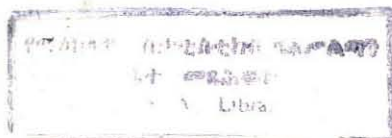


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**THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**

**CENTRAL STATISTICAL AUTHORITY**



**AGRICULTURAL SAMPLE SURVEY  
1995/96 (1988 E.C.)**

**REPORT ON**

**FARM MANAGEMENT PRACTICES  
OF BELG SEASON CROPS**

**FOR**

**1995/96 (1988 E.C.)  
(Private Peasant Holdings)**

**VOLUME VII**

**Addis Ababa  
January, 1997**

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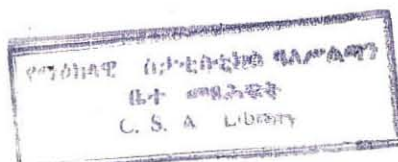
STATISTICAL BULLETIN

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## ABBREVIATIONS

CSA	-	CENTRAL STATISTICAL AUTHORITY
EC	-	ETHIOPIAN CALENDER
CV	-	COEFFICIENT OF VARIATION
SE	-	STANDARD ERROR
HA	-	HECTARE
QT	-	QUINTAL
SNNPR	-	SOUTHERN NATION, NATIONALITIES AND PEOPLES REGION

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## **1. INTRODUCTION**

Agriculture is the backbone of the Ethiopian economy. The country's economic development highly depends on the development of the agricultural sector. Farmers' interest in the adoption and acceptance of new innovations and modern agricultural techniques and technologies, such as use of fertilizers, irrigation, improved seeds and pesticides, do have influencing impact on the development of the agricultural sector as a whole.

The extent of adopting modern agricultural practices, such as utilization of fertilizer, irrigation, pesticides and improved seeds, by the traditional peasant farmers can be considered as important indicators for estimating the rate of adoption of modern technologies.

This report presents quantitative information about the use of modern agricultural inputs for belg season crops of 1995/96(1988 E.C.) of the private peasant holdings for the country, regions and group of zones as it was obtained from the results of the belg agricultural sample survey conducted in May 1996 by the Central Statistical Authority (CSA). The report is subdivided into three sections;

**Section 1.** deals with estimates of total area under different farm management practices, total area under fertilizer application by type of fertilizer and quantity of commercial fertilizer in 1995/96(1988 E.C.) belg season.

**Section 2.** deals with estimates of total area under belg season crops and the distribution of area under different farm management practices by area size groups in 1995/96(1988 E.C.) belg season.

**Section 3.** deals with estimates of total number of belg crop producing holders reporting the use of improved farm management practices by age in 1995/96(1988 E.C.) belg season.

## **2. OBJECTIVE OF THE SURVEY**

The general objective of the agricultural sample survey was to collect basic quantitative information on the country'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; area under different land uses; quantity and cost of agricultural inputs by type for meher and belg seasons; number of livestock and poultry by type, purpose, sex and age; number of beehives in the private peasant holdings at country, regional and group of zone levels.

## **3. COVERAGE AND CONTENT**

The 1995/96 (1988 E.C.) annual agricultural sample survey was designed to cover **sedentary rural** agricultural population in all regions of the country. A total of 54 zones and 367 weredas were covered in the survey. The areal coverage of the survey is given in page 3.

## **4. SAMPLE DESIGN**

A two-stage stratified sample design was used for the 1995/96 (1988 E.C.) Annual Agricultural Sample survey. In three regions, namely, in Amhara, Oromiya and Southern nations, Nationalities and Peoples' Region, groups 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 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.

**AREAL COVERAGE OF THE 1995/96 (1988 E.C.) AGRICULTURAL  
SAMPLE SURVEY <sup>1</sup>**

Region	NUMBER OF ZONES		NUMBER OF WEREDAS	
	PLANNED TO BE COVERED IN THE SURVEY	COVERED IN THE SURVEY	PLANNED TO BE COVERED IN THE SURVEY	COVERED IN THE SURVEY
TIGRAY <sup>2</sup>	5	4	35	34
AFAR <sup>3</sup>	5	2	6	4
AMHARA	10	10	96	95
OROMIYA	12	12	148	144
SOMALIE <sup>4</sup>	9	3	6	5
BENSHANGUL-GUMEZ	3	2	6	5
S.N.N.P.R	16	16	72	69
GAMBELA	1	1	5	4
HARARI	1	1	1	1
ADDIS ABABA <sup>5</sup>	6	2	5	5
DIRE DAWA	1	1	1	1
<b>TOTAL</b>	<b>69</b>	<b>54</b>	<b>381</b>	<b>367</b>

**Notes**

- 1 - At the time of the design of the survey all the regions had the indicated number of zones.
- 2 - In Tigray Region, four out of five zones have rural settled population. In the remaining one zone the entire population is urban residents.
- 3 - Afar Region has a total of five zones, however only two zones have significant rural sedentary population.
- 4 - Somalie Region has a total of nine zones, however only three zones have significant rural sedentary population.
- 5 - 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 and Nationalities Peoples' Region

A fixed number of sample EAs was determined for each stratum /reporting level based on population 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 population size. From within each stratum sample EAs were selected with probability proportional to size, size being the total number of households of the EAs as obtained from the 1994 census map work. From each sample EA, 25 agricultural households were selected systematically without replacement from a fresh list of agricultural households. All information on belg season agricultural activities were collected from these households. For details of Belg questionnaires refer to **Appendix I**.

Estimation procedures of totals and ratios of agricultural characteristics and measure of their precision are given in **Appendix II and III** .

## **5. FIELD ORGANIZATION.**

CSA branch statistical office heads, field supervisors and enumerators were fully involved in the survey. Hence, 15 statistical branch office heads, about 189 field supervisors, each supervising 5 enumerators in most cases and about 672 enumerators (including reserves) stationed in each of the selected EAs, experts from head office, other support staff and about 62 drivers were involved in the operation.

Sets of necessary survey equipment (ropes, compasses, protractors, rulers, iron poles, measuring tapes, balance scales, etc.) were made available to the enumerators. In order to facilitate the field work and to standardize the quality of the data collected, 62 vehicles were put on operation during the field work of the agricultural sample survey.

## **6. TRAINING OF FIELD STAFF**

At the outset all relevant materials, like equipment have been procured, questionnaires and instruction manuals were prepared and printed. Then the training program for the field staff was carried out in two stages. In the first stage, about 90 trainees i.e. experts 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 about 140 field supervisors and about 651 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, concepts 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.

## **7. METHOD OF DATA COLLECTION**

Information on agricultural practices (use of fertilizer, use of pesticides, use of improved seeds and use of irrigation), area and production of major belg season crops were collected subjectively by interviewing the holders in the sampled households.

There are two well known crop production seasons in Ethiopia Meher (Main) and Belg seasons. According to generally accepted definitions, Meher season refers to long rainy season, which normally occurs from June to September. While "Belg Season" refers to small rainy season, which normally occurs from February to May. In most cases during Belg period long maturing crops are planted and their harvest can extend to December or January. Most of the time, short maturing crops are planted during Belg period and are harvested in June or July.

However, due to the heterogeneity of belg practices in different parts of the country and the overlapping nature of sowing time for some meher season crops the reports on belg season crops in the past faced problem of identification. Hence, in order to report the two seasons crops separately and also not to overlook or miss agricultural practices performed all the year round, either through irrigation, use of soil moister from dried swampy or marshy areas the following definition has been adopted since 1987/88.

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

## **8. EDITING, CODING AND VERIFICATION**

The editing and coding instruction manuals were prepared and printed. Then intensive training was given to the editor-coders for two days. About 36 editor-coders were involved to accomplish the editing and coding tasks. In due course, one professional staff was assigned to answer questions, clear doubts,...etc. so as to facilitate the editing and coding activity. In addition, the edited and coded questionnaires were checked by about 7 supervisors/verifiers. The verification was done on 100% basis.

## **9. DATA ENTRY, CLEANING AND PROCESSING**

About 20 data encoders have participated in the data entry activity. Unlike the previous years, the data was entered in personal computers using IMPS (Integrated Microcomputer Processing System) software. Then, the data entered was checked and cleaned by three regular staffs. Finally, the data processing activity was also done by personal computers(PCs) to produce results which were indicated in the tabulation plan and this operation was performed by two programmers.

## **10. BASIC CONCEPTS AND DEFINITIONS**

The concepts and definitions used in the survey are defined as follows.

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

**Households:** A household may be either;

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

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

**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 help of others, operates land or raises livestock in his own right, i.e. the person who decides on what, when, where and how to grow crops or raise livestock and has right to determine the utilization of the products.

**Holding:** A holding is all the land and 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.

**Area size groups:** In this report area size group is determined by total area under major belg season crops which is mainly land area under temporary crops.

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

**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 one or more cadastral units, plots or field adjacent to each other.

**Field:** A field is defined as any plot of land which is a parcel or part of a parcel under the same crop.

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

**Meher season crops:** crops that are harvested during the months of September (Meskerem) to February (Yekatit) are considered as main (Meher) season crops.

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

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

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

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

**NOTE**

1. If in some tables figures do not add up to total it is due to rounding.
2. Those estimates designated by "\*\*\*" in all tables could not be reported because of high coefficient of variation (i.e. they are consolidated in total estimates.
3. In all tables "-" labeled for data not available and "0.00" indicates the value is insignificant.

## 11. SUMMARY OF THE SURVEY RESULTS

As mentioned earlier, the results of the 1995/96 (1988 E.C.) agricultural sample survey on belg season farm management practices are presented in three sections. In each section short descriptive analysis and tables with numerical results for the country and region levels are presented.

According to 1995/96(1988 E.C.) annual agricultural sample survey results, it was estimated that 1,125.08 thousand hectares of land was covered by belg season major crops. In which four million holders were engaged in the production activity. Of the total area under belg season major crops 253.48 thousand hectares (22.53%) was under the use of improved farm management practices in which 0.94 (23.51%) million belg crop producing holders reported to be involved in different improved farm management practices.

Moreover, in 1995/96 (1988 E.C) it was estimated that a total of 67,230 quintals of commercial fertilizers was utilized for belg season crop production. The details in each of the above mentioned variables are discussed in the following sub-sections

**Summary Table A. summary of the survey results.**

* Belg Crop Area (000'ha)	1125.08
* Number of Belg Crop producing Holders(in million)	4.02
* Improved Farm Management Practices(000'ha)	253.48
* Number of holders reporting the use of farm management practices(in million)	0.94
* Quantity of Commercial fertilizer(000'qt)	67.23

**SECTION 1.**

**1.1 TOTAL AREA UNDER DIFFERENT FARM MANAGEMENT PRACTICES**

According to the 1995/96(1988 E. C.) agricultural sample survey results, it was estimated that about 1125 thousand hectares of land were covered by belg season major crops. Of this total 253.48 hectares (22.53% of the total) was under the use of improved farm management practices. Moreover, of the above mentioned total area under improved farm inputs, 170.41 thousand hectares (67.23%) was under fertilizer (both natural and commercial), 56.28 thousand hectares (22.20%) was under irrigation, 8.72 thousand hectares (3.44%) was treated with pesticides and 18.07 thousand hectares (7.13%) was under improved seeds. The coverage of the above

mentioned farm management practices accounted for 15.15%, 5.18%, 0.78% and 1.61% of the total area under belg season crops respectively (see summary Table B.).

SUMMARY TABLE B. Estimates of total area under improved farm management Practices for belg season crops of private holdings in Ethiopia, 1995/96(1988 E.C.).

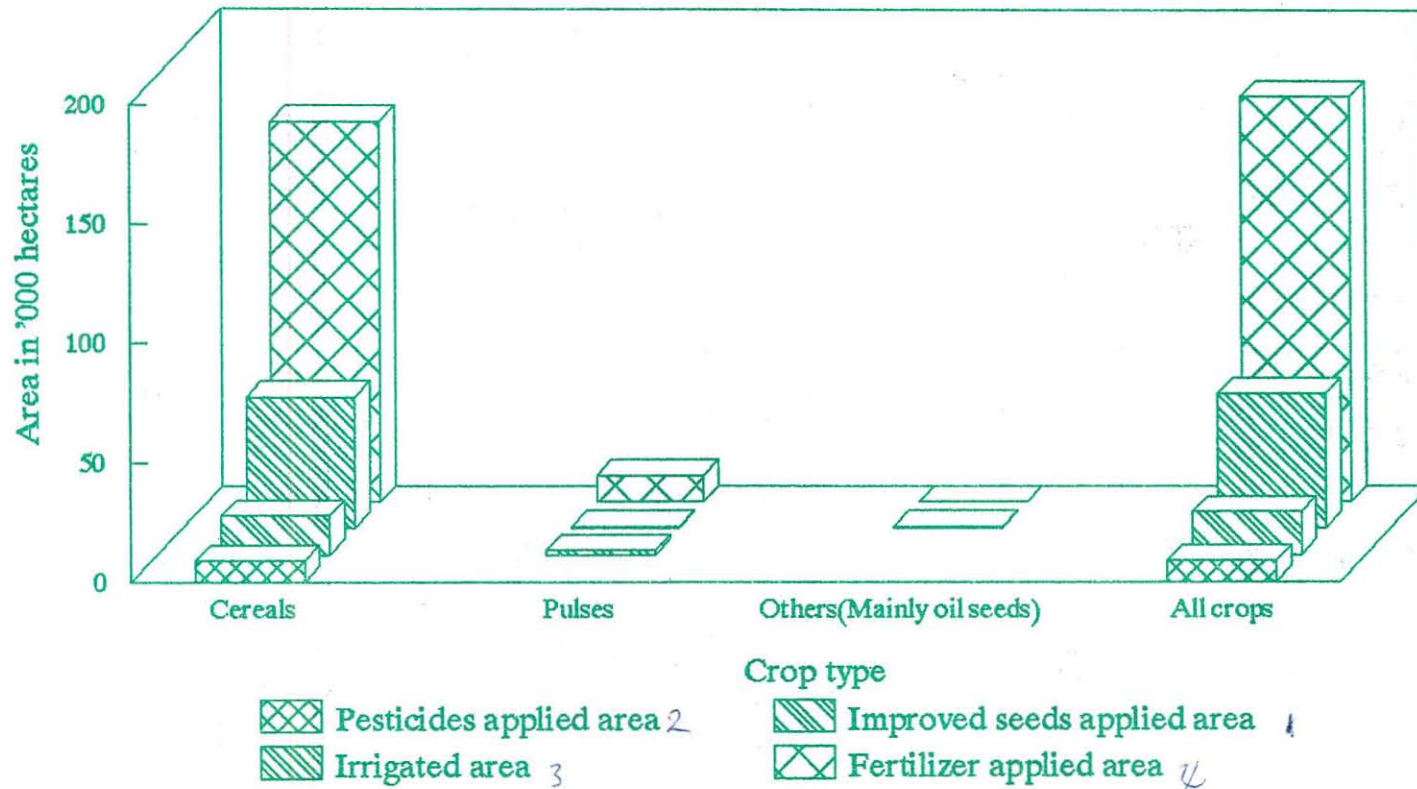
Type of improved farm management practices	Area under impr. farm management practices		% age from total belg crop area
	'000 ha	%	
Irrigation	58.28	22.99	5.18
Improved seeds	18.07	7.13	1.61
Fertilizer (Nat + Com)	170.41	67.23	15.15
Pesticides	8.72	3.44	0.78
Total	253.48	100.00	22.53

The estimates of total land area under different farm management practices for belg season crops of 1995/96(1988 E.C.) is presented in Summary Table C. As it is indicated in the summary table, the highest proportion of crop area under different farm management practices was reported to be covered by belg cereals, which accounted for 239.40 thousand hectares (94.45%). Furthermore, about 13 thousand hectares (5.29%) and 0.67 thousand hectares(0.26%) were accounted for belg pulses and other crops (mainly oil seeds), respectively.

