THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

CENTRAL STATISTICAL AGENCY

AGRICULTURAL SAMPLE SURVEY
2009/2010 (2002 E.C.)

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VOLUME IV

REPORT ON

AREA AND PRODUCTION OF CROPS

(PRIVATE PEASANT HOLDINGS, MEHER SEASON)

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ABBREVIATIONS: CV-COEFFICIENT OF VARIATION

E.C- ETHIOPIAN CALENDER

S.N.N.P.R- SOUTHERN NATIONS,NATIONALITIES AND PEOPLES'REGION

PART I

INTRODUCTION AND OBJECTIVES OF THE SURVEY

1.1. INTRODUCTION

The sound performance of agriculture warrants the availability of food crops. This accomplishment in agriculture does not only signify the adequate acquisition of food crops to attain food security, but also heralds a positive aspect of the economy. In regard to this, collective efforts are being geared to securing agricultural outputs of the desired level so that self reliance in food supply can be achieved and disaster caused food shortages be contained in the shortest possible time in Ethiopia.

The prime role that agriculture plays in a country's political, economic and social stability makes measures of agricultural productions extremely sensitive. Statistics collected on agricultural productions are, therefore, fraught with questions of reliability by data users. To tackle these questions convincingly and dissipate the misgivings of users, information on agriculture has to be collected using standard procedures of data collection.

Upholding this principle, the Central Statistical Agency (CSA) has been furnishing statistical information on the country's agriculture since 1980/81 to alert policy interventionists on the changes taking place in the agricultural sector. As part of this task the 2009/10 (2002 E.C.) Agricultural Sample Survey (AgSS) was conducted to provide data on crop area and production of crops within the private peasant holdings for Meher Season of the specified year. The survey results are presented in this bulletin and other electronic media for data users.

The report comprises three parts. Part I contains the objectives of this annual survey. Part II deals with coverage of the survey, sample design, field organization and method of data collection and Part III includes the survey results. Estimation procedures and formulation of estimates of totals, ratios and variance are presented in Appendix I. Estimates of the standard errors with the corresponding coefficients of variations for area and production of crops are presented in Appendix II. The numbers of agricultural

households covered, number of parcels and fields measured are presented in appendix III and the survey questionnaires in Appendix IV.

1.2. OBJECTIVES OF THE SURVEY

The general objective of 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 (Area and production, land use, farm management and crop utilization), Livestock Survey and Belg Season Survey.

The specific objectives of Meher Season Post Harvest Survey are to estimate the total crop area, volume of crop production and yield of crops 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 and regional level only***.

PART II

SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING

2.1. SCOPE AND COVERAGE OF THE SURVEY

The range of data items that the 2009/10 (2002 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 2009/10 (2002 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 1,660 Enumeration Areas (EAs) were selected. However, due to various reasons that are beyond control, in 25 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,635 EAs (98.5 %) throughout the regions. The Annual Agricultural Sample survey (Meher season) was conducted on the basis of 20 agricultural households selected from each EA. Regarding the ultimate sampling units, it was intended to cover a total of 33,200 agricultural households, however, 32,630 (98.3 %) were actually covered by the survey.

2.2 SAMPLING FRAME

The list containing EAs of all regions and their respective households obtained from the 1999 E.C cartographic 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 the secondary sampling units (SSUs) were agricultural households.

The sample size for the 2009/10 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 1999 E.C cartographic census frame. From the fresh list of households prepared at the beginning of the survey 20 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. Distribution of sampling units (sampled and covered EAs and households) by stratum is also presented in Appendix-III.

. 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 Department of Regional Offices and Field Operations that liaises between the Head Office and the 25 Branch Statistical Offices spread across the regions. All Branch Offices took part in the survey execution especially in recruiting the enumerators, organizing the 2nd 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 1,817 enumerators, 558 field supervisors, 44 coordinators and 65 statisticians were involved in the data collection where on the average one supervisor was assigned to five 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 164 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 Head Quarters of CSA and lasted 7 days targeted staff from the Head Office, statisticians and senior field supervisors from Branch Statistical Offices. The staff that took part in the first stage training was then assigned to conduct similar training for the enumerators and other supervisors for 12 days in all the twenty- five Branch Statistical Offices distributed across the country.

In the training the field staff 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

The agricultural data for the year 2009/10 (2002 E.C) was collected from sedentary rural peasant households by interviewing the selected agricultural holders and physically measuring their fields to obtain data on crop yields and other items of interest.

The data obtained were recorded in various forms designed for this purpose. Instruments like measuring tape; compass, kitchen balance, scientific calculators, GPS (Oromiya region only) and others were used during data collection for a timely and smooth acquisition of accurate data. The procedures for measuring area under crop and area of non - crop fields operated by the holders were performed for the 30 selected households from each sampled E.A. using measuring tapes and compasses.

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 66 editors-coders and verifiers were trained for two days 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 18 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 70 data encoders, 10 data encoder supervisors, 12 data cleaning operators and 55 personal computers. 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 with out 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.

Note:-

1. If in some tables figures do not add up to total it is due to rounding
2. Those area and production designated by "*" in all tables could not be reported because of high coefficient of variation (i.e. they are less reliable). However, they are consolidated in the total estimates.

3.In all tables "-" indicates not reported.

PART III

SUMMARY OF SURVEY RESULTS

3.1 INTRODUCTION

By and large, agriculture in Ethiopia is subsistence. This is particularly true to the major food crops grown in the country and covered in the survey. The major food crops are produced in almost all regions of the country in spite of the variation in volume of production across the regions. The variation may be attributed to the extent of area devoted to each crop type, weather change and a shift in preference for the crops grown.

The food crops on which data is collected are the ones that are commonly grown by the majority of peasant holders. In the statistical tables these crops have been categorized into eight groups for simplicity of description and comparison purposes. The groups are cereals, pulses, oilseeds, vegetables, root crops, fruit crops, stimulant crops and sugar cane. Stimulant crops consist of Chat, coffee and hops.

Crop yield per area (amount of crop harvested per amount of land planted) is the most commonly used impact indicator for agricultural productivity activities. Crop yields are inevitably affected by many factors, these are weather, input price, changes in farming practices, amounts of fertilizer used, quality of seed varieties,and use of irrigation.

3.2 Major Findings of the Year 2009/10 (2002 E.C.), Post-Harvest Crop Production Survey, Meher Season

The results of the year 2009/10 (2002 E.C.), Meher Season Post-harvest Crop Production Survey has been summarized and quantitative information with regard to farm management practice, land use and Utilization agricultural produce will be made available at national and regional reporting levels, consecutively, following this report. This report, however, presents quantitative information on cropped land area and production of both temporary and permanent crops at Country and regional reporting levels.

In this section of the report, therefore, brief discussions on the major findings of the Survey are presented as follows.

3.2.1 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 contributer for the country's foreign currency earnings, among others.

The results of the year 2008/09 (2001 E.C.), Meher Season Post-harvest Crop Production Survey indicate that a total land area of about 11.50 million hectares are covered by grain crops i.e. cereals, pulses and oilseeds, from which a total volume of about 180.76 million quintals of grains are obtained, from private peasant holdings (See Table 1 below).

Table 1 Total Area under and Production of Grain Crops for Private holdings, 2009/10 (2002 E.C.), Meher Season

Crop Category	Total Area in Hectare	%	Total Production in Qts	%
Cereals.....	**9,233,025.14**	**80.26**	**155,342,279.88**	**85.94**
Pulses.....	**1,489,308.45**	**12.95**	**18,980,472.57**	**10.50**
Oil Crop……..	**780,915.89**	**6.79**	**6,436,143.98**	**3.56**
Grain Crops……..	**11,503,249.48**	**100**	**180,758,896.43**	**100**

Note:- Assuming what has been estimated for belg season and commercial farms in 2008/09 will be obtained during the current crop season, the total picture for the country in 2008/09 will be as follows :-

	Grain Crops Area in Ha	Estimated Production in Qts
• **Private holdings in 2009/10 Meher Season**	**11,503,249**	**180,748,896**
• **Commercial farms in both Seasons**	**300,956**	**5,118,186**
• **Private holdings in Belg Season**	**1,017,562**	**6,805,584**
Grand Total	***12,827,603***	***185,580,111***

within the category of grain crops**,** **Cereals** are the major food crops both in terms of the area they are planted to and volume of production obtained. They are produced in larger volume compared with other crops because they are the principal staple crops. Cereals are grown in all the regions with varying quantity as shown in the survey results. The data in Table 1 well underpin this finding of the survey.

Out of the total grain crop area, 80.26% (9.23 million hectares) was under cereals. Teff, maize, wheat and sorghum took up 22.5% (about 2.58 million hectares), 15.41% (about 1.77million hectares), 14.64% (1.68 million hectares) and 14.07% (1.62 million hectares) of the grain crop area, respectively. As to production, the tables paint similar picture as that of the area. Cereals contributed 85.94% (about 155.34 million quintals) of the grain production. Maize, wheat, Teff and sorghum made up 21.56% (38.97 million quintals), 17.02% (30.76 million quintals), 17.59% (31.79 million quintals) and 16.44% (29.71 million quintals) of the grain production, in the same order.

The survey results show that the private peasant holders grow various crops for own consumption and/ or economic benefits. Pulses are also among the various crops produced in all the regions of the country after cereals. Pulses are grown in different volumes across the country as indicated in Table 2.

Pulses grown in 2009 /10 (2002 E.C) covered 12.95% (1.49 million hectares) of the grain crop area and 10.5% (more than 18.98 million quintals) of the grain production was drawn from the same crops. Faba beans, haricot beans, and field peas were planted to 4.45% (more than 512 thousand hectares), 2.12% (more than 244 thousand hectares) and 1.97% (about 226 thousand hectares) of the grain crop area. The production obtained from faba beans, chick-peas, and haricot beans was 3.38% (about 6.11 million), 1.57% (about 2.85 million) and 2.01(3.63 million) quintals of the grain production, in that order.

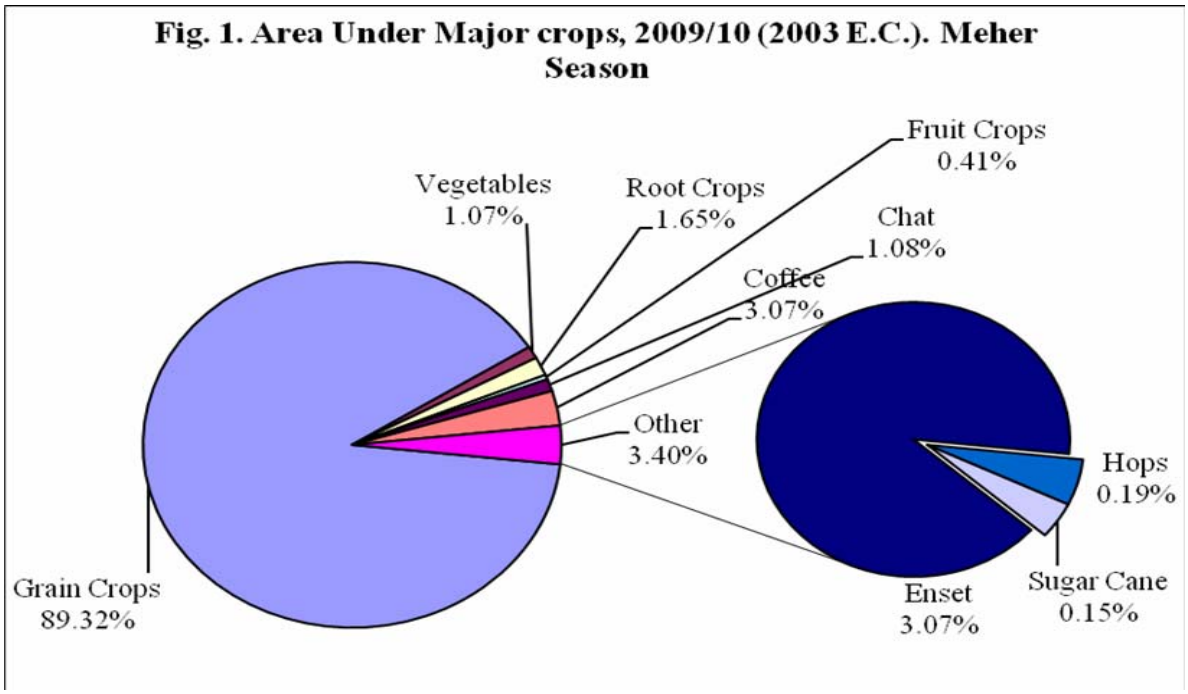
Oilseeds refe to crops which are also classified within grain crops category**,** nonetheless**.** oilseeds are grown to flavour the food consumed at home and earn some cash for peasant holders in the country. Various oil crops are produced in all the regions with differing quantity as illustrated in the survey results. Table 1 underscores this point in detail.

Oilseeds added 6.79% (about 780 thousand hectares) of the grain crop area and 3.56% (about 6.44 million quintals) of the production to the national grain total. Neug, sesame and linseed covered 2.23% (about 256 thousand hectares), 2.75% (more than 315 thousand

hectares) and 1.22% (more than 140 thousand hectares) of the grain crop area and 0.87% (about 1.57 million quintals), 1.44% (about 2.61 million quintals) and 0.83% (about 1.51 million quintals) of the grain production, respectively.

