

THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

CENTRAL STATISTICAL AGENCY

AGRICULTURAL SAMPLE SURVERY

2011/12 (2004 E.C) VOLUME VI



**REPORT ON FARM MANAGEMENT PRACTICE
BELG SEASON CROPS FOR**

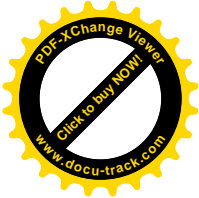
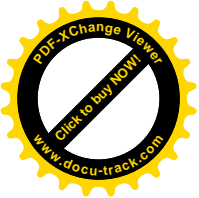
PRIVATE PEASANT HOLDINGS

**ADDIS ABABA
SETEMBER 2012**

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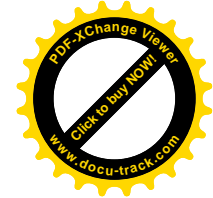
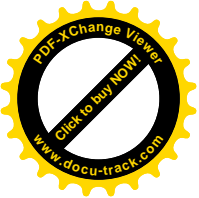
STATISTICAL BULLETIN

532



CONTENTS

	<u>PAGE</u>
LIST OF TABLES.....	II
LIST OF FIGURES.....	III
I INTRODUCTION AND OBJECTIVES OF THE SURVEY	1
1.1 Introduction.....	1
1.2 Objectives of the Survey.....	1
II SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING.....	3
2.1 Coverage	3
2.2 Sample Frame.....	3
2.3 Sample Design.....	3
2.4 Selection Scheme.....	4
2.5 Field Organization.....	4
2.6 Training of Field Staff.....	4
2.7 Methods of Data Collection.....	5
2.8 Data Processing.....	6
a. Editing, Coding and Verification.....	6
b. Data Entry, Cleaning and Tabulation.....	6
2.9 Basic Concepts and Definitions.....	6
III SUMMARY OF THE RESULTS OF BELG SESON FARM MANAGEMENT PEACTICE	9
Statistical Tables Presenting Results at National and Regional Levels.....	19
APPENDIX I.....	67
APPENDIX II.....	73
APPENDIX III.....	81



LIST OF TABELS

Summary Table A,

Total Cropland area and Number of Holders engaged in 2011/12 (2004 E.C.) Belg Season Crop production activities..... 9

Summary Table B,

Total Cropland area under improved Farm management practices for Belg Season crops of Private Holdings in Ethiopia, 2011/12 (2004 E.C.) 10

Summary Table C,

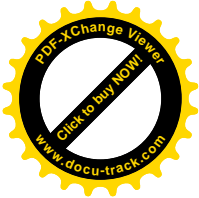
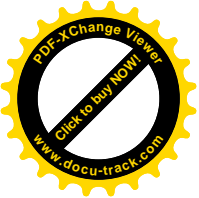
Total Cropland area under improved Farm management practices for Belg Season crops By Major crop Category for Private Holdings in Ethiopia, 2011/12 (2004 E.C.)..... 10

Summary Table D,

Total Cropland area under improved Farm management practices for Belg Season Crops By Region for Private Holdings in Ethiopia, 2011/12 (2004 E.C.)..... 11

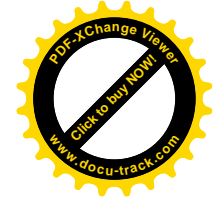
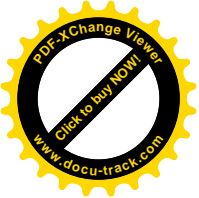
Summary Table E,

Total Number of Belg Crop producing holders reporting use of Farm Management Practice by age for private holdings in Ethiopia, 2011/12 (2004 E.C.)..... 14



LIST OF FIGURES

Figure 1. Estimates of total Area of chemical fertilizer applied by type for Belg season crops of private peasant holdings in Ethiopia, 2011/12 (2004 E.C.).....	12
Figure 2. Estimates of total quantity of chemical fertilizer applied by type for Belg season crops of private peasant holdings in Ethiopia2011/12 (2004 E.C.).....	13
Fig 3. Number of Holders Applying Agricultural Inputs by Age group, 2011/12 (2004E.C.) Belg Season	15
Fig 4. Number of Holders Applying Agricultural Inputs by Educational Status, 2011/12 (2004 E.C.) Belg Season	16
Fig.5. Total Damaged Cropland Area by Causes of Damaged and Crop Category, 2011/12 (2004 E.C.) Belg Season	17



CHAPTER- I

1. INTRODUCTION AND OBJECTIVES OF THE SURVEY

1.1 Introduction

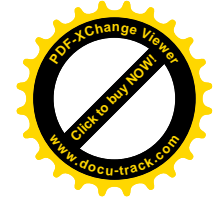
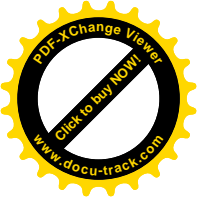
Country's experience showed that farmers' attitude and tendency to adopt and accept new innovations, modern agricultural techniques and technologies, such as use of fertilizers, irrigation, improved seeds and pesticides that help to improve their living standards through attaining enhanced productivity, do have positive impact on the development of the agricultural sector as a whole. In this regard, the extent of adopting modern agricultural practices, such as utilization of fertilizer, irrigation, pesticides and improved seeds ...etc, by the peasant farmers often used as important indicators for estimating the rate and extent of modern technologies use in the country's agriculture, above all the magnitude and level modern/improved farm management practices in the agriculture sector used to be the sole indicator of the transformation rate of the country's existing agriculture to modern agriculture.

This report which is Volume VI of the seven series reports, presents quantitative information about the use of modern agricultural inputs for Belg season crops of 2011/12 (2004 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 May, 2012 by the Central Statistical Agency (CSA).

1.2 Objectives of the 2010/11 Belg Season Crop Production Sample Survey

The objectives of the 2011/12(2004 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:-

- 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 programmes. This report, therefore, presents quantitative information on the above mentioned major variables at country and regional levels.



CHAPTER II

2. SURVEY METHODOLOGY, FIELD ORGANIZATION, METHOD OF DATA COLLECTION AND PROCESSING

2.1 COVERAGE

The 2011/12 (2004 E.C) Annual Agricultural Sample Survey (Belg season) covered the entire rural parts of the country except the non-sedentary population of three zones of Afar & six zones of Somali regions. Accordingly the survey took in to account of all parts of Harari, Dire Dawa, and actually **59** Zones / Special weredas (that are treated as zones) of other regions.

To be covered by the survey, a total of around 1,440 Enumeration Areas (EAs) were selected. However, due to various reasons that are beyond control, in 201 EAs the survey could not be successful and hence interrupted. Thus, all in all the survey succeeded to cover 1,239 EAs throughout the regions. The Annual Agricultural Sample survey (Belg season) was conducted on the basis of 30 agricultural households selected from each EA.

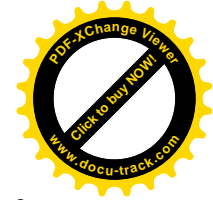
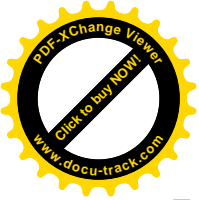
2.2 SAMPLING FRAME

The list containing EAs of all regions and their respective households obtained from the 1999 E.C cartographic census frame was used as the sampling frame in order to select the primary sampling units (EAs). Consequently, all sample EAs were selected from this frame based on the design proposed for the survey. The second stage sampling units, households, were selected from a fresh list of households that were prepared for each EA at the beginning of the survey.

2.3 SAMPLE DESIGN

In order to select the sample a stratified two-stage cluster sample design was implemented. Enumeration areas (EAs) were taken to be the primary sampling units (PSUs) and the secondary sampling units (SSUs) were agricultural households.

The sample size for the 2011/12 agricultural sample survey was determined by taking into 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 considered.



Except Harari, and Dire Dawa, where each region as a whole was taken to be the domain of estimation; each zone of a region / special wereda was adopted as a stratum for which major findings of the survey are reported.

2.3 SELECTION SCHEME

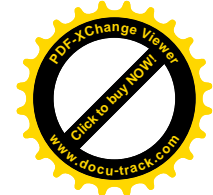
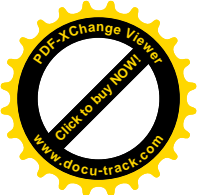
Enumeration areas from each stratum were selected systematically using probability proportional to size sampling technique; size being number of agricultural households. The sizes for EAs were obtained from the 1999 E.C cartographic census frame. From the fresh list of households prepared at the beginning of the survey 30 agricultural households within each sample EA were selected systematically. Estimation procedure of totals, ratios, sampling error and the measurement of precision of estimates (CV) and the questionnaires are given in Appendix-I, Appendix- II and Appendix-III respectively.

2.5 Field Organization

The Central Statistical Agency (CSA) branch statistical office heads, field supervisors and enumerators, other supporting staff and drivers were all involved in the field operation activities of the 2011/12 (2004 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, measuring tape, sample bags...etc). To assist with the fieldwork and data collection activities all available four-wheel drive vehicles were used for supervision and collection of completed questionnaires.

2.6 Training of Field Staff

At the beginning of the survey year, 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 for one week at Hawassa. Those trained in the first stage conducted similar training for field supervisors and enumerators for 17 days in the 24 branch statistical 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, and definitions of terms used, the method of area measurement, interviewing procedures, ... etc. The enumerators' and supervisors' training also included a field practice to reinforce the procedures discussed in the classroom with regard to field area measurement, use of the programmable calculator, GPS/Compass Rope and crop-cutting techniques.



2.7 Methods of Data Collection.

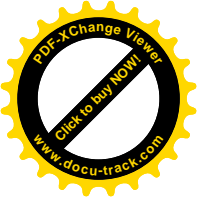
Except cropland area of major Belg Season crop, the data of which collected objectively using GPS/compasses and measuring tape, the information on production of major Belg Season crops and agricultural practices (uses of fertilizer, pesticide, improved seed and irrigation) were subjectively collected by interviewing the holders of sampled households.

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(short rain) 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 moisture 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, production and yield of major Belg Season crops for the year 2011/12 (2004 E.C.) The data collection period for obtaining the area, production and agricultural practices of the Belg season crops was from 'Sene' 1 -15, 2004 E.C. (i.e. From June 8 to June 22, 2012). 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 calculated from the condition factor data that are collected directly from the sampled holders within household, peasant association chairpersons and development agents. The enumerators were trained to systematically present the questions to the respondents on percentage changes translating to languages.

2.8 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 thirty four 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 the data entry unit. The editing, coding, verification and data entry of all questionnaires was completed in two weeks time.

b. Data Entry, Cleaning and Tabulation

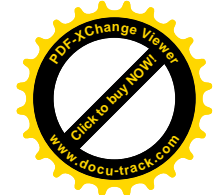
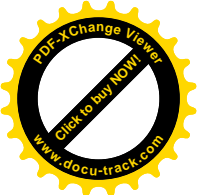
Before starting data entry computer edit specifications were prepared for use on personal computers, utilizing the CSPRO Software for data consistency checking purposes. The data on the coded questionnaires were then entered into the CSPRO software on personal computers. The data was then checked and cleaned using the computer edit specifications prepared earlier for this purpose. Forty six data encoders and eight supervisors were involved in the process and it took twenty five days to complete the job. Finally, tabulation was done on personal computers to produce results as indicated in the tabulation plan.

2.9 Basic concepts and definitions

For better understanding and ultimate use of the data presented in this report, the definitions and concepts of technical terms and terminologies used for the collection of all types of data of the 2011/12 (2004 E.C.) Belg Seasons Crop Production Sample Survey is presented 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.

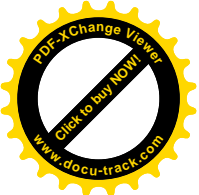
Under conditions of traditional agricultural holding the holder may be regarded as the person, who with or without helps, of others, operates land or raises livestock in his own right, i.e. the person who decides on what, when where and how to grow crops or raise livestock and has right to determine 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 of 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 single mixed crop.

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



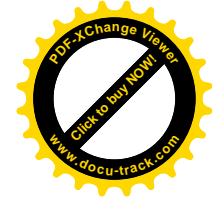
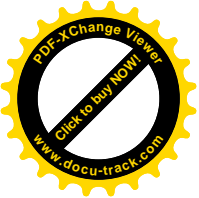
Meher Season Crops: - are those crops that are harvested during September (Meskerem) to February (Yekatit) are considered as main (Meher) season crops.

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 troublesome or harmful to crop. Insecticides, herbicides and fungicides are all considered as pesticides.



CHAPTER III

III. SUMMARY OF THE RESULTS OF THE 2011/12 (2004 E.C.) FARM MANAGEMENT PRACTICES OF BELG SEASON SURVEY

In this part of the report, the results of the 2011/12 (2004 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 discussions on the major findings of the survey.

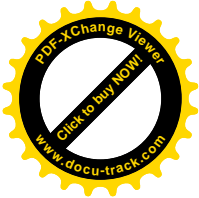
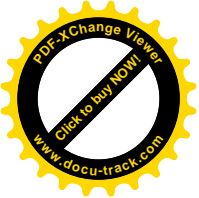
According to 2011/12 (2004 E.C.), Belg Season Crop Production Sample Survey results, it was estimated that Belg season major crops covered 1,311,391 hectares of land, where 5,789,131 holders were engaged in the production activity. Of this total area under Belg season crops 940,318 hectares (71.70%) was under the use of improved farm management practices in which 5,946,465 agricultural holders reported for utilizing different agricultural inputs. Moreover, in 2011/12 (2004 E.C.) it was estimated that a total of 268,222 quintals of commercial fertilizer was utilized for Belg season crop production.

Summary Table A: Total Cropland Area and Number of holders engaged in 2010/11 (2003 E.C.) belg season crop production activities

• Belg crop Area in Hectare	1,311,391
• Number of Belg Crop Producing Holders	5,789,131
• Improved Farm Management including practices in Hectare	940,318
• Number of holders reporting the use of farm management practices	5,946,465
• Quantity of commercial fertilizer applied in Quintals	268,222

3.1 Belg Season Cropland Areas under Different Farm Management Practices

According to the 2011/12 (2004 E.C.), Belg season Crop Production Sample Survey results, it was estimated that Belg season crops covered about 1,311,391 hectares of land. Of this total, about 940,318 hectares (71.70%) was under the use of improved farm management practices. Moreover, of the above mentioned total cropland area under improved farm inputs, about 563,850 hectares (42.99%) was under fertilizer (Both Natural and Commercial), 90,974 hectares (6.94%) was under irrigation, 114,206 hectares (8.71%) was treated with pesticides



and 37,359 hectares (2.85%) was under improved seeds. The coverage of the above mentioned farm management practices accounted

Summary Table B. Cropland Area Under Improved Farm Management Practices;

For Private Holdings, 2011/12 (2004 E.C.), Belg season

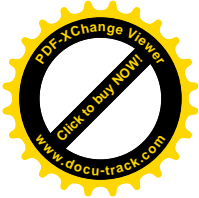
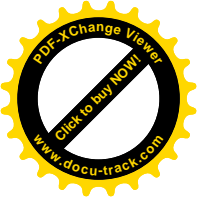
Country Level

Farm Mangement Practices	Cropland AREA		% From Country Total
	IN		
	Hectare	%	
IRRIGATION	90,974	11.28	6.94
IMPROVED SEEDS	37,359	4.63	2.85
FERTILIZER	563,850	69.92	20.45
PESTICIDES	114,206	14.16	8.71
TOTAL	806,389	100.00	61.49

for 20.45%, 6.94%, 8.71% and 2.85% of the country level total area under Belg season crops, respectively (See Summary Table B).

In Summary Table C, below the 2011/12 (2004 E.C.), Belg Season estimates of total cropland area under different farm management practices is presented. As it is indicated in the summary Table, the highest proportion of cropland area under different farm management practices was reported to be covered by Cereals, which accounted for 891,169 hectares (67.96 %) from the total all crop land covered area reported at country level), followed by pulses with 261,966 hectares (19.98%) from the total all cropped land area reported at country level under improved farm management practices, The other crops i.e. Root crop, vegetable and Oilseed are covers 108,769 hectar(8.29%), 31,687 hectar (2.42%) and 17,800 hectar (1.36%) respectively.

Summary Table C. Cropland Area Under Improved Farm Management Practices;				
For Private Holdings, 2011/12 (2004 E.C.), Belg season				
Country Level				
Crop Categoriey	Cropland AREA			
	Total Area		Under IMP. Farm Mgmnt Practice	
	Area In Hectare	%	Area In Hectare	% From Total
CEREALS	891,169	67.96	935,936	77.18
PULSES	261,966	19.98	130,267	10.74
OIL CEOPS	17,800	1.36	7,558	0.62
VEGETABLES	31,687	2.42	25,585	2.11
ROOT CROPS	108,769	8.29	113,271	9.34
ALLCROPLAND AREA	1,311,391	100	1,212,617	100



3.2 Fertilizer Applied Cropland Area and Fertilizer Type used

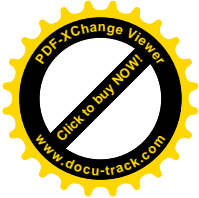
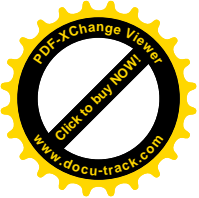
The results of the survey indicate that belg season cropland area under both natural and commercial fertilizers were estimated to be 563,850 hectares, covering 42.99% of the total area under Belg seasons crops of the private holdings. Of the total fertilized area 298,066 hectares (52.86% from the total fertilizer appliedbel cropland area and 22.73% from total country level Belg Cropland area) was reported to be under natural fertilizers. The coverage of commercial fertilizers was estimated to be 265,785 hectares (47.16 % from the total fertilizer applied aea and 20.27% from the country total crop land areat), the share of DAP, UREA and the mixture of the two [i.e. DAP + UREA] called as commercial fertiltzers altogether constitute 39.64%, 02.02% and 5.50% of the total fertilizer applied crop land area and 17.04%, 0.87% and 2.37% of the total country level reported Belg season cropland area in that order (For details see Summary Table D.)

