

THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
CENTRAL STATISTICAL AUTHORITY

AGRICULTURAL SAMPLE SURVEY
1998/99 (1991 E.C.)

REPORT ON

FARM MANAGEMENT PRACTICES
OF BELG SEASON CROPS

FOR
1998/99 (1991 E.C.)

(Private Peasant Holdings)

VOLUME VII

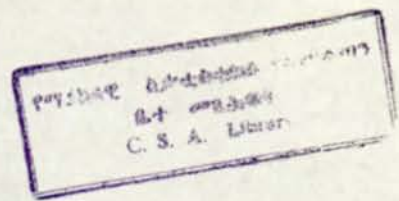
Addis Ababa
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ABBREVIATIONS

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

PART I

INTRODUCTION AND OBJECTIVE OF THE SURVEY

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 1998/99(1991 E.C.) of the private peasant holdings for the country and regions as it was obtained from the results of the Belg agricultural sample survey conducted in May 1999 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 1998/99(1991 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 1998/99(1991 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 1998/99(1991 E.C.) Belg season.

2. OBJECTIVE OF THE SURVEY

The general objective of the survey is to collect basic quantitative information on Ethiopia's agriculture. This information is essential for development planning and socio-economic policy formulation.

In a micro-perspective, the objectives of this Survey are to estimate the total cultivated land; total production and yield per hectare of major crops for both the Meher and Belg Seasons. Data on area under different land uses; and quantity and cost of agricultural inputs by type for both seasons is also collected. From the sample, the number of livestock and poultry by type, purpose, sex and age; and, number of beehives in the private peasant holdings are estimated at the national, regional and zonal levels.

PART II

SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING

1. SCOPE COVERAGE AND CONTENT OF THE SURVEY

The 1998/99 (1991 E.C.) annual Agricultural Sample Survey covers only sedentary rural agricultural population in all regions of the country. A total of 56 zones and 409 Weredas were covered in the survey. The areal coverage of the survey is given in page 5.

A total of 1,450 enumeration areas were selected to be covered in the survey in all regions. However, during the data collection stage the survey succeeded to cover only 1,428 enumeration areas (EAs) for Belg Season Survey. In each EA a sample of 40 agricultural households were selected where only the first 25 sample agricultural households were used for obtaining information on farm management practices.

2. SAMPLE DESIGN

A two-stage stratified sample design is used for the 1998/99 (1991 E.C.) Annual Agricultural Sample Survey. All regions except Harari, Addis Ababa, Dire Dawa and Gambella are broken into zones and treated as strata/reporting levels for survey summarization purposes, but for the four mentioned regions, the reporting levels are the regions themselves. The sample design first-stage consists of primary sampling units (PSUs) in all strata which are enumeration areas (EAs). The second-stage sampling units are agricultural households selected as the secondary level sampling units. The survey questionnaires are administered to all

agricultural holders in the sampled agricultural households.

Based on cost and field enumeration considerations, a fixed number of sample EAs were allocated to each stratum / reporting level taking into consideration the desired precision of the estimates and number of households per stratum. The overall sample number of EAs in a stratum was proportionately allocated to zones/special weredas within stratum based on their number of households. From within each Zone/Special Wereda sample EAs were selected with probability proportional to size, size being the total number of households identified for EAs as obtained from the 1994 Population Census. From each sample EA, 25 agricultural households were sampled systematically without replacement from a newly enumerated list of agricultural households.

Information was collected from the first twenty-five households except for crop-cutting data which is collected from only the last 15 agricultural households, starting from the 11th selected agricultural households. Data is collected on separate questionnaires from each holder within these twenty-five sampled households.

The estimation formulation procedures for totals and ratios of the agricultural variables estimated and the measure of their precision are presented in the **Appendix I**.

AREAL COVERAGE OF THE 1998/99 (1991 E.C.)

AGRICULTURAL SAMPLE SURVEY

REGION	NUMBER OF ZONES		NUMBER OF WEREDAS	
	Total	COVERED IN THE SURVEY	Total	COVERED IN THE SURVEY
TIGRAY ¹	5	4	34	33
AFAR ²	5	3	8	7
AMHARA	11	10	93	93
OROMIA	12	12	174	171
SOMALIE ³	9	3	9	9
BENISHANGUL-GUMUZ	3	3	20	18
S.N.N.P.R	14	14	74	73
GAMBELA	4	3	5	5
HARARI	1	1	1	1
ADDIS ABABA ⁴	6	2	5	5
DIRE DAWA	1	1	1	1
TOTAL	71	56	424	416

Notes

1. In Tigray Region, four out of five zones have rural settled population. The remaining one zone the entire population is urban resident.
2. Afar Region has a total of five zones, however only two zones have significant rural sedentary population.
3. Somalie Region has a total of nine zones, however only three zones have significant rural sedentary population.
4. Addis Ababa has a total of six zones, however, only two zones have rural settled population. In the remaining four zones the entire population is urban resident.

3. FIELD ORGANIZATION

CSA Branch Statistical Office heads, field supervisors and enumerators, other support staff and drivers were all involved in the conduct of the AgSS area and production survey data collection effort. To accomplish the data collection all field enumerators were equipped with the necessary survey equipment i.e. compass, protractor, ruler, measuring tape, balance scale, poles, ropes, sample bags, ...etc.) at the completion of training. To assist with the field work and data collection activities all available four-wheel drive vehicles were used for supervision and collection of completed questionnaires.

4. TRAINING OF FIELD STAFF

The field staff training program was carried out in two stages. The first-stage consisted of trainees from the head office, Branch Statistical Office heads and some of the field supervisors being given training for one week at CSA's headquarters complex in Addis Ababa.

Many of those trained in the first-stage conducted similar training for field supervisors and enumerators for 10 days in all of CSA's 22 branch offices which are distributed around the country. During this second-stage training, the field staff were given detailed classroom instruction on the objectives and uses of the AgSS, concepts and definitions of terms used, the method of area measurement, method of crop cutting, as well as correct interviewing procedures, ... etc. The enumerator training also included a field practice to reinforce the concepts discussed in the classroom with regard to field measurement and crop cutting data collection.

5. METHOD OF DATA COLLECTION

The 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 moisture 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.

6. DATA PROCESSING

a. EDITING, CODING AND VERIFICATION.

To insure the quality of the collected survey data an editing, coding and verification instruction manual was written, and fifty-five editors, coders and verifiers were trained for two days to edit, code and verify the data using the forementioned manual as a reference and teaching aid.

The enumerator completed questionnaires were edited, coded and later verified by supervisors on a 100% basis before the questionnaires were sent to the data processing unit for data entry. The editing, coding and verification of all questionnaires was completed in twelve days.

b. DATA ENTRY, CLEANING AND TABULATION

Before starting data entry of the questionnaire data, experts in agricultural statistics prepared edit specifications for use on personal computers utilizing the Integrated Microcomputer Processing System (IMPS) software for data consistency checking purposes.

The data on the coded questionnaires were then entered into the IMPS software on personal computers. The data was then checked and cleaned using the edit specifications prepared earlier for this purpose. Forty data encoders were involved in this total process and it took seven days to complete the job. Finally, tabulation was done on personal computers to produce results as indicated in the tabulation plan.

7. 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.

PART III

SUMMARY OF THE RESULTS OF THE 1998/99 (1991 E.C.)

FARM MANAGEMENT PRACTICES OF BELG SEASON SURVEY

As mentioned earlier, the results of the 1998/99 (1991 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 1998/99(1991 E.C.) annual agricultural sample survey results, it was estimated that Belg season major crops covered 500.21 thousand hectares of land. In which 2659.12 thousand holders were engaged in the production activity. Of the total area under Belg season major crops 217.75 thousand hectares (43.53%) was under the use of improved farm management practices in which 915.37(34.42%) thousand Belg crop producing holders reported to be involved in applying different agricultural inputs.

Moreover, in 1998/99 (1991 E.C) it was estimated that a total of 69,010 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)	500.21
* Number of Belg Crop Producing Holders(in million)	2.66
* Improved Farm Management Practices('000ha)	217.75
* Number of holders reporting the use of farm management practices(in million)	0.92
* Quantity of commercial fertilizer('000qt)	69.01

SECTION 1.

1.1 TOTAL AREA UNDER DIFFERENT FARM MANAGEMENT PRACTICES

According to the 1998/99 (1991 E. C.) agricultural sample survey results, it was estimated that Belg season major crops covered about 500.21 thousand hectares of land. Of this total 217.75 hectares (43.53% of the total) was under the use of improved farm management practices. Moreover, of the above mentioned total area under improved farm inputs, 155.88 thousand hectares (71.59%) was under fertilizer (both natural and commercial), 15.91 thousand hectares (7.31%) was under irrigation, 23.79 thousand hectares (10.93%) was treated with pesticides and 22.17 thousand hectares (10.18%) was under improved seeds. The coverage of the above mentioned farm management practices accounted for 31.16%, 3.18%, 4.76% and 4.43% 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, 1998/99 (1991 E.C.)

TYPE OF IMPROVED FARM MANAGEMENT PRACTICES	AREA UNDER IMPROVED FARM MANAGEMENT PRACTICE	% FROM TOTAL BELG FARM MANAGEMENT AREA	% FROM TOTAL BELG CROP AREA
IRRIGATION	15.91	7.31	3.18
IMPROVED SEEDS	22.17	10.18	4.43
FERTILIZER	155.88	71.59	31.16
PESTICIDES	23.79	10.93	4.76
TOTAL	217.75	100	43.53

The estimates of total land area under different farm management practices for Belg season crops of 1998/99 (1991 E.C.) is presented in Summary Table C. As it is indicated in the