3.2.2 <u>Vegetables</u>- 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. Statistical Table 1 underlines this more in the report. Vegetables took up about 1.07% of the area under all crops at national level. Of all the area under vegetables 64.93% and 23.69% was under red peppers and Ethiopian Cabbage, respectively. As to production of vegetables, 28.59% and 49.20% was that of the same crops, in that order.

Fig. 1. Area Under Major crops, 2009/10 (2003 E.C.). Meher Season



3.2.3 <u>Root Crops</u> - 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 importances 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.

Table 2 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

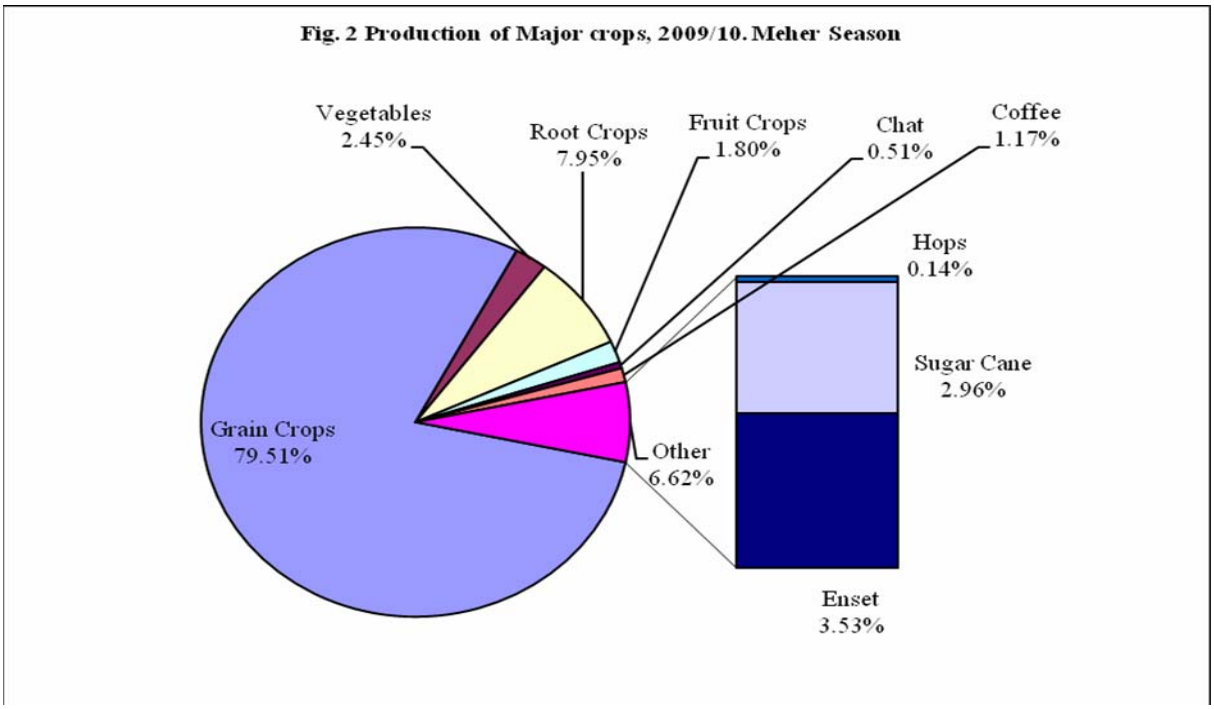
Ethiopia

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	***12,208,970***	***11,503,249.48***	***180,758,896***	
Cereals.....	*11,857,352*	*9,233,025.14*	*155,342,280*	
Teff.....	*5,630,440*	*2,588,661.14*	*31,793,743*	*12.28*
Barley.....	*4,365,199*	*1,129,112.36*	*17,504,436*	*15.5*
Wheat.....	*4,666,194*	*1,683,565.26*	*30,756,436*	*18.27*
Maize.....	*7,148,501*	*1,772,253.11*	*38,971,631*	*21.99*
Sorghum.....	*4,072,328*	*1,618,677.24*	*29,712,655*	*18.36*
Finger millet.....	*1,346,755*	*368,999.15*	*5,241,911*	*14.21*
Oats/'Aja'.....	*253,886*	*24,017.99*	*330,191*	*13.75*
Rice.....	*126,432*	*47,738.88*	*1,031,277*	*21.6*
Pulses.....	*6,659,923*	*1,489,308.45*	*18,980,473*	
Faba beans..... .	*3,689,452*	*512,067.20*	*6,108,453*	*11.93*
Field peas.....	*1,493,441*	*226,532.57*	*2,358,721*	*10.41*
Haricot beans.....	*2,153,146*	*244,012.88*	*3,628,903*	*14.87*
Chick-peas.....	*941,999*	*213,187.14*	*2,846,398*	*13.35*
Lentils.....	*727,002*	*105,956.04*	*1,237,772*	*11.68*
Vetch.....	*670,593*	*135,657.67*	*2,040,196*	*15.04*
Soya beans.....	*62,508*	*5,678.69*	* *	
Fenugreek.....	*402,227*	*21,183.02*	*271,220*	*12.8*
Gibto.....	*105,717*	*25,033.25*	*416,759*	*16.65*
Oilseeds.....	*2,737,845*	*780,915.89*	*6,436,144*	
Neug.....	*878,875*	*256,794.20*	*1,578,467*	*6.15*
Linseed.....	*891,217*	*140,800.92*	*1,506,285*	*10.7*
Groundnuts.....	*211,694*	*41,578.79*	*464,248*	*11.17*
Sunflower.....	*89,998*	*4,652.53*	*55,524*	*11.93*
Sesame.....	*582,400*	*315,842.80*	*2,605,343*	*8.25*
Rapeseed.....	*494,999*	*21,246.65*	*226,277*	*10.65*
Vegetables.....	***5,060,004***	***138,392.53***	***5,573,568***	
Lettuce.....	*37,591* *		* *	
Head Cabbage.....	*274,662*	*2,561.71*	*203,881*	*79.59*
Ethiopian Cabbage.....	*2,799,879*	*32,782.45*	*2,741,975*	*83.64*
Tomatoes.....	*194,704*	*4,952.90*	*404,261*	*81.62*
Green peppers.....	*812,431*	*7,849.75*	*614,637*	*78.3*
Red peppers.....	*1,776,393*	*89,862.11*	*1,593,275*	*17.73*
Swiss chard.....	*97,809*	*227.43*	*6,392*	*28.1*
Root Crops.....	***5,038,428***	***212,208.33***	***18,063,778***	
Beetroot.....	*257,382*	*1,096.31*	*100,785*	*91.93*
Carrot.....	*157,032*	*2,712.70*	*182,293*	*67.2*
Onion.....	*556,342*	*17,588.41*	*1,693,168*	*96.27*
Potatoes.....	*1,371,759*	*69,783.60*	*5,723,325*	*82.02*
Garlic.....	*2,079,195*	*15,361.25*	*1,796,578*	*116.96*
Taro/'Godere'.....	*956,894*	*52,200.84*	*4,060,001*	*77.78*
Sweet potatoes.....	*1,296,460*	*53,465.22*	*4,507,628*	*84.31*
Fruit Crops.....	***2,625,123***	***53,086.49***	***4,089,115***	***77.03***
Avocados.....	*781,233*	*5,693.74*	*376,509*	*66.13*
Bananas.....	*1,522,523*	*29,408.90*	*2,085,962*	*70.93*
Guavas.....	*238,781*	*1,944.39*	*29,285*	*15.06*
Lemons.....	*157,560*	*753.34*	*62,131*	*82.47*
Mangoes.....	*681,084*	*8,629.88*	*656,199*	*76.04*
Oranges.....	*336,467*	*3,471.01*	*438,276*	*126.27*
Papayas.....	*564,885*	*3,066.64*	*436,576*	*142.36*
Pineapples.....	*11,022* *		* *	
Chat.....	***1,723,263***	***138,811.38***	***1,162,797***	***8.38***
Coffee.....	***2,959,093***	***395,003.48***	***2,654,693***	***6.72***
Hops.....	***1,615,533***	***23,997.98***	***309,384***	***12.89***
Sugar Cane.....	***762,720***	***18,908.42***	***6,724,394***	***355.63***
Enset.....	***3,447,810***	***395,632.45***	***8,015,531***	***20.26***

Root crops covered more than 1.65% of the area under all crops in the country. Potatoes, sweet potatoes and taro ('Godere') added 32.88%, 25.19% and 24.6% of the area to the root crop total. The same crops and onion contributed 31.88%, 24.95%, 22.48% and 9.37% to the root crop production total in the same order.

3.2.4 <u>Fruit Crops</u> – The survey results show that fruit crops grown by the private peasant holders cover only a small token area and production in the country. The number of holders practicing fruit farming is much less than that of grains or cereals as indicated in the tables.

More than 53 thousand hectares of land is under fruit crops in Ethiopia. Bananas contributed about 55.40% of the fruit crop area followed by mangoes that contributed 16.26% of the area. More than 4.08 million quintals of fruits was produced in the country. Bananas, Papayas, mangoes and oranges took up 51.01%, 10.68%, 16.05% and 10.72% of the fruit production, respectively, as shown in Table 2.



3.2.5 <u>Stimulant crops</u> – Farmers engaged in growing and producing stimulant crops such as coffee and Chat are greater in number than those growing fruits. The area and production of these crops are also larger than that of fruits since they earn a considerable amount of cash for the holders. Table 1 show Chat and coffee shared 1.08% and 3.07% of

the area under all crops in the country and 1.16 and 2.65 million quintals of produce was obtained from these crops in the same agricultural year respectively.

3.2.6 Sugar Cane- is grown in small areas in some parts of the country within the private peasant holdings. More than 18 thousand hectares of land was under sugar cane in the country, yielding more than 6.72 million quintals of produce by the peasant holders. But the production is not usually used for industrial purposes. It is noticeably used up in household consumption.

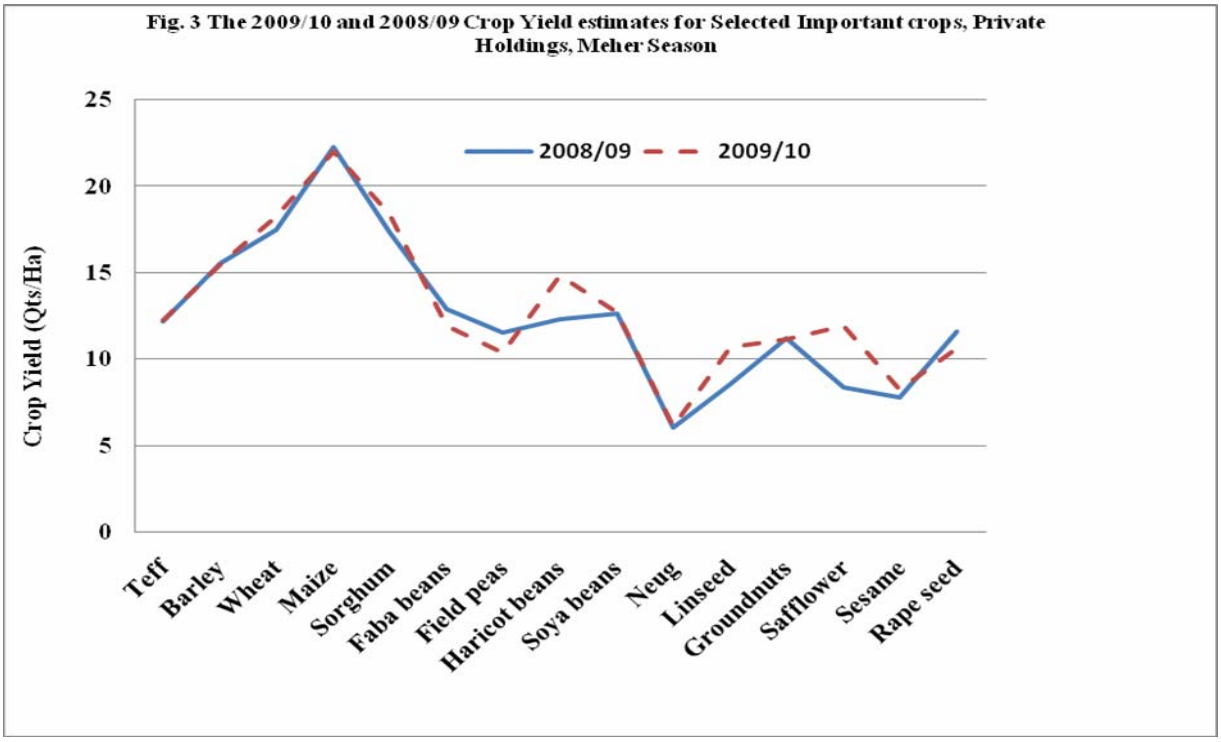
3.2.7 Enset:- is grown in south-western part of the country and covers considerable land area within the private holdings. More than 395 thousand hectares of land was under Enset in the country, yielding more than 8.02 million quintals of produce by the peasant holders

3.3 Comparison of the current year (2009/10) Post Harvest Crop yield with last year (2008/09), estimates.

In this section of the report an attempt has been made to compare the post-harvest crop productivity estimates of selected important food crops obtained from the 2009/10 (2002 E.C.) Agricultural Sample Survey with last year i.e. 2008/09 crop yield estimates of the same crops.