Summary Table D:- Fertilizer Applied Cropland Area ;For Private Holdings, 2011/12 (2004 E.C.), Belg season

Country Level			
FertilizerType	Fertilizer Applied AREA		% From Country Total B.Crop Area
	In Hectare	%	
Natural	298,066	52.86	22.73
Commercial	265,785	47.16	20.27
DAP	223,400	39.62	17.04
UREA	11,358	2.02	0.87
DAP + UREA	31,027	5.50	2.37
Total	563,580	100.00	42.98

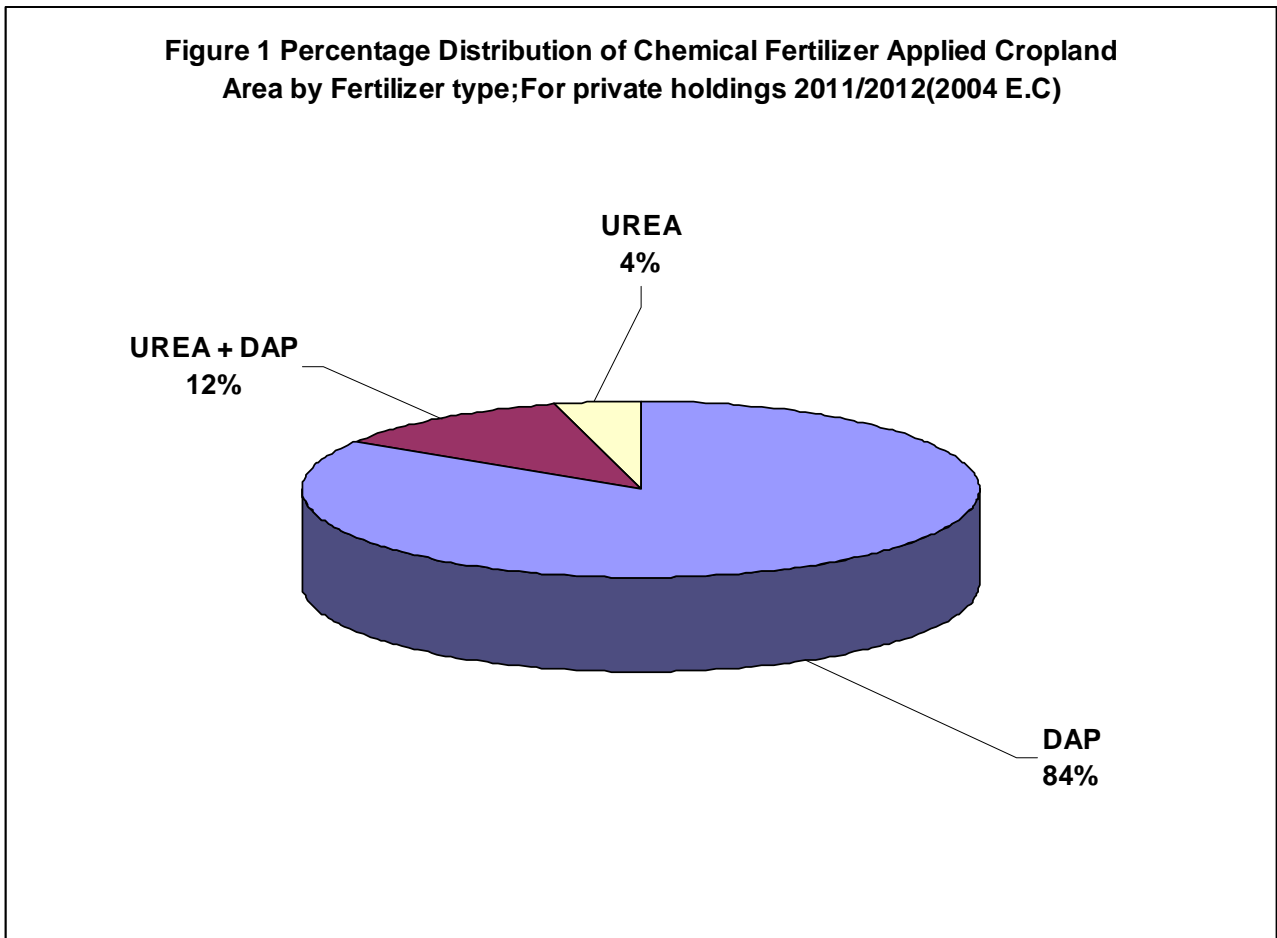
3.3.1 Use of Natural Fertilizers

In general, the application of natural fertilizers for Belg season crops in 2011/12 (2004 E.C.), varies from crop to crop. Of the total area under natural fertilizer, the highest proportion was reported for maize crop, which was estimated at 126,910 hectares (42.58%). The fertilized area (natural fertilizer) under haricot beans was the second with an estimated area of 52,521 hectares (17.62%), while area under potato stood third i.e. 31,086 hectares, accounting 10.43% of the total country level natural fertilizer applied Belg season cropland area (see Table 2.1).



3.3.2 Use of Commercial Fertilizers

Out of the total cropland area under commercial fertilizers in 2011/12 (2004 E.C.), Belg season, i.e, 265,785 hectare (20.27% of the total Belg season crop area), the area under DAP was the highest which accounted for 223,400 hectare (84.05%), while the the second and third were the mix of the two fertilizers (DAP+UREA) and UREA covering 31,027 hectare (11.67%) and 11,358 hectare (4.28 %) of the total commercial fertilizer applied area, respectively (see Fig 1.)



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 81,814 hectares (30.78%). The second highest area reported under commercial fertilizers was for Haricotbean, i.e., 44,829 hectares (16.87%), followed by potato with 39,988.hectares, i.e. about 15.05% of the total haricotbean covered area, was under commercial fertilizer, during the 2011/12 Belg season harvest.

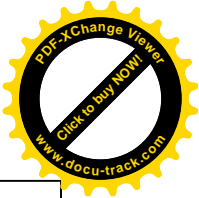
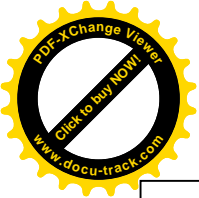
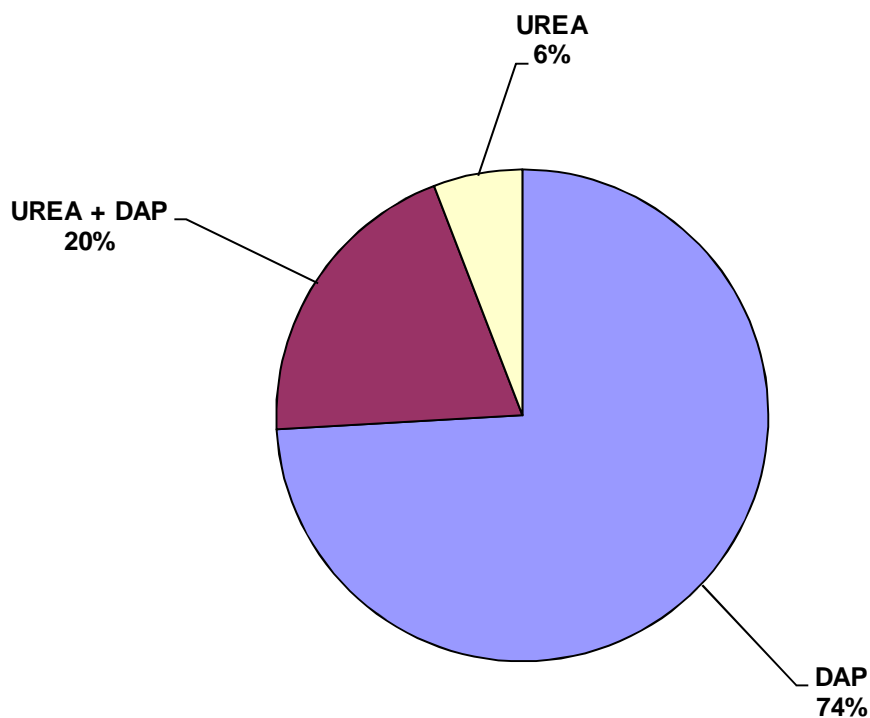


Figure 2: Percentage Distribution of Quantity of Chemical fertilizer Applied by fertilizer type: For private holdings, 2011/12(2004 E.c), Belg season country level

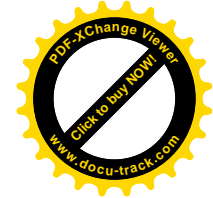
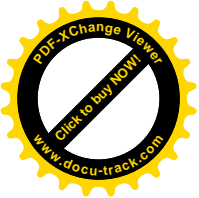


Farm Management Practices by Age

To easily identify the age category of holders who used to earn the economic benefit generated from adopting/practicing the use of modern farm management practices 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 stated

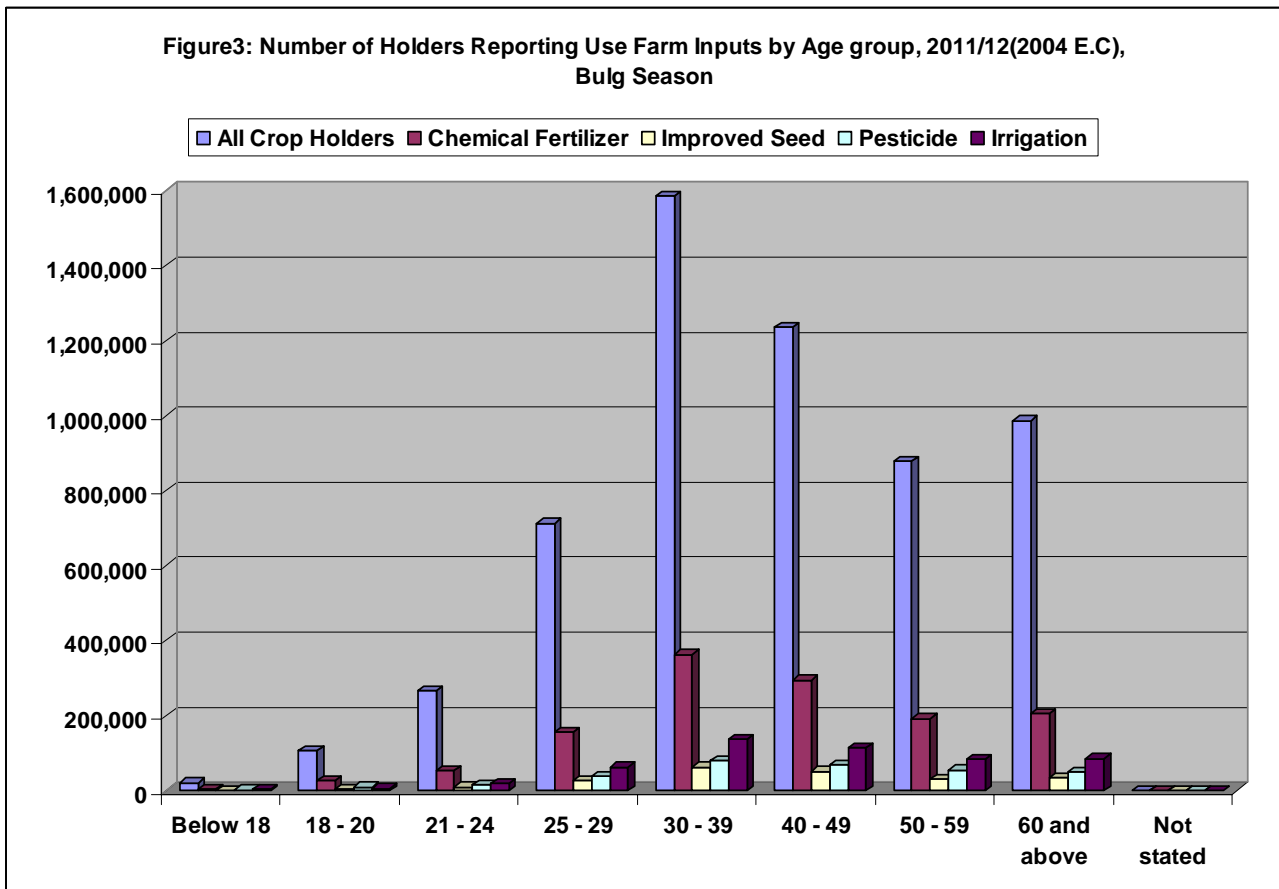
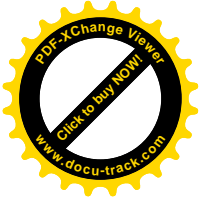
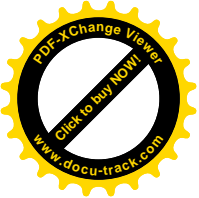


Based on the survey results, a total of 5,789,131 holders were engaged in the over all Belg season agricultural activities in 2011/12 (2004 E.C.) belg season. As mentioned above, these holders are categorized in to nine age groups based on the age of the holder. Accordingly, the highest number 1,585,212 (28.38%) of holders was estimated to fall in the age group 30-39. The second 1,234,984 (21.33%) and third 686,104 (11.85%) highest number of holders fall in the age groups 40-49 and 60 and above, respectively. Moreover, it was estimated that a total of

Summery table E: Number and Percentage distribution of Belg Crop producing Holders reporting use of Farm inputs by age group; for private holdings 2011/2012 (2004 E.C) belg season

<i>Country Level</i>										
	<i>All</i>		<i>Chemical</i>							
<i>Age group</i>	<i>Crop Holders</i>	<i>%</i>	<i>Fertilizer</i>	<i>%</i>	<i>Improved Seed</i>	<i>%</i>	<i>Pesticide</i>	<i>%</i>	<i>Irrigation</i>	<i>%</i>
<i>Below 18</i>	20,608.00	0.34	2,785.00	0.22	*		1,482.00	0.47	2,839.00	0.56
<i>18 - 20</i>	105,829.00	1.83	24,787.00	1.92	2,224.00	1.03	8,584.00	2.73	5,460.00	1.07
<i>21 - 24</i>	265,137.00	4.58	53,689.00	4.16	8,938.00	4.15	15,095.00	4.80	19,294.00	3.79
<i>25 - 29</i>	712,086.00	12.30	156,233.00	12.09	26,072.00	12.10	36,900.00	11.72	62,789.00	12.34
<i>30 - 39</i>	1,585,212.00	27.38	362,848.00	28.09	61,853.00	28.71	79,004.00	25.10	137,533.00	27.04
<i>40 - 49</i>	1,234,984.00	21.33	294,323.00	22.78	50,221.00	23.31	68,662.00	21.82	113,101.00	22.23
<i>50 - 59</i>	878,900.00	15.18	192,086.00	14.87	30,899.00	14.34	55,161.00	17.53	82,770.00	16.27
<i>60 and above</i>	986,104.00	17.03	204,901.00	15.86	34,679.00	16.10	49,840.00	15.84	84,918.00	16.69
<i>Not stated</i>	*		*		-		-		-	
<i>Total</i>	5,789,131.00	100	1,291,922.00	100	215,463.00	100	314,728.00	100	508,704.00	100
<i>%</i>	100		22.32		3.72		5.44		8.79	

1,291,922; 215,463; 314,728 and 508,704 Belg crop-producing holders (i.e. about 22.32%; 3.72%; 5.44% and 8.79% of the country total Belg crop producing holders) reported the use of commercial fertilizer, pesticides, improved seed, and irrigation practices, respectively, to obtain higher cop yield (See summary Table E).



3.6 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 of new and improved farming technologies. Therefore, in this report an attempt is made to categorize holders' reporting the use of modern farming practices during the 2011/12 Belg Season Crop Production activities based on their educational status. According to the results of the 2011/12 Belg Season Crop Production Sample Survey, out of the total number i.e. 5,789,131 holders, out of which the highest number of holders who used chemical fertilizers, improved seed, pesticides and irrigation i.e. about 168,301; 32,540, 43,320, and 44,916 holders were found to have Grade 4 – 6 educational status. In general, it was also estimated that number of illiterate holders were recorded more in all application of agricultural inputs as compared to number of literate holders.

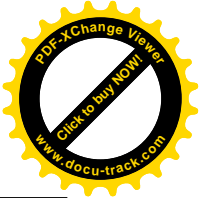
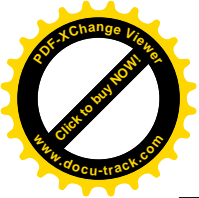
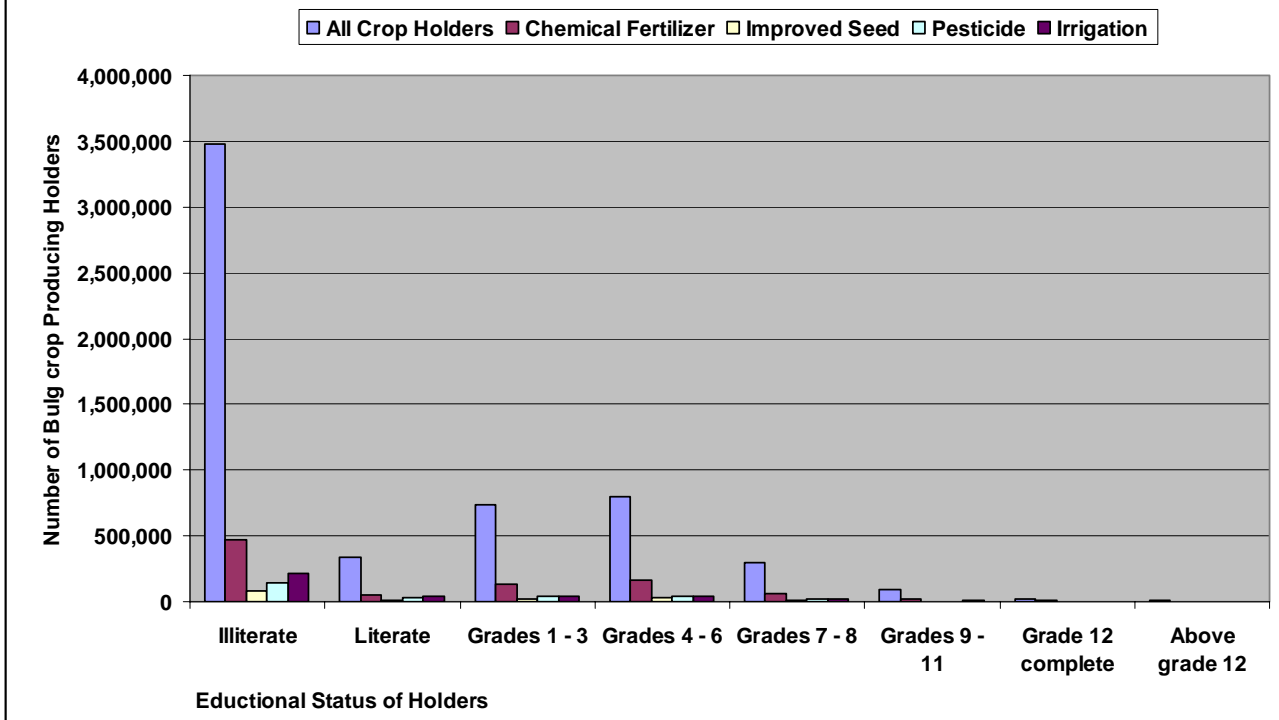


Figure4: Number of Holders Reporting Use of Farm Inputs by Eductuional Status, 2011/12(2004 E.C), Bulg Season



3.7 Number of Holders Reporting Damaged Cropland Area by Causes of Damage

The total number of belg crop producing private peasant holders who reported crop damage and the cause of damage during the year 2011/12 Belg Season Crop Production harvest were estimated to be about 1,566,024 and the damaged cropland area was estimated to be 123,438 hectares. As indicated in Table 4, the highest cropland area was reported for cereals, that are 68,695 hectares, followed by pulses, which is 35,355 hectares and then Oil crops with 1,586 hectares of damaged cropland area. With regard to the causes of crop damage, it is reported that 82,049 hectares was damaged due to Halistone the second highest crop damage which is estimated at 8,744 hectares was damaged by frost or floods. For details, see Table 4 and Fig 5.

