNP

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS.....	2056045	52937.92	2.57	390550.31	24950.41	6.39	1874005.45	206762.17	11.03
Cereals.....	1882607	55138.91	2.93	272406.69	22052.39	8.1	1508578.72	199462.63	13.22
Teff.....	72338	11375.94	15.73	19538.56	4201.34	21.5	98510.78	31237.2	31.71
Barley.....	144597	17056.73	11.8	10520.43	1527.33	14.52	37435.54	7143.09	19.08
Wheat.....	10855	2103.26	19.38	1018.67	265.66	26.08	3282.52	1968.28	59.96
Maize.....	1807356	56647.93	3.13	213297.91	19283.55	9.04	1195298	174285.78	14.58
Sorghum.....	152875	15634.48	10.23	25454.79	3410.78	13.4	126356.78	27942.01	22.11
Finger millet.....	9150	2578.96	28.19	722.65	239.13	33.09	920.32	477.42	51.88
Oats/'Aja'.....	1226	546.66	44.6	26.71	16.66	62.37	-	-	-
Rice.....	3531	2177.16	61.65	1826.97	1291.05	70.67	46774.77	45168.01	96.56
Pulses.....	1492817	53625.4	3.59	109295.91	6047.42	5.53	365421.29	25639.61	7.02
Horse beans.....	36588	6232.99	17.04	1049.48	203.18	19.36	1393.41	304.8	21.87
Field peas.....	18074	4861.63	26.9	603.99	156.57	25.92	1048.15	346.86	33.09
Haricot beans.....	1478299	53745.36	3.64	107507.3	6025.56	5.6	362979.73	25625.49	7.06
Chick-peas.....	1353	710.6	52.51	89.82	50.86	56.63	-	-	-
Lentils.....	1092	416.7	38.17	32.86	12.21	37.15	-	-	-
Vetch.....	126	99.42	78.7	0.19	0.14	75.24	-	-	-
Soya beans.....	37	34.41	93.89	0.52	0.48	93.89	-	-	-
Fenugreek.....	2260	674.92	29.87	8.94	3.34	37.41	-	-	-
Gibto.....	371	265.87	71.7	2.82	2.08	73.79	-	-	-
Oilseeds.....	42663	8500.76	19.93	8847.71	2997.14	33.87	5.44	2.79	51.23
Neug.....	766	440.53	57.52	8.29	6.51	78.56	-	-	-
Linseed.....	1318	475.71	36.08	19.99	7.33	36.68	-	-	-
Groundnuts.....	22052	6406.77	29.05	2431.19	932.45	38.35	5.44	2.79	51.23
Sunflower.....	4032	991.04	24.58	127.11	68.35	53.77	-	-	-
Sesame.....	15990	5448.07	34.07	6260.57	2823.9	45.11	-	-	-
Rapeseed.....	170	98.19	57.79	0.58	0.51	88.34	-	-	-
Vegetables.....	1179787	43398.36	3.68	17117.23	1214.74	7.1	860976.94	103655.61	12.04
Lettuce.....	792	380.72	48.05	2.89	1.86	64.49	-	-	-
Head Cabbage.....	8166	2439.45	29.87	416.19	219.93	52.84	18560.7	10892.46	58.69
Ethiopian Cabbage....	1163386	43427.23	3.73	16369.61	1187.37	7.25	824746.39	103068.63	12.5
Tomatoes.....	5375	1660.12	30.88	110.1	67.56	61.36	13773.03	9319.83	67.67
Green peppers.....	27493	7242.61	26.34	145.62	81.48	55.96	3687.81	1118.16	30.32
Red peppers.....	4713	1147.64	24.35	13.73	4.83	35.16	91.78	44.02	47.97
Swiss chard.....	2555	1068.28	41.81	59.08	56.8	96.15	117.23	85.69	73.1
Root Crops.....	947632	40801.47	4.31	42282.26	3442.33	8.14	1439039.86	141557.72	9.84
Beetroot.....	6772	1965.29	29.02	83.57	44.78	53.59	624.7	232.17	37.17
Carrot.....	18050	6998.43	38.77	285.61	253.79	88.86	13992.03	11872.01	84.85
Onion.....	57573	11677.56	20.28	507.07	283.01	55.81	43051.61	30398.94	70.61
Potatoes.....	631080	39374.47	6.24	31570.6	3378.06	10.7	822724.27	117035.93	14.23
Garlic.....	103505	12435.7	12.01	535.77	103	19.23	45422.55	12821.17	28.23
Taro/'Godere'.....	146297	15118.1	10.33	2778.28	433.88	15.62	39616.11	12697.54	32.05
Sweet potatoes.....	211927	24430.7	11.53	6521.38	912.19	13.99	473608.6	73189.12	15.45