The presentation of Such comparisons are believed to give a bird's eye view whether, or not the current year estimated increase in the volume of production over the last year estimate, is effected from increased cropped area or due to the attainment of enhanced crop yield or the contribution of both have brought the increment of the current year production, contributed but enhanced crop yield taken up the lion sharet, so as one can generally indicate the direction, the rate of change and the level of steps the agriculture sector taking up on the ladder of transformation to commercialized agriculture from its intial subsistence and back ward stating point. Of cource, it should be noted that, except the progress made during the the last two and half decades, the the agricultural sector in Ethiopia had remained stagenant for centuries with limited progress in few specific areas.

Consequently, the results of such comparison are believed to serve as problem area in dicators for concerned stakeholders to develop and implement corrective measures, so as to accelerate the speed of transforming the existing agriculture into commercial agriculture. Thus, to meet the so far mentioned objectives, the following brief discussion on the results of crop productivity comparisons made for selected important food crops at country level is presented:



Even though the rain fall was not adequate in the current crop-growing season, i.e. 2009/10 (2002 E.C.), both the estimated cropped land area and the volume of grain crops production obtained have increased by about **2.61 %** and **5.60%** over last year 2008/09 post harvest estimate. However, with regard to estimated crop yield, crops such as barely, maze and oats within the category of cereals, crops such as faba beans, haricot beans, chick pease and soyabeans within the category of pulses as well as crops such as sufflower and rape seed within the category of oilcrops, have shown a decrease that ranges from 8.51% for rape seed to 0.15% for chik pease in the current year post-harvest estimated crop yield when compared with last year estimates. On the other hand, a number of crops within the grain crops category have shown significant increment in the current year post harvested estimated yield when compared with last year I,e, 2008/09 estimates. For instance, the estimated crop productivity of the following

selected important food crops i.e. Teff, wheat, faba beans and chickpeas have shown significant increment, where the increment ranges from **17.47%** for Chicpeas to **6.17%** for Teff when compared with the year 2007/08 post harvest estimates, while the range of the increment over the 2008/09 post harvest estimate was 11.14% for chickpeas and 1.56% for Teff (See Figure 3 & Statistical Table 4).

Table 3 - Estimate of Area and Production of Grain Crops for 2008/2009 (2001 E.C) and 2009/2010 (2002 E.C), Meher Season

Region	Area in hectare			Production in quintal		
	2009 / 10 (2002 E.C)	2008 / 09 (2001 E.C)	% Change	2009 /10 (2002 E.C)	2008 /09 (2001 E.C)	% Change
TIGRAY	*856,330*	885,835	-3.33	11,486,773.07	12,349,722	-6.99
AFAR	*	17,423	*	*	425,491	*
AMHARA	*3,997,750*	3,973,611	0.61	*57,105,217.80*	56,721,904	0.68
OROMIA	*5,348,593*	5,073,271	5.43	*90,712,995.53*	82,384,641	10.11
SOMALI	*69,789*	75,142	-7.12	*1,172,662.20*	1,676,584	-30.06
BENISHANGUL-GUMUZ	*188,392*	192,422	-2.09	*3,252,672.58*	2,764,377	17.66
S.N.N.P.R.	1,006,725	964,379	4.39	16,491,768.74	14,336,202	15.04
GAMBELA	*9,715*	10,342	-6.07	*191,715.20*	244,398	-21.56
HARARI	*9,855*	10,166	-3.06	*102,192.10*	159,035	-35.74
DIRE DAWA	*10,045*	7,909	27.00	*99,204.88*	105,051	-5.57
ALL	11,503,249	**11,210,501**	2.61	180,758,896	**171,167,405**	5.60

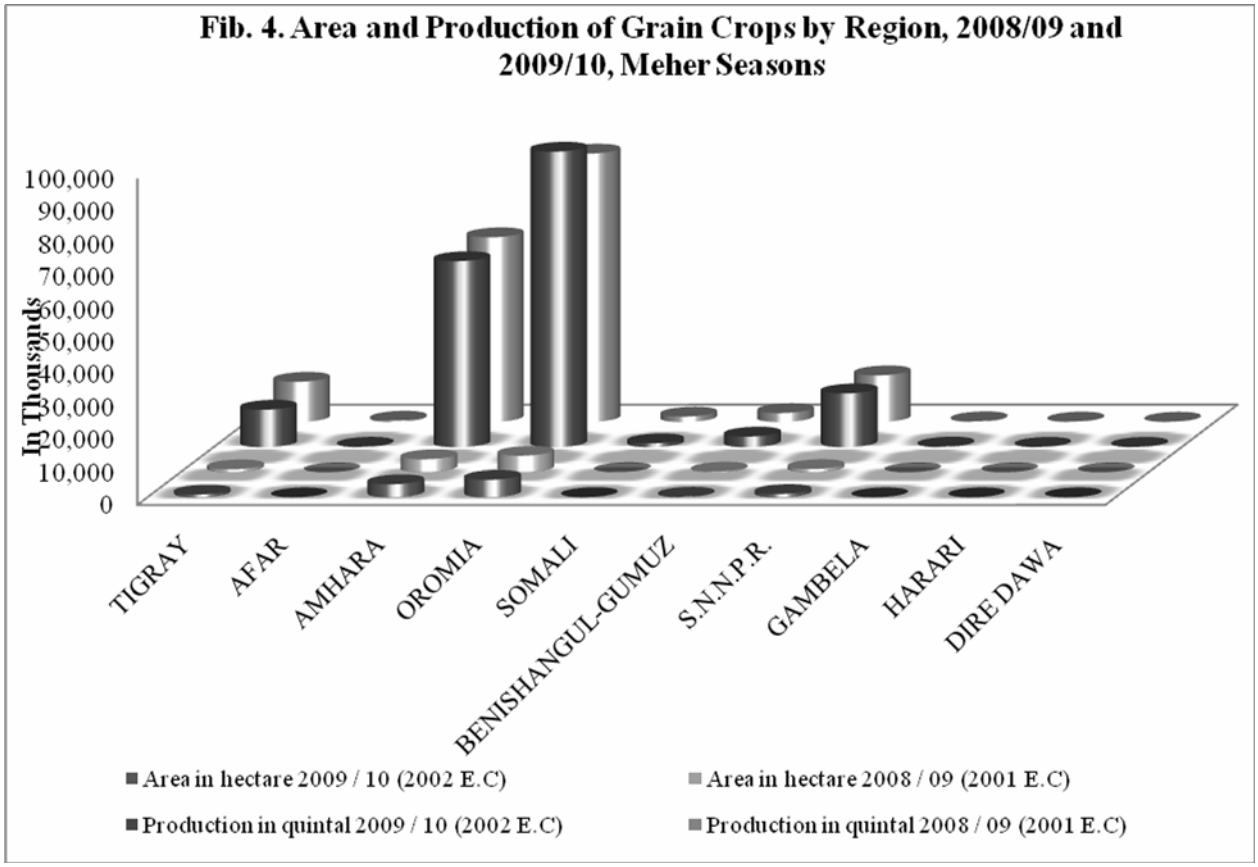


Table 4 - Estimate of Area, Production and Yield of Crops for 2008/2009 (2001 E.C) and 2009/2010 (2002 E.C), Meher Season

Ethiopia

Crop	Area in hectare			Production in quintal			Yield (quintal / hectare)		
	2009 / 10 (2002 E.C)	2008 / 09 (2001 E.C)	% Change	2009 /10 (2002 E.C)	2008 / 09 (2001 E.C)	% Change	2009 / 10 (2002 E.C)	2008 / 09 (2001 E.C)	% Change
Grain crops	*11,503,249*	*11210501*	*2.61*	180,758,896	171167405	*5.60*			
Cereals	*9,233,025*	*8770118*	*5.28*	155,342,280	144964059	*7.16*			
Teff	*2,588,661*	*2481333*	*4.33*	31,793,743	30280181	*5.00*	*12.28*	*12.20*	*0.66*
Barley	*1,129,112*	*977757*	*15.48*	17,504,436	15194042	*15.21*	*15.5*	*15.54*	*-0.26*
Wheat	*1,683,565*	*1453817*	*15.80*	30,756,436	25376398	*21.20*	*18.27*	*17.46*	*4.64*
Maize	*1,772,253*	*1768122*	*0.23*	38,971,631	39325217	*-0.90*	*21.99*	*22.24*	*-1.12*
Sorghum	*1,618,677*	*1615297*	*0.21*	29,712,655	28043510	*5.95*	*18.36*	*17.36*	*5.76*
Finger millet	*368,999*	*408099*	*-9.58*	5,241,911	5603045	*-6.45*	*14.21*	*13.73*	*3.50*
Oats / 'Aja'	*24,018*	*30605*	*-21.52*	330,191	427729	*-22.80*	*13.75*	*13.98*	*-1.65*
Rice	*47,739*	*35088*	*36.05*	1,031,277	713937	*44.45*	*21.6*	*20.35*	*6.14*
Pulses	*1,489,308*	*1585236*	*-6.05*	18,980,473	19646301	*-3.39*			
Faba beans	*512,067*	*538820*	*-4.97*	6,108,453	6959837	*-12.23*	*11.93*	*12.92*	*-7.66*
Field peas	*226,533*	*230749*	*-1.83*	2,358,721	2670933	*-11.69*	*10.41*	*11.58*	*-10.10*
Haricot beans	*244,013*	*267069*	*-8.63*	3,628,903	3297753	*10.04*	*14.87*	*12.35*	*20.40*
Chick-peas	*213,187*	*233440*	*-8.68*	2,846,398	3120800	*-8.79*	*13.35*	*13.37*	*-0.15*
Lentils	*105,956*	*94946*	*11.60*	1,237,772	947734	*30.60*	*11.68*	*9.98*	*17.03*
Grass peas	*135,658*	*159731*	*-15.07*	2,040,196	2021255	*0.94*	*15.04*	*12.65*	*18.89*
Soya beans	*5,679*	*6236*	*-8.94*	72,050	78989	*-8.79*	*12.69*	*12.67*	*0.16*
Fenugreek	*21,183*	*33774*	*-37.28*	271,220	376589	*-27.98*	*12.8*	*11.15*	*14.80*
Gibto	*25,033*	*20469*	*22.30*	416,759	172411	*141.72*	*16.65*	*8.42*	*97.74*
Oilseeds	*780,916*	*855147*	*-8.68*	6,436,144	6557044	*-1.84*			
Neug	*256,794*	*313445*	*-18.07*	1,578,467	1907523	*-17.25*	*6.15*	*6.09*	*0.99*
Linseed	*140,801*	*180873*	*-22.15*	1,506,285	1560793	*-3.49*	*10.74*	*8.63*	*24.45*
Groundnuts	*41,579*	*41761*	*-0.44*	464,248	468872	*-0.99*	*11.17*	*11.23*	*-0.53*
Safflower	*4,653*	*7853*	*-40.76*	55,524	65814	*-15.63*	*11.93*	*8.38*	*42.36*
Sesame	*315,843*	*277992*	*13.62*	2,605,343	2167407	*20.21*	*8.25*	*7.8*	*5.77*
Rape seed	*21,247*	*33223*	*-36.05*	226,277	386637	*-41.48*	*10.65*	*11.64*	*-8.51*
Vegetables	*138,393*	*162125*	*-14.64*	5,573,568	5988571	*-6.93*			
Lettuce	*156*	*	*	9,149	*	*	*58.58*	*	*
Head cabbage	*2,562*	*3400*	*-24.64*	203,881	241335	*-15.52*	*79.61*	*70.99*	*12.14*
Eth. Cabbage	*32,782*	*33901*	*-3.30*	2,741,975	2815668	*-2.62*	*83.34*	*83.06*	*0.34*
Tomatoes	*4,953*	*5342*	*-7.28*	404,261	418150	*-3.32*	*81.66*	*78.28*	*4.32*
Green peppers	*7,850*	*8581*	*-8.52*	614,637	658725	*-6.69*	*78.01*	*76.77*	*1.62*
Red peppers	*89,862*	*110406*	*-18.61*	1,593,275	1834026	*-13.13*	*17.73*	*16.61*	*6.74*
Swiss chard	*227*	*243*	*-6.45*	6,392	6809	*-6.13*	*28.1*	*28.01*	*0.32*
Root crops	*212,208*	*145742*	*45.61*	18,063,778	12136043	*48.84*			
Beetroot	*1,096*	*2119*	*-48.27*	100,785	200927	*-49.84*	*91.93*	*94.82*	*-3.05*
Carrot	*2,713*	*	*	182,293	134666	*35.37*	*67.2*	*	*
Onion	*17,588*	*15628*	*12.54*	1,693,168	1488549	*13.75*	*96.27*	*95.25*	*1.07*
Potatoes	*69,784*	*48113*	*45.04*	5,723,325	3840457	*49.03*	*82.02*	*79.82*	*2.76*
Garlic	*15,361*	*14137*	*8.66*	1,796,578	1560477	*15.13*	*116.96*	*110.38*	*5.96*
Taro / 'Godere'	*52,201*	*30251*	*72.56*	4,060,001	2282428	*77.88*	*77.78*	*75.45*	*3.09*
Sweet potatoes	*53,465*	*33070*	*61.67*	4,507,628	2628539	*71.49*	*84.31*	*79.48*	*6.08*
Fruit crops	*53,086*	*47990*	*10.62*	4,089,115	3512593	*16.41*			
Avocados	*5,694*	*5067*	*12.36*	376,509	324519	*16.02*	*66.03*	*64.04*	*3.11*
Bananas	*29,409*	*29064*	*1.19*	2,085,962	1943331	*7.34*	*70.94*	*66.86*	*6.10*
Guavas	*1,944*	*1320*	*47.35*	29,285	19474	*50.38*	*15.07*	*14.76*	*2.10*
Lemons	*753*	*754*	*-0.06*	62,131	48713	*27.54*	*76.86*	*64.62*	*18.94*
Mangoes	*8,630*	*6051*	*42.61*	656,199	441582	*48.60*	*75.96*	*72.97*	*4.10*
Oranges	*3,471*	*2440*	*42.27*	438,276	293410	*49.37*	*125.95*	*120.27*	*4.72*
Papayas	*3,067*	*3254*	*-5.77*	436,576	440035	*-0.79*	*141.99*	*135.22*	*5.01*
Pineapples	*119*	*40*	*194.73*	4,176	*	*	*35.21*	*	*
Chat	*138,811*	*138145*	*0.48*	1,162,797	1149211	*1.18*	*8.35*	*8.32*	*0.36*
Coffee	*395,003*	*391296*	*0.95*	2,654,693	2602392	*2.01*	*6.72*	*6.65*	*1.05*
Hops	*23,998*	*24409*	*-1.68*	309,384	302813	*2.17*	*12.78*	*12.41*	*2.98*
Sugar cane	*18,908*	*15602*	*21.19*	6,724,394	5594041	*20.21*	*355.63*	*358.55*	*-0.81*
Enset	*395,632*	*278668*	*41.97*	8,015,531	5565899	*44.01*	*20.32*	*19.97*	*1.75*