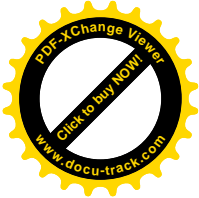
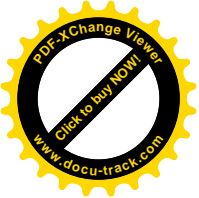
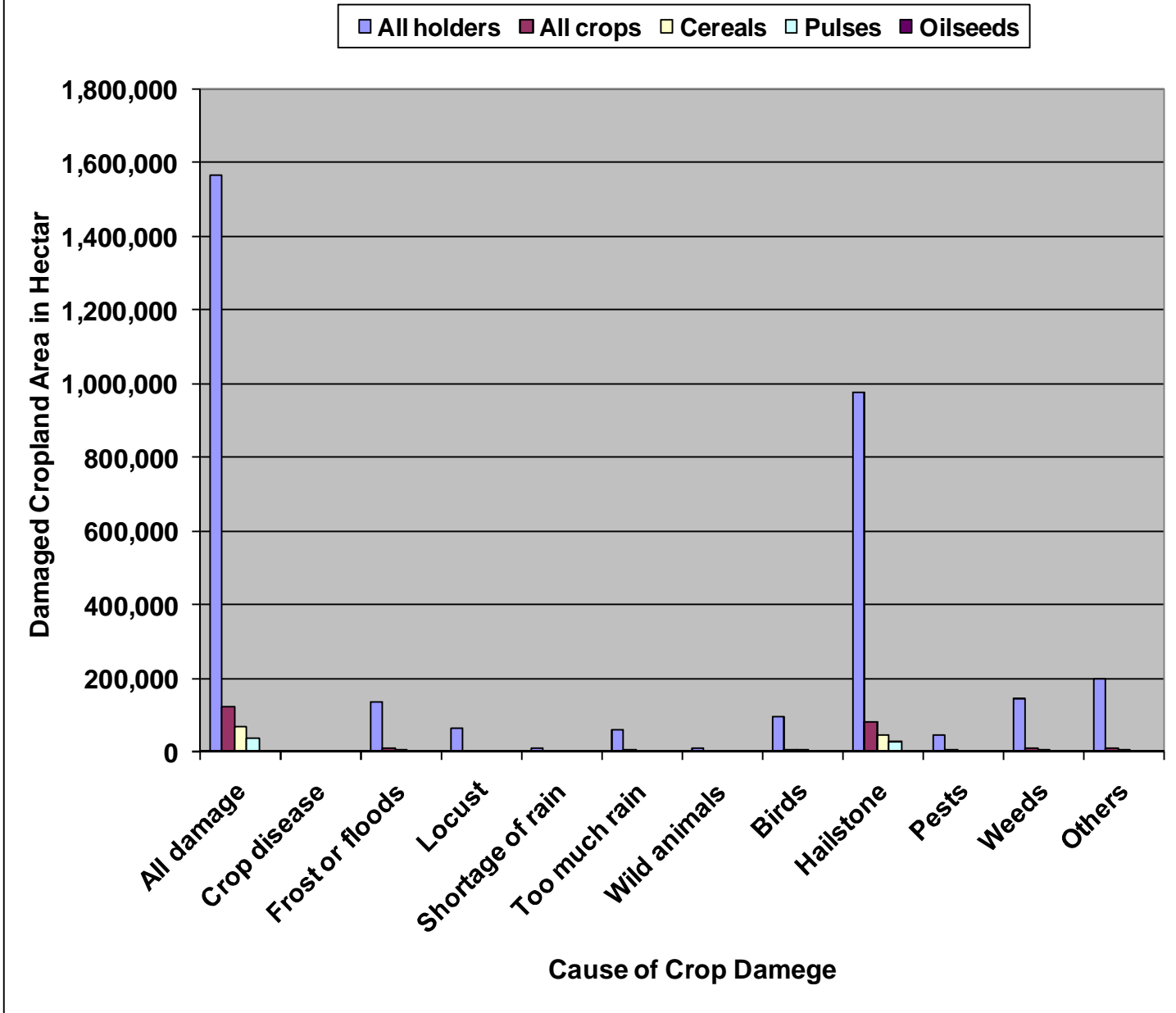
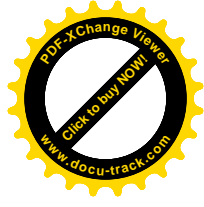
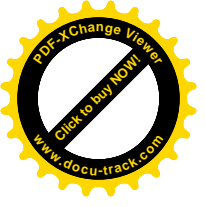


Figure5: Damedged Cropland Area by causes of damage and crop catagory; 2011/12(2004 E.C) Bulg Season





National and Regional Statistical Tables

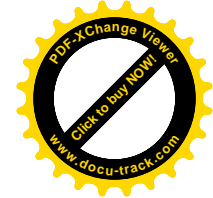
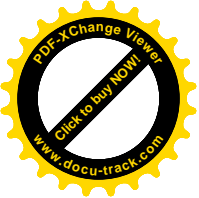


Table 1: Number of Holders, Inputs Applied Area and Quantity of Inputs used

Country Level

<i>Crop type</i>	<i>All Fertilizer</i>			<i>Natural</i>		<i>DAP</i>		
	<i>All crop land Area</i>	<i>Hectare</i>	<i>Quintas</i>	<i>Holder</i>	<i>Hectare</i>	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>
All	1,311,392	563,850	268,223	3,094,598	298,066	1,075,007	223,400	198,761
Cereals	891,169	353,456	131,872	2,234,854	182,250	636,922	147,460	106,410
<i>Teff</i>	74,144	21,915	7,128	46,897	6,204	44,806	12,179	5,351
<i>Barley</i>	149,377	62,222	28,137	232,324	23,129	131,945	38,058	27,158
<i>Wheat</i>	62,350	32,361	22,270	62,800	7,934	60,837	23,261	20,526
<i>Maize</i>	526,428	208,724	70,242	1,963,904	126,910	450,801	65,225	49,763
<i>Sorghum</i>	69,268	25,270	2,908	140,533	17,227	36,596	6,815	2,501
<i>Finger millet</i>	803	165	*	1,586	*	*	*	*
<i>Oats/ 'Aja'</i>	6,921	2,492	982	13,185	757	10,488	1,726	982
<i>Rice</i>	*	*	*	*	*	*	*	*
Pulse	261,966	102,102	49,899	1,453,919	56,455	465,540	41,250	42,436
<i>Horse/Faba beans</i>	5,321	870	430	28,513	653	5,056	214	*
<i>Field peas</i>	15,761	1,770	96	22,339	1,436	3,043	333	96
<i>Haricot beans</i>	218,550	97,350	48,826	1,408,085	52,521	457,917	40,457	41,805
<i>Chick peas</i>	7,214	395	*	6,903	390	*	*	*
<i>Lentiles</i>	9,093	1,395	*	15,685	1,188	1,559	*	*
<i>Vetch/Grass peas</i>	*	*	-	1,558	*	-	-	-
<i>Soya beans</i>	*	*	-	*	*	-	-	-
<i>Fenugreek</i>	2,147	232	*	8,422	176	*	*	*
<i>Gibto</i>	*	*	-	*	*	-	-	-
Oile crops	17,800	3,636	1,198	25,691	1,622	8,702	1,793	1,062
<i>Nueg</i>	*	*	*	*	*	-	-	-
<i>Linseed</i>	1,058	42	*	2,208	23	*	*	*
<i>Ground nuts</i>	4,339	1,299	*	11,515	*	*	*	*
<i>Safflower</i>	241	*	*	*	*	*	*	*
<i>Sesame</i>	11,727	1,944	*	*	*	3,445	*	*
<i>Rapeseed</i>	*	*	*	7,232	104	*	*	*
Vegetables.....	31,687	21,001	14,199	1,253,912	16,742	121,737	2,471	7,158
<i>Lettuce.....</i>	*	*	*	2,012	*	-	-	-
<i>Head Cabbage....</i>	670	350	387	24,153	110	*	*	*
<i>Ethiopian Cabbage</i>	27,601	18,508	9,370	1,195,390	15,708	114,424	2,294	6,760
<i>Tomatoes.....</i>	1,895	*	*	20,813	400	*	*	*
<i>Green peppers...</i>	793	471	*	52,419	262	2,384	*	57
Red peppers.....	650	435	*	13,566	252	1,692	*	*
<i>Swiss chard....</i>	*	*	*	3,308	*	-	-	-
<i>Root Crops.....</i>	108,769	83,656	71,055	1,078,797	40,997	409,598	30,426	41,695
<i>Beetroot.....</i>	297	209	*	19,625	115	*	*	*
<i>Carrot.....</i>	759	505	69	21,928	433	3,144	*	*
<i>Onion.....</i>	6,682	4,909	8,861	110,709	1,944	7,568	*	*
<i>Potatoes.....</i>	84,825	70,074	60,550	727,607	31,086	386,395	29,394	40,413
<i>Garlic.....</i>	3,521	1,933	*	180,896	1,740	10,945	144	239
<i>Taro/'Godere'...</i>	3,059	1,473	216	84,972	1,405	4,362	56	162
<i>Sweet potatoes..</i>	9,625	4,553	215	148,162	4,275	7,688	187	193

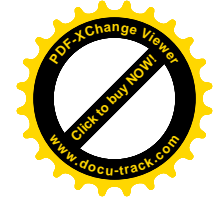
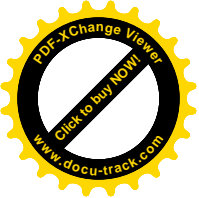


Table 1(Cont'd)

Country Level	UREA			UREA + DAP			Indigenous seed	
	Holder	Hectare	Quintal	Holder	Hectare	Quintal	Holder	Hectare
All	87,255	11,358	15,715	184,132	31,027	53,746	5,758,509	1,274,017
Cereals	45,138	6,752	6,644	83,172	16,994	18,818	4,397,902	856,818
Teff	4,723	884	447	9,369	2,648	1,330	303,150	73,966
Barley	2,953	327	305	5,522	708	674	832,202	149,081
Wheat	*	*	*	2,120	1,109	1,702	227,049	61,981
Maize	36,229	5,179	5,712	68,626	11,410	14,768	3,564,420	492,945
Sorghum	4,011	298	*	3,971	930	269	360,648	69,243
Finger millet	-	-	-	*	*	*	9,808	803
Oats/ 'Aja'	*	*	-	-	-	-	59,684	6,921
Rice	-	-	-	*	*	*	*	*
Pulse	22,447	1,061	1,935	46,390	3,336	5,529	3,037,093	261,384
Horse/Faba beans	-	-	-	*	*	*	81,022	5,321
Field peas	-	-	-	-	-	-	108,018	15,761
Haricot beans	21,926	1,051	1,931	44,928	3,321	5,090	2,826,076	218,000
Chick peas	*	-	*	-	-	-	63,046	7,214
Lentiles	-	-	-	*	*	*	76,115	9,060
Veich/Grass peas	-	-	-	-	-	-	27,690	*
Soya beans	-	-	-	-	-	-	*	*
Fenugreek	*	*	*	-	-	-	34,241	2,147
Gibto	-	-	-	-	-	-	*	*
Oil crops	*	*	*	*	*	*	102,754	17,792
Nueg	*	*	*	-	-	-	2,007	*
Linseed	*	*	-	-	-	-	14,580	1,058
Ground nuts	*	*	-	-	-	-	38,970	4,339
Safflower	-	-	-	*	*	*	4,906	233
Sesame	*	*	*	*	*	*	33,286	11,727
Rapeseed	-	-	-	-	-	-	10,769	*
Vegetables.....	19,030	443	801	26,022	*	*	1,930,418	31,351
Lettuce.....	-	-	-	*	*	*	4,396	*
Head Cabbage....	*	*	*	*	*	*	46,325	482
Ethiopian Cabbage	8,022	106	*	*	*	*	1,813,857	27,573
Tomatoes.....	1,798	*	*	*	*	*	57,952	1,785
Green peppers...	*	*	*	*	*	*	100,853	792
Red peppers.....	*	*	*	*	*	*	30,722	642
Swiss chard....	-	-	-	*	*	*	4,792	*
Root Crops.....	43,986	2,976	6,327	98,422	9,257	23,033	1,981,993	106,672
Beetroot.....	*	*	-	*	*	*	35,381	271
Carrot.....	*	*	*	*	*	*	26,854	*
Onion.....	17,181	*	*	6,294	934	4,042	199,000	5,735
Potatoes.....	26,969	1,361	1,868	89,459	8,233	18,269	1,388,240	83,983
Garlic.....	2,802	32	*	*	*	*	296,484	3,518
Taro/'Godere'...	-	-	-	*	*	*	167,160	3,056
Sweet potatoes..	*	*	*	*	*	*	270,996	9,580

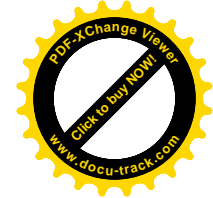
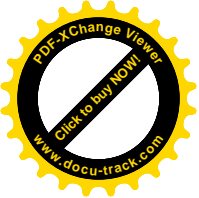


Table 1(Cont'd)

Country Level

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	Hectare
All	214,691	37,359	9,133	314,728	114,206	508,704	90,974	467,350	133,929
Cereals	162,034	34,335	8,520	238,760	102,213	337,531	66,494	355,421	108,401
Teff	*	*	*	66,500	18,295	25,749	3,955	17,960	5,246
Barley	*	*	*	113,576	32,139	15,107	1,428	55,792	17,962
Wheat	*	*	*	86,355	35,276	9,871	1,846	24,795	15,892
Maize	156,633	33,467	7,487	43,871	9,437	301,181	57,673	277,213	63,751
Sorghum	*	*	-	*	*	7,613	*	21,875	5,326
Finger millet	-	-	-	*	*	-	-	-	-
Oats/ 'Aja'	-	-	-	22,898	3,428	*	*	-	-
Rice	*	*	*	*	*	*	*	*	*
Pulse	3,653	*	*	41,338	6,456	122,094	8,509	161,521	13,200
Horse/Faba beans	-	-	-	*	*	*	*	-	-
Field peas	-	-	-	1,479	*	*	*	*	*
Haricot beans	3,082	*	*	26,910	3,289	91,607	4,416	159,426	13,092
Chick peas	-	-	-	*	*	15,335	*	*	*
Lentiles	*	*	*	*	*	6,729	459	*	*
Veich/Grass peas	-	-	-	*	*	*	*	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	*	*	10,624	*	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	*	*	-	*	*	2,425	*	3,725	1,497
Nueg	-	-	-	-	-	*	*	*	*
Linseed	-	-	-	-	-	*	*	-	-
Ground nuts	-	-	-	*	*	*	*	*	*
Safflower	*	*	-	-	-	*	*	-	-
Sesame	-	-	-	-	-	*	*	3,067	1,464
Rapeseed	-	-	-	-	-	-	-	*	*
Vegetables.....	11,056	336	-	*	713	129,617	3,189	7,136	346
Lettuce.....	-	-	-	-	-	*	*	-	-
Head Cabbage....	*	*	-	*	*	8,814	150	-	-
Ethiopian Cabbage	1,926	27	-	*	*	63,764	595	-	-
Tomatoes.....	2,348	*	-	2,756	*	37,719	1,554	3,291	177
Green peppers...	*	*	-	*	*	30,751	443	-	-
Red peppers.....	*	*	-	*	*	16,814	435	*	*
Swiss chard....	*	*	-	*	*	*	*	-	-
Root Crops.....	45,585	2,097	*	35,356	4,714	219,214	12,317	128,983	10,484
Beetroot.....	4,246	*	*	-	-	8,963	50	-	-
Carrot.....	8,524	*	*	-	-	5,499	*	-	-
Onion.....	*	*	-	*	*	77,561	4,219	19,288	*
Potatoes.....	23,348	843	*	20,858	2,637	118,834	5,969	111,520	8,484
Garlic.....	1,000	*	-	2,108	123	26,763	569	-	-
Taro/'Godere'...	*	*	-	*	*	*	*	-	-
Sweet potatoes..	*	*	-	*	*	27,443	*	1,862	*

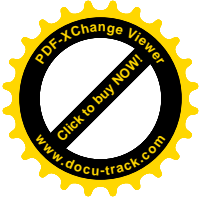
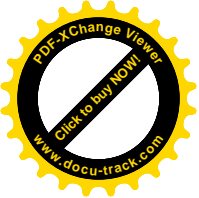


Table 1.3: Number of Holders, Inputs Applied Area and Quantity of Inputs used

Amhara Region

Crop type	All crop land Area	All Fertilizer		Natural		DAP		
		Hectare	Quintal	Holder	Hectare	Holder	Hectare	Quintal
All	136,427	42,957	16,340	281,001	32,798	32,345	5,811	5,725
Cereals	81,283	25,707	7,449	142,291	18,567	23,953	5,101	*
Teff	11,038	2,745	*	23,261	2,159	*	*	*
Barley	56,674	15,633	*	93,049	11,687	*	*	*
Wheat	4,453	2,458	*	24,852	2,408	-	-	-
Maize	8,136	4,460	4,290	24,193	1,903	*	*	*
Sorghum	*	181	-	2,254	181	-	-	-
Finger millet	-	-	-	-	-	-	-	-
Oats/ 'Aja'	*	*	-	*	*	-	-	-
Rice	*	*	-	*	*	-	-	-
Pulse	33,871	1,727	*	28,994	1,696	*	*	*
Horse/Faba beans	-	-	-	-	-	-	-	-
Field peas	861	*	-	*	*	-	-	-
Haricot beans	15,752	243	*	5,828	224	*	*	*
Chick peas	6,615	378	*	6,313	378	-	-	-
Lentiles	5,725	667	*	10,189	655	-	-	-
Veich/Grass peas	*	*	-	*	*	-	-	-
Soya beans	-	-	-	-	-	-	-	-
Fenugreek	1,195	*	-	4,793	*	-	-	-
Gibto	-	-	-	-	-	-	-	-
Oil crops	*	24	*	1,658	24	-	-	-
Nueg	*	*	*	*	*	-	-	-
Linseed	*	*	-	1,371	*	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Safflower	*	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Rapeseed	*	-	-	-	-	-	-	-
Vegetables.....	829	476	347	31,926	313	*	*	*
Lettuce.....	*	*	*	*	*	-	-	-
Head Cabbage....	*	*	*	*	*	-	-	-
Ethiopian Cabbage	92	70	*	15,729	65	*	*	*
Tomatoes.....	*	*	*	*	*	*	*	*
Green peppers...	172	101	*	6,813	*	*	*	*
Red peppers.....	298	183	*	6,793	*	*	*	*
Swiss chard....	*	*	-	*	*	-	-	-
Root Crops.....	19,830	15,023	*	169,729	12,199	*	*	*
Beetroot.....	*	*	-	*	*	-	-	-
Carrot.....	*	*	-	*	*	-	-	-
Onion.....	2,468	2,028	*	23,457	604	-	*	*
Potatoes.....	16,930	12,851	2,230	148,741	11,472	*	*	*
Garlic.....	*	91	*	9,689	70	*	*	*
Taro/'Godere'...	-	-	-	-	-	-	-	-
Sweet potatoes..	*	*	-	*	*	-	-	-

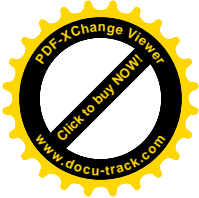
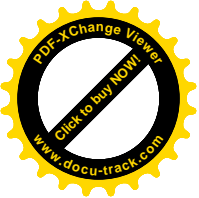


Table 1.3 (Cont'd)

Amhara Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	Hectare
All	16,088	*	*	45,459	10,097	177,551	25,458	71,136	13,297
Cereals	*	*	*	23,551	3,838	92,226	12,724	34,905	6,987
Teff	*	*	*	13,347	*	22,805	*	*	*
Barley	*	*	*	*	*	11,170	840	15,451	*
Wheat	*	*	*	*	*	9,662	1,759	-	-
Maize	*	*	*	3,401	*	63,182	6,620	20,386	*
Sorghum	-	-	-	-	-	-	-	*	*
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	*	*	-	-
Rice	-	-	-	-	-	-	-	-	-
Pulse	*	*	-	20,428	*	44,632	6,087	*	*
Horse/Faba beans	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	*	*	*	*	-	-
Haricot beans	*	*	-	*	*	*	*	*	*
Chick peas	-	-	-	*	*	15,310	*	*	-
Lentiles	-	-	-	*	*	6,683	459	*	*
Veich/Grass peas	-	-	-	*	*	*	*	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	*	*	9,385	*	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	1,489	*	*	*
Nueg	-	-	-	-	-	*	*	*	*
Linseed	-	-	-	-	-	*	*	-	-
Ground nuts	-	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	*	*	-	-
Sesame	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	*	*	-	*	*	41,685	665	*	*
Lettuce.....	-	-	-	-	-	*	*	-	-
Head Cabbage....	*	*	-	*	*	3,238	*	-	-
Ethiopian Cabbage	*	*	-	-	-	15,437	64	-	-
Tomatoes.....	-	-	-	*	*	8,495	*	*	*
Green peppers...	-	-	-	*	*	13,812	130	-	-
Red peppers.....	*	*	-	*	*	11,483	246	-	-
Swiss chard....	*	*	-	-	-	*	*	-	-
Root Crops.....	3,464	146	-	*	*	103,758	5,865	47,941	4,566
Beetroot.....	*	*	-	-	-	*	*	-	-
Carrot.....	*	*	-	-	-	*	*	-	-
Onion.....	*	*	-	*	*	40,617	2,355	*	*
Potatoes.....	1,948	*	-	*	*	65,072	3,137	40,645	3,396
Garlic.....	-	-	-	*	*	14,728	*	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	-	-	1,373	*	-	-

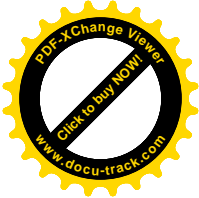
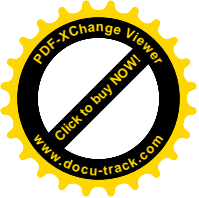