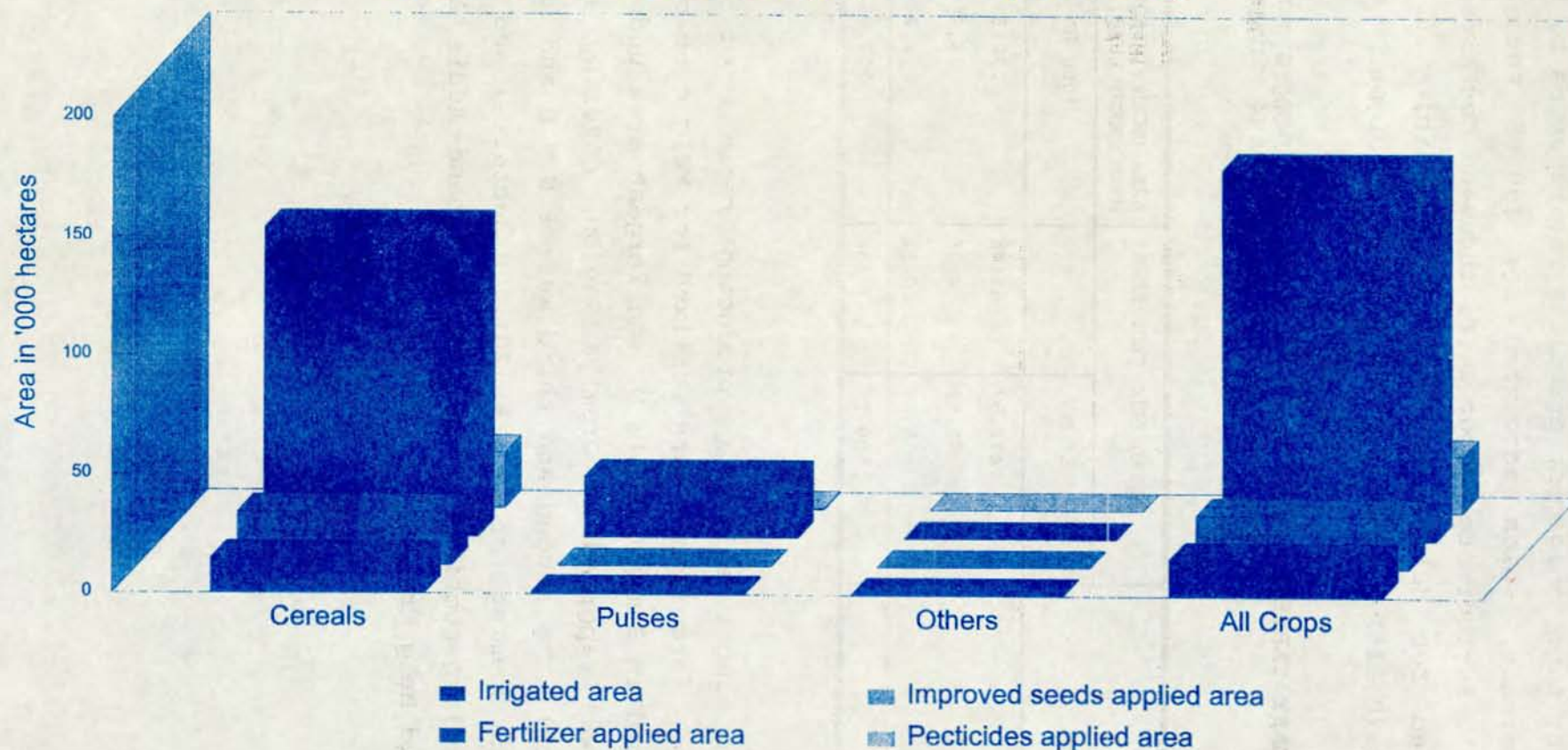
summary table, the highest proportion of crop area under different farm management practices was reported to be covered by Belg cereals, which accounted for 190.65 thousand hectares (87.55%). Furthermore, about 26.86 thousand hectares (12.33%) was accounted for Belg pulses and the remaining 0.24 thousands hectares(0.11%) was reported as Belg other crops.

SUMMARY TABLE C: ESTIMATES OF TOTAL AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

CROP TYPE	TOTAL BELG CROP AREA		AREA UNDER IMPROVED FARM MANAGEMENT PRAC.	
	'000 HA	%	'000 HA	%
CEREALS	428.57	85.68	190.65	87.55
PULSES	70.02	14.00	26.86	12.33
OTHERS	1.61	0.32	0.24	0.11
TOTAL	500.21	100	217.75	100

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 44.10%(220,430 hectares). The second and third were S.N.N.P and Amhara regions with the coverage of 40.22% (201,170 hectares) and 13.63%(68,190 hectares), respectively. On the other hand Addis Ababa had not produced Belg Crops in this year.

Figure 1. Estimates of total area under improved farm management practices for Belg season crops by private holdings in Ethiopia, 1998/99(1991 E.C.)



SUMMARY TABLE D: ESTIMATES OF TOTAL AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99 (1991 E.C.)

REGION	TOTAL BELG CROP AREA		AREA UNDER FARM MANAGEMENT PRACTICES	
	'000 HA	%	'000 HA	%
TIGRAY	4.15	0.83	2.82	1.29
AFAR	1.14	.23	0.02	0.01
AMHARA	68.19	13.63	28.90	13.27
OROMIA	220.43	44.1	67.70	31.10
SOMALIE	1.63	0.33	0.15	0.07
BENSHANGUL-GUMEZ	1.07	0.21	0.13	0.06
S.N.N.P.R	201.17	40.22	117.81	54.10
GAMBELA	2.13	0.43	-	-
HARARI	0.24	0.05	0.15	0.07
ADDIS ABABA	-	-	-	-
DRE DAWA	0.07	0.01	0.07	0.03
TOTAL	500.21	100.00	217.75	100.00

Figure 2. Estimates of area under improved farm management practices for Belg season crops of private holdings in Ethiopia, 1998/99(1991 E.C.)

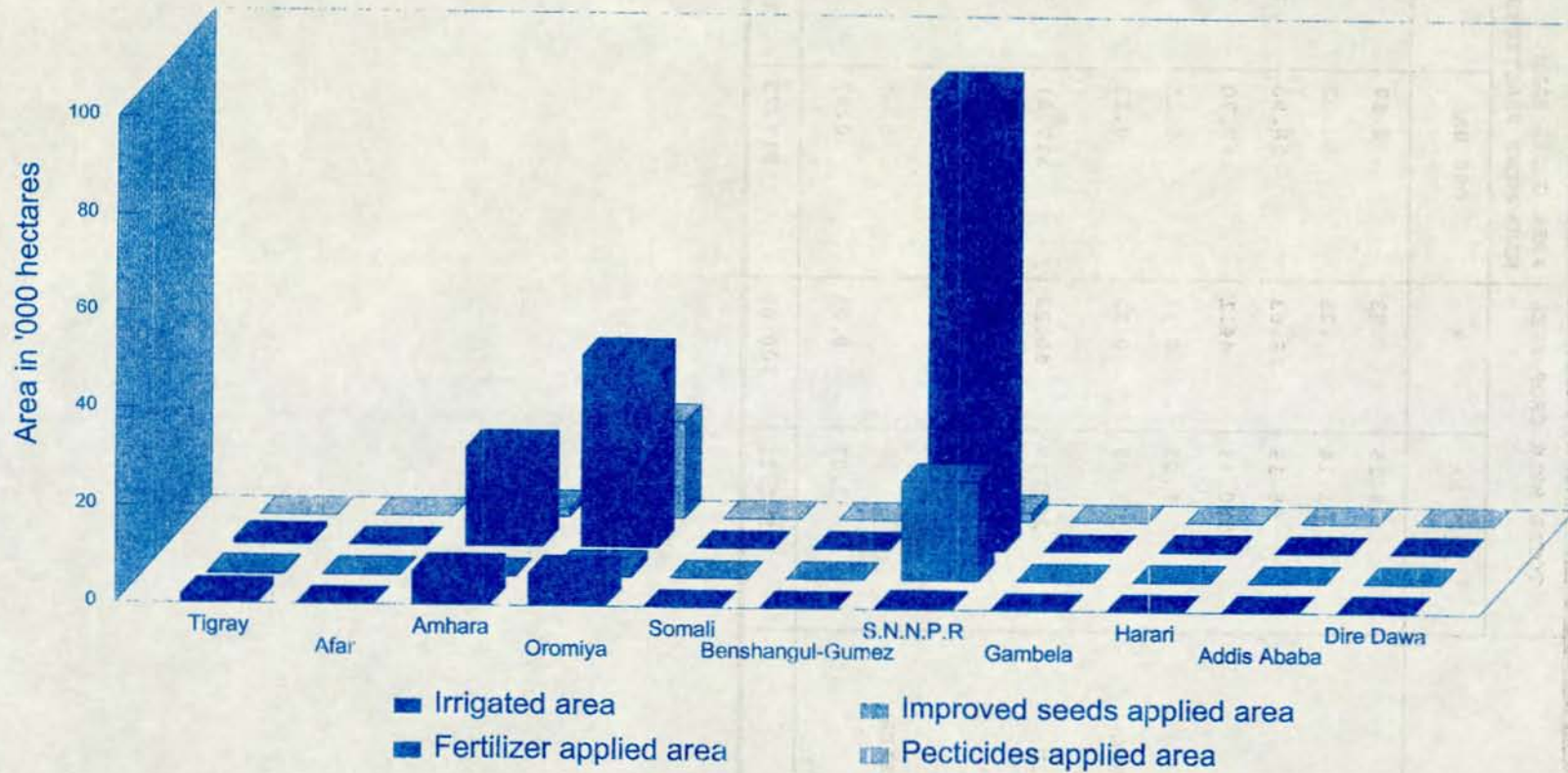


TABLE 1.

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MANGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	428.57	85.68	14.86	93.40	22.15	99.91	130.26	83.56	23.38	98.28
Teff	30.50	6.10	.77	4.84	-	-	1.49	.96	5.85	24.59
Barley	86.26	17.24	1.74	10.94	.02	.09	39.24	25.17	2.27	9.54
Wheat	36.70	7.34	1.79	11.25	.98	4.42	14.13	9.06	7.03	29.55
Maize	248.48	49.68	10.39	65.30	21.11	95.22	70.92	45.50	7.10	29.84
Sorghum	15.74	3.15	.03	.19	.04	.18	1.52	.98	.31	1.30
Millet	.77	.15	-	-	-	-	.18	.12	.24	1.01
Oats	10.12	2.02	.14	.88	-	-	2.78	1.78	.58	2.44
PULSES	70.02	14.00	.84	5.28	.02	.09	25.59	16.42	.41	1.72
Horse Beans	3.28	.66	.01	.06	-	-	.58	.37	-	-
Field Peas	7.25	1.45	.03	.19	-	-	.10	.06	-	-
Haricot Beans	52.90	10.58	.17	1.07	.02	.09	24.49	15.71	.14	.59
Chick Peas	4.03	.81	.36	2.26	-	-	.01	.01	.27	1.13
Lentils	2.36	.47	.19	1.19	-	-	.41	.26	-	-
Vetch	.20	.04	.08	.50	-	-	-	-	-	-
OTHERS	1.62	.32	.21	1.32	-	-	.03	.02	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	.29	.06	-	-	-	-	-	-	-	-
Rapeseed	.01	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	1.32	.26	.21	1.32	-	-	.03	.02	-	-
ALL CROPS	500.21	100.00	15.91	100.00	22.17	100.00	155.88	100.00	23.79	100.00

P1

TABLE 1.1

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

AREA (IN '000 HECTARES)

REGION	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
TIGRAY	4.15	0.83	1.75	11	.17	0.77	.90	0.58	-	-
AFAR	1.14	0.23	-	-	-	-	.01	.01	.01	.04
AMHARA	68.19	13.63	6.91	43.43	-	-	20.22	12.97	1.79	7.52
OROMIYA	220.43	44.08	6.70	42.11	1.71	7.71	39.39	25.26	19.90	83.65
SOMALI	1.63	0.33	0.03	.19	0.01	.05	-	-	.11	.46
BENSHANGUL-GUMZ	1.07	0.21	.05	.31	-	-	.08	0.05	-	-
S.N.N.P.R	201.17	40.22	.42	2.64	20.29	91.48	95.16	61.04	1.94	8.15
GAMBELA	2.13	0.43	-	-	-	-	-	-	-	-
HARARI	.24	0.05	-	-	-	-	.11	.07	.04	0.16
ADDIS ABABA	-	-	-	-	-	-	-	-	-	-
DIRE DAWA	.07	.01	.05	.31	-	-	.02	.01	-	-
TOTALROPS	500.21	100.00	15.91	100.00	22.17	100.00	155.88	100.00	23.79	100.00