Table 5 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Tigray

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*941,347*	*856330.49*	*11486773.07*	
Cereals.....	*934,864*	*693967.25*	*9625716.14*	
Teff.....	*530,566*	*187858.61*	*2039993.98*	*10.86*
Barley.....	*447,284*	*106787.74*	*1440496.11*	*13.49*
Wheat.....	*402,819*	*113595.76*	*1771643.59*	*15.6*
Maize.....	*527,007*	*64649.07*	*822298.13*	*12.72*
Sorghum.....	*326,645*	*155420.96*	*2808587.00*	*18.07*
Finger millet.....	*252,901*	*64612.04*	*741605.96*	*11.48*
Oats/'Aja'.....	*	*	*	*
Rice.....	*	*	-	-
Pulses.....	*430,727*	*63797.70*	*794859.66*	
Faba beans..... .	*249,109*	*19726.93*	*249056.41*	*12.63*
Field peas.....	*80,323*	*8330.71*	*108252.63*	*12.99*
Haricot beans.....	*30,364*	*4076.43*	*46854.86*	*11.49*
Chick-peas.....	*72,929*	*13548.86*	*177803.44*	*13.12*
Lentils.....	*75,407*	*7909.51*	*95617.05*	*12.09*
Grass Peas.....	*47,044*	*9459.05*	*113402.84*	*11.99*
Soya beans.....	*	*	-	-
Fenugreek.....	*21,358*	*691.00*	*3872.43*	*5.6*
Gibto.....	-	-	-	-
Oilseeds.....	*250,459*	*98565.54*	*1066197.27*	
Neug.....	*50,360*	*6744.15*	*63790.04*	*9.46*
Linseed.....	*100,192*	*13147.93*	*116743.06*	*8.88*
Groundnuts.....	*	*	*	*
Safflower.....	*	*	*	*
Sesame.....	*125,725*	*78052.64*	*874746.34*	*11.21*
Rape seed.....	*	*	-	-
Vegetables.....	*220,049*	*3681.81*	*158503.55*	
Lettuce.....	*2,453*	*3.35*	*337.44*	*100.73*
Head Cabbage.....	*1,947*	*	*	*
Ethiopian Cabbage.....	*	*	-	-
Tomatoes.....	*25,034*	*448.33*	*48809.98*	*108.87*
Green peppers.....	*63,101*	*632.72*	*75264.63*	*118.95*
Red peppers.....	*143,687*	*2559.53*	*32326.13*	*12.63*
Swiss chard.....	*5,823*	*16.62*	*1138.69*	*68.51*
Root Crops.....	*108,765*	*1822.83*	*206952.97*	
Beetroot.....	*	*	-	-
Carrot.....	*	*	*	*
Onion.....	*21,041*	*340.60*	*47728.87*	*140.13*
Potatoes.....	*36,320*	*907.05*	*77987.07*	*85.98*
Garlic.....	*74,768*	*552.23*	*79443.00*	*143.86*
Taro/'Godere'.....	-	-	-	-
Sweet potatoes.....	*	*	*	*
Fruit Crops.....	*45,897*	*1002.13*	*26962.59*	*26.91*
Avocados.....	*	*	-	-
Bananas.....	*4,651*	*	*	*
Guavas.....	*16,336*	*108.10*	*	*
Lemons.....	*17,332*	*	*	*
Mangoes.....	*2,688*	*29.37*	-	-
Oranges.....	*6,817*	*	*	*
Papayas.....	*21,151*	*397.89*	*19641.55*	*49.36*
Pineapples.....	*	*	-	-
Chat.....	*16,030*	*	-	-
Coffee.....	*10,614*	*	-	-
Hops.....	*120,720*	*1132.84*	*36489.76*	*32.21*
Sugar Cane.....	*	*	-	-
Enset.....	-	-	-	-

Table 6 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Afar Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*7,345*	*6,056.56*	*143,694.34*	
Cereals.....	*7,308*	*5,697.12*	*142,051.77*	
Teff.....	*2,316*	*	*	*
Barley.....	*	*	-	-
Wheat.....	-	-	-	-
Maize.....	*6,507*	*3,498.58*	*128,964.04*	*36.86*
Sorghum.....	*	*578.4*	*7,834.90*	*13.55*
Finger millet.....	-	-	-	-
Oats/'Aja'.....	-	-	-	-
Rice.....	-	-	-	-
Pulses.....	*870*	*	*	
Faba beans..... .	-	-	-	-
Field peas.....	-	-	-	-
Haricot beans.....	*	*	*	*
Chick-peas.....	*	*	*	*
Lentils.....	*	*	-	-
Grass Peas.....	-	-	-	-
Soya beans.....	-	-	-	-
Fenugreek.....	-	-	-	-
Gibto.....	-	-	-	-
Oilseeds.....	*	*	*	
Neug.....	*	*	-	-
Linseed.....	*	*	-	-
Groundnuts.....	*	*	-	-
Safflower.....	*	*	*	*
Sesame.....	*	*	*	*
Rape seed.....	-	-	-	-
Vegetables.....	*606*	*	*	
Lettuce.....	-	-	-	-
Head Cabbage.....	-	-	-	-
Ethiopian Cabbage.....	*	*	*	*
Tomatoes.....	*	*	-	-
Green peppers.....	*	*	-	-
Red peppers.....	*450*	*	*	*
Swiss chard.....	-	-	-	-
Root Crops.....	*264*	*	*	
Beetroot.....	-	-	-	-
Carrot.....	-	-	-	-
Onion.....	*207*	*	*	*
Potatoes.....	-	-	-	-
Garlic.....	-	-	-	-
Taro/'Godere'.....	-	-	-	-
Sweet potatoes.....	*	*	-	-
Fruit Crops.....	*	*	*	*
Avocados.....	*	*	-	-
Bananas.....	*	*	*	*
Guavas.....	*	*	-	-
Lemons.....	*	*	*	*
Mangoes.....	*	*	-	-
Oranges.....	*	*	-	-
Papayas.....	*270*	*	*	*
Pineapples.....	-	-	-	-
Chat.....	-	-	-	-
Coffee.....	-	-	-	-
Hops.....	-	-	-	-
Sugar Cane.....	*	*	-	-
Enset.....	-	-	-	-

Table 7 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Amhara Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*3,523,891*	*3,997,749.90*	*57,105,217.80*	
Cereals.....	*3,491,338*	*2,986,621.87*	*46,301,971.90*	
Teff.....	*2,168,938*	*1,001,028.47*	*12,860,563.42*	*12.85*
Barley.....	*1,533,878*	*387,862.40*	*5,067,683.72*	*13.07*
Wheat.....	*1,668,522*	*548,315.25*	*8,960,927.31*	*16.34*
Maize.....	*1,983,295*	*355,508.17*	*8,010,693.99*	*22.53*
Sorghum.....	*903,114*	*486,467.74*	*7,922,460.70*	*16.29*
Finger millet.....	*492,212*	*164,321.16*	*2,495,092.51*	*15.18*
Oats/'Aja'.....	*104,043*	*8,742.51*	*123,639.49*	*14.14*
Rice.....	*64,092*	*34,376.16*	*	*
Pulses.....	*2,248,657*	*694,671.70*	*8,541,004.37*	
Faba beans..... .	*1,434,186*	*232,535.13*	*2,602,238.28*	*11.19*
Field peas.....	*685,494*	*108,469.23*	*1,060,383.78*	*9.78*
Haricot beans.....	*296,227*	*51,247.46*	*852,206.53*	*16.63*
Chick-peas.....	*499,592*	*113,337.02*	*1,456,408.67*	*12.85*
Lentils.....	*408,922*	*62,827.37*	*620,625.91*	*9.88*
Grass Peas.....	*397,492*	*85,262.04*	*1,288,389.32*	*15.11*
Soya beans.....	*	*	*	*
Fenugreek.....	*188,773*	*14,236.43*	*204,363.94*	*14.35*
Gibto.....	*102,638*	*24,890.64*	*415,310.94*	*16.69*
Oilseeds.....	*1,204,242*	*316,456.33*	*2,262,241.53*	
Neug.....	*355,889*	*75,303.79*	*511,090.96*	*6.79*
Linseed.....	*315,263*	*31,960.61*	*184,696.94*	*5.78*
Groundnuts.....	*19,522*	*	*	*
Safflower.....	*72,388*	*4,013.81*	*43,547.65*	*10.85*
Sesame.....	*266,250*	*185,782.18*	*1,296,604.52*	*6.98*
Rape seed.....	*381,231*	*16,415.27*	*187,445.07*	*11.42*
Vegetables.....	*1,303,575*	*37,117.42*	*872,094.59*	
Lettuce.....	*6,072*	*	-	-
Head Cabbage.....	*82,160*	*345.86*	*30,321.59*	*87.67*
Ethiopian Cabbage.....	*255,927*	*1,599.11*	*143,501.90*	*89.74*
Tomatoes.....	*51,534*	*392.18*	*	*
Green peppers.....	*167,472*	*2,141.22*	*185,924.68*	*86.83*
Red peppers.....	*862,043*	*32,561.99*	*480,032.75*	*14.74*
Swiss chard.....	*27,752*	*	*582.79*	*
Root Crops.....	*1,457,515*	*36,340.79*	*3,519,150.20*	
Beetroot.....	*41,115*	*	*	*
Carrot.....	*30,616*	*136.07*	*6,874.43*	*50.52*
Onion.....	*165,629*	*3,648.79*	*404,411.82*	*110.83*
Potatoes.....	*499,939*	*24,129.65*	*2,154,050.07*	*89.27*
Garlic.....	*1,108,883*	*8,072.72*	*930,969.81*	*115.32*
Taro/'Godere'.....	*	*	-	-
Sweet potatoes.....	*21,802*	*196.41*	*9,399.86*	*47.86*
Fruit Crops.....	*215,260*	*2,846.78*	*239,557.97*	*84.15*
Avocados.....	*21,978*	*	*	*
Bananas.....	*59,000*	*626.77*	*13,539.01*	*21.6*
Guavas.....	*43,402*	*190.6*	*2,920.97*	*15.33*
Lemons.....	*49,473*	*244.69*	*33,698.49*	*137.72*
Mangoes.....	*42,141*	*213.31*	*15,421.86*	*72.3*
Oranges.....	*60,245*	*979.51*	*	*
Papayas.....	*50,022*	*	*	*
Pineapples.....	-	-	-	-
Chat.....	*176,869*	*6,436.63*	*45,951.48*	*7.14*
Coffee.....	*226,781*	*5,423.67*	*19,898.17*	*3.67*
Hops.....	*891,803*	*15,189.03*	*110,276.58*	*7.26*
Sugar Cane.....	*62,058*	*1,066.20*	*	*
Enset.....	*4,343*	*5.79*	-	-

