

# **CHAPTER VI**

## **FARM MANAGEMENT PRACTICES**

### **1 INTRODUCTION**

Ethiopia is endowed with abundant resources suitable for agriculture. As result of which the agricultural activity in Ethiopia is quite varied being conditioned by such factors as climate, soils topography, ... etc that have favored not only the employment of the majority of the country's population but also served as the main source of input (raw material) for the large and medium scale industries as well as the main generator of the country's foreign currency earnings.

Though agriculture is the backbone of Ethiopian economy it is characterized by low level of productivity and subsistence farming system that have resulted hand to mouth production. Nowadays the problem mentioned has become more acute as a result of two factors. First the number of people is increasing at a rate that doubles the present population of the country in about a generation. Secondly this is occurring at a time when the area of new land suitable for cultivation is rapidly diminishing.

Till recently traditional practice such as use of animal dung and crop residue crop rotation and expanding cultivable crop land had helped a lot to increase productivity, however, the problem mentioned above has become more acute and beyond the limits of the traditional practices which of course had already been exhausted. Hence, the scale of severity of the country's food and other related problems will be so great that a massive short and long-range innovative efforts will be required to solve it.

As a result, increasing productivity on various field crops is the only realistic option to raise the living standards of the rural population and to ensure food security and poverty alleviation. There are many modern techniques and technologies of achieving enhanced crop productivity. Accordingly, the major factors behind achieving high level of crop productivity increases are greater and more efficient use of fertilizers, wide spread uses of

improved variety seeds, pesticides, expanded use of irrigation and effective extension services. Thus, during the 2001/02 Agricultural Sample Enumeration, basic data on agricultural inputs and practices were collected, processed and the results are presented in this chapter.

This chapter is therefore, deals with the agricultural census data that indicates the type of inputs applied, quantity of inputs applied, the irrigated cropland area, estimates of cropland area damage, number of holders who applied different agricultural inputs and farm management practices, and number of holders covered by extension package programs in Addis Ababa City Administration. Data are presented for private holdings in rural areas for both Meher and Belg seasons, and urban areas of holdings for Meher season. For urban areas, data are collected and presented only to the inputs applied and the irrigated cropland area and number of holders who applied farm inputs. Moreover, this chapter presents statistical Tables 6.1 – 6.5.4 that show the results of the census. In the Annex to this chapter are also given tables showing estimates, standard errors (S.E) and coefficient of variation (C.V), i.e. in Tables 6.1 and 6.2 for some relevant variables.

## **2 CROPLAND AREA UNDER AGRICULTURAL INPUTS AND FARM MANAGEMENT PRACTICES**

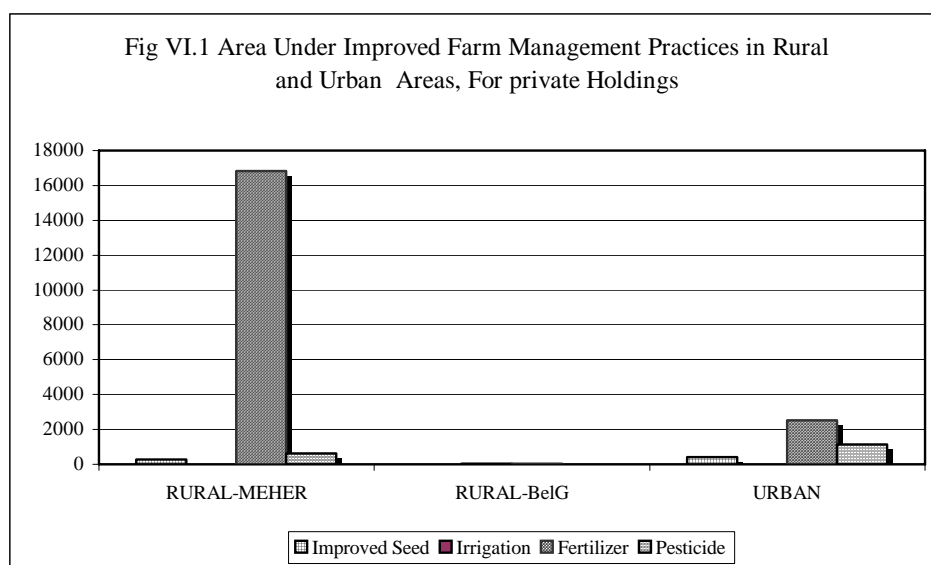
This section of the chapter deals with the agricultural inputs applied and the irrigated cropland area for both rural and urban areas of Addis Ababa City Administration. Agricultural holders in the sampled households were asked whether they have applied agricultural inputs on their fields or not and the area of all plots operated by the holders were actually measured objectively for private holdings in rural areas. While in urban areas all types of data on farm practices were obtained by interview methods. This helped to estimate area under total crop, irrigated land, fertilizers, pesticides and improved seeds used during the agricultural year. Following data on area under agricultural farm inputs for Addis Ababa City Administration are briefly discussed.

The census data show that Addis Ababa City Administration predominantly produces grain crops and the major crops either in terms of the magnitude of area and volume of production includes Teff, wheat and barley that accounted for about 74.65% of the area cultivated under all crops. On the other hand, vegetables, root crops and permanent crops are not widely grown as grains in the region in terms of both area coverage and production obtained. As a result, the agricultural inputs were applied to a great extent on the area under grain crops in order to increase the volume of production. Among different types of agricultural inputs that were applied, it is found that fertilizers application had relatively high coverage of area under crops. Moreover, the census data indicate that vast majority of agricultural holders have used agricultural inputs on small size of holdings. In general, the holders in the region as a whole have practiced modern agricultural techniques and technologies but in a much smaller extent.

## **2.1 Fertilized Cropland Areas**

The effects of fertilizers on improving the efficiency of crop production as well known and can be hardly over emphasized. More over, the fertilizing materials and mixture are not restricted to in organic Chemicals but include organic substances such as crop residue animal dung, .. etc. Therefore, fertilizers refer to anything added to the soil with the intention of increasing the amount of plant nutrients available for crop growth. In the census, data on application, type and quantity of natural and chemical fertilizers were collected. The natural fertilizers consisted of animal dung and compost while chemical fertilizers consisted of DAP (Di-Ammonium phosphate) and UREA (Ammonium Nitrate).

Although fertilizer is one of the very important agricultural inputs to increase the level of production, in Addis Ababa City Administration, fertilizers were applied on 19,400 hectares (79.88%) of the total cultivated cropland area. Of this total area fertilized cropland, the share of rural and urban areas was found to be 86.77% and 13.09%, respectively. Moreover, the proportion of total fertilized cropland areas in rural areas for Meher season was 16,834 hectares (86.77%) as compared to only 27 hectares (0.14%) for Belg season. Regarding private holdings in urban areas, data are collected and presented only for Meher season. For details, refer to Summary Table VI.1 and Fig VI.1.



Furthermore, out of the total fertilized cropland areas, 91.99% were under cereals, 4.65% under pulses, 0.06% under oil seeds and 1.06% under vegetables while fruits and stimulants contributed 0.06% and 0.04%, respectively. Most of the fertilized cropland areas in the region were allotted to cereals in both rural and urban areas (See Summary Table VI.1)

With regard to a specific crop, Teff is the most important fertilized crop that comprised an area of 46.63% of the total cropland area under fertilizers. The second important fertilized crop is wheat covering 43.49% of the total cropland area under fertilizers. Chickpeas ranks third taking up 2.45% of the total cropland area under fertilizers. For details, refer to Summary Table VI.2.

## 2.2 Cropland Areas Treated with Pesticides

Pesticides are chemicals that are used for the control of mitigation or elimination of pests that are detrimental to crops. Examples of pesticides are insecticides, herbicides and fungicides. Summary Table VI.1 reveals that the total cropland area treated with pesticides was estimated to be 1,779 hectares. Of the total cropland areas treated with pesticides, the share of rural areas was found to be 35.58% while the rest 64.36% is the share of urban

areas. Thus, private holdings in urban areas had the highest share, while the contribution of the rural areas to the total pesticide applied cropland area was very limited in scale.

Furthermore, most of the pesticide applied land areas in the city Administration were under cereal crops (about 95%), while the remaining 5% of the fields under pulses, oilseeds, vegetables root crops and permanent crops were treated with pesticides. Out of all cropland areas on which pesticides are applied, Teff accounts for about 1,075 hectares followed by wheat and barley, accounting for about 441 and 170 hectares, respectively. For Details, see Summary Tables VI.1 and VI.2.