SUMMARY TABLE C. Estimates of total area under improved farm management practices for belg season crops of private holdings in Ethiopia, 1995/96(1988 E.C.) by Crop type.

Crop Type	Total belg crop area		Area under impr. farm management practices	
	'000 ha	%	'000 ha	%
Cereals	1017.88	90.47	239.4	94.45
Pulses	104.41	9.28	13.41	5.29
Others (Mainly oilseeds)	2.79	0.25	0.67	0.26
All crops	1125.08	100.00	253.48	100.00

Figure 1. Estimates of total area under improved farm management practices for belg season crops by privateholdings in Ethiopia, 1995/96(1988 E.C.)



In almost all belg producing regions of the country, improved farm inputs were utilized for belg crop production. As indicated in Summary Table D, the largest area under belg season crops was reported by Oromiya Region, covering 46.77%(118,560 hectares). The second and third were S.N.N.P and Amhara regions with the coverage of 37.27%(94,480 hectares) and 9.67%(24,520 hectares) respectively.

SUMMARY TABLE D. Estimates of total area under improved farm management practices for belg season crops of private holdings in Ethiopia, 1995/96(1988 E.C.) by Region.

Region	Total belg crop area		Area under impr. farm management practices	
	'000 ha	%	'000 ha	%
Tigray	**	**	4.48	1.77
Afar	5.52	0.49	0.51	0.20
Amhara	148.08	13.16	24.52	9.67
Oromiya	520.59	46.27	118.56	46.77
Somalie	**	**	3.93	1.55
Benshangul- Gumuz	**	**	1.04	0.41
S.n.n.p	357.18	31.75	94.48	37.27
Gambela	**	**	5.49	2.17
Harari	0.64	0.06	0.37	0.15
Addis Ababa	-	-	-	-
Dire dawa	0.49	0.04	**	**
Total	1125.08	100.00	253.47	100.00

Fig 2. Estimates of area under improved farm management practices for Belg Season crops of private holdings in Ethiopia, 1995/96(1988 E.C.)  
By Region

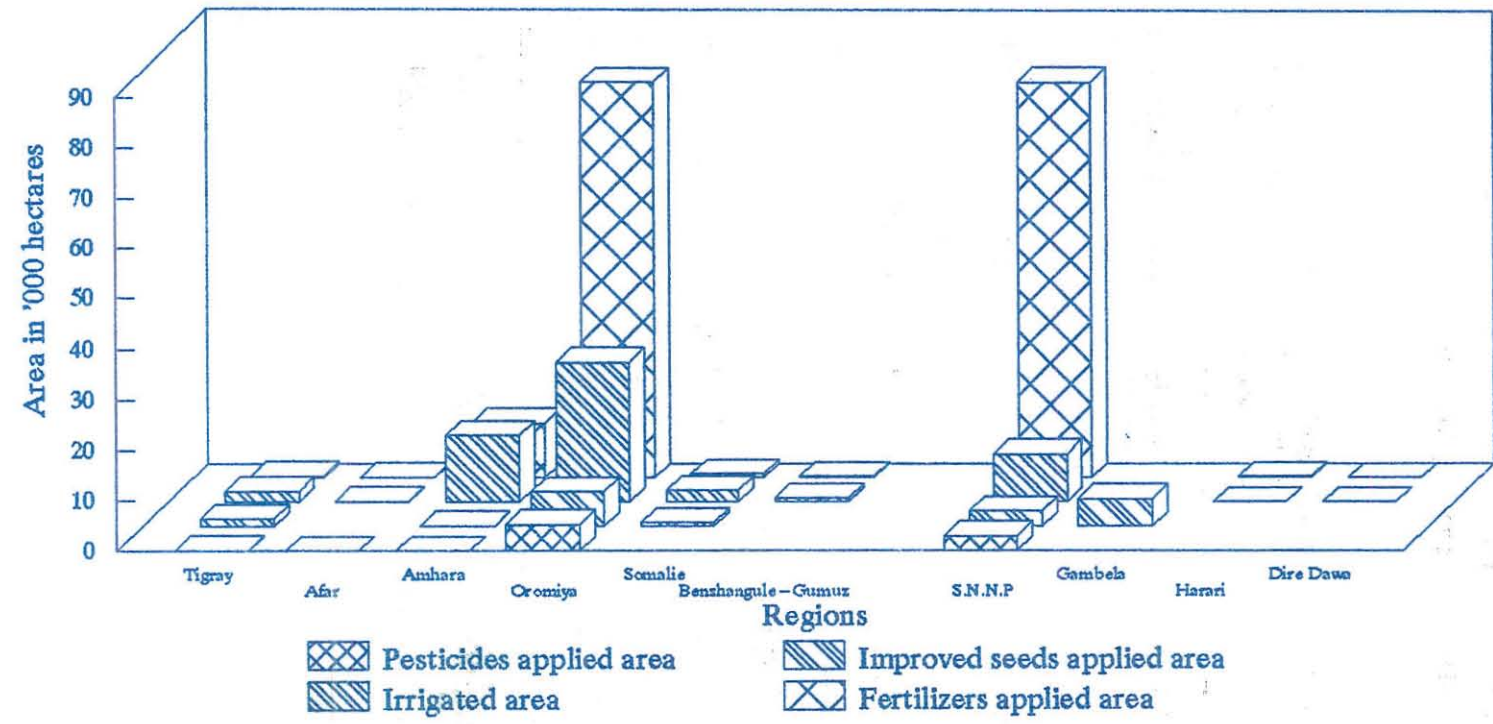


TABLE 1.1

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA  
1995/96(1988 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	1,017.88	90.47	54.95	97.64	16.31	90.26	159.42	93.55	8.72	100.00
Teff	65.49	5.82	**	**	**	**	5.22	3.06	1.82	20.87
Barley	232.96	20.71	3.00	5.33	-	-	49.18	28.86	1.83	20.99
Wheat	50.34	4.47	.84	1.49	**	**	**	**	**	**
Maize	570.43	50.70	44.12	78.39	13.33	73.77	63.92	37.51	3.38	38.76
Sorghum	76.27	6.78	**	**	**	**	**	**	**	**
Millet	**	**	-	-	-	-	-	-	-	-
Oats	18.62	1.65	**	**	-	-	**	**	-	-
PULSES	104.41	9.28	.69	1.23	**	**	10.96	6.43	-	-
Horse Beans	**	**	-	-	-	-	-	-	-	-
Field Peas	23.25	2.07	**	**	-	-	**	**	-	-
Haricot Beans	54.36	4.83	**	**	**	**	9.83	5.77	-	-
Chick Peas	5.43	.48	**	**	**	**	.06	.04	-	-
Lentils	18.24	1.62	**	**	-	-	**	**	-	-
Vetch	**	**	**	**	-	-	-	-	-	-
OTHERS	2.79	.25	**	**	-	-	**	**	-	-
Neug	1.41	.13	**	**	-	-	**	**	-	-
Lin Seed	**	**	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1,125.08	100.00	56.28	100.00	18.07	100.00	170.41	100.00	8.72	100.00

TABLE 1.2

ESTIMATES OF AREA UNDER DIFFERENT FARM MANAGEMENT PRACTICES BY REGION FOR BELG  
SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA  
1995/96(1988 E.C.)

AREA (IN '000 HECTARES)

REGION	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED (NAT + COM)	%	PESTICIDE APPLIED	%
TIGRAY	**	**	2.22	3.95	**	**	.49	.29	.18	2.06
AFAR	5.52	.49	.20	.36	-	-	.18	.11	.13	1.49
AMHARA	148.08	13.16	13.37	23.76	.16	.89	10.87	6.38	**	**
OROMIYA	520.59	46.27	27.74	49.30	6.86	37.98	78.65	46.15	5.31	60.89
SOMALIE	**	4.10	2.31	4.11	**	**	.84	.49	-	-
BENSHANGUL-GUMUZ	**	**	**	**	-	-	.27	.16	-	-
S.N.N.P.	357.18	31.75	9.59	17.04	3.18	17.61	78.73	46.20	2.98	34.17
GAMBELA	**	**	-	-	5.49	30.40	-	-	-	-
HARARI	.64	.06	.02	.04	-	-	.35	.21	-	-
ADDIS ABABA	-	-	-	-	-	-	-	-	-	-
DIRE DAWA	.49	.04	**	**	-	-	**	**	-	-
TOTAL AREA	1,125.05	100.00	56.27	100.00	18.06	100.00	170.42	100.00	8.72	100.00

TABLE 1.3 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	**	**	2.15	97.29	**	**	.49	100.00	.18	100.00
Teff	**	**	-	-	**	**	-	-	-	-
Barley	**	**	**	**	-	-	**	**	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	2.13	7.66	2.13	96.38	**	**	0.38	77.55	.18	100.00
Sorghum	**	**	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	**	**	**	**	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	**	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	2.21	100.00	**	**	.49	100.00	.18	100.00

TABLE 1.4 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Afar

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	4.14	75.14	.20	100.00	-	-	.06	33.33	.13	100.00
Teff	3.92	71.14	.04	20.00	-	-	.06	33.33	.13	100.00
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	**	**	-	-	-	-	-	-	-	-
Maize	**	**	.16	80.00	-	-	-	-	-	-
Sorghum	**	**	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	**	**	-	-	-	-	.12	66.67	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	**	**	-	-	-	-	.06	33.33	-	-
Chick Peas	**	**	-	-	-	-	.06	33.33	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-
ALL CROPS	5.51	100.00	.20	100.00	-	-	.18	100.00	.13	100.00

TABLE 1.5

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Amhara

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	117.32	79.22	12.36	92.45	.15	88.24	10.37	95.49	**	**
Teff	20.22	13.65	**	**	.04	23.53	.64	5.89	-	-
Barley	75.36	50.89	**	**	-	-	8.67	79.83	**	**
Wheat	7.12	4.81	**	**	**	**	**	**	-	-
Maize	7.90	5.33	5.69	42.56	.09	52.94	.41	3.78	-	-
Sorghum	**	**	**	**	-	-	-	-	-	-
Millet	**	**	-	-	-	-	-	-	-	-
Oats	6.04	4.08	**	**	-	-	**	**	-	-
PULSES	29.71	20.06	.37	2.77	**	**	**	**	-	-
Horse Beans	**	**	-	-	-	-	-	-	-	-
Field Peas	8.66	5.85	**	**	-	-	**	**	-	-
Haricot Beans	**	**	-	-	-	-	-	-	-	-
Chick Peas	**	**	**	**	**	**	-	-	-	-
Lentils	14.71	9.93	**	**	-	-	**	**	-	-
Vetch	**	**	**	**	-	-	-	-	-	-
OTHERS	1.06	.72	**	**	-	-	**	**	-	-
Neug	**	**	**	**	-	-	**	**	-	-
Lin Seed	**	**	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-
ALL CROPS	148.09	100.00	13.37	100.00	.17	100.00	10.86	100.00	**	**

TABLE 1.6 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Dromiya

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	483.07	92.80	27.51	99.17	5.13	74.67	75.94	96.55	5.31	100.00
Teff	22.12	4.25	-	-	-	-	3.26	4.14	**	**
Barley	141.52	27.19	**	**	-	-	34.26	43.56	**	**
Wheat	41.39	7.95	**	**	**	**	**	**	**	**
Maize	259.17	49.79	25.47	91.82	**	**	14.28	18.16	**	**
Sorghum	**	**	**	**	**	**	**	**	**	**
Millet	**	**	-	-	-	-	-	-	-	-
Oats	**	**	-	-	-	-	**	**	-	-
PULSES	35.77	6.87	**	**	**	**	2.71	3.45	-	-
Horse Beans	**	**	-	-	-	-	-	-	-	-
Field Peas	**	**	-	-	-	-	**	**	-	-
Haricot Beans	16.29	3.13	**	**	**	**	2.10	2.67	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	3.51	.67	-	-	-	-	-	-	-	-
Vetch	**	**	-	-	-	-	-	-	-	-
OTHERS	**	**	-	-	-	-	-	-	-	-
Neug	**	**	-	-	-	-	-	-	-	-
Lin Seed	**	**	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-
ALL CROPS	520.57	100.00	27.74	100.00	6.87	100.00	78.65	100.00	5.31	100.00

TABLE 1.7 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Somalie

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	**	**	2.31	100.00	**	**	.84	100.00	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	**	**	-	-	-	-	-	-	-	-
Wheat	**	**	-	-	**	**	-	-	-	-
Maize	**	**	2.31	100.00	**	**	.84	100.00	-	-
Sorghum	**	**	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	2.31	100.00	**	**	.84	100.00	-	-

TABLE 1.8 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	**	**	**	**	-	-	.27	100.00	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	**	-	-	.27	100.00	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	**	**	-	-	.27	100.00	-	-

TABLE 1.9 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

S.N.M.P.R.