Table 8 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Oromia Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*4,859,822*	*5,348,592.85*	*90,712,995.53*	
Cereals.....	*4,756,109*	*4,466,527.59*	*80,538,211.02*	
Teff.....	*2,140,224*	*1,182,810.77*	*14,368,405.08*	*12.15*
Barley.....	*1,602,528*	*542,476.08*	*9,685,632.14*	*17.85*
Wheat.....	*1,844,019*	*857,603.04*	*16,782,415.27*	*19.57*
Maize.....	*2,978,603*	*1,000,055.87*	*23,255,330.29*	*23.25*
Sorghum.....	*1,883,150*	*754,878.14*	*14,656,767.28*	*19.42*
Finger millet.....	*471,490*	*105,610.88*	*1,471,754.13*	*13.94*
Oats/'Aja'.....	*126,800*	*14,147.33*	*193,557.40*	*13.68*
Rice.....	*42,075*	*8,945.47*	*124,349.43*	*13.9*
Pulses.....	*2,309,385*	*559,779.91*	*7,474,028.36*	
Faba beans..... .	*1,271,328*	*205,519.57*	*2,649,528.31*	*12.89*
Field peas.....	*387,474*	*77,397.47*	*892,812.03*	*11.54*
Haricot beans.....	*828,328*	*114,706.95*	*1,559,665.48*	*13.6*
Chick-peas.....	*299,918*	*79,404.89*	*1,141,574.58*	*14.38*
Lentils.....	*215,931*	*34,248.11*	*514,696.11*	*15.03*
Grass Peas.....	*223,267*	*40,673.13*	*636,170.52*	*15.64*
Soya beans.....	*30,825*	*1,738.72*	*18,326.84*	*10.54*
Fenugreek.....	*168,067*	*6,054.22*	*61,254.49*	*10.12*
Gibto.....	*	*	-	-
Oilseeds.....	*1,071,108*	*322,285.35*	*2,700,756.14*	
Neug.....	*438,649*	*163,785.42*	*950,343.18*	*5.8*
Linseed.....	*406,637*	*92,674.57*	*1,183,155.03*	*12.77*
Groundnuts.....	*126,814*	*26,654.89*	*240,285.24*	*9.01*
Safflower.....	*10,945*	*	*	*
Sesame.....	*123,818*	*34,154.17*	*279,718.70*	*8.19*
Rape seed.....	*96,989*	*4,535.35*	*37,872.59*	*8.35*
Vegetables.....	*1,820,872*	*50,842.92*	*1,781,167.66*	
Lettuce.....	*17,723*	*	*	*
Head Cabbage.....	*106,459*	*1,658.36*	*	*
Ethiopian Cabbage.....	*1,044,828*	*11,467.28*	*724,776.94*	*63.2*
Tomatoes.....	*33,982*	*	*	*
Green peppers.....	*389,278*	*3,445.58*	*212,258.20*	*61.6*
Red peppers.....	*540,284*	*32,590.37*	*575,353.06*	*17.65*
Swiss chard.....	*24,031*	*101.12*	*	*
Root Crops**.....**	*1,990,656*	*91,021.45*	*7,250,190.49*	
Beetroot.....	*109,837*	*668.51*	*69,390.97*	*103.8*
Carrot.....	*71,589*	*2,373.25*	*161,571.37*	*68.08*
Onion.....	*227,530*	*9,968.38*	*924,840.94*	*92.78*
Potatoes.....	*451,078*	*32,032.32*	*2,495,607.45*	*77.91*
Garlic.....	*740,017*	*6,078.33*	*752,000.62*	*123.72*
Taro/'Godere'.....	*236,883*	*8,452.26*	*524,731.34*	*62.08*
Sweet potatoes.....	*695,217*	*31,448.40*	*2,322,047.80*	*73.84*
Fruit Crops.....	*942,354*	*16,470.70*	*1,133,189.92*	*68.8*
Avocados.....	*125,383*	*1,349.86*	*80,173.66*	*59.39*
Bananas.....	*545,797*	*8,976.12*	*562,827.16*	*62.7*
Guavas.....	*114,338*	*1,213.04*	*18,423.52*	*15.19*
Lemons.....	*24,328*	*56.93*	*2,511.38*	*44.11*
Mangoes.....	*298,960*	*3,392.72*	*250,313.27*	*73.78*
Oranges.....	*101,867*	*803.11*	*89,838.63*	*111.86*
Papayas.....	*201,733*	*672.75*	*128,975.11*	*191.71*
Pineapples.....	*2,554*	*6.16*	*127.2*	*20.65*
Chat.....	*904,912*	*96,659.86*	*792,182.76*	*8.2*
Coffee.....	*1,139,554*	*278,161.11*	*1,929,795.07*	*6.94*
Hops.....	*375,362*	*5,820.18*	*130,658.83*	*22.45*
Sugar Cane.....	*246,877*	*10,739.43*	*3,305,102.00*	*307.75*
Enset.....	*1,087,431*	*105,367.79*	*2,021,710.77*	*19.19*

Table 9 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Somali Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*87,816*	*69,789.27*	*1,172,662.20*	
Cereals.....	*87,139*	*67,095.02*	*1,105,199.83*	
Teff.....	-	-	-	-
Barley.....	*7,158*	*3,015.79*	*18,460.49*	*6.12*
Wheat.....	*11,051*	*4,364.13*	*72,244.97*	*16.55*
Maize.....	*69,275*	*26,998.54*	*440,831.70*	*16.33*
Sorghum.....	*60,217*	*32,704.78*	*573,535.49*	*17.54*
Finger millet.....	-	-	-	-
Oats/'Aja'.....	*	*	*	*
Rice.....	-	-	-	-
Pulses.....	*6,231*	*575.71*	*8,590.88*	
Faba beans..... .	-	-	-	-
Field peas.....	-	-	-	-
Haricot beans.....	*4,675*	*431.61*	*	*
Chick-peas.....	*	*	*	*
Lentils.....	*	*	-	-
Grass Peas.....	-	-	-	-
Soya beans.....	-	-	-	-
Fenugreek.....	*	*	-	-
Gibto.....	-	-	-	-
Oilseeds.....	*	*	*	
Neug.....	-	-	-	-
Linseed.....	*	*	-	-
Groundnuts.....	*	*	*	*
Safflower.....	-	-	-	-
Sesame.....	*	*	*	*
Rape seed.....	-	-	-	-
Vegetables.....	*6,177*	*	*	
Lettuce.....	-	-	-	-
Head Cabbage.....	-	-	-	-
Ethiopian Cabbage.....	-	-	-	-
Tomatoes.....	*	*	*	*
Green peppers.....	*	*	*	*
Red peppers.....	*	*	-	-
Swiss chard.....	-	-	-	-
Root Crops.....	*4,088*	*	*	
Beetroot.....	-	-	-	-
Carrot.....	-	-	-	-
Onion.....	*	*	*	*
Potatoes.....	*	*	*	*
Garlic.....	*	*	*	*
Taro/'Godere'.....	-	-	-	-
Sweet potatoes.....	*	*	*	*
Fruit Crops.....	*4,083*	*584.05*	*	*
Avocados.....	-	-	-	-
Bananas.....	*	*	*	*
Guavas.....	*	*	*	*
Lemons.....	*1,377*	*47.02*	*1,927.22*	*40.99*
Mangoes.....	*1,253*	*	*	*
Oranges.....	*1,158*	*	*	*
Papayas.....	*	*	*	*
Pineapples.....	-	-	-	-
Chat.....	*17,135*	*4,278.80*	*41,190.00*	*9.63*
Coffee.....	*	*	*	*
Hops.....	-	-	-	-
Sugar Cane.....	*	*	*	*
Enset.....	*	*	-	-

Table 10 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Benishangul-Gumuz Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*146,658*	*188,391.80*	*3,252,672.58*	
Cereals.....	*145,952*	*148,212.53*	*2,845,687.66*	
Teff.....	*35,022*	*18,632.31*	*182,564.59*	*9.8*
Barley.....	*5,312*	*874.3*	*9,392.63*	*10.74*
Wheat.....	*6,368*	*	*	*
Maize.....	*130,843*	*35,953.40*	*801,218.72*	*22.28*
Sorghum.....	*102,885*	*59,963.23*	*1,327,809.84*	*22.14*
Finger millet.....	*52,340*	*28,391.84*	*442,684.65*	*15.59*
Oats/'Aja'.....	*1,000*	*87.6*	*	*
Rice.....	*3,583*	*584.81*	*6,988.75*	*11.95*
Pulses.....	*53,369*	*7,288.09*	*109,627.10*	
Faba beans..... .	*6,415*	*624.69*	*8,223.09*	*13.16*
Field peas.....	*4,320*	*659.93*	*	*
Haricot beans.....	*35,123*	*4,302.58*	*79,976.73*	*18.59*
Chick-peas.....	*3,315*	*236.94*	*1,193.99*	*5.04*
Lentils.....	*975*	*46.61*	*	*
Grass Peas.....	-	-	-	-
Soya beans.....	*10,069*	*1,321.43*	*10,572.95*	*8*
Fenugreek.....	*774*	*7.05*	*	*
Gibto.....	*	*	*	*
Oilseeds.....	*89,703*	*32,891.18*	*297,357.83*	
Neug.....	*31,588*	*10,724.02*	*51,070.48*	*4.76*
Linseed.....	*7,557*	*	*	*
Groundnuts.....	*29,786*	*6,752.98*	*99,726.66*	*14.77*
Safflower.....	*1,535*	*47.13*	*435.22*	*9.23*
Sesame.....	*53,232*	*14,741.26*	*143,337.86*	*9.72*
Rape seed.....	*	*	*	*
Vegetables.....	*51,471*	*1,709.31*	*45,301.81*	
Lettuce.....	-	-	-	-
Head Cabbage.....	*2,537*	*11.09*	*1,394.64*	*125.76*
Ethiopian Cabbage.....	*3,982*	*62.43*	*3,115.09*	*49.9*
Tomatoes.....	*6,280*	*26.74*	*	*
Green peppers.....	*8,512*	*79.71*	*	*
Red peppers.....	*38,939*	*1,528.73*	*32,306.42*	*21.13*
Swiss chard.....	*693*	*0.62*	-	-
Root Crops.....	*42,104*	*879.18*	*73,649.72*	
Beetroot.....	*2,616*	*3.94*	*508.83*	*129.14*
Carrot.....	*801*	*	*	*
Onion.....	*7,383*	*66.81*	*	*
Potatoes.....	*5,698*	*	*	*
Garlic.....	*9,651*	*51.13*	*5,822.33*	*113.87*
Taro/'Godere'.....	*3,698*	*45.72*	*1,338.75*	*29.28*
Sweet potatoes.....	*27,428*	*386.72*	*26,055.82*	*67.38*
Fruit Crops.....	*59,334*	*1,443.50*	*114,635.47*	*79.41*
Avocados.....	*1,708*	*5.65*	*	*
Bananas.....	*22,484*	*416.9*	*26,391.77*	*63.3*
Guavas.....	*5,832*	*25.72*	*22.84*	*0.89*
Lemons.....	*6,083*	*28.12*	*1,537.84*	*54.69*
Mangoes.....	*43,155*	*849.7*	*73,495.81*	*86.5*
Oranges.....	*9,017*	*66.92*	*2,983.61*	*44.58*
Papayas.....	*15,292*	*50.42*	*10,177.52*	*201.85*
Pineapples.....	*	*	-	-
Chat.....	*12,394*	*317.47*	*	*
Coffee.....	*21,634*	*754.23*	*2,594.02*	*3.44*
Hops.....	*12,861*	*78.17*	*1,883.69*	*24.1*
Sugar Cane.....	*3,201*	*77.27*	*15,622.36*	*202.18*
Enset.....	*520*	*7.7*	-	-