### **2.3 Cropland Areas on which Improved Seeds are Used**

Improved seeds are defined as crop varieties that give significantly higher yield and better quality compared to locally produced varieties of seeds. As illustrated in Summary Table VI.1, the total cultivated cropland area was estimated at 24,286 hectares. Of this total, only 719 hectares (2.96%) was sown with improved variety of seeds. The share of rural and urban areas was found to be 40.61 percent and 159.39 percent of the total cropland areas on which improved seeds are used, respectively. Consequently, the private holdings in the urban areas during Meher season had the highest share; while the contribution of the private holdings in urban areas to the total improved seeds applied cropland area in the administration was limited in scale. The share of Belg season to the total improved seed applied cropland area was also found to be 0.97% (See Fig VI.1)

Summary Table VI.1 also presents the total cropland area with application of improved agricultural practices and inputs by crop category for private holdings in rural and urban areas. The data in this table indicate that the highest area under improved seed was reported for cereal that account for about 59.39% while the remaining 40.61% was reported to be under pulses, oil seeds vegetables, root crops and permanent crops altogether.

## **2.4 Cropland Areas Under Irrigation**

The increase in crop production, to keep pace with the increased population demand, can be achieved among others by the efficient utilization irrigation practices. Moreover, irrigation practices make possible the utilization of advanced technology in farming: these include the proper application of fertilizers, the adoption of good crop rotation practices and the use of better seed varieties.

Irrigated cropland areas, therefore, refer to the practice where an area of land is purposely and actually provided with water, other than the precipitation obtained from rain to improve the production of crops. The uncontrolled flooding of land by the overflow of rivers or streams is not considered to be as practice of irrigation.

The observation on irrigated cropland areas was very low and estimates that are obtained from the census of the Addis Ababa City Administration were insignificant and as a result it is represented with asterikes in this report. However, the data indicates that the peasants in the city Administration used to practice irrigation scheme to increase production in 2001/02(1994 E.C) both seasons.

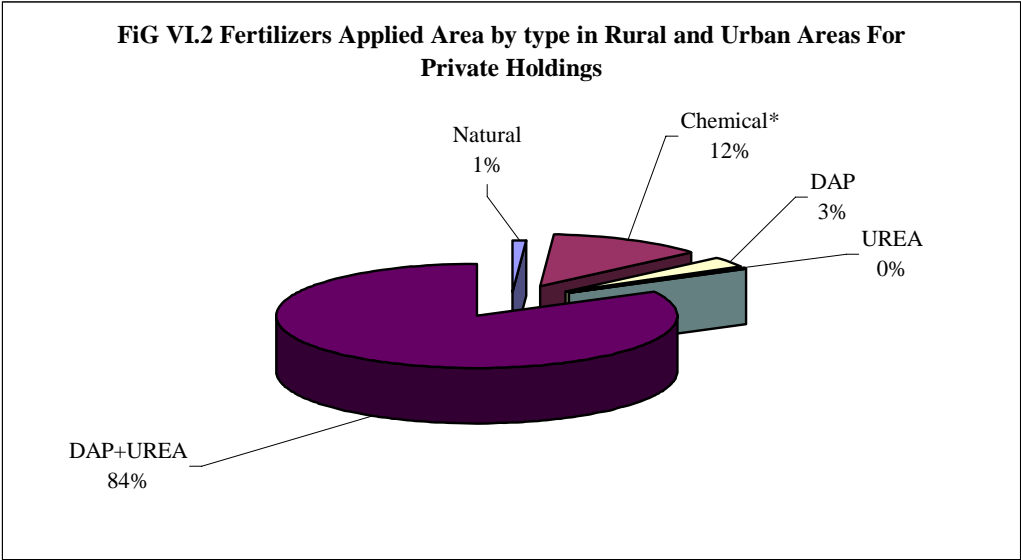
## **3 HOLDERS APPLYING FERTILIZERS, AREA, AND QUANTITY OF FERTILIZERS APPLIED**

In 2001/02 Agricultural Sample Enumeration, the total number of holders applying fertilizers in the Addis Ababa City Administration is estimated to be about 13,858. Of these total private holders, about 11,563 holders (83.44%) were in rural and about 16.56% in urban areas. The application of fertilizers in Meher and Belg seasons for private holdings in rural areas shows a great variation, that is, 83.23% of the holders applied fertilizers in Meher season while only 1.81 percent applied in Belg season (See Summary Tables VI.3 and VI.4).

With regard to the type of fertilizers applied, the great majority of holders applied chemical fertilizers (13,025). When we come to the utilization of natural fertilizers, about 2,439

holders were reported to apply natural fertilizers in the 2001/02-crop year. In urban areas for private holdings, a total of 2,295 holders applied natural and chemical fertilizers. Among the types of fertilizers, chemical fertilizers were applied in a larger cultivated area of cropland, which is about 2,422 hectares (12.48% of fertilized cropland area). Among the chemical fertilizers used in rural areas, considerable amount of cropland area was covered by a mixture of DAP and UREA which is 16,079 hectares (82.88%) and DAP was applied on 635 hectares (3.27%) and UREA on 51 hectares (0.26%), (See Fig VI.2 and Summary Table VI.3)

Furthermore, the data in Summary Table VI.3 indicates that the total quantity of chemical fertilizers applied by holders in the rural areas was estimated at about 34,074 quintals, of which, the share of the mixture of DAP and UREA was the highest accounting for about 97.43 percent of the total volume of chemical fertilizers applied. This is followed by DAP accounting for about 2.44 percent and then UREA with about 0.11 percent (See Fig VI.3 and Summary Table VI.3)



\* Refers to urban areas only

**SUMMARY TABLE VI.1: Total Area Under Improved Farm Management Practices  
by Crop Categories in Rural and Urban Areas, Both Seasons, for Private Holdings.**

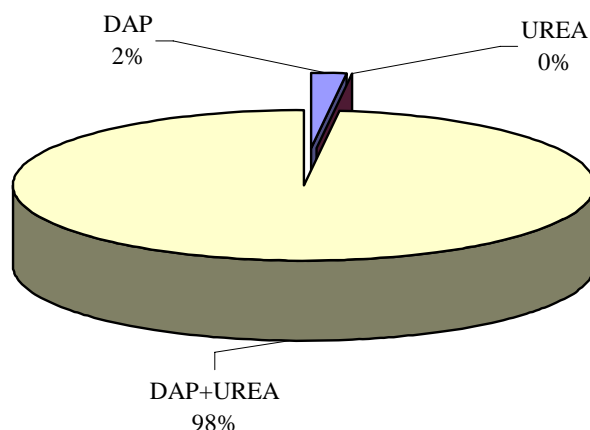
ITEM	Area in Hectares									
	Total	Grains				Vegetables	Root Crops	Permanent Crops		
		Cereals	Pulses	Oilseeds	Others			Fruits	Stimulant	Other
Total Area										
Rural and Urban ..	24286	18246	5248	37	*	245	461	*	37	11
Rural .....	21244	16099	4893	14	*	46	167	*	23	2
Meher .....	21196	16078	4889	14	*	33	157	*	23	2
Belg .....	49	*	*	*	*	*	10	*	*	*
Urban (Meher).....	3042	2147	355	23	*	199	*	*	*	9
Improved Seeds										
Rural and Urban ..	719	427	9	*	*	*	*	*	*	*
Percent..	100	59.39	1.25	*	*	*	*	*	*	*
Rural .....	292	259	8	*	*	4	21	*	*	*
Percent..	40.61	88.70	2.74	*	*	1.37	7.19	*	*	*
Meher .....	285	259	*	*	*	*	18	*	*	*
Percent..	39.64	90.88	*	*	*	*	6.32	*	*	*
Belg .....	7	*	*	*	*	3	*	*	*	*
Percent..	0.97	*	*	*	*	42.86	*	*	*	*
Urban (Meher).....	427	168	*	*	*	*	*	*	*	*
Percent..	59.39	39.34	*	*	*	*	*	*	*	*
Irrigation										
Rural and Urban ..	*	24	*	*	*	203	*	*	*	*
Percent..	*	*	*	*	*	*	*	*	*	*
Rural .....	39	*	*	*	*	18	19	*	*	*
Percent..	*	*	*	*	*	46.15	48.72	*	*	*
Meher .....	15	*	*	*	*	4	*	*	*	*
Percent..	*	*	*	*	*	26.67	*	*	*	*
Belg .....	24	*	*	*	*	*	10	*	*	*
Percent..	*	*	*	*	*	*	41.67	*	*	*
Urban (Meher).....	*	24	*	*	*	186	*	*	*	*
Percent..	*	*	*	*	*	*	*	*	*	*
Fertilizer										
Rural and Urban ..	19400	17847	903	11	*	206	*	*	11	8
Percent..	100	91.99	4.65	0.06	*	1.06	*	*	0.06	0.04
Rural .....	16862	15857	835	*	*	27	129	*	8	1
Percent..	86.92	94.04	4.95	*	*	0.16	0.77	*	0.05	0.01
Meher .....	16834	15851	834	*	*	14	122	*	8	1
Percent..	86.77	94.16	4.95	*	*	0.08	0.72	*	0.05	0.01
Belg .....	27	*	*	*	*	*	7	*	*	*
Percent..	0.14	*	*	*	*	*	25.93	*	*	*
Urban (Meher).....	2539	1990	69	*	*	179	*	*	*	6
Percent..	13.09	78.38	2.72	*	*	7.05	*	*	*	0.24
Pesticides										
Rural and Urban ..	1779	1690	19	*	*	*	16	*	*	*
Percent..	100	95.00	1.07	*	*	*	0.90	*	*	*
Rural .....	633	619	*	*	*	*	*	*	*	*
Percent..	35.58	97.79	*	*	*	*	*	*	*	*
Meher .....	623	619	*	*	*	*	*	*	*	*
Percent..	35.02	99.36	*	*	*	*	*	*	*	*
Belg .....	*	*	*	*	*	*	*	*	*	*
Percent..	*	*	*	*	*	*	*	*	*	*
Urban (Meher).....	1145	1072	17	*	*	*	*	*	*	*
Percent..	64.36	93.62	1.48	*	*	*	*	*	*	*