Table 1.4: Number of Holders, Inputs Applied Area and Quantity of Inputs used

<i>Oromia Region</i>								
<i>Crop type</i>	<i>All crop land Area</i>	<i>All Fertilize</i>		<i>Natural</i>		<i>DAP</i>		
		<i>Hectare</i>	<i>Quintal</i>	<i>Holder</i>	<i>Hectare</i>	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>
All	674,892	299,182	134,427	1,173,557	147,173	401,089	132,627	108,725
Cereals	493,765	216,748	79,927	872,186	100,269	303,036	104,992	69,361
<i>Teff</i>	39,474	12,369	2,968	16,583	3,421	27,874	7,821	2,455
<i>Barley</i>	81,807	43,410	24,741	84,296	8,988	112,137	33,767	24,199
<i>Wheat</i>	56,723	29,323	22,037	34,621	5,233	58,931	22,987	20,350
<i>Maize</i>	266,466	110,460	27,219	764,034	70,072	149,616	32,837	19,682
<i>Sorghum</i>	42,909	18,846	1,924	86,864	12,009	25,842	5,794	1,636
<i>Finger millet</i>	*	*	*	*	*	*	*	*
<i>Oats/ 'Aja'</i>	6,316	2,270	975	8,313	544	10,393	1,718	975
<i>Rice</i>	-	-	-	-	-	-	-	-
Pulse	114,574	38,249	16,864	601,096	25,739	108,721	10,739	14,331
<i>Horse/Faba beans</i>	*	404	*	14,965	378	*	*	*
<i>Field peas</i>	14,295	1,432	89	11,068	1,106	2,932	326	89
<i>Haricot beans</i>	91,260	35,573	16,632	586,780	23,664	103,060	10,148	14,102
<i>Chick peas</i>	*	*	-	*	*	-	-	-
<i>Lentiles</i>	*	*	*	*	*	1,481	*	*
<i>Veich/Grass peas</i>	*	-	-	-	-	-	-	-
<i>Soya beans</i>	*	-	-	-	-	-	-	-
<i>Fenugreek</i>	913	115	*	2,103	*	*	*	*
<i>Gibto</i>	*	-	-	-	-	-	-	-
Oil crops	7,400	2,195	*	18,364	1,288	6,481	693	*
<i>Nueg</i>	*	*	-	*	*	-	-	-
<i>Linseed</i>	*	*	*	*	*	*	*	*
<i>Ground nuts</i>	1,856	*	*	*	*	*	*	*
<i>Safflower</i>	-	-	-	-	-	-	-	-
<i>Sesame</i>	*	*	*	*	*	*	*	*
<i>Rapeseed</i>	*	*	*	7,183	104	*	*	*
Vegetables.....	12,978	7,612	*	376,420	6,045	20,046	675	2,459
<i>Lettuce.....</i>	*	*	-	*	*	-	-	-
<i>Head Cabbage....</i>	215	146	*	18,778	67	-	-	-
<i>Ethiopian Cabbage</i>	10,927	6,191	2,395	348,585	5,506	16,078	602	2,185
<i>Tomatoes.....</i>	*	*	*	8,013	218	*	*	*
<i>Green peppers...</i>	433	285	*	25,390	159	*	*	*
<i>Red peppers.....</i>	*	*	*	3,914	*	*	*	*
<i>Swiss chard....</i>	*	*	-	*	*	-	-	-
Root Crops.....	46,176	34,378	31,699	389,172	13,832	124,310	15,528	22,169
<i>Beetroot.....</i>	205	*	*	13,632	76	*	*	*
<i>Carrot.....</i>	*	*	*	7,660	*	*	*	*
<i>Onion.....</i>	3,427	2,332	3,166	41,819	980	5,944	*	*
<i>Potatoes.....</i>	36,181	28,761	28,045	260,198	9,937	113,225	14,809	21,314
<i>Garlic.....</i>	2,624	1,449	290	96,971	1,376	5,103	53	142
<i>Taro/'Godere'...</i>	279	*	*	13,732	*	*	*	*
<i>Sweet potatoes..</i>	3,056	1,179	*	21,644	985	2,413	106	*

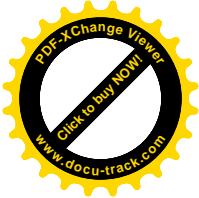
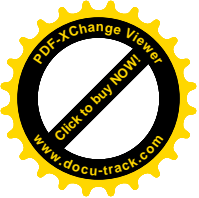


Table 1.4 (Cont'd)

Oromia Region

<i>Crop type</i>	<i>UREA</i>			<i>UREA + DAP</i>			<i>Indigenous seed</i>	
	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>	<i>Holder</i>	<i>Hectare</i>
All	40,879	7,732	8,256	47,804	11,650	17,447	2,538,674	664,212
Cereals	24,454	5,453	5,004	24,438	6,034	5,562	2,037,019	484,714
<i>Teff</i>	*	*	*	*	*	*	142,640	39,474
<i>Barley</i>	1,755	295	276	2,612	*	*	429,803	81,549
<i>Wheat</i>	*	*	*	1,634	1,055	1,661	167,198	56,580
<i>Maize</i>	19,846	4,482	4,441	17,840	3,068	*	1,610,245	257,815
<i>Sorghum</i>	2,927	226	*	3,588	*	234	197,550	42,909
<i>Finger millet</i>	-	-	-	-	-	-	*	*
<i>Oats/ 'Aja'</i>	*	*	-	-	-	-	48,470	6,316
<i>Rice</i>	-	-	-	-	-	-	-	-
Pulse	13,708	790	*	10,810	981	1,262	1,315,296	114,275
<i>Horse/Faba beans</i>	-	-	-	-	-	-	43,950	*
<i>Field peas</i>	-	-	-	-	-	-	75,024	14,295
<i>Haricot beans</i>	13,413	780	*	10,810	981	1,262	1,230,281	90,992
<i>Chick peas</i>	-	-	-	-	-	-	*	*
<i>Lentiles</i>	-	-	-	-	-	-	24,262	*
<i>Veich/Grass peas</i>	-	-	-	-	-	-	*	*
<i>Soya beans</i>	-	-	-	-	-	-	*	*
<i>Fenugreek</i>	*	*	*	-	-	-	10,527	913
<i>Gibto</i>	-	-	-	-	-	-	*	*
Oil crops	*	*	*	*	*	*	46,805	7,400
<i>Nueg</i>	-	-	-	-	-	-	*	*
<i>Linseed</i>	*	*	-	-	-	-	4,220	*
<i>Ground nuts</i>	*	*	-	-	-	-	16,694	1,856
<i>Safflower</i>	-	-	-	-	-	-	-	-
<i>Sesame</i>	*	*	*	*	*	*	14,976	*
<i>Rapeseed</i>	-	-	-	-	-	-	10,187	*
Vegetables.....	*	*	*	*	*	*	673,533	12,867
<i>Lettuce.....</i>	-	-	-	-	-	-	*	*
<i>Head Cabbage....</i>	*	*	*	*	*	*	35,963	206
<i>Ethiopian Cabbage</i>	*	*	*	*	*	*	616,505	10,914
<i>Tomatoes.....</i>	-	-	-	*	*	*	31,787	*
<i>Green peppers...</i>	*	*	*	*	*	*	52,415	432
<i>Red peppers.....</i>	-	-	-	-	-	-	6,544	*
<i>Swiss chard....</i>	-	-	-	-	-	-	*	*
Root Crops.....	19,298	1,198	1,733	23,220	3,820	7,797	755,674	44,958
<i>Beetroot.....</i>	*	*	-	-	-	-	27,425	198
<i>Carrot.....</i>	-	-	-	-	-	-	9,924	*
<i>Onion.....</i>	3,379	272	*	*	613	2,263	85,045	2,508
<i>Potatoes.....</i>	15,017	857	*	18,748	3,158	5,514	533,357	36,070
<i>Garlic.....</i>	*	*	*	*	*	*	170,853	2,622
<i>Taro/'Godere'...</i>	-	-	-	-	-	-	21,146	279
<i>Sweet potatoes..</i>	*	*	*	*	*	-	55,135	3,056

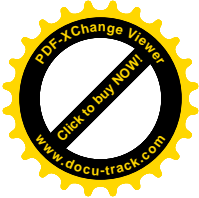
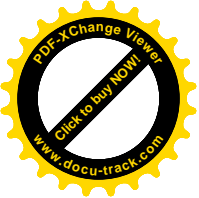


Table 1.4 (Cont'd)

Oromia Region

<i>Crop type</i>	<i>Improved seed</i>			<i>Pesticide</i>		<i>Irrigation</i>		<i>Extension package</i>	
	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>	<i>Holder</i>	<i>Hectare</i>	<i>Holder</i>	<i>Hectare</i>	<i>Holder</i>	<i>Hectare</i>
All	57,125	10,670	2,811	215,064	96,266	216,672	26,623	207,543	78,644
Cereals	37,363	9,041	2,514	198,098	92,125	147,430	18,084	190,039	69,217
<i>Teff</i>	*	-	*	44,142	12,637	*	*	8,301	2,941
<i>Barley</i>	*	*	*	105,396	31,233	*	*	38,316	13,353
<i>Wheat</i>	*	*	*	78,865	34,745	*	*	23,763	15,777
<i>Maize</i>	35,149	8,641	2,004	33,431	7,909	143,406	17,354	132,450	32,602
<i>Sorghum</i>	-	-	-	*	*	3,662	*	16,398	4,544
<i>Finger millet</i>	-	-	-	*	*	-	-	-	-
<i>Oats/ 'Aja'</i>	-	-	-	22,898	3,428	-	-	-	-
<i>Rice</i>	-	-	-	-	-	-	-	-	-
Pulse	*	*	*	8,307	1,257	41,462	877	81,327	5,963
<i>Horse/Faba beans</i>	-	-	-	*	*	*	*	-	-
<i>Field peas</i>	-	-	-	*	*	-	-	-	-
<i>Haricot beans</i>	*	*	*	5,762	*	40,616	851	80,760	5,873
<i>Chick peas</i>	-	-	-	-	-	-	-	-	-
<i>Lentiles</i>	*	*	*	*	*	-	-	*	*
<i>Vetch/Grass peas</i>	-	-	-	-	-	-	-	-	-
<i>Soya beans</i>	-	-	-	-	-	-	-	-	-
<i>Fenugreek</i>	-	-	-	*	*	*	*	-	-
<i>Gibto</i>	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	*	*	1,781	*
<i>Nueg</i>	-	-	-	-	-	-	-	-	-
<i>Linseed</i>	-	-	-	-	-	-	-	-	-
<i>Ground nuts</i>	-	-	-	-	-	*	*	*	*
<i>Safflower</i>	-	-	-	-	-	-	-	-	-
<i>Sesame</i>	-	-	-	-	-	-	-	*	*
<i>Rapeseed</i>	-	-	-	-	-	-	-	*	*
Vegetables.....	*	*	-	3,548	*	49,239	1,716	*	*
<i>Lettuce.....</i>	-	-	-	-	-	-	-	-	-
<i>Head Cabbage....</i>	*	*	-	*	*	4,502	*	-	-
<i>Ethiopian Cabbage</i>	*	*	-	2,343	25	24,259	349	-	-
<i>Tomatoes.....</i>	1,672	*	-	*	*	17,560	*	*	*
<i>Green peppers...</i>	*	*	-	*	*	13,299	273	-	-
<i>Red peppers.....</i>	-	-	-	-	-	*	*	*	*
<i>Swiss chard.....</i>	-	-	-	-	-	-	-	-	-
Root Crops.....	15,297	*	-	16,042	2,682	98,203	5,737	29,087	2,800
<i>Beetroot.....</i>	*	*	-	-	-	6,243	42	-	-
<i>Carrot.....</i>	*	*	-	-	-	*	*	-	-
<i>Onion.....</i>	*	*	-	2,589	558	30,241	1,592	5,253	557
<i>Potatoes.....</i>	2,586	111	-	11,531	1,987	49,692	2,684	24,460	2,179
<i>Garlic.....</i>	*	*	-	1,654	*	9,824	*	-	-
<i>Taro/'Godere'...</i>	-	-	-	-	-	-	-	-	-
<i>Sweet potatoes..</i>	-	-	-	*	*	21,928	*	*	*

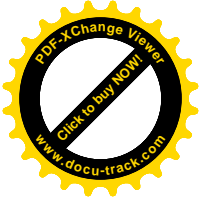
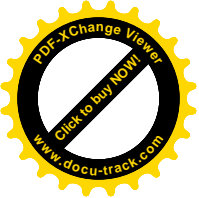


Table 1.5: Number of Holders, Inputs Applied Area and Quantity of Inputs used

Somale Region

Crop type	All crop land Area	All Fertilizer		Natural		DAP		
		Hectare	Quintal	Holder	Hectare	Holder	Hectare	Quintal
All	4,574	358	*	4,625	349	-	-	-
Cereals	4,105	*	-	3,885	*	-	-	-
Teff	-	-	-	-	-	-	-	-
Barley	*	-	-	-	-	-	-	-
Wheat	*	-	-	-	-	-	-	-
Maize	4,058	*	-	3,885	*	-	-	-
Sorghum	*	*	-	*	*	-	-	-
Finger millet	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-
Pulse	362	*	-	*	*	-	-	-
Horse/Faba beans	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-
Haricot beans	362	*	-	*	*	-	-	-
Chick peas	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-
Vetch/Grass peas	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Vegetables.....	65	29	1	589	26	-	-	-
Lettuce.....	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	-	-	-
Ethiopian Cabbage	*	*	-	*	*	-	-	-
Tomatoes.....	63	27	1	560	23	-	-	-
Green peppers...	*	*	-	*	*	-	-	-
Red peppers.....	-	-	-	-	-	-	-	-
Swiss chard.....	*	-	-	-	-	-	-	-
Root Crops.....	42	16	*	*	*	-	-	-
Beetroot.....	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-
Onion.....	41	15	*	*	*	-	-	-
Potatoes.....	-	-	-	-	-	-	-	-
Garlic.....	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-
Sweet potatoes..	*	*	-	73	*	-	-	-

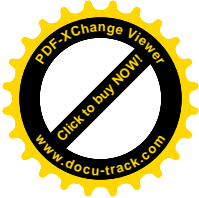
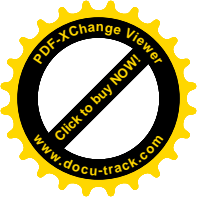


Table 1.5 (Cont'd)

Somale Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	Hectare
All	*	*	-	69	7	2,826	429	*	*
Cereals	-	-	-	*	*	2,354	309	-	-
Teff	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-
Maize	-	-	-	*	*	2,332	309	-	-
Sorghum	-	-	-	-	-	47	*	-	-
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-
Pulse	-	-	-	-	-	*	*	-	-
Horse/Faba beans	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	*	*	-	-
Chick peas	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-
Veich/Grass peas	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	-	-	-	47	3	926	65	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage	-	-	-	-	-	-	-	-	-
Tomatoes.....	-	-	-	47	3	926	63	-	-
Green peppers...	-	-	-	-	-	*	*	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	*	*	*	*	-	-
Root Crops.....	*	*	-	47	3	652	42	*	*
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	*	*	-	47	3	605	41	*	*
Potatoes.....	-	-	-	-	-	-	-	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	-	-	*	*	-	-

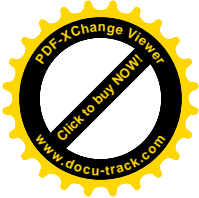
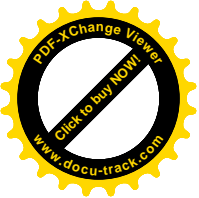


Table 1.6: Number of Holders, Inputs Applied Area and Quantity of Inputs used

Benshangul-Gumuz Region

Crop type	All crop land Area	All Fertilizer		Natural		DAP		
		Hectare	Quintal	Holder	Hectare	Holder	Hectare	Quintal
All	6,108	2,211	*	23,296	2,111	*	*	*
Cereals	2,434	1,069	10	17,986	1,042	*	*	*
Teff	-	-	-	-	-	-	-	-
Barley	65	*	-	*	*	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	2,255	1,028	*	17,798	1,017	*	*	*
Sorghum	114	*	*	*	*	-	-	-
Finger millet	-	-	-	-	-	-	-	-
Oats/ 'Aja'	*	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-
Pulse	3,283	964	*	16,765	902	*	*	*
Horse/Faba beans	*	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-
Haricot beans	3,242	960	*	16,765	898	*	*	*
Chick peas	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-
Veitch/Grass peas	-	-	-	-	-	-	-	-
Soya beans	*	*	-	*	*	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-
Oil crops	*	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-
Linseed	*	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Vegetables.....	272	120	4	9,105	116	*	*	*
Lettuce.....	-	-	-	-	-	-	-	-
Head Cabbage....	*	*	*	*	*	*	*	*
Ethiopian Cabbage	183	68	*	4,964	68	*	*	*
Tomatoes.....	70	*	*	4,425	*	*	*	*
Green peppers...	16	*	*	1,968	*	-	-	-
Red peppers....	*	*	-	*	*	-	-	-
Swiss chard....	-	-	-	-	-	-	-	-
Root Crops.....	118	58	*	4,735	52	*	*	*
Beetroot.....	*	*	-	*	*	-	-	-
Carrot.....	*	*	-	*	*	-	-	-
Onion.....	16	*	*	972	*	*	*	*
Potatoes.....	92	*	*	2,680	*	*	*	*
Garlic.....	5	*	-	*	*	-	-	-
Taro/'Godere'...	*	*	-	*	*	-	-	-
Sweet potatoes..	*	*	-	*	*	-	-	-

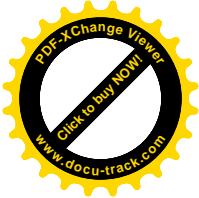
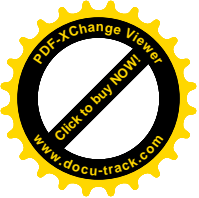


Table 1.6 (Cont'd)

Benshangul-Gumuz Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	Hectare
All	*	*	*	*	*	13,706	693	*	*
Cereals	*	*	*	-	-	8,884	400	*	*
Teff	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	*	*	-	-
Wheat	-	-	-	-	-	-	-	-	-
Maize	*	*	*	-	-	8,884	400	*	*
Sorghum	-	-	-	-	-	-	-	-	-
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-
Pulse	-	-	-	-	-	*	*	*	*
Horse/Faba beans	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	*	*	*	*
Chick peas	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-
Vetch/Grass peas	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	*	*	-	*	*	7,944	105	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage....	*	*	-	-	-	*	*	-	-
Ethiopian Cabbage	-	-	-	-	-	3,119	30	-	-
Tomatoes.....	-	-	-	*	*	5,759	62	-	-
Green peppers...	-	-	-	*	*	2,298	12	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	*	*	-	-	-	3,474	16	*	*
Beetroot.....	-	-	-	-	-	*	*	-	-
Carrot.....	-	-	-	-	-	*	*	-	-
Onion.....	*	*	-	-	-	*	8	*	*
Potatoes.....	*	*	-	-	-	*	*	-	-
Garlic.....	-	-	-	-	-	*	*	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	-	-	*	*	-	-

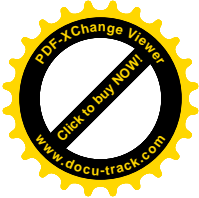
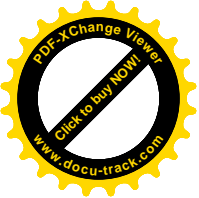


Table 1.7: Number of Holders, Inputs Applied Area and Quantity of Inputs used

(S.N.N.P.R) Region

Crop type	All crop land Area		All Fertilizer		Natural		DAP		
	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Quintal		
All	449,950	216,962	116,096	1,603,175	114,666	638,295	84,471	84,016	
Cereals	272,407	108,162	43,770	1,191,504	61,409	307,807	36,988	32,197	
Teff	19,539	6,402	3,650	6,637	538	15,998	4,077	2,714	
Barley	10,520	3,176	613	54,960	2,452	7,860	549	397	
Wheat	1,019	518	185	2,714	*	1,905	274	176	
Maize	213,298	91,661	38,217	1,149,327	53,239	285,346	30,977	27,995	
Sorghum	25,455	6,010	958	48,926	4,877	10,446	975	842	
Finger millet	723	95	*	1,472	*	*	*	*	
Oats/ 'Aja'	*	*	*	*	*	*	*	*	
Rice	*	*	*	-	-	*	*	*	
Pulse	109,296	60,939	32,192	801,356	27,933	355,398	30,426	27,994	
Horse/Faba beans	1,049	466	418	13,548	275	3,348	188	*	
Field peas	604	97	*	4,642	89	112	*	*	
Haricot beans	107,507	60,351	31,765	793,026	27,551	353,435	30,224	27,593	
Chick peas	*	*	*	*	*	*	*	*	
Lentiles	33	*	*	*	*	*	*	*	
Veich/Grass peas	*	*	-	*	*	-	-	-	
Soya beans	*	-	-	-	-	-	-	-	
Fenugreek	9	*	-	1,526	*	-	-	-	
Gibto	*	*	-	*	*	-	-	-	
Oil crops	8,848	*	*	5,612	*	*	*	*	
Nueg	*	*	-	*	*	-	-	-	
Linseed	20	*	-	*	*	-	-	-	
Ground nuts	2,431	*	-	3,670	*	-	-	-	
Safflower	*	*	*	*	*	*	*	*	
Sesame	6,261	*	*	*	*	*	*	*	
Rapeseed	*	*	-	*	*	-	-	-	
Vegetables.....	17,117	12,522	8,112	833,733	10,165	99,365	1,756	4,600	
Lettuce.....	*	*	-	*	*	-	-	-	
Head Cabbage....	*	*	*	2,192	*	*	*	*	
Ethiopian Cabbage	16,370	12,179	6,928	826,083	10,070	97,952	1,689	4,548	
Tomatoes.....	*	*	*	1,545	7	-	-	-	
Green peppers...	*	60	*	17,603	54	*	*	*	
Red peppers....	14	9	*	2,345	7	*	*	*	
Swiss chard....	*	*	*	*	*	-	-	-	
Root Crops.....	42,282	33,928	31,267	513,261	14,855	268,219	14,201	18,568	
Beetroot.....	*	*	*	4,468	*	-	-	-	
Carrot.....	*	*	*	11,981	*	*	*	*	
Onion.....	*	*	*	43,601	*	*	*	*	
Potatoes.....	31,571	28,370	30,179	315,430	9,625	257,564	13,911	18,178	
Garlic.....	536	386	*	73,164	291	4,697	81	71	
Taro/'Godere'...	2,778	1,277	204	71,217	1,221	3,992	44	150	
Sweet potatoes..	6,521	3,341	124	124,688	3,264	5,193	77	124	