Table 11 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

S.N.N.P. Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*2,571,752*	*1,006,724.81*	*16,491,768.74*	
Cereals.....	*2,365,420*	*837,849.64*	*14,406,368.21*	
Teff.....	*753,261*	*196,701.83*	*2,336,961.52*	*11.88*
Barley.....	*767,845*	*88,038.46*	*1,282,189.12*	*14.56*
Wheat.....	*729,460*	*155,660.71*	*3,089,909.82*	*19.85*
Maize.....	*1,412,815*	*278,927.61*	*5,390,794.21*	*19.33*
Sorghum.....	*741,225*	*108,743.79*	*2,167,101.90*	*19.93*
Finger millet.....	*77,592*	*6,020.19*	*89,980.50*	*14.95*
Oats/'Aja'.....	*20,551*	*769.24*	*11,128.35*	*14.47*
Rice.....	*	*	*	*
Pulses.....	*1,600,229*	*162,694.55*	*2,048,351.74*	
Faba beans..... .	*727,928*	*53,627.90*	*599,406.85*	*11.18*
Field peas.....	*335,744*	*31,671.95*	*289,339.90*	*9.14*
Haricot beans.....	*947,881*	*68,837.36*	*1,079,358.13*	*15.68*
Chick-peas.....	*65,025*	*6,488.32*	*67,657.70*	*10.43*
Lentils.....	*25,183*	*912.14*	*6,564.67*	*7.2*
Grass Peas.....	*	*	*	*
Soya beans.....	*14,159*	*	*	*
Fenugreek.....	*22,903*	*186.45*	*	*
Gibto.....	*	*	-	-
Oilseeds.....	*102,156*	*6,180.61*	*37,048.79*	
Neug.....	*	*	*	*
Linseed.....	*61,040*	*2,385.05*	*19,061.52*	*7.99*
Groundnuts.....	*14,923*	*607.18*	*3,353.98*	*5.52*
Safflower.....	*3,882*	*	*	*
Sesame.....	*9,371*	*	*10,123.76*	*
Rape seed.....	*12,231*	*181.65*	*	*
Vegetables.....	*1,646,145*	*43,509.79*	*2,706,653.80*	
Lettuce.....	*11,310*	*26.44*	-	-
Head Cabbage.....	*81,028*	*524.66*	*37,995.46*	*72.42*
Ethiopian Cabbage.....	*1,489,078*	*19,621.73*	*1,867,802.42*	*95.19*
Tomatoes.....	*69,496*	*1,270.75*	*194,476.94*	*153.04*
Green peppers.....	*180,095*	*1,493.20*	*130,977.72*	*87.72*
Red peppers.....	*188,553*	*20,521.11*	*472,186.89*	*23.01*
Swiss chard.....	*39,509*	*51.91*	*3,214.36*	*61.92*
Root Crops.....	*1,413,726*	*80,677.61*	*6,879,251.53*	
Beetroot.....	*103,098*	*261.49*	*17,440.66*	*66.7*
Carrot.....	*53,477*	*	*11,897.20*	*
Onion.....	*130,214*	*2,867.79*	*213,685.51*	*74.51*
Potatoes.....	*377,151*	*12,364.37*	*961,111.83*	*77.73*
Garlic.....	*145,102*	*578.25*	*27,630.11*	*47.78*
Taro/'Godere'.....	*708,466*	*43,495.77*	*3,517,799.44*	*80.88*
Sweet potatoes.....	*537,062*	*20,925.15*	*2,129,686.78*	*101.78*
Fruit Crops.....	*1,322,585*	*29,631.38*	*2,516,908.17*	*84.94*
Avocados.....	*625,625*	*4,192.86*	*295,907.25*	*70.57*
Bananas.....	*876,457*	*18,809.76*	*1,474,531.16*	*78.39*
Guavas.....	*51,791*	*373.77*	*7,786.72*	*20.83*
Lemons.....	*55,319*	*196.25*	*16,667.84*	*84.93*
Mangoes.....	*273,203*	*3,467.36*	*307,319.02*	*88.63*
Oranges.....	*154,010*	*1,284.50*	*177,017.94*	*137.81*
Papayas.....	*262,720*	*1,293.56*	*233,629.33*	*180.61*
Pineapples.....	*6,611*	*13.32*	*	*
Chat.....	*565,345*	*25,050.28*	*283,046.11*	*11.3*
Coffee.....	*1,544,837*	*107,287.79*	*702,319.59*	*6.55*
Hops.....	*212,139*	*1,760.30*	*30,075.15*	*17.09*
Sugar Cane.....	*438,669*	*6,658.07*	*2,837,035.91*	*426.1*
Enset.....	*2,346,099*	*289,496.44*	*5,980,855.54*	*20.66*

Table 12 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Gambela Region

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*31,962*	*9,714.70*	*191,715.20*	
Cereals.....	*30,929*	*9,600.73*	*191,223.33*	
Teff.....	*	*	*	*
Barley.....	*	*	-	-
Wheat.....	*	*	-	-
Maize.....	*22,806*	*4,792.95*	*97,124.93*	*20.26*
Sorghum.....	*16,213*	*4,682.30*	*92,578.59*	*19.77*
Finger millet.....	*	*	*	*
Oats/'Aja'.....	*	*	-	-
Rice.....	*602*	*	*	*
Pulses.....	*5,497*	*88.76*	*242.73*	
Faba beans..... .	*	*	-	-
Field peas.....	*	*	-	-
Haricot beans.....	*5,082*	*49.57*	*242.73*	*4.9*
Chick-peas.....	-	-	-	-
Lentils.....	-	-	-	-
Grass Peas.....	*	*	-	-
Soya beans.....	*161*	*	-	-
Fenugreek.....	-	-	-	-
Gibto.....	-	-	-	-
Oilseeds.....	*1,898*	*25.21*	*249.13*	
Neug.....	-	-	-	-
Linseed.....	-	-	-	-
Groundnuts.....	*1,089*	*18.34*	*164.32*	*8.96*
Safflower.....	*359*	*	*	*
Sesame.....	*	*	*	*
Rape seed.....	*	*	-	-
Vegetables.....	*8,223*	*133.14*	*9,180.27*	
Lettuce.....	*	-	-	-
Head Cabbage.....	*488*	*	-	-
Ethiopian Cabbage.....	*4,981*	*26.85*	*2,767.38*	*103.07*
Tomatoes.....	*1,304*	*	*	*
Green peppers.....	*2,146*	*32.07*	*3,090.06*	*96.35*
Red peppers.....	*1,330*	*	*	*
Swiss chard.....	-	-	-	-
Root Crops.....	*11,309*	*398.35*	*36,028.50*	
Beetroot.....	*181*	*	-	-
Carrot.....	*	*	-	-
Onion.....	*777*	*7.45*	-	-
Potatoes.....	*323*	*2.2*	-	-
Garlic.....	*543*	*0.76*	*116.36*	*153.11*
Taro/'Godere'.....	*7,472*	*196.44*	*16,131.38*	*82.12*
Sweet potatoes.....	*4,417*	*190.62*	*19,780.76*	*103.77*
Fruit Crops.....	*18,373*	*525.37*	-	-
Avocados.....	*5,702*	*26.13*	-	-
Bananas.....	*9,348*	*143.73*	-	-
Guavas.....	*480*	*1.89*	-	-
Lemons.....	*855*	*1.78*	-	-
Mangoes.....	*10,656*	*236.88*	-	-
Oranges.....	*2,565*	*21.14*	-	-
Papayas.....	*8,422*	*85.65*	-	-
Pineapples.....	*1,406*	*8.17*	-	-
Chat.....	*2,719*	*102.78*	-	-
Coffee.....	*10,352*	*3,091.98*	-	-
Hops.....	*2,607*	*17.25*	-	-
Sugar Cane.....	*7,633*	*119.14*	-	-
Enset.....	*9,156*	*732.73*	*12,964.89*	*17.69*

Table 13 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Harari

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*18,380*	*9,854.52*	*102,192.10*	
Cereals.....	*18,297*	*7,834.52*	*90,930.62*	
Teff.....	-	-	-	-
Barley.....	*621*	*	*	*
Wheat.....	*3,165*	*246.78*	*4,446.21*	*18.02*
Maize.....	*12,549*	*1,425.18*	*18,142.19*	*12.73*
Sorghum.....	*17,274*	*6,122.81*	*67,760.06*	*11.07*
Finger millet.....	*	*	-	-
Oats/'Aja'.....	*	*	-	-
Rice.....	-	-	-	-
Pulses.....	*	*	-	
Faba beans..... .	*	-	-	-
Field peas.....	*	-	-	-
Haricot beans.....	-	-	-	-
Chick-peas.....	*	*	-	-
Lentils.....	-	-	-	-
Grass Peas.....	-	-	-	-
Soya beans.....	-	-	-	-
Fenugreek.....	-	-	-	-
Gibto.....	-	-	-	-
Oilseeds.....	*8,249*	*2,018.33*	*11,261.48*	
Neug.....	-	-	-	-
Linseed.....	*	*	-	-
Groundnuts.....	*8,199*	*2,010.84*	*11,260.94*	*5.6*
Safflower.....	-	-	-	-
Sesame.....	*	*	*	*
Rape seed.....	-	-	-	-
Vegetables.....	*486*	*	-	
Lettuce.....	-	-	-	-
Head Cabbage.....	*	*	-	-
Ethiopian Cabbage.....	-	-	-	-
Tomatoes.....	*	*	-	-
Green peppers.....	*	*	-	-
Red peppers.....	*	*	-	-
Swiss chard.....	-	-	-	-
Root Crops.....	*4,022*	*160.49*	-	
Beetroot.....	-	-	-	-
Carrot.....	-	-	-	-
Onion.....	*	*	-	-
Potatoes.....	*551*	*12.36*	-	-
Garlic.....	*	*	-	-
Taro/'Godere'.....	-	-	-	-
Sweet potatoes.....	*3,477*	*139.86*	-	-
Fruit Crops.....	*10,338*	*444.29*	-	-
Avocados.....	-	-	-	-
Bananas.....	*1,922*	*10.59*	-	-
Guavas.....	*3,258*	*13.53*	-	-
Lemons.....	*1,956*	*41.69*	-	-
Mangoes.....	*6,980*	*329.49*	-	-
Oranges.....	*324*	*0.32*	-	-
Papayas.....	*2,346*	*48.67*	-	-
Pineapples.....	-	-	-	-
Chat.....	*15,695*	*3,298.98*	-	-
Coffee.....	*1,548*	*	-	-
Hops.....	*	*	-	-
Sugar Cane.....	*1,956*	*197.48*	-	-
Enset.....	*	*	-	-

Table 14 - Area, Production and Yield of Crops for Private Peasant Holdings for Meher Season 2009/2010 (2002 E.C)

Dire Dawa

Crop	Number of holders	Area in hectare	Production in quintal	yield (qt / ha)
Grain Crops.	*19,996*	*10,044.58*	*99,204.88*	
Cereals.....	*19,996*	*9,618.86*	*94,919.41*	
Teff.....	-	-	-	-
Barley.....	*	*	-	-
Wheat.....	*	*	*	*
Maize.....	*4,800*	*443.76*	*6,232.45*	*14.04*
Sorghum.....	*19,781*	*9,115.09*	*88,219.48*	*9.68*
Finger millet.....	-	-	-	-
Oats/'Aja'.....	-	-	-	-
Rice.....	-	-	-	-
Pulses.....	*4,865*	*243.12*	*2,807.86*	
Faba beans..... .	-	-	-	-
Field peas.....	-	-	-	-
Haricot beans.....	*4,762*	*238.45*	*2,807.33*	*11.77*
Chick-peas.....	-	-	-	-
Lentils.....	-	-	-	-
Grass Peas.....	*	*	-	-
Soya beans.....	-	-	-	-
Fenugreek.....	*	*	*	*
Gibto.....	-	-	-	-
Oilseeds.....	*2,184*	*	*	
Neug.....	-	-	-	-
Linseed.....	-	-	-	-
Groundnuts.....	*	*	*	*
Safflower.....	-	-	-	-
Sesame.....	*677*	*16.64*	*163.13*	*9.8*
Rape seed.....	-	-	-	-
Vegetables.....	*2,399*	*69.67*	-	
Lettuce.....	-	-	-	-
Head Cabbage.....	-	-	-	-
Ethiopian Cabbage.....	*	*	-	-
Tomatoes.....	*1,975*	*	-	-
Green peppers.....	*669*	*6.69*	-	-
Red peppers.....	-	-	-	-
Swiss chard.....	-	-	-	-
Root Crops.....	*5,979*	*194.42*	-	
Beetroot.....	-	-	-	-
Carrot.....	-	-	-	-
Onion.....	*673*	*10.75*	-	-
Potatoes.....	*526*	*6.62*	-	-
Garlic.....	*	*	-	-
Taro/'Godere'.....	*	*	-	-
Sweet potatoes.....	*5,373*	*143.79*	-	-
Fruit Crops.....	*5,751*	*93.97*	-	-
Avocados.....	*	*	-	-
Bananas.....	*504*	*1.65*	-	-
Guavas.....	*1,929*	*10.32*	-	-
Lemons.....	*705*	*	-	-
Mangoes.....	*1,839*	*21.75*	-	-
Oranges.....	*413*	*	-	-
Papayas.....	*2,628*	*34.7*	-	-
Pineapples.....	*	*	-	-
Chat.....	*12,164*	*1,199.53*	-	-
Coffee.....	*3,496*	*104.96*	-	-
Hops.....	-	-	-	-
Sugar Cane.....	*	*	-	-
Enset.....	-	-	-	-

APPENDIX I

ESTIMATION PROCEDURES OF TOTAL, RATIO 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] strtatum 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, $\bar{Y}_{hi} = \frac{Y_{hi}}{16 C_{hi}}$ 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.