**SUMMARY TABLE VI.2: Total Area Under Improved Seed, Irrigation, Fertilizer, and Pesticide  
by Type of Crops in Rural and Urban Areas, for Private Holdings**

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	24286	719	2.96	*	*	19400	79.88	1779	7.33
Grain Crops.....	23531	436	1.85	30	0.13	18761	79.73	1710	7.27
Cereals .....	18246	427	2.34	24	0.13	17847	97.81	1690	9.26
Teff .....	9183	168	1.83	13	0.14	9047	98.52	1075	11.71
Barley.....	423	16	3.78	*	*	320	75.65	170	40.19
Wheat.....	8523	241	2.83	5	0.06	8437	98.99	441	5.17
Maize .....	65	1	1.54	*	*	28	43.08	*	*
Sorghum .....	42	-	-	-	-	9	21.43	*	*
Finger millet ..	*	-	-	-	-	*	*	-	-
Oats ('Aja').....	*	-	-	-	-	*	*	-	-
Rice .....	-	-	-	-	-	-	-	-	-
Pulses .....	5248	9	0.17	*	*	903	17.21	19	0.36
Horse beans ....	283	*	*	*	*	78	27.56	*	*
Field peas.....	94	*	*	*	*	35	37.23	*	*
Haricot beans ..	3	*	*	*	*	*	*	-	-
Chick peas .....	2668	*	*	*	*	476	17.84	13	0.49
Lentils .....	*	-	-	-	-	*	*	-	-
Vetch.....	1414	-	-	-	-	*	*	*	*
Soya .....	-	-	-	-	-	-	-	-	-
Fenugreek .....	219	-	-	-	-	76	34.7	-	-
Gibto .....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	37	-	-	-	-	10	27.03	*	*
Neug.....	25	-	-	-	-	*	*	-	-
Linseed.....	12	-	-	-	-	*	*	-	-
Ground nuts ....	-	-	-	-	-	-	-	-	-
Sufflower .....	*	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-	-
Rapeseed .....	1	-	-	-	-	*	*	-	-
Other Grains .....	*	-	-	-	-	*	*	-	-
Vegetables .....	245	*	*	203	82.86	206	84.08	*	*
Lettuce .....	26	*	*	*	*	*	*	-	-
Head cabbage..	20	5	25	18	90	18	90	12	60
Kale.....	91	*	*	*	*	75	82.42	*	*
Tomatoes .....	*	*	*	*	*	*	*	-	-
Green peppers ..	1	-	-	*	*	*	*	*	*
Red peppers ....	-	-	-	-	-	-	-	-	-
Swiss chard.....	*	*	*	*	*	*	*	*	*
Others.....	33	*	*	*	*	20	60.61	*	*
Root Crops.....	461	*	*	*	*	*	*	16	3.47
Beet root .....	16	*	*	*	*	14	87.5	*	*
Carrot.....	*	*	*	*	*	*	*	*	*
Onions.....	*	*	*	*	*	*	*	-	-
Potatoes.....	46	*	*	42	91.3	39	84.78	*	*
Garlic .....	13	-	-	*	*	5	38.46	*	*
Taro .....	-	-	-	-	-	-	-	-	-
Sweet potatoes	*	-	-	*	*	*	*	-	-
Others.....	*	*	*	*	*	*	*	*	*
Permanent Crops.....	49	*	*	*	*	20	40.82	*	*
Fruit Crops.....	*	*	*	*	*	*	*	-	-
Avocado.....	*	*	*	*	*	*	*	-	-
Bananas.....	*	-	-	-	-	-	-	-	-
Guava .....	*	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-	-
Oranges .....	*	*	*	*	*	*	*	-	-
Papayas .....	-	-	-	-	-	-	-	-	-
Pineapples.....	-	-	-	-	-	-	-	-	-
Others.....	*	*	*	*	*	*	*	-	-
Stimulant Crops .....	37	*	*	*	*	11	29.73	*	*
Chat.....	1	-	-	*	*	1	100	-	-
Coffee .....	*	*	*	*	*	*	*	-	-
Hops .....	36	-	-	*	*	10	27.78	*	*
Others.....	-	-	-	-	-	-	-	-	-
Other Permanent	11	*	*	*	*	8	72.73	-	-
Enset .....	10	*	*	*	*	8	80	-	-
Sugar Cane....	*	*	*	*	*	*	*	-	-
Others.....	*	*	*	-	-	*	*	-	-

**FIG VI.3 Quantity of Fertilizer Applied By Type in Rural Areas, For Private Holdings.**



### 3.1 Application of Natural Fertilizers in the Rural and Urban Areas

According to the census findings, about 2,062 holders in rural areas and 377 holders in urban areas applied natural fertilizers on 212 hectares of cropland (comprising 1.09% of the total fertilized land area). Of the total cropland area on which natural fertilizers are applied, the share of Meher and Belg seasons in rural areas was 0.47 and 0.14 percent, respectively. Moreover, of the total land area on which natural fertilizers are applied 64.62% was under cereals, 12.26% under pulses, 7.55% under vegetables, 8.49% under root crops, 5.19% under stimulants and 1.42% under other permanent crops. For details, refer to Summary Tables VI.3 and VI.5.

### 3.2 Application of DAP in the Rural Areas

As illustrated in Summary Table VI.3, about 10,965 holders in rural areas have applied chemical fertilizers on a total of 16,766 hectares of cultivated cropland area, of which DAP on about 635 hectares, which is about 3.27% of the total fertilized land area. DAP applied cropland area varied markedly from one group of crops to another, i.e., of the total DAP applied cropland area 42.91% and 50.79% were for cereals and pulses, respectively. Variations in the application of fertilizers with respect to specific crops are also

considerable, i.e., relatively it is higher for chickpeas at 195 hectares and Teff at 129 hectares (For details, refer to Summary Tables VI.3 and VI.4).

Furthermore, the total quantity of DAP applied in rural areas is estimated to be about 832 quintals, which is 2.44% of the total quantity of chemical fertilizers applied. In general, the quantity of DAP applied was the highest for cereals which was about 481 quintals followed by pulses that amounted to 200 quintals, during the 2001/02 (1994 E.C) Meher season only.

### **3.3 Application of UREA in the Rural Areas**

About 488 holders in rural areas have applied UREA, and the cropland areas under UREA application occupied 51 hectares, which is 0.26% of the total fertilizers applied cropland area. Out of this total UREA applied area, it is reported that 54.9 % was under cereals, 33.33% under pulses and 9.8% under root crops. Among all crops, the largest UREA applied area was under wheat at 20 hectares, which accounts for about 39.22% of the total UREA applied cropland area. Moreover, the data in the table shows that the total quantity of UREA applied was about 43 quintals in which the highest amount was applied for cereals at 24 quintals, while the share of pulses and root crops was 6 and 11 quintals of UREA, respectively. during the 2001/02 (1994 E.C) Meher season only (See Summary Table VI.3).