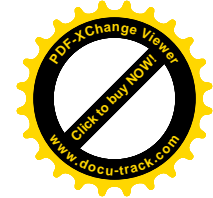
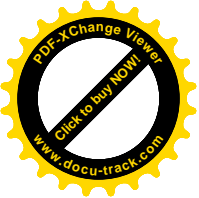


Table 1.7 (Cont'd)

(S.N.N.P.R) Region

Crop type	UREA			UREA + DAP			Indigenous seed	
	Holder	Hectare	Quintal	Holder	Hectare	Quintal	Holder	Hectare
All	17,960	975	1,471	112,903	16,850	30,609	2,466,632	426,764
Cereals	10,837	485	673	44,353	9,280	10,900	1,849,571	250,413
Teff	182	77	28	4,517	1,710	908	72,242	19,531
Barley	*	*	*	1,795	172	213	144,518	10,498
Wheat	*	*	*	*	*	*	10,855	1,019
Maize	10,117	356	556	39,200	7,089	9,666	1,770,766	191,360
Sorghum	*	*	*	383	*	*	152,693	25,430
Finger millet	-	-	-	*	*	*	9,150	723
Oats/ 'Aja'	-	-	-	-	-	-	1,226	*
Rice	-	-	-	*	*	*	*	*
Pulse	7,697	239	360	34,071	2,341	3,838	1,491,281	109,014
Horse/Faba beans	-	-	-	*	*	*	36,588	1,049
Field peas	-	-	-	-	-	-	18,074	604
Haricot beans	7,697	239	360	33,854	2,338	3,812	1,476,762	107,226
Chick peas	-	-	-	-	-	-	*	*
Lentiles	-	-	-	-	-	-	1,092	33
Veitch/Grass peas	-	-	-	-	-	-	*	*
Soya beans	-	-	-	-	-	-	*	*
Fenugreek	-	-	-	-	-	-	2,260	9
Gibto	-	-	-	-	-	-	*	*
Oil crops	-	-	-	*	*	*	42,532	8,840
Nueg	-	-	-	-	-	-	*	*
Linseed	-	-	-	-	-	-	1,318	20
Ground nuts	-	-	-	-	-	-	22,052	2,431
Safflower	-	-	-	*	*	*	3,900	*
Sesame	-	-	-	-	-	-	15,990	6,261
Rapeseed	-	-	-	-	-	-	*	*
Vegetables.....	*	41	*	*	*	*	1,178,494	16,925
Lettuce.....	-	-	-	-	-	-	792	*
Head Cabbage....	*	*	*	*	*	*	6,781	254
Ethiopian Cabbage	*	*	*	*	*	*	1,163,386	16,360
Tomatoes.....	-	-	-	*	*	*	4,752	*
Green peppers...	-	-	-	-	-	-	27,493	*
Red peppers....	-	-	-	-	-	-	4,713	14
Swiss chard....	-	-	-	*	*	*	2,315	*
Root Crops.....	6,067	210	263	65,486	4,662	12,436	941,472	41,573
Beetroot.....	-	-	-	*	*	*	5,810	*
Carrot.....	-	-	-	*	*	*	13,962	*
Onion.....	-	-	-	-	-	-	56,394	*
Potatoes.....	5,775	210	263	63,797	4,625	11,739	625,383	30,942
Garlic.....	*	*	-	*	*	*	103,230	534
Taro/'Godere'...	-	-	-	*	*	*	145,781	2,776
Sweet potatoes..	-	-	-	-	-	-	211,893	6,476

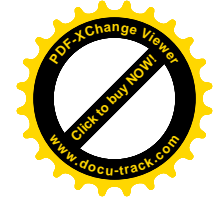
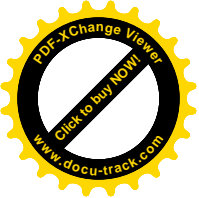


Table 1.7 (Cont'd)

(S.N.N.P.R) Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder		Holder	Hectare
All	137,870	23,179	4,762	52,255	7,348	57,414	11,011	176,324	39,741
Cereals	110,793	21,988	4,446	15,851	5,773	51,103	9,177	121,493	30,365
Teff	*	*	*	8,749	3,138	2,358	*	5,550	1,313
Barley	*	*	*	1,353	*	*	*	*	192
Wheat	-	-	-	*	*	-	-	*	*
Maize	110,426	21,932	4,437	6,055	1,023	48,696	7,658	116,733	27,796
Sorghum	*	*	-	*	*	*	*	5,065	725
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	*	*	-	-
Rice	-	-	-	*	*	*	*	*	*
Pulse	2,464	*	*	*	376	29,803	*	71,664	5,510
Horse/Faba beans	-	-	-	*	*	*	*	-	-
Field peas	-	-	-	-	-	*	*	*	*
Haricot beans	2,464	*	*	*	349	29,284	*	71,605	5,505
Chick peas	-	-	-	-	-	*	*	*	*
Lentiles	-	-	-	*	*	*	*	-	-
Veich/Grass peas	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	*	*	-	*	*	*	*	*	*
Nueg	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	*	*	-	-
Ground nuts	-	-	-	*	*	-	-	-	-
Safflower	*	*	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	*	*	*	*
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	2,901	*	-	*	*	23,030	252	*	*
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage....	*	*	-	*	*	*	*	-	-
Ethiopian Cabbage	*	*	-	*	*	*	*	-	-
Tomatoes.....	*	*	-	*	*	*	*	*	*
Green peppers...	-	-	-	-	-	*	*	-	-
Red peppers....	-	-	-	-	-	*	*	*	*
Swiss chard....	*	*	-	-	-	-	-	-	-
Root Crops.....	26,231	709	*	9,279	636	7,070	377	47,812	2,920
Beetroot.....	*	*	*	-	-	258	*	-	-
Carrot.....	*	*	*	-	-	*	*	-	-
Onion.....	1,179	*	-	-	-	*	*	1,352	*
Potatoes.....	18,708	628	*	8,621	626	*	*	45,580	2,892
Garlic.....	618	*	-	*	*	*	*	-	-
Taro/'Godere'...	*	*	-	*	*	*	*	-	-
Sweet potatoes..	*	*	-	-	-	3,377	*	950	*

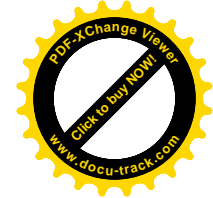
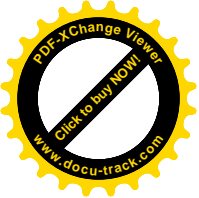


Table 1.8: Number of Holders, Inputs Applied Area and Quantity of Inputs used

<i>Gambella Region</i>								
<i>Crop type</i>	<i>All crop land Area</i>	<i>All Fertilizer</i>		<i>Natural</i>		<i>DAP</i>		
		<i>Hectare</i>	<i>Quintal</i>	<i>Holder</i>	<i>Hectare</i>	<i>Holder</i>	<i>Hectare</i>	<i>Quintal</i>
All	7,850	*	-	*	*	-	-	-
Cereals	6,731	*	-	*	*	-	-	-
<i>Teff</i>	*	-	-	-	-	-	-	-
<i>Barley</i>	*	-	-	-	-	-	-	-
<i>Wheat</i>	-	-	-	-	-	-	-	-
<i>Maize</i>	6,640	*	-	*	*	-	-	-
<i>Sorghum</i>	*	-	-	-	-	-	-	-
<i>Finger millet</i>	*	-	-	-	-	-	-	-
<i>Oats/ 'Aja'</i>	-	-	-	-	-	-	-	-
<i>Rice</i>	*	-	-	-	-	-	-	-
Pulse	249	*	-	*	*	-	-	-
<i>Horse/Faba beans</i>	-	-	-	-	-	-	-	-
<i>Field peas</i>	-	-	-	-	-	-	-	-
<i>Haricot beans</i>	249	*	-	*	*	-	-	-
<i>Chick peas</i>	-	-	-	-	-	-	-	-
<i>Lentiles</i>	-	-	-	-	-	-	-	-
<i>Veich/Grass peas</i>	-	-	-	-	-	-	-	-
<i>Soya beans</i>	-	-	-	-	-	-	-	-
<i>Fenugreek</i>	-	-	-	-	-	-	-	-
<i>Gibto</i>	-	-	-	-	-	-	-	-
Oil crops	826	*	-	*	*	-	-	-
<i>Nueg</i>	-	-	-	-	-	-	-	-
<i>Linseed</i>	-	-	-	-	-	-	-	-
<i>Ground nuts</i>	*	-	-	-	-	-	-	-
<i>Safflower</i>	-	-	-	-	-	-	-	-
<i>Sesame</i>	773	*	-	*	*	-	-	-
<i>Rapeseed</i>	-	-	-	-	-	-	-	-
Vegetables.....	31	-	-	-	-	-	-	-
<i>Lettuce.....</i>	*	-	-	-	-	-	-	-
<i>Head Cabbage....</i>	-	-	-	-	-	-	-	-
<i>Ethiopian Cabbage</i>	29	-	-	-	-	-	-	-
<i>Tomatoes.....</i>	*	-	-	-	-	-	-	-
<i>Green peppers...</i>	*	-	-	-	-	-	-	-
<i>Red peppers.....</i>	-	-	-	-	-	-	-	-
<i>Swiss chard.....</i>	-	-	-	-	-	-	-	-
Root Crops.....	13	-	-	-	-	-	-	-
<i>Beetroot.....</i>	-	-	-	-	-	-	-	-
<i>Carrot.....</i>	-	-	-	-	-	-	-	-
<i>Onion.....</i>	*	-	-	-	-	-	-	-
<i>Potatoes.....</i>	*	-	-	-	-	-	-	-
<i>Garlic.....</i>	*	-	-	-	-	-	-	-
<i>Taro/'Godere'...</i>	*	-	-	-	-	-	-	-
<i>Sweet potatoes..</i>	*	-	-	-	-	-	-	-

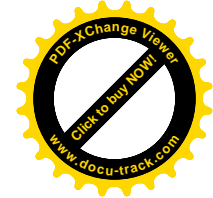
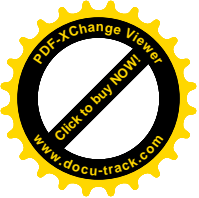


Table 1.9 (Cont'd)

Harari Region

Crop type	UREA			UREA + DAP			Indigenous seed	
	Holder	Hectare	Quintal	Holder	Hectare	Quintal	Holder	Hectare
All	*	*	*	*	*	*	5,827	675
Cereals	*	*	-	-	-	-	5,539	488
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	*	*	-	-	-	-	3,661	264
Sorghum	*	*	-	-	-	-	2,744	224
Finger millet	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-
Pulse	*	*	-	-	-	-	4,103	154
Horse/Faba beans	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	*	*
Haricot beans	*	*	-	-	-	-	4,022	149
Chick peas	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-
Veich/Grass peas	-	-	-	-	-	-	*	*
Soya beans	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	*	*
Oil crops	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Vegetables.....	-	-	-	-	-	-	*	*
Lettuce.....	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	-	*	*
Ethiopian Cabbage	-	-	-	-	-	-	-	-
Tomatoes.....	-	-	-	-	-	-	*	*
Green peppers...	-	-	-	-	-	-	-	-
Red peppers.....	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-
Root Crops.....	*	*	*	*	*	*	716	*
Beetroot.....	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-
Onion.....	-	-	-	-	-	-	-	-
Potatoes.....	*	*	*	-	-	-	491	*
Garlic.....	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	*	*	*	253	*

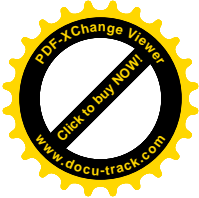
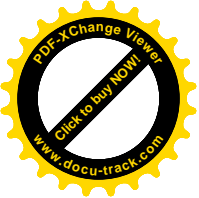


Table 1.9 (Cont'd)

Harari Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	
All	-	-	-	*	*	805	*	426	58
Cereals	-	-	-	-	-	*	*	426	44
Teff	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	*	*	*	*
Sorghum	-	-	-	-	-	*	*	*	*
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-
Pulse	-	-	-	-	-	*	*	315	*
Horse/Faba beans	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	*	*	-	-
Haricot beans	-	-	-	-	-	*	*	315	*
Chick peas	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-
Vetch/Grass peas	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	-	-	-	-	-	*	*	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	*	*	-	-
Ethiopian Cabbage	-	-	-	-	-	-	-	-	-
Tomatoes.....	-	-	-	-	-	*	*	-	-
Green peppers...	-	-	-	-	-	-	-	-	-
Red peppers....	-	-	-	-	-	-	-	-	-
Swiss chard....	-	-	-	-	-	-	-	-	-
Root Crops.....	-	-	-	*	*	*	*	*	*
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	-	-	-	-	-	-	-	-	-
Potatoes.....	-	-	-	-	-	*	*	*	*
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	*	*	*	*	-	-

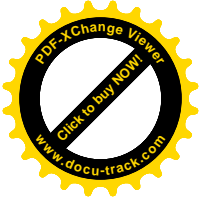
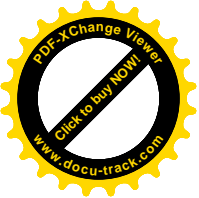


Table 1.10: Number of Holders, Inputs Applied Area and Quantity of Inputs used

Dire Dawa Region

Crop type	All crop land Area	All Fertilizer		Natural		DAP		
		Hectare	Quintal	Holder	Hectare	Holder	Hectare	Quintal
All	301	273	*	2,643	*	-	-	-
Cereals	*	*	*	*	*	-	-	-
Teff	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-
Maize	*	*	*	*	*	-	-	-
Sorghum	*	*	-	*	*	-	-	-
Finger millet	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-
Pulse	*	-	-	-	-	-	-	-
Horse/Faba beans	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-
Haricot beans	*	-	-	-	-	-	-	-
Chick peas	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-
Vetch/Grass peas	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-
Oil crops	*	*	-	*	*	-	-	-
Nueg	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-
Sesame	*	*	-	*	*	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Vegetables.....	68	61	*	1,575	51	-	-	-
Lettuce.....	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	-	-	-
Ethiopian Cabbage	-	-	-	-	-	-	-	-
Tomatoes.....	52	48	*	1,410	43	-	-	-
Green peppers...	*	*	*	*	*	-	-	-
Red peppers....	-	-	-	-	-	-	-	-
Swiss chard....	-	-	-	-	-	-	-	-
Root Crops.....	28	24	*	790	17	-	-	-
Beetroot.....	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-
Onion.....	*	*	-	*	*	-	-	-
Potatoes.....	15	14	*	320	7	-	-	-
Garlic.....	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-
Sweet potatoes..	*	*	-	*	*	-	-	-

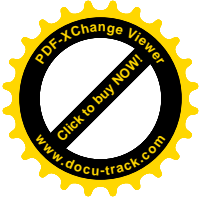
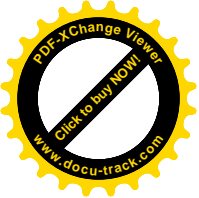


Table 1.10 (Cont'd)

Dire Dawa Region

Crop type	Improved seed			Pesticide		Irrigation		Extension package	
	Holder	Hectare	Quintal	Holder	Hectare	Holder	Hectare	Holder	Hectare
All	-	-	-	*	*	2,884	*	*	*
Cereals	-	-	-	-	-	*	*	*	*
Teff	-	-	-	-	-	-	-	-	-
Barley	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-
Maize	-	-	-	-	-	*	*	*	*
Sorghum	-	-	-	-	-	*	*	-	-
Finger millet	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-
Pulse	-	-	-	-	-	*	*	-	-
Horse/Faba beans	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	*	*	-	-
Chick peas	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-
Veich/Grass peas	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-
Oil crops	-	-	-	-	-	*	*	-	-
Nueg	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-
Safflower	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	*	*	-	-
Rapeseed	-	-	-	-	-	-	-	-	-
Vegetables.....	-	-	-	*	*	1,659	61	-	-
Lettuce.....	-	-	-	-	-	-	-	-	-
Head Cabbage....	-	-	-	-	-	-	-	-	-
Ethiopian Cabbage	-	-	-	-	-	-	-	-	-
Tomatoes.....	-	-	-	*	*	1,466	46	-	-
Green peppers...	-	-	-	-	-	*	*	-	-
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	-	-	-	-	-	-	-	-	-
Root Crops.....	-	-	-	-	-	984	24	-	-
Beetroot.....	-	-	-	-	-	-	-	-	-
Carrot.....	-	-	-	-	-	-	-	-	-
Onion.....	-	-	-	-	-	*	*	-	-
Potatoes.....	-	-	-	-	-	559	15	-	-
Garlic.....	-	-	-	-	-	-	-	-	-
Taro/'Godere'...	-	-	-	-	-	-	-	-	-
Sweet potatoes..	-	-	-	-	-	*	*	-	-

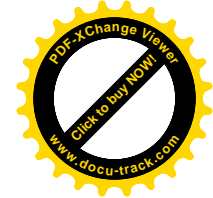
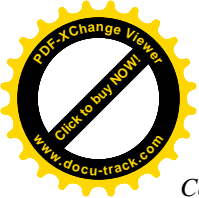


Table 2: Holders Applying Inputs by Age group

Country Level

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	20,608	2,785	*	1,482	2,839
<i>18 - 20</i>	105,829	24,787	2,224	8,584	5,460
<i>21 - 24</i>	265,137	53,689	8,938	15,095	19,294
<i>25 - 29</i>	712,086	156,233	26,072	36,900	62,789
<i>30 - 39</i>	1,585,212	362,848	61,853	79,004	137,533
<i>40 - 49</i>	1,234,984	294,323	50,221	68,662	113,101
<i>50 - 59</i>	878,900	192,086	30,899	55,161	82,770
<i>60 and above</i>	986,104	204,901	34,679	49,840	84,918
<i>Not stated</i>	*	*	-	-	-
<i>Total</i>	5,789,131	1,291,922	215,463	314,728	508,704
<i>%</i>	100	22	4	5	9

Table 2.1: Holders Applying Inputs by Age group

Tigray Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	-	-	-	-	-
<i>18 - 20</i>	*	*	-	-	*
<i>21 - 24</i>	*	*	-	-	*
<i>25 - 29</i>	*	*	-	-	*
<i>30 - 39</i>	4,183	*	-	-	*
<i>40 - 49</i>	4,242	2,455	*	*	2,899
<i>50 - 59</i>	4,354	*	-	-	*
<i>60 and above</i>	3,266	1,760	*	*	*
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	18,479	8,698	*	*	*

Table 2.2: Holders Applying Inputs by Age group

Afar Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	*	-	-	-	*
<i>18 - 20</i>	*	-	-	-	*
<i>21 - 24</i>	1,070	-	*	-	1,006
<i>25 - 29</i>	2,487	-	*	-	2,398
<i>30 - 39</i>	8,798	*	744	*	7,924
<i>40 - 49</i>	8,991	*	812	*	8,132
<i>50 - 59</i>	4,295	-	*	-	3,990
<i>60 and above</i>	3,098	-	*	-	2,857
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	29,043	*	2,484	*	26,611