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

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

STANDARD ERRORS AND COEFFICIENTS OF VARIATION OF ESTIMATES

Estimate of Holders, Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Ethiopia

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	11,503,249	194,563	2	180,758,896	3,552,486	2
Cereals	9,233,025	149,670	2	155,342,280	3,146,949	2
Teff	2,588,661	82,067	3	31,793,743	1,178,297	4
Barley	1,129,112	60,708	5	17,504,436	1,291,227	7
Wheat	1,683,565	77,530	5	30,756,436	1,670,225	5
Maize	1,772,253	58,635	3	38,971,631	1,485,080	4
Sorghum	1,618,677	81,246	5	29,712,655	1,672,773	6
Finger millet	368,999	22,519	6	5,241,911	381,031	7
Oats / 'Aja'	24,018	3,379	14	330,191	47,263	14
Rice	47,739	17,166	36	1,031,277	449,646	44
Pulses	1,489,308	45,993	3	18,980,473	691,569	4
Horse beans	512,067	21,462	4	6,108,453	280,565	5
Field peas	226,533	13,662	6	2,358,721	162,060	7
Haricot beans	244,013	19,994	8	3,628,903	343,261	9
Chick-peas	213,187	17,480	8	2,846,398	280,005	10
Lentils	105,956	10,947	10	1,237,772	171,998	14
Vetch	135,658	13,692	10	2,040,196	231,336	11
Soya beans	5,679	1,782	31	72,050	40,801	57
Fenugreek	21,183	4,184	20	271,220	78,895	29
Gibto	25,033	5,609	22	416,759	98,200	24
Oilseeds	780,916	71,283	9	6,436,144	611,558	10
Neug	256,794	17,334	7	1,578,467	115,728	7
Linseed	140,801	13,182	9	1,506,285	205,765	14
Groundnuts	41,579	10,279	25	464,248	122,765	26
Safflower	4,653	1,015	22	55,524	12,629	23
Sesame	315,843	68,020	22	2,605,343	555,935	21
Rape seed	21,247	2,515	12	226,277	31,890	14

Estimate of Holders, Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Tigray

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	856,330	38,862	5	11,486,773	653,117	6
Cereals	693,967	31,386	5	9,625,716	512,906	5
Teff	187,859	15,598	8	2,039,994	186,522	9
Barley	106,788	10,393	10	1,440,496	165,292	11
Wheat	113,596	12,201	11	1,771,644	202,163	11
Maize	64,649	5,961	9	822,298	90,958	11
Sorghum	155,421	17,686	11	2,808,587	338,663	12
Finger millet	64,612	6,986	11	741,606	125,228	17
Oats / 'Aja'	256	174	68	1,091	838	77
Rice	787	715	91	-	-	-
Pulses	63,798	6,135	10	794,860	100,579	13
Horse beans	19,727	2,699	14	249,056	43,458	17
Field peas	8,331	1,873	22	108,253	28,094	26
Haricot beans	4,076	1,916	47	46,855	21,155	45
Chick-peas	13,549	3,121	23	177,803	50,989	29
Lentils	7,910	1,940	25	95,617	32,639	34
Vetch	9,459	2,419	26	113,403	28,812	25
Soya beans	55	38	69	-	-	-
Fenugreek	691	266	38	3,872	1,272	33
Gibto	-	-	-	-	-	-
Oilseeds	98,566	13,605	14	1,066,197	160,912	15
Neug	6,744	1,620	24	63,790	17,632	28
Linseed	13,148	2,000	15	116,743	19,314	17
Groundnuts	510	465	91	10,416	10,251	98
Safflower	15	13	88	502	494	99
Sesame	78,053	13,850	18	874,746	163,358	19
Rape seed	96	80	84	-	-	-

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Afar

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	6,057	1,647	27	143,694	39,180	27
Cereals	5,697	1,499	26	142,052	39,120	28
Teff	1,619	961	59	5,253	2,963	56
Barley	1	1	99	-	-	-
Wheat	-	-	-	-	-	-
Maize	3,499	983	28	128,964	38,632	30
Sorghum	578	287	50	7,835	3,554	45
Finger millet	-	-	-	-	-	-
Oats / 'Aja'	-	-	-	-	-	-
Rice	-	-	-	-	-	-
Pulses	167	86	51	960	600	63
Horse beans	-	-	-	-	-	-
Field peas	-	-	-	-	-	-
Haricot beans	122	62	50	893	572	64
Chick-peas	45	28	64	67	43	64
Lentils	0	0	99	-	-	-
Vetch	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-
Gibto	-	-	-	-	-	-
Oilseeds	192	118	61	683	368	54
Neug	8	7	92	-	-	-
Linseed	3	3	92	-	-	-
Groundnuts	0	0	99	-	-	-
Safflower	13	9	67	120	74	61
Sesame	167	108	65	562	314	56
Rape seed	-	-	-	-	-	-

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Amhara

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	3,997,750	130,477	3	57,105,218	1,875,770	3
Cereals	2,986,622	81,429	3	46,301,972	1,492,804	3
Teff	1,001,028	53,215	5	12,860,563	719,137	6
Barley	387,862	31,470	8	5,067,684	480,331	9
Wheat	548,315	35,766	7	8,960,927	663,379	7
Maize	355,508	23,517	7	8,010,694	617,166	8
Sorghum	486,468	55,572	11	7,922,461	1,038,422	13
Finger millet	164,321	18,023	11	2,495,093	307,110	12
Oats / ‘Aja’	8,743	1,889	22	123,639	27,914	23
Rice	34,376	16,914	49	860,911	448,296	52
Pulses	694,672	33,474	5	8,541,004	462,643	5
Horse beans	232,535	16,742	7	2,602,238	204,515	8
Field peas	108,469	10,579	10	1,060,384	107,746	10
Haricot beans	51,247	11,492	22	852,207	204,399	24
Chick-peas	113,337	12,090	11	1,456,409	176,099	12
Lentils	62,827	8,064	13	620,626	93,479	15
Vetch	85,262	11,730	14	1,288,389	203,987	16
Soya beans	1,866	1,573	84	41,077	40,058	98
Fenugreek	14,236	3,499	25	204,364	77,031	38
Gibto	24,891	5,609	23	415,311	98,191	24
Oilseeds	316,456	66,134	21	2,262,242	530,191	23
Neug	75,304	9,547	13	511,091	74,463	15
Linseed	31,961	3,707	12	184,697	23,312	13
Groundnuts	2,981	1,716	58	38,856	27,045	70
Safflower	4,014	981	24	43,548	10,890	25
Sesame	185,782	66,145	36	1,296,605	527,694	41
Rape seed	16,415	2,269	14	187,445	30,698	16

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Oromia

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	5,348,593	132,579	2	90,712,996	2,812,199	3
Cereals	4,466,528	115,126	3	80,538,211	2,587,800	3
Teff	1,182,811	57,500	5	14,368,405	870,391	6
Barley	542,476	50,241	9	9,685,632	1,178,788	12
Wheat	857,603	65,998	8	16,782,415	1,484,202	9
Maize	1,000,056	48,225	5	23,255,330	1,201,463	5
Sorghum	754,878	55,248	7	14,656,767	1,239,063	8
Finger millet	105,611	10,537	10	1,471,754	168,561	11
Oats / ‘Aja’	14,147	2,781	20	193,557	37,884	20
Rice	8,945	1,280	14	124,349	10,945	9
Pulses	559,780	29,780	5	7,474,028	487,527	7
Horse beans	205,520	12,422	6	2,649,528	178,399	7
Field peas	77,397	7,868	10	892,812	113,742	13
Haricot beans	114,707	15,171	13	1,559,665	252,991	16
Chick-peas	79,405	12,063	15	1,141,575	209,399	18
Lentils	34,248	7,142	21	514,696	140,627	27
Vetch	40,673	6,634	16	636,171	105,232	17
Soya beans	1,739	661	38	18,327	7,336	40
Fenugreek	6,054	2,279	38	61,254	16,974	28
Gibto	37	34	91	-	-	-
Oilseeds	322,285	22,542	7	2,700,756	253,495	9
Neug	163,785	14,249	9	950,343	86,321	9
Linseed	92,675	12,478	13	1,183,155	203,439	17
Groundnuts	26,655	9,878	37	240,285	109,053	45
Safflower	481	255	53	9,381	6,241	67
Sesame	34,154	7,310	21	279,719	59,538	21
Rape seed	4,535	1,079	24	37,873	8,622	23

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Somale

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	69,789	8,325	12	1,172,662	158,774	14
Cereals	67,095	8,198	12	1,105,200	152,347	14
Teff	-	-	-	-	-	-
Barley	3,016	1,189	39	18,460	9,209	50
Wheat	4,364	1,917	44	72,245	34,151	47
Maize	26,999	3,827	14	440,832	88,295	20
Sorghum	32,705	5,748	18	573,535	104,575	18
Finger millet	-	-	-	-	-	-
Oats / 'Aja'	12	10	81	127	103	81
Rice	-	-	-	-	-	-
Pulses	576	182	32	8,591	3,594	42
Horse beans	-	-	-	-	-	-
Field peas	-	-	-	-	-	-
Haricot beans	432	166	39	6,898	3,501	51
Chick-peas	125	73	58	1,692	1,147	68
Lentils	12	12	96	-	-	-
Vetch	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-
Fenugreek	7	6	84	-	-	-
Gibto	-	-	-	-	-	-
Oilseeds	2,119	1,474	70	58,871	42,191	72
Neug	-	-	-	-	-	-
Linseed	17	12	71	-	-	-
Groundnuts	1,878	1,412	75	58,870	42,191	72
Safflower	-	-	-	-	-	-
Sesame	223	170	76	1	1	101
Rape seed	-	-	-	-	-	-

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Benishangul - Gumuz

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	188,392	10,091	5	3,252,673	206,305	6
Cereals	148,213	8,362	6	2,845,688	198,741	7
Teff	18,632	3,128	17	182,565	34,851	19
Barley	874	357	41	9,393	4,281	46
Wheat	3,725	1,980	53	74,381	43,297	58
Maize	35,953	3,816	11	801,219	82,770	10
Sorghum	59,963	5,876	10	1,327,810	136,226	10
Finger millet	28,392	4,508	16	442,685	79,436	18
Oats / 'Aja'	88	37	42	647	361	56
Rice	585	240	41	6,989	3,429	49
Pulses	7,288	1,031	14	109,627	16,170	15
Horse beans	625	199	32	8,223	2,769	34
Field peas	660	305	46	7,933	4,229	53
Haricot beans	4,303	1,024	24	79,977	16,531	21
Chick-peas	237	72	30	1,194	473	40
Lentils	47	21	46	268	163	61
Vetch	-	-	-	-	-	-
Soya beans	1,321	292	22	10,573	2,175	21
Fenugreek	7	3	44	11	6	57
Gibto	89	81	92	1,448	1,327	92
Oilseeds	32,891	2,887	9	297,358	29,987	10
Neug	10,724	1,904	18	51,070	9,034	18
Linseed	607	353	58	2,629	1,441	55
Groundnuts	6,753	1,638	24	99,727	23,551	24
Safflower	47	18	39	435	193	44
Sesame	14,741	1,703	12	143,338	18,646	13
Rape seed	19	11	61	159	94	59

Estimate of Holders, Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

S.N.N.P.R.

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	1,006,725	39,585	4	16,491,769	834,608	5
Cereals	837,850	37,283	4	14,406,368	806,262	6
Teff	196,702	18,518	9	2,336,962	278,624	12
Barley	88,038	7,831	9	1,282,189	139,937	11
Wheat	155,661	14,815	10	3,089,910	320,639	10
Maize	278,928	22,208	8	5,390,794	596,925	11
Sorghum	108,744	8,850	8	2,167,102	199,882	9
Finger millet	6,020	1,464	24	89,981	21,499	24
Oats / 'Aja'	769	288	37	11,128	4,310	39
Rice	2,988	2,526	85	38,303	32,877	86
Pulses	162,695	8,319	5	2,048,352	127,106	6
Horse beans	53,628	4,325	8	599,407	56,283	9
Field peas	31,672	3,037	10	289,340	30,164	10
Haricot beans	68,837	5,728	8	1,079,358	106,350	10
Chick-peas	6,488	2,034	31	67,658	30,702	45
Lentils	912	211	23	6,565	1,963	30
Vetch	258	144	56	2,233	1,234	55
Soya beans	696	419	60	2,073	1,258	61
Fenugreek	186	58	31	1,718	961	56
Gibto	17	16	95	-	-	-
Oilseeds	6,181	1,911	31	37,049	7,989	22
Neug	229	211	92	2,172	2,132	98
Linseed	2,385	458	19	19,062	5,776	30
Groundnuts	607	271	45	3,354	1,463	44
Safflower	81	60	74	1,537	1,288	84
Sesame	2,696	1,833	68	10,124	4,888	48
Rape seed	182	80	44	800	466	58

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Gambela

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	9,715	1,051	11	191,715	22,355	12
Cereals	9,601	1,052	11	191,223	22,359	12
Teff	10	8	81	1	1	95
Barley	9	5	56	-	-	-
Wheat	6	6	94	-	-	-
Maize	4,793	705	15	97,125	17,408	18
Sorghum	4,682	767	16	92,579	15,405	17
Finger millet	42	38	91	793	721	91
Oats / 'Aja'	0	0	95	-	-	-
Rice	58	39	67	726	561	77
Pulses	89	32	37	243	60	25
Horse beans	33	28	83	-	-	-
Field peas	3	3	94	-	-	-
Haricot beans	50	13	25	243	60	25
Chick-peas	-	-	-	-	-	-
Lentils	-	-	-	-	-	-
Vetch	2	2	103	-	-	-
Soya beans	1	1	95	-	-	-
Fenugreek	-	-	-	-	-	-
Gibto	-	-	-	-	-	-
Oilseeds	25	6	24	249	78	31
Neug	-	-	-	-	-	-
Linseed	-	-	-	-	-	-
Groundnuts	18	5	29	164	50	31
Safflower	0	0	52	0	0	52
Sesame	6	4	58	84	69	82
Rape seed	0	0	102	-	-	-

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Harari

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	9,855	751	8	102,192	10,980	11
Cereals	7,835	569	7	90,931	11,685	13
Teff	-	-	-	-	-	-
Barley	35	24	69	582	456	78
Wheat	247	94	38	4,446	2,105	47
Maize	1,425	183	13	18,142	3,601	20
Sorghum	6,123	507	8	67,760	8,341	12
Finger millet	1	1	96	-	-	-
Oats / 'Aja'	3	3	96	-	-	-
Rice	-	-	-	-	-	-
Pulses	2	2	96	-	-	-
Horse beans	-	-	-	-	-	-
Field peas	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-
Chick-peas	2	2	96	-	-	-
Lentils	-	-	-	-	-	-
Vetch	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-
Gibto	-	-	-	-	-	-
Oilseeds	2,018	403	20	11,261	2,102	19
Neug	-	-	-	-	-	-
Linseed	5	5	99	-	-	-
Groundnuts	2,011	403	20	11,261	2,102	19
Safflower	-	-	-	-	-	-
Sesame	3	2	92	1	0	92
Rape seed	-	-	-	-	-	-

