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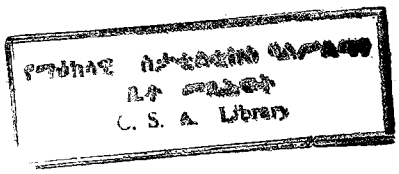

AGRICULTURAL SAMPLE SURVEY
1996/97 (1989 E.C.)

VOLUME I

REPORT ON

AREA AND PRODUCTION FOR MAJOR CROPS

(PRIVATE PEASANT HOLDINGS, MEHER SEASON)

ADDIS ABABA
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- NUMBER OF EAs SAMPLED AND COVERED

- NUMBER OF HOUSEHOLDS EXPECTED TO BE COVERED AND ACTUALLY COVERED

- NUMBER OF PARCELS AND FIELDS MEASURED

- NUMBER OF CROP CUTTINGS CONDUCTE.

ABBREVIATIONS

CSA	-	CENTRAL STATISTICAL AUTHORITY
CV	-	COEFFICIENT OF VARIATION
EC	-	ETHIOPIAN CALENDAR
EA	-	ENUMERATION AREA
GDP	-	GROSS DOMESTIC PRODUCT
HA	-	HECTARE
NS	-	NOT STATED
PCs	-	PERSONAL COMPUTERS
PSUs	-	PRIMARY SAMPLING UNITS
QT	-	QUINTAL
SE	-	STANDARD ERROR
SNNPR-		SOUTHERN NATION, NATIONALITIES AND PEOPLES' REGION

REPORT ON

AREA AND PRODUCTION OF MAJOR CROPS

1. INTRODUCTION

The collection of reliable, comprehensive and timely statistical information on agriculture is very essential for planning purposes and formulation of agricultural policy. Hence, The Central Statistical Authority (CSA) has been conducting Agricultural Sample Surveys on annual basis since 1980/81 (1973 E.C.) to meet some of the statistical data needs of planners and policy makers.

This publication presents the 1996/97(1989 E.C.) Agricultural Sample Survey results on area and production of major crops in the private peasant holdings. The report comprises of sections dealing with the objectives of the 1996/97(1989 E.C.) annual survey; coverage and content of the survey; sample design; field organization; training of field staff ; method of data collection; and survey results on area, production and yield of major crops. Moreover, estimation procedures for area and production of major crops for the year 1996/97(1989 E.C.) are briefly explained in the Appendix I. The standard errors and coefficient of variations for area and production estimates of major crops, number of EAs sampled and covered, number of agricultural households covered, parcels and fields measured and number of crop cuttings conducted are presented in Appendix II and III.

2. OBJECTIVES OF THE SURVEY.

The general objective of the agricultural sample survey was to collect basic quantitative information on the nation's agriculture that are considered essential for development planning and socio-economic policy formulation.

In particular, the objectives of the survey were to estimate the total cultivated land; total production and yield of major crops per hectare; crop land uses (temporary and permanent); quantity and cost of agricultural inputs by type; number of livestock and poultry by type, purpose, sex and age; number of beehives and honey production in the private peasant holdings for the nation, regions and group of zones.

3. COVERAGE AND CONTENT.

The 1996/97 (1989 E.C.) annual agricultural sample survey was designed to cover sedentary rural agricultural population in all regions of the country. Urban and nomadic areas were not included in the survey. Accordingly, a total of 55 zones and 375 weredas were covered by the survey. The areal coverage of the survey is given in *Table a*.

Table a. **AREAL COVERAGE OF THE 1996/97 AGRICULTURAL SAMPLE SURVEY**

REGION	NUMBER OF ZONES			NUMBER OF WEREDAS	
	TOTAL	COVERED BY THE SURVEY	NOT COVERED BY THE SURVEY	PLANNED TO BE COVERED BY THE SURVEY	COVERED BY THE SURVEY
TIGRAY[1]	5	4	1	35	33
AFAR[2]	5	3	2	7	7
AMHARA	10	10	-	95	95
OROMIYA	12	12	-	148	148
SOMALIE[3]	9	3	6	7	6
BENSHANGUL-GUMEZ	3	2	1	7	7
S.N.N.P.R.	16	16	-	68	68
GAMBELA	1	1	-	5	4
HARARI	1	1	-	1	1
A. ABABA[4]	6	2	4	5	5
DIRE DAWA	1	1	-	1	1
TOTAL	69	55	14	379	375

Note

1 - In Tigray Region, four out of five zones have rural settled population. In the remaining one zone the entire population is urban residents.

2 - Afar region has a total of five zones, but only three zones have significant sedentary rural population.

3 - Somalie region has a total of nine zones, however only three zones have significant sedentary rural population.

4 - Addis Ababa has a total of six zones, however, only two zones have rural settled population. In the remaining four zones the entire population is urban residents.

S.N.N.P.R = Southern Nations Nationalities and Peoples' Region

Moreover, for the survey a total of 705 Enumeration Areas were selected to be covered in all regions. Nevertheless, 5 of them were closed due to various reasons and the survey succeeded to cover 700 Enumeration Areas(EAs). Furthermore, from each of the selected EAs a sample of 25 agricultural households were selected to represent the agricultural population of the sampled EA.

From these households, information on area under crops, Meher and Belg season production of crops, cropland utilisation, agricultural practices, crop damage, quantity and type of agricultural inputs used, number of livestock and poultry by type, purpose, age and sex, number of beehives by type, honey yield, milk yield butter were collected.

It should be noted here that of the total 25 agricultural households covered in the selected EAs, the data collection on crop cutting was administered only on the last 15 households starting from the 11th selected household. Thus, a total of 17,117 agricultural households were covered for these exercises. In addition, area measurements of 78,347 fields in 46,247 parcels with different crops belonging to the 25 households were done for the meher season and 24,571 crop-cutting exercises on major temporary crops in sub-sample of the fields were conducted. For details refer to ***Appendix III***.

4. CONCEPTS AND DEFINITIONS.

In order to standardize the data the same concepts and definitions were applied during data collection. Hence, some of the concepts and definitions used in the survey are given below.

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

Holder: A holder is a person who exercises management control over the operations of the agricultural holding and takes the major decision regarding the utilization of the available resources. He has technical and economic responsibility for the holding. He may operate the holding directly as an owner or as a manager. Under conditions of traditional agricultural holding the holder may be regarded as the person, who with or without the help of others, operates land or raises livestock in his own right, i.e. the person who decides on what, when, where and how to grow crops or raise livestock and has the right to determine the utilization of the products.

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

Household: A household may be either;

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

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

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

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

Meher(Main) Season Crop: Any crop harvested from Meskerem (September) to Yekatit (February) is considered as meher season crop.

5. SAMPLE DESIGN.

A two stage stratified sample design was used for the 1996/97 (1989 E.C.) Annual Agricultural Sample Survey. In three regions, namely in Amhara, Oromiya and Southern Nations and Nationalities Peoples' Region, group of contiguous zones were treated as strata/reporting levels of the survey results. In the remaining regions, the reporting levels were the regions themselves. The primary sampling units (PSUs) in all strata were Enumeration Areas (EAs). Agricultural households were the ultimate sampling units. The survey questionnaires were administered to all agricultural holders in the sampled agricultural households.

A fixed number of sample EAs was determined for each stratum/ reporting level based on precision of estimates, household size of the stratum and cost considerations. The overall sample number of EAs in a stratum was proportionately allocated to zones/special weredas within the stratum to their household size. From within each Zone/Special Wereda sample EAs were selected with probability proportional to size, size being the total number of households of EAs as obtained from the 1994 census map work. From each sample EA, 25 agricultural households were sampled systematically without replacement from a fresh list of agricultural households.

All information were collected from these households except for crop-cutting exercise, for which data were collected only from the last 15 agricultural households starting from the 11th selected agricultural households. Moreover, holders within these households were enumerated and the required data were collected from these holders.

Estimation procedures of totals and ratios of agricultural variables and the measure of precision of area and production are given in ***Appendix I*** and *II*.

6. FIELD ORGANIZATION.

CSA branch statistical office heads, field supervisors and enumerators, experts from head office, other support staff and drivers were involved in the operation of the survey.

For all enumerators the necessary survey equipment, such as compasses, protractors, ruler, measuring tapes, balance scales, poles, ropes, sample bags,...etc. were made available and to assist the field work 68 vehicles were put on operation.

7. TRAINING OF FIELD STAFF.

The training program for the field staff was carried out in two stages. In the first stage trainees from the head office, branch statistical office heads and some of the field supervisors were given training for one week at the head office. Some of those trained in the first stage conducted similar training for field supervisors and enumerators for 10 days in all the 15 branch offices all over the country. During the training, the field staff were given detailed class room instruction on the objective and uses of the survey, concept and definitions of terms used, method of area measurement, method of crop cutting, interviewing procedures,... etc. The training sessions included thorough field practices with regard to data collection.

8. METHOD OF DATA COLLECTION.

Survey data were collected on questionnaires both by subjective and objective methods. Information on agricultural practices (application of fertilizer, pesticide, use of improved seed and irrigation), livestock and poultry information were collected subjectively by interviewing the holders in the sampled households.

In addition, the objective measurements, particularly for area measurements, were carried out for the 25 selected households from each sampled EA in which all crop areas were physically measured using compasses and measuring tapes. On the other hand, all fields under temporary crops of each holder in the last 15 sampled households were classified by type of crop and from each type a field was randomly selected for crop cutting. Then, a sixteen meter square plot was demarcated in the selected field in which the crop in the plot was harvested. The harvested crop

was threshed and carried in bag with identification information like name of the crop, holding number, parcel and field number. The crop in the bag was weighed immediately after threshing and weighed again after two weeks of drying. The weights were recorded in the respective questionnaire.