### **3.4 Application of a Mixture of DAP and UREA in the Rural Areas**

The census findings depicts the fact that holders have applied a mixture of DAP and UREA on their crop fields. As presented in Summary Table VI.3 there were about 10,568 holders in the city Administration who applied a mixture of DAP and UREA on 16,079 hectares, which is 82.88% of the total area on which fertilizers were applied. The application of a mixture of DAP and UREA to cereals and pulses was on 15,509 and 469 hectares, respectively. It was observed that the application of a mixture of UREA and DAP is low in other crops relative to cereals and pulses. For instance, the application of a mixture of DAP and UREA for vegetables and root crops were only on 18 and 79 hectares, respectively.

In addition, out of the total quantity of chemical fertilizers applied, the amount of a mixture of DAP and UREA was 33,198 quintals, which is 97.43% of the total quantity of chemical fertilizers applied. The application of a mixture of DAP and UREA to cereals, pulses vegetables and root crops amounted to about 32,607; 373; 75 and 129 quintals, in that order. Of the total quantity of mixed chemical fertilizers applied, Teff took the highest proportion accounting for about 52.56% (17,448 quintals). For details, refer to Summary Table VI.3 and VI.4.

## **4 HOLDERS UTILIZING IMPROVED SEEDS AND QUANTITY OF IMPROVED SEEDS USED**

In the 2001/02 Agricultural Sample Enumeration, data on number of holders that have used improved seeds and quantity of seeds used was collected. Hence, the number of holders that have used improved variety seeds and quantity of improved cereals, pulses and oil seeds are presented in Summary Table VI.5.

### **4.1 Number of Holders using Improved Seeds.**

As presented in Summary Table VI.5 the use of improved seeds is limited to only 730 in rural and 466 holders in urban areas of the region. Of the total holders using improved seeds, 35.84% utilized improved wheat seeds, 33.36% improved Teff seeds, 16.81% improved variety of carrot seeds.

### **4.2 Quantity of Improved Seeds Used**

Information on quantity of improved varieties of seeds is also limited to grain crops. As can be seen from Summary Table VI.5, the total quantity of improved seeds was estimated to be 269 quintals. The total quantity of improved seeds used has been low for private holdings in

**SUMMARY TABLE VI.3: Number of Holders Applying Fertilizers, Area Under Fertilizers  
and Quantity of Fertilizers Applied by Type in Rural and Urban Areas, for Private Holdings**

Type of Fertilizer	Number of Holders Applying Fertilizer by Type									
	Total	Grains				Vegetables	Root Crops	Permanent Crops		
		Cereals	Pulses	Oilseeds	Others			Fruits	Stimulant	Other
Rural and Urban.....	13858	12702	2908	76	*	1914	2837	46	570	309
Percent..	100									
Natural .....	2439	793	319	*	-	810	966	42	542	288
Chemical .....	13025	12418	2602	46	-	1178	-	-	-	-
DAP .....	1670	534	922	*	-	*	*	-	-	*
UREA.....	488	143	117	*	-	82	227	*	*	-
DAP+UREA .....	10568	10430	1600	*	*	*	*	*	*	-
Urban.....	2295	1776	146	24	-	507	332	15	89	92
Percent..	16.56									
Natural .....	377	167	-	-	-	88	60	15	78	81
Chemical .....	2061	1689	146	24	-	419	273	-	*	*
Rural Meher.....	11534	10908	2758	51	*	1320	2458	*	481	216
Percent..	83.23									
Natural .....	2043	605	315	*	-	712	870	*	464	208
Chemical .....	10950	10729	2456	*	*	*	*	*	*	*
DAP .....	1665	529	922	*	-	*	*	-	-	*
UREA.....	477	143	117	*	-	71	221	-	-	-
DAP+UREA .....	10525	10430	1600	*	*	*	*	*	*	-
Rural Belg .....	251	*	*	-	-	208	126	-	-	-
Percent	1.81									
Natural .....	54	*	*	-	-	*	46	-	-	-
Chemical .....	197	*	*	-	-	181	80	-	-	-
DAP .....	*	*	-	-	-	-	-	-	-	-
UREA.....	*	-	-	-	-	*	*	-	-	-
DAP+UREA .....	186	-	*	-	-	*	80	-	-	-
Area in Hectares										
Rural and Urban.....	19400	17847	903	10	*	206	*	*	11	8
Percent..	100	91.99	4.65	0.05	*	1.06	*	*	0.06	0.04
Natural .....	212	137	26	*	-	16	18	*	11	3
Percent..	1.09	64.62	12.26	*	-	7.55	8.49	*	5.19	1.42
Chemical .....	19188	17710	877	9	-	190	-	-	-	-
Percent..	98.91	92.3	4.57	0.05	-	0.99	-	-	-	-
DAP .....	635	271	322	*	-	*	*	-	-	*
Percent..	3.27	42.74	50.79	*	-	*	*	-	-	*
UREA.....	51	28	17	*	-	*	5	-	-	-
Percent..	0.26	54.90	33.33	*	-	*	9.80	-	-	-
DAP+UREA .....	16079	15509	469	*	*	5	78	*	*	-
Percent..	82.88	96.46	2.92	*	*	0.03	0.49	*	*	-
Urban .....	2539	1990	69	*	-	179	*	*	*	6
Percent..	13.09	78.38	2.72	*	-	7.05	*	*	*	0.24
Natural .....	116	89	-	-	-	*	*	*	*	2
Percent..	0.60	76.72	-	-	-	*	*	*	*	1.72
Chemical (Urban) .....	2422	1901	69	*	-	170	*	-	*	*
Percent..	12.48	78.49	2.85	*	-	7.02	*	-	*	*
Rural Meher.....	16834	15851	834	*	*	14	122	*	7	1
Percent..	86.77	94.16	4.95	*	*	0.08	0.72	*	0.04	0.01
Natural .....	90	42	26	*	-	7	5	*	7	1
Percent..	0.46	46.67	28.89	*	-	7.78	5.56	*	7.78	1.11
Chemical .....	16744	15808	808	*	*	7	117	*	*	*
Percent..	86.31	94.41	4.83	*	*	0.04	0.7	*	*	*
DAP .....	634	271	322	*	-	*	*	-	-	*
Percent..	3.27	42.74	50.79	*	-	*	*	-	-	*
UREA.....	51	28	17	*	-	*	5	-	-	-
Percent..	0.26	54.9	33.33	*	-	*	9.8	-	-	-
DAP+UREA .....	16060	15509	469	*	*	5	72	*	*	-
Percent..	82.78	96.57	2.92	*	*	0.03	0.45	*	*	-
Rural Belg .....	27	*	*	-	-	*	7	-	-	-
Percent..	0.14	*	*	-	-	*	25.93	-	-	-
Natural .....	*	*	*	-	-	*	*	-	-	-
Percent..	*	*	*	-	-	*	*	-	-	-
Chemical .....	22	*	*	-	-	*	7	-	-	-
Percent..	0.11	*	*	-	-	*	31.82	-	-	-
DAP .....	*	*	-	-	-	-	-	-	-	-
Percent..	*	*	-	-	-	-	-	-	-	-
UREA.....	*	-	-	-	-	*	*	-	-	-
Percent..	*	-	-	-	-	*	*	-	-	-
DAP+UREA .....	19	-	*	-	-	*	6	-	-	-
Percent..	0.10	-	*	-	-	*	31.58	-	-	-

SUMMARY TABLE VI.3: Cont.