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGEMENT PRACTICES							
			IRRGATED	%	IMPRVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	320.34	89.69	9.59	100.00	3.19	100.00	71.39	90.69	2.98	100.00
Teff	**	**	-	-	-	-	**	**	1.11	37.25
Barley	15.00	4.20	-	-	-	-	6.13	7.79	**	**
Wheat	**	**	-	-	-	-	**	.01	-	-
Maize	242.04	67.76	7.55	78.73	2.36	73.98	47.90	60.59	.56	18.79
Sorghum	**	**	**	**	**	**	**	**	-	-
Millet	**	**	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	36.84	10.31	-	-	-	-	7.33	9.31	-	-
Horse Beans	**	**	-	-	-	-	-	-	-	-
Field Peas	**	**	-	-	-	-	-	-	-	-
Haricot Beans	35.28	9.88	-	-	-	-	7.33	9.31	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
ALL CROPS	357.18	100.00	9.59	100.00	3.19	100.00	78.72	100.00	2.98	100.00

TABLE 1.10 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Gambela

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGEMENT PRACTICES							
			IRRGATED	%	IMPRVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	**	**	-	-	5.49	100.00	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	**	**	-	-	5.49	100.00	-	-	-	-
Sorghum	**	**	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	-	-	5.49	100.00	-	-	-	-

TABLE 1.11 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Harari

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES								
			IRRGATED	%	IMPRVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%	
CEREALS	**	**	-	-	-	-	-	**	**	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	-	-	-	-	-	**	**	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-
PULSES	.64	98.46	.02	100.00	-	-	.34	97.14	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.64	98.46	.02	100.00	-	-	.34	97.14	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.65	100.00	.02	100.00	-	-	.35	100.00	-	-	-

TABLE 1.12 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRGATED	%	IMPRVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	.49	100.00	**	**	-	-	**	**	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	.25	51.02	.03	60.00	-	-	**	**	-	-
Sorghum	**	**	**	**	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.49	100.00	**	**	-	-	**	**	-	-

## 1.2 TOTAL AREA UNDER FERTILIZER BY TYPE

The results of the survey indicate that land area under both natural and commercial fertilizers were estimated to be 170.42 thousand hectares, covering 15.15% of the total area under belg seasons crops of the private holdings. Of the total fertilized area 62.71 thousand hectares (36.80%) was reported to be under natural fertilizers. The coverage of commercial fertilizers was estimated to be 106.79 thousand hectares (62.66%), constituting of 58.46% DAP, 2.01% UREA and 2.19% mix of the two fertilizers (DAP+UREA). Moreover, 920 hectares (0.54%) was reported to be the area under the mix of natural and commercial fertilizers (for details see Summary Table E.).

SUMMARY TABLE E. Estimates of total area under fertilizer by type of fertilizer for belg season crops of private holdings in Ethiopia, 1995/96(1988 E.C.).

Type of Fertilizers	Fertilized area		% age from total belg crop area
	'000 ha	%	
I. Natural fertilizer	62.71	36.80	5.57
II. Commercial fertilizer	106.79	62.66	9.49
DAP	99.63	58.46	8.86
UREA	3.43	2.01	0.30
DAP+UREA	3.73	2.19	0.33
III. Both Natural + Commercial fert.	0.92	0.54	0.08
Total	170.42	100.00	15.15

### A. USE OF NATURAL FERTILIZERS

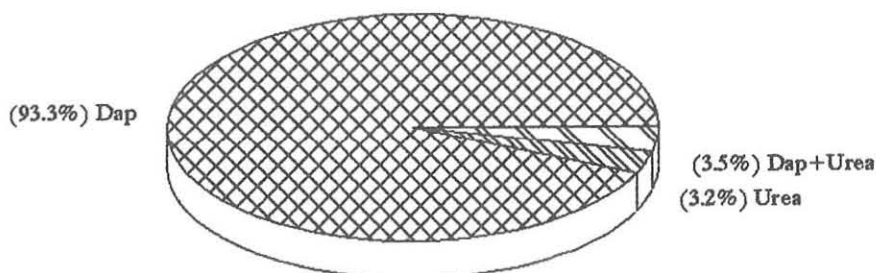
In general the application of natural fertilizers for belg season crops in 1995/96(1988 E.C.), varies from crop to crop. Of the total area under fertilizer, the highest proportion was reported for maize crop which was estimated at 31.16 thousand hectares (49.70%). The fertilized area (natural fertilizer) under

sorghum was the second and estimated to be 16.53 thousand hectares(26.37%), while area under barley stood third with about nine thousand hectares(13.80%)(see Table 2.1).

#### **B. USE OF COMMERCIAL FERTILIZERS**

Out of the total land area under commercial fertilizers in 1995/96(1988 E.C.) belg season, the area under DAP was the highest which accounted for 93.3%, while the mix of the two fertilizers (DAP+UREA) and UREA were covering 3.5% and 3.2% of the belg crop area, respectively (see Fig 3.).

Figure 3. Estimates of fertilizer applied area by type for belg season crops by privateholdings in Ethiopia, 1995/96(1988 E.C.)



Similarly, the application of commercial fertilizers varied from crop to crop. Of the total area under commercial fertilizers, the highest area was reported for barley at 40.17 thousand hectares (37.61%). The second highest area reported under commercial fertilizers was for maize i.e 32.16 thousand hectares (30.11%) thousand hectares.

The regional distribution of both natural and commercial fertilizers application varied from region to region. For instance, of the total area under both (Natural + Commercial) fertilizers, the highest was reported for S.N.N.P Region which accounted for 78,740 hectares(46.20% of the total). Oromiya and Amhara Regions were the second and third to report the highest area under both(Natural and Commercial) fertilizers which were estimated to be 78,650 hectares (46.15%) and 10,860 hectares (6.37%) respectively(for details see Table 2.2).

TABLE 2.1

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

## Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RCIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	159.41	93.55	57.86	92.30	100.64	94.23	2.82	81.98	94.16	94.51	3.66	98.12	.91	100.00
Teff	5.22	3.06	.67	1.07	4.55	4.26	**	**	3.49	3.50	.52	13.94	-	-
Barley	49.18	28.86	8.69	13.86	40.17	37.61	**	**	39.79	39.94	-	-	**	**
Wheat	**	**	**	**	**	**	.02	.58	**	**	**	**	-	-
Maize	63.91	37.51	31.16	49.70	32.16	30.11	1.88	54.65	27.87	27.97	2.41	64.61	.59	64.84
Sorghum	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	**	**	-	-	**	**	-	-	-	-
PULSES	10.96	6.43	4.80	7.66	6.16	5.77	.62	18.02	5.47	5.49	**	**	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	**	**	**	**	**	**	-	-	**	**	-	-	-	-
Haricot Beans	9.83	5.77	4.28	6.83	5.55	5.20	.62	18.02	4.86	4.88	**	**	-	-
Field Peas	.06	.04	.06	.10	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Neug	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	170.40	100.00	62.69	100.00	106.80	100.00	3.44	100.00	99.63	100.00	3.73	100.00	.91	100.00

TABLE 2.2

ESTIMATES OF FERTILIZER APPLIED AREA BY REGION AND TYPE OF FERTILIZER FOR  
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA  
 1995/96(1988 E.C.)

AREA ('000 HECTARES)

REGION	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RCIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM	%
TIGRAY	.48	.28	.25	.40	**	**	.05	1.46	-	-	.18	4.83	-	-
AFAR	.18	.11	.18	.29	-	-	-	-	-	-	-	-	-	-
AMHARA	10.86	6.37	8.81	14.05	2.05	1.92	.03	.87	1.99	2.00	.03	.80	-	-
OROMIYA	78.65	46.15	12.25	19.53	66.40	62.18	.80	23.32	63.66	63.90	1.94	52.01	-	-
SOMALIE	.84	.49	.84	1.34	-	-	-	-	-	-	-	-	-	-
BENISHANGUL-GUMUZ	.27	.16	.27	.43	-	-	-	-	-	-	-	-	-	-
S.N.N.P.	78.74	46.20	39.71	63.32	38.11	35.69	2.55	74.34	33.98	34.11	1.58	42.36	.92	100.00
GAMBELLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HARARI	.35	.21	.35	.56	-	-	-	-	-	-	-	-	-	-
ADDIS ABABA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DIRE DAWA	**	**	**	**	-	-	-	-	-	-	-	-	-	-
TOTAL	170.42	100.00	62.71	100.00	106.79	100.00	3.43	100.00	99.63	100.00	3.73	100.00	.92	100.00

TABLE 2.3

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

## Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RCIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.49	100.00	.26	100.00	**	**	.05	100.00	-	-	.18	100.00	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.38	77.55	**	**	**	**	.05	100.00	-	-	.18	100.00	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.49	100.00	.26	100.00	**	**	.05	100.00	-	-	.18	100.00	-	-

TABLE 2.4

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

## Afar

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RCIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.06	33.33	.06	33.33	-	-	-	-	-	-	-	-	-	-
Teff	.06	33.33	.06	33.33	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	.12	66.67	.12	66.67	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.06	33.33	.06	33.33	-	-	-	-	-	-	-	-	-	-
Field Peas	.06	33.33	.06	33.33	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.18	100.00	.18	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.5

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
 BELG SEASON CROPS OF PRIVATE HOLDINGS  
 1995/96(1988 E.C.)

Amhara

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RCIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	10.38	95.49	8.32	94.44	2.06	100.00	.04	100.00	1.99	100.00	.03	100.00	-	-
Teff	.65	5.98	.61	6.92	.04	1.94	.02	50.00	-	-	.02	66.67	-	-
Barley	8.67	79.76	6.90	78.32	1.77	85.92	-	-	1.77	88.94	-	-	-	-
Wheat	**	**	**	**	.02	.97	.02	50.00	-	-	-	-	-	-
Maize	.41	3.77	**	**	.23	11.17	-	-	.22	11.06	.01	33.33	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	-	-	-	-	-	-	-	-	-	-
PULSES	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Neug	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	10.87	100.00	8.81	100.00	2.06	100.00	.04	100.00	1.99	100.00	.03	100.00	-	-

TABLE 2.6

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Oromiya

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	75.93	96.55	10.15	82.86	65.78	99.08	.79	100.00	63.05	99.04	1.94	100.00	-	-
Teff	3.25	4.13	-	-	3.25	4.90	**	**	3.06	4.81	-	-	-	-
Barley	34.26	43.57	1.25	10.20	33.01	49.72	**	**	32.85	51.60	**	**	-	-
Wheat	**	**	**	**	**	**	-	-	**	**	**	**	-	-
Maize	14.27	18.15	8.49	69.31	5.78	8.71	.44	55.70	**	**	**	**	-	-
Sorghum	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	**	**	-	-	**	**	-	-	-	-
PULSES	2.71	3.45	2.10	17.14	**	**	-	-	**	**	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	**	**	-	-	**	**	-	-	**	**	-	-	-	-
Haricot Beans	2.10	2.67	2.10	17.14	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	78.64	100.00	12.25	100.00	66.39	100.00	.79	100.00	63.66	100.00	1.94	100.00	-	-

TABLE 2.7

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Somalie

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.84	100.00	.84	100.00	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.84	100.00	.84	100.00	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.84	100.00	.84	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.8

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Benshangul - Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.27	100.00	.27	100.00	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.27	100.00	.27	100.00	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.27	100.00	.27	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.9

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR  
BELG SEASON CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

S.N.N.P.R.

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	71.40	90.69	37.93	95.52	32.56	85.44	1.93	75.69	29.12	85.70	1.51	95.57	.91	100.00
Teff	**	**	-	-	1.26	3.31	**	**	**	**	.50	31.65	-	-
Barley	6.13	7.79	**	**	5.38	14.12	**	**	5.17	15.21	-	-	**	**
Wheat	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Maize	47.71	60.60	21.20	53.39	25.92	68.01	1.39	54.51	23.52	69.22	1.01	63.92	.59	64.84
Sorghum	**	**	**	**	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	7.33	9.31	1.78	4.48	5.55	14.56	.62	24.31	4.86	14.30	**	**	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	7.33	9.31	1.78	4.48	5.55	14.56	.62	24.31	4.86	14.30	**	**	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	78.73	100.00	39.71	100.00	38.11	100.00	2.55	100.00	33.98	100.00	1.58	100.00	.91	100.00



### 1.3 TOTAL QUANTITY OF COMMERCIAL FERTILIZER APPLIED BY TYPE

In 1995/96(1988 E.C) the total quantity of commercial fertilizer used for belg season crop production was estimated at 67230 quintals. Of this total, the share of DAP was the highest accounting for 88.50% (59,490 quintals). The mix of the two types of fertilizers (DAP+UREA) was the second highest accounting for 8.67% (5,850 quintals) while UREA stood third accounting for 2.84% (1,900 quintals)( see Fig 4.).

Figure 4. Estimates of total quantity of fertilizer applied by type for belg season crops by private holdings in Ethiopia, 1995/96(1988 E.C.)

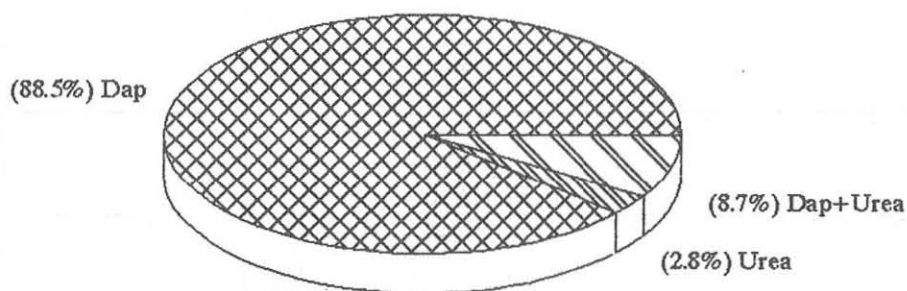


TABLE 3.1

ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED  
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS, 1996(1988 E.C.)

## Ethiopia

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	63.95	95.12	1.55	81.15	56.60	95.13	5.81	99.66
Teff	1.84	2.74	**	**	.93	1.56	.64	10.98
Barley	26.62	39.60	**	**	26.25	44.12	-	-
Wheat	**	**	.02	1.05	**	**	**	**
Maize	26.87	39.97	.88	46.07	21.59	36.29	4.40	75.47
Sorghum	**	**	-	-	**	**	-	-
Millet	-	-	-	-	-	-	-	-
Oats	**	**	-	-	**	**	-	-
PULSES	3.28	4.88	**	**	2.90	4.87	**	**
Horse Beans	-	-	-	-	-	-	-	-
Chick Peas	**	**	-	-	**	**	-	-
Haricot Beans	3.20	4.76	**	**	2.82	4.74	**	**
Field Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-
Rape seed	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-
ALL CROPS	67.23	100.00	1.91	100.00	59.50	100.00	5.83	100.00

TABLE 3.2 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED BY  
REGION AND TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS IN ETHIOPIA, 1996(1988 E.C.)

