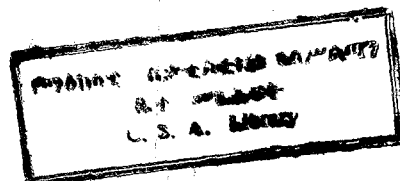


03/02/91

*THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
CENTRAL STATISTICAL AUTHORITY*



**AGRICULTURAL SAMPLE SURVEY
1997/98 (1990 E.C.)**

VOLUME I

REPORT ON

**AREA AND PRODUCTION FOR
MAJOR CROPS**

(PRIVATE PEASANT HOLDINGS, MEHER SEASON)

*ADDIS ABABA
JUNE 1998*

189

STATISTICAL BULLETIN

189

1974

1974

1974

1974

1974

1974

1974

1974

1974

1974

1974

**PREPARED AND PRINTED BY
CENTRAL STATISTICAL AUTHORITY
P.O. BOX 1143 ADDIS ABABA
Tel. 55-30-11**

Content

	<u>Page</u>
PART I. INTRODUCTION AND OBJECTIVES OF THE SURVEY	1
1. INTRODUCTION.....	1
2. OBJECTIVES OF THE SURVEY.....	2
PART II. SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING	3
1. SCOPE COVERAGE AND CONTENT OF THE SURVEY	3
2. CONCEPTS AND DEFINITIONS.....	5
3. SAMPLE DESIGN.....	7
4. FIELD ORGANIZATION.....	9
5. TRAINING OF FIELD STAFF.....	9
6. METHOD OF DATA COLLECTION.....	10
7. DATA PROCESSING	11
a. EDITING, CODING AND VERIFICATION.....	11
b. DATA ENTRY, CLEANING AND TABULATION.....	11
PART III. SUMMARY OF THE SURVEY RESULTS.....	12
1. AREA AND PRODUCTION	12
2. SPECIAL SUMMARY OF CROP DAMAGE ASSESSMENT	20

1912

... ..
... ..
... ..

... ..

1912

... ..

...

1912

... ..

...

...

...

...

...

...

1912

... ..

...

...

1912

...

...

APPENDIX I- ESTIMATION PROCEDURE OF TOTAL, RATIO AND SAMPLING ERROR.....	88
APPENDIX II- STANDARD ERROR AND COEFFICIENT OF VARIATIONS.....	93
APPENDIX III-	100
- NUMBER OF EAs SAMPLED AND COVERED	
- NUMBER OF HOUSEHOLD EXPECTED TO BE COVERED AND ACTUALLY COVERED	
- NUMBER OF PARCELS AND FIELDS MEASURED	
- NUMBER OF CROP CUTTINGS CONDUCTED.	

ABBREVIATIONS

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

PART I

INTRODUCTION AND OBJECTIVES OF THE SURVEY

1. INTRODUCTION

In a country where the economy is predominantly agrarian, agricultural information is essential for policy makers and other users. In this regard, the Central Statistical Authority (CSA) has exerted every effort to provide users and decision makers with reliable and timely agricultural data.

This report presents the 1997/98(1990 E.C.) Agricultural Sample Survey (AgSS) area and production survey results for the major crops produced within the private peasant holdings sector of the economy. The report includes the objectives of this annual survey while outlining: coverage and content of the survey, sample design, field organization, training of field staff, method of data collection, as well as the survey estimates of area, production and yield of major crops. Estimation procedures and formulations for estimates of totals, ratios, and variance are presented in Appendix I. Estimates of the standard errors with the corresponding coefficient of variations for area and production for the major crops, the number of agricultural households covered, parcels and fields measured, and number of crop cuttings completed are presented in Appendix II and Appendix III.

2. OBJECTIVES OF THE SURVEY

The general objective of CSA's Agricultural Sample Survey (AgSS) is to collect basic quantitative information on the country's agriculture that is considered essential for development planning, socio-economic policy formulation, food assistance, etc. The AgSS is composed of four components: a forecast survey, a Meher season survey, a livestock survey, and a survey of the Belg season crop area and production.