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Gambella

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	28,123	1048.99	3.73	7805.59	854.65	10.95	53515.95	8113.79	15.16
Cereals.....	26,529	1271.03	4.79	6730.68	819.78	12.18	47933.05	6847.66	14.29
Teff.....	142	120.5	84.58	20.89	18.42	88.19	-	-	-
Barley.....	91	45.32	49.6	26.52	16.33	61.56	-	-	-
Wheat.....	-	-	-	-	-	-	-	-	-
Maize.....	26,443	1267.35	4.79	6639.64	807.71	12.17	47933.05	6847.66	14.29
Sorghum.....	94	53.1	56.69	1.68	1.09	64.8	-	-	-
Finger millet.....	41	35.86	87.85	10.55	9.27	87.85	-	-	-
Oats/'Aja'.....	-	-	-	-	-	-	-	-	-
Rice.....	163	110.27	67.54	31.4	19.85	63.21	-	-	-
Pulses.....	4,490	820.26	18.27	249.4	103.59	41.53	584.41	160.62	27.48
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	-	-	-	-	-	-	-	-	-
Haricot beans.....	4,490	820.26	18.27	249.4	103.59	41.53	584.41	160.62	27.48
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds.....	2,266	689.92	30.44	825.51	350.24	42.43	4998.49	4321.27	86.45
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	224	214.16	95.68	52.33	50.11	95.75	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	2,142	658.5	30.74	773.18	343.82	44.47	4998.49	4321.27	86.45
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables.....	1,876	435.14	23.19	31.47	9.58	30.43	2855.32	927.36	32.48
Lettuce.....	19	18.01	92.91	0.03	0.02	92.91	-	-	-
Head Cabbage.....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage . . .	1,806	432.61	23.95	29.34	9.42	32.1	2530.53	874.46	34.56
Tomatoes.....	83	56.4	67.79	2.1	1.9	90.31	324	308.33	95.16
Green peppers.....	34	21.85	65.03	0.01	0.01	84.64	0.79	0.67	84.64
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	805	217.63	27.04	13.39	5.09	37.99	589.11	282.98	48.03
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	82	40.78	49.64	0.33	0.21	63.67	-	-	-
Potatoes.....	158	121.35	76.57	4.13	3.39	82.1	-	-	-
Garlic.....	204	76.17	37.42	0.46	0.25	53.6	61.5	32.43	52.73
Taro/'Godere'.....	192	119.41	62.35	1.45	1.09	75.47	116.57	88.85	76.22
Sweet potatoes.....	225	96.06	42.67	7.03	3.53	50.17	411.04	274.96	66.89

Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season

Harari

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	5,595	412.37	7.37	642.45	89.16	13.88	2131.22	576.35	27.04
Cereals.....	5,539	418.41	7.55	488.49	69.53	14.23	671.86	471.7	70.21
Teff.....	-	-	-	-	-	-	-	-	-
Barley.....	-	-	-	-	-	-	-	-	-
Wheat.....	-	-	-	-	-	-	-	-	-
Maize.....	3,661	516.3	14.1	264.33	71.2	26.94	671.86	471.7	70.21
Sorghum.....	2,744	513.23	18.7	224.16	54.8	24.45	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/'Aja' ¹	-	-	-	-	-	-	-	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses.....	4,103	611.35	14.9	153.95	35.33	22.95	1459.36	287.25	19.68
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	28	27.77	98.22	0.49	0.48	98.22	-	-	-
Haricot beans.....	4,022	633.16	15.74	148.79	36.24	24.36	1459.36	287.25	19.68
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	21	20.94	99.85	0.24	0.24	99.85	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	31	28.96	92.87	4.44	4.12	92.87	-	-	-
Oilseeds.....	-	-	-	-	-	-	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables.....	111	76.99	69.6	5.54	4.36	78.78	-	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	82	73.6	89.38	4.77	4.34	91.01	-	-	-
Ethiopian Cabbage.....	-	-	-	-	-	-	-	-	-
Tomatoes.....	28	27.77	98.22	0.76	0.75	98.22	-	-	-
Green peppers.....	-	-	-	-	-	-	-	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	716	198	27.64	27.08	15.55	57.44	1028.85	653.06	63.48
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	-	-	-	-	-	-	-	-	-
Potatoes.....	491	131.55	26.79	15.01	8.54	56.89	-	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere' ¹	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	253	116.66	46.15	12.07	7.66	63.47	1028.85	653.06	63.48

**Standard Errors and Coefficient of Variation For the Estimates of Number of holders, Area and Production of major Crops,
2011/12(2004 E.C) Agricultural Sample Survey, Belg Season**