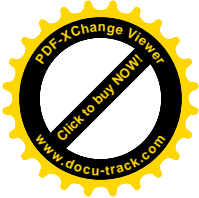
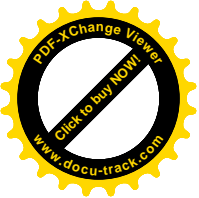


Table 2.3: Holders Applying Inputs by Age group

Amhara Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	3,023	*	-	*	*
<i>18 - 20</i>	2,182	*	-	*	*
<i>21 - 24</i>	17,113	3,104	*	2,303	5,903
<i>25 - 29</i>	62,786	10,320	*	6,956	22,732
<i>30 - 39</i>	148,436	14,910	*	9,356	42,649
<i>40 - 49</i>	142,810	16,007	2,856	9,452	40,146
<i>50 - 59</i>	112,105	13,471	3,477	7,242	33,518
<i>60 and above</i>	129,277	10,945	4,125	7,752	30,002
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	617,731	69,981	16,088	45,459	177,551

Table 2.4: Holders Applying Inputs by Age group

Oromia Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	9,942	*	*	*	*
<i>18 - 20</i>	67,952	16,545	*	6,164	2,803
<i>21 - 24</i>	148,524	28,863	2,753	11,182	8,977
<i>25 - 29</i>	346,074	74,741	8,438	26,602	28,500
<i>30 - 39</i>	695,999	131,380	15,753	56,926	58,252
<i>40 - 49</i>	501,205	98,255	9,562	44,179	46,924
<i>50 - 59</i>	356,539	59,477	7,908	33,035	31,893
<i>60 and above</i>	426,431	60,795	11,512	36,383	38,703
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	2,552,666	470,817	57,228	215,064	216,672

Table 2.5: Holders Applying Inputs by Age group

Somale Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	-	-	-	-	-
<i>18 - 20</i>	442	-	-	-	-
<i>21 - 24</i>	567	-	-	-	*
<i>25 - 29</i>	1,541	-	-	-	*
<i>30 - 39</i>	4,099	69	*	*	865
<i>40 - 49</i>	4,309	*	-	*	*
<i>50 - 59</i>	3,509	*	-	*	476
<i>60 and above</i>	4,680	-	-	-	244
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	19,147	111	*	69	2,826

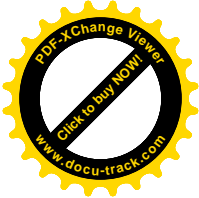
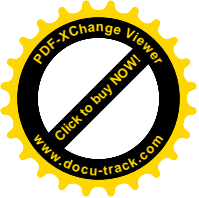


Table 2.6: Holders Applying Inputs by Age group

Benshangul-Gumuz Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	*	-	*	-	*
<i>18 - 20</i>	1,003	-	-	-	*
<i>21 - 24</i>	1,532	*	-	*	*
<i>25 - 29</i>	4,043	*	-	-	*
<i>30 - 39</i>	10,341	*	*	-	2,973
<i>40 - 49</i>	8,315	*	-	-	3,207
<i>50 - 59</i>	7,585	697	*	*	2,808
<i>60 and above</i>	7,988	*	*	-	2,488
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	40,900	1,569	*	*	13,706

Table 2.7: Holders Applying Inputs by Age group

(S.N.N.P.R) Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	7,258	1,044	*	*	*
<i>18 - 20</i>	33,076	7,544	*	*	951
<i>21 - 24</i>	94,478	21,187	5,613	1,480	*
<i>25 - 29</i>	288,359	70,432	16,479	3,256	6,591
<i>30 - 39</i>	701,329	214,195	41,002	12,159	21,442
<i>40 - 49</i>	555,331	176,789	36,541	14,481	9,988
<i>50 - 59</i>	385,596	116,811	19,092	*	7,624
<i>60 and above</i>	408,130	130,991	18,334	5,446	8,270
<i>Not stated</i>	*	*	-	-	-
<i>Total</i>	2,473,828	739,264	138,540	52,255	57,414

Table 2.8: Holders Applying Inputs by Age group

Gambella Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	98	-	-	*	-
<i>18 - 20</i>	474	-	-	*	-
<i>21 - 24</i>	1,032	-	-	*	-
<i>25 - 29</i>	4,227	-	-	*	-
<i>30 - 39</i>	8,958	-	*	*	-
<i>40 - 49</i>	7,827	-	-	*	-
<i>50 - 59</i>	3,596	-	-	*	-
<i>60 and above</i>	2,184	-	-	*	-
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	28,397	-	*	*	-

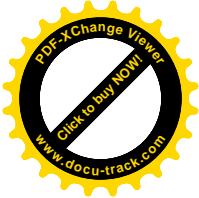
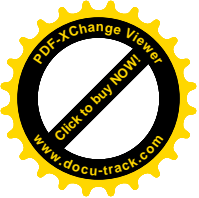


Table 2.9: Holders Applying Inputs by Age group

Harari Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	-	-	-	-	-
<i>18 - 20</i>	*	-	-	-	-
<i>21 - 24</i>	*	-	-	-	-
<i>25 - 29</i>	876	*	-	-	*
<i>30 - 39</i>	2,366	*	-	*	*
<i>40 - 49</i>	1,221	280	-	-	186
<i>50 - 59</i>	619	*	-	-	*
<i>60 and above</i>	573	*	-	-	*
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	5,827	890	-	*	805

Table 2.10: Holders Applying Inputs by Age group

Dire Dawa Region

<i>Age group</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Below 18</i>	*	*	-	-	*
<i>18 - 20</i>	*	-	-	-	*
<i>21 - 24</i>	*	*	-	-	*
<i>25 - 29</i>	290	*	-	-	203
<i>30 - 39</i>	704	*	-	-	651
<i>40 - 49</i>	733	*	-	*	707
<i>50 - 59</i>	703	*	-	-	642
<i>60 and above</i>	475	*	-	-	475
<i>Not stated</i>	-	-	-	-	-
<i>Total</i>	3,111	*	-	*	2,884

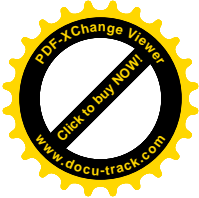
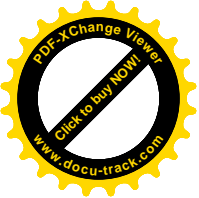


Table 3. Holders Applying Inputs by Educational Status

<i>Country Level</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	3,482,337	467,690	84,278	138,778	210,838	
<i>Literate</i>	336,174	50,632	9,913	28,313	41,087	
<i>Grades 1 - 3</i>	736,081	128,374	20,494	37,445	40,405	
<i>Grades 4 - 6</i>	802,434	168,301	32,540	43,320	44,916	
<i>Grades 7 - 8</i>	299,770	62,844	11,859	15,988	15,367	
<i>Grades 9 - 11</i>	95,295	23,657	3,678	4,576	6,914	
<i>Grade 12 complete</i>	25,232	7,224	*	896	840	
<i>Above grade 12</i>	11,809	4,231	*	*	*	
Total	5,789,131	912,952	165,783	269,937	360,621	

Table 3.1: Holders Applying Inputs by Educational Status

<i>Tigray Region</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	10,767	2,435	*	*	*	*
<i>Literate</i>	3,031	*	-	-	-	*
<i>Grades 1 - 3</i>	*	-	-	-	-	-
<i>Grades 4 - 6</i>	2,764	*	-	-	-	*
<i>Grades 7 - 8</i>	*	*	-	-	-	*
<i>Grades 9 - 11</i>	-	-	-	-	-	-
<i>Grade 12 complete</i>	-	-	-	-	-	-
<i>Above grade 12</i>	-	-	-	-	-	-
Total	18,479	*	*	*	*	*

Table 3.2: Holders Applying Inputs by Educational Status

<i>Afar Region</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	22,395	-	1,916	*	20,195	
<i>Literate</i>	*	*	*	-	*	
<i>Grades 1 - 3</i>	1,309	-	*	-	1,038	
<i>Grades 4 - 6</i>	685	*	*	-	506	
<i>Grades 7 - 8</i>	979	-	*	-	933	
<i>Grades 9 - 11</i>	-	-	-	-	-	
<i>Grade 12 complete</i>	-	-	-	-	-	
<i>Above grade 12</i>	-	-	-	-	-	
Total	29,043	*	2,431	*	26,078	

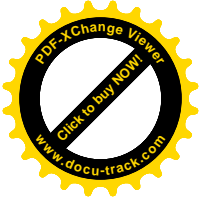
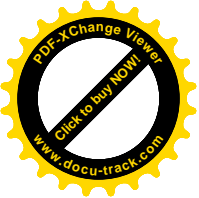


Table 3.3: Holders Applying Inputs by Educational Status

<i>Amhara Region</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	413,940	23,623	*		21,251	72,745
<i>Literate</i>	99,508	11,607	*		6,217	20,923
<i>Grades 1 - 3</i>	34,516	1,477	*		*	5,856
<i>Grades 4 - 6</i>	48,327	3,449	-		6,495	9,083
<i>Grades 7 - 8</i>	16,777	*	-		*	2,246
<i>Grades 9 - 11</i>	3,846	*	-		-	*
<i>Grade 12 complete</i>	*	-	-		*	-
<i>Above grade 12</i>	*	-	-		-	-
Total	617,731	40,842	*		37,762	111,759

Table 3.4: Holders Applying Inputs by Educational Status

<i>Oromia Region</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	1,489,775	189,070	20,606		97,752	86,262
<i>Literate</i>	170,100	28,997	*		21,637	10,714
<i>Grades 1 - 3</i>	375,876	58,683	*		32,017	22,102
<i>Grades 4 - 6</i>	335,561	56,763	6,605		32,066	19,102
<i>Grades 7 - 8</i>	132,164	21,664	2,672		14,011	7,474
<i>Grades 9 - 11</i>	40,463	8,900	*		4,227	2,381
<i>Grade 12 complete</i>	6,849	*	-		*	840
<i>Above grade 12</i>	1,877	*	-		*	-
Total	2,552,666	364,461	38,381		202,909	148,875

Table 3.5: Holders Applying Inputs by Educational Status

<i>Somale Region</i>						
<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>	
<i>Illiterate</i>	12,739	-	-		-	645
<i>Literate</i>	3,291	-	-		-	*
<i>Grades 1 - 3</i>	1,076	-	-		-	*
<i>Grades 4 - 6</i>	1,445	-	-		-	*
<i>Grades 7 - 8</i>	571	-	-		-	*
<i>Grades 9 - 11</i>	-	-	-		-	-
<i>Grade 12 complete</i>	-	-	-		-	-
<i>Above grade 12</i>	*	-	-		*	*
Total	19,147	-	-		*	2,354

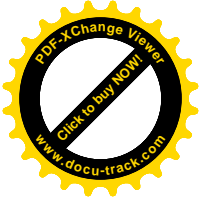
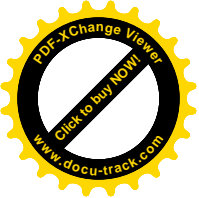


Table 3.6: Holders Applying Inputs by Educational Status

Benshangul-Gumuz Region

<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Illiterate</i>	26,400	*	*	-	5,014
<i>Literate</i>	3,392	-	-	-	*
<i>Grades 1 - 3</i>	5,218	-	*	-	*
<i>Grades 4 - 6</i>	4,104	-	-	-	*
<i>Grades 7 - 8</i>	996	-	-	-	*
<i>Grades 9 - 11</i>	792	*	-	-	*
<i>Grade 12 complete</i>	-	-	-	-	-
<i>Above grade 12</i>	-	-	-	-	-
<i>Total</i>	40,900	882	*	-	8,994

Table 3.7: Holders Applying Inputs by Educational Status

(S.N.N.P.R) Region

<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Illiterate</i>	1,480,307	251,273	56,329	18,705	20,480
<i>Literate</i>	52,692	8,144	2,681	*	*
<i>Grades 1 - 3</i>	313,624	68,156	14,061	2,520	9,777
<i>Grades 4 - 6</i>	405,117	107,065	25,842	*	*
<i>Grades 7 - 8</i>	145,826	40,612	9,049	1,322	4,209
<i>Grades 9 - 11</i>	49,041	14,151	2,541	*	*
<i>Grade 12 complete</i>	17,698	7,023	*	*	-
<i>Above grade 12</i>	9,522	4,020	*	-	*
<i>Total</i>	2,473,828	500,444	113,524	28,006	52,859

Table 3.8: Holders Applying Inputs by Educational Status

Gambella Region

<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Illiterate</i>	18,837	-	-	*	-
<i>Literate</i>	357	-	-	*	-
<i>Grades 1 - 3</i>	2,330	-	-	*	-
<i>Grades 4 - 6</i>	3,758	-	*	*	-
<i>Grades 7 - 8</i>	1,839	-	-	*	-
<i>Grades 9 - 11</i>	1,053	-	-	-	-
<i>Grade 12 complete</i>	120	-	-	-	-
<i>Above grade 12</i>	103	-	-	-	-
<i>Total</i>	28,397	-	*	*	-

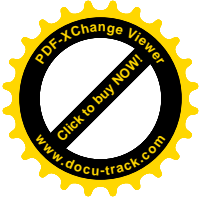
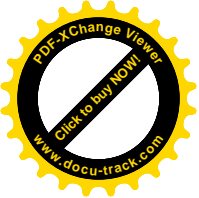


Table 3.9: Holders Applying Inputs by Educational Status

Harari Region

<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Illiterate</i>	4,672	566	-	-	*
<i>Literate</i>	*	-	-	-	-
<i>Grades 1 - 3</i>	432	*	-	-	*
<i>Grades 4 - 6</i>	374	*	-	-	*
<i>Grades 7 - 8</i>	165	*	-	-	*
<i>Grades 9 - 11</i>	*	*	-	-	-
<i>Grade 12 complete</i>	*	*	-	-	-
<i>Above grade 12</i>	-	-	-	-	-
<i>Total</i>	5,827	753	-	-	*

Table 3.10: Holders Applying Inputs by Educational Status

Dire Dawa Region

<i>Educational Status of Holders</i>	<i>All Crop Holders</i>	<i>Chemical Fertilizer</i>	<i>Improved Seed</i>	<i>Pesticide</i>	<i>Irrigation</i>
<i>Illiterate</i>	2,505	*	-	-	*
<i>Literate</i>	*	-	-	-	*
<i>Grades 1 - 3</i>	236	*	-	-	*
<i>Grades 4 - 6</i>	300	-	-	-	172
<i>Grades 7 - 8</i>	-	-	-	-	-
<i>Grades 9 - 11</i>	-	-	-	-	-
<i>Grade 12 complete</i>	-	-	-	-	-
<i>Above grade 12</i>	-	-	-	-	-
<i>Total</i>	3,111	*	-	-	*

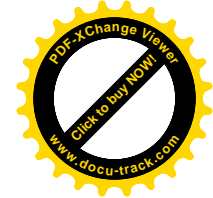
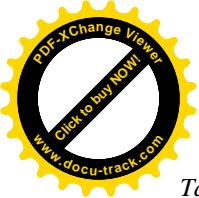


Table 4: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Country Level

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	1,566,024	123,438	68,695	35,355	1,586
Crop disease	*	*	*	*	-
Frost or floods	135,078	8,744	5,859	1,221	*
Locust	63,410	1,480	880	378	*
Shortage of rain	7,478	*	*	*	*
Too much rain	57,828	3,106	1,846	970	*
Wild animals	10,524	468	282	*	*
Birds	94,968	5,467	3,168	964	275
Hailstone	975,535	82,049	44,953	25,155	447
Pests	46,694	2,864	1,844	494	166
Weeds	143,018	8,627	4,846	2,562	*
Others	198,345	8,671	4,608	2,047	208

Table 4.1: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Tigray Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	*	297	197	-	-
Crop disease	-	-	-	-	-
Frost or floods	-	-	-	-	-
Locust	-	-	-	-	-
Shortage of rain	-	-	-	-	-
Too much rain	*	*	*	-	-
Wild animals	-	-	-	-	-
Birds	-	-	-	-	-
Hailstone	1,463	*	*	-	-
Pests	-	-	-	-	-
Weeds	-	-	-	-	-
Others	*	*	*	-	-

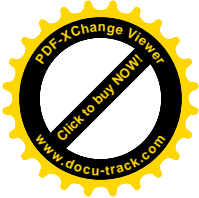
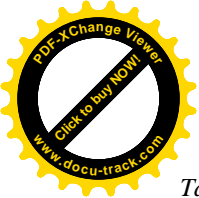


Table 4.2: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Afar Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	10,312	3,269	2,827	*	-
Crop disease	*	-	-	-	-
Frost or floods	2,539	636	326	*	-
Locust	-	-	-	-	-
Shortage of rain	*	*	*	-	-
Too much rain	*	*	*	-	-
Wild animals	*	*	*	-	-
Birds	*	*	*	-	-
Hailstone	2,184	790	790	-	-
Pests	*	*	*	-	-
Weeds	3,176	654	535	*	-
Others	*	*	*	-	-

Table 4.3: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Amhara Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	210,354	26,049	10,260	12,837	*
Crop disease	*	*	-	*	-
Frost or floods	16,413	686	550	*	*
Locust	6,133	448	*	*	-
Shortage of rain	*	*	*	*	-
Too much rain	8,849	395	*	*	-
Wild animals	*	*	*	*	*
Birds	1,101	*	*	-	-
Hailstone	160,805	22,157	8,496	11,221	*
Pests	*	*	*	*	-
Weeds	24,607	1,311	251	920	-
Others	14,026	544	143	*	*

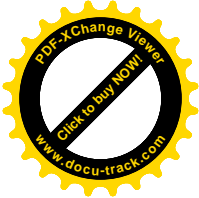
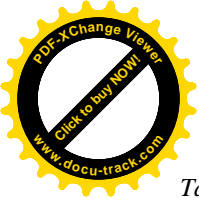


Table 4.4: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	650,869	58,705	34,699	15,082	330
Crop disease	*	*	*	*	-
Frost or floods	48,053	2,037	1,108	414	-
Locust	8,094	145	*	*	*
Shortage of rain	*	*	*	-	-
Too much rain	25,738	1,647	*	370	*
Wild animals	2,747	*	*	*	-
Birds	27,229	2,148	1,313	235	*
Hailstone	440,151	43,251	26,425	10,532	116
Pests	8,706	707	*	*	*
Weeds	73,181	4,742	2,889	1,275	*
Others	58,457	2,447	1,245	710	*

Table 4.5: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	9,899	1,221	*	389	-
Crop disease	-	-	-	-	-
Frost or floods	-	-	-	-	-
Locust	-	-	-	-	-
Shortage of rain	-	-	-	-	-
Too much rain	-	-	-	-	-
Wild animals	-	-	-	-	-
Birds	*	*	*	*	-
Hailstone	7,868	1,145	*	366	-
Pests	-	-	-	-	-
Weeds	*	3	2	-	-
Others	*	*	*	*	-

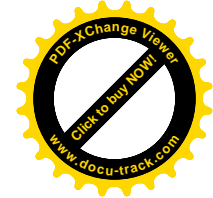
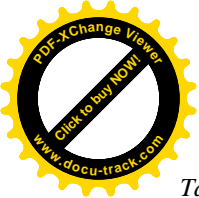


Table 4.6: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Benshangul-Gumuz Region

Cause of damage	All holders	All crops	Crop category			
			Cereals	Pulses	Oilseeds	
All damage	3,740	112	*	*	35	-
Crop disease	-	-	-	-	-	-
Frost or floods	487	6	2	2	*	-
Locust	-	-	-	-	-	-
Shortage of rain	-	-	-	-	-	-
Too much rain	350	3	1	1	*	-
Wild animals	-	-	-	-	-	-
Birds	*	*	*	*	-	-
Hailstone	155	5	-	-	5	-
Pests	-	-	-	-	-	-
Weeds	1,297	*	*	*	*	-
Others	*	*	*	*	26	-

Table 4.7: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

(S.N.N.P.R) Region

Cause of damage	All holders	All crops	Crop category			
			Cereals	Pulses	Oilseeds	
All damage	667,897	33,231	19,541	6,988	1,160	
Crop disease	973	*	*	*	-	
Frost or floods	65,566	5,292	*	684	*	
Locust	49,183	887	445	317	-	
Shortage of rain	*	*	*	*	*	
Too much rain	22,392	1,009	586	337	*	
Wild animals	5,140	275	138	*	*	
Birds	60,785	2,909	1,675	702	230	
Hailstone	361,369	14,468	8,312	3,030	*	
Pests	33,981	1,856	1,257	253	*	
Weeds	40,108	1,868	1,128	360	*	
Others	118,872	4,496	2,130	1,176	174	

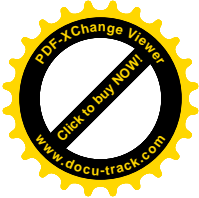
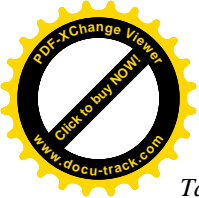


Table 4.8: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

Gambella Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	7,633	534	287	17	*
Crop disease	-	-	-	-	-
Frost or floods	2,019	87	76	4	-
Locust	-	-	-	-	-
Shortage of rain	-	-	-	-	-
Too much rain	149	8	*	*	-
Wild animals	-	-	-	-	-
Birds	3,288	279	84	*	*
Hailstone	*	*	*	*	-
Pests	637	33	*	*	-
Weeds	*	*	*	*	-
Others	376	*	*	*	-

Table 4.9: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

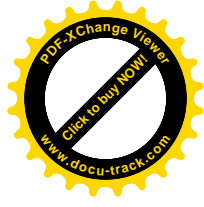
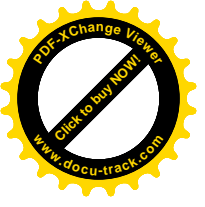
Harari Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	*	*	*	-	-
Crop disease	-	-	-	-	-
Frost or floods	-	-	-	-	-
Locust	-	-	-	-	-
Shortage of rain	-	-	-	-	-
Too much rain	-	-	-	-	-
Wild animals	-	-	-	-	-
Birds	*	*	*	-	-
Hailstone	-	-	-	-	-
Pests	-	-	-	-	-
Weeds	*	*	*	-	-
Others	-	-	-	-	-

Table 4.10: Number of Holders and Damaged Crop Area in Hectare by Category of Crops and Cause of Damage

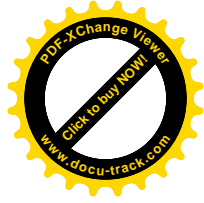
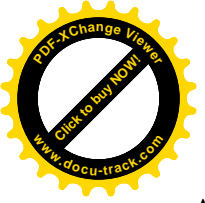
Dire Dawa Region

Cause of damage	All holders	All crops	Crop category		
			Cereals	Pulses	Oilseeds
All damage	*	*	*	-	-
Crop disease	-	-	-	-	-
Frost or floods	-	-	-	-	-
Locust	-	-	-	-	-
Shortage of rain	-	-	-	-	-
Too much rain	-	-	-	-	-
Wild animals	-	-	-	-	-
Birds	-	-	-	-	-
Hailstone	*	*	*	-	-
Pests	-	-	-	-	-
Weeds	*	*	*	-	-
Others	*	*	*	-	-



APPENDIX I

Estimation Procedures of Totals, Ratios and Sampling Errors



APPENDIX I Estimation Procedures of Totals, Ratios and Sampling Errors

The following formulas were used to estimate total area of land under specific crop, total holders, quantity of fertilizer applied and seed sowed, and ratios in a stratum.