	Quantity in Quintals									
Rural .....	34074	33113	579	*	*	*	281	-	*	-
Percent..	100	0.97	0.02	*	*	*	0.01	-	*	-
DAP .....	832	481	200	-	-	*	*	-	-	-
Percent..	2.44	57.81	24.04	-	-	*	*	-	-	-
UREA.....	39	24	6	-	-	1	*	-	-	-
Percent..	0.11	61.54	15.38	-	-	2.56	*	-	-	-
DAP+UREA .....	33198	32607	373	*	*	15	130	-	*	-
Percent..	97.43	98.22	1.12	*	*	0.05	0.39	-	*	-
Rural Meher .....	33988	33113	579	*	*	*	258	-	*	-
Percent..	99.75	97.43	1.7	*	*	*	0.76	-	*	-
DAP .....	832	481	200	-	-	*	*	-	-	-
Percent..	2.44	57.81	24.04	-	-	*	*	-	-	-
UREA.....	39	24	6	-	-	1	*	-	-	-
Percent..	0.11	61.54	15.38	-	-	2.56	*	-	-	-
DAP+UREA .....	33117	32607	373	*	*	15	109	-	*	-
Percent..	97.19	98.46	1.13	*	*	0.05	0.33	-	*	-
Rural Belg .....	86	*	*	-	-	*	23	-	-	-
Percent..	0.25	-	-	-	-	-	-	-	-	-
DAP .....	*	*	-	-	-	-	-	-	-	-
Percent..	*	*	-	-	-	-	-	-	-	-
UREA.....	*	-	-	-	-	*	*	-	-	-
Percent..	*	-	-	-	-	*	*	-	-	-
DAP+UREA .....	81	-	*	-	-	*	21	-	-	-
Percent..	0.24	-	*	-	-	*	25.93	-	-	-

To avoid duplication number of holders that applied fertilizers in rural and urban areas for private holdings do not add up to the totals. Hence, the sum of estimates may not be equal to the totals.

rural areas of the region. As can be seen from the data, the utilization of improved seeds is very low that indicates the holders continued reliance on low yielding local/traditional seeds.

## 5 FARM MANAGEMENT PRACTICES AND EDUCATIONAL ATTAINMENT OF HOLDERS

This section of the chapter presents data on educational attainment of holders in relation to their farm management practices. At the time of enumeration all holders in the sampled households were asked to state their educational attainment. As presented in Summary Table VI.6 data on literacy status and highest grade completed for literate holders were collected.

The census findings indicate that the level of educational attainment of the holders in Addis Ababa City Administration is very low. Thus, this situation may have a direct impact on the level of awareness of the holders with respect to better and improved farming technologies and this is a typical characteristic of peasant community in developing countries. A large number of holders (64.25% in rural and 45.01 % in urban areas) were found to be illiterate, while 9.60% in rural and 12.36% in urban areas have participated in informal education.

**SUMMARY TABLE VI.4: Number of Holders Applying Fertilizers, Fertilized Area, and Quantity of Fertilizers by Crop Type in Rural and Urban Areas, for Private Holdings**

CROP	Application of total Fertilizers		Application of Fertilizers by Type and Quantity				
	Holders	Hectares	Natural		Chemical – DAP		
			Holders	Hectares	Holders	Hectares	Quintals
TOTAL .....	13858	19400	2439	212	1670	635	832
Grain Crops .....	12835	18761	1014	164	1403	595	682
Cereals .....	12702	17847	793	137	534	273	482
Teff .....	11414	9047	126	61	296	129	239
Barley .....	788	320	75	21	96	26	43
Wheat.....	10232	8437	76	35	318	117	199
Maize .....	776	28	580	15	*	*	*
Sorghum .....	32	9	*	*	-	-	-
Finger millet .....	*	*	*	*	-	-	-
Oats ('Aja').....	*	*	-	-	-	-	-
Rice .....	-	-	-	-	-	-	-
Pulses .....	2908	903	319	26	922	322	200
Horse beans .....	661	78	300	17	*	*	*
Field peas.....	122	35	*	*	-	-	-
Haricot beans.....	46	*	-	-	-	-	-
Chick peas .....	1384	476	*	*	561	195	108
Lentils.....	600	*	-	-	*	16	*
Vetch.....	464	*	-	-	301	*	*
Soya .....	-	-	-	-	-	-	-
Fenugreek .....	666	76	*	*	229	17	*
Gibto .....	-	-	-	-	-	-	-
Oil Seeds .....	76	10	*	*	*	*	*
Neug .....	24	*	-	-	-	-	-
Linseed .....	*	*	*	*	-	-	-
Ground nuts .....	-	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-
Rapeseed.....	36	*	*	*	*	*	*
Other Grains .....	*	*	-	-	-	-	-
Vegetables .....	1914	206	810	16	*	*	*
Lettuce .....	279	*	83	*	*	*	*
Head cabbage ....	222	18	26	*	-	-	-
Kale.....	1380	75	461	9	*	*	*
Tomatoes .....	54	*	*	*	-	-	-
Green peppers.....	212	*	113	*	-	-	-
Red peppers .....	-	-	-	-	-	-	-
Swiss chard.....	421	*	100	1	-	-	-
Others .....	441	20	342	2	*	*	*
Root Crops .....	2837	*	966	18	*	*	*
Beet root .....	143	14	42	*	-	-	-
Carrot.....	1050	*	89	8	*	*	*
Onions .....	297	*	204	3	*	*	*
Potatoes .....	137	39	36	*	-	-	-
Garlic .....	1585	5	686	2	*	*	*
Taro ('Godere') ..	-	-	-	-	-	-	-
Sweet potatoes.....	*	*	*	*	-	-	-
Others .....	*	*	-	-	-	-	-
Permanent Crops.....	796	20	743	14	*	*	*
Fruit Crops .....	46	*	42	*	-	-	-
Avocado.....	*	*	*	*	-	-	-
Bananas .....	-	-	-	-	-	-	-
Guava (Zeytuna) ..	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-
Oranges.....	*	*	*	*	-	-	-
Papayas .....	-	-	-	-	-	-	-
Pineapples.....	-	-	-	-	-	-	-
Others .....	13	*	*	*	-	-	-
Stimulant Crops .....	570	11	542	11	-	-	-
Chat.....	70	1	70	1	-	-	-
Coffee .....	57	*	57	*	-	-	-
Hops .....	534	10	506	10	-	-	-
Others .....	-	-	-	-	-	-	-
Other Permanent ..	309	8	288	3	*	*	*
Enset .....	216	8	205	3	-	-	-
Sugar Cane .....	*	*	*	*	-	-	-
Others .....	74	*	66	*	*	*	*

SUMMARY TABLE VI.4. Contd.

CROP	Application of Fertilizers by Type and Quantity						Chemical Fertilizer (Urb)	
	Chemical – UREA			Chemical - DAP & UREA			Holders	Hectares
	Holders	Hectares	Quintals	Holders	Hectares	Quintals		
TOTAL .....	488	51	43	10568	16079	33198	2061	2422
Grain Crops.....	238	45	30	10459	15982	32993	1689	1975
Cereals .....	143	28	24	10430	15509	32607	1689	1901
Teff .....	*	*	*	9787	7767	17448	1337	1085
Barley.....	21	*	*	131	*	*	480	213
Wheat.....	56	20	*	8705	7670	15009	1197	595
Maize .....	*	*	*	99	*	*	35	2
Sorghum.....	-	-	-	*	*	*	*	*
Finger millet ..	-	-	-	-	-	-	-	-
Oats ('Aja').....	-	-	-	*	*	*	*	*
Rice.....	-	-	-	-	-	-	-	-
Pulses .....	117	17	6	1600	469	373	146	69
Horse beans.....	*	*	*	*	*	*	34	10
Field peas .....	*	*	*	-	-	-	79	29
Haricot beans ..	*	*	*	*	*	*	-	-
Chick peas.....	*	*	*	857	246	171	*	*
Lentils .....	*	*	*	*	*	*	*	*
Vetch.....	*	*	*	*	*	*	14	*
Soya .....	-	-	-	-	-	-	-	-
Fenugreek .....	*	*	*	*	*	14	*	*
Gibto .....	-	-	-	-	-	-	-	-
Oil Seeds .....	*	*	*	*	*	*	24	*
Neug.....	-	-	-	-	-	-	24	*
Linseed.....	-	-	-	*	*	*	-	-
Ground nuts ....	-	-	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-
Rapeseed.....	*	*	-	-	-	-	-	-
Other Grains .....	-	-	-	*	*	*	-	-
Vegetables .....	82	1	*	*	18	75	419	170
Lettuce .....	-	-	-	-	-	-	189	*
Head cabbage..	*	*	-	160	12	*	32	*
Kale.....	66	*	1	*	*	*	330	*
Tomatoes .....	-	-	-	*	*	*	*	*
Green peppers ..	-	-	-	*	*	*	-	-
Red peppers ....	-	-	-	-	-	-	-	-
Swiss chard .....	*	*	*	*	*	*	303	*
Others.....	-	-	-	*	*	*	48	*
Root Crops.....	227	5	11	*	79	129	273	*
Beet root .....	*	*	*	48	3	*	42	*
Carrot.....	77	4	*	*	68	95	212	*
Onions.....	*	*	*	*	*	*	*	*
Potatoes.....	-	-	-	25	*	*	76	*
Garlic .....	*	*	*	*	*	*	*	*
Taro .....	-	-	-	-	-	-	-	-
Sweet potatoes ..	-	-	-	-	-	-	-	-
Others.....	-	-	-	*	*	*	*	*
Permanent Crops.....	-	-	-	*	*	*	*	*
Fruit Crops.....	-	-	-	*	*	*	*	*
Avocado.....	-	-	-	-	-	-	-	-
Bananas.....	-	-	-	-	-	-	-	-
Guava .....	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-
Mangoes.....	-	-	-	-	-	-	-	-
Oranges .....	-	-	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-	-
Others.....	-	-	-	*	*	*	*	*
Stimulant Crops.....	-	-	-	*	*	*	*	*
Chat.....	-	-	-	-	-	-	-	-
Coffee .....	-	-	-	-	-	-	-	-
Hops .....	-	-	-	*	*	*	*	*
Others.....	-	-	-	-	-	-	-	-
Other Permanent ..	-	-	-	-	-	-	*	*
Enset .....	-	-	-	-	-	-	*	*
Sugar Cane.....	-	-	-	-	-	-	-	-
Others.....	-	-	-	-	-	-	-	-