9. EDITING, CODING AND VERIFICATION.

Intensive training was given to the editors and in due course, regular staff were assigned to answer questions, clear doubts,...etc. so as to facilitate the editing and coding activity. In addition, the edited and coded data were checked by supervisors on 100% basis.

10. DATA ENTRY, CLEANING AND PROCESSING.

The data was entered in personal computers using IMPS (Integrated Microcomputer Processing System) Software by data encoders. Then, the data entered was checked and cleaned. Finally, the data processing activity was also done by personal computers(PCs) to produce results which were indicated in the tabulation plan.

11. SUMMARY OF THE SURVEY RESULTS ON AREA AND PRODUCTION.

The result of area, production and yield for major crops (temporary or annual) are presented in this publication. Consequently, the *total area* under major temporary crops (See *Table b*) is estimated to be about 8.07 million hectares at national level for the meher season of 1996/97 (1989 E.C.).

Out of the total area *cereals* account for about 6.69 million hectares (82.86%) while *pulses* and *other crops* like *neug, linseed, rapeseed, ground nuts, sunflower, sesame* and *fenugreek* shared 0.91million hectares (11.22%) and 0.48 million hectares (5.93%) respectively.

When we look at the specific crop the largest area, i.e. about 2.17 million hectares, is reported for *teff* followed by *sorghum* and *maize* in that order. For details refer to Table 3.

Table b. **Summary of Area, Production and Yield of Major Crops for Meher Season of the year 1996/97 (1989 E.C.)** *(Private peasant Holdings)*

TYPE OF CROP	TOTAL AREA		TOTAL PRODUCTION		YIELD(QT/HA)
	MILLION HA	%	MILLION QT.	%	
CEREALS	6.69	82.86	86.29	89.47	12.90
PULSES	0.91	11.22	8.03	8.32	8.87
OTHER CROPS	0.48	5.93	2.13	2.21	4.46
TOTAL	8.07	100.00	96.45	100.00	11.95

Furthermore, the *total production* estimate for private peasant holdings during meher season of 1996/97(1989 E.C.) at national level is about 96.45 million quintals, of which *cereals* account for 86.29 million quintals, *pulses* account for about 8.03 million quintals and *other crops* mentioned above totalled to 2.13 million quintals (See *Table b*).

The survey result also indicates that the yield of *cereals* is 12.90 quintals per hectare, the yield of *pulses* is 8.87 quintals per hectare and the yield of *other crops* mentioned above is 4.46 quintals per hectare. It is also shown in Table 3 that highest yield is reported for *maize*, which is 19.23 quintals per hectare and the smallest is for *nueg*, 3.33 quintals per hectare.

As presented in Table 1, total area cultivated, total production and the average yield per hectare have increased by 1.56%, 3.95% and 2.4% respectively compared to last year. The increase is mainly attributed to favorable condition of the cropping season.

NOTE

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

TABLE 1. Estimates of 1995/96 and 1996/97 Area, Production and Yield of Major Crops for Private Peasant Holdings in Ethiopia
Meher Season

CROP	TOTAL AREA('000 HA)			TOTAL PRODUCTION('000 QT.)			YIELD(QT/HA)		
	1995/96 (1988 E.C.)	1996/97 (1989 E.C.)	% CHANGE	1995/96 (1988 E.C.)	1996/97 (1989 E.C.)	% CHANGE	1995/96 (1988 E.C.)	1996/97 (1989 E.C.)	% CHANGE
CEREALS	6,652.55	6,688.56	0.54	82,697.14	86,293.32	4.35	12.43	12.90	3.78
TEFF	2,097.40	2,167.77	3.36	17,523.75	20,018.93	14.24	8.35	9.23	10.54
BARLEY	825.54	697.67	−15.49	8,725.32	7,423.85	−14.92	10.57	10.64	0.66
WHEAT	882.06	772.23	−12.45	10,763.04	10,015.90	−6.94	12.20	12.97	6.31
MAIZE	1,280.68	1,316.87	2.83	25,392.92	25,320.03	−0.29	19.83	19.23	−3.03
SORGHUM	1,252.41	1,399.95	11.78	17,226.52	20,073.46	16.53	13.75	14.34	4.29
MILLET	269.35	290.66	7.91	2,413.42	2,961.65	22.72	8.96	10.19	13.73
OATS	45.11	43.41	−3.77	652.17	479.49	−26.48	14.46	11.05	−23.58
PULSES	904.39	905.35	0.11	8,141.44	8,026.28	−1.41	9.00	8.86	−1.56
HORSE BEANS	336.72	329.31	−2.20	3,593.67	3,206.76	−10.77	10.67	9.74	−8.72
FIELD PEAS	180.46	158.11	−12.39	1,395.75	1,063.03	−23.84	7.73	6.72	−13.07
HARICOTBEANS	101.17	112.81	11.51	783.61	947.64	20.93	7.75	8.40	8.39
CHICK PEAS	144.97	147.90	2.02	1,232.41	1,264.61	2.61	8.50	8.55	0.59
LENTILS	65.12	52.81	−18.90	331.64	344.87	3.99	5.09	6.43	26.33
VETCH	75.95	104.41	37.47	804.36	1,199.36	49.11	10.59	11.49	8.50
OTHERS	391.57	478.45	22.19	1,952.60	2,132.79	9.23	4.99	4.46	−10.62
NEUG	223.33	250.52	12.17	859.49	834.54	−2.90	3.85	3.33	−13.51
LINSEED	112.72	148.17	31.45	568.38	676.23	18.97	5.04	4.56	−9.52
RAPESEED	14.19	21.40	50.81	**	**	**	**	**	–
GROUND NUTS	13.26	17.43	31.45	**	125.28	–	**	7.19	–
SUFLOWER	4.78	5.17	8.16	**	**	**	**	**	–
SESAME	9.39	18.50	97.02	**	72.76	–	**	3.93	–
FENUGREEK	13.90	17.26	24.17	73.51	100.31	36.46	5.29	5.80	9.64
ALL CROPS	7,948.51	8,072.36	1.56	92,791.18	96,452.39	3.95	11.67	11.95	2.40

Fig 1. Estimates of Area Under Major Crops for Private Holdings: National* 1996/97 (1989 E.C.)

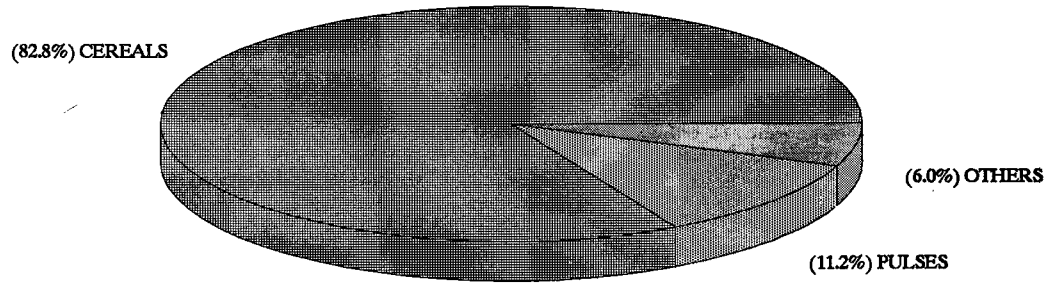

Fig 2. Estimates of Production for Major Crops for Private Holdings: National* 1996/97 (1989 E.C.)

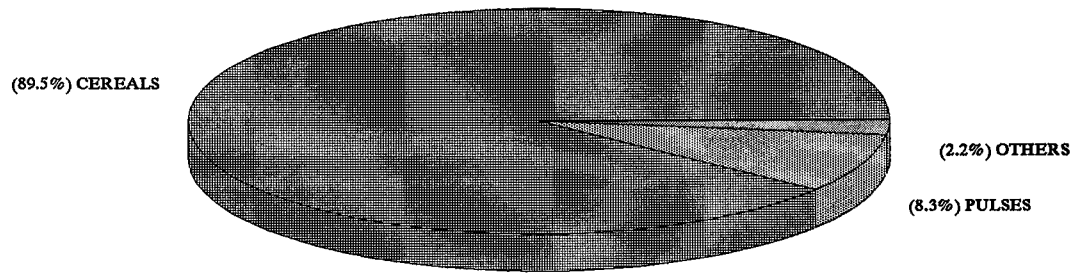

Table 2. Estimates of 1995/96 and 1996/97 Area and Production of Major Crops for Private Peasant Holdings in Ethiopia by Region (Meher Season)

REGION	TOTAL AREA ('000 HA)			TOTAL PRODUCTION ('000 QT)		
	1995/96 (1988 E.C.)	1996/97 (1989 E.C.)	% CHANGE	1995/96 (1988 E.C.)	1996/97 (1989 E.C.)	% CHANGE
TIGRAY	481.43	481.54	0.02	5,278.22	5,906.00	11.89
AFAR	24.34	29.76	22.27	193.23	393.06	103.42
AMHARA	2,933.08	3,081.22	5.05	28,612.93	31,426.58	9.83
OROMIYA	3,624.71	3,625.48	0.02	47,493.53	47,852.23	0.76
SOMALI	59.73	50.91	−14.77	424.83	369.55	−13.01
BENSHANGULE−GUMEZ	95.86	110.45	15.22	1,058.50	1,164.11	9.98
S.N.N.P.R.	697.60	666.35	−4.48	9,265.15	9,009.71	−2.76
GAMBELA	10.08	5.23	−48.12	227.89	90.83	−60.14
HARARI	4.41	6.01	36.28	46.01	58.08	26.23
ADDIS ABABA	9.91	9.70	−2.12	147.61	116.18	−21.29
DIRE DAWA	7.39	5.70	−22.87	43.29	66.07	52.62
ALL REGIONS	7,948.54	8,072.35	1.56	92,791.19	96,452.40	3.95

FIGURE 3

ESTIMATES OF AREA AND PRODUCTION OF MAJOR CROPS BY REGION
FOR PRIVATE PEASANT HOLDINGS, NATIONAL, 1996/97 (1988 E.C.)