QUANTITY (IN '000 QUINTAL)

REGION	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
TIGRAY	**	**	.02	1.05	-	-	.37	6.32
AFAR	-	-	-	-	-	-	-	-
AMHARA	1.76	2.62	.05	2.63	1.67	2.81	.04	.68
OROMIYA	33.75	50.20	.64	33.68	31.23	52.50	1.88	32.14
SOMALIE	-	-	-	-	-	-	-	-
BENISHANGUL-GUMUZ	-	-	-	-	-	-	-	-
S.N.N.P.	31.34	46.62	1.19	62.63	26.59	44.70	3.56	60.85
GAMBELLA	-	-	-	-	-	-	-	-
HARARI	-	-	-	-	-	-	-	-
ADDIS ABABA	-	-	-	-	-	-	-	-
DIRE DAWA	-	-	-	-	-	-	-	-
TOTAL QUANTITY	67.23	100.00	1.90	100.00	59.49	100.00	5.85	100.00

TABLE 3.3

ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED  
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS, 1996(1988 E.C.)

## Tigray

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	**	**	.02	100.00	-	-	.37	100.00
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	**	**	.02	100.00	-	-	.37	100.00
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	**	**	.02	100.00	-	-	.37	100.00

TABLE 3.4

ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED  
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS, 1996(1988 E.C.)

## Amhara

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	1.76	100.00	.05	100.00	1.67	100.00	.04	100.00
Teff	.06	3.41	.03	60.00	-	-	.03	75.00
Barley	1.12	63.64	-	-	1.12	67.07	-	-
Wheat	.02	1.14	.02	40.00	-	-	-	-
Maize	.56	31.82	-	-	.55	32.93	.01	25.00
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	1.76	100.00	.05	100.00	1.67	100.00	.04	100.00

TABLE 3.5 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED  
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS, 1996(1988 E.C.)

Oromiya

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	33.68	99.76	.65	100.00	31.15	99.74	1.87	100.00
Teff	**	**	**	**	**	**	-	-
Barley	21.04	62.32	**	**	20.74	66.41	-	-
Wheat	**	**	-	-	**	**	**	**
Maize	3.12	9.24	**	**	**	**	**	**
Sorghum	**	**	-	-	**	**	-	-
Millet	-	-	-	-	-	-	-	-
Oats	**	**	-	-	**	**	-	-
PULSES	**	**	-	-	**	**	-	-
Horse Beans	-	-	-	-	-	-	-	-
Chick Peas	**	**	-	-	**	**	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	33.76	100.00	.65	100.00	31.23	100.00	1.87	100.00

TABLE 3.6 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED  
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF  
PRIVATE HOLDINGS, 1996(1988 E.C.)

S.N.M.P.R.

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	28.14	89.79	.82	69.49	23.77	89.39	3.54	99.44
Teff	.86	2.74	**	**	**	**	.62	17.42
Barley	4.47	14.26	**	**	4.39	16.51	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	22.81	72.78	**	**	19.21	72.25	2.92	82.02
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	3.20	10.21	**	**	2.82	10.61	**	**
Horse Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Haricot Beans	3.20	10.21	**	**	2.82	10.61	**	**
Field Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	31.34	100.00	1.18	100.00	26.59	100.00	3.56	100.00

## SECTION 2.

### 2.1 TOTAL AREA AND DISTRIBUTION OF AREA UNDER DIFFERENT FARM MANAGEMENT PRACTICE BY AREA SIZE GROUPS.

For the purpose of a systematic presentation of this report, total belg crop area have been classified in to seven area size groups. These groupings are:

- Group 1 - under 0.10 hectare
- Group 2 - 0.10 - 0.50 hectare
- Group 3 - 0.51 - 1.00 hectare
- Group 4 - 1.01 - 2.00 hectares
- Group 5 - 2.01 - 5.00 hectares
- Group 6 - 5.01 - 10.00 hectares
- Group 7 - 10.01 and above hectares

According to the survey results, in 1995/96(1988 E.C) it was estimated that a total of 1,125.08 thousand hectares was under belg season major crops. By these groupings, as presented in Figure 5 the highest belg crop area 53.02% fall in area size group 2 which followed by group 3, 15.45% and group 1, 8.87%(for details see Table 4.1 and Fig 5.).

Figure 5. Estimates of total area under belg season crops by area size groups by private holdings in Ethiopia, 1995/96(1988 E.C.)

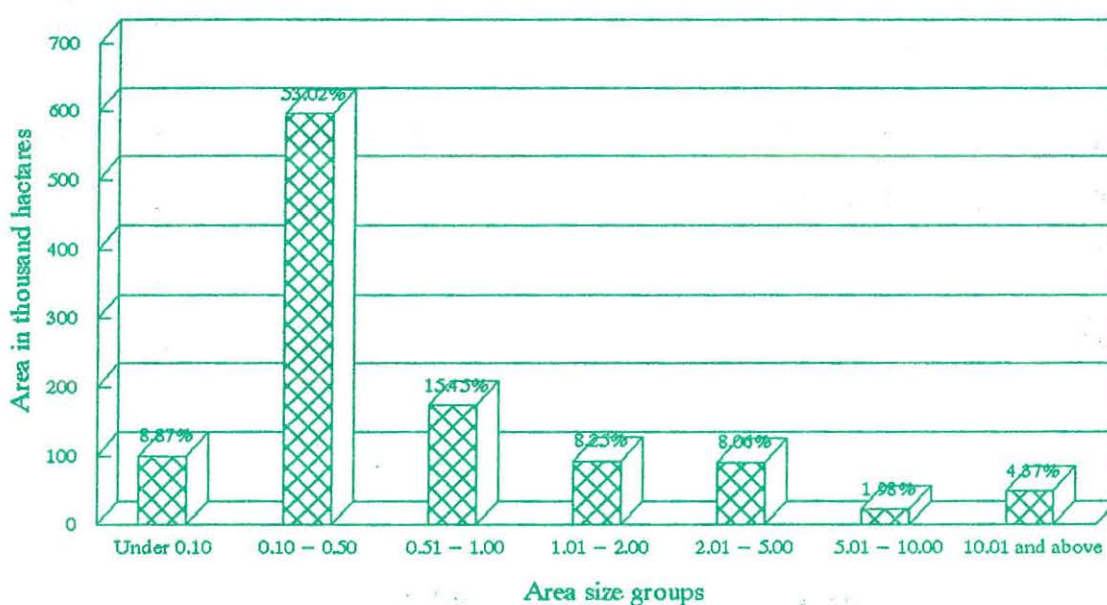


TABLE 4.1

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	78.87	539.20	164.50	86.07	80.96	19.10	49.19	1,017.88
Teff	5.12	46.75	9.05	4.57	-	-	-	65.49
Barley	23.93	165.58	34.42	7.19	1.84	-	-	232.96
Wheat	3.70	32.14	4.78	**	**	5.59	-	50.34
Maize	40.78	255.30	90.46	58.05	63.14	**	49.19	570.43
Sorghum	.94	26.98	23.85	**	10.86	-	-	76.27
Millet	**	**	**	-	-	-	-	**
Oats	3.85	10.40	**	**	**	-	-	18.62
PULSES	19.89	56.03	8.84	**	**	**	-	104.41
Horse Beans	**	**	**	-	-	-	-	**
Field Peas	4.14	17.07	**	-	-	-	-	23.25
Haricot Beans	10.33	22.59	**	**	**	**	-	54.36
Chick Peas	**	4.68	-	-	-	-	-	5.43
Lentils	3.86	9.82	2.29	**	-	-	-	18.24
Vetch	.20	**	-	-	-	-	-	**
OTHERS	1.00	1.28	**	-	-	-	-	2.79
Neug	**	.77	-	-	-	-	-	1.41
Lin Seed	**	**	**	-	-	-	-	**
Rape seed	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-
ALL CROPS	99.76	596.51	173.85	92.84	90.63	22.30	49.19	1,125.08

TABLE 4.2 ESTIMATES OF AREA BY AREA SIZE GROUPS AND REGION FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA  
1995/96(1988 E.C.)

AREA (IN '000 HECTARES)

REGION	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
TIGRAY	1.31	**	6.67	4.97	-	-	-	**
AFAR	**	4.11	**	-	-	-	-	5.52
AMHARA	31.04	97.30	16.28	3.47	-	-	-	148.08
OROMIYA	41.47	303.73	84.55	32.54	7.10	7.27	43.91	520.59
SOMALIE	1.18	5.06	8.23	5.37	**	-	-	**
BENISHANGUL-GUMUZ	**	2.96	2.69	**	2.09	-	-	**
S.N.N.P.	24.19	166.83	54.20	42.20	55.17	**	-	357.18
GAMBELLA	.02	.63	.18	-	-	.44	5.28	**
HARARI	.03	.54	.08	-	-	-	-	.64
ADDIS ABABA	-	-	-	-	-	-	-	-
DIRE DAWA	-	.49	-	-	-	-	-	.49
TOTAL AREA	99.75	596.51	173.86	92.83	90.63	22.29	49.19	1,125.06

TABLE 4.3

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	**	**	6.66	4.97	-	-	-	**
Teff	-	**	1.41	2.71	-	-	-	**
Barley	**	**	-	-	-	-	-	**
Wheat	-	-	-	-	-	-	-	-
Maize	**	1.57	-	-	-	-	-	2.13
Sorghum	-	**	5.25	2.26	-	-	-	**
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	**	-	-	-	-	-	-	**
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	**	-	-	-	-	-	-	**
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	**	-	-	-	-	-	-	**
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	1.31	**	6.66	4.97	-	-	-	**

TABLE 4.4

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Afar

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	**	2.86	**	-	-	-	-	4.14
Teff	**	2.71	**	-	-	-	-	3.92
Barley	-	-	-	-	-	-	-	-
Wheat	-	**	-	-	-	-	-	**
Maize	-	**	**	-	-	-	-	**
Sorghum	-	**	-	-	-	-	-	**
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	**	**	-	-	-	-	-	**
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	**	**	-	-	-	-	-	**
Chick Peas	.02	**	-	-	-	-	-	**
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	**	4.12	**	-	-	-	-	5.51

TABLE 4.5

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Amhara

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	23.55	79.61	12.97	**	-	-	-	117.32
Teff	4.25	13.28	**	-	-	-	-	20.22
Barley	12.30	52.76	**	**	-	-	-	75.36
Wheat	2.34	**	-	-	-	-	-	7.12
Maize	2.09	4.90	.90	-	-	-	-	7.90
Sorghum	**	**	-	-	-	-	-	**
Millet	-	**	-	-	-	-	-	**
Oats	2.54	3.24	**	-	-	-	-	6.04
PULSES	6.91	17.23	3.32	**	-	-	-	29.71
Horse Beans	**	-	-	-	-	-	-	**
Field Peas	2.64	4.51	**	-	-	-	-	8.66
Haricot Beans	**	**	**	-	-	-	-	**
Chick Peas	**	**	-	-	-	-	-	**
Lentils	3.08	7.89	**	**	-	-	-	14.71
Vetch	-	**	-	-	-	-	-	**
OTHERS	.57	.49	-	-	-	-	-	1.06
Neug	**	.49	-	-	-	-	-	**
Lin Seed	**	-	-	-	-	-	-	**
Rape seed	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-
ALL CROPS	31.03	97.33	16.29	3.47	-	-	-	148.09

TABLE 4.6

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Dromiya

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	32.70	278.25	81.31	32.54	7.10	7.27	43.91	483.07
Teff	.31	18.01	1.94	1.87	-	-	-	22.12
Barley	9.05	101.78	24.71	**	-	-	-	141.52
Wheat	1.28	25.60	4.78	**	**	5.59	-	41.39
Maize	20.47	123.35	45.71	22.07	**	1.68	43.91	259.17
Sorghum	**	**	**	-	-	-	-	**
Millet	-	-	**	-	-	-	-	**
Oats	1.31	7.16	**	**	**	-	-	**
PULSES	8.34	24.68	**	-	-	-	-	35.77
Horse Beans	**	**	-	-	-	-	-	**
Field Peas	1.35	**	-	-	-	-	-	**
Haricot Beans	5.55	8.81	**	-	-	-	-	16.29
Chick Peas	-	-	-	-	-	-	-	-
Lentils	**	1.93	**	-	-	-	-	3.51
Vetch	.20	**	-	-	-	-	-	**
OTHERS	**	**	**	-	-	-	-	**
Neug	**	**	-	-	-	-	-	**
Lin Seed	**	**	**	-	-	-	-	**
Rape seed	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-
ALL CROPS	41.48	303.72	84.57	32.54	7.10	7.27	43.91	520.57

TABLE 4.7

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Somalie

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	1.18	5.05	8.23	5.37	**	-	-	**
Teff	-	-	-	-	-	-	-	-
Barley	**	**	-	-	-	-	-	**
Wheat	**	**	-	-	-	-	-	**
Maize	1.02	4.11	**	**	**	-	-	**
Sorghum	**	**	**	**	**	-	-	**
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	1.18	5.05	8.23	5.37	**	-	-	**

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TABLE 4.8

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	**	2.96	2.69	**	2.09	-	-	**
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	**	2.96	2.69	**	2.09	-	-	**
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	**	2.96	2.69	**	2.09	-	-	**

TABLE 4.9

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

S.N.N.P.R.