Estimate of Holders Area, Production, Standard Errors and Coefficient of Variations
For Crops 2009/2010 (2002 E.C)

Dire Dawa

Crop	Area	Standard Error	CV %	Production	Standard Error	CV %
Grain	10,045	802	8	99,205	10,930	11
Cereals	9,619	778	8	94,919	10,568	11
Teff	-	-	-	-	-	-
Barley	12	7	57	-	-	-
Wheat	48	39	80	467	375	80
Maize	444	160	36	6,232	2,736	44
Sorghum	9,115	827	9	88,219	10,680	12
Finger millet	-	-	-	-	-	-
Oats / 'Aja'	-	-	-	-	-	-
Rice	-	-	-	-	-	-
Pulses	243	65	27	2,808	780	28
Horse beans	-	-	-	-	-	-
Field peas	-	-	-	-	-	-
Haricot beans	238	65	27	2,807	780	28
Chick-peas	-	-	-	-	-	-
Lentils	-	-	-	-	-	-
Vetch	4	4	97	-	-	-
Soya beans	-	-	-	-	-	-
Fenugreek	1	1	68	1	0	68
Gibto	-	-	-	-	-	-
Oilseeds	183	101	55	1,478	849	57
Neug	-	-	-	-	-	-
Linseed	-	-	-	-	-	-
Groundnuts	166	101	61	1,314	855	65
Safflower	-	-	-	-	-	-
Sesame	17	5	32	163	58	36
Rape seed	-	-	-	-	-	-

APPENDIX III

NUMBER OF EAs SAMPLED AND COVERED
NUMBER OF HOUSEHOLDS SAMPLED AND COVERED
NUMBER OF FIELDS MEASURED AND CROP-CUTTINGS PERFORMED

Appendix III(a). Number of Planned and Actually Covered Sampling Units (EAs & Households) of the 2009/10 (2002 E.C.) Annual Agricultural Sample Survey (Meher Season).

Region	Enumeration Areas		Households	
	Planned	**Covered**	**Planned**	**Covered**
Tigray	152	152	3040	3040
Afar	49	48	980	937
Amhara	336	336	6720	6720
Oromia	452	452	9040	9040
Somali	72	70	1440	1353
Benishangul-Gumuz	90	90	1800	1800
SNNP	380	380	7600	7600
Gambela	81	59	1620	1180
Harari	24	24	480	480
Dire Dawa	24	24	480	480
Country Total	1660	1635	33200	32630

APPENDIX IV

QUESTIONNAIRE

Ag.S.S. Form **2002**/0

Central Statistical Agency
National Integrated Household Survey
Agricultural Sample Survey, 2009/2010 (2002 E.C)

Part I - Identification Particulars

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

Part II – List of Households, Agricultural and non – agricultural Holders and order of selection

1	2	3	4		5	6	7
Household ID	Name of Household Head	Is there Agricultural Holder in The Household? Yes = 1 No = 2 code	Agricultural / Non - agricultural Holder ID Within the Household		Holder's Name	Agricultural Household ID	Selection Order

	Name	Signature	Date
Enumerator's			
Supervisor's			
Branch Office Head			

1.Total Number of Agricultural Households_____
2. Random Interval _____
3. Random Start _____

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Part II – List of Households, Agricultural Holders and order of selection

1	2	3		4		5	6	7
Household ID	Name of Household Head	Is there Agricultural Holder in The Household? Yes = 1 No = 2	code	Agricultural / Non - agricultural Holder ID Within the Household		Holder's Name	Agricultural Household ID	Selection Order

	Name	Signature	Date
Enumerator's			
Supervisor's			
Branch Office Head			

1.Total Number of Agricultural Households_____

2. Random Interval _____

3. Random Start _____

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Ag.S.S, Form 2002/1

Central Statistical Agency

National Integrated Household Survey

Agricultural Sample Survey, 2009/2010 (2002 E.C)

Part I - Identification Particulars

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

Part II – List of Selected Agricultural Households and Holders

1	2	3	4	5	6	7
Household ID	Name of Household Head	Holder ID	Name of Holder	Farm Type Crop = 1 Livestock = 2 Both = 3 Crop & non-agri=4 Livestck &non-agri=5 All = 6 Non-agri = 7	Selection Order	Remarks
				code		

	Name	Signature	Date
Enumerator's			
Supervisor's			
Branch Office Head			

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Part II – List of Selected Agricultural Households and Holders

1	2	3	4	5	6	7
Household ID	Name of Household Head	Holder ID	Name of Holder	Farm Type Crop = 1 Livestock = 2 Both = 3 code	Selection Order	Remarks

	Name	Signature	Date
Enumerator's			
Supervisor's			
Branch Office Head			

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Form AgSS 2002/2A

CENTRAL STATISTICAL AUTHORITY

ETHIOPIAN AGRICULTURAL SAMPLE SURVEY 2009/2010 (2002 E.C)

PART I – IDENTIFICATION PARTICULARS

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Region	Zone	Wereda	PA / REST.AR	EA LOCAL	HH ID	HH HEAD SEX 1=M 2=F	HOLDER ID	HOLDER'S NAME	AGE	SEX M=1 F=2	HIGHEST GRADE COMPLETED	HOLDER'S HH SIZE	FARMING TYPE CROP=1 LIVEST=2 BOTH=3

PART II – CROP FIELD / OTHER LAND USE

15		16	17					
			PARCEL NO.		FIELD NO.			
			IS THE FIELD PURE STAND =1 MIXED CROP =2 OTHER LAND USE=3					
			CROP/OTHER NAME		CROP NAME		CROP NAME	
SER. NO.		QUESTIONS FOR THE HOLDER	CODE		CODE		CODE	
0	1	Ownership Own = 1 Rented in =2 Other =3						
0	2	Is field under Extension Program? Yes =1 No = 2						
0	3	Is Field Irrigated? Yes =1 No =2						
0	4	If Field Irrigated source of water River =1 Lake =2 Pond =3 Harvested water =4 other =5						
0	5	Is Field Prevented form Erosion Yes = 1 No =2						
0	6	If yes in #5, common way of prevention Terracing = 1 Other =5 Water catchments =2 Afforestation = 3 Plough along the cont. = 4						
0	7	Percent share of mixed crops						
0	8	Number of Fruit Trees *(excluding coffee, chat, pineapple, sugarcane*)						
0	9	Number of Fruit Bearing Trees *(excluding coffee, chat, pineapple, sugarcane)*						
1	0	Seed / Seedling Type Improved Seed = 1 indigenous seed = 2						
1	1	*For Cereals, Pulses & Oilseeds only* Quantity of improved seeds used	Kilo	Gram	Kilo	Gram	Kilo	Gram
1	2	*For Cereals, Pulses & Oilseeds only* Price of improved seeds used	Birr	Cents	Birr	Cents	Birr	Cents
1	3	*For Cereals, Pulses & Oilseeds only* Quantity of indigenous seeds used	Kilo	Gram	Kilo	Gram	Kilo	Gram
1	4	Was crop damaged ? Yes = 1 No =2						
1	5	If yes in question number 14, Cause of damage → Code →						
1	6	Percent of damaged crop						
1	7	Prevention/precaution measure taken? Yes =1 No =2						
1	8	Type of measure if any? Chemical = 1 Non – chemical = 2 Both = 3						
1	9	Chemical type used if any Pesticide =1 herbicide =2 Fungicide =3 1&2 = 4 1 & 3 = 5 2 & 3 = 6 All = 7						
2	0	Is Fertilizer Used? Yes =1 No = 2						
2	1	Type of fertilizer used if any? Natural = 1 Chemical = 2 Both = 3						
2	2	If chemical fertilizer used 22.1 Type UREA = 1 DAP = 2 Both = 3						
		22.2 Quantity of chemical fertilizer used	Kilo		Gram			
2	3	If natural fertilizer used, type Manure = 1 Compost = 2 Organic = 3 1 &2 = 4 1&3 = 5 2 & 3 = 6 All = 7 others = 8						
2	4	How often is temporary crop field used in Meher (main) season?						
2	5	If twice in #24 which crop is the 2nd harvest?	Crop name	code	Crop name	code	Crop name	code
2	6	What was the previous state of the field ? Falow =1 crop field =2 Virgin =3 Rented in cropfield =4 other =5						

PART III – RESULTS OF AREA MEASUREMENTS

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			

For fields selected	Selected corner number		Shortest side length		Random number	
For crop cutting	Shortest side Bearing		Longest side length		Random number	

Form AgSS2002/2B

CENTRAL STATISTICAL AUTHORITY

ETHIOPIAN AGRICULTURAL SAMPLE SURVEY 2009/10 (2002 E.C)

PART I – IDENTIFICATION PARTICULARS

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Region	Zone	Wereda	PA / REST.AR	EA LOCAL	HH ID	HH HEAD SEX 1=M 2=F	HOLDER ID	HOLDER'S NAME	AGE	SEX M=1 F=2	HIGHEST GRADE COMPLETED	HOLDER'S HH SIZE	FARMING TYPE CROP=1 LIVEST=2 BOTH=3

PART II – MISCELLANEOUS QUESTIONS FOR THE HOLDER

15	16	17
SER.NO.	QUESTIONS	CODE
1	Do you exercise crop rotation on your land holing? Yes = 1 No = 2	
2	Reason for not using chemical fertilizers on any one of your crop fields Ignorance = 1 High price = 2 Lack of Money = 3 Non – availability of supply = 4 lack of credit service =5 Skeptical of the outcome = 6 Others (specify) = 7	
3	Reason for not participating in Extension Program Ignorance = 1 Lack of Money = 2 Skeptical of the outcome = 3 Non – availability of the program = 4 Lack of adequate crop fields = 5 Others (specify) = 6	
4	Do you get credit services? Yes = 1 No = 2	
5	If no in # 4 Why? Non availability of the service = 1 Unable to pay the loan = 2 Inadequate services provided = 3 Ignorance = 4 Does not yield any results = 5 Others = 6	
6	Do you get advisory services? Yes = 1 No = 2	
7	If no in # 6 Why? Non availability of the service = 1 Inadequate services provided = 2 Inadequate services provided = 2 Ignorance = 3 Does not yield any results = 4 Others = 5	
8	Your major supplier of fertilizer is Government organizations = 1 Private organizations = 2 Merchants = 3 Others (Specify) = 4 Never used fertilizer = 5	
9	How many oxen do you have in this Meher season?	
10	If you have one or no ox how do you plough? By renting ox = 1 By pairing mine with someone's ox = 2 By pairing mine with cow/ horse =3 Using horses or cows = 4 Hand digging = 5 Using borrowed oxen = 6 others = 7	
11	Total number of fields recorded for the holder	
12	Total number of crop fields recorded for the holder	
13	Has the holder ploughed additional fields over that of the previous year? Yes =1 No = 2	
14	If yes in question # 13, what was the previous state of the additional fields? Holder's virgin land = 1 Public/ Community virgin land = 2 Borrowed fallow land = 3 Other = 4	

Form AgSS. 2002/4

CENTRAL STATISTICAL AUTHORITY
ETHIOPIAN AGRICULTURAL SAMPLE SURVEY 2009/10 (2002 E.C)

Part I – Identification Particular

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Region	Zone	Wereda	Farmers' Association	E.A	Household ID	Household Head Sex M = 1 F = 2	Holder ID	Holder's Name	Age	Sex M = 1 F = 2	Educational Level Highest grade Completed	Household Size	Holding type Crop = 1 Livestock = 2 Both = 3

Part II – List of temporary crop fields for selecting crop cutting plots

15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
				Crop name																			
Parcel No.	Field No.	Crop name	code	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.	Field No.	Selected Field No.

Form AgSS. 2002/5

CENTRAL STATISTICAL AUTHORITY

ETHIOPIAN AGRICULTURAL SAMPLE SURVEY 2009/10

(2002 E.C)

Part I – Identification Particular

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Region	Zone	Wereda	Farmers' Association	E.A	Household ID	Household Head Sex M = 1 F = 2	Holder ID	Holder's Name	Age	Sex M = 1 F = 2	Educational Level Highest grade Completed	Household Size	Holding type Crop = 1 Livestock = 2 Both = 3

Part II – Temporary Crop Cutting Results

15	16	17	18	19		20		21		22		23		24		25	26	27	28	
Parcel No.	Field No.	Crop name	code	Crop cutting day	Crop cutting month	Fresh Weight Of the harvest Kilo	Fresh Weight Of the harvest Gram	Dry Weighing Day	Dry Weighing Month	Dry Weight Kilo	Dry Weight Gram	Was the Crop used before harvest Yes = 1 No = 2	code	Was there any crop damage? Yes = 1 No = 2	Code	If yes Cause of damage	Code	Percent of crop damaged	Crop Stand Pure stand = 1 Mixed = 2	code