TABLE 1.2

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	3.95	95.18	1.55	88.57	.17	100.00	.90	100.00	-	-
Teff	2.19	52.77	-	-	-	-	.18	20.00	-	-
Barley	.31	7.47	.31	17.71	-	-	.03	3.33	-	-
Wheat	.01	.24	.01	.57	.01	5.88	.01	1.11	-	-
Maize	1.28	30.84	1.22	69.71	.16	94.12	.55	61.11	-	-
Sorghum	.01	.24	.01	.57	-	-	-	-	-	-
Millet	.15	3.61	-	-	-	-	.13	14.44	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	.20	4.82	.20	11.43	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-
Chick Peas	.12	2.89	.12	6.86	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	.08	1.93	.08	4.57	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	4.15	100.00	1.75	100.00	.17	100.00	.90	100.00	-	-

TABLE 1.3

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Afar

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	.52	45.61	-	-	-	-	.01	100.00	.01	100.00
Teff	.24	21.05	-	-	-	-	.01	100.00	.01	100.00
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	.01	.88	-	-	-	-	-	-	-	-
Sorghum	.27	23.68	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	.62	54.39	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.52	45.61	-	-	-	-	-	-	-	-
Chick Peas	.10	8.77	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.14	100.00	-	-	-	-	.01	100.00	.01	100.00

TABLE 1.4

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGEMENT PRACTICES							
			IRRIGATED		IMPROVED SEEDS APPLIED		FERTILIZER APPLIED		PESTICIDES APPLIED	
				%		%		%		%
CEREALS	50.07	73.43	6.10	88.28	-	-	19.21	95.00	1.52	84.92
Teff	13.91	20.40	.76	11.00	-	-	.09	.45	1.47	82.12
Barley	28.67	42.04	1.43	20.69	-	-	17.97	88.87	-	-
Wheat	4.69	6.88	1.78	25.76	-	-	.72	3.56	.05	2.79
Maize	2.28	3.34	2.00	28.94	-	-	.40	1.98	-	-
Sorghum	.12	.18	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	.40	.59	.13	1.88	-	-	.03	.15	-	-
PULSES	17.90	26.25	.60	8.68	-	-	1.01	5.00	.27	15.08
Horse Beans	1.21	1.77	-	-	-	-	.52	2.57	-	-
Field Peas	2.79	4.09	.03	.43	-	-	.07	.35	-	-
Haricot Beans	8.52	12.49	.14	2.03	-	-	-	-	-	-
Chick Peas	3.19	4.68	.24	3.47	-	-	.01	.05	.27	15.08
Lentils	2.18	3.20	.19	2.75	-	-	.41	2.03	-	-
Vetch	.01	.01	-	-	-	-	-	-	-	-
OTHERS	.22	.32	.21	3.04	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	.01	.01	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	.21	.31	.21	3.04	-	-	-	-	-	-
ALL CROPS	68.19	100.00	6.91	100.00	-	-	20.22	100.00	1.79	100.00

TABLE 1.5

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Oromia

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	198.05	89.85	6.67	99.55	1.71	100.00	38.64	98.10	19.90	100.00
Teff	11.90	5.40	-	-	-	-	.80	2.03	3.92	19.70
Barley	49.71	22.55	-	-	-	-	17.63	44.88	2.20	11.06
Wheat	31.38	14.24	-	-	.97	56.73	13.37	33.94	6.97	35.03
Maize	89.38	40.55	6.65	99.25	.74	43.27	4.00	10.15	6.12	30.75
Sorghum	5.96	2.70	-	-	-	-	.04	.10	.11	.55
Millet	-	-	-	-	-	-	-	-	-	-
Oats	9.72	4.41	.02	.30	-	-	2.75	6.98	.58	2.91
PULSES	20.98	9.52	.03	.45	-	-	.72	1.83	-	-
Horse Beans	1.87	.85	.01	.15	-	-	.05	.15	-	-
Field Peas	4.45	2.02	-	-	-	-	.04	.10	-	-
Haricot Beans	13.75	6.24	.02	.30	-	-	.62	1.57	-	-
Chick Peas	.62	.28	-	-	-	-	-	-	-	-
Lentils	.18	.08	-	-	-	-	-	-	-	-
Vetch	.11	.05	-	-	-	-	-	-	-	-
OTHERS	1.40	.64	-	-	-	-	.03	.08	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	.28	.13	-	-	-	-	-	-	-	-
Rapeseed	.01	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	1.11	.50	-	-	-	-	.03	.08	-	-
ALL CROPS	220.43	100.00	6.70	100.00	1.71	100.00	39.39	100.00	19.90	100.00

TABLE 1.6

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

TYPE OF CROP	Somale		AREA (IN '000 HECTARES)							
	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	1.63	100.00	.03	100.00	-	-	.01	100.00	.11	100.00
Teff	-	-	-	-	-	-	-	-	-	-
Barley	.04	2.45	-	-	-	-	-	-	.01	9.09
Wheat	.05	3.07	-	-	-	-	-	-	.01	9.09
Maize	1.44	88.34	.03	100.00	-	-	.01	100.00	.09	81.82
Sorghum	.10	6.13	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.63	100.00	.03	100.00	-	-	.01	100.00	.11	100.00

TABLE 1.7

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	.11	10.28	.04	80.00	-	-	.02	25.00	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	.02	1.87	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	.08	7.48	.04	80.00	-	-	.02	25.00	-	-
Sorghum	.01	.93	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	.96	89.72	.01	20.00	-	-	.06	75.00	-	-
Horse Beans	.02	1.87	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.94	87.85	.01	20.00	-	-	.06	75.00	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	1.07	100.00	.05	100.00	-	-	.08	100.00	-	-

TABLE 1.8

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

S.N.N.P.R

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	172.02	85.51	.42	100.00	20.27	99.90	71.46	75.09	1.84	94.85
Teff	2.25	1.12	.01	2.38	-	-	.41	.43	.45	23.20
Barley	7.50	3.73	-	-	.02	.10	3.56	3.74	.06	3.09
Wheat	.57	.28	-	-	-	-	.03	.03	-	-
Maize	151.85	75.48	.41	97.62	20.21	99.61	65.93	69.28	.89	45.88
Sorghum	9.23	4.59	-	-	.04	.20	1.48	1.56	.20	10.31
Millet	.62	.31	-	-	-	-	.05	.05	.24	12.37
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	29.15	14.49	-	-	.02	.10	23.70	24.91	.10	5.15
Horse Beans	.18	.09	-	-	-	-	-	-	-	-
Field Peas	.02	.01	-	-	-	-	-	-	-	-
Haricot Beans	28.95	14.39	-	-	.02	.10	23.70	24.91	.10	5.15
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	201.17	100.00	.42	100.00	20.29	100.00	95.16	100.00	1.94	100.00

TABLE 1.9

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Gambela

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	2.13	100.00	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	.01	.47	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	2.11	99.06	-	-	-	-	-	-	-	-
Sorghum	.01	.47	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	2.13	100.00	-	-	-	-	-	-	-	-

TABLE 1.10

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Harari

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	.02	8.33	-	-	-	-	.01	9.09	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	.01	4.17	-	-	-	-	.01	9.09	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-
Sorghum	.01	4.17	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	.22	91.67	-	-	-	-	.10	90.91	.04	100.00
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.22	91.67	-	-	-	-	.10	90.91	.04	100.00
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.24	100.00	-	-	-	-	.11	100.00	.04	100.00

TABLE 1.11

ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL BELG CROP AREA	%	AREA UNDER FARM MAGAGEMENT PRACTICES							
			IRRIGATED	%	IMPROVED SEEDS APPLIED	%	FERTILIZER APPLIED	%	PESTICIDES APPLIED	%
CEREALS	.07	100.00	.05	100.00	-	-	.02	100.00	-	-
Teff	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-
Maize	.05	71.43	.04	80.00	-	-	.02	100.00	-	-
Sorghum	.02	28.57	.01	20.00	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.07	100.00	.05	100.00	-	-	.02	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 155.87 thousand hectares, covering 31.16% of the total area under Belg seasons crops of the private holdings. Of the total fertilized area 75.27 thousand hectares (48.29%) was reported to be under natural fertilizers. The coverage of commercial fertilizers was estimated to be 75 thousand hectares (48.12%), constituting of 36.69% DAP, 2.61% UREA and 8.81% mix of the two fertilizers (DAP+UREA). Moreover, 5600 hectares (3.59%) 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 OF BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

SR.NO	TYPE OF FERTILIZER	FERTILIZER APPLIED AREA		PERCENTAGE FROM TOTAL BELG CROP AREA
		000' HA	%	
1	NATURAL	75.27	48.29	15.05
2	COMMERCIAL	75.00	48.12	14.99
2.1	DAP	57.19	36.69	11.43
2.2	UREA	4.07	2.61	0.81
2.3	DAP+UREA	13.74	8.81	2.75
3	BOTH (COM+NAT)	5.6	3.59	1.12
	TOTAL	155.87	100	31.16

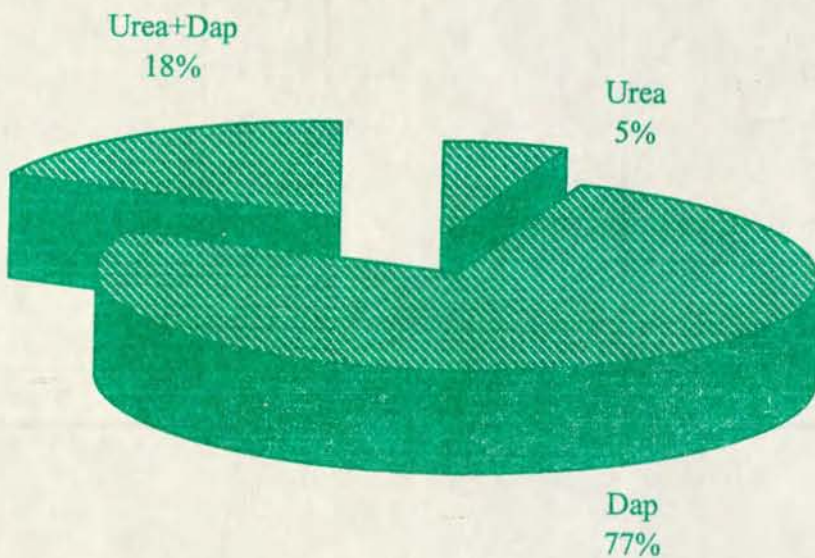
A. USE OF NATURAL FERTILIZERS

In general the application of natural fertilizers for Belg season crops in 1998/99(1991 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 41.30 thousand hectares (54.87%). The fertilized area (natural fertilizer) under barley was the second and estimated to be 16.53 thousand hectares(21.96%), while area under haricot beans stood third about 13.21 thousand hectares,17.55%(see Table 2.1).

B. USE OF COMMERCIAL FERTILIZERS

Out of the total land area under commercial fertilizers in 1998/99(1991 E.C.) Belg season, the area under DAP was the highest which accounted for 77%, while the mix of the two fertilizers (DAP+UREA) and UREA were covering 18% and 5% of the Belg crop area, respectively (see Fig 3.).

Figure 3. Estimates of commercial fertilizer applied area by type for Belg Season crops of Private holdings in Ethiopia ,1998/99(1991 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 maize at 25.92 thousand hectares (34.56%). The second highest area reported under commercial fertilizers was for barley i.e. 22.17 thousand hectares (29.56%) 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.R Region which accounted for 95,140 hectares (61.04% 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 39,380 hectares (25.26%) and 20,210 hectares (12.97%), respectively.