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	19.77	154.50	51.48	37.70	45.49	**	-	320.34
Teff	**	4.97	**	-	-	-	-	**
Barley	1.85	10.71	**	-	1.84	-	-	15.00
Wheat	**	**	-	-	-	-	-	**
Maize	16.53	117.44	35.43	27.43	33.81	**	-	242.04
Sorghum	.58	17.95	13.34	**	9.84	-	-	**
Millet	**	**	-	-	-	-	-	**
Oats	-	-	-	-	-	-	-	-
PULSES	4.42	12.34	**	**	**	**	-	36.84
Horse Beans	**	-	**	-	-	-	-	**
Field Peas	**	**	**	-	-	-	-	**
Haricot Beans	4.28	11.89	**	**	**	**	-	35.28
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	24.19	166.84	54.19	42.20	55.16	**	-	357.18

TABLE 4.10

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Gambela

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	.02	.63	.18	-	-	.44	5.28	**
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	.02	.63	**	-	-	.44	5.28	**
Sorghum	-	-	**	-	-	-	-	**
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	.02	.63	.18	-	-	.44	5.28	**

TABLE 4.11

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Harari

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	**	-	-	-	-	-	-	**
Teff	-	-	-	-	-	-	-	-
Barley	**	-	-	-	-	-	-	**
Wheat	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	.02	.54	.08	-	-	-	-	.64
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	.02	.54	.08	-	-	-	-	.64
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
ALL CROPS	.03	.54	.08	-	-	-	-	.65

TABLE 4.12

ESTIMATE OF AREA BY AREA SIZE GROUPS FOR BELG SEASON  
CROPS OF PRIVATE HOLDINGS  
1995/96(1988 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

TYPE OF CROP	AREA SIZE GROUPS IN HECTARES							TOTAL
	UNDER 0.10	0.10-0.50	0.51-1.00	1.01-2.00	2.01-5.00	5.01-10.00	10.01 & ABOVE	
CEREALS	-	.49	-	-	-	-	-	.49
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	-	.25	-	-	-	-	-	.25
Sorghum	-	**	-	-	-	-	-	**
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
ALL CROPS	-	.49	-	-	-	-	-	.49

**2.2 THE DISTRIBUTION OF AREA UNDER DIFFERENT FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS.**

According to the survey results, the total land area under different farm management practices was estimated to be 253.47 thousand hectares (i.e. 22.53% of the total belg crop area). Of this total, the highest 54.62% land area under improved farm management practices was exercised by area size group 2. Second and third by rank were area size groups 3 and 1, covering 15.14% and 9.79% respectively (for details see Summary Table F.).

SUMMARY TABLE F. Estimates of total area under improved farm management practices by area size groups for belg season crops of private holdings in Ethiopia 1995/96 (1988 E.C.)

Area size groups in hectar	Total belg crop area		Area under impr. farm management practices	
	'000 ha	%	'000 ha	%
Under 0.10	99.76	8.87	24.81	9.79
0.10 - 0.50	596.5	53.02	138.46	54.62
0.51 - 1.00	173.85	15.45	38.37	15.14
1.01 - 2.00	92.84	8.25	21.44	8.46
2.01 - 5.00	90.63	8.06	12.6	4.97
5.01 - 10.00	22.3	1.98	7.27	2.87
10.01 and above	49.19	4.37	10.53	4.15
Total	1125.07	100.00	253.48	100.00

TABLE 5.1 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
					UNDER 0.10	6.18	10.98	.85	4.70	16.05	9.42	11.21		
0.10 - 0.50	32.45	57.66	5.33	29.50	98.08	57.56	33.65	53.68	63.67	59.61	.76	83.52	2.60	29.82
0.51 - 1.00	6.74	11.98	2.86	15.83	24.38	14.31	6.49	10.35	17.89	16.75	-	-	4.39	50.34
1.01 - 2.00	3.98	7.07	3.75	20.75	13.71	8.05	5.11	8.15	8.60	8.05	-	-	-	-
2.01 - 5.00	-	-	-	-	12.60	7.39	6.23	9.94	6.37	5.96	-	-	-	-
5.01 -10.00	1.68	2.99	-	-	5.59	3.28	-	-	5.59	5.23	-	-	-	-
10.01 AND OVER	5.25	9.33	5.28	29.22	-	-	-	-	-	-	-	-	-	-
TOTAL	56.28	100.00	18.07	100.00	170.41	100.00	62.69	100.00	106.81	100.00	.91	100.00	8.72	100.00

TABLE 5.2 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Tigray

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
					UNDER 0.10	.64	28.96	-	-	.16	32.65	.11		
0.10 - 0.50	1.57	71.04	1.59	100.00	.33	67.35	.15	57.69	.18	78.26	-	-	.18	100.00
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2.21	100.00	1.59	100.00	.49	100.00	.26	100.00	.23	100.00	-	-	.18	100.00

TABLE 5.3 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Afar

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.10 - 0.50	.09	45.00	-	-	.18	100.00	.18	100.00	-	-	-	-	.13	100.00
0.51 - 1.00	.11	55.00	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.20	100.00	-	-	.18	100.00	.18	100.00	-	-	-	-	.13	100.00

TABLE 5.4 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Amhara

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	3.02	22.59	.16	100.00	2.89	26.59	2.72	30.87	.17	8.25	-	-	.12	100.00
0.10 - 0.50	9.98	74.64	-	-	5.45	50.14	4.95	56.19	.50	24.27	-	-	-	-
0.51 - 1.00	.37	2.77	-	-	2.53	23.28	1.14	12.94	1.39	67.48	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	13.37	100.00	.16	100.00	10.87	100.00	8.81	100.00	2.06	100.00	-	-	.12	100.00

TABLE 5.5 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Oromiya

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	2.24	8.07	.46	6.71	5.62	7.15	4.32	35.27	1.30	1.96	-	-	1.20	22.64
0.10 - 0.50	15.24	54.94	1.77	25.80	45.21	57.48	7.93	64.73	37.28	56.14	-	-	1.33	25.09
0.51 - 1.00	2.40	8.65	1.52	22.16	10.84	13.78	-	-	10.84	16.33	-	-	2.77	52.26
1.01 - 2.00	.93	3.35	3.11	45.34	8.60	10.93	-	-	8.60	12.95	-	-	-	-
2.01 - 5.00	-	-	-	-	2.79	3.55	-	-	2.79	4.20	-	-	-	-
5.01 -10.00	1.68	6.06	-	-	5.59	7.11	-	-	5.59	8.42	-	-	-	-
10.01 AND OVER	5.25	18.93	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	27.74	100.00	6.86	100.00	78.65	100.00	12.25	100.00	66.40	100.00	-	-	5.30	100.00

TABLE 5.6 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Somali

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	.06	7.69	.16	19.05	.16	19.05	-	-	-	-	-	-
0.10 - 0.50	.70	30.30	.08	10.26	.68	80.95	.68	80.95	-	-	-	-	-	-
0.51 - 1.00	1.61	69.70	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	.64	82.05	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2.31	100.00	.78	100.00	.84	100.00	.84	100.00	-	-	-	-	-	-

TABLE 5.7 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	.02	2.60	-	-	-	-	-	-	-	-	-	-	-	-
0.10 - 0.50	.75	97.40	-	-	.27	100.00	.27	100.00	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.77	100.00	-	-	.27	100.00	.27	100.00	-	-	-	-	-	-

TABLE 5.8 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

S.N.N.P.R.

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	.26	2.71	.16	5.03	7.20	9.15	3.88	9.77	3.17	8.32	.15	16.48	.40	13.42
0.10 - 0.50	4.05	42.19	1.75	55.03	45.63	57.97	19.17	48.29	25.70	67.45	.76	83.52	.96	32.21
0.51 - 1.00	2.24	23.33	1.27	39.94	10.97	13.94	5.31	13.38	5.66	14.86	-	-	1.62	54.36
1.01 - 2.00	3.05	31.77	-	-	5.11	6.49	5.11	12.87	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	9.80	12.45	6.23	15.69	3.57	9.37	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	9.60	100.00	3.18	100.00	78.71	100.00	39.70	100.00	38.10	100.00	.91	100.00	2.98	100.00

TABLE 5.9 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Gambela

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.10 - 0.50	-	-	.14	2.55	-	-	-	-	-	-	-	-	-	-
0.51 - 1.00	-	-	.07	1.28	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 - 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	5.28	96.17	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	5.49	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 5.10 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Harari

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	-	-	.01	2.86	.01	2.86	-	-	-	-	-	-
0.10 - 0.50	.02	100.00	-	-	.29	82.86	.29	82.86	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	.05	14.29	.05	14.29	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 - 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.02	100.00	-	-	.35	100.00	.35	100.00	-	-	-	-	-	-

TABLE 5.11 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY AREA SIZE GROUPS  
FOR BELG SEASON OF PRIVATE HOLDINGS  
1995/96 (1988 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

AREA SIZE GROUPS (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.10 - 0.50	.05	100.00	-	-	.04	100.00	.04	100.00	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.05	100.00	-	-	.04	100.00	.04	100.00	-	-	-	-	-	-

### SECTION 3.

#### 3. TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE of IMPROVED FARM MANAGEMENT PRACTICES BY AGE.

For the purpose of preparing this report belg crop producing holders' ages have been categorized in to nine groups, as follows:-

##### The group categories by age

group 1	-	under 18 years
group 2	-	18 - 20 years
group 3	-	21 - 24 years
group 4	-	25 - 29 years
group 5	-	30 - 39 years
group 6	-	40 - 49 years
group 7	-	50 - 59 years
group 8	-	60 years & above
group 9	-	not stated

Based on the survey results, a total of 4.02 million holders were engaged in the over all belg season agricultural activities in 1995/96(1988 E.C.)belg season. As mentioned above, these holders are categorized in to nine age groups based on the age of the holder . Accordingly, the highest number 1,014,410 (25.22%) of holders were estimated to fall in the age group 30 - 39. The second (22.2%) and third (18.78%) highest number of holders fall in the age groups 40 - 49 and 60 and above, respectively

Moreover , it was estimated that a total of 945,620 belg crop producing holders (about 23.51% of the total) reported the use of improved farm management practices. Among belg producing holders

the highest number of holders 38.85% reported to use natural fertilizer while 29.2% and 23.3% of them reported to use commercial fertilizer and irrigation, respectively (see summary Table G and Table 6.1)

SUMMARY TABLE G. Estimates of total number of belg crop producing holders reporting use of farm management practices by age for belg season crops of private holdings in Ethiopia, 1995/96(1988 E.C.).

Age of holders in years	Total number of holders in		Number of holders reporting use of imp. farm mng.practices	
	'000	%	'000	%
Under 18	25.11	0.62	4.88	0.52
18 - 20	76.30	1.90	12.51	1.32
21 - 24	188.46	4.69	35.96	3.80
25 - 29	483.67	12.03	99.27	10.50
30 - 39	1014.41	25.22	260.02	27.50
40 - 49	892.99	22.20	231.09	24.44
50 - 59	585.60	14.56	154.35	16.32
60 and above	755.32	18.78	147.54	15.60
Not stated	-	-	-	-
Total	4021.86	100.00	945.62	100.00

TABLE 6.1 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Ethiopia

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	.47	-	1.27	2.01	-	-
18 - 20	3.71	-	6.30	2.50	-	-
21 - 24	6.53	.92	14.16	12.95	-	1.40
25 - 29	22.54	4.43	34.30	35.05	.63	2.32
30 - 39	53.80	10.41	105.69	76.21	3.70	10.21
40 - 49	61.32	13.21	80.12	66.24	1.24	8.96
50 - 59	38.57	4.65	64.29	39.53	.68	6.63
60 & ABOVE	33.46	7.35	60.66	41.55	-	4.52
NOT STATED	-	-	-	-	-	-
TOTAL	220.40	40.97	366.79	276.04	6.25	35.19

TABLE 6.2 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY REGION FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA 1995/96 (1988 E.C.)

NUMBER IN THOUSANDS

REGION	NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
TIGRAY	23.06	6.16	2.98	1.47	-	.73
AFAR	.44	-	.92	-	-	.65
AMHARA	77.82	4.87	60.71	7.24	-	2.51
OROMIYA	88.97	14.70	111.83	120.41	-	15.99
SOMALIE	4.26	1.20	4.50	-	-	-
BENSHANGUL-GUMU	4.55	-	1.21	-	-	-
S.N.N.P.	20.74	13.04	183.47	146.93	6.25	15.31
GAMBELA	-	.99	-	-	-	-
HARARI	.12	-	1.02	-	-	-
ADDIS ABABA	-	-	-	-	-	-
DIRE DAWA	.41	-	.16	-	-	-
TOTAL	220.37	40.96	366.80	276.05	6.25	35.19

TABLE 6.3 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Tigray

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	1.47	-	-	-	-	-
25 - 29	-	.78	-	-	-	-
30 - 39	2.83	1.57	-	-	-	-
40 - 49	11.53	1.52	.73	1.47	-	.73
50 - 59	3.56	.73	1.50	-	-	-
60 & ABOVE	3.66	1.57	.75	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	23.05	6.17	2.98	1.47	-	.73

TABLE 6.4 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Afar

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	-	-	-	-	-	-
25 - 29	.22	-	.46	-	-	-
30 - 39	.07	-	-	-	-	.46
40 - 49	.07	-	-	-	-	-
50 - 59	-	-	.46	-	-	-
60 & ABOVE	.07	-	-	-	-	.19
NOT STATED	-	-	-	-	-	-
TOTAL	.43	-	.92	-	-	.65

TABLE 6.5 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Amhara

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	.35	-	2.64	-	-	-
25 - 29	6.34	.36	2.85	.36	-	-
30 - 39	19.33	.36	12.36	1.21	-	-
40 - 49	22.50	2.82	14.52	1.60	-	-
50 - 59	16.05	.36	12.86	2.83	-	2.51
60 & ABOVE	13.25	.96	15.48	1.24	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	77.82	4.86	60.71	7.24	-	2.51

TABLE 6.6 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Oromiya

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	.47	-	.63	-	-	1.15
18 - 20	.54	-	1.69	-	-	-
21 - 24	3.46	.77	2.72	4.42	-	.77
25 - 29	10.07	1.80	9.84	14.73	-	.51
30 - 39	21.17	2.20	32.25	31.85	-	4.03
40 - 49	24.02	5.59	25.12	27.57	-	4.89
50 - 59	17.61	1.95	24.63	18.82	-	2.61
60 & ABOVE	11.65	2.38	14.95	23.04	-	2.03
NOT STATED	-	-	-	-	-	-
TOTAL	88.99	14.69	111.83	120.43	-	15.99

TABLE 6.7 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Somalia

NUMBER IN THOUSANDS

AGE OF HOLDERS/ IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	.34	-	-	-
21 - 24	.71	-	.26	-	-	-
25 - 29	2.13	-	.86	-	-	-
30 - 39	1.42	.30	.34	-	-	-
40 - 49	-	.30	1.53	-	-	-
50 - 59	-	.32	.60	-	-	-
60 & ABOVE	-	.29	.59	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	4.26	1.21	4.52	-	-	-

TABLE 6.8 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Benshangul-Gumuz

NUMBER IN THOUSANDS

AGE OF HOLDERS/ IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	.54	-	-	-	-	-
25 - 29	.18	-	-	-	-	-
30 - 39	.44	-	.24	-	-	-
40 - 49	1.40	-	.24	-	-	-
50 - 59	1.27	-	.24	-	-	-
60 & ABOVE	.72	-	.48	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	4.55	-	1.20	-	-	-

TABLE 6.9 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

S.N.N.P.R.