1. For Estimating Total Area of Land Under Specific Crop:

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

in which, $W_{hi} = \frac{M_h H_{hi}}{n_h m_{hi} h_{hi}}$ is the basic weight.

Where:

h represents the stratum

n_h is the total number of sample EAs successfully covered in the h^{th} stratum.

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

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

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

h_{hi} is the number of sample agricultural households successfully covered in the i^{th} sample EA in the h^{th} stratum.

a_{hij} is the value of area for agricultural households j , in the i^{th} EA in the h^{th} stratum under a specific crop.

a_{hi} is the sample total area under specific crop for EA i in stratum h .

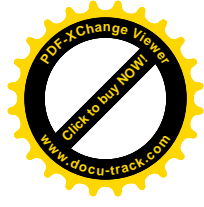
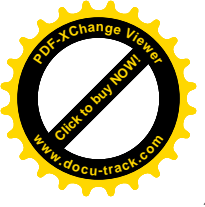
\hat{A}_h estimate of total area under specific crop in stratum h .

2. For Estimating Total Number of Holders:

$$\hat{Y}_h = \sum_{i=1}^{n_h} W_{hi} y_{hi}$$

Where:

y_{hi} is the sample total number of holders of i^{th} EA in the h^{th} stratum.



\hat{Y}_h is estimate of total number of holders for the h^{th} stratum.

W_{hi} is as defined above.

3. For Estimating Quantity of Fertilizer and seed in Stratum h:

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

where,

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

q_{hi} is the sample total of a specific fertilizer applied or seed sowed for a specific crop land in the i^{th} EA in the h^{th} stratum.

W_{hi} is as defined above.

4. For Estimating Ratios in Stratum h:

$$\hat{R}_h = \frac{\hat{Z}_h}{\hat{X}_h},$$

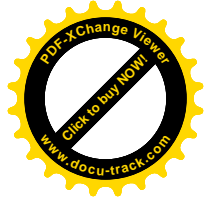
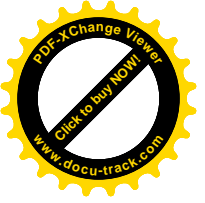
Where, the numerator and denominator are estimates of domain totals for characteristic z and x, respectively.

5. Sampling Variance of Estimates:

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

$$\text{Var}(\hat{A}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{A}_{hi} - \frac{\hat{A}_h}{n_h} \right)^2 + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{j=1}^{h_{hi}} \left(\hat{A}_{hij} - \frac{\hat{A}_{hi}}{h_{hi}} \right)^2$$

$$\text{Var}(\hat{Y}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h} \right)^2 + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{j=1}^{h_{hi}} \left(\hat{Y}_{hij} - \frac{\hat{Y}_{hi}}{h_{hi}} \right)^2$$



$$Var(\hat{Q}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Q}_{hi} - \frac{\hat{Q}_h}{n_h} \right)^2 + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{i=1}^{n_h} \left(\hat{Q}_{hij} - \frac{\hat{Q}_{hi}}{h_{hi}} \right)^2$$

$$Var(\hat{R}_h) = \frac{1}{\hat{X}_h^2} \left[Var(\hat{Z}_h) + \hat{R}_h^2 Var(\hat{X}_h) - 2\hat{R}_h Cov(\hat{Z}_h, \hat{X}_h) \right]$$

Where,

$$Cov(\hat{Z}_h, \hat{X}_h) = (1 - f_h) \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Z}_{hi} - \frac{\hat{Z}_h}{n_h} \right) \left(\hat{X}_{hi} - \frac{\hat{X}_h}{n_h} \right) + f_h \sum_{i=1}^{n_h} (1 - f_{hi}) \left(\frac{h_{hi}}{h_{hi} - 1} \right) \sum_{j=1}^{h_{hi}} \left(\hat{Z}_{hij} - \frac{\hat{Z}_{hi}}{h_{hi}} \right) \left(\hat{X}_{hij} - \frac{\hat{X}_{hi}}{h_{hi}} \right)$$

f_h = average first stage probability of selection of EAs within stratum h .

$f_{hi} = \frac{h_{hi}}{H_{hi}}$ = average second stage probability of selection within the i^{th} sample EA in stratum h .

$\hat{A}_{hi}, \hat{Y}_{hi}, \hat{Q}_{hi}, \hat{Z}_{hi}, \hat{X}_{hi}$ are weighted total area, holder, quantity of fertilizer or seed, characteristics z and x , respectively, in the i^{th} EA and h^{th} stratum.

$\hat{A}_{hij}, \hat{Y}_{hij}, \hat{Q}_{hij}, \hat{Z}_{hij}, \hat{X}_{hij}$ are weighted value of area, holder, quantity of fertilizer or seed, characteristics z and x , respectively, from j^{th} agricultural household in the i^{th} EA and h^{th} stratum.

Since all strata are independent, the total variance at regional and country level is computed by aggregating the result obtained at Zone/Special Wereda level, i.e.

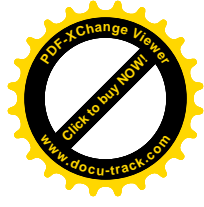
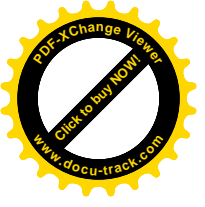
$$Var(\hat{A}) = \sum_h^L Var(\hat{A}_h), Var(\hat{Y}) = \sum_h^L Var(\hat{Y}_h), Var(\hat{R}) = \sum_{i=1}^L Var(\hat{R}_h)$$

Where, L is the number of strata (Zone/Special Wereda).

In estimating the sampling variance by the above formula, selection of EAs within a stratum is assumed to be with replacement. By so doing the variance estimate may be slightly over estimated but it greatly simplifies the estimation procedure.

6. Coefficient of Variation (CV) of Estimates:

Coefficient of Variations (CV's) in percentage for estimates of stratum total area, number of holders, applied fertilizer and sowed seed for a specific crop are given by:



$$CV(\hat{A}_h) = \frac{\sqrt{\text{Var}(\hat{A}_h)}}{\hat{A}_h} * 100, CV(\hat{Y}_h) = \frac{\sqrt{\text{Var}(\hat{Y}_h)}}{\hat{Y}_h} * 100, CV(\hat{Q}_h) = \frac{\sqrt{\text{Var}(\hat{Q}_h)}}{\hat{Q}_h} * 100,$$

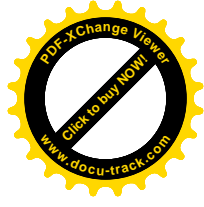
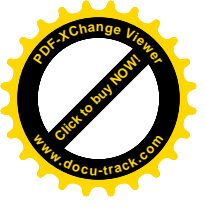
$$CV(\hat{R}_h) = \frac{\sqrt{\text{Var}(\hat{R}_h)}}{\hat{R}_h} * 100$$

7. Ninety-five Percent Confidence Interval (CI) of Stratum Total of Area:

$$\hat{A}_h \pm 1.96 * SE(\hat{A}_h) \quad ,$$

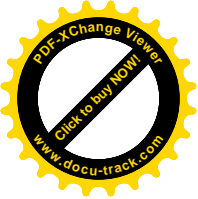
Where, $SE(\hat{A}_h) = \sqrt{\text{Var}(\hat{A}_h)}$ is the standard error of the estimate of stratum total area.

Estimates of standard errors and confidence intervals for other estimates can also be calculated by adopting the above formulas.



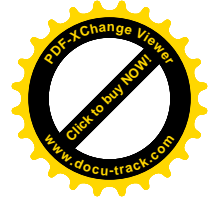
APPENDIX II

Standard Errors and Coefficient of Variation



Annex II

Table 2 Estimate of Number of Holders, Inputs applied Area and Quantity of Inputs used and their Standard Errors & Coefficients of Variations of Major Crops (For Ethiopia), 2011/12 (2004 E.C) Agricultural Sample Survey, Belg Season



Crop	All crop land area			All fertilizer						Natural					
	Area (Ha)			Area (Ha)			Quantity (Qt)			Holder			Area (Ha)		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
All	1,311,392	40,665	3	563,850	22,023	4	268,223	20,007	7	3,094,598	68,273	2	298,066	13,365	4
Cereals	891,169	34,810	4	353,456	18,969	5	131,872	12,441	9	2,234,854	67,932	3	182,250	10,603	6
Teff	74,144	8,483	11	21,915	3,431	16	7,128	1,044	15	46,897	8,676	19	6,204	1,269	20
Barley	149,377	13,497	9	62,222	8,029	13	28,137	5,174	18	232,324	24,297	10	23,129	3,400	15
Wheat	62,350	13,403	22	32,361	8,560	26	22,270	7,171	32	62,800	10,773	17	7,934	1,777	22
Maize	526,428	27,632	5	208,724	13,683	7	70,242	7,788	11	1,963,904	65,602	3	126,910	8,653	7
Sorghum	69,268	9,404	14	25,270	3,860	15	2,908	691	24	140,533	16,773	12	17,227	3,018	18
Finger millet	803	248	31	165	79	48	84	56	66	1,586	741	47	69	35	51
Oats/ 'Aja'	6,921	1,369	20	2,492	595	24	982	319	33	13,185	4,499	34	757	284	38
Rice	1,879	1,291	69	308	280	91	120	116	97	322	321	100	19	19	100
Pulse	261,966	13,518	5	102,102	6,245	6	49,899	5,389	11	1,453,919	54,676	4	56,455	3,610	6
Horse/Faba beans	5,321	2,358	44	870	176	20	430	207	48	28,513	5,096	18	653	143	22
Field peas	15,761	2,932	19	1,770	387	22	96	38	39	22,339	5,727	26	1,436	360	25
Haricot beans	218,550	11,608	5	97,350	6,153	6	48,826	5,351	11	1,408,085	54,049	4	52,521	3,486	7
Chick peas	7,214	1,638	23	395	126	32	1	1	71	6,903	2,166	31	390	126	32
Lentiles	9,093	3,191	35	1,395	551	40	523	421	80	15,685	5,969	38	1,188	483	41
Vetch/Grass peas	3,848	1,952	51	85	55	64	-	-	-	1,558	737	47	85	55	64
Soya beans	11	8	76	4	4	100	-	-	-	94	94	100	4	4	100
Fenugreek	2,147	639	30	232	71	31	22	13	61	8,422	2,083	25	176	66	37
Gibto	23	17	71	2	2	100	-	-	-	252	251	100	2	2	100
Oile seeds	17,800	3,923	22	3,636	1,051	29	1,198	529	44	25,691	5,847	23	1,622	607	37
Nueg	102	72	71	81	71	87	3	3	99	1,062	536	50	81	71	87
Linseed	1,058	469	44	42	19	46	8	8	99	2,208	879	40	23	11	46
Ground nuts	4,339	1,302	30	1,299	569	44	14	14	100	11,515	4,379	38	1,073	549	51
Safflower	241	95	39	14	10	71	141	138	97	640	402	63	4	3	76
Sesame	11,727	3,664	31	1,944	863	44	710	404	57	3,034	2,258	74	337	246	73
Rapeseed	333	192	58	256	180	70	322	320	99	7,232	3,000	41	104	47	45
Vegetables.....	31,687	1,761	6	21,001	1,503	7	14,199	3,778	27	1,253,912	48,270	4	16,742	1,176	7
Lettuce.....	14	8	57	9	7	79	27	27	99	2,012	962	48	5	3	65
Head Cabbage....	670	231	35	350	119	34	387	187	48	24,153	5,355	22	110	28	25
Ethiopian Cabbage	27,601	1,534	6	18,508	1,292	7	9,370	2,011	21	1,195,390	47,471	4	15,708	1,149	7
Tomatoes.....	1,895	657	35	1,167	627	54	3,642	2,691	74	20,813	3,770	18	400	93	23
Green peppers...	793	153	19	471	106	23	271	136	50	52,419	7,793	15	262	58	22
Red peppers....	650	194	30	435	141	33	324	165	51	13,566	3,698	27	252	99	39
Swiss chard.....	66	57	87	60	57	94	178	179	100	3,308	1,310	40	4	2	65
Root Crops.....	108,769	7,400	7	83,656	6,834	8	71,055	10,072	14	1,078,797	49,456	5	40,997	3,604	9
Beetroot.....	297	100	34	209	90	43	85	56	66	19,625	4,402	22	115	35	30
Carrot.....	759	353	47	505	217	43	69	33	49	21,928	6,393	29	433	189	44
Onion.....	6,682	1,429	21	4,909	1,256	26	8,861	4,092	46	110,709	14,559	13	1,944	423	22
Potatoes.....	84,825	7,103	8	70,074	6,642	9	60,550	8,867	15	727,607	44,319	6	31,086	3,444	11
Garlic.....	3,521	573	16	1,933	380	20	1,059	599	57	180,896	17,211	10	1,740	374	22
Taro/'Godere'...	3,059	448	15	1,473	273	19	216	93	43	84,972	11,379	13	1,405	269	19
Sweet potatoes..	9,625	1,349	14	4,553	737	16	215	78	36	148,162	19,197	13	4,275	726	17

Table 1(Cont'd)

Crop	DAP									UREA								
	Holder			Area (Ha)			Quantity (Qt)			Holder			Area (Ha)			Quantity (Qt)		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
All	1,075,007	53,355	5	223,400	15,232	7	198,761	15,272	8	87,255	12,609	14	11,358	2,235	20	15,715	4,125	27
Cereals	636,922	39,475	6	147,460	13,701	9	106,410	11,082	10	45,138	7,412	16	6,752	1,490	22	6,644	1,816	27
Teff	44,806	7,783	17	12,179	2,355	19	5,351	864	16	4,723	1,892	40	884	344	39	447	208	47
Barley	131,945	18,214	14	38,058	7,075	19	27,158	5,154	19	2,953	1,044	35	327	145	44	305	129	42
Wheat	60,837	13,302	22	23,261	7,219	31	20,526	6,884	34	546	364	67	56	48	86	42	28	67
Maize	450,801	34,015	8	65,225	7,734	12	49,763	5,914	12	36,229	6,971	19	5,179	1,331	26	5,712	1,785	31
Sorghum	36,596	8,030	22	6,815	2,078	30	2,501	639	26	4,011	1,400	35	298	97	33	139	84	61
Finger millet	738	408	55	92	70	76	69	54	78	-	-	-	-	-	-	-	-	-
Oats/ 'Aja'	10,488	2,749	26	1,726	504	29	982	319	33	315	315	100	8	8	100	-	-	-
Rice	286	278	97	103	101	97	62	60	97	-	-	-	-	-	-	-	-	-
Pulse	465,540	33,929	7	41,250	4,090	10	42,436	4,708	11	22,447	6,288	28	1,061	358	34	1,935	728	38
Horse/Faba beans	5,056	1,664	33	214	92	43	404	205	51	-	-	-	-	-	-	-	-	-
Field peas	3,043	936	31	333	127	38	96	38	39	-	-	-	-	-	-	-	-	-
Haricot beans	457,917	33,872	7	40,457	4,078	10	41,805	4,683	11	21,926	6,278	29	1,051	358	34	1,931	728	38
Chick peas	58	59	102	4	5	102	1	1	102	226	224	99	-	-	-	1	1	99
Lentiles	1,559	714	46	195	108	55	110	92	84	-	-	-	-	-	-	-	-	-
Vetch/Grass peas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	1,063	551	52	46	27	58	19	13	69	295	295	100	10	10	100	3	3	100
Gibto	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oile seeds	8,702	3,207	37	1,793	769	43	1,062	513	48	1,064	544	51	126	98	78	9	7	74
Nueg	-	-	-	-	-	-	-	-	-	226	224	99	-	-	99	3	3	99
Linseed	500	497	99	14	14	99	8	8	99	258	258	100	4	4	100	-	-	-
Ground nuts	2,836	2,195	77	198	146	74	14	14	100	382	381	100	28	27	100	-	-	-
Safflower	146	92	63	3	3	84	43	41	95	-	-	-	-	-	-	-	-	-
Sesame	3,445	1,458	42	1,425	740	52	675	401	59	198	199	100	94	94	100	6	6	100
Rapeseed	1,775	1,758	99	152	151	99	322	320	99	-	-	-	-	-	-	-	-	-
Vegetables.....	121,737	17,852	15	2,471	435	18	7,158	1,421	20	19,030	5,439	29	443	148	33	801	278	35
Lettuce.....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Head Cabbage....	1,218	745	61	64	43	66	44	37	84	1,809	1,329	74	46	34	75	68	53	77
Ethiopian Cabbage	114,424	17,650	15	2,294	429	19	6,760	1,401	21	8,022	3,228	40	106	52	49	373	188	50
Tomatoes.....	3,226	1,950	60	50	40	80	180	157	87	1,798	706	39	51	33	65	69	35	51
Green peppers...	2,384	1,105	46	30	19	65	57	27	47	4,609	2,795	61	116	71	61	114	105	92
Red peppers.....	1,692	753	44	33	17	51	118	71	61	4,013	2,175	54	123	88	71	177	150	85
Swiss chard.....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Root Crops.....	409,598	37,960	9	30,426	4,470	15	41,695	6,653	16	43,986	10,292	23	2,976	945	32	6,327	3,146	50
Beetroot.....	2,066	1,484	72	73	64	88	79	56	70	322	322	100	11	11	100	-	-	-
Carrot.....	3,144	1,343	43	60	50	82	49	29	59	246	245	100	11	11	100	15	15	100
Onion.....	7,568	2,568	34	511	270	53	560	352	63	17,181	5,958	35	1,520	820	54	4,259	3,040	71
Potatoes.....	386,395	36,979	10	29,394	4,445	15	40,413	6,603	16	26,969	8,385	31	1,361	449	33	1,868	724	39
Garlic.....	10,945	2,350	21	144	45	31	239	69	29	2,802	949	34	32	15	46	166	96	58
Taro/'Godere'...	4,362	1,054	24	56	23	40	162	75	46	-	-	-	-	-	-	-	-	-
Sweet potatoes..	7,688	2,374	31	187	59	31	193	76	39	548	395	72	40	37	91	18	14	78