TABLE 2

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	130.26	83.57	60.97	81.00	64.83	86.44	3.50	86.00	48.44	84.70	12.89	93.81	4.46	79.64
Teff	1.49	.96	.50	.66	.99	1.32	.32	7.86	.66	1.15	.01	.07	-	-
Barley	39.24	25.17	16.53	21.96	22.17	29.56	.28	6.88	21.67	37.89	.22	1.60	.54	9.64
Wheat	14.13	9.07	.80	1.06	13.17	17.56	1.03	25.31	11.99	20.97	.15	1.09	.16	2.86
Maize	70.92	45.50	41.30	54.87	25.92	34.56	1.73	42.51	11.68	20.42	12.51	91.05	3.70	66.07
Sorghum	1.52	.98	1.44	1.91	.08	.11	.06	1.47	.02	.03	-	-	-	-
Millet	.18	.12	.18	.24	-	-	-	-	-	-	-	-	-	-
Oats	2.78	1.78	.22	.29	2.50	3.33	.08	1.97	2.42	4.23	-	-	.06	1.07
PULSES	25.58	16.41	14.30	19.00	10.14	13.52	.57	14.00	8.72	15.25	.85	6.19	1.14	20.36
Horse Beans	.58	.37	.58	.77	-	-	-	-	-	-	-	-	-	-
Field Peas	.10	.06	.09	.12	.01	.01	-	-	.01	.02	-	-	-	-
Haricot Beans	24.48	15.71	13.21	17.55	10.13	13.51	.57	14.00	8.71	15.23	.85	6.19	1.14	20.36
Chick Peas	.01	.01	.01	.01	-	-	-	-	-	-	-	-	-	-
Lentils	.41	.26	.41	.54	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	.03	.02	-	-	.03	.04	-	-	.03	.05	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	.03	.02	-	-	.03	.04	-	-	.03	.05	-	-	-	-
ALL CROPS	155.87	100.00	75.27	100.00	75.00	100.00	4.07	100.00	57.19	100.00	13.74	100.00	5.60	100.00

TABLE 2.1

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.88	100.00	.50	100.00	.36	100.00	-	-	.01	100.00	.35	100.00	.02	100.00
Teff	.18	20.45	.18	36.00	-	-	-	-	-	-	-	-	-	-
Barley	.02	2.27	-	-	.02	5.56	-	-	-	-	.02	5.71	-	-
Wheat	.01	1.14	-	-	.01	2.78	-	-	-	-	.01	2.86	-	-
Maize	.54	61.36	.19	38.00	.33	91.67	-	-	.01	100.00	.32	91.43	.02	100.00
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	.13	14.77	.13	26.00	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.88	100.00	.50	100.00	.36	100.00	-	-	.01	100.00	.35	100.00	.02	100.00

TABLE 2.2

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR

BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

TYPE OF CROP	AREA (IN '000 HECTARES)													
	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-
Teff	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.3

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Amhara		AREA (IN '000 HECTARES)													
TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%	
CEREALS	19.20	95.00	13.06	92.82	6.14	100.00	-	-	6.05	100.00	.09	100.00	-	-	
Teff	.09	.45	.09	.64	-	-	-	-	-	-	-	-	-	-	
Barley	17.97	88.92	11.87	84.36	6.10	99.35	-	-	6.05	100.00	.05	55.56	-	-	
Wheat	.72	3.56	.68	4.83	.04	.65	-	-	-	-	.04	44.44	-	-	
Maize	.39	1.93	.39	2.77	-	-	-	-	-	-	-	-	-	-	
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oats	.03	.15	.03	.21	-	-	-	-	-	-	-	-	-	-	
PULSES	1.01	5.00	1.01	7.18	-	-	-	-	-	-	-	-	-	-	
Horse Beans	.52	2.57	.52	3.70	-	-	-	-	-	-	-	-	-	-	
Field Peas	.07	.35	.07	.50	-	-	-	-	-	-	-	-	-	-	
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chick Peas	.01	.05	.01	.07	-	-	-	-	-	-	-	-	-	-	
Lentils	.41	2.03	.41	2.91	-	-	-	-	-	-	-	-	-	-	
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ALL CROPS	20.21	100.00	14.07	100.00	6.14	100.00	-	-	6.05	100.00	.09	100.00	-	-	

TABLE 2.4

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Oromia		AREA (IN '000 HECTARES)													
TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%	
CEREALS	38.64	98.12	5.38	88.78	32.46	99.82	1.49	99.33	30.76	99.84	.21	100.00	.80	100.00	
Teff	.81	2.06	.15	2.48	.66	2.03	.10	6.67	.56	1.82	-	-	-	-	
Barley	17.68	44.90	1.37	22.61	15.77	48.49	.28	18.67	15.39	49.95	.10	47.62	.54	67.50	
Wheat	13.37	33.95	.10	1.65	13.11	40.31	1.03	68.67	11.99	38.92	.09	42.86	.16	20.00	
Maize	3.99	10.13	3.53	58.25	.42	1.29	-	-	.40	1.30	.02	9.52	.04	5.00	
Sorghum	.04	.10	.04	.66	-	-	-	-	-	-	-	-	-	-	
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oats	2.75	6.98	.19	3.14	2.50	7.69	.08	5.33	2.42	7.85	-	-	.06	7.50	
PULSES	.71	1.80	.68	11.22	.03	.09	.01	.67	.02	.06	-	-	-	-	
Horse Beans	.06	.15	.06	.99	-	-	-	-	-	-	-	-	-	-	
Field Peas	.03	.08	.02	.33	.01	.03	-	-	.01	.03	-	-	-	-	
Haricot Beans	.62	1.57	.60	9.90	.02	.06	.01	.67	.01	.03	-	-	-	-	
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
OTHERS	.03	.08	-	-	.03	.09	-	-	.03	.10	-	-	-	-	
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fenugreek	.03	.08	-	-	.03	.09	-	-	.03	.10	-	-	-	-	
ALL CROPS	39.38	100.00	6.06	100.00	32.52	100.00	1.50	100.00	30.81	100.00	.21	100.00	.80	100.00	

TABLE 2.5

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

TYPE OF CROP	AREA (IN '000 HECTARES)													
	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.01	100.00	.01	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.6

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.02	25.00	.02	25.00	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.02	25.00	.02	25.00	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	.06	75.00	.06	75.00	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	.06	75.00	.06	75.00	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.08	100.00	.08	100.00	-	-	-	-	-	-	-	-	-	-

TABLE 2.7

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

S.N.N.P.R	AREA (IN '000 HECTARES)													
	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICIAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	71.44	75.09	41.98	77.04	25.83	71.93	2.00	79.05	11.63	57.21	12.20	93.49	3.63	76.58
Teff	.40	.42	.08	.15	.32	.89	.22	8.70	.10	.49	-	-	-	-
Barley	3.55	3.73	3.28	6.02	.27	.75	-	-	.24	1.18	.03	.23	-	-
Wheat	.03	.03	.02	.04	.01	.03	-	-	.01	.05	-	-	-	-
Maize	65.93	69.30	37.15	68.18	25.15	70.04	1.72	67.98	11.26	55.39	12.17	93.26	3.63	76.58
Sorghum	1.48	1.56	1.40	2.57	.08	.22	.06	2.37	.02	.10	-	-	-	-
Millet	.05	.05	.05	.09	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	23.70	24.91	12.51	22.96	10.08	28.07	.53	20.95	8.70	42.79	.85	6.51	1.11	23.42
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	23.70	24.91	12.51	22.96	10.08	28.07	.53	20.95	8.70	42.79	.85	6.51	1.11	23.42
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	95.14	100.00	54.49	100.00	35.91	100.00	2.53	100.00	20.33	100.00	13.05	100.00	4.74	100.00

TABLE 2.8

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Harari		AREA (IN '000 HECTARES)													
TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%	
CEREALS	.01	9.09	-	-	.01	25.00	-	-	-	-	.01	100.00	-	-	
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Barley	.01	9.09	-	-	.01	25.00	-	-	-	-	.01	100.00	-	-	
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Maize	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PULSES	.10	90.91	.04	100.00	.03	75.00	.03	100.00	-	-	-	-	.03	100.00	
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Haricot Beans	.10	90.91	.04	100.00	.03	75.00	.03	100.00	-	-	-	-	.03	100.00	
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ALL CROPS	.11	100.00	.04	100.00	.04	100.00	.03	100.00	-	-	.01	100.00	.03	100.00	

TABLE 2.9

ESTIMATES OF FERTILIZER APPLIED AREA BY TYPE OF FERTILIZER FOR
 BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
 1998/99(1991 E.C.)

Dire Dawa

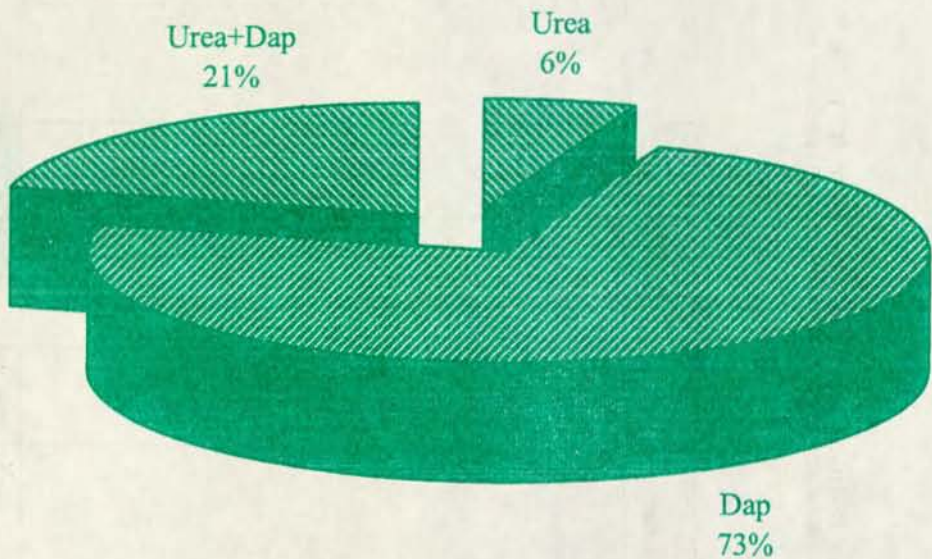
AREA (IN '000 HECTARES)

TYPE OF CROP	TOTAL (COMM+NAT)	%	NATURAL	%	COMME- RICAL	%	UREA	%	DAP	%	DAP+UREA	%	BOTH NAT+COM.	%
CEREALS	.02	100.00	.02	100.00	-	-	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize	.02	100.00	.02	100.00	-	-	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL CROPS	.02	100.00	.02	100.00	-	-	-	-	-	-	-	-	-	-

1.3 TOTAL QUANTITY OF COMMERCIAL FERTILIZER APPLIED BY TYPE

In 1998/99(1991 E.C) the total quantity of commercial fertilizer used for Belg season crop production was estimated at 69,010 quintals. Of this total, the share of DAP was the highest accounting for 73% (50,310 quintals). The mixture of the two types of fertilizers (DAP+UREA) was the second highest accounting for 21% (14,590 quintals) while UREA stood third accounting for 6% (4090 quintals) (see Fig 4).