Moreover, the data shows that 15.52% of the holders in rural and 21.61% of holders in urban areas have completed grades 1 to 6 and only 10.46% of the holders in rural and 18.57 % in urban areas have completed grades 7-12. These estimates show that holders in urban areas are relatively more literate than those in the rural areas. This could probably be due to better access to school and/or better awareness of the importance of education among the holders in the urban than those in the rural areas.

Moreover, the total number of holders participating in the agricultural extension package programs was 93, which is only about 0.58 percent of the total holders in the city Administration. Of the total holders participating in the extension programs, 93 were in Meher season. The distribution of extension package program participants by educational status shows that 49.46% have completed grades 1 to 6.

As a result of insignificant number of holders who have been exposed to extension packages as well as to education, the impact of education on the use of improved farm practices was not clearly exhibited by the census data. The data indicates that out of all holders who have used improved seeds, practiced irrigation, and applied fertilizers and pesticides, 52.26, 43.50, 63.45 and 45.11 percents were illiterate, respectively (For details, refer to Summary Table VI.6).

## **6 DAMAGED CROPLAND AREAS AND SIZE OF HOLDINGS IN RURAL AREAS**

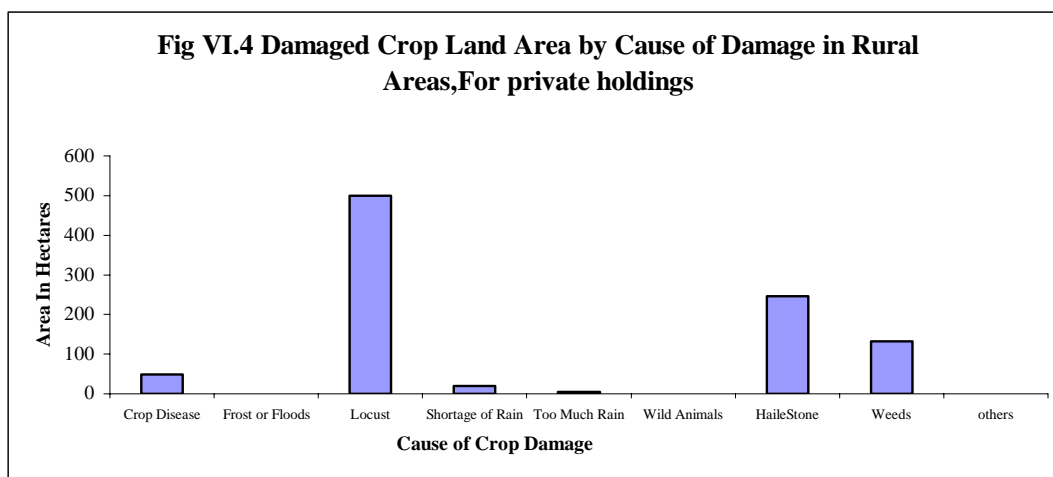
This section of the chapter deals with the estimates of damaged cropland areas by size of holdings in Addis Ababa City Administration. Cropland area damage includes any cropland planted or sown with intention to harvest crops, but failed to produce crop partly or fully due to various reasons. Out of the total cultivated cropland area, 4.80% was affected by crop damage in both Meher and Belg seasons. The cropland area damage that accounted for 51.86% fall under holders in rural areas who had holding size that ranges from 2.01 to 5 hectares, followed by holders in rural areas who had holding size of between 1.01 and 2 hectares accounted for 26.47 % of the total cropland area damaged.

SUMMARY TABLE VI.5: Number of Holders Utilizing Improved Seeds and Quantity of Improved Seeds Applied by Crop Type in Rural and Urban Areas, for Private Holdings

Type of Crop	Holders Applying Improved Seeds					Quantity in Quintals			
	Total	%	Rural		Urban Meher	Rural	%	Meher	Belg
			Meher	Belg					
Total.....	1196	100	674	72	466	269	100	269	
Grain Crops.....	831	69.48	546	*	270	269	100.00	269	
Cereals.....	792	66.22	526	*	266	262	97.40	262	
Teff.....	399	33.36	278	-	121	61	22.68	61	
Barley.....	47	3.93	*	-	43	*	*	*	
Wheat.....	425	35.54	288	-	137	201	74.72	201	
Maize.....	22	1.84	-	-	22	-	-	-	
Sorghum.....	-	-	-	-	-	-	-	-	
Finger millet.....	-	-	-	-	-	-	-	-	
Oats ('Aja').....	-	-	-	-	-	-	-	-	
Rice.....	-	-	-	-	-	-	-	-	
Pulses.....	57	4.77	35	*	*	*	*	*	
Horse beans.....	21	1.76	*	-	*	*	*	*	
Field peas.....	*	*	*	-	*	*	*	*	
Haricot beans.....	*	*	-	*	-	-	-	-	
Chick peas.....	*	*	*	-	-	*	*	*	
Lentils.....	-	-	-	-	-	-	-	-	
Vetch.....	-	-	-	-	-	-	-	-	
Soya.....	-	-	-	-	-	-	-	-	
Fenugreek.....	-	-	-	-	-	-	-	-	
Oil Seeds.....	-	-	-	-	-	-	-	-	
Neug.....	-	-	-	-	-	-	-	-	
Linseed.....	-	-	-	-	-	-	-	-	
Ground nuts.....	-	-	-	-	-	-	-	-	
Sufflower.....	-	-	-	-	-	-	-	-	
Sesame.....	-	-	-	-	-	-	-	-	
Rapeseed.....	-	-	-	-	-	-	-	-	
Other Grains.....	-	-	-	-	-	-	-	-	
Vegetables.....	245	20.48	46	61	149	-	-	-	
Lettuce.....	61	5.10	*	*	*	-	-	-	
Head cabbage.....	67	5.60	34	*	*	-	-	-	
Kale.....	101	8.44	*	*	69	-	-	-	
Tomatoes.....	*	*	-	*	-	-	-	-	
Green peppers.....	-	-	-	-	-	-	-	-	
Red peppers.....	-	-	-	-	-	-	-	-	
Swiss chard.....	165	13.80	*	*	134	-	-	-	
Others.....	*	*	*	-	*	-	-	-	
Root Crops.....	230	19.23	125	*	88	-	-	-	
Beet root.....	46	3.85	*	*	*	-	-	-	
Carrot.....	201	16.81	113	*	76	-	-	-	
Onions.....	50	4.18	*	-	43	-	-	-	
Potatoes.....	*	*	-	-	*	-	-	-	
Garlic.....	-	-	-	-	-	-	-	-	
Taro ('Godere').....	-	-	-	-	-	-	-	-	
Sweet potatoes.....	-	-	-	-	-	-	-	-	
Others.....	*	*	-	-	*	-	-	-	
Permanenet Crops.....	33	2.76	*	72	45	-	-	-	
Fruit Crops.....	*	*	*	*	15	-	-	-	
Avocado.....	-	-	*	-	*	-	-	-	
Bananas.....	-	-	-	-	-	-	-	-	
Guava (Zeytuna).....	-	-	-	-	-	-	-	-	
Lemons.....	-	-	-	-	-	-	-	-	
Mangoes.....	*	*	-	-	-	-	-	-	
Oranges.....	-	-	*	-	-	-	-	-	
Papayas.....	-	-	-	-	-	-	-	-	
Pineapples.....	*	*	-	-	-	-	-	-	
Others.....	-	-	-	-	*	-	-	-	
Stimulant Crops.....	*	*	*	*	-	*	-	-	
Chat.....	-	-	-	-	-	-	-	-	
Coffee.....	-	-	*	-	-	-	-	-	
Other Permanent Crops.....	44	3.68	-	*	37	-	-	-	

SUMMARY TABLE VI.6: Holders Applying Agricultural Inputs and Participating in Extension Programs  
by Level of Education in Rural and Urban Areas, for Private Holdings

[illegible]



With regard to the causes of crop damage, it is reported that 49.02% was damaged due to locust, 24.12% was caused by hail stone and 12.94% was due to weeds. (For details see Summary Table VI.8 and Fig VI.3).