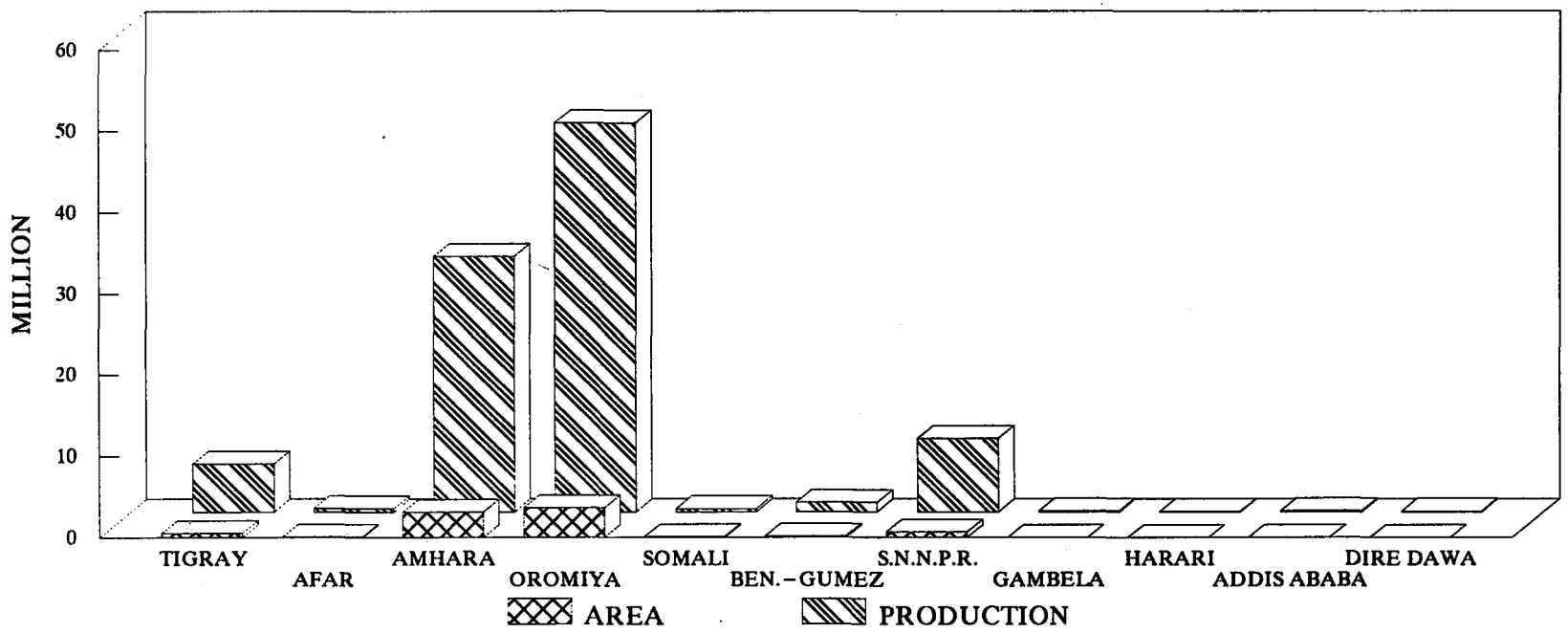

Table 3 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

NATIONAL

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	6,688.55	82.86	86,293.32	89.47	12.90
Teff	2,167.77	26.85	20,018.93	20.76	9.23
Barley	697.67	8.64	7,423.85	7.70	10.64
Wheat	772.23	9.57	10,015.90	10.38	12.97
Maize	1,316.87	16.31	25,320.03	26.25	19.23
Sorghum	1,399.95	17.34	20,073.46	20.81	14.34
Millet	290.66	3.60	2,961.65	3.07	10.19
Oats	43.41	0.54	479.49	0.50	11.05
Pulses	905.34	11.22	8,026.28	8.32	8.87
Horse Beans	329.31	4.08	3,206.76	3.32	9.74
Field Peas	158.11	1.96	1,063.03	1.10	6.72
Haricot Beans	112.81	1.40	947.64	0.98	8.40
Chick Peas	147.90	1.83	1,264.61	1.31	8.55
Lentils	52.81	0.65	344.87	0.36	6.53
Vetch	104.41	1.29	1,199.36	1.24	11.49
Others	478.44	5.93	2,132.79	2.21	4.46
Neug	250.52	3.10	834.54	0.87	3.33
Linseed	148.17	1.84	676.23	0.70	4.56
Rapeseed	21.40	0.27	**	**	**
Ground Nuts	17.43	0.22	125.28	0.13	7.19
Sunflower	5.17	0.06	**	**	**
Sesame	18.50	0.23	72.76	0.08	3.93
Fenugreek	17.26	0.21	100.31	0.10	5.81
All Crops	8,072.33	100.00	96,452.39	100.00	11.95

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 4. Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

TIGRAY

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	448.76	93.19	5,627.56	95.29	12.54
Teff	99.50	20.66	777.35	13.16	7.81
Barley	55.54	11.53	579.87	9.82	10.44
Wheat	55.36	11.50	559.38	9.47	10.10
Maize	41.74	8.67	827.55	14.01	19.83
Sorghum	141.19	29.32	2,340.32	39.63	16.58
Millet	55.43	11.51	543.09	9.20	9.80
Oats	-	-	-	-	-
Pulses	27.85	5.78	255.60	4.33	9.18
Horse Beans	10.11	2.10	117.48	1.99	11.62
Field Peas	2.40	0.50	19.43	0.33	8.10
Haricot Beans	**	**	**	**	**
Chick Peas	4.62	0.96	**	**	**
Lentils	3.89	0.81	22.44	0.38	5.77
Vetch	**	**	**	**	7.78
Others	4.92	1.02	22.83	0.39	4.64
Neug	**	0.03	**	**	**
Linseed	2.19	0.45	8.94	0.15	4.08
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	481.54	100.00	5,906.00	100.00	12.26

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 5. Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

Afar

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	29.37	98.69	391.37	99.57	13.33
Teff	**	**	**	18.21	**
Barley	**	**	**	1.77	**
Wheat	**	**	**	2.55	**
Maize	1.47	4.94	13.60	3.46	9.25
Sorghum	19.86	66.73	**	73.58	**
Millet	-	-	-	-	-
Oats	-	-	-	-	-
Pulses	0.35	1.18	1.59	0.40	4.54
Horse Beans	**	**	**	0.08	**
Field Peas	**	**	**	0.02	**
Haricot Beans	-	-	-	-	-
Chick Peas	**	**	**	0.30	**
Lentils	**	**	**	0.01	**
Vetch	-	-	-	-	-
Others	0.03	0.10	0.10	0.03	3.33
Neug	-	-	**	-	**
Linseed	-	-	-	-	-
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	-	**
Sesame	**	**	**	0.02	**
Fenugreek	-	-	-	-	-
All Crops	29.76	100.00	393.06	100.00	13.21

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates

Table 6. Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

AMHARA

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	2,487.41	80.73	27,266.34	86.76	10.96
Teff	903.19	29.31	7,560.76	24.06	8.37
Barley	244.01	7.92	2,337.31	7.44	9.58
Wheat	212.02	6.88	2,071.88	6.59	9.77
Maize	316.25	10.26	5,301.25	16.87	16.76
Sorghum	626.22	20.32	8,021.20	25.52	12.81
Millet	176.49	5.73	1,901.05	6.05	10.77
Oats	9.23	0.30	72.89	0.23	7.90
Pulses	386.08	12.53	3,271.70	10.41	8.47
Horse Beans	129.77	4.21	1,203.46	3.83	9.27
Field Peas	55.95	1.82	354.90	1.13	6.34
Haricot Beans	20.21	0.66	145.01	0.46	7.18
Chick Peas	98.83	3.21	801.30	2.55	8.11
Lentils	28.70	0.93	181.81	0.58	6.33
Vetch	52.60	1.71	585.21	1.86	11.13
Others	207.73	6.74	888.55	2.83	4.28
Neug	133.85	4.34	511.58	1.63	3.82
Linseed	44.83	1.45	166.37	0.53	3.71
Rapeseed	9.01	0.29	104.05	0.33	11.55
Ground Nuts	-	-	-	-	-
Sunflower	4.74	0.15	**	**	**
Sesame	**	**	**	**	**
Fenugreek	6.13	0.20	40.72	0.13	6.64
All Crops	3,081.22	100.00	31,426.58	100.00	10.20

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 6.1 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

NORTH AND SOUTH GONDAR Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	788.54	79.47	7,086.78	86.65	8.99
Teff	273.48	27.56	2,141.39	26.18	7.83
Barley	76.29	7.69	483.23	5.91	6.33
Wheat	40.93	4.12	327.96	4.01	8.01
Maize	79.26	7.99	838.88	10.26	10.58
Sorghum	236.08	23.79	2,535.55	31.00	10.74
Millet	81.43	8.21	755.38	9.24	9.28
Oats	**	**	**	**	**
Pulses	115.64	11.65	816.52	9.98	7.06
Horse Beans	39.44	3.97	315.35	3.86	8.00
Field Peas	12.84	1.29	64.08	0.78	4.99
Haricot Beans	**	**	**	**	**
Chick Peas	34.72	3.50	257.67	3.15	7.42
Lentils	3.45	0.35	10.27	0.13	2.98
Vetch	13.82	1.39	105.55	1.29	7.64
Others	88.10	8.88	275.01	3.36	3.12
Neug	65.56	6.61	209.97	2.57	3.20
Linseed	9.61	0.97	**	**	**
Rapeseed	1.29	0.13	**	**	**
Ground Nuts	-	-	-	-	-
Sunflower	2.42	0.24	4.76	0.06	1.97
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	992.28	100.00	8,178.31	100.00	8.24