Figure 4. Estimates of total quantity of commercial fertilizer applied by type for Belg Season crops of private holdings in Ethiopia, 1998/99(1991 E.C.)



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 1998/99(1991 E.C) it was estimated that a total of 500.21 thousand hectares was under Belg season major crops. By these groupings, as presented in Figure 5 the highest Belg crop area 63.28% fall in area size group 2 which followed by group 3(18.42%) and group 1(12.88%). For details see Table 4.1 and Fig 5.

Figure 5. Estimates of total area under Belg season crops by area size groups of private holdings in Ethiopia, 1998/99(1991 E.C.)

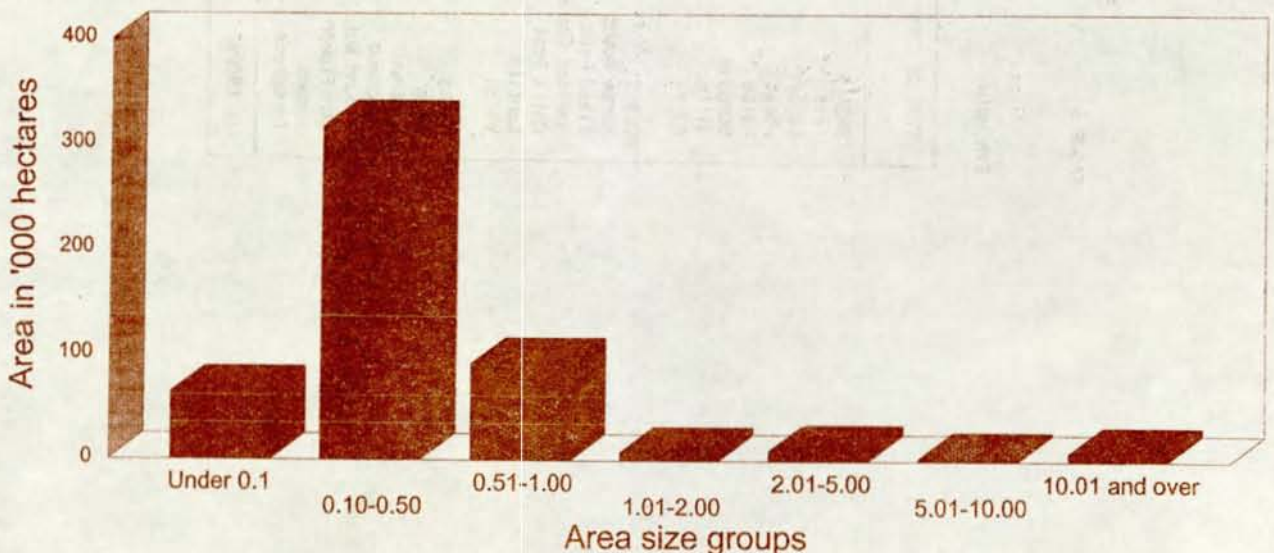


TABLE 3 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Ethiopia

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	63.62	92.19	2.76	67.48	46.53	92.49	14.32	98.15
Teff	.73	1.06	.30	7.33	.32	.64	.11	.75
Barley	27.04	39.18	.26	6.36	25.16	50.01	1.62	11.10
Wheat	8.20	11.88	.69	16.87	6.92	13.75	.59	4.04
Maize	25.74	37.30	1.36	33.25	12.40	24.65	11.98	82.11
Sorghum	.09	.13	.07	1.71	.02	.04	-	-
Millet	-	-	-	-	-	-	-	-
Oats	1.82	2.64	.08	1.96	1.71	3.40	.02	.14
PULSES	5.36	7.77	1.33	32.52	3.75	7.45	.27	1.85
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	.02	.03	-	-	.02	.04	-	-
Haricot Beans	5.34	7.74	1.33	32.52	3.73	7.41	.27	1.85
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	.03	.04	-	-	.03	.06	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	.03	.04	-	-	.03	.06	-	-
ALL CROPS	69.01	100.00	4.09	100.00	50.31	100.00	14.59	100.00

TABLE 3.1 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Tigray

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	1.66	100.00	.04	100.00	.05	100.00	1.58	100.00
Teff	-	-	-	-	-	-	-	-
Barley	.17	10.24	-	-	-	-	.17	10.76
Wheat	.11	6.63	-	-	-	-	.11	6.96
Maize	1.38	83.13	.04	100.00	.05	100.00	1.30	82.28
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	1.66	100.00	.04	100.00	.05	100.00	1.58	100.00

TABLE 3.2 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Amhara

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	5.86	100.00	.02	100.00	4.70	100.00	1.15	100.00
Teff	.09	1.54	-	-	-	-	.09	7.83
Barley	5.42	92.49	-	-	4.69	99.79	.73	63.48
Wheat	.21	3.58	-	-	-	-	.21	18.26
Maize	.14	2.39	.02	100.00	.01	.21	.12	10.43
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	5.86	100.00	.02	100.00	4.70	100.00	1.15	100.00

TABLE 3.3 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Oromia

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	33.16	99.28	1.27	90.07	30.44	99.74	1.45	98.64
Teff	.30	.90	.18	12.77	.12	.39	-	-
Barley	21.11	63.20	.26	18.44	20.28	66.45	.57	38.78
Wheat	7.82	23.41	.69	48.94	6.89	22.58	.25	17.01
Maize	2.11	6.32	.06	4.26	1.44	4.72	.61	41.50
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	1.82	5.45	.08	5.67	1.71	5.60	.02	1.36
PULSES	.21	.63	.14	9.93	.05	.16	.02	1.36
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	.02	.06	-	-	.02	.07	-	-
Haricot Beans	.19	.57	.14	9.93	.03	.10	.02	1.36
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	.03	.09	-	-	.03	.10	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	.03	.09	-	-	.03	.10	-	-
ALL CROPS	33.40	100.00	1.41	100.00	30.52	100.00	1.47	100.00

TABLE 3.4 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
 BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
 PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Somale

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	-	-	-	-	-	-	-	-
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	-	-	-	-	-	-	-	-

TABLE 3.5 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

S.N.N.P.R

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY	%	UREA	%	DAP	%	DAP + UREA	%
CEREALS	22.88	82.33	1.44	57.83	11.33	75.58	10.10	98.06
Teff	.35	1.26	.12	4.82	.20	1.33	.02	.19
Barley	.30	1.08	-	-	.19	1.27	.11	1.07
Wheat	.05	.18	.01	.40	.02	.13	.02	.19
Maize	22.09	79.49	1.24	49.80	10.90	72.72	9.95	96.60
Sorghum	.09	.32	.07	2.81	.02	.13	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	4.91	17.67	1.05	42.17	3.66	24.42	.20	1.94
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	4.91	17.67	1.05	42.17	3.66	24.42	.20	1.94
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	27.79	100.00	2.49	100.00	14.99	100.00	10.30	100.00

TABLE 3.6 ESTIMATES OF QUANTITY OF COMMERCIAL FERTILIZER APPLIED
BY TYPE OF FERTILIZER FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Harari

QUANTITY (IN '000 QUINTAL)

TYPE OF CROP	TOTAL QUANTITY		UREA		DAP		DAP + UREA	
	QUANTITY	%	QUANTITY	%	QUANTITY	%	QUANTITY	%
CEREALS	.05	17.24	-	-	-	-	.04	40.00
Teff	-	-	-	-	-	-	-	-
Barley	.04	13.79	-	-	-	-	.04	40.00
Wheat	-	-	-	-	-	-	-	-
Maize	.01	3.45	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	.24	82.76	.14	100.00	.03	100.00	.06	60.00
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	.24	82.76	.14	100.00	.03	100.00	.06	60.00
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.29	100.00	.14	100.00	.03	100.00	.10	100.00

TABLE 4

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	52.49	269.51	79.71	7.56	9.31	2.44	7.57	428.57
Teff	3.53	21.04	5.88	-	-	.04	-	30.50
Barley	14.87	53.92	15.73	-	1.74	-	-	86.26
Wheat	4.08	25.92	5.46	-	1.24	-	-	36.70
Maize	25.73	150.34	49.45	7.56	6.33	2.40	6.67	248.48
Sorghum	1.69	11.33	1.83	-	-	-	.90	15.74
Millet	.24	.51	.03	-	-	-	-	.77
Oats	2.35	6.45	1.33	-	-	-	-	10.12
PULSES	11.29	46.06	12.42	-	.23	-	-	70.02
Horse Beans	.82	2.29	.17	-	-	-	-	3.28
Field Peas	1.77	3.25	2.23	-	-	-	-	7.25
Haricot Beans	7.40	37.00	8.26	-	.23	-	-	52.90
Chick Peas	.56	2.20	1.27	-	-	-	-	4.03
Lentils	.63	1.24	.49	-	-	-	-	2.36
Vetch	.11	.08	-	-	-	-	-	.20
OTHERS	.67	.95	-	-	-	-	-	1.62
Neug	.57	.75	-	-	-	-	-	1.32
LinSeed	.09	.20	-	-	-	-	-	.29
Rapeseed	.01	-	-	-	-	-	-	.01
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	64.45	316.52	92.13	7.56	9.54	2.44	7.57	500.21

TABLE 4.1

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

AREA (IN '000 HECTARES)

REGION	SIZE OF HOLDING 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	0.89	2.88	0.38	-	-	-	4.15	428.57
AFAR	0.28	0.84	0.04	-	-	-	1.14	30.50
AMHARA	9.27	41.51	15.70	-	1.74	-	-	68.19
OROMIYA	33.97	145.53	37.29	-	1.24	2.40	-	220.43
SOMALIE	0.09	1.01	0.29	-	0.26	-	-	1.63
BENSHANGUL-GUMZ	0.61	0.36	0.10	-	-	-	-	1.07
S.N.N.P.R.	19.00	122.75	37.93	7.56	6.30	0.04	7.57	201.17
GAMBELLA	0.27	1.51	0.35	-	-	-	-	2.13
HARARI	0.07	0.11	0.05	-	-	-	-	0.24
ADDIS ABABA	-	-	-	-	-	-	-	-
DIRE DAWA	.02	0.05	0.01	-	-	-	-	0.07
ALL CROPS	64.45	316.52	92.13	7.56	9.54	2.44	7.57	500.21

TABLE 4.2

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Tigray

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.76	2.81	.38	-	-	-	-	3.95
Teff	.29	1.74	.15	-	-	-	-	2.19
Barley	.08	.23	-	-	-	-	-	.31
Wheat	.01	-	-	-	-	-	-	.01
Maize	.33	.73	.23	-	-	-	-	1.28
Sorghum	.01	-	-	-	-	-	-	.01
Millet	.04	.11	-	-	-	-	-	.15
Oats	-	-	-	-	-	-	-	-
PULSES	.13	.07	-	-	-	-	-	.20
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	.05	.07	-	-	-	-	-	.12
Lentils	-	-	-	-	-	-	-	-
Vetch	.08	-	-	-	-	-	-	.08
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.89	2.88	.38	-	-	-	-	4.15

TABLE 4.3

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Afar

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.21	.29	.04	-	-	-	-	.52
Teff	.13	.08	.04	-	-	-	-	.24
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	.01	-	-	-	-	-	-	.01
Sorghum	.07	.21	-	-	-	-	-	.27
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	.07	.55	-	-	-	-	-	.62
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	.03	.49	-	-	-	-	-	.52
Chick Peas	.04	.06	-	-	-	-	-	.10
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.28	.84	.04	-	-	-	-	1.14