## **7 FARM MANAGEMENT PRACTICES OF HOLDERS IN RURAL AREAS**

In order to obtain more detailed information concerning the various types of farm practices of holders in rural areas, data were collected subjectively by interviewing sampled agricultural holders on the sources of water for irrigation schemes, method to improve soil fertility, method of ploughing and soil conservation, participation in extension package programs, as well as use of credit and/or advisory services. Hence, the total number of holders reporting different farm management practices and their percentage distribution by type of farm management practices is presented in Summary Table VI.8. Following are discussions of the major findings with respect to these data.

### **7.1 Sources of Water for Irrigation Schemes**

In a country like Ethiopia, where the amount, timing and distribution of rainfall is irregular, use of irrigation would significantly improve and raise the level of crop production.

However, irrigation is not extensive in Addis Ababa City Administration. Even though the coverage of irrigation scheme is very limited both in rural and urban areas, the census data reveals that of the total crop holder in the rural areas only 28.33%, 6.53%, and 6.4% reported to have used ponds, rivers and other sources as their major source of water for irrigation practices, respectively. It should be noted that data on the number of holders who practice irrigation schemes and the number of holders reporting the sources of water for irrigation were collected in different period of time in the process of the 2001/02 agricultural activities. In an enumeration area a total of 30 households were systematically sampled that mainly resulted about 30 holders. Thus, the data on number of holders practicing irrigation was collected in September 2001 (for ten households) and in December 2001 (for twenty households). However, the data on the holders reporting the sources of water for irrigation was collected only in March. Hence, some discrepancy is observed in the total numbers of holders who have reported the use of irrigation practices presented in Summary Table VI.6 and VI.8.

During the 2001/02 EASE, an attempt has also been made to assess the extent of irrigation practice in urban areas. Thus, sources of water for irrigation under permanent crops in urban areas for Meher season have been assessed and the data are presented in Summary Table VI.9. The data in the table shows that only 25.65 percent of the total holders reported as practicing irrigation during the Meher season and of these holders the sources of water for irrigation for 20.16%, and 1.28 percent were from rivers, and lakes, respectively. While the remaining 2.79% holders used tap water, well and other sources to irrigate their cropped fields. In the same summary table, out of the total holders, it is found that only 567 (19.57 percent) holders in urban areas practiced Belg crop production in the past three years prior to 2001/02 (1994 E.C.).

## **7.2 Methods Used to Improve Soil Fertility**

The fertility of the soil in Ethiopia is being depleted slowly as time passes because of continuous cropping. In the census, holders were asked to state their method of improving soil fertility, that is whether they use crop rotation or burning of soil. Hence, the data

showed that of the total holders about 88.08% have reported practicing crop rotation, while very few holders reported practicing burning of soil as their main method for improving soil fertility.

### **7.3 Application of Chemical Fertilizer and reason for not applying Fertilizers**

In order to gauge the attitude of holders who did not use chemical fertilizers, sampled households were asked the reasons for not using chemical fertilizers. The data in Summary Table VI.8, indicate that the majority of the holders did not use chemical fertilizers due to various reasons. A total of about 1,846 holders did not use chemical fertilizers due to shortage of money, about 1,025 holders due to lack of knowledge regarding the advantage, about 283 holders due to high cost of fertilizers, about 277 holders due to insufficient supply of fertilizers in their area, and about 8,380 holders which is the highest mentioned “other reasons” for not using chemical fertilizers.

### **7.4 Method of Ploughing**

One aspect to increase agricultural production is through mechanization. The replacement of hand digging and ox/horse driven ploughing method by tractor is of paramount importance for increasing the volume of agricultural production. In light of this, an attempt has been made to collect some basic information on method of ploughing by the holders at the time of the census enumeration. Thus, the majority of the holders (85.08%) reported to have used ox/horse driven ploughing method and 11.3% of the holders reported to have used hand digging methods. Nevertheless, holders who used both hand dug and ox/horse driven ploughing methods accounted for about 3.05%.

### **7.5 Methods Used for Soil Conservation**

According to the data in Summary Table VI.8, the majority of the holders reported using different methods of soil conservation. Of which, 4.97, 2.7 and 55.89 percent of holders have practiced terracing, water catchments and ploughing along the contour, respectively. On the other hand about 25.64% of holders reported that they have other methods for soil conservation.

**SUMMARY TABLE VI.7: Causes of Damage of Cropland Area by Size of Holdings and  
Seasons in Rural Areas, for Private Holdings**

Cause of Damage	Size of Holding (Hectares)							
	Total	Under 0.1	0.1 – 0.5	0.51 – 1.0	1.01 – 2.0	2.01 – 5.00	5.01 – 10.0	Over 10
	Both Seasons							
Total .....	1020	3	19	39	143	529	270	*
Percent.,	100	0.29	1.86	3.82	14.02	51.86	26.47	*
Crop Disease .....	48	1	*	*	7	21	16	-
Percent.,	4.71	2.08						
Frost or Floods .....	*	*	*	-	*	*	*	-
Percent.,	*	*	*	-	*	*	*	-
Locust.....	500	1	4	23	*	249	*	*
Percent.,	49.02	0.20	0.80	4.60	*	49.80	*	*
Shortage of Rain .....	20	*	*	*	4	7	5	*
Percent.,	1.96	*	*	*	20.00	35.00	25.00	*
Too Much Rain .....	4	*	*	*	*	*	*	-
Percent.,	0.39	*	*	*	*	*	*	-
Wild Animals .....	*	*	*	*	*	*	*	-
Percent.,	*	*	*	*	*	*	*	-
Birds .....	-	-	-	-	-	-	-	-
Percent.,	-	-	-	-	-	-	-	-
Hailstone .....	246	*	*	7	29	141	53	*
Percent.,	24.12	*	*	2.85	11.79	57.32	21.54	*
Pests and Insects .....	-	-	-	-	-	-	-	-
Percent.,	-	-	-	-	-	-	-	-
Weeds.....	132	*	*	*	17	48	54	*
Percent.,	12.94	*	*	*	12.88	36.36	40.91	*
Others .....	-	-	-	-	-	-	-	-
Percent.,	-	-	-	-	-	-	-	-
Meher Season								
Total	1019	3	19	39	143	528	270	*
Crop Disease .....	47	1	*	*	7	20	16	-
Frost or Floods .....	*	*	*	-	*	*	*	-
Locust.....	499	1	4	23	*	249	*	*
Shortage of Rain .....	20	*	*	*	4	7	5	*
Too Much Rain .....	4	*	*	*	*	*	*	-
Wild Animals .....	*	*	*	*	*	*	*	-
Birds .....	-	-	-	-	-	-	-	-
Hailstone .....	246	*	*	7	29	141	53	*
Pests and Insects .....	-	-	-	-	-	-	-	-
Weeds.....	132	*	*	*	17	48	54	*
Others .....	-	-	-	-	-	-	-	-
Belg Season								
Total	*	*	*	-	-	-	-	-
Crop Disease .....	*	*	*	-	-	-	-	-
Frost or Floods .....	-	-	-	-	-	-	-	-
Locust.....	*	*	-	-	-	-	-	-
Shortage of Rain .....	*	*	-	-	-	-	-	-
Too Much Rain .....	*	*	-	-	-	-	-	-
Wild Animals .....	-	-	-	-	-	-	-	-
Birds .....	-	-	-	-	-	-	-	-
Hailstone .....	-	-	-	-	-	-	-	-
Pests and Insects .....	-	-	-	-	-	-	-	-
Weeds.....	*	*	-	-	-	-	-	-
Others .....	-	-	-	-	-	-	-	-