The objectives of the Meher season area and production survey and included in this report are estimates of the total cultivated land area and yield per hectare of major crops (temporary). Companion reports are published separately with estimates of land utilization and quantity of agricultural inputs applied by type for the Meher and Belg seasons. A special study was conducted in Harari region designed to provide high precision estimates at the farmer's association level (a one hundred percent sample of primary sampling units at the first-stage of sampling), a sub-sample of sixty-five households at the second-stage, and published as a separate report. In cooperation with the National Fertilizer Industry Agency (N.F.I.A.) the 1997/98 AgSS incorporated additional data collection for making baseline estimates of fertilizer usage which are being published also in a separate report. All reports are based on the private peasant holdings in sedentary areas of the nation, further subdivided by regions and zones.

PART II

SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING

1. SCOPE, COVERAGE AND CONTENT OF THE SURVEY.

The 1997/98 (1990 E.C.) annual Agricultural Sample Survey used a sampling frame which was designed to cover the sedentary rural agricultural population in all regions of the country (urban and nomadic areas were not included in the survey). Illustrated in Table A is a break down of the sample distribution as expressed by regions, zones and weredas. A total of 56 zones and 409 weredas were actually covered by the survey.

The lowest level sampling unit used for this survey is defined as an enumeration area (EA) as identified for the 1994 Population Census. For the 1997/98 AgSS a total of 1380 enumeration areas were selected from all regions of the country. Due to various reasons, 31 of them were incompletely enumerated which resulted in the survey actually covering 1349 enumeration areas (EAs). From each of the selected EAs a representative sample of 40 agricultural households were selected to represent the agricultural population of the sampled EA.

Of these 40 agricultural households, the first 25 were used for obtaining information on area under crops, Meher and Belg season production of crops, land utilization, agricultural practices, crop damage, and quantity of agricultural inputs used. It is important to note that of the total 40 agricultural households sampled in the selected EAs, data on crop cutting were collected for only the 15 households (11th -25th households selected).

Table A. AREAL COVERAGE OF THE 1997/98 AGRICULTURAL SAMPLE SURVEY

REGION	NUMBER OF ZONES			NUMBER OF WEREDAS	
	TOTAL	ZONES SAMPLED FOR THE SURVEY	N O T COVERED BY THE SURVEY	SAMPLED FOR THE SURVEY	ACTUAL NUMBER OF WEREDAS COVERED BY THE SURVEY
TIGRAY	4	4	-	34	31
AFAR ¹	5	3	2	8	7
AMHARA	11	10	1	93	92
OROMIYA	12	12	-	174	171
SOMALIE ²	9	3	6	9	9
BENSHANGUL-GUMEZ	3	3	-	20	15
S.N.N.P.R.	14	14	-	74	72
GAMBELA	4	3	1	5	5
HARARI	1	1	-	1	1
A. ABABA ³	6	2	4	5	5
DIRE DAWA	1	1	-	1	1
TOTAL	70	56	14	424	409

Note

- 1 - Afar region has a total of five zones, but only three zones have significant sedentary rural population.
- 2 - Somalie region has a total of nine zones, however only three zones have significant sedentary rural population.
- 3 - Addis Ababa has a total of six zones, however, only two zones have rural settled population. In the remaining four zones the entire population is urban residents.

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

2. CONCEPTS AND DEFINITIONS.

In order to collect standardized data of acceptable quality the same concepts and definitions must be used by all field enumerators during data collection. Below are defined some of the more important concepts and definitions used for the survey:

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 in geographical area and usually consists of 150 - 200 households.

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

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

Household: A household may be either;

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

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

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

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

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

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

Belg Season Crop: any crop harvested during the months of March (Megabit) to August (Nehase).

Temporary Crops: Temporary crops are crops which are grown under a cycle of less than one year, sometimes only a few months with an objective to be sown or replanted again for additional production following the current harvest. Continuously grown crops planted in rotation are also considered temporary crops since each is harvested and destroyed by ploughing in preparation for each successive crop.

Permanent Crops: Crops which are grown and occupy land for a long period of time, not requiring replanting for several years after each harvest, are considered permanent crops. All fruit trees (i.e. oranges, mandarin, banana, etc.) and trees for beverages (i.e. coffee, tea, etc.) are considered permanent crops, but meadows and pastures are excluded.

3. SAMPLE DESIGN.

A two-stage stratified sample design is used for the 1997/98 (1990 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, 40 agricultural households were sampled systematically without replacement from a newly enumerated list of agricultural households of which the first 25 agricultural households were used to obtain information on crop planted area and crop production of both the Meher and Belg seasons. However, livestock information was collected from the full sample of 40 selected agricultural households.

Information was collected from all 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 precision for area and production are presented in *Appendix I and II*.

4. 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.

5. 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 15 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