TABLE 4.4

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Amhara

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	7.10	28.85	12.40	-	1.74	-	-	50.07
Teff	1.57	8.85	3.50	-	-	-	-	13.91
Barley	2.88	16.36	7.69	-	1.74	-	-	28.67
Wheat	.92	2.81	.96	-	-	-	-	4.69
Maize	1.26	.77	.25	-	-	-	-	2.28
Sorghum	.07	.06	-	-	-	-	-	.12
Millet	-	-	-	-	-	-	-	-
Oats	.40	-	-	-	-	-	-	.40
PULSES	1.95	12.66	3.30	-	-	-	-	17.90
Horse Beans	.04	1.17	-	-	-	-	-	1.21
Field Peas	.46	1.16	1.17	-	-	-	-	2.79
Haricot Beans	.43	7.72	.37	-	-	-	-	8.52
Chick Peas	.43	1.50	1.27	-	-	-	-	3.19
Lentils	.58	1.11	.49	-	-	-	-	2.18
Vetch	.01	-	-	-	-	-	-	.01
OTHERS	.22	-	-	-	-	-	-	.22
Neug	.21	-	-	-	-	-	-	.21
LinSeed	.01	-	-	-	-	-	-	.01
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	9.27	41.51	15.70	-	1.74	-	-	68.19

TABLE 4.5

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Oromia

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	28.06	133.39	32.99	-	1.24	2.40	-	198.05
Teff	.95	9.08	1.88	-	-	-	-	11.90
Barley	9.67	33.33	6.72	-	-	-	-	49.71
Wheat	3.04	22.72	4.39	-	1.24	-	-	31.38
Maize	12.08	56.64	18.25	-	-	2.40	-	89.38
Sorghum	.37	5.17	.42	-	-	-	-	5.96
Millet	-	-	-	-	-	-	-	-
Oats	1.95	6.45	1.33	-	-	-	-	9.72
PULSES	5.47	11.19	4.30	-	-	-	-	20.98
Horse Beans	.69	1.00	.17	-	-	-	-	1.87
Field Peas	1.30	2.09	1.06	-	-	-	-	4.45
Haricot Beans	3.36	7.32	3.07	-	-	-	-	13.75
Chick Peas	.04	.57	-	-	-	-	-	.62
Lentils	.05	.13	-	-	-	-	-	.18
Vetch	.03	.08	-	-	-	-	-	.11
OTHERS	.44	.95	-	-	-	-	-	1.40
Neug	.35	.75	-	-	-	-	-	1.11
LinSeed	.08	.20	-	-	-	-	-	.28
Rapeseed	.01	-	-	-	-	-	-	.01
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	33.97	145.53	37.29	-	1.24	2.40	-	220.43

TABLE 4.6

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Somale

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.09	1.01	.29	-	.26	-	-	1.63
Teff	-	-	-	-	-	-	-	-
Barley	.02	.02	-	-	-	-	-	.04
Wheat	.01	.02	.02	-	-	-	-	.05
Maize	.05	.89	.25	-	.26	-	-	1.44
Sorghum	.01	.08	.02	-	-	-	-	.10
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.09	1.01	.29	-	.26	-	-	1.63

TABLE 4.7

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.10	.01	-	-	-	-	-	.11
Teff	-	-	-	-	-	-	-	-
Barley	.02	-	-	-	-	-	-	.02
Wheat	-	-	-	-	-	-	-	-
Maize	.08	-	-	-	-	-	-	.08
Sorghum	-	.01	-	-	-	-	-	.01
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	.51	.35	.10	-	-	-	-	.96
Horse Beans	.02	-	-	-	-	-	-	.02
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	.49	.35	.10	-	-	-	-	.94
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.61	.36	.10	-	-	-	-	1.07

TABLE 4.8

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

S.N.N.P.R

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	15.91	101.60	33.26	7.56	6.07	.04	7.57	172.02
Teff	.60	1.29	.32	-	-	.04	-	2.25
Barley	2.21	3.97	1.32	-	-	-	-	7.50
Wheat	.11	.38	.09	-	-	-	-	.57
Maize	11.65	89.77	30.12	7.56	6.07	-	6.67	151.85
Sorghum	1.15	5.79	1.38	-	-	-	.90	9.23
Millet	.19	.40	.03	-	-	-	-	.62
Oats	-	-	-	-	-	-	-	-
PULSES	3.09	21.15	4.67	-	.23	-	-	29.15
Horse Beans	.07	.12	-	-	-	-	-	.18
Field Peas	.01	-	-	-	-	-	-	.02
Haricot Beans	3.01	21.03	4.67	-	.23	-	-	28.95
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	19.00	122.75	37.93	7.56	6.30	.04	7.57	201.17

TABLE 4.9

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Gambela

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.27	1.51	.35	-	-	-	-	2.13
Teff	-	-	-	-	-	-	-	-
Barley	-	.01	-	-	-	-	-	.01
Wheat	-	-	-	-	-	-	-	-
Maize	.26	1.50	.35	-	-	-	-	2.11
Sorghum	.01	-	-	-	-	-	-	.01
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.27	1.51	.35	-	-	-	-	2.13

TABLE 4.10

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Harari

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	-	-	-	-	-	.02
Teff	-	-	-	-	-	-	-	-
Barley	-	.01	-	-	-	-	-	.01
Wheat	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	-	-	-
Sorghum	-	.01	-	-	-	-	-	.01
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	.07	.09	.05	-	-	-	-	.22
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	.07	.09	.05	-	-	-	-	.22
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.07	.11	.05	-	-	-	-	.24

TABLE 4.11

ESTIMATE OF AREA BY SIZE OF HOLDING FOR BELG SEASON
CROPS OF PRIVATE HOLDINGS IN ETHIOPIA
1998/99(1991 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

TYPE OF CROP	SIZE OF HOLDING 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	.05	.01	-	-	-	-	.07
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
wheat	-	-	-	-	-	-	-	-
Maize	.01	.04	-	-	-	-	-	.05
Sorghum	.01	.01	.01	-	-	-	-	.02
Millet	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-
PULSES	-	-	-	-	-	-	-	-
Horse Beans	-	-	-	-	-	-	-	-
Field Peas	-	-	-	-	-	-	-	-
Haricot Beans	-	-	-	-	-	-	-	-
Chick Peas	-	-	-	-	-	-	-	-
Lentils	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-
OTHERS	-	-	-	-	-	-	-	-
Neug	-	-	-	-	-	-	-	-
LinSeed	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Ground Nuts	-	-	-	-	-	-	-	-
Sun Flower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
ALL CROPS	.02	.05	.01	-	-	-	-	.07

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 217.75 thousand hectares (43.53% of the total Belg crops area). Of this total, the highest 63.92% 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 19.78% and 11.82%, 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, 1997/1998 (1991 E.C.)

Area size groups in hectar	Total Belg crop area		Area under impr. farm Management practices	
	'000 ha	%	'000 ha	%
Under 0.10	64.45	12.88	25.74	11.82
0.10-0.50	316.52	63.28	139.20	63.92
0.51-1.00	92.52	18.50	43.08	19.78
1.01-2.00	7.56	1.51	-	-
2.01-5.00	9.54	1.91	9.28	4.26
5.01-10.00	2.44	0.49	-	-
10.01 & above	7.57	1.51	0.49	0.22
TOTAL	500.21	100.00	217.79	100.00

TABLE 5 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Ethiopia

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	5.37	33.69	2.21	9.97	16.28	10.44	6.97	11.61	.79	19.36	8.52	9.29	1.88	7.90
0.10 - 0.50	6.80	42.66	13.77	62.11	101.21	64.92	42.85	71.35	2.52	61.76	55.84	60.86	17.42	73.22
0.51 - 1.00	3.77	23.65	6.19	27.92	28.63	18.37	9.00	14.99	.77	18.87	18.86	20.56	4.49	18.87
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	9.28	5.95	1.24	2.06	-	-	8.04	8.76	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	.49	.31	-	-	-	-	.49	.53	-	-
TOTAL	15.94	100.00	22.17	100.00	155.89	100.00	60.06	100.00	4.08	100.00	91.75	100.00	23.79	100.00

TABLE 5.1 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Tigray

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	.56	31.82	.02	11.76	.25	27.78	.01	100.00	-	-	.24	26.97	-	-
0.10 - 0.50	.97	55.11	.15	88.24	.42	46.67	-	-	-	-	.42	47.19	-	-
0.51 - 1.00	.23	13.07	-	-	.23	25.56	-	-	-	-	.23	25.84	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1.76	100.00	.17	100.00	.90	100.00	.01	100.00	-	-	.89	100.00	-	-

TABLE 5.2 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Afar

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%	
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%			
UNDER 0.10	-	-	-	-	.01	100.00	-	-	-	-	-	.01	100.00	.01	100.00
0.10 - 0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 - 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	.01	100.00	-	-	-	-	-	.01	100.00	.01	100.00

TABLE 5.3 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Amhara

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	3.15	45.52	-	-	1.41	6.98	.31	5.13	-	-	1.10	7.76	.06	3.35
0.10 - 0.50	3.14	45.38	-	-	11.83	58.54	3.12	51.66	-	-	8.71	61.47	1.25	69.83
0.51 - 1.00	.63	9.10	-	-	5.23	25.88	2.61	43.21	-	-	2.62	18.49	.48	26.82
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	1.74	8.61	-	-	-	-	1.74	12.28	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	6.92	100.00	-	-	20.21	100.00	6.04	100.00	-	-	14.17	100.00	1.79	100.00

TABLE 5.4 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Oromia

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	1.43	21.34	.38	22.22	7.23	18.35	4.42	14.11	.12	3.00	2.69	40.88	1.35	6.79
0.10 - 0.50	2.61	38.96	1.33	77.78	26.73	67.83	22.70	72.45	1.38	92.00	2.65	40.27	15.34	77.12
0.51 - 1.00	2.66	39.70	-	-	4.21	10.68	2.97	9.48	-	-	1.24	18.84	3.20	16.09
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	1.24	3.15	1.24	3.96	-	-	-	-	-	-
5.01 - 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	6.70	100.00	1.71	100.00	39.41	100.00	31.33	100.00	1.50	100.00	6.58	100.00	19.89	100.00

TABLE 5.5 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Scale

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%	
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%			
UNDER 0.10	.01	33.33	-	-	.01	100.00	-	-	-	-	-	.01	100.00	-	-
0.10 - 0.50	.02	66.67	-	-	-	-	-	-	-	-	-	-	-	.07	63.64
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	.04	36.36
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 - 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.03	100.00	-	-	.01	100.00	-	-	-	-	-	.01	100.00	.11	100.00

TABLE 5.6 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Benshangul-Gumuz

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%	
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%			
UNDER 0.10	.05	100.00	-	-	.08	100.00	-	-	-	-	-	.08	100.00	-	-
0.10 - 0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.05	100.00	-	-	.08	100.00	-	-	-	-	-	.08	100.00	-	-

TABLE 5.7 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

S.N.N.P.R

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	.16	38.10	1.80	8.88	7.25	7.62	2.22	9.79	.65	25.69	4.38	6.26	.44	22.68
0.10 - 0.50	.02	4.76	12.29	60.60	62.20	65.36	17.03	75.12	1.13	44.66	44.04	62.95	.73	37.63
0.51 - 1.00	.24	57.14	6.19	30.52	18.91	19.87	3.42	15.09	.75	29.64	14.74	21.07	.77	39.69
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	6.31	6.63	-	-	-	-	6.31	9.02	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	.49	.51	-	-	-	-	.49	.70	-	-
TOTAL	.42	100.00	20.28	100.00	95.16	100.00	22.67	100.00	2.53	100.00	69.96	100.00	1.94	100.00

TABLE 5.8 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Gambela

AREA (IN '000 HECTARES)

SIZE OF HOLDING (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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.51 - 1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 5.9 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Harari

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%		
UNDER 0.10	-	-	-	-	.03	30.00	-	-	.01	25.00	.02	33.33	.02	50.00
0.10 - 0.50	-	-	-	-	.02	20.00	-	-	.01	25.00	.01	16.67	.02	50.00
0.51 - 1.00	-	-	-	-	.05	50.00	-	-	.02	50.00	.03	50.00	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	.10	100.00	-	-	.04	100.00	.06	100.00	.04	100.00

TABLE 5.10 ESTIMATES OF AREA UNDER IMPROVED FARM MANAGEMENT PRACTICES BY SIZE OF HOLDINGS FOR BELG SEASON OF PRIVATE HOLDINGS IN ETHIOPIA 1998/99(1991 E.C.)

Dire Dawa

AREA (IN '000 HECTARES)

SIZE OF HOLDING (IN HECTARES)	IRRIGATED AREA	%	IMPROVED SEEDS APPLIED AREA	%	FERTILIZER APPLIED AREA								PESTICIDES APPLIED AREA	%	
					TOTAL	%	NATURAL	%	COMMER.	%	NAT + COM	%			
UNDER 0.10	.01	20.00	-	-	.01	50.00	-	-	-	-	-	.01	50.00	-	-
0.10 - 0.50	.03	60.00	-	-	.01	50.00	-	-	-	-	-	.01	50.00	-	-
0.51 - 1.00	.01	20.00	-	-	-	-	-	-	-	-	-	-	-	-	-
1.01 - 2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.01 - 5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.01 -10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.01 AND OVER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.05	100.00	-	-	.02	100.00	-	-	-	-	-	.02	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 2.66 million holders were engaged in the over all Belg season agricultural activities in 1998/99 (1991 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 709,840 (26.69%) of holders were estimated to fall in the age group 30 - 39. The second (21.10%) and third (15.49%) highest number of holders fall in the age groups 40 - 49 and 60 and above, respectively.

Moreover, it was estimated that a total of 915,370 Belg crop producing holders (about 34.41 of the total) reported the use of improved farm management practices. Among Belg producing holders the highest number of holders 33.99% reported to use natural

fertilizers while 32.62% and 11.95% of them reported to use irrigation and improved seeds, respectively (see summary Table G and Table 7.1)

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, 1997/1998 (1991 E.C.)

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF BELG CROP PRODUCING HOLDERS IN		NUMBER OF BELG CROP PRODUCING HOLDERS REPORTING USE OF FARM MANAGEMENT PRACTICES	
	'000	%	'000	%
UNDER 18	14.94	0.56	4.07	0.44
18 - 20	56.41	2.12	9.59	1.05
21 - 24	132.49	4.98	30.03	3.28
25 - 29	387.37	14.57	107.70	11.77
30 - 39	709.84	26.69	204.68	22.36
40 - 49	561.18	21.10	143.03	15.63
50 - 59	382.24	14.37	87.01	9.50
60 & ABOVE	412.03	15.49	114.80	12.54
NOT STATED	2.62	0.1	214.46	23.43
TOTAL	2659.12	100.00	915.37	100.00

TABLE 6 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Ethiopia

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	4.32	1.65	-	-	10.62	.44	14.94	.56
18 - 20	9.48	3.62	-	-	46.93	1.96	56.41	2.12
21 - 24	18.30	6.99	-	-	114.19	4.76	132.49	4.98
25 - 29	45.63	17.44	-	-	341.74	14.26	387.37	14.57
30 - 39	66.96	25.59	.37	38.95	642.51	26.81	709.84	26.69
40 - 49	49.71	19.00	.58	61.05	510.89	21.32	561.18	21.10
50 - 59	29.94	11.44	-	-	352.30	14.70	382.24	14.37
60 & ABOVE	36.80	14.06	-	-	375.23	15.66	412.03	15.49
NOT STATED	.51	.19	-	-	2.11	.09	2.62	.10
TOTAL	261.65	100.00	.95	100.00	2,396.52	100.00	2,659.12	100.00

TABLE 6.1 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

NUMBER IN THOUSANDS

REGION	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	%
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		
TIGRAY	4.03	1.54	-	-	31.39	1.31	35.42	1.33
AFAR	0.73	0.28	-	-	6.51	0.27	7.24	0.27
AMHARA	38.42	14.68	0.91	95.79	283.38	11.82	322.71	12.14
OROMIYA	121.10	46.28	-	-	1,166.72	48.68	1,287.82	48.43
SOMALIE	0.16	0.06	-	-	3.28	0.20	3.44	0.13
BENSHANGUL-GUMZ	2.95	1.13	0.04	4.21	20.28	0.85	23.27	0.88
S.N.N.P.R	90.99	34.78	-	-	872.22	36.39	963.21	36.22
GAMBELA	2.93	1.12	-	-	7.32	0.31	10.25	0.38
HARARI	0.31	0.12	-	-	3.32	0.14	3.63	0.14
ADDIS ABABA	-	-	-	-	-	-	-	-
DIRE DAWA	0.04	0.02	-	-	2.12	0.09	2.16	0.08
TOTAL	261.65	100.00	.95	100.00	2,396.52	100.00	2,659.12	100.00

TABLE 6.2 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Tigray

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	%
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		
UNDER 18	-	-	-	-	-	-	-	-
18 - 20	-	-	-	-	.24	.76	.24	.68
21 - 24	-	-	-	-	.97	3.09	.97	2.74
25 - 29	.63	15.63	-	-	3.73	11.88	4.36	12.31
30 - 39	.57	14.14	-	-	4.80	15.29	5.37	15.13
40 - 49	1.33	33.00	-	-	9.43	30.04	10.76	30.38
50 - 59	.63	15.63	-	-	4.32	13.76	4.95	14.00
60 & ABOVE	.87	21.59	-	-	7.55	24.05	8.42	23.77
NOT STATED	-	-	-	-	.35	1.12	.35	.99
TOTAL	4.03	100.00	-	-	31.39	100.00	35.42	100.00

TABLE 6.3 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Afar

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	-	-	-	-
18 - 20	-	-	-	-	.07	1.08	.07	.97
21 - 24	.05	6.85	-	-	.38	5.84	.43	5.96
25 - 29	.05	6.85	-	-	.68	10.45	.73	9.99
30 - 39	.07	9.59	-	-	.97	14.90	1.04	14.42
40 - 49	.46	63.01	-	-	1.32	20.28	1.78	24.55
50 - 59	-	-	-	-	1.51	23.20	1.51	20.94
60 & ABOVE	.10	13.70	-	-	1.58	24.27	1.68	23.16
NOT STATED	-	-	-	-	-	-	-	-
TOTAL	.73	100.00	-	-	6.51	100.00	7.24	100.00

TABLE 6.4 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Amhara

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	.53	.19	.53	.16
18 - 20	-	-	-	-	3.16	1.12	3.16	.98
21 - 24	2.01	5.23	-	-	10.39	3.67	12.40	3.84
25 - 29	7.03	18.30	-	-	31.33	11.06	38.36	11.89
30 - 39	8.95	23.30	.35	38.46	58.55	20.66	67.85	21.02
40 - 49	6.41	16.68	.56	61.54	60.66	21.41	67.63	20.96
50 - 59	3.98	10.36	-	-	59.00	20.82	62.98	19.52
60 & ABOVE	9.53	24.80	-	-	58.94	20.80	68.47	21.22
NOT STATED	.51	1.33	-	-	.82	.29	1.33	.41
TOTAL	38.42	100.00	.91	100.00	283.38	100.00	322.71	100.00

TABLE 6.5 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Oromia

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	2.71	2.24	-	-	5.16	.44	7.87	.61
18 - 20	5.40	4.46	-	-	20.22	1.73	25.62	1.99
21 - 24	7.83	6.47	-	-	59.00	5.06	66.83	5.19
25 - 29	15.19	12.54	-	-	170.50	14.61	185.69	14.42
30 - 39	29.92	24.71	-	-	298.59	25.59	328.51	25.51
40 - 49	23.77	19.63	-	-	258.21	22.13	281.98	21.90
50 - 59	15.91	13.14	-	-	172.44	14.78	188.35	14.63
60 & ABOVE	20.37	16.82	-	-	182.27	15.62	202.64	15.74
NOT STATED	-	-	-	-	.33	.03	.33	.03
TOTAL	121.10	100.00	-	-	1,166.72	100.00	1,287.82	100.00

TABLE 6.6 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Somale

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	.03	.91	.03	.87
18 - 20	-	-	-	-	.06	1.83	.06	1.75
21 - 24	-	-	-	-	.12	3.66	.12	3.50
25 - 29	.05	31.25	-	-	.40	12.20	.45	13.12
30 - 39	.01	6.25	-	-	1.04	31.71	1.05	30.61
40 - 49	.02	12.50	-	-	.70	21.34	.72	20.99
50 - 59	.05	31.25	-	-	.46	14.02	.51	14.87
60 & ABOVE	.03	18.75	-	-	.46	14.02	.49	13.99
NOT STATED	-	-	-	-	.01	.30	.01	.29
TOTAL	.16	100.00	-	-	3.28	100.00	3.44	100.00

TABLE 6.7 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Benshangul-Gumuz

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	.10	.49	.10	.43
18 - 20	.08	2.71	-	-	.28	1.38	.36	1.50
21 - 24	.22	7.46	-	-	.89	4.39	1.11	4.77
25 - 29	.49	16.61	-	-	2.99	14.74	3.48	14.99
30 - 39	.80	27.12	.02	50.00	4.59	22.63	5.41	23.24
40 - 49	.27	9.15	.02	50.00	4.55	22.44	4.84	20.79
50 - 59	.78	26.44	-	-	3.97	19.58	4.75	20.45
60 & ABOVE	.31	10.51	-	-	2.91	14.35	3.22	13.83
NOT STATED	-	-	-	-	-	-	-	-
TOTAL	2.95	100.00	.04	100.00	20.28	100.00	23.27	100.00

TABLE 6.8 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

S.N.N.P.R

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	1.56	1.71	-	-	4.73	.54	6.29	.65
18 - 20	3.88	4.26	-	-	22.33	2.56	26.21	2.72
21 - 24	7.70	8.46	-	-	40.91	4.69	48.61	5.05
25 - 29	21.67	23.82	-	-	130.13	14.92	151.80	15.76
30 - 39	26.00	28.57	-	-	270.00	30.96	296.00	30.73
40 - 49	16.69	18.34	-	-	173.73	19.92	190.42	19.77
50 - 59	8.23	9.04	-	-	109.17	12.52	117.40	12.19
60 & ABOVE	5.26	5.78	-	-	120.62	13.83	125.88	13.07
NOT STATED	-	-	-	-	.60	.07	.60	.06
TOTAL	90.99	100.00	-	-	872.22	100.00	963.21	100.00