Diredawa

Crop	Holders			Area in Hectares			Production in Quintals		
	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.	Estimate	S.E.	C.V.
GRAIN CROPS	1,876	949.61	50.61	205.26	150	73.08	-	-	-
Cereals.....	1,876	949.61	50.61	204.99	149.91	73.13	-	-	-
Teff.....	-	-	-	-	-	-	-	-	-
Barley.....	-	-	-	-	-	-	-	-	-
Wheat.....	-	-	-	-	-	-	-	-	-
Maize.....	1,842	946.24	51.37	200.33	146	72.88	-	-	-
Sorghum.....	142	99.91	70.21	4.66	4.14	88.72	-	-	-
Finger millet.....	-	-	-	-	-	-	-	-	-
Oats/Aja ¹	-	-	-	-	-	-	-	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses	31	30.76	98.64	0.14	0.14	98.64	-	-	-
Horse beans.....	-	-	-	-	-	-	-	-	-
Field peas.....	-	-	-	-	-	-	-	-	-
Haricot beans.....	31	30.76	98.64	0.14	0.14	98.64	-	-	-
Chick-peas.....	-	-	-	-	-	-	-	-	-
Lentils.....	-	-	-	-	-	-	-	-	-
Vetch.....	-	-	-	-	-	-	-	-	-
Soya beans.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	-	-	-	-	-	-	-	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oilseeds	36	35.55	98.6	0.13	0.12	98.6	-	-	-
Neug.....	-	-	-	-	-	-	-	-	-
Linseed.....	-	-	-	-	-	-	-	-	-
Groundnuts.....	-	-	-	-	-	-	-	-	-
Sunflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	36	35.55	98.6	0.13	0.12	98.6	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Vegetables	1,860	427.54	22.99	67.76	26.39	38.94	-	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage.....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage	-	-	-	-	-	-	-	-	-
Tomatoes.....	1,632	324.1	19.85	51.8	18.1	34.94	-	-	-
Green peppers.....	635	445.17	70.05	15.96	12.3	77.03	-	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops	1,123	232.86	20.73	28.11	5.97	21.24	-	-	-
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	209	130.58	62.57	4.54	2.84	62.59	-	-	-
Potatoes.....	559	248.71	44.53	14.91	6.38	42.78	-	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/"Godere" ¹	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	426	217.14	50.94	8.66	4.34	50.05	-	-	-

APPENDIX III: QUESTIONNAIRES

Questionnaires used for the 2011/12 (2004 E.C) Belg Season Crop Production Sample Survey

Crop Production Sample Survey

NOTE:- This Form Should be Filled Out For Mixed Crops According to their Type in pure Stands

Assessment of Belg Season Crop Conditions- 2011/12 (2004E.C)

Part I – Identification Particulars

1	2	3	4	5	6
Region	Zone	wereda	Farmers' Association	Enumeration Area	Crop Name

Part II - Assessment of Crop Conditions (For Belg Season)

1	2	3	4	5	6					11
					Crop Productivity Compared to Last Year					
					Increase = 1 Equal/ No change = 2 Decrease = 3	If Increase		If Decrease		
Quantity in Percent	One Major Reason for Increase	Quantity in Percent	One Major Reason for Decrease							
Sr. No.		Household ID Numb	Holder ID Number	Number Of Fields	Code	Code	Code	Code	Code	
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									

PART 3A: RESULTS OF AREA MEASUREMENTS using GPS

18	19	20	21	22	23	24	25	
GPS Accuracy during field measurement	Is the field measured? yes =1 No =2 →							Comments
	Area of measured field		Is the field Flat =1 Partially Sloppy = 2 Sloppy = 3	Code	If the field covered? None = 1 With plant / permanent crop = 2 With house = 3 Partially covered = 4 Others = 5	Code		
	Area in square meters (Clockwise)	Area in square meters (Anti-Clockwise)						
<i>Field measurement</i>			<i>Date</i>		<i>Month</i>			

PART 3B – RESULTS OF AREA MEASUREMENTS USING COMPASS-ROPE

18	19	20	21	22	23	24	25	26
Is the field measured? Yes =1 No = 2 Code →								
Side	1 - 2	2 - 3	3 -	4 -	5 -	6 -	7 -	8 -
Bearing (0)								
Length								
Side	9 -	10 -	11 -	12 -	13 -	14 -	15 -	16 -
Bearing(0)								
Length								
Side	17 -	18 -	19 -	20 -	21 -	22 -	23 -	24 -
Bearing (0)								
Length								
Side	25 -	26 -	27 -	28 -	29 -	30 -	31 -	32 -
Bearing (0)								
Length								
Field Measurement	date	month	Closure error		Area in square meters			

	Name	Signature	Date
Data collector			
Field Supervisor			

Questionnaires used for the 2011/12(2004 E.C)
Belg Season Crop Production Sample Survey
Assessment of crop condition

Part I – Identification Particulars

1	2	3	4	5
Region	Zone	Wereda	Farmers' Association	Enumeration Area

Part II - Assessment of Crop Conditions (For Belg Season)

1	2	3	4	5	6	7	8	
Crop Name	Co de	Expected Crop Productivity Compared to Last Year						Expected Productivity Change In Percent
		Increase = 1 Equal/No Change = 2 Decrease = 3 Co de	If increase		If Decrease		Code	
			Quantity of increase In percent	One Major Reason for Increase	Quantity of Decrease In percent	One Major Reason for Decrease		
Teff	07							
Barley	01							
Wheat	08							
Maize	02							
Sorghum	06							
Finger millet	03							
Oats/'aja'	04							
Rice	05							
Horse beans	13							
Field peas	15							
Haricot beans	12							
Chick peas	11							
Lentiis	14							
Grass peas/vetch	16							
Fenugreek	36							
Gibto	17							
Niger seed	25							
Lin seed/flax	23							
Ground nuts	24							
Sufflower	28							
Sesame	27							
Rape seed	26							
Soya beans	18							