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	.64	2.01	-	-
18 - 20	2.99	-	4.27	2.50	-	-
21 - 24	-	-	8.43	8.53	-	.63
25 - 29	3.54	1.49	20.24	19.96	.63	1.81
30 - 39	8.41	5.70	59.94	43.15	3.70	5.71
40 - 49	1.70	2.56	37.76	35.61	1.24	3.33
50 - 59	-	1.15	23.83	17.88	.68	1.51
60 & ABOVE	4.11	2.15	28.36	17.28	-	2.31
NOT STATED	-	-	-	-	-	-
TOTAL	20.75	13.05	183.47	146.92	6.25	15.30

TABLE 6.10 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Gambela

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	-	.14	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 39	-	.28	-	-	-	-
40 - 49	-	.43	-	-	-	-
50 - 59	-	.14	-	-	-	-
60 & ABOVE	-	-	-	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	-	.99	-	-	-	-

TABLE 6.11 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Harari

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	-	-	.11	-	-	-
25 - 29	.06	-	.05	-	-	-
30 - 39	.06	-	.51	-	-	-
40 - 49	-	-	.12	-	-	-
50 - 59	-	-	.17	-	-	-
60 & ABOVE	-	-	.06	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	.12	-	1.02	-	-	-

TABLE 6.12 ESTIMATE OF TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE FOR BELG SEASON CROPS OF PRIVATE HOLDINGS, 1995/96 (1988 E.C.)

Dire Dawa

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF BELG CROP PRODUCING HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	.17	-	-	-	-	-
21 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 39	.06	-	.06	-	-	-
40 - 49	.09	-	.10	-	-	-
50 - 59	.09	-	-	-	-	-
60 & ABOVE	-	-	-	-	-	-
NOT STATED	-	-	-	-	-	-
TOTAL	.41	-	.16	-	-	-

**APPENDIX I**  
**SURVEY QUESTIONNAIRES**







CENTRAL STATISTICAL AUTHORITY  
 NATIONAL INTEGRATED HOUSEHOLD SURVEY PROGRAM  
 AGRICULTURAL SAMPLE SURVEY - 1988 E.C.

FORM ASS-88/7A

PART 1 - IDENTIFICATION PARTICULARS

JOB ID	1	2	3	PART 1 - IDENTIFICATION PARTICULARS																									
	1	8	5																										
REGION	ZONE		WEREDA		SUPERMISION AREA		FARMERS' ASSOCIATION			ENUMERATION AREA			HOUSEHOLD ID NUMBER (ASS*88/1 prt2 col1)			HOLDER ID NUMBER (ASS*88/1 prt2 col3)		HOLDER'S NAME			SEX	AGE	EDUC. STATUS (grade comp)	NUMBER OF MEMBERS OF HOLDR'S HH.	TYPE OF AGRICULT. CROP=1 LV.STO=2 BOTH=3				
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			

PART 2- LIST OF FIELDS AND AGRICULTURAL PRACTICES (1988 E.C. BBLG SEASON)

LINE NO.	SERIAL NO.OF		CROP NAME	TEMPORARY	CODE	TYPE OF SEED USE IMPRVD=1 INDIGN.=2	USE OF IRRIG. YES=1 NO=2	USE YES=1 NO=2	USE OF FERTILIZERS				USE OF PEST- CIDES YES=1 NO=2	WAS CROP DAMAGED ?		REMARKS										
	PARCEL	FIELD							IF YES NATURL=1 COMM=2 BOTH=3	IF COMMERCIAL FERT. UREA=1 DAP=2 BOTH=3	QUANTITY USED			IF YES REASON OF DAMAGE	CODE		PERCENT DAMAGED									
			KG.	GRAMS	NO=2	NO=2																				
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
0	1																									
0	2																									
0	3																									
0	4																									
0	5																									
0	6																									
0	7																									
0	8																									
0	9																									
1	0																									

NOTES ON COL. 12 ABOVE

- ILLITERATE = 1
- GRADES 1-3 = 2
- GRADES 4-6 = 3
- GRADES 7-8 = 4
- GRADES 9-11 = 5
- GRADE 12 COMP. = 6
- ABOVE 12 GRADE = 7

NOTE: THIS FORM SHOULD BE FILLED OUT ONLY FOR TEMPORARY PURE STAND CROPS AND TEMPORARY WITH OTHER MIXED STAND CROPS.



**APPENDIX II**  
**ESTIMATION PROCEDURES OF TOTAL AND**  
**SAMPLING ERROR**



## APPENDIX II - ESTIMATION PROCEDURES OF TOTAL AND SAMPLING ERRORS

The following formula are used to estimate total area of land under specific crop where a certain agricultural input was applied in a given stratum.

**Note:-** All information on belg season agricultural activities are collected using subjective methods, by interviewing each holder in the sample 25 agricultural households. Hence the data on area for major belg season crops were usually reported in local units. There fore one has to note that before applying the estimation procedures defined here below, the reported area under a specific crop where a certain agricultural input was applied has to be converted in to standard units using conversion equivalents.

### 1. Estimating Area

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

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

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

$m_{hi}$  is number of sampled agricultural households of the  $i^{\text{th}}$  sample EA in the  $h^{\text{th}}$  stratum.

$a_{hi}$  is the sample total of area values in the  $i^{\text{th}}$  EA in the  $h^{\text{th}}$  stratum for the specific agricultural input for the specific crop.

$\hat{A}_h$  is estimate of total area under specific crop where a certain agricultural input was used in the  $h^{\text{th}}$  stratum.

## 2. To Estimate Quantity of Fertilizer

$$\hat{Q}_h = \sum_{i=1}^{n_h} W_{hi} q_{hi}$$

in which

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

is the weight given above.

where

$\hat{Q}_h$  is estimate of total quantity of a specific fertilizer applied for a specific crop land in the  $h^{\text{th}}$  stratum.

$q_{hi}$  is the sample total of quantity of a specific fertilizer applied for a specific crop land in the  $i^{\text{th}}$  EA in the  $h^{\text{th}}$  stratum.

### 3. Estimating Sampling Variance

Sampling Variance of estimate of stratum total of area for a specific crop where a certain agricultural input used and quantity of a certain fertilizer are estimated by the following formulas respectively.

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

In estimating sampling variance by the above formula, selection of EAs with in 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 procedures. Further more the finite population correction (fpc) is ignored in the formula. This is due to the fact that its effect is negligible

### 4. Estimating Coefficient of Variance

$$CV(\hat{A}_h) = \frac{\sqrt{\text{var}(\hat{A}_h)}}{\hat{A}_h} \times 100\%$$

$$CV(\hat{Q}_h) = \frac{\sqrt{\text{VAR}(\hat{Q}_h)}}{\hat{Q}_h} \times 100\%$$



**APPENDIX III**  
**STANDARD ERROR AND COEFFICIENT OF**  
**VARIATION FOR ESTIMATES**



TABLE 1.1

Estimates of Area under Improved Farm Management Practices and their Standar Error and  
Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
ETHIOPIA

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	1017.87	92.04	9.04	54.96	10.29	18.72	16.31	2.69	16.52	159.42	31.25	19.60	8.72	1.91	21.96
Teff	65.49	14.08	21.50	**	**	**	**	**	**	5.22	1.76	33.77	1.82	0.34	18.90
Barley	232.96	28.08	12.05	3.00	1.32	43.87	-	-	-	49.18	12.92	26.27	1.83	0.85	46.17
Wheat	50.34	16.39	32.56	0.84	0.41	48.89	**	**	**	**	**	**	**	**	**
Maize	570.43	75.82	13.29	44.12	9.56	21.68	13.33	2.41	18.09	63.92	11.34	17.75	3.38	1.42	41.93
Sorghum	76.27	32.17	42.18	**	**	**	**	**	**	**	**	**	**	**	**
Millet	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Oats	18.62	6.75	36.26	**	**	**	-	-	-	**	**	**	-	-	-
Pulses	104.41	19.18	18.37	0.68	0.24	34.33	**	**	**	10.96	2.37	21.60	-	-	-
Horsebeans	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	23.25	7.86	33.80	**	**	**	-	-	-	**	**	**	-	-	-
Haricot beans	54.36	16.27	29.94	**	**	**	**	**	**	9.83	2.31	23.53	-	-	-
Chick Peas	5.43	2.48	45.60	**	**	**	**	**	**	0.06	0.00	0.00	-	-	-
Lentils	18.24	4.90	26.85	**	**	**	-	-	-	**	**	**	-	-	-
Vetch	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Oil Seeds	2.79	1.20	42.90	**	**	**	-	-	-	**	**	**	-	-	-
Neug	1.41	0.63	44.88	**	**	**	-	-	-	**	**	**	-	-	-
Linseed	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	1125.06	95.69	8.51	56.28	10.36	18.40	18.07	3.13	17.31	170.42	32.25	18.92	8.72	1.91	21.96

TABLE 1.2

Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)

TIGRAY

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	**	**	**	2.15	0.78	36.50	**	**	**	0.49	0.11	22.75	0.18	0.00	0.00
Teff	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Barley	**	**	**	**	**	**	-	-	-	**	**	**	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	2.13	0.98	46.13	2.13	0.80	37.40	**	**	**	0.38	0.17	43.90	0.18	0.00	0.00
Sorghum	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	**	**	**	2.22	0.75	34.02	**	**	**	0.49	0.11	22.75	0.18	0.00	0.00

TABLE 1.3

Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
AFAR

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate C.V	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	4.15	1.18	28.48	0.20	0.00	0.00	-	-	-	0.06	0.00	0.00	0.13	0.05	40.79
Teff	3.92	1.24	31.72	0.04	0.00	0.00	-	-	-	0.06	0.00	0.00	0.13	0.05	40.79
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	0.16	0.00	0.00	-	-	-	-	-	-	-	-	-
Sorghum	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	**	**	**	-	-	-	-	-	-	0.12	0.00	0.00	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	**	**	**	-	-	-	-	-	-	0.06	0.00	0.00	-	-	-
Chick Peas	**	**	**	-	-	-	-	-	-	0.06	0.00	0.00	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	5.52	1.95	35.23	0.20	0.00	0.00	-	-	-	0.18	0.00	0.00	0.13	0.05	40.79

TABLE 1.4

Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
AMHARA

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate S.E C.V C.V ('000) (%)	Estimate S.E C.V ('000) (%)	Estimate S.E C.V ('000 HA) ('000) (%)			
Cereals	117.32	17.37	14.81	12.36	2.88	23.31	0.14	0.02	16.12	10.38	3.99	38.43	**	**	**
Teff	20.22	5.54	27.41	**	**	**	0.04	0.00	0.00	0.64	0.22	34.56	-	-	-
Barley	75.36	17.62	23.37	**	**	**	-	-	-	8.67	3.98	45.91	**	**	**
Wheat	7.12	2.58	36.21	**	**	**	**	**	**	**	**	**	-	-	-
Maize	7.90	2.54	32.16	5.69	1.67	29.42	0.09	0.04	45.07	0.41	0.11	27.31	-	-	-
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Millet	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Oats	6.04	1.90	31.44	**	**	**	-	-	-	**	**	**	-	-	-
Pulses	29.71	6.57	22.10	0.37	0.18	49.14	**	**	**	**	**	**	-	-	-
Horsebeans	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	8.66	2.72	31.41	**	**	**	-	-	-	**	**	**	-	-	-
Haricot beans	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-
Lentils	14.71	4.69	31.87	**	**	**	-	-	-	**	**	**	-	-	-
Vetch	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Oil Seeds	1.05	0.42	39.55	**	**	**	-	-	-	**	**	**	-	-	-
Neug	**	**	**	**	**	**	-	-	-	**	**	**	-	-	-
Linseed	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	148.08	20.38	13.77	13.37	3.15	23.56	0.16	0.01	7.42	10.87	4.15	38.12	**	**	**

TABLE 1.5

Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
 OROMIYA

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate C.V ('000)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	483.08	67.51	13.98	27.52	9.65	35.06	5.12	2.09	40.71	75.94	24.03	31.64	5.31	1.73	32.63
Teff	22.12	8.91	40.30	—	—	—	—	—	—	3.26	1.60	49.13	**	**	**
Barley	141.52	21.57	15.24	**	**	**	—	—	—	34.26	12.03	35.12	**	**	**
Wheat	41.39	16.17	39.06	**	**	**	**	**	**	**	**	**	**	**	**
Maize	259.17	60.41	23.31	25.47	9.11	35.75	**	**	**	14.28	3.01	21.06	**	**	**
Sorghum	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Millet	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Oats	**	**	**	—	—	—	—	—	—	**	**	**	—	—	—
Pulses	35.78	9.14	25.56	**	**	**	**	**	**	2.71	0.93	34.50	—	—	—
Horsebeans	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Field Peas	**	**	**	—	—	—	—	—	—	**	**	**	—	—	—
Haricot beans	16.29	4.81	29.51	**	**	**	**	**	**	2.10	0.82	39.20	—	—	—
Chick Peas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lentils	3.51	1.42	40.44	—	—	—	—	—	—	—	—	—	—	—	—
Vetch	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Oil Seeds	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Neug	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Linseed	**	**	**	—	—	—	—	—	—	—	—	—	—	—	—
Rapeseed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fenugreek	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ground nuts	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sun flower	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sesame	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Castor beans	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All Crops	520.59	69.50	13.35	27.74	9.64	34.74	6.86	2.62	38.23	78.65	24.43	31.06	5.31	1.73	32.63

TABLE 1.6 Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.) SOMALIE

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate C.V	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	**	**	**	2.31	0.00	0.00	**	**	**	0.84	0.28	33.33	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Maize	**	**	**	2.31	0.00	0.00	**	**	**	0.84	0.28	33.33	-	-	-
Sorghum	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	**	**	**	2.31	0.00	0.00	**	**	**	0.84	0.28	33.33	-	-	-

TABLE 1.7

Estimates of Area under Improved Farm Management Practices and their Standar Error and  
Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
BENISHANGUL-GUMEZ

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate C.V	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	**	**	**	**	**	**	-	-	-	0.27	0.00	0.00	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	**	**	**	-	-	-	0.27	0.00	0.00	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Noug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	**	**	**	**	**	**	-	-	-	0.27	0.00	0.00	-	-	-

TABLE 1.8 Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.) S.N.N.P.R.

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	320.34	49.77	15.54	9.59	1.93	20.14	3.18	1.10	34.69	71.40	19.58	27.43	2.98	0.81	27.16
Teff	**	**	**	-	-	-	-	-	-	**	**	**	1.11	0.00	0.00
Barley	15.00	3.45	23.04	-	-	-	-	-	-	6.13	2.50	40.84	**	**	**
Wheat	**	**	**	-	-	-	-	-	-	**	**	**	-	-	-
Maize	242.04	36.58	15.11	7.55	2.22	29.44	2.36	0.74	31.37	47.70	10.93	22.92	0.56	0.27	48.68
Sorghum	**	**	**	**	**	**	**	**	**	**	**	**	-	-	-
Millet	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	36.83	15.49	42.06	-	-	-	-	-	-	7.33	2.16	29.42	-	-	-
Horsebeans	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	35.28	15.49	43.92	-	-	-	-	-	-	7.33	2.16	29.42	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	357.18	52.67	14.75	9.59	1.93	20.14	3.18	1.10	34.69	78.73	20.64	26.22	2.98	0.81	27.16

TABLE 1.9

Estimates of Area under Improved Farm Management Practices and their Standar Error and  
Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
GAMBELA

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate C.V ( <sup>'000</sup> )	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)
Cereals	**	**	**	-	-	-	5.49	0.00	0.00	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	-	-	-	5.49	0.00	0.00	-	-	-	-	-	-
Sorghum	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	**	**	**	-	-	-	5.49	0.00	0.00	-	-	-	-	-	-

TABLE 1.10

Estimates of Area under Improved Farm Management Practices and their Standar Error and  
Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
HARARI

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate C.V	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> HA)	S.E ( <sup>'000</sup> )	C.V (%)
Cereals	**	**	**	-	-	-	-	-	-	**	**	**	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	-	-	-	-	-	-	**	**	**	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	0.64	0.29	45.78	0.02	0.00	0.00	-	-	-	0.34	0.16	45.72	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	0.64	0.29	45.78	0.02	0.00	0.00	-	-	-	0.34	0.16	45.72	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.64	0.30	46.03	0.02	0.00	0.00	-	-	-	0.35	0.16	46.42	-	-	-

TABLE 1.11

Estimates of Area under Improved Farm Management Practices and their Standar Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
DIRE DAWA

Variable	Total Area			Irrigation applied Area			Improved Seed Applied Area			Fertilizer Applied Area			Pesticide Applied Area		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate C.V	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	0.49	0.22	44.47	**	**	**	-	-	-	**	**	**	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	0.25	0.11	44.02	0.03	0.01	22.74	-	-	-	**	**	**	-	-	-
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.49	0.22	44.47	**	**	**	-	-	-	**	**	**	-	-	-

TABLE 2.1 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.) ETHIOPIA

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	159.42	31.25	19.60	57.87	17.15	29.64	100.63	25.10	24.95	2.81	0.83	29.49	94.16	24.75	26.28	3.66	0.55	15.03	0.92	0.32	35.27
Teff	5.22	1.76	33.77	0.67	0.26	39.70	4.56	1.67	36.73	**	**	**	3.49	1.49	42.58	0.52	0.00	0.00	-	-	-
Barley	49.18	12.92	26.27	8.69	2.72	31.24	40.16	12.31	30.64	**	**	**	39.79	12.00	30.16	-	-	-	**	**	**
Wheat	**	**	**	**	**	**	**	**	**	0.02	0.00	0.00	**	**	**	**	**	**	-	-	-
Maize	63.92	11.34	17.75	31.16	5.34	17.13	32.16	8.28	25.73	1.88	0.67	35.61	27.87	8.05	28.86	2.41	1.17	48.56	0.59	0.21	35.35
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	**	**	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Pulses	10.96	2.37	21.60	4.80	1.14	23.81	6.16	1.84	29.84	0.62	0.31	49.22	5.47	1.82	33.24	**	**	**	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	**	**	**	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Haricot beans	9.83	2.31	23.53	4.28	1.12	26.13	5.55	1.78	32.14	0.62	0.31	49.22	4.86	1.76	36.28	**	**	**	-	-	-
Chick Peas	0.06	0.00	0.00	0.06	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	170.42	32.25	18.92	62.71	17.40	27.75	106.79	25.85	24.21	3.43	1.06	30.86	99.63	25.46	25.55	3.73	0.55	14.85	0.92	0.32	35.27

TABLE 2.2 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.)  
TIGRAY

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	0.49	0.11	22.75	0.25	0.04	14.85	**	**	**	0.05	0.00	0.00	-	-	-	0.18	0.00	0.00	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	0.38	0.17	43.90	**	**	**	**	**	**	0.05	0.00	0.00	-	-	-	0.18	0.00	0.00	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.49	0.11	22.75	0.25	0.04	14.85	**	**	**	0.05	0.00	0.00	-	-	-	0.18	0.00	0.00	-	-	-



TABLE 2.4 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.) AMHARA

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	10.38	3.99	38.43	8.32	2.57	30.88	2.06	0.00	0.00	0.03	0.00	0.00	1.99	0.00	0.00	0.03	0.00	0.00	-	-	-
Teff	0.64	0.22	34.56	0.61	0.26	43.64	0.04	0.00	0.00	0.02	0.00	0.00	-	-	-	0.02	0.00	0.00	-	-	-
Barley	8.67	3.98	45.91	6.90	2.67	38.63	1.77	0.00	0.00	-	-	-	1.77	0.00	0.00	-	-	-	-	-	-
Wheat	**	**	**	**	**	**	0.02	0.00	0.00	0.02	0.00	0.00	-	-	-	-	-	-	-	-	-
Maize	0.41	0.11	27.31	**	**	**	0.24	0.00	0.00	-	-	-	0.22	0.00	0.00	0.01	0.00	0.00	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	10.87	4.15	38.12	8.81	2.76	31.28	2.06	0.00	0.00	0.03	0.00	0.00	1.99	0.00	0.00	0.03	0.00	0.00	-	-	-

TABLE 2.5 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.) OROMIYA

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	75.94	24.03	31.64	10.15	1.97	19.41	65.79	23.79	36.16	0.80	0.11	13.67	63.05	23.47	37.23	1.94	0.38	19.48	-	-	-
Teff	3.26	1.60	49.13	-	-	-	3.26	1.60	49.13	**	**	**	3.06	1.47	47.84	-	-	-	-	-	-
Barley	34.26	12.03	35.12	1.25	0.33	26.03	33.02	12.08	36.58	**	**	**	32.85	11.76	35.79	-	-	-	-	-	-
Wheat	**	**	**	**	**	**	**	**	**	-	-	-	**	**	**	**	**	**	-	-	-
Maize	14.28	3.01	21.06	8.49	2.08	24.51	5.78	2.40	41.45	0.44	0.14	32.17	**	**	**	**	**	**	-	-	-
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	**	**	**	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Pulses	2.71	0.93	34.50	2.10	0.78	37.29	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	-	-	-	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-
Haricot beans	2.10	0.82	39.20	2.10	0.78	37.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	78.65	24.43	31.06	12.25	2.35	19.15	66.40	24.11	36.32	0.80	0.11	13.67	63.66	23.79	37.37	1.94	0.38	19.48	-	-	-

TABLE 2.6 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.)  
SOMALIE

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	0.84	0.28	33.33	0.84	0.28	33.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	0.84	0.28	33.33	0.84	0.28	33.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.84	0.28	33.33	0.84	0.28	33.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2.7 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.)  
BENISHANGUL-GUMEZ

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	0.27	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	0.27	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.27	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2.8 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.) S.N.N.P.R.

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)	Estimate ( <sup>000</sup> HA)	S.E ( <sup>000</sup> )	C.V (%)
Cereals	71.40	19.58	27.43	37.93	16.84	44.40	32.55	8.03	24.66	1.93	0.82	42.61	29.11	7.85	26.95	1.51	0.40	26.53	0.92	0.32	35.27
Teff	**	**	**	-	-	-	1.26	0.49	38.94	**	**	**	**	**	**	0.50	0.00	0.00	-	-	-
Barley	6.13	2.50	40.84	**	**	**	5.38	2.38	44.20	**	**	**	5.17	2.40	46.50	-	-	-	**	**	**
Wheat	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	47.70	10.93	22.92	21.20	4.90	23.14	25.91	7.92	30.57	1.39	0.65	47.15	23.52	7.75	32.97	1.01	0.40	39.78	0.59	0.21	35.35
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	7.33	2.16	29.42	1.78	0.78	44.05	5.55	1.78	32.14	0.62	0.31	49.22	4.86	1.76	36.28	**	**	**	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	7.33	2.16	29.42	1.78	0.78	44.05	5.55	1.78	32.14	0.62	0.31	49.22	4.86	1.76	36.28	**	**	**	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	78.73	20.64	26.22	39.71	17.02	42.86	38.10	9.32	24.46	2.55	1.05	41.32	33.98	9.07	26.68	1.58	0.41	25.72	0.92	0.32	35.27

TABLE 2.9 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.) HARARI

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	0.34	0.16	45.72	0.34	0.16	45.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	0.34	0.16	45.72	0.34	0.16	45.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	0.35	0.16	46.42	0.35	0.16	46.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2.10 Estimates of Fertilizer Applied Area by type of Fertilizer and their Standard Error and Coefficient of Variation for Belg Season crops of Private Holdings, 1995/96(1988 E.C.)  
DIRE DAWA

Variable	Total			Natural			Commercial			Urea			Dap			Dap+Urea			Both(Nat+Com)		
	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)	Estimate ('000 HA)	S.E ('000)	C.V (%)
Cereals	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horsebeans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Crops	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 3.1

Estimates of Quantity of Fertilizer Applied by type of Fertilizer  
their Standard Error and Coefficient of Variation for Private Holdings,1995/96(1988 E.C.)

ETHIOPIA

Type of Crop	Total			Urea			Dap			Dap+Urea		
	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)
CEREALS	63.95	110.56	17.29	1.55	4.38	28.45	56.60	109.42	19.33	5.81	6.61	11.36
Teff	1.84	5.62	30.61	**	**	**	0.93	4.20	45.38	0.64	0.00	0.00
Barley	26.62	80.21	30.13	**	**	**	26.25	78.92	30.07	-	-	-
Wheat	**	**	**	0.02	0.00	0.00	**	**	**	**	**	**
Maize	26.87	65.90	24.53	0.88	3.55	40.29	21.59	63.31	29.33	4.40	11.90	27.02
Sorghum	**	**	**	-	-	-	**	**	**	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	-	-	-	**	**	**	-	-	-
PULSES	3.28	12.70	38.71	**	**	**	2.90	12.47	43.02	**	**	**
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	**	**	**	-	-	-	**	**	**	-	-	-
Haricot beans	3.20	12.68	39.58	**	**	**	2.82	12.45	44.13	**	**	**
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
OILSEEDS	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Castor Beans	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	67.23	116.07	17.26	1.91	5.13	26.95	59.50	114.86	19.31	5.83	6.44	11.03

TABLE 3.2

## Estimates of Quantity of Fertilizer Applied by type of Fertilizer

their Standard Error and Coefficient of Variation for Private Holdings,1995/96(1988 E.C.)

TIGRAY

Type of Crop	Total			Urea			Dap			Dap+Urea		
	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)
CEREALS	**	**	**	0.02	0.00	0.00	-	-	-	0.37	0.00	0.00
Teff	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	0.02	0.00	0.00	-	-	-	0.37	0.00	0.00
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
OILSEEDS	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Castor Beans	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	**	0.02	0.00	0.00	-	-	-	0.37	0.00	0.00

TABLE 3.3

Estimates of Quantity of Fertilizer Applied by type of Fertilizer  
their Standard Error and Coefficient of Variation for Private Holdings,1995/96(1988 E.C.)

AMHARA

Type of Crop	Total			Urea			Dap			Dap+Urea		
	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)
CEREALS	1.76	0.00	0.00	0.05	0.00	0.00	1.67	0.00	0.00	0.04	0.00	0.00
Teff	0.06	0.00	0.00	0.03	0.00	0.00	-	-	-	0.03	0.00	0.00
Barley	1.12	0.00	0.00	-	-	-	1.12	0.00	0.00	-	-	-
Wheat	0.02	0.00	0.00	0.02	0.00	0.00	-	-	-	-	-	-
Maize	0.56	0.00	0.00	-	-	-	0.55	0.00	0.00	0.01	0.00	0.00
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
OILSEEDS	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Castor Beans	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.76	0.00	0.00	0.05	0.00	0.00	1.67	0.00	0.00	0.39	0.00	0.00

TABLE 3.4

Estimates of Quantity of Fertilizer Applied by type of Fertilizer  
their Standard Error and Coefficient of Variation for Private Holdings, 1995/96(1988 E.C.)

OROMIYA

Type of Crop	Total			Urea			Dap			Dap+Urea		
	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)	Estimate ( <sup>'000</sup> QT)	S.E ( <sup>'000</sup> )	C.V (%)
CEREALS	33.68	90.27	26.81	0.65	2.51	39.02	31.15	90.11	28.93	1.87	2.50	13.31
Teff	**	**	**	**	**	**	**	**	**	-	-	-
Barley	21.04	78.35	37.25	**	**	**	20.74	77.01	37.14	-	-	-
Wheat	**	**	**	-	-	-	**	**	**	**	**	**
Maize	3.12	13.22	42.41	**	**	**	**	**	**	**	**	**
Sorghum	**	**	**	-	-	-	**	**	**	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	**	**	**	-	-	-	**	**	**	-	-	-
PULSES	**	**	**	-	-	-	**	**	**	-	-	-
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	**	**	**	-	-	-	**	**	**	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
OILSEEDS	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Castor Beans	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	33.76	90.60	26.85	0.65	2.51	39.02	31.23	90.43	28.96	1.87	2.50	13.31

TABLE 3.5

Estimates of Quantity of Fertilizer Applied by type of Fertilizer  
their Standard Error and Coefficient of Variation for Private Holdings,1995/96(1988 E.C.)

S.N.N.P.R

Type of Crop	Total			Urea			Dap			Dap+Urea		
	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)	Estimate ('000 QT)	S.E ('000)	C.V (%)
CEREALS	28.14	63.74	22.66	0.82	3.59	43.35	23.77	62.06	26.11	3.54	6.12	17.29
Teff	0.86	1.48	17.26	**	**	**	**	**	**	0.62	0.00	0.00
Barley	4.47	17.17	38.42	**	**	**	4.39	17.23	39.25	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-
Maize	22.81	64.47	28.27	**	**	**	19.21	62.59	32.58	2.92	6.12	20.94
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	3.20	12.68	39.58	**	**	**	2.82	12.45	44.13	**	**	**
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	3.20	12.68	39.58	**	**	**	2.82	12.45	44.13	**	**	**
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
OILSEEDS	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Groundnuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Castor Beans	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	31.34	72.46	23.12	1.18	4.47	37.54	26.59	70.81	26.63	3.56	5.94	16.67

TABLE 4.1 Estimates of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
ETHIOPIA

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)
CEREALS	76.67	6.17	7.82	539.19	33.33	6.16	164.50	24.58	14.94	86.07	16.56	22.73	80.96	24.47	30.22	19.10	9.33	48.87	49.19	0.00	0.00	1017.67	92.04	9.04
Teff	5.12	1.77	34.52	48.75	10.47	22.41	9.05	3.50	38.68	4.57	0.00	0.00	-	-	-	-	-	-	-	-	-	65.49	14.08	21.50
Barley	23.93	3.61	15.09	185.58	19.41	11.72	34.42	9.86	28.66	7.19	3.43	47.71	1.64	0.00	0.00	-	-	-	-	-	-	232.96	26.08	12.05
Wheat	3.70	0.95	25.57	32.14	10.17	31.64	4.78	1.88	41.56	**	**	**	**	**	**	5.59	0.00	0.00	-	-	-	50.34	16.39	32.56
Maize	40.78	3.68	9.52	255.30	18.89	7.40	90.46	20.82	22.79	58.05	16.41	28.27	63.14	24.84	39.34	**	**	**	49.19	0.00	0.00	570.43	75.82	13.29
Sorghum	0.94	0.29	30.33	26.98	8.33	30.67	23.85	3.95	16.55	**	**	**	10.86	1.01	9.28	-	-	-	-	-	-	76.27	32.17	42.18
Millet	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Oats	3.55	0.95	24.85	10.40	2.89	27.80	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	18.82	6.75	36.26
PULSES	19.89	2.54	12.79	58.04	9.12	16.28	8.84	2.88	32.55	**	**	**	**	**	**	**	**	**	-	-	-	104.41	19.18	18.37
Horse Beans	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Field Peas	4.14	1.10	26.54	17.07	7.25	42.44	**	**	**	-	-	-	-	-	-	-	-	-	-	-	23.25	7.86	33.80	
Haricot Beans	10.33	1.64	15.89	22.59	3.85	17.03	**	**	**	**	**	**	**	**	**	**	**	**	-	-	-	54.36	16.27	29.94
Chick Peas	**	**	**	4.85	2.06	44.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.43	2.48	45.60
Lentils	3.86	1.00	25.85	9.82	3.15	32.08	2.29	1.10	47.94	**	**	**	-	-	-	-	-	-	-	-	-	18.24	4.90	26.85
Vetch	0.20	0.10	49.14	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
OTHERS	1.00	0.39	38.28	1.26	0.58	45.30	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	2.79	1.20	42.90
Neug	**	**	**	0.77	0.32	40.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.41	0.63	44.88
Lin Seed	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenu Geek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caster Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	89.76	7.70	7.72	596.51	36.45	6.11	173.85	24.29	13.97	82.83	18.85	21.39	90.83	23.47	25.90	22.29	7.87	35.29	49.19	0.00	0.00	1125.06	95.68	8.51

TABLE 4.2 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
TIGRAY

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	**	**	**	**	**	**	6.67	0.00	0.00	4.97	0.00	0.00	-	-	-	-	-	-	-	-	-	**	**	**
Teff	-	-	-	**	**	**	1.41	0.00	0.00	2.71	0.00	0.00	-	-	-	-	-	-	-	-	-	**	**	**
Barley	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	1.57	0.69	44.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.13	0.68	46.13
Sorghum	-	-	-	**	**	**	525	0.00	0.00	2.26	0.00	0.00	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Haricot Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.31	0.65	49.63	**	**	**	6.67	0.00	0.00	4.97	0.00	0.00	-	-	-	-	-	-	-	-	-	**	**	**

TABLE 4.3 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation  
for Belg Season Crops of Private Holdings, 1995/96(1985 E.C.)  
AFAR

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	**	**	**	2.68	0.87	30.54	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	4.15	1.18	28.48
Teff	**	**	**	2.71	0.82	33.90	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	3.92	1.24	31.72
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Maize	-	-	-	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Sorghum	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Bean	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Chick Peas	0.02	0.01	44.52	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenu Greek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caster Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	**	4.11	1.61	39.09	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	5.82	1.95	35.23

TABLE 4.4 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation  
for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
AMHARA

TYPE OF CROP	Area Size groups in Hectares																		TOTAL					
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			ESTIMATE	SE	C.V
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	23.56	4.40	18.67	79.90	11.89	14.93	12.96	4.32	33.31	**	**	**	-	-	-	-	-	-	-	-	-	117.32	17.37	14.81
Teff	4.25	1.73	40.74	13.26	3.57	26.89	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	20.22	5.54	27.41
Barley	12.30	3.02	24.55	52.76	11.96	22.66	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	75.36	17.62	23.37
Wheat	2.34	0.84	35.83	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.12	2.58	36.21
Maize	2.09	0.72	34.44	4.90	2.20	44.83	0.90	0.20	22.70	-	-	-	-	-	-	-	-	-	-	-	-	7.90	2.54	32.16
Sorghum	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Oats	2.54	0.89	34.89	3.24	1.35	41.65	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	6.04	1.90	31.44
PULSES	6.91	1.80	23.06	17.22	4.03	23.43	3.32	1.43	43.17	**	**	**	-	-	-	-	-	-	-	-	-	29.71	6.57	22.10
Horse Beans	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Field Peas	2.64	0.91	34.57	4.51	1.58	35.14	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	5.66	2.72	31.41
Haricot Bean	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Chick Peas	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Lentils	3.06	0.90	29.26	7.89	3.00	38.07	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	14.71	4.69	31.87
Vetch	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
OLSEEDS	0.57	0.25	44.69	0.49	0.24	48.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.05	0.42	39.55
Neug	**	**	**	0.49	0.24	48.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Lin Seed	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caster Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CROPS-ALL	31.04	5.71	18.39	97.30	12.82	13.17	16.28	3.91	24.04	3.47	1.37	39.36	-	-	-	-	-	-	-	-	-	148.08	20.36	13.77

TABLE 4.5 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.) OROMIYA

TYPE OF CROP	Area Size groups in Hectares																		TOTAL					
	UNDER 0.1			0.1 -0.5			0.51 -1.00			1.01 -2.00			2.01 -5.00			5.01 -10.00			10.01 & OVER			ESTIMATE	SE	C.V
	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V			
('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	
CEREALS	32.70	3.48	10.68	278.25	26.64	9.58	81.30	23.19	28.53	32.54	10.42	32.01	7.10	3.13	44.00	7.27	0.00	0.00	43.91	0.00	0.00	483.08	67.51	13.98
Teff	0.31	0.13	42.52	18.01	8.19	45.48	1.94	0.53	27.22	1.87	0.00	0.00	-	-	-	-	-	-	-	-	-	22.12	8.91	40.30
Barley	9.05	1.76	19.49	101.78	15.00	14.74	24.71	8.72	35.29	**	**	**	-	-	-	-	-	-	-	-	-	141.52	21.57	15.24
Wheat	1.28	0.44	33.93	25.60	9.85	38.46	4.78	1.98	41.56	**	**	**	**	**	**	5.59	0.00	0.00	-	-	-	41.39	16.17	39.06
Maize	20.47	2.95	14.44	123.35	16.00	12.97	45.71	19.81	43.34	22.07	9.85	43.70	**	**	**	1.88	0.00	0.00	43.91	0.00	0.00	259.17	60.41	23.31
Sorghum	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Oats	1.31	0.33	25.49	7.16	2.56	35.70	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	**	**	**
PULSES	8.34	1.70	20.43	24.69	7.71	31.21	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	35.78	9.14	25.58
Horse Beans	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Field Peas	1.35	0.60	44.80	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Haricot Bean	5.55	1.25	22.48	8.81	2.66	30.21	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	16.29	4.81	29.51
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	**	**	**	1.93	0.96	49.44	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	3.51	1.42	40.44
Vetch	0.20	0.10	49.14	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
OLSEEDS	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Neug	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Lin Seed	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenu Geek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caster Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	41.47	4.37	10.53	303.73	29.64	9.76	84.55	22.88	27.07	32.54	10.42	32.01	7.10	3.13	44.00	7.27	0.00	0.00	43.91	0.00	0.00	520.59	69.50	13.35

TABLE 4.6 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1995 E.C.)  
SOMALIE

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	1.18	0.36	30.60	5.06	0.64	12.74	6.23	2.80	34.07	5.37	1.26	23.42	**	**	**	-	-	-	-	-	-	**	**	**
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Wheat	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Maize	1.02	0.37	36.62	4.11	0.83	20.21	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	**	**	**
Sorghum	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenu Gieek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.18	0.36	30.60	5.06	0.64	12.74	6.23	2.80	34.07	5.37	1.26	23.42	**	**	**	-	-	-	-	-	-	**	**	**

TABLE 4.7 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1995 E.C.)  
BENSHANGUL - GUMUZ

TYPE OF CROP	Area Size groups in Hectares																		TOTAL					
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			ESTIMATE	SE	C.V
	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)
CEREALS	**	**	**	2.96	0.80	27.06	2.69	0.00	0.00	**	**	**	2.09	0.00	0.00	-	-	-	-	-	-	**	**	**
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	**	**	**	2.96	0.80	27.06	2.69	0.00	0.00	**	**	**	2.09	0.00	0.00	-	-	-	-	-	-	**	**	**
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hartcot Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundN uts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	**	**	**	2.96	0.80	27.06	2.69	0.00	0.00	**	**	**	2.09	0.00	0.00	-	-	-	-	-	-	**	**	**

TABLE 4.8 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1968 E.C.) S.N.P.R.

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)	ESTIMATE ( <sup>000</sup> HA)	SE ( <sup>000</sup> )	C.V (%)
CEREALS	19.76	2.44	12.34	154.50	13.20	8.55	51.49	6.27	12.18	37.71	16.02	42.49	45.49	9.83	21.81	**	**	**	-	-	-	320.34	49.77	15.54
Teff	**	**	**	4.97	1.84	36.95	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Barley	1.85	0.61	33.15	10.71	2.94	27.47	**	**	**	-	-	-	1.84	0.00	0.00	-	-	-	-	-	-	15.00	3.45	23.04
Wheat	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Maize	16.53	2.36	14.25	117.44	9.89	8.25	35.43	4.66	13.21	27.43	12.50	45.56	33.81	9.83	29.07	**	**	**	-	-	-	242.04	36.58	15.11
Sorghum	0.56	0.20	34.55	17.95	6.26	34.87	13.34	1.57	11.80	**	**	**	9.54	0.00	0.00	**	**	**	-	-	-	**	**	**
Millet	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	4.42	1.00	22.61	12.33	2.60	21.10	**	**	**	**	**	**	**	**	**	**	**	**	-	-	-	36.83	15.49	42.06
Horse Beans	**	**	**	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Field Peas	**	**	**	**	**	**	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Haricot Bean	4.26	1.00	23.45	11.89	2.62	22.03	**	**	**	**	**	**	**	**	**	**	**	**	-	-	-	35.28	15.49	43.82
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	24.19	2.65	10.95	166.83	14.10	8.45	54.20	6.53	12.05	42.20	16.35	38.73	55.17	7.00	12.70	**	**	**	-	-	-	357.18	52.67	14.75

TABLE 4.9 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.)  
GAMBELA

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	0.02	0.01	40.29	0.63	0.30	47.64	0.16	0.04	21.29	-	-	-	-	-	-	0.44	0.00	0.00	5.28	0.00	0.00	**	**	**
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	0.02	0.01	43.07	0.63	0.30	47.64	**	**	**	-	-	-	-	-	-	0.44	0.00	0.00	5.28	0.00	0.00	**	**	**
Sorghum	-	-	-	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Se same	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	0.02	0.01	40.29	0.63	0.30	47.64	0.16	0.04	21.29	-	-	-	-	-	-	0.44	0.00	0.00	5.28	0.00	0.00	**	**	**

TABLE 4.10 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation for Belg Season Crops of Private Holdings, 1995/96(1988 E.C.) HARARI

TYPE OF CROP	Area Size groups in Hectares																							
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			TOTAL		
	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)	ESTIMATE ('000HA)	SE ('000)	C.V (%)
CEREALS	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	0.02	0.01	30.51	0.54	0.27	49.44	0.08	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.64	0.29	45.78
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Bean	0.02	0.01	30.51	0.54	0.27	49.44	0.08	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.64	0.29	45.78
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundNuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	0.03	0.01	41.77	0.54	0.27	49.44	0.08	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.65	0.30	46.03

TABLE 4.11 Estimate of Area by Area size groups and their Standard Error and Coefficient of Variation  
for Belg Season Crops of Private Holdings, 1995/96(1985 E.C.)  
DIFE DAWA

TYPE OF CROP	Area Size groups in Hectares																		TOTAL					
	UNDER 0.1			0.1-0.5			0.51-1.00			1.01-2.00			2.01-5.00			5.01-10.00			10.01 & OVER			ESTIMATE	SE	C.V
	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V	ESTIMATE	SE	C.V			
('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	('000HA)	('000)	(%)	
CEREALS	-	-	-	0.49	0.19	39.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.49	0.22	44.47
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	0.25	0.10	39.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.11	44.02
Sorghum	-	-	-	**	**	**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**	**	**
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLSEEDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lin Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rape Seed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GroundN uts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Se same	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castor Bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	-	-	-	0.49	0.19	39.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.49	0.22	44.47