TABLE 6.9 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Gambela

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	.05	1.71	-	-	.06	.82	.11	1.17
18 - 20	.11	3.75	-	-	.46	6.28	.57	5.56
21 - 24	.43	14.68	-	-	1.31	17.90	1.74	16.98
25 - 29	.47	16.04	-	-	1.01	13.80	1.48	14.44
30 - 39	.55	18.77	-	-	2.46	33.61	3.01	29.27
40 - 49	.67	22.87	-	-	.89	12.16	1.56	15.22
50 - 59	.33	11.26	-	-	.75	10.25	1.08	10.54
60 & ABOVE	.32	10.92	-	-	.38	5.19	.70	6.83
NOT STATED	-	-	-	-	-	-	-	-
TOTAL	2.93	100.00	-	-	7.32	100.00	10.25	100.00

TABLE 6.10 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1999 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Harari

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	.02	.60	.02	.55
18 - 20	-	-	-	-	.05	1.51	.05	1.37
21 - 24	.05	16.13	-	-	.14	4.22	.19	5.19
25 - 29	.03	9.68	-	-	.69	20.78	.72	19.95
30 - 39	.10	32.26	-	-	.87	26.20	.97	26.78
40 - 49	.09	29.03	-	-	.80	24.10	.89	24.32
50 - 59	.03	9.68	-	-	.39	11.75	.42	11.48
60 & ABOVE	.01	3.23	-	-	.36	10.84	.37	10.38
NOT STATED	-	-	-	-	-	-	-	-
TOTAL	.31	100.00	-	-	3.32	100.00	3.63	100.00

TABLE 6.11 ESTIMATES OF TOTAL NUMBER OF HOLDERS BY AGE OF HOLDER AND TYPE OF HOLDING DURING 1998/99(1991 E.C.)
BELG CROP PRODUCTION SEASON FOR PRIVATE HOLDINGS IN ETHIOPIA

Dire Dawa

NUMBER IN THOUSANDS

AGE OF HOLDERS IN YEARS	TOTAL NUMBER OF HOLDERS ENGAGED						TOTAL NUMBER OF HOLDERS	
	WITH CROP ONLY	%	WITH LIVESTOCK ONLY	%	WITH CROP & LIVESTOCK	%		%
UNDER 18	-	-	-	-	-	-	-	-
18 - 20	.02	50.00	-	-	.06	2.83	.08	3.70
21 - 24	-	-	-	-	.10	4.72	.10	4.63
25 - 29	.02	50.00	-	-	.27	12.74	.29	13.43
30 - 39	-	-	-	-	.65	30.66	.65	30.09
40 - 49	-	-	-	-	.60	28.30	.60	27.78
50 - 59	-	-	-	-	.28	13.21	.28	12.96
60 & ABOVE	-	-	-	-	.16	7.55	.16	7.41
NOT STATED	-	-	-	-	-	-	-	-
TOTAL	.04	100.00	-	-	2.12	100.00	2.16	100.00

TABLE 7 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM
MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Ethiopia

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	1.01	1.29	1.21	.24	-	.32
18 - 20	2.04	.53	5.87	.04	-	1.11
21 - 24	11.44	3.08	9.19	2.47	.80	3.05
25 - 29	31.72	14.80	36.18	7.45	12.20	5.35
30 - 39	57.31	39.51	70.20	7.76	19.59	10.31
40 - 49	51.32	19.12	41.63	7.33	13.71	9.92
50 - 59	39.28	10.94	23.38	4.76	3.85	4.80
60 & ABOVE	45.18	14.91	37.08	6.51	3.91	7.21
NOT STATED	59.26	5.23	86.38	6.46	8.45	48.68
TOTAL	298.56	109.41	311.12	43.02	62.51	90.75

TABLE 7.1 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Tigray

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	.24	-	-	-	-	-
21 - 24	.77	.29	-	-	-	-
25 - 29	2.19	.29	-	-	.62	-
30 - 39	3.54	-	.16	.18	.48	-
40 - 49	6.98	-	-	-	1.58	-
50 - 59	3.92	.79	-	-	.22	-
60 & ABOVE	5.19	.29	.50	.21	.58	-
NOT STATED	2.85	.22	-	-	.90	-
TOTAL	25.68	1.88	.66	.39	4.38	-

TABLE 7.2 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Afar

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	-	-	-	-	-	.07
25 - 29	-	-	-	-	-	-
30 - 39	-	-	-	-	-	.05
40 - 49	-	-	-	-	-	.07
50 - 59	-	-	-	-	-	.07
60 & ABOVE	-	-	-	-	-	.13
NOT STATED	-	-	-	-	-	-
TOTAL	-	-	-	-	-	.39

TABLE 7.3 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Amhara

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	.53	-	-	-	-	-
18 - 20	.53	-	.87	-	-	-
21 - 24	4.99	-	.43	-	-	-
25 - 29	10.02	.42	1.84	-	.88	.77
30 - 39	23.52	-	8.98	.53	1.62	.77
40 - 49	22.26	.09	4.34	-	1.49	.09
50 - 59	20.66	-	2.47	-	-	.38
60 & ABOVE	21.47	-	.98	-	.47	.38
NOT STATED	50.42	-	.51	-	1.21	3.26
TOTAL	154.40	.51	20.42	.53	5.67	5.65

TABLE 7.4 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Oromia

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	.49	-	.58	-	-	.29
18 - 20	1.15	-	1.88	-	-	1.05
21 - 24	5.30	.41	4.79	1.21	-	2.57
25 - 29	15.28	.99	21.34	.75	.81	3.18
30 - 39	23.97	3.01	33.71	.74	3.14	5.66
40 - 49	18.50	3.92	20.76	1.02	1.19	7.68
50 - 59	13.58	.94	12.37	.56	-	2.89
60 & ABOVE	17.95	4.67	18.84	.75	-	5.43
NOT STATED	4.26	.59	51.19	2.34	2.05	36.20
TOTAL	100.48	14.53	165.46	7.37	7.19	64.95

TABLE 7.5 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Sample

NUMBER IN THOUSANDS

AGE OF HOLDERS/ IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	.01
18 - 20	.02	-	-	-	-	.01
21 - 24	.02	-	-	-	-	-
25 - 29	.03	-	-	-	-	.01
30 - 39	.21	.02	.02	-	-	.03
40 - 49	.16	-	-	-	-	.04
50 - 59	.02	-	-	-	-	.01
60 & ABOVE	.04	-	-	-	-	.03
NOT STATED	.02	-	-	-	-	.04
TOTAL	.52	.02	.02	-	-	.18

TABLE 7.6 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Benshangul-Gumuz

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	-	-	-	-	-	-
21 - 24	-	-	-	-	-	-
25 - 29	.63	-	-	-	-	-
30 - 39	1.17	-	-	-	-	-
40 - 49	.97	-	-	-	-	-
50 - 59	.19	-	-	-	-	-
60 & ABOVE	.43	-	-	-	-	-
NOT STATED	.27	-	-	-	-	-
TOTAL	3.66	-	-	-	-	-

TABLE 7.7 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

S.N.N.P.R

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	1.29	.63	.24	-	-
18 - 20	.05	.53	3.12	-	-	-
21 - 24	.30	2.38	3.97	1.25	.80	.35
25 - 29	3.42	13.11	12.93	6.65	9.84	1.23
30 - 39	4.56	36.36	27.28	6.27	14.34	3.68
40 - 49	2.10	15.04	16.51	6.23	9.39	1.79
50 - 59	.75	9.19	8.51	4.19	3.62	1.39
60 & ABOVE	.05	9.90	16.77	5.52	2.86	1.10
NOT STATED	1.43	4.42	34.66	4.05	4.29	9.12
TOTAL	12.66	92.22	124.38	34.40	45.14	18.66

TABLE 7.8 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Gambela

NUMBER IN THOUSANDS

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

TABLE 7.9 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Harari

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	.02
18 - 20	-	-	-	.04	-	.04
21 - 24	-	-	-	.01	-	.06
25 - 29	.02	-	.08	.05	.05	.16
30 - 39	.02	-	.05	.05	.01	.13
40 - 49	.04	.02	.02	.08	.06	.24
50 - 59	-	.02	.03	.01	-	.07
60 & ABOVE	-	-	-	.04	-	.13
NOT STATED	-	-	.03	.07	-	.07
TOTAL	.08	.04	.21	.35	.12	.92

TABLE 7.10 ESTIMATE OF TOTAL NUMBER OF HOLDERS REPORTING USE OF IMPROVED FARM
MANAGEMENT PRACTICES BY AGE OF HOLDERS FOR BELG SEASON CROPS OF
PRIVATE HOLDINGS IN ETHIOPIA, 1998/99(1991 E.C.)

Dire Dawa

NUMBER IN THOUSANDS

AGE OF HOLDERS' IN YEARS	NUMBER OF HOLDERS' REPORTING USE OF					
	IRRIGATION	IMPROVED SEEDS	NATURAL FERTILIZERS	COMMER. FERTILIZERS	BOTH NAT + COM	PESTICIDES
UNDER 18	-	-	-	-	-	-
18 - 20	.06	-	-	-	-	-
21 - 24	.06	-	-	-	-	-
25 - 29	.14	-	-	-	-	-
30 - 39	.32	.02	-	-	-	-
40 - 49	.30	-	-	-	-	-
50 - 59	.17	-	-	-	-	-
60 & ABOVE	.05	-	-	-	-	-
NOT STATED	.02	-	-	-	-	-
TOTAL	1.12	.02	-	-	-	-

Note

The 1998/99(1991 E.C.) Belg season crop production activities was very poor compared to the previous year i.e.1997/98(1990 E.C.).

Among a number of factors that contributed for the very poor performance of the 1998/99(1991 E.C.) Belg season crop production activity, the major one was the unusual prolonged delay of the on set of Belg rains that lasts for a month and even more not getting the Belg rains in most parts of the country, which have discouraged and hindered the overall farmers' activity for Belg Crop production. This situation forced a number of farmers to leave Belg crop fields fallow, hoping to use them for the coming Meher season crop production.

Besides its Prolonged delay, the Belg rains were unsatisfactory both in amount and distribution in most parts of the country. Hence, the overall shortage of Belg rains either discouraged the farmers from attempting to prepare the land and plant it with Belg crop or completely or partly damaged Belg crops at their growing stage. As a result, only few farmers in some parts of the country were able to manage the 1998/99(1991 E.C.) Belg season Crop production activity.

The consequence of the above mentioned situation indicates that farm management practices (usage of agricultural inputs) were less performed throughout the 1998/99(1991 E.C.) Belg season crop production year.

APPENDIX - I

ESTIMATION PROCEDURES OF TOTAL AND SAMPLING ERROR

APPENDIX I - 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 on in a given stratum.

Note:- All information on belg season agricultural activities were 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. Therefore 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^{th} stratum.

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

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

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

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

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

q_{hi} is the sample total of quantity of a specific fertilizer applied for a specific crop land in the i^{th} EA in the h^{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 within a stratum is assumed to be with replacement. By so doing the variance estimate may be slightly overestimated but it greatly simplifies 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

Coefficient of Variation (CV) of estimate of stratum total area and quantity are given by:

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

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

Regional or national estimates of the total characteristics and sampling variance are obtained by aggregating the respective stratum totals.

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