## **7.6 Extension Packages, and Use of Agricultural Credit and Advisory Services**

Extension packages are outreach programs operating in rural areas for private holdings aiming to transfer modern agricultural technologies to increase crop and livestock productivity. The programs are usually undertaken through close follow-up and advisory services by the agricultural development agents. A holder is said to be a participant of this program if and only if he/she obtains agricultural advices, apply the recommended inputs and other related services such as close follow up by the extension agent, supervision by wereda and zonal agricultural bureaus...etc on a regular basis. The prevalence of different types of extension packages were assessed during the Agricultural Sample Enumeration. These include, rain shortage area packages, rain abundant area packages, post harvest technology packages, ...etc. Thus, the data showed that about 1.47% and 0.92% of the agricultural holders were covered by rain abundant areas extension packages and economically important crop extension packages, respectively. In response to why they have not been covered by these extension packages from the inception of the program, holders reported the reasons as follows: that is 7.61% of the holders reported shortage of money, 7.18% reported no knowledge about the advantage, 69.6% which is the highest reported program not available, 2.01% were suspicious of its efficiency and 8.68% reported not sufficient arable land available and 2.16% due to other reasons.

In the rural Ethiopia, there are institutions that provide credit and assist peasants by furnishing short and intermediate term loans for the purchase of chemical fertilizers, improved variety seeds, and pesticides. These institutions not only give great emphasis to providing loans to peasants but also aiding them with advice on farming practices. Then, data are collected by interviewing sampled holders on use of credit and advisory services and are presented in Summary Table VI.8. Thus, the data in this table shows that about 2.24 percent of the holders have obtained advice on agricultural practices, while about 22.45 percent of the holders reported to have used credit services. However, the observed number of holders proved that the use of credit and advisory services were limited in scope.



## **7.7 SOURCES AND COST OF CHEMICAL FERTILIZERS.**

As illustrated in Summary Table VI.10, it is estimated that a total of 5,859 holders (45.08%) reported “Government” as their major sources of chemical fertilizers, while about 1,301 (10.01%) holders mentioned traders as their major sources of chemical fertilizers, respectively. Regardless of the source, the average cost was 279.64 Birr/Quintal for DAP and 223.85 Birr/Quintal for UREA.

## **8 USES OF CROP SPECIFIC EXTENSION PACKAGE PROGRAMS**

Extension package is one of the means by which productivity improves and thereby food production increases. Moreover, Agricultural Development Agents (ADA) assist the peasants by operating demonstration plots to provide information to agricultural holders on improved seed varieties, on use of fertilizers and pesticides, and improvements in production practices to increase yields. Further, advisory services are provided to holders to those who are willing to participate in the extension package programs.

### **8.1 Holders Participating in Crop Specific Extension Package Programs**

In rural areas of the Addis Ababa City Administration, data on the distributions of holders participating in crop specific extension package programs are presented in Summary Table VI.11. Accordingly, about 93 holders have been participating in crop specific package, where, about 46 and 61 holders who considered Teff and wheat, respectively.

### **8.2 Area Under Crop Specific Extension Package Programs**

In the 2001/02 EASE, data on cropland area under extension package programs was collected. Thus, Summary Table VI.12 shows that a total of 54 hectares (0.22% of the total cropland area) was under extension package programs. Out of the total cropland area under extension package programs, 37.04% was observed under Teff while wheat contributed about 61.11% . For details, see Summary Table VI.11.

**SUMMARY TABLE VI.8: Number of Holders by Type of Farm Management Practices  
in Rural Areas, for Private Holdings**

<b>Farm Practices</b>	<b>Number of Holders Reporting</b>	<b>Percentage</b>
<b>Total Crop Holders</b>	12998	100
Source of Water for Irrigation		
Holders who Practice Irrigation	766	5.89
River .....	50	6.53
Lake .....	*	*
Pond .....	217	28.33
Other .....	49	6.4
Method to Improve Soil Fertility		
Crop Rotation .....	11449	88.08
Burning of Soil .....	*	*
Reason for Not Using Chemical Fertilizer		
Do Not Know Advantages .....	1025	
Too Expensive.....	283	
Shortage of Money.....	1846	
Insufficient Supply .....	277	
No Credit Service.....	*	
Suspicious of Efficacy .....	*	
Other .....	8380	
Method of Ploughing		
Hand Dug .....	1469	11.3
Ox/Horse Driven .....	11059	85.08
Tractor .....	-	-
Hand Dug and Ox/Horse Driven .....	396	3.05
Tractor and Ox/Horse Driven .....	*	*
Method of Soil Conservation		
Terracing .....	581	4.47
Water Catchments .....	351	2.7
Afforestation.....	*	*
Ploughing Along the Contour .....	7264	55.89
Others .....	3333	25.64
<b>All Holders .....</b>	<b>16051</b>	<b>100</b>
Participation in Extension Package by Type		
Rain Shortage Areas Package .....	-	-
Rain Abundant Areas Package.....	236	1.47
Post Harvest Technology Package.....	*	*
Livestock Development Package.....	-	-
Economically Important Crops Package .....	148	0.92
Any Two or More Packages .....	-	-
Reason For Not Participating in Extension Packages		
Do Not Know the Advantages .....	1152	7.18
Shortage of Money .....	1222	7.61
Suspicious of Efficacy .....	322	2.01
Programs Not Available.....	11171	69.6
Not Sufficient Arable Land.....	1394	8.68
Others .....	347	2.16
Use of Credit or Advisory Services		
Credit Services .....	3604	22.45
Advisory Services .....	360	2.24

Summary Table VI.9 Holders who Practice Irrigation by Sources of Water in Meher Season and Holders who Practice Belg From 1999/2000 to 2001/02 in Urban Areas

Sources of Water	Number of Holders	Percent
<b>Those who Practice Irrigation in Meher Season (2001/02)</b>		
<b>Crop Holders.....</b>	2897	100
<b>Holders who Practice Irrigation Sources</b>	743	25.65
River.....	584	20.16
Lake.....	37	1.28
Well.....	*	*
Tap Water.....	*	*
Others.....	*	*
Not Stated.....	41	1.42
<b>Those who Practice Belg from 1999/2000 to 2001/02</b>		
<b>Crop Holders.....</b>	2897	100.00
<b>Holders who Practice Belg.....</b>	567	19.57
Male.....	441	15.22
Female.....	126	4.35

Summary Table VI.10: Holders by Sources of Chemical Fertilizers and Cost of Chemical Fertilizers in Rural Areas for Private Holdings.

Sources and Type of Fertilizers	Number of Holders	Percent
<b>Crop Holders.....</b>	12998	100.00
<b>Sources</b>		
Government.....	5859	45.08
Private Organization	*	*
Traders.....	1301	10.01
Others.....	*	*
Do not Buy.....	2184	16.80
Not Reported.....	50	0.38
<b>Type of Fertilizers</b>	<b>Cost in Birr/Quintal</b>	
DAP.....	279.64	
UREA.....	223.88	

Summary Table VI.11: Number of Holders Participating Crop Specific Extension Package Program and Area under Crop Specific Extension Package Program  
By Season in Rural Areas, for Private Holdings.

Ext. Package by Crop	Rural				Meher		Belg	
	Holder	%	Area	%	Holder	Area	Holder	Area
Total	93	100	54	100	93	54	-	-
Teff	46	49.46	20	37.04	46	20	-	-
Barley	-	-	-	-	-	-	-	-
Wheat	61	65.59	33	61.11	61	33	-	-
Maize	-	-	-	-	-	-	-	-
Sorghum	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-
Chick peas	*	*	*	*	*	*	-	-
Lentils	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-
Rapeseed	-	-	-	-	-	-	-	-
Other Grains	-	-	-	-	-	-	-	-
Tomatoes	-	-	-	-	-	-	-	-
Red Papper	-	-	-	-	-	-	-	-
Onion	-	-	-	-	-	-	-	-
Potatoes	*	*	*	*	*	*	-	-
Sweet potatoes	-	-	-	-	-	-	-	-
Enset	-	-	-	-	-	-	-	-
Other Permanent	-	-	-	-	-	-	-	-

TABLE 6.1: AREA OF CROPLAND UNDER IMPROVED FARM MANAGEMENT PRACTICES BