I. INTRODUCTION AND OBJECTIVES OF THE SURVEY

1.1 Introduction

Country's experience showed that farmers' attitude and tendency to adopte and accept new innovations, modern agricultural techniques and technologies, such as use of fertilizers, irrigation, improved seeds and pesticides that help to improve their living standards through attaining inhanced productivity, do have positive 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 peasant farmers can be considered as important indicators for estimating the rate of adoption of modern technologies.

This report which is Volume VI of the six series reports, presents quantitative information about the use of modern agricultural inputs for Belg season crops of **2004/05 (1997 E.C.)** of the private peasant holdings for the country and regions as it was obtained from the results of the Belg Season Crop Production Sample Survey conducted in June, **2005** by the Central Statistical Authority (CSA).

1.2 Objectives of the 2004/05 (1997 E.C) Belg Season Crop Production Sample Survey

The objectives of the **2004/05 (1997 E.C.)** Belg Season Crop Production Sample Survey is to produce basic quantitative information on cropland area, production and yield, of major Belg season crops, as well as to provide quantitative information on:-

- Cropland area, production and yield of major Belg season crops
- The extent and use of different farm management practices on Belg season crops such as fertilized crop land area and quantity of fertilizer used by crop and fertilizer type, irrigated cropland area under improved seed, pesticide treated cropland area … etc.

The adequate and timely supply of this information to ultimate users is, therefore, important for use as a primary input in the process of policy formulation, designing developmental agricultural projects and programmmes. This report, therefore, presents quantitative information on the above mentioned major variables at country and regional levels.

II.Survey Methodology, Data Collection and Processing

2.1 Scopes and Coverage

The 2004/5 (1997 E.C) Annual Agricultural Sample Survey (Belg Season) covered the entire rural parts of the country where Bulg season Crop production activities are practiced except three zones of Afar regional state and six zones of Somali regional state where the inhabitants are predominantly pastoralists. Accordingly, the survey took into account all parts of Harari, Addis Ababa and Dire Dawa, and 58 additional Zones / Special Weredas (that are treated as zones) of other regions. Besides, the survey could not also be accomplished in all the zones of Gambella region.

Initially, a total of 2,016 enumeration areas were selected to be covered by the survey, and the survey was successfully carried-out in all sampled (100 %) EA's. As regard to the ultimate sampling unit, it was planned to conduct the survey on 50,400 agricultural households and 50,131 (99.47 %) households were actually covered by the Belg season Agricultural Sample Survey. Distribution of the number of sampling units (planned and covered) by reporting level is presented in Table 2.1 below.

Table 2.1. Number of Zones / Strata Covered, Planned and Covered Enumeration Areas & Households by reporting level.

Reporting level	Number of Zones Covered	Enumeration Areas		Households	
		Planned	Covered	Planned	Covered
Tigray	5	164	164	4100	4063
Afar	2	56	56	1400	1398
Amhara	10	396	396	9900	9843
Oromia	14	536	536	13400	13349
Somali	3	84	84	2100	2076
Benishangul-Gumuz	3	84	84	2100	2083
SNNP	21	624	624	15600	15520
Harari*	1	24	24	600	600
Addis Ababa*	1	24	24	600	600
Dire Dawa*	1	24	24	600	599
Total	**61**	**2016**	**2016**	**50400**	**50131**

**** = Values for these regions refer only the number of strata (domain of estimation)***

2.2 Sample Design

A stratified two-stage cluster sample design was used to select the sample. Enumeration areas (EA's) were taken to be the primary sampling units (PSU's) and the secondary sampling units (SSU's) were agricultural households. Sample enumeration areas from each stratum were sub-samples of the 2001/2 (1994 E.C) Ethiopian Agricultural Sample Enumeration. They were selected using probability proportional to size systematic sampling; size being number of agricultural households obtained from the 1994 Population & Housing Census and adjusted for the sub-sampling effect. Within each sample EA a fresh list of households was prepared and 25 agricultural households from each sample EA were systematically selected at the second stage. The survey questionnaire was finally administered for those 25 agricultural households selected at the second stage. Information on area under crops, Belg season production of crops, agricultural practices, crop damage, and quantity of agricultural inputs used were obtained from the 25 households that were ultimately selected.

The sample size for the (2004/5) agricultural sample survey was determined by taking in to account of both the required level of precision for the most important estimates within each domain and the amount of resources allocated to the survey. In order to reduce non-sampling errors manageability of the survey in terms of quality and operational control was also in addition considered.

Except Harari, Addis Ababa and Dire Dawa, where the region as a whole were taken to be the domain of estimation, each zone of a region / special wereda that is considered to be a zone by itself was adopted as a stratum for which major findings of the survey are computed. However, by aggregating the results obtained from each zone the final report is provided only at regional & country level.

Estimation procedure for totals & ratios and their sampling errors are given in Appendix I. Estimates of standard errors and Coefficient of Variations for selected estimates are also presented in Appendix II.

Remark: As of the 2001/2 Ethiopian Agricultural Sample Enumeration, Addis Ababa City Administration had a total of 35 enumeration areas. However, during the 2004 Urban Economic Establishments Census it was found that some of the rural enumeration areas (EAs) were to be part of the urban areas of the city. Consequently only 24 enumeration

areas were left as the rural EAs of the City Administration. Therefore, the 2004/5 (1997 E.C) annual Agricultural Sample Survey (Belg Season) covered all the 24 EAs with certainty. Hence, there could be great variation among estimates of area & crop production of the 2004/5 (1997 E.C) and that of the previous years.

2.3 Field Organization

The Central Statistical Authority (CSA) branch statistical office heads, field supervisors and enumerators, other supporting staff and drivers were all involved in the field operation activities of the 2004/05(1997 E.C.) Belg season Crop Production Sample survey. To accomplish the data collection activities, all field enumerators were equipped with the necessary survey equipment (i.e. compass, programmable calculator, protractor, ruler, measuring tape, balance scale, iron peg, ropes, sample bags…etc) at the completion of training. To assist with the fieldwork and data collection activities all available four-wheel drive vehicles were used for supervision and collection of completed questionnaires.

2.4 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, statisticians and some of the field supervisors have been given training for one week at CSA's headquarters in Addis Ababa. Many of those trained in the first stage conducted similar training for field supervisors and enumerators for **10 days** in CSA's 24 branch offices, which are distributed all over the country. During the second stage training, the field staff were given detailed classroom instruction on the objectives and uses of the Agricultural Sample Survey (AgSS) concepts, definitions of terms used, the method of area measurement, method of crop cutting, as well as correct interviewing procedures, … etc. The enumerator's and supervisors' training also included a field practice to reinforce the concepts discussed in the classroom with regard to field measurement and crop cutting data collection.

2.5 Methods of Data Collection.

Except Cropland area of major Belg Season Crop, the data of which collected objectively using compasses and measuring tape, the information on production of major Belg Season crops and agricultural practices (uses of fertilizer, pesticide, improved seed and irrigation) were subjectively collected by interviewing the holders of sampled households. **Appendix II,** illustrates the total

number of EAs and households reporting for the 2004/05 (1997E.C**)** Belg crop productions by region.

A major characteristic of Ethiopian agriculture is the existence of two well-known crop production seasons referred to as the Meher (or main) and Belg Seasons. The generally accepted definition of the Meher season is that of the long rainy season, which normally occurs from June to September. The Belg Season most often refers to small but timely rainy season, which normally occurs from February to May but in limited areas of the country. Generally, the Meher Season rainy period provides ideal growing conditions for the longer maturing crops. Planting and harvest of Meher crops can extend to December or January in some areas. Most of the time holders rely on short maturing crops for planting during the Belg rainy period and harvest of the crops is in June or July.

A point of contention arises with respect to the pure definition of the Belg crop. Belg cropping practices are heterogeneous across different portions of the country. The nature of the sowing period also overlaps with some of the Meher Season crops. Consequently, the report on Belg Season crops in the past faced a problem of a clearly defined growing period. It is important not to overlook or miss agricultural practices performed all year round due to use of irrigation or soil moister from sufficiently dried areas that from time-to-time are swampy or marshy. To help clarify the two-crop season, the following definition has been in use 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 Meher (or main) season crops.

This report consists of estimates of area under farm management practices of major Belg Season crops for the year 2004/05 (1997 E.C). The data collection period for obtaining the area, production and agricultural practices of the Belg season crops ranged from 'Sene' 15-30, 1997 E.C. (i.e. From June 23 to July 7, 2005). Data on area under Belg season crop are collected objectively using compass and measuring tapes, while data on production of belg season crops were using subjective method based on face-to-face interviewing of the holder by the enumerator. Data on production of belg season crops are usually reported in local production measuring units that require conversion to an equivalent metric unit using the conversion factors available for local units at Wereda level prepared by CSA. The conversions factors have been constructed from experimentally derived data using actual holder production data associated with each local unit.

2.6 Data Processing

a. Editing, Coding and Verifcation

To insure the quality of the collected survey data an editing, coding, and verification instruction manual was written, and seventeen editors, data coders and verifiers were trained for one day to edit, code and verify the data using the aforementioned manual as a reference and teaching aid.

The enumerator completed, edited and coded questionnaires sent to the head office were thoroughly verified by trained verifiers on a 100% basis before the questionnaires were sent to data entry unit. The editing, coding, verification and data entry of all questionnaires was completed in thirty-one days.

b. Data Entry, Cleaning and Tabulation

Before starting data entry computer edit specifications were prepared 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 computer edit specifications prepared earlier for this purpose. Fifty-six data encoders were involved in this total process and it took fourteen days to complete the job. Finally, tabulation was done on personal computers to produce results as indicated in the tabulation plan.

2.7 Basic Concepts and Definitions

For better understanding and ultimate use of the data presented in this report, the definitions of concepts and terminology used for the collection of all types of data of the 2004/05 (1997 E.C.) Belg season Crop Production Sample survey are presented here below:-

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

Household:- A household may be either;

a) a one person household, that is a person who makes provision for his own food or other essentials for living without combining with any other person to form part of a multi person household or
b) a multi person household, that is, a group of two or more persons who live together and make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to greater or lesser extent. They may be related unrelated persons, or a combination of both.

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

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 helps, 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.

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:- are those crops that are harvested during 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 crop. Insecticides, herbicides and fungicides are all considered as pesticides.

III. SUMMARY OF THE RESULTS OF THE 2004/05 (1997 E.C.) FARM MANAGEMENT PRACTICES OF BELG SEASON SURVEY

In this part of the report, the results of the 2004/05 (1997 E.C) Belg Season Crop Production Sample Survey on the extent and use of Belg season farm management practices are presented. The following are brief desscusions on the major findings of the survey.

According to 2004/05 (1997 E.C) Belg Season Crop Production Sample Survey results, it was estimated that Belg season major crops covered 982.80 thousand hectares of land, where **3.85** million holders were engaged in the production activity. Of this total area under Belg season crops 378.19 thousand hectares (38.48%) was under the use of improved farm management practices in which 2,692.42 (70.00%) thousand agricultural holders reported for utilizing different agricultural inputs. Moreover, in 2004/05 (1997 E.C) it was estimated that a total of 84,401 quintals of commercial fertilizer was utilized for Belg season crop production.

Summary Table A: Total Cropland Area and Number of holdersengaged in 2004/05(1997 e.c.) belg season crop production activities

• Belg crop Area (`000 ha)	982.80
• Number of Belg Crop Producing Holders (in million)	3.85
• Improved Farm Management practices (`000 ha)	378.19
• Number of holders reporting the use of farm management practices (in million)	2.70
• Quantity of commercial fertilizer applied (`000 qt.)	84.40

3.1 Total Area under Different Farm Management Practices

According to the 2004/05 (1997 E.C) Belg season Crop Production Sample Survey results, it was estimated that Belg season crops covered about 982.80 thousands hectares of land. Of this total, 378.19 hectares (38.48%) was under the use of improved farm management practices. Moreover, of the above mentioned total cropland area under improved farm inputs, 290.94 thousand hectares (76.93%) was under fertilizer (Both Natural and Commercial), 38.03 thousand hectares (10.06%) was under irrigation, 34.12 thousand hectares (9.02%) was treated with pesticides and 15.10 thousand hectares (3.99%) was under improved seeds. The coverage of the above mentioned farm management practices accounted for **29**.60%, 3.87%, 3.47% and 1.53% of the total area under Belg season crops, respectively. (See Summary Table B).

Summary Table B. Total Area Under Improved Farm Management Practices For Belg Season Crops of Private Holdings in Ethiopia 2004/05 (1997 E.C.)

TYPE OF FARM MANAGEMENT PRACTICES	TOTAL AREA IN '000HA.	%	% FROM TOTAL BELG CROP AREA
IRRIGATION	38.03	10.06	3.87
IMPROVED SEEDS	15.10	3.99	1.53
FERTILIZER	290.94	76.93	29.60
PESTICIDES	34.12	9.02	3.47
TOTAL	**378.19**	**100.00**	**38.47**

The estimate of total cropland area under different farm management practices for Belg season crops of 2004/05 (1997 E.C) is presented in Summary Table C. As it is indicated in this summary Table, the highest proportion of cropland area under different farm management practices was reported to be covered by Cereals, which accounted for 796.49 thousand hectares (81.04%). Furthermore, about 176.64 thousand hectares (17.97%) was accounted for Belg Pulses and the remaining 9.67 thousands hectares (0.99%) was reported as Belg Oilseed crops.

Summary Table C. Total Area Under Improved Farm Management Practices for Belg Season Crops of Private Holdings in Ethiopia, 2004/05 (1997 E.C.)

CROP TYPE	TOTAL BELG CROP AREA		CROPLAND AREA UNDER IMP. FARM MANAGEMENT PRAC.	
	`000 HA.	**%**	**`000 HA.**	**%**
CEREALS	796.49	81.04	320.18	84.84
PULSES	176.64	17.97	56.42	14.95
OILSEEDS	9.67	0.99	0.80	0.21
GRAINS	**982.80**	**100.00**	**377.40**	**100.00**

In all most all Belg producing regions of the country, improved farm inputs were utilized for Belg crop production. As indicated in Summery Table D, the largest area under Belg season crops was reported by Oromia Region, covering 48.17% (473.16 thousand hectares). The second and third were S.N.N.P.R. and Amhara Regions with the coverage of 34.53% (339.34 thousand hectares) and 13.52% (132.91 thousand hectares) **,** respectively.

Summary Table D. Total Cropland Area Under Improved Farm Management Practices for Belg seasocrops of private Holdings in Ethiopia, *2004/05 (1997 E.C.)*

REGION	TOTAL BELG CROP AREA		CROPLAND AREA UNDER FARM MANAGEMENT PRACTCES	
	`000 HA.	%	`000 HA.	%
Tigray	22.56	2.30	8.93	2.38
Afar	1.23	0.12	0.08	0.02
Amhara	132.91	13.52	45.30	12.07
Oromia	473.46	48.17	196.49	52.35
Somalie	11.61	1.18	0.51	0.14
Benshangul-Gumz	1.16	0.12	-	
S.N.N.P.R	339.34	34.53	123.60	32.93
Gambela	-	-	-	-
Harari	0.38	0.04	0.28	0.07
Addis Ababa		-	-	-
Dire Dawa	0.15	0.02	0.14	0.04
TOTAL	**982.80**	**100.00**	**375.33**	**100.00**

3.2 Total Cropland Area under Fertilizer by Type

The results of the survey indicate that belg season cropland area under both natural and commercial fertilizers were estimated to be 290.94 thousand hectares, covering 29.60% of the total area under Belg seasons crops of the private holdings. Of the total fertilized area 174.00 thousand hectares (59.81%) was reported to be under natural fertilizers. The coverage of commercial fertilizers was estimated to be 116.94 thousand hectares (40.19 %), constituting of 36.34% DAP, 1.52% UREA and 2.33% mixture of the two fertilizers (DAP+UREA). (For details see Summary Table E.)

Summary Table E: **Total Cropland Area under Fertilizer by Type of Fertilizer for Private Holdings in Ethiopia, 2004/05 (1997 E.C)**

TYPE OF FERTILIZER	**FERTILIZAER APPLIED AREA IN**		**PERCENTAGE FROM TOTAL BELG CROP AREA**
	000'HA	%	
NATURAL	174.00	42.66	17.71
COMMERCIAL	116.94	28.67	29.60
DAP	105.74	25.92	10.76
UREA	4.43	1.09	0.45
DAP+UREA	6.77	1.66	0.69
TOTAL	**407.88**	**100.00**	**59.21**

3.3.1 Use of Natural Fertilizers

In general, the application of natural fertilizers for Belg season crops in 2004/05 (1997 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 86.49 thousand hectares (29.73 %). The fertilized area (naturalfertilizer) under haricot beans was the second and estimated to be 27.80 thousand hectares (9.56%), while area under barley stood third i.e. 24.86 thousand hectares, 8.55% (see Table 2.1).

3.3.2 Use of Commercial Fertilizers

Out of the total land area under commercial fertilizers in 2004/05 (1997 E.C) Belg season, the area under DAP was the highest which accounted for 25.92% while the mix of the two fertilizers (DAP+UREA) and UREA were covering 1.66 % and 1.09 % of the Belg crop area, respectively (see Fig 3.)

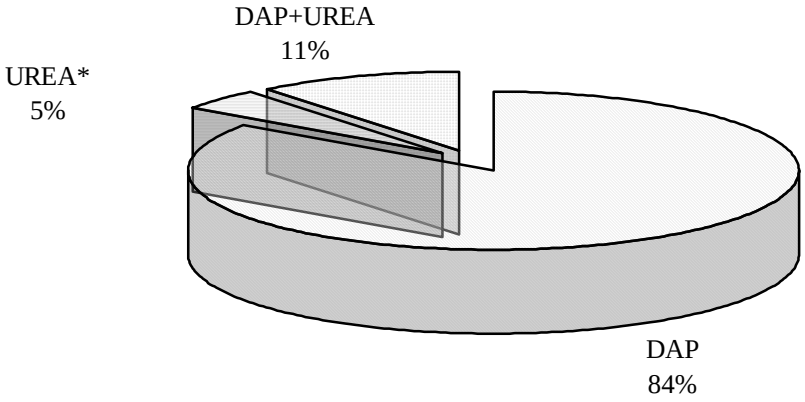
Similarly, the application of commercial fertilizers varied from crop to crop. Of the total area under commercial fertilizers the highest area was reported for barley at 50.04 thousand hectares (42.79%). The second highest area reported under commercial fertilizers was for maize i.e. 26.43 thousand hectares (22.60%).

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 Oromia Region, which accounted for 142,858 hectares (49.10% of the total), S.N.N.P and Amhara Regions were the second and third to report the highest area under both (Natural and Commercial) fertilizers which were estimated to be 106,813 hectares (36.71%) and 34,633 hectares (11.90%), respectively.

3.4 Total Quantity of Commercial Fertilizer Applied by Type

In 2004/05 (1997 E.C.) the total quantity of commercial fertilizer used for Belg season crop production was estimated at 84,401 quintals. Of this total, the share of DAP was the highest accounting for 84.70% (71,490 quintals). The mixture of the two types of fertilizers (DAP+UREA) was the second highest accounting for 10.72% (9,047quintals). The last was the share of the Urea, which accounted for 4.58% (3,864 quintals)(See Fig 1).

Figure 1. Estimates of total quantity of commercial fertilizer applied by type for Belg season crops of private holdings in Ethiopia, **2004/2005(1997 E.C.)**



Note

***** The value of UREA has got a high coefficient of variation, therefore, users are advised to use the estimate with caution.

3.5 Total number of Belg Crop producing Holders Reporting use of Improved Farm Management Practices by Age.

To easily identify the age category of holders who used to practice modern farm management on their holdings, Belg crop producing holders' ages have been categorized into nine groups. These are:

The group categories by age

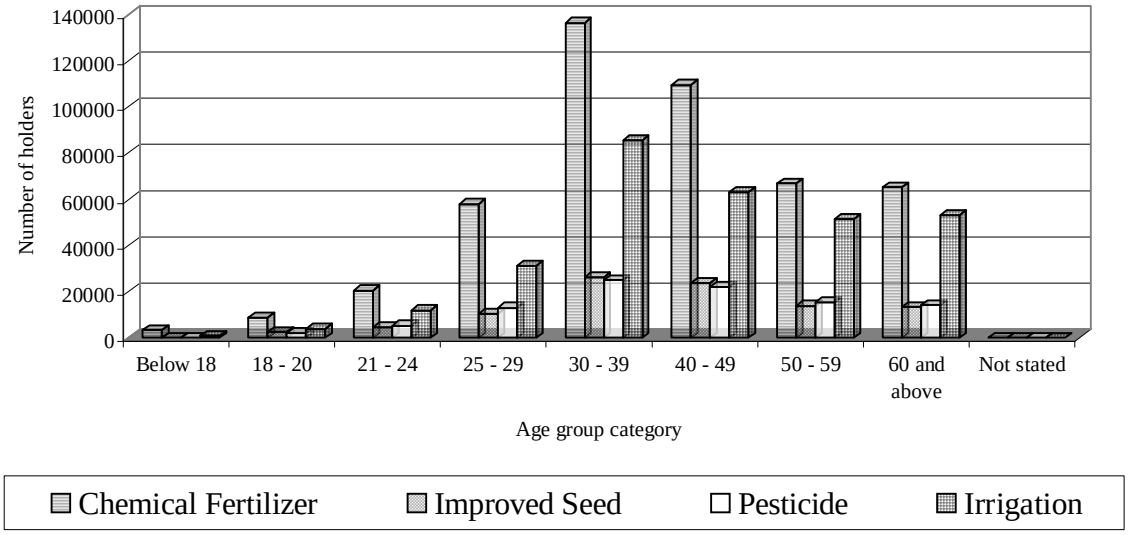
Group	1	-	Under 18 Years
Group	2	-	18-20 Years
Group	3	-	21-24 Years
Group	4	-	25-29 Years
Group	5	-	30-39 Years
Group	6	-	40-49 Years
Group	7	-	50-59 Years
Group	8	-	60 years& above
Group	9	-	not state

Based on the survey results, a total of 3.85 million holders were engaged in the over all Belg season agricultural activities in 2004/05 (1997 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 1058519 (27.48%) of holders was estimated to fall in the age group 30-39**.** The second (21.76%) and third (16.77%) highest number of holders fall in the age groups 40-49 and 60 and above, respectively. Moreover, it was estimated that a total of 846,621 Belg crop-producing holders (about 21.98% of the total) reported the use of improved farm management practices (see summary Table F)

Summary Table F: Total number of Belg Crop Producing holders reporting use of Farm Management Practices by age for Private holdings in Ethiopia, 2004/05 (1997 E.C.)

Age Group Category	Total Number of Holders		Number of holders Reporting use of Farm Management Practices	
	Number	%	Number	%
Under 18	22644	0.59	4704	0.56
18-20	72751	1.89	14419	1.70
21-24	176058	4.57	35361	4.18
25-29	490439	12.84	100513	11.87
30-39	1058519	27.48	244888	28.93
40-49	838204	21.76	189312	22.36
50-59	545573	14.16	125079	14.77
60 & ABOVE	645772	16.77	132174	15.61
NOT STATED	*	*	*	*
TOTAL	3851848	100.00	846621	100.00

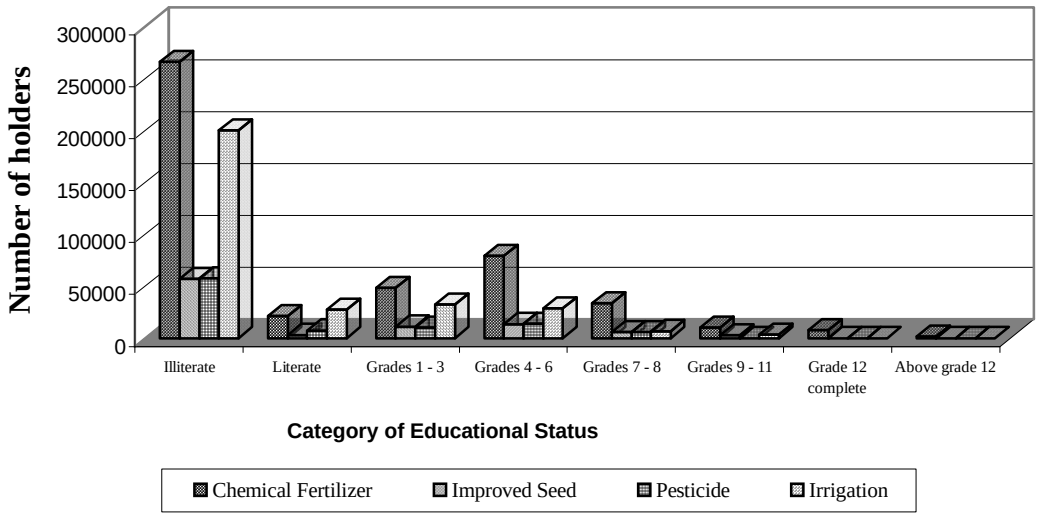
Fig. 3 Number of holders applying agricultural in puts by Age Group, 2004/05 Belg Season



3.4 Total Number of Belg Crop producing Holders reporting use of Improved Farm Management Practices, by Holders' Educational Status.

Holders Educational Status plays important role in the adoption new and improved farming technologies, therefore, in this report an attempt is made to categorize holders reporting use of modern farming practice during the 2004/05 Belg Season Crop Production activities depending up on their educational status. According to the results of the 2004/05 Belg Season Crop Production Sample Survey, out of the total number i.e**.** 3.85 million holders, the highest number of holders (about 478.98 thousand holders) used chemical fertilizers, followed by use of irrigation scheme (300.99 thousand holders). It was also estimated that illiterate holders were recorded more in all application of agricultural inputs as compared to litrate holders.

Fig 2. Number of Holders Applying Inputs By Educational Status, 2003/04 Belg Season.



3. 6 Number of Holders Reporting Damaged Cropland Area by Causes of Damage

The total number of belg crop producing private peasant holders who reported their crops were damaged by different causes of damage during the year 2004/05 Belg Season Crop Production harvest were estimated to be about 1.39 million and the damaged cropland area was estimated to be 142.67 thousand hectares. As indicated in Table 4, the highest cropland area was reported for cereals, that is 106.71 thousand hectares, followed by pulses (35.41 thousand hectares), and the oilseeds (0.55 thousand hectares) , respectively.

With regard to the causes of crop damage, it is reported that 71.62 thousand hectares was damged due to Hailstone, the second highest crop damage which is estimated at 27.21 thousand hecares was damaged by Frost. For details, see Table 4.

Fig 4. Total damaged cropland area by causes of damage and crop category