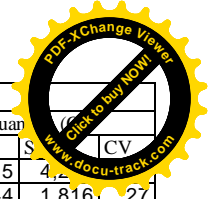
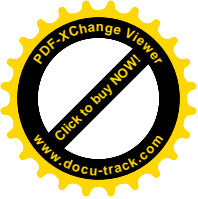


Table 1(Cont'd)

Crop	UREA + DAP									INDOGEONUS SEED								
	Holder			Area (Ha)			Quantity			Holder			Area (Ha)			Quantity		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
All	184,132	21,789	12	31,027	3,684	12	53,746	10,817	20	5,758,509	68,673	1	1,274,017	39,226	3	712,364	59,742	8
Cereals	83,172	16,393	20	16,994	2,660	16	18,818	4,278	23	4,397,902	77,504	2	856,818	33,157	4	597,422	49,600	8
Teff	9,369	2,766	30	2,648	909	34	1,330	378	28	303,150	29,906	10	73,966	8,481	11	30,140	3,513	12
Barley	5,522	1,598	29	708	254	36	674	238	35	832,202	48,734	6	149,081	13,492	9	281,126	28,019	10
Wheat	2,120	770	36	1,109	520	47	1,702	776	46	227,049	24,997	11	61,981	13,391	22	128,110	32,649	25
Maize	68,626	15,958	23	11,410	2,217	19	14,768	4,144	28	3,564,420	78,067	2	492,945	25,368	5	136,201	8,148	6
Sorghum	3,971	1,212	31	930	435	47	269	114	42	360,648	28,717	8	69,243	9,404	14	8,842	1,460	17
Finger millet	97	97	100	3	3	100	16	15	100	9,808	2,607	27	803	248	31	245	149	61
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-	59,684	9,472	16	6,921	1,369	20	10,907	2,221	20
Rice	381	370	97	186	181	97	58	56	97	4,016	2,203	55	1,878	1,291	69	1,851	1,440	78
Pulse	46,390	8,606	19	3,336	777	23	5,529	1,397	25	3,037,093	78,946	3	261,384	13,480	5	110,159	8,338	8
Horse/Faba beans	248	181	73	3	2	58	26	16	60	81,022	10,234	13	5,321	2,358	44	4,843	2,723	56
Field peas	-	-	-	-	-	-	-	-	-	108,018	16,072	15	15,761	2,932	19	15,109	3,109	21
Haricot beans	44,928	8,516	19	3,321	777	23	5,090	1,335	26	2,826,076	76,615	3	218,000	11,562	5	74,055	5,293	7
Chick peas	-	-	-	-	-	-	-	-	-	63,046	11,948	19	7,214	1,638	23	4,478	1,161	26
Lentiles	1,244	1,237	99	12	12	100	413	410	99	76,115	16,567	22	9,060	3,191	35	6,816	2,014	30
Vetch/Grass peas	-	-	-	-	-	-	-	-	-	27,690	9,880	36	3,848	1,952	51	3,352	2,097	63
Soya beans	-	-	-	-	-	-	-	-	-	457	298	65	11	8	76	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	34,241	5,942	17	2,147	639	30	1,499	480	32
Gibto	-	-	-	-	-	-	-	-	-	577	320	55	23	17	71	7	6	92
Oil seeds	491	346	71	94	88	93	127	103	81	102,754	13,930	14	17,792	3,923	22	3,448	773	22
Nueg	-	-	-	-	-	-	-	-	-	2,007	709	35	102	72	71	30	26	87
Linseed	-	-	-	-	-	-	-	-	-	14,580	4,831	33	1,058	469	44	413	188	46
Ground nuts	-	-	-	-	-	-	-	-	-	38,970	9,332	24	4,339	1,302	30	1,356	548	40
Safflower	238	236	99	7	7	100	98	99	101	4,906	1,102	22	233	95	41	27	26	95
Sesame	253	253	100	87	87	100	29	29	100	33,286	7,883	24	11,727	3,664	31	1,602	495	31
Rapeseed	-	-	-	-	-	-	-	-	-	10,769	4,693	44	333	192	58	19	16	82
Vegetables.....	26,022	12,851	49	1,346	772	57	6,240	3,512	56	1,930,418	56,717	3	31,351	1,747	6	88	28	32
Lettuce.....	246	244	99	4	4	99	27	27	99	4,396	1,645	37	14	8	57	-	-	-
Head Cabbage....	1,864	1,000	54	129	70	54	274	153	56	46,325	10,342	22	482	140	29	-	-	-
Ethiopian Cabbage	18,101	11,260	62	399	317	80	2,237	1,463	65	1,813,857	54,586	3	27,573	1,534	6	67	19	29
Tomatoes.....	4,404	2,947	67	665	616	93	3,393	2,686	79	57,952	9,238	16	1,785	652	37	21	20	96
Green peppers...	1,688	971	58	63	38	59	100	57	57	100,853	14,089	14	792	153	19	-	-	-
Red peppers....	246	245	100	27	27	100	30	29	100	30,722	6,654	22	642	190	30	-	-	100
Swiss chard.....	238	238	100	57	57	100	178	179	100	4,792	1,483	31	63	57	90	-	-	-
Root Crops.....	98,422	13,475	14	9,257	1,586	17	23,033	5,639	24	1,981,993	72,240	4	106,672	7,344	7	1,247	859	69
Beetroot.....	257	256	100	10	10	100	5	5	100	35,381	6,666	19	271	97	36	-	-	-
Carrot.....	292	292	100	1	1	100	4	4	100	26,854	7,166	27	529	288	54	-	-	-
Onion.....	6,294	2,205	35	934	355	38	4,042	1,513	37	199,000	20,425	10	5,735	1,270	22	32	17	53
Potatoes.....	89,459	13,124	15	8,233	1,514	18	18,269	4,904	27	1,388,240	67,457	5	83,983	7,077	8	1,154	858	74
Garlic.....	1,277	643	50	16	13	80	654	586	90	296,484	27,132	9	3,518	573	16	49	25	50
Taro/'Godere'...	1,054	613	58	12	6	52	54	31	57	167,160	16,135	10	3,056	449	15	5	4	81
Sweet potatoes..	1,017	560	55	51	36	71	4	4	98	270,996	27,336	10	9,580	1,346	14	6	3	57

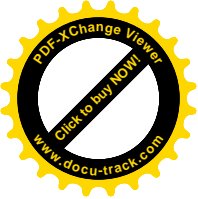
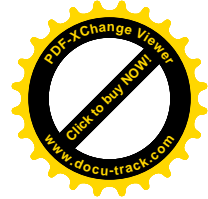


Table I(Cont'd)



Crop	IMPROVED SEED									PESTICIEDS					
	Holder			Area (Ha)			Quintal			Holder			Area (Ha)		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
All	214,691	22,656	11	37,359	6,688	18	9,133	1,415	15	314,728	34,613	11	114,206	17,343	15
Cereals	162,034	20,563	13	34,335	6,653	19	8,520	1,395	16	238,760	24,674	10	102,213	16,607	16
Teff	1,946	1,339	69	178	148	83	110	73	66	66,500	11,796	18	18,295	3,321	18
Barley	1,338	765	57	296	193	65	222	186	84	113,576	16,556	15	32,139	6,728	21
Wheat	2,247	1,355	60	369	233	63	700	482	69	86,355	16,811	19	35,276	10,491	30
Maize	156,633	20,439	13	33,467	6,641	20	7,487	1,291	17	43,871	9,300	21	9,437	3,019	32
Sorghum	299	182	61	25	16	66	-	-	-	4,433	2,356	53	2,369	1,541	65
Finger millet	-	-	-	-	-	-	-	-	-	208	209	100	66	67	100
Oats/ 'Aja'	-	-	-	-	-	-	-	-	-	22,898	5,530	24	3,428	973	28
Rice	33	33	100	1	1	100	1	1	100	1,783	1,721	97	1,202	1,161	97
Pulse	3,653	1,117	31	582	305	52	436	299	69	41,338	12,579	30	6,456	2,499	39
Horse/Faba beans	-	-	-	-	-	-	-	-	-	1,407	978	70	311	285	92
Field peas	-	-	-	-	-	-	-	-	-	1,479	687	46	326	183	56
Haricot beans	3,082	980	32	550	306	56	413	300	73	26,910	9,535	35	3,289	1,575	48
Chick peas	-	-	-	-	-	-	-	-	-	3,860	2,124	55	515	299	58
Lentiles	571	567	99	32	32	100	23	23	100	799	438	55	105	85	81
Vetch/Grass peas	-	-	-	-	-	-	-	-	-	8,102	7,790	96	1,888	1,844	98
Soya beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	1,433	887	62	22	15	68
Gibto	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil seeds	132	132	100	8	8	100	-	-	-	892	863	97	110	107	97
Nueg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	892	863	97	110	107	97
Safflower	132	132	100	8	8	100	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vegetables.....	11,056	3,666	33	336	163	48	-	-	-	30,939	19,636	63	713	349	49
Lettuce.....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Head Cabbage....	5,690	2,852	50	187	150	80	-	-	-	2,601	1,562	60	90	76	85
Ethiopian Cabbage	1,926	763	40	27	13	49	-	-	-	25,857	19,569	76	369	302	82
Tomatoes.....	2,348	1,004	43	110	61	55	-	-	-	2,756	1,067	39	220	153	70
Green peppers..	543	406	75	1	1	85	-	-	-	1,086	558	51	32	30	93
Red peppers....	275	274	99	8	8	99	-	-	-	296	294	100	2	2	100
Swiss chard.....	1,046	838	80	3	2	92	-	-	-	26	25	98	-	-	98
Root Crops.....	45,585	9,028	20	2,097	751	36	178	135	76	35,356	7,935	22	4,714	1,344	29
Beetroot.....	4,246	2,073	49	26	16	62	-	-	98	-	-	-	-	-	-
Carrot.....	8,524	3,646	43	229	178	77	-	-	81	-	-	-	-	-	-
Onion.....	8,957	5,994	67	948	687	73	-	-	-	12,186	6,130	50	1,923	1,084	56
Potatoes.....	23,348	5,524	24	843	240	29	178	135	76	20,858	5,004	24	2,637	783	30
Garlic.....	1,000	485	49	3	2	65	-	-	-	2,108	738	35	123	59	48
Taro/ Godere'...	699	433	62	3	2	67	-	-	-	483	348	72	5	3	68
Sweet potatoes..	697	465	67	46	43	94	-	-	-	820	469	57	26	14	55

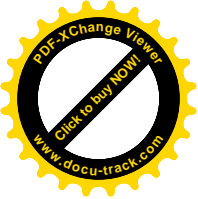
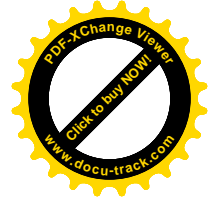


Table I(Cont'd)



Crop	IRRIGATION						EXTENSION PACKAGE					
	Holder			Area (Ha)			Holder			Area (Ha)		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
All	508,704	41,424	8	90,974	9,538	10	467,350	38,315	8	133,929	14,950	11
Cereals	337,531	34,517	10	66,494	7,411	11	355,421	31,079	9	108,401	13,454	12
Teff	25,749	9,131	35	3,955	1,820	46	17,960	4,538	25	5,246	1,419	27
Barley	15,107	3,635	24	1,428	425	30	55,792	12,823	23	17,962	4,884	27
Wheat	9,871	4,325	44	1,846	790	43	24,795	8,422	34	15,892	7,037	44
Maize	301,181	32,731	11	57,673	6,948	12	277,213	27,922	10	63,751	9,975	16
Sorghum	7,613	3,214	42	1,487	1,013	68	21,875	5,822	27	5,326	1,987	37
Finger millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats/'Aja'	578	407	70	105	58	56	-	-	-	-	-	-
Rice	58	42	72	1	1	95	510	463	91	225	217	97
Pulse	122,094	21,992	18	8,509	2,655	31	161,521	19,791	12	13,200	2,491	19
Horse/Faba beans	1,005	805	80	80	78	97	-	-	-	-	-	-
Field peas	645	428	66	10	6	55	34	34	101	-	-	101
Haricot beans	91,607	19,800	22	4,416	2,017	46	159,426	19,745	12	13,092	2,489	19
Chick peas	15,335	6,983	46	2,120	1,129	53	284	231	81	4	5	102
Lentiles	6,729	2,724	40	459	212	46	1,811	1,304	72	103	88	86
Vetch/Grass peas	4,737	2,696	57	650	350	54	-	-	-	-	-	-
Soya beans	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	10,624	3,906	37	774	433	56	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-	-	-	-
Oilseeds	2,425	873	36	463	246	53	3,725	1,410	38	1,497	683	46
Nueg	226	224	99	-	-	99	226	224	99	-	-	99
Linseed	354	274	77	6	4	71	-	-	-	-	-	-
Ground nuts	575	573	100	209	209	100	280	280	100	31	31	100
Safflower	1,005	545	54	114	66	58	-	-	-	-	-	-
Sesame	266	144	54	134	113	84	3,067	1,357	44	1,464	682	47
Rapeseed	-	-	-	-	-	-	153	152	99	2	2	99
Vegetables.....	129,617	16,889	13	3,189	758	24	7,136	2,680	38	346	140	40
Lettuce.....	737	727	99	7	7	99	-	-	-	-	-	-
Head Cabbage....	8,814	2,338	27	150	62	41	-	-	-	-	-	-
Ethiopian Cabbage	63,764	13,580	21	595	140	23	-	-	-	-	-	-
Tomatoes.....	37,719	6,182	16	1,554	643	41	3,291	1,200	36	177	79	45
Green peppers..	30,751	5,571	18	443	109	25	-	-	-	-	-	-
Red peppers....	16,814	5,554	33	435	156	36	4,091	2,348	57	169	105	62
Swiss chard.....	2,161	1,207	56	5	3	63	-	-	-	-	-	-
Root Crops.....	219,214	22,502	10	12,317	1,716	14	128,983	22,934	18	10,484	2,495	24
Beetroot.....	8,963	2,419	27	50	20	40	-	-	-	-	-	-
Carrot.....	5,499	2,428	44	81	47	58	-	-	-	-	-	-
Onion.....	77,561	11,222	14	4,219	1,189	28	19,288	6,717	35	1,911	1,108	58
Potatoes.....	118,834	16,082	14	5,969	911	15	111,520	21,934	20	8,484	2,226	26
Garlic.....	26,763	5,688	21	569	233	41	-	-	-	-	-	-
Taro/'Godere'...	846	454	54	44	36	83	-	-	-	-	-	-
Sweet potatoes..	27,443	10,486	38	1,386	720	52	1,862	710	38	89	47	52

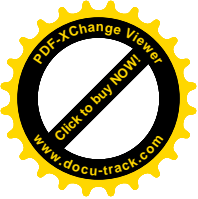


Table 2. Holders Applying Inputs by Educational Status

National Level															
Educational Status of Holders	Crop Holders			Fertilizer			Improved Seed			Pesticide			Irrigation		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
Illiterate	2,933,288	57,880	2	467,690	25,072	5	84,278	10,641	13	138,778	16,147	12	210,838	21,927	10.40
Literate	290,312	19,309	7	50,632	7,172	14	9,913	3,546	36	28,313	5,902	21	41,087	7,297	17.76
Grades 1 - 3	654,988	20,083	3	128,374	9,795	8	20,494	4,160	20	37,445	5,086	14	40,405	6,695	16.57
Grades 4 - 6	704,604	21,579	3	168,301	12,170	7	32,540	6,080	19	43,320	5,783	13	44,916	8,267	18.40
Grades 7 - 8	255,267	11,986	5	62,844	6,260	10	11,859	2,726	23	15,988	2,892	18	15,367	2,759	17.95
Grades 9 - 11	82,485	5,769	7	23,657	3,208	14	3,678	1,198	33	4,576	1,135	25	6,914	2,652	38.35
Grade 12 complete	21,803	3,032	14	7,224	1,791	25	1,034	654	63	896	432	48	840	369	43.97
Above grade 12	10,125	2,259	22	4,231	1,395	33	1,987	1,069	54	622	337	54	253	184	72.77
Total	4,952,873	77,812	2	912,952	46,712	5	165,783	20,583	12	269,937	27,902	10	360,621	36,934	10.24

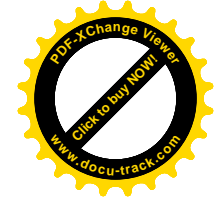
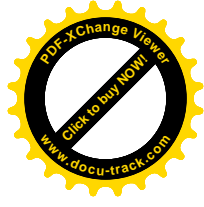
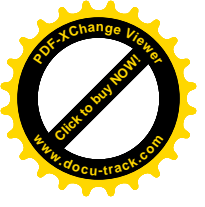
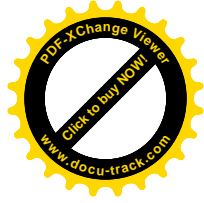
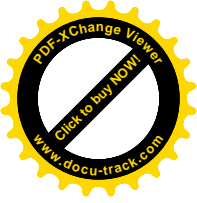


Table 2. Holders Applying Inputs by Age group

National Level															
Age group	Crop Holders			Fertilizer			Improved Seed			Pesticide			Irrigation		
	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV	Estimate	SE	CV
Below 18	17,367	2,190	13	1,334	598	45	-	-	-	887	429	48	1,630	772	47
18 - 20	95,514	6,336	7	18,647	2,913	16	2,144	861	40	8,008	2,253	28	4,407	1,016	23
21 - 24	228,565	9,543	4	36,537	3,726	10	8,052	1,671	21	13,717	2,657	19	15,436	2,889	19
25 - 29	617,942	17,122	3	114,018	8,905	8	24,392	4,249	17	31,093	4,053	13	48,891	6,490	13
30 - 39	1,366,740	29,239	2	264,658	15,859	6	49,116	6,637	14	68,673	7,671	11	101,340	11,989	12
40 - 49	1,056,243	24,258	2	206,463	13,398	6	40,247	6,342	16	59,051	7,480	13	76,098	8,369	11
50 - 59	743,467	18,982	3	131,970	9,120	7	19,221	3,723	19	43,943	5,668	13	51,500	6,599	13
60 and above	826,765	22,581	3	139,324	9,075	7	22,610	4,801	21	44,566	6,255	14	61,321	7,624	12
Not stated	270	270	100	-	-	-	-	-	-	-	-	-	-	-	-
Total	4,952,873	77,812	2	912,952	46,712	5	165,783	20,583	12	269,937	27,902	10	360,621	36,934	10



APPENDIX III: QUESTIONNAIRES



PART 3A: RESULTS OF AREA MEASUREMENTS using GPS

18	19	20	21	22	23	24	25
GPS Accuracy during field measurement	Is the field measured? yes =1 No =2 →						Comments
	Area of measured field		Is the field Flat =1 Partially Sloppy = 2 Sloppy = 3	Code	If the field covered? None , 1 With plant / permanent crop = 2 With house = 3 Partially covered , 4 Others , 5	Code	
	Area in square meters (Clockwise)	Area in square meters (Anti-Clockwise)					
<i>Field measurement</i>			<i>Date</i>		<i>Month</i>		

PART 3B – RESULTS OF AREA MEASUREMENTS USING COMPASS-ROPE

18	19	20	21	22	23	24	25	26
Is the field measured?		Yes =1		No = 2		Code		→
Side	1 - 2	2 - 3	3 -	4 -	5 -	6 -	7 -	8 -
Bearing (0)								
Length								
Side	9 -	10 -	11 -	12 -	13 -	14 -	15 -	16 -
Bearing(0)								
Length								
Side	17 -	18 -	19 -	20 -	21 -	22 -	23 -	24 -
Bearing (0)								
Length								
Side	25 -	26 -	27 -	28 -	29 -	30 -	31 -	32 -
Bearing (0)								
Length								
Field Measurement	date	month	Closure error			Area in square meters		

	Name	Signature	Date
Data collector			
Field Supervisor			