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 6.2 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

EAST, WEST GOJAM AND AGEWAWI Zone

	TOTAL AREA		TOTAL PRODUCTION		YIELD (QT/HA)
CROP TYPE	('000 hectare)	%	('000 quintal)	%	
Cereals	873.73	80.85	10,949.64	86.84	12.53
Teff	394.60	36.52	3,665.76	29.07	9.29
Barley	70.02	6.48	761.82	6.04	10.88
Wheat	64.16	5.94	668.43	5.30	10.42
Maize	194.05	17.96	3,805.95	30.19	19.61
Sorghum	59.42	5.50	947.42	7.51	15.94
Millet	90.65	8.39	1,099.10	8.72	12.12
Oats	**	**	**	**	**
Pulses	109.64	10.15	1,143.06	9.07	10.43
Horse Beans	34.17	3.16	321.79	2.55	9.42
Field Peas	15.98	1.48	111.61	0.89	6.98
Haricot Beans	**	**	**	**	**
Chick Peas	29.44	2.72	292.73	2.32	9.94
Lentils	**	**	**	**	**
Vetch	24.26	2.25	364.16	2.89	15.01
Others	97.25	9.00	515.89	4.09	5.30
Neug	65.71	6.08	291.74	2.31	4.44
Linseed	20.56	1.90	**	**	**
Rapeseed	**	**	101.66	0.81	**
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	1,080.62	100.00	12,608.59	100.00	11.67

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 6.3 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

NORTH WOLO AND WAGHAMRA Zone

	TOTAL AREA		TOTAL PRODUCTION		YIELD (QT/HA)
CROP TYPE	('000 hectare)	%	('000 quintal)	%	
Cereals	216.62	84.03	2,229.75	87.67	10.29
Teff	68.02	26.39	502.44	19.75	7.39
Barley	33.25	12.90	279.18	10.98	8.40
Wheat	24.25	9.41	215.65	8.48	8.89
Maize	2.73	1.06	53.40	2.10	19.56
Sorghum	85.42	33.14	1,146.31	45.07	13.42
Millet	1.64	0.64	**	**	**
Oats	**	**	**	**	**
Pulses	36.16	14.03	289.89	11.40	8.02
Horse Beans	10.00	3.88	106.17	4.17	10.62
Field Peas	8.77	3.40	39.78	1.56	4.54
Haricot Beans	**	**	**	**	**
Chick Peas	8.25	3.20	68.25	2.68	8.27
Lentils	6.61	2.56	51.31	2.02	7.76
Vetch	**	**	**	**	**
Others	5.01	1.94	23.83	0.94	4.76
Neug	0.45	0.17	**	**	**
Linseed	3.11	1.21	11.86	0.47	3.81
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	257.78	100.00	2,543.47	100.00	9.87

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 6.4 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

SOUTH WOLO, OROMIA AND NORTH SHEWA Zone

	TOTAL AREA		TOTAL PRODUCTION		YIELD (QT/HA)
CROP TYPE	('000 hectare)	%	('000 quintal)	%	
Cereals	608.52	81.08	7,000.17	86.46	11.50
Teff	167.08	22.26	1,251.17	15.45	7.49
Barley	64.45	8.59	813.08	10.04	12.62
Wheat	82.69	11.02	859.85	10.62	10.40
Maize	40.21	5.36	603.02	7.45	15.00
Sorghum	245.31	32.68	3,391.92	41.90	13.83
Millet	**	**	**	**	**
Oats	6.01	0.80	54.15	0.67	9.01
Pulses	124.64	16.61	1,022.23	12.63	8.20
Horse Beans	46.16	6.15	460.14	5.68	9.97
Field Peas	18.37	2.45	139.44	1.72	7.59
Haricot Beans	2.70	0.36	26.30	0.32	9.74
Chick Peas	26.42	3.52	182.65	2.26	6.91
Lentils	18.39	2.45	115.71	1.43	6.29
Vetch	12.61	1.68	97.98	1.21	7.77
Others	17.37	2.31	73.82	0.91	4.25
Neug	**	**	**	**	**
Linseed	11.56	1.54	36.26	0.45	3.14
Rapeseed	0.01	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	-	3.40
Sesame	**	**	**	**	**
Fenugreek	2.53	0.34	21.47	**	**
All Crops	750.54	100.00	8,096.22	100.00	10.79

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

OROMIA

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	2,986.93	82.39	43,052.63	89.97	14.41
Teff	952.67	26.28	9,528.75	19.91	10.00
Barley	343.64	9.48	3,892.82	8.14	11.33
Wheat	431.75	11.91	6,043.31	12.63	14.00
Maize	751.84	20.74	15,416.61	32.22	20.51
Sorghum	426.42	11.76	7,349.56	15.36	17.24
Millet	46.70	1.29	417.06	0.87	8.93
Oats	33.90	0.94	404.51	0.85	11.93
Pulses	395.50	10.91	3,657.07	7.64	9.25
Horse Beans	148.26	4.09	1,420.02	2.97	9.58
Field Peas	73.82	2.04	472.64	0.99	6.40
Haricot Beans	68.88	1.90	681.67	1.42	9.90
Chick Peas	40.96	1.13	400.08	0.84	9.77
Lentils	18.84	0.52	128.70	0.27	6.83
Vetch	44.73	1.23	553.95	1.16	12.38
Others	243.05	6.70	1,142.54	2.39	4.70
Neug	102.85	2.84	283.24	0.59	2.75
Linseed	100.59	2.77	500.05	1.04	4.97
Rapeseed	**	**	**	**	**
Ground Nuts	**	**	108.93	0.23	**
Sunflower	**	**	**	**	**
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	3,625.48	100.00	47,852.23	100.00	13.20

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7.1 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

EAST AND WEST WELEGA Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	502.98	82.23	5,908.53	93.65	11.75
Teff	171.05	27.97	1,159.30	18.37	6.78
Barley	24.09	3.94	42.76	0.68	1.78
Wheat	34.17	5.59	189.68	3.01	5.55
Maize	166.41	27.21	3,153.05	49.97	18.95
Sorghum	70.09	11.46	1,056.49	16.74	15.07
Millet	36.36	5.94	306.51	4.86	8.43
Oats	**	**	**	**	**
Pulses	43.17	7.06	249.82	3.96	5.79
Horse Beans	24.89	4.07	162.25	2.57	6.52
Field Peas	10.35	1.69	32.11	0.51	3.10
Haricot Beans	7.51	1.23	54.06	0.86	7.20
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	**	**	**	**	**
	0.10	0.02			
Others	65.49	10.71	151.11	2.39	2.31
Neug	59.39	9.71	133.90	2.12	2.25
Linseed	2.99	0.49	8.51	0.13	2.85
Rapeseed	1.29	0.21	4.12	0.07	3.19
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	1.52	0.25	3.99	0.06	2.63
Fenugreek	0.30	0.05	0.60	0.01	2.00
All Crops	611.65	100.00	6,309.47	100.00	10.32

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7.2 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

ILUBABOR AND JIMA Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	439.89	90.27	5,949.00	93.26	13.52
Teff	173.28	35.56	1,720.78	26.98	9.93
Barley	15.49	3.18	187.78	2.94	12.12
Wheat	9.40	1.93	117.99	1.85	12.55
Maize	177.29	36.38	3,112.49	48.79	17.56
Sorghum	54.62	11.21	704.62	11.05	12.90
Millet	8.95	1.84	**	**	**
Oats	**	**	**	**	**
Pulses	39.00	8.00	401.86	6.30	10.30
Horse Beans	19.51	4.00	221.06	3.47	11.33
Field Peas	7.31	1.50	53.00	0.83	7.25
Haricot Beans	**	**	**	**	**
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	**	**	**	**	**
Others	8.40	1.72	28.31	0.44	3.37
Neug	5.11	1.05	12.77	0.20	2.50
Linseed	2.94	0.60	12.92	0.20	4.39
Rapeseed	**	**	**	**	**
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	0.01	-	**	**	**
Fenugreek	**	**	**	**	**
All Crops	487.29	100.00	6,379.16	100.00	13.09

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7.3 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

NORTH AND WEST SHEWA Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	724.94	79.78	8,451.63	86.02	11.66
Teff	324.27	35.69	3,268.51	33.26	10.08
Barley	141.72	15.60	1,291.02	13.14	9.11
Wheat	127.76	14.06	1,873.72	19.07	14.67
Maize	38.52	4.24	726.35	7.39	18.86
Sorghum	92.10	10.14	1,289.36	13.12	14.00
Millet	-	-	-	-	-
Oats	0.58	0.06	**	**	**
Pulses	127.76	14.06	1,118.39	11.38	8.75
Horse Beans	46.04	5.07	412.66	4.20	8.96
Field Peas	16.67	1.83	108.91	1.11	6.53
Haricot Beans	-	-	-	-	-
Chick Peas	23.73	2.61	179.81	1.83	7.58
Lentils	12.09	1.33	**	**	**
Vetch	29.23	3.22	330.58	3.36	11.31
Others	55.93	6.16	255.69	2.60	4.57
Neug	29.66	3.26	101.95	1.04	3.44
Linseed	22.31	2.46	110.37	1.12	4.95
Rapeseed	**	**	**	**	**
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	-	-	-	-	-
Fenugreek	**	**	**	**	**
All Crops	908.63	100.00	9,825.71	100.00	10.81

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7.4 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

EAST SHEWA, ARSI, BALE AND BORENA Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	1,022.23	80.06	17,092.89	88.85	16.72
Teff	267.56	20.96	3,164.32	16.45	11.83
Barley	153.23	12.00	2,243.45	11.66	14.64
Wheat	254.21	19.91	3,790.91	19.71	14.91
Maize	256.32	20.07	6,117.72	31.80	23.87
Sorghum	60.58	4.74	1,391.80	7.24	22.97
Millet	**	**	**	**	**
Oats	29.66	2.32	379.98	1.98	12.81
Pulses	158.22	12.39	1,551.44	8.06	9.81
Horse Beans	46.25	3.62	505.26	2.63	10.92
Field Peas	36.50	2.86	257.25	1.34	7.05
Haricot Beans	42.00	3.29	351.32	1.83	8.36
Chick Peas	**	**	**	**	**
Lentils	5.37	0.42	**	**	**
Vetch	**	**	**	**	**
Others	96.39	7.55	592.59	3.08	6.15
Neug	**	**	**	**	**
Linseed	71.48	5.60	364.58	1.90	5.10
Rapeseed	**	**	**	**	**
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	**	**	**	**	**
Fenugreek	**	**	**	**	**
All Crops	1,276.83	100.00	19,236.92	100.00	15.07

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 7.5 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

EAST AND WEST HARERGE Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	296.89	87.04	5,650.57	92.62	19.03
Teff	16.51	4.84	215.84	3.54	13.07
Barley	9.11	2.67	127.81	2.09	14.03
Wheat	6.21	1.82	71.00	1.16	11.43
Maize	113.30	33.22	2,307.01	37.81	20.36
Sorghum	149.03	43.69	2,907.29	47.65	19.51
Millet	**	**	**	**	**
Oats	**	**	**	**	**
Pulses	27.35	8.02	335.56	5.50	12.27
Horse Beans	11.57	3.39	118.79	1.95	10.27
Field Peas	3.00	0.88	21.37	0.35	7.12
Haricot Beans	10.76	3.15	181.10	2.97	16.83
Chick Peas	**	**	**	**	**
Lentils	0.71	0.21	**	**	**
Vetch	**	**	**	**	**
Others	16.84	4.94	114.83	1.88	6.82
Neug	-	-	-	-	-
Linseed	0.87	0.26	3.66	0.06	4.21
Rapeseed	-	-	-	-	-
Ground Nuts	**	**	108.93	1.79	**
Sunflower	-	-	-	-	-
Sesame	**	**	**	**	**
Fenugreek	0.62	0.18	**	**	**
All Crops	341.08	100.00	6,100.96	100.00	17.89

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 8 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

SOMALE

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	49.35	96.94	361.41	97.80	7.32
Teff	**	**	**	**	**
Barley	4.22	8.29	25.73	6.96	6.10
Wheat	3.49	6.86	**	**	**
Maize	16.36	32.14	142.75	38.63	8.73
Sorghum	24.95	49.01	167.96	45.45	6.73
Millet	-	-	-	-	-
Oats	0.13	0.26	**	**	**
Pulses	1.12	2.20	5.93	1.60	5.29
Horse Beans	-	-	-	-	-
Field Peas	-	-	-	-	-
Haricot Beans	0.67	1.32	**	**	**
Chick Peas	0.28	0.55	**	**	**
Lentils	**	**	1.44	0.39	**
Vetch	-	-	-	-	-
Others	**	**	**	**	**
Neug	-	-	-	-	-
Linseed	**	**	**	**	**
Rapeseed	-	-	-	-	-
Ground Nuts	**	**	NS	-	**
Sunflower	-	-	-	-	-
Sesame	**	**	NS	-	-
Fenugreek	**	**	**	**	**
All Crops	50.91	100.00	369.55	100.00	7.26

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 9 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

BENSHANGUL GUMEZ

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	87.29	79.03	1,078.16	92.62	12.35
Teff	17.89	16.20	104.64	8.99	5.85
Barley	**	**	**	**	**
Wheat	**	**	**	**	**
Maize	21.73	19.67	443.78	38.12	20.42
Sorghum	38.34	34.71	448.84	38.56	11.71
Millet	7.13	6.46	60.22	5.17	8.45
Oats	**	**	**	**	**
Pulses	3.59	3.25	22.61	1.94	6.30
Horse Beans	**	**	**	**	**
Field Peas	**	**	**	**	**
Haricot Beans	1.36	1.23	**	**	**
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	-	-	-	-	-
Others	19.57	17.72	63.34	5.44	3.24
Neug	13.65	12.36	39.36	3.38	2.88
Linseed	0.12	0.11	**	**	**
Rapeseed	**	**	**	**	**
Ground Nuts	1.40	1.27	6.64	0.57	4.74
Sunflower	-	-	-	-	-
Sesame	4.37	3.96	16.11	1.38	3.69
Fenugreek	-	-	-	-	-
All Crops	110.45	100.00	1,164.11	100.00	10.54

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 10 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

(S.N.N.P.R)

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	576.42	86.50	8,222.50	91.26	14.26
Teff	183.58	27.55	1,924.48	21.36	10.48
Barley	48.55	7.29	574.69	6.38	11.84
Wheat	64.34	9.66	1,254.94	13.93	19.50
Maize	163.24	24.50	3,113.44	34.56	19.07
Sorghum	111.76	16.77	1,314.22	14.59	11.76
Millet	4.88	0.73	**	**	**
Oats	**	**	**	**	**
Pulses	88.63	13.30	785.25	8.72	8.86
Horse Beans	39.83	5.98	456.98	5.07	11.47
Field Peas	25.34	3.80	212.18	2.36	8.37
Haricot Beans	21.01	3.15	104.53	1.16	4.98
Chick Peas	1.76	0.26	**	**	**
Lentils	**	**	**	**	**
Vetch	**	**	NS	**	**
Others	1.30	0.20	1.96	0.02	1.51
Neug	-	-	-	-	-
Linseed	0.32	0.05	**	**	**
Rapeseed	**	**	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	-	-	-	-	-
Fenugreek	0.29	0.04	1.03	0.01	3.55
All Crops	666.35	100.00	9,009.71	100.00	13.52

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 10.1 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

YEM, KEFICHO, MAJI, SHEKICHO AND BENCHI Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	72.79	82.14	1,062.07	88.44	14.59
Teff	20.21	22.81	184.64	15.38	9.14
Barley	7.23	8.16	78.15	6.51	10.81
Wheat	3.39	3.83	**	**	**
Maize	24.43	27.57	494.03	41.14	20.22
Sorghum	16.97	19.15	262.62	21.87	15.48
Millet	0.57	0.64	**	**	**
Oats	-	-	-	-	-
Pulses	15.79	17.82	138.82	11.56	8.79
Horse Beans	8.18	9.23	76.42	6.36	9.34
Field Peas	4.64	5.24	22.58	1.88	4.87
Haricot Beans	**	**	**	**	**
Chick Peas	**	**	**	**	**
Lentils	-	-	-	-	-
Vetch	-	-	-	-	-
Others	0.04	0.05	0.02	-	0.50
Neug	-	-	-	-	-
Linseed	**	**	**	-	**
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	-	-	-	-	-
All Crops	88.62	100.00	1,200.91	100.00	13.55

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 10.2 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

NORTH AND SOUTH OMO, GARDULA AND KONSO Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	204.76	86.55	2,057.79	90.32	10.05
Teff	73.23	30.95	627.72	27.55	8.57
Barley	12.76	5.39	**	**	**
Wheat	**	**	**	**	**
Maize	42.73	18.06	536.83	23.56	12.56
Sorghum	74.05	31.30	767.40	33.68	10.36
Millet	**	**	**	**	**
Oats	-	-	-	-	-
Pulses	31.50	13.32	219.70	9.64	6.97
Horse Beans	10.63	4.49	101.06	4.44	9.51
Field Peas	9.13	3.86	77.63	3.41	8.50
Haricot Beans	10.82	4.57	38.06	1.67	3.52
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	-	-	-	-	-
Others	0.31	0.13	0.85	0.04	2.74
Neug	-	-	-	-	-
Linseed	**	**	**	**	**
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	**	**	**	**	**
Sesame	-	-	-	-	-
Fenugreek	-	-	-	-	-
All Crops	236.57	100.00	2,278.33	100.00	9.63

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 10.3 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

HADIYA, KEMBATA AND GURAGE Zone

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	249.36	93.85	4,476.15	96.51	17.95
Teff	82.02	30.87	1,033.58	22.29	12.60
Barley	14.82	5.58	213.73	4.61	14.42
Wheat	56.08	21.11	1,157.57	24.96	20.64
Maize	73.78	27.77	1,770.17	38.17	23.99
Sorghum	19.38	7.29	269.68	5.81	13.92
Millet	3.27	1.23	**	**	**
Oats	**	**	**	**	**
Pulses	15.51	5.84	160.75	3.47	10.36
Horse Beans	9.33	3.51	119.53	2.58	12.81
Field Peas	4.36	1.64	37.63	0.81	8.63
Haricot Beans	1.46	0.55	3.21	0.07	2.20
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	**	**	NS	-	**
Others	0.84	0.32	1.09	0.02	1.30
Neug	-	-	-	-	-
Linseed	0.08	0.03	**	**	**
Rapeseed	**	**	NS	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	0.29	0.11	1.03	0.02	3.55
All Crops	265.70	100.00	4,637.99	100.00	17.46

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 10.4 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

SIDAMA, GEDIO, BURJI AND AMARO Zone

	TOTAL AREA		TOTAL PRODUCTION		YIELD (QT/HA)
CROP TYPE	('000 hectare)	%	('000 quintal)	%	
Cereals	49.51	65.61	626.49	70.20	12.65
Teff	8.12	10.76	78.53	8.80	9.67
Barley	13.74	18.21	**	**	**
Wheat	3.93	5.21	**	**	**
Maize	22.30	29.55	312.41	35.01	14.01
Sorghum	1.37	1.82	**	**	**
Millet	-	-	-	-	-
Oats	**	**	**	**	**
Pulses	25.84	34.24	265.98	29.80	10.29
Horse Beans	11.69	15.49	159.96	17.92	13.68
Field Peas	7.21	9.55	74.35	8.33	10.31
Haricot Beans	5.79	7.67	23.89	2.68	4.13
Chick Peas	**	**	**	**	**
Lentils	**	**	**	**	**
Vetch	-	-	-	-	-
Others	0.11	0.15	-	-	-
Neug	-	-	-	-	-
Linseed	**	**	NS	-	-
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	-	-	-	-	-
All Crops	75.46	100.00	892.47	100.00	11.83

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 11 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

GAMBELA

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	5.03	96.18	90.04	99.13	17.90
Teff	-	-	-	-	-
Barley	-	-	-	-	-
Wheat	-	-	-	-	-
Maize	2.91	55.64	47.34	52.12	16.27
Sorghum	2.10	40.15	42.51	46.80	20.24
Millet	**	**	**	**	**
Oats	-	-	-	-	-
Pulses	0.01	0.19	0.01	0.01	1.00
Horse Beans	-	-	-	-	-
Field Peas	-	-	-	-	-
Haricot Beans	**	**	**	**	**
Chick Peas	-	-	-	-	-
Lentils	-	-	-	-	-
Vetch	-	-	-	-	-
Others	0.19	3.63	0.78	0.86	4.11
Neug	-	-	-	-	-
Linseed	-	-	-	-	-
Rapeseed	-	-	-	-	-
Ground Nuts	0.01	0.01	0.05	0.06	5.00
Sunflower	-	-	-	-	-
Sesame	**	**	**	**	**
Fenugreek	-	-	-	-	-
All Crops	5.23	100.00	90.83	100.00	17.37

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 12 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

HARARI

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	4.90	81.53	48.09	82.80	9.81
Teff	-	-	-	-	-
Barley	**	**	**	**	**
Wheat	0.10	1.66	0.70	1.21	7.00
Maize	1.17	19.47	12.71	21.88	10.86
Sorghum	3.58	59.57	34.45	59.31	9.62
Millet	-	-	-	-	-
Oats	-	-	-	-	-
Pulses	0.03	0.50	0.33	0.57	11.00
Horse Beans	-	-	-	-	-
Field Peas	-	-	-	-	-
Haricot Beans	**	**	**	**	**
Chick Peas	-	-	-	-	-
Lentils	-	-	-	-	-
Vetch	-	-	-	-	-
Others	1.08	17.97	9.66	16.63	8.94
Neug	-	-	-	-	-
Linseed	-	-	-	-	-
Rapeseed	-	-	-	-	-
Ground Nuts	1.08	17.97	9.66	16.63	8.94
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	-	-	-	-	-
All Crops	6.01	100.00	58.08	100.00	9.66

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 13 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

ADDIS ABABA

CROP TYPE	TOTAL AREA ('000 hectare)	TOTAL AREA %	TOTAL PRODUCTION ('000 quintal)	TOTAL PRODUCTION %	YIELD (QT/HA)
Cereals	7.49	77.22	90.05	77.51	12.02
Teff	4.49	46.29	49.81	42.87	11.09
Barley	**	**	**	**	**
Wheat	2.71	27.94	37.18	32.00	13.72
Maize	0.01	0.10	**	**	**
Sorghum	0.07	0.72	**	**	**
Millet	-	-	-	-	-
Oats	-	-	-	-	-
Pulses	2.09	21.55	25.30	21.78	12.11
Horse Beans	0.16	1.65	**	**	**
Field Peas	0.03	0.31	**	**	**
Haricot Beans	-	-	-	-	-
Chick Peas	0.65	6.70	9.00	7.75	13.85
Lentils	0.46	4.74	4.24	3.65	9.22
Vetch	0.78	8.04	11.33	9.75	14.53
Others	0.12	1.24	0.82	0.71	6.83
Neug	**	**	**	**	**
Linseed	**	**	**	**	**
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	0.09	0.93	0.69	0.59	7.67
All Crops	9.70	100.00	116.18	100.00	11.98

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

Table 14 Estimates of Area,Production and Yield of Major Crops for Private Peasant Holdings 1996/97 (1989 E.C.)

DIRE DAWA

CROP TYPE	TOTAL AREA ('000 hectare)	%	TOTAL PRODUCTION ('000 quintal)	%	YIELD (QT/HA)
Cereals	5.60	98.25	65.17	98.64	11.64
Teff	-	-	-	-	-
Barley	-	-	-	-	-
Wheat	-	-	-	-	-
Maize	0.13	2.28	**	**	**
Sorghum	5.46	95.79	64.19	97.15	11.76
Millet	-	-	-	-	-
Oats	-	-	-	-	-
Pulses	0.10	1.75	0.89	1.35	8.90
Horse Beans	-	-	-	-	-
Field Peas	-	-	-	-	-
Haricot Beans	0.09	1.58	0.89	1.35	9.89
Chick Peas	-	-	-	-	-
Lentils	-	-	-	-	-
Vetch	-	-	-	-	-
Others	-	-	-	-	-
Neug	-	-	-	-	-
Linseed	-	-	-	-	-
Rapeseed	-	-	-	-	-
Ground Nuts	-	-	-	-	-
Sunflower	-	-	-	-	-
Sesame	-	-	-	-	-
Fenugreek	-	-	-	-	-
All Crops	5.70	100.00	66.07	100.00	11.59

** These estimates could not be reported in this table because of high coefficient of variation (i.e. less reliable). However they are consolidated in the total estimates.

APPENDIX I

ESTIMATION PROCEDURE OF TOTAL, RATIO AND SAMPLING ERROR

APPENDIX I

ESTIMATION PROCEDURES OF TOTAL, RATIO AND SAMPLING ERRORS.

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

1. For estimating total area of land under specific crop:

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

in which

$$W_{hi} = \frac{N_h M_{hi}}{n_h N_{hi} m_{hi}}$$

is the weight.

where

h represents the stratum.

n_h is the total number of EAs selected in h^{th} stratum.

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

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

M_{hi} is the total number of agricultural households of the i^{th} sample EA in the h^{th} stratum obtained from households listing of the survey.

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

a_{hi} is the sample total of values of area in the i^{th} EA in the h^{th} stratum under a specific crop.

$\hat{A}_h$ is estimate of total area under specific crop in the h^{th} stratum.

2. For estimating level of production :

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

in which

$$p_{hi} = \bar{a}_{hi} \times \bar{Y}_{hi}$$

where

$$\bar{a}_{hi} = \frac{a_{hi}}{m_{hi}}$$

$$\bar{y}_{hi} = \frac{y_{hi}}{16 c_{hi}}$$

Note: W_{hi} is as defined above.

where y_{hi} is sample total of yield of a specific crop from 16 mt^2 area of land for crop -cutting of crop in the i^{th} EA in the h^{th} stratum.

c_{hi} is number of crop-cuttings of a specific crop in the i^{th} EA in the h^{th} stratum.

$\bar{a}_{hi}$ is sample average area per agricultural household under specific crop in the i^{th} EA in the h^{th} stratum

$\bar{y}_{hi}$ is average yield per square meter of a specific crop in the i^{th} EA in the h^{th} stratum.

$\hat{P}_{hi}$ is estimate of production quantity per household of a specific crop in the i^{th} EA in the h^{th} stratum.

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

3. Estimate of yield of a specific crop is given by:

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

4. Sampling Variance of Estimates:

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

$$Var(\hat{A}_h) = \frac{n_h}{n_h - 1}\left[\sum_{i=1}^{n_n} \hat{A}_{hi}^2 - \frac{\hat{A}_h^2}{n_h}\right]$$

$$Var(\hat{P}_h) = \frac{n_h}{n_h - 1}\left[\sum_{i=1}^{n_h} \hat{P}_{hi}^2 - \frac{\hat{P}_h^2}{n_h}\right]$$

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

where

$$Cov(\hat{P}_h, \hat{A}_h) = \frac{n_h}{n_h - 1}[\sum_{i=1}^{n_h} (\hat{A}_{hi} - \frac{\hat{A}_h}{n_h})(\hat{P}_{hi} - \frac{\hat{P}_h}{n_h})]$$

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 simplify the estimation procedure. Further more the finite population correction (fpc) is ignored in the formula. This is due to the fact that its effect is negligible.

5. Coefficient of Variation(CV) of esimates:

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

$$CV(\hat{A}_h) = \frac{\sqrt{Var(\hat{A}_h)}}{\hat{A}_h} \times 100$$

$$CV(\hat{P}_h) = \frac{\sqrt{Var(\hat{P}_h)}}{\hat{P}_h} \times 100$$

$$CV(\hat{Y}_h) = \frac{\sqrt{Var(\hat{Y}_h)}}{\hat{Y}_h} \times 100$$

APPENDIX II

STANDARD ERROR AND COEFFICIENT OF VARIATIONS

FOR ESTIMATES

Table 1. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

NATIONAL

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	6,688.56	184.33	2.76	86,293.31	3,067.88	3.56
Teff	2,167.77	106.87	4.93	20,018.93	1,181.10	5.90
Barley	697.67	61.66	8.84	7,423.85	862.08	11.61
Wheat	772.23	65.86	8.53	10,015.90	1,074.59	10.73
Maize	1,316.87	72.83	5.53	25,320.03	1,893.99	7.48
Sorghum	1,399.95	87.15	6.22	20,073.46	1,507.31	7.51
Millet	290.66	36.90	12.70	2,961.65	477.87	16.14
Oats	43.41	12.45	28.68	479.49	177.29	36.97
Pulses	905.35	42.35	4.68	8,026.27	480.67	5.99
Horsebeans	329.31	22.45	6.82	3,206.76	273.35	8.52
Field peas	158.11	15.62	9.88	1,063.03	144.56	13.60
Haricot beans	112.81	17.66	15.66	947.64	175.68	18.54
Chick peas	147.90	20.27	13.70	1,264.61	214.63	16.97
Lentils	52.81	7.20	13.63	344.87	69.49	20.15
Vetch	104.41	17.97	17.21	1,199.36	241.86	20.17
Others	478.45	41.76	8.73	2,132.79	254.02	11.91
Neug	250.52	28.86	11.52	834.54	112.55	13.49
Linseed	148.17	26.63	17.98	676.23	150.51	22.26
Rapeseed	21.40	8.75	40.88	**	**	**
Groundnuts	17.43	7.63	43.77	125.28	54.08	43.17
Sunfower	5.17	2.26	43.71	**	**	**
Seasame	18.50	5.74	31.01	72.76	24.38	33.51
Fenugreek	17.26	5.84	33.83	100.31	34.61	34.50
Total	8,072.36	193.66	2.40	96,452.37	3,116.25	3.23

Table 2. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

TIGRAY

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	448.76	37.22	8.29	5,627.56	618.06	10.98
Teff	99.50	12.94	13.01	777.35	112.37	14.46
Barley	55.54	11.84	21.33	579.87	133.14	22.96
Wheat	55.36	12.93	23.35	559.38	132.54	23.69
Maize	41.74	8.70	20.85	827.55	222.46	26.88
Sorghum	141.19	25.32	17.94	2,340.32	510.28	21.80
Millet	55.43	13.93	25.14	543.09	155.56	28.64
Oats	–	–	–	–	–	–
Pulses	27.85	5.29	18.99	255.60	58.19	22.77
Horsebeans	10.11	3.06	30.27	117.48	40.43	34.41
Field peas	2.40	0.81	33.70	19.43	6.62	34.09
Haricot beans	**	**	**	**	**	**
Chick peas	4.62	1.83	39.70	**	**	**
Lentils	3.89	1.86	47.85	22.44	11.14	49.63
Vetch	**	**	**	**	**	**
Others	4.92	2.17	44.09	8.94	4.21	47.09
Neug	**	**	**	**	**	**
Linseed	2.19	0.88	40.28	8.94	4.21	47.06
Rapeseed	–	–	–	–	–	–
Groundnuts	–	–	–	–	–	–
Sunfower	–	–	–	–	–	–
Seasame	**	**	**	**	**	**
Fenugreek	**	**	**	**	**	**
Total	481.53	37.65	7.82	5,905.98	620.90	10.51

Table 3. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

AFAR

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	29.37	9.63	32.78	391.37	153.55	39.23
Teff	**	**	**	71.57	40.59	56.71
Barley	**	**	**	6.95	6.66	95.76
Wheat	**	**	**	10.02	9.50	94.89
Maize	1.47	0.54	36.38	13.60	5.43	39.89
Sorghum	19.86	8.97	45.18	289.23	147.53	51.01
Millet	–	–	–	–	–	–
Oats	–	–	–	–	–	–
Pulses	0.36	0.16	45.30	1.59	0.73	45.75
Horsebeans	**	**	**	**	**	**
Field peas	**	**	**	**	**	**
Haricot beans	–	–	–	–	–	–
Chick peas	**	**	**	**	**	**
Lentils	**	**	**	**	**	**
Vetch	–	–	–	–	–	–
Others	**	**	**	**	**	**
Neug	**	**	**	**	**	**
Linseed	–	–	–	–	–	–
Rapeseed	–	–	–	–	–	–
Groundnuts	–	–	–	–	–	–
Sunfower	**	**	**	**	**	**
Seasame	**	**	**	**	**	**
Fenugreek	–	–	–	–	–	–
Total	29.76	9.63	32.36	393.06	153.55	39.07

Table 4. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

AMHARA

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	2,487.41	109.00	4.38	27,266.34	1,501.56	5.51
Teff	903.19	63.16	6.99	7,560.76	546.62	7.23
Barley	244.01	27.65	11.33	2,337.31	386.12	16.52
Wheat	212.02	30.05	14.17	2,071.88	332.85	16.06
Maize	316.25	27.20	8.60	5,301.25	702.03	13.24
Sorghum	626.22	66.34	10.59	8,021.20	1,006.50	12.55
Millet	176.49	32.83	18.60	1,901.05	435.27	22.90
Oats	9.23	2.49	26.99	72.89	25.73	35.30
Pulses	386.06	25.47	6.60	3,271.69	285.19	8.72
Horsebeans	129.77	13.59	10.47	1,203.46	182.99	15.20
Field peas	55.95	7.37	13.17	354.90	58.48	16.48
Haricot beans	20.21	8.33	41.22	145.01	52.95	36.51
Chick peas	98.83	15.79	15.97	801.30	143.23	17.88
Lentils	28.70	5.17	18.01	181.81	37.48	20.62
Vetch	52.60	9.53	18.11	585.21	145.30	24.83
Others	207.73	24.99	12.03	888.54	118.07	13.29
Neug	133.85	21.35	15.95	511.58	87.99	17.20
Linseed	44.83	11.17	24.92	166.37	56.32	33.85
Rapeseed	9.01	4.21	46.72	104.05	49.96	48.01
Groundnuts	–	–	–	–	–	–
Sunfower	4.74	2.25	47.55	**	**	**
Seasame	**	**	**	**	**	**
Fenugreek	6.13	1.64	26.71	40.72	12.27	30.13
Total	3,081.20	114.72	3.72	31,426.57	1,533.41	4.88

Table 5. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

OROMIA

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	2,986.92	137.87	4.62	43,052.62	2,443.36	5.68
Teff	952.67	82.16	8.62	9,528.75	997.29	10.47
Barley	343.64	52.92	15.40	3,892.82	741.00	19.03
Wheat	431.75	55.64	12.89	6,043.31	958.55	15.86
Maize	751.84	62.94	8.37	15,416.61	1,610.82	10.45
Sorghum	426.42	46.60	10.93	7,349.56	933.20	12.70
Millet	46.70	8.92	19.09	417.06	107.09	25.68
Oats	33.90	12.20	35.97	404.51	174.56	43.15
Pulses	395.49	32.29	8.16	3,657.06	367.52	10.05
Horsebeans	148.26	16.61	11.20	1,420.02	181.31	12.77
Field peas	73.82	12.83	17.38	472.64	122.81	25.98
Haricot beans	68.88	15.07	21.87	681.67	163.91	24.05
Chick peas	40.96	12.54	30.62	400.08	155.98	38.99
Lentils	18.84	4.63	24.57	128.70	56.84	44.17
Vetch	44.73	14.76	33.00	553.95	189.53	34.21
Others	243.07	33.22	13.67	1,142.54	222.80	19.50
Neug	102.85	19.24	18.71	283.24	68.51	24.19
Linseed	100.59	24.16	24.02	500.05	138.75	27.75
Rapeseed	**	**	**	**	**	**
Groundnuts	**	**	**	108.93	53.63	49.24
Sunfower	**	**	**	**	**	**
Seasame	**	**	**	**	**	**
Fenugreek	**	**	**	**	**	**
Total	3,625.48	145.40	4.01	47,852.22	2,481.32	5.19

Table 6. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

SOMALI

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	49.34	6.66	13.51	361.41	55.66	15.40
Teff	**	**	**	**	**	**
Barley	4.22	1.19	28.26	25.73	10.41	40.44
Wheat	3.49	1.50	43.06	**	**	**
Maize	16.36	4.04	24.68	142.75	40.13	28.11
Sorghum	24.95	4.94	19.79	167.96	34.69	20.65
Millet	–	–	–	–	–	–
Oats	0.13	0.07	49.31	**	**	**
Pulses	1.13	0.35	31.39	5.93	2.15	36.32
Horsebeans	–	–	–	–	–	–
Field peas	–	–	–	–	–	–
Haricot beans	0.67	0.33	48.93	**	**	**
Chick peas	0.28	0.13	48.21	**	**	**
Lentils	**	**	**	**	**	**
Vetch	–	–	–	–	–	–
Others	**	**	**	**	**	**
Neug	–	–	–	–	–	–
Linseed	**	**	**	**	**	**
Rapeseed	–	–	–	–	–	–
Groundnuts	**	**	**	–	–	–
Sunfower	–	–	–	–	–	–
Seasame	**	**	**	–	–	–
Fenugreek	**	**	**	**	**	**
Total	50.90	6.68	13.12	369.55	55.72	15.08

Table 7. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

BENSHANGUL-GUMEZ

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	87.28	10.38	11.90	1,078.15	164.72	15.28
Teff	17.89	5.35	29.87	104.64	45.24	43.24
Barley	**	**	**	**	**	**
Wheat	**	**	**	**	**	**
Maize	21.73	4.51	20.76	443.78	123.60	27.85
Sorghum	38.34	7.12	18.58	448.84	95.00	21.17
Millet	7.13	2.51	35.22	60.22	24.07	39.98
Oats	**	**	**	**	**	**
Pulses	3.59	1.09	30.50	22.61	8.50	37.60
Horsebeans	**	**	**	**	**	**
Field peas	**	**	**	**	**	**
Haricot beans	1.36	0.66	48.43	**	**	**
Chick peas	**	**	**	**	**	**
Lentils	**	**	**	**	**	**
Vetch	–	–	–	–	–	–
Others	19.58	3.28	16.75	63.34	13.34	21.05
Neug	13.65	2.65	19.42	39.36	10.61	26.95
Linseed	0.12	0.05	47.42	**	**	**
Rapeseed	**	**	**	**	**	**
Groundnuts	1.40	0.65	46.44	6.64	3.26	49.06
Sunfower	–	–	–	–	–	–
Seasame	4.37	1.82	41.72	16.11	7.32	45.47
Fenugreek	–	–	–	–	–	–
Total	110.45	10.79	9.77	1,164.10	165.31	14.20

Table 8. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

S.N.N.P.R.

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	576.42	38.12	6.61	8,222.50	811.33	9.87
Teff	183.58	21.80	11.88	1,924.48	267.98	13.93
Barley	48.55	9.70	19.98	574.69	141.33	24.59
Wheat	64.34	12.94	20.11	1,254.94	310.04	24.71
Maize	163.24	22.11	13.55	3,113.44	630.72	20.26
Sorghum	111.76	14.96	13.39	1,314.22	268.43	20.42
Millet	4.88	1.93	39.61	**	**	**
Oats	**	**	**	**	**	**
Pulses	88.63	8.56	9.66	785.26	94.94	12.09
Horsebeans	39.83	5.79	14.55	456.98	77.52	16.96
Field peas	25.34	4.93	19.46	212.18	46.37	21.86
Haricot beans	21.01	3.85	18.31	104.53	29.06	27.80
Chick peas	1.76	0.84	48.00	**	**	**
Lentils	**	**	**	**	**	**
Vetch	**	**	**	–	–	–
Others	1.30	0.43	32.96	1.95	0.53	27.12
Neug	–	–	–	–	–	–
Linseed	0.32	0.14	43.18	**	**	**
Rapeseed	**	**	**	–	–	–
Groundnuts	–	–	–	–	–	–
Sunfower	**	**	**	**	**	**
Seasame	–	–	–	–	–	–
Fenugreek	0.29	0.14	49.27	1.03	0.51	49.58
Total	666.35	39.08	5.86	9,009.71	816.88	9.07

Table 9. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

GAMBELA

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	5.03	0.98	19.51	90.04	21.59	23.97
Teff	–	–	–	–	–	–
Barley	–	–	–	–	–	–
Wheat	–	–	–	–	–	–
Maize	2.91	0.85	29.13	47.34	18.19	38.41
Sorghum	2.10	0.49	23.53	42.51	11.62	27.33
Millet	**	**	**	**	**	**
Oats	–	–	–	–	–	–
Pulses	**	**	**	**	**	**
Horsebeans	–	–	–	–	–	–
Field peas	–	–	–	–	–	–
Haricot beans	**	**	**	**	**	**
Chick peas	–	–	–	–	–	–
Lentils	–	–	–	–	–	–
Vetch	–	–	–	–	–	–
Others	**	**	**	**	**	**
Neug	–	–	–	–	–	–
Linseed	–	–	–	–	–	–
Rapeseed	–	–	–	–	–	–
Groundnuts	0.01	0.01	38.61	0.05	0.02	33.99
Sunfower	–	–	–	–	–	–
Seasame	**	**	**	**	**	**
Fenugreek	–	–	–	–	–	–
Total	5.23	0.98	18.76	90.83	21.59	23.76

Table 10. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

HARARI

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	4.89	0.38	7.68	48.09	5.73	11.92
Teff	–	–	–	–	–	–
Barley	**	**	**	**	**	**
Wheat	0.10	0.03	32.98	0.70	0.27	39.03
Maize	1.17	0.10	8.76	12.71	1.62	12.74
Sorghum	3.58	0.36	10.04	34.45	5.49	15.94
Millet	–	–	–	–	–	–
Oats	–	–	–	–	–	–
Pulses	**	**	**	**	**	**
Horsebeans	–	–	–	–	–	–
Field peas	–	–	–	–	–	–
Haricot beans	**	**	**	**	**	**
Chick peas	–	–	–	–	–	–
Lentils	–	–	–	–	–	–
Vetch	–	–	–	–	–	–
Others	1.08	0.29	26.85	9.66	3.11	32.19
Neug	–	–	–	–	–	–
Linseed	–	–	–	–	–	–
Rapeseed	–	–	–	–	–	–
Groundnuts	1.08	0.29	27.03	9.66	3.11	32.18
Sunfower	–	–	–	–	–	–
Seasame	–	–	–	–	–	–
Fenugreek	–	–	–	–	–	–
Total	6.00	0.47	7.91	58.08	6.53	11.24

Table 11. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

ADDIS ABABA

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	7.50	0.65	8.73	90.05	9.00	9.99
Teff	4.49	0.48	10.80	49.81	6.36	12.78
Barley	**	**	**	**	**	**
Wheat	2.71	0.43	15.89	37.18	6.21	16.71
Maize	0.01	0.00	39.11	**	**	**
Sorghum	0.07	0.03	39.92	**	**	**
Millet	–	–	–	–	–	–
Oats	–	–	–	–	–	–
Pulses	2.08	0.20	9.60	25.31	2.88	11.39
Horsebeans	0.16	0.07	40.60	**	**	**
Field peas	0.03	0.02	47.22	**	**	**
Haricot beans	–	–	–	–	–	–
Chick peas	0.65	0.15	23.37	9.00	2.31	25.72
Lentils	0.46	0.11	23.29	4.24	1.23	28.97
Vetch	0.78	0.11	14.15	11.33	1.69	14.93
Others	0.13	0.02	18.84	0.82	0.21	25.87
Neug	**	**	**	**	**	**
Linseed	**	**	**	**	**	**
Rapeseed	–	–	–	–	–	–
Groundnuts	–	–	–	–	–	–
Sunfower	–	–	–	–	–	–
Seasame	–	–	–	–	–	–
Fenugreek	0.09	0.02	25.50	0.69	0.20	28.61
Total	9.71	0.69	7.14	116.18	9.53	8.20

Table 12. Estimates of Area and Production, their Standard Error and Coefficient of Variation For Major Crops in 1996/97 (1989 E.C.)

DIRE DAWA

TYPE OF CROP	Area ('000 HA)	S.E. ('000)	C.V. %	Production ('000 Qt)	S.E. ('000)	C.V. %
Cereals	5.59	0.54	9.70	65.17	6.73	10.33
Teff	–	–	–	–	–	–
Barley	–	–	–	–	–	–
Wheat	–	–	–	–	–	–
Maize	0.13	0.05	38.17	**	**	**
Sorghum	5.46	0.54	9.82	64.19	6.70	10.44
Millet	–	–	–	–	–	–
Oats	–	–	–	–	–	–
Pulses	0.09	0.04	44.44	0.89	0.44	49.44
Horsebeans	–	–	–	–	–	–
Field peas	–	–	–	–	–	–
Haricot beans	0.09	0.04	42.90	0.89	0.44	49.47
Chick peas	–	–	–	–	–	–
Lentils	–	–	–	–	–	–
Vetch	–	–	–	–	–	–
Others	–	–	–	–	–	–
Neug	–	–	–	–	–	–
Linseed	–	–	–	–	–	–
Rapeseed	–	–	–	–	–	–
Groundnuts	–	–	–	–	–	–
Sunfower	–	–	–	–	–	–
Seasame	–	–	–	–	–	–
Fenugreek	–	–	–	–	–	–
Total	5.68	0.54	9.57	66.06	6.74	10.21

APPENDIX III

- *NUMBER OF EAs SAMPLED AND COVERED.*
- *NUMBER OF HOUSEHOLDS EXPECTED TO BE COVERED AND ACTUALLY COVERED.*
- *NUMBER OF PARCELS AND FIELDS MEASURED.*
- *NUMBER OF CROP-CUTTINGS CONDUCTED .*

APPENDIX III

REGION	*REPORTING LEVEL*	*NUMBER OF EAs SAMPLED*	*NUMBER OF EAs COVERED*	*NUMBER OF HOUSEHOLDS EXPECTED TO BE COVERED*	*NUMBER OF HOUSEHOLDS COVERED*	*NUMBER OF PARCELS*	*NUMBER OF FIELDS MEASURED*	*NUMBER OF CROP-CUTTINGS*
TIGRAY	TIGRAY	35	35	875	625	2,213	3,383	1,440
AFAR	AFAR	25	24	625	241	648	946	402
AMHARA	N. & S. GONDER	40	40	1,000	1,000	4,215	6,369	2,415
	AGEWAWI, E. & W. GOJAM	40	40	1,000	994	3,946	5,665	1,901
	N. WOLO & WAGHAMRA	35	35	875	859	2,526	3,719	1,502
	S. WOLO, OROMIYA & N. SHOA	40	39	1,000	972	3,328	5,703	1,801
	TOTAL	155	154	3,875	3,825	14,015	21,456	7,619
OROMIYA	E. & W. WELEGA	40	40	1,000	1,000	3,409	7,203	1,818
	ILLUBABOR & JIMA	40	40	1,000	999	2,996	6,283	1,736
	N. & W. SHOA	40	39	1,000	1,000	3,693	5,615	1,724
	E. SHOA, ARSI, BALE & BORENA	40	40	1,000	944	2,711	4,552	1,365
	E. & W. HARERGHE	40	40	1,000	1,000	2,293	3,575	1,327
	TOTAL	200	199	5,000	4,943	15,102	27,228	7,970
SOMALIE	SOMALIE	25	24	375	344	736	1,164	415
BENSHANGUL-GUMEZ	BENSHANGUL-GUMEZ	25	25	375	625	2,141	3,275	1,383
S.N.N.P.R.	YEM, KEFICHO,MAJI,SHEKICHO & BENCH	35	35	875	858	1,594	3,167	712
	N. & S. OMO, DERASHE & KONSO	35	35	875	872	1,554	3,320	704
	HADIYA, KEMBATA & GURAGE	35	35	875	875	1,534	4,508	1,054
	SIDAMA, GEDIO, BURJI & AMARO	35	35	875	869	1,572	2,888	388
	TOTAL	140	140	3,500	3,474	6,254	13,883	2,858
GAMBELA	GAMBELA	25	25	625	508	992	1,474	322
HARARI	HARARI	25	25	625	625	1,477	1,830	715
ADDIS ABABA	ADDIS ABABA	25	25	625	622	1,814	2,902	1,117
DIRE DAWA	DIRE DAWA	25	25	625	625	854	1,006	369
	GRAND TOTAL	**705**	**700**	**17,625**	**17,117**	**46,247**	**78,347**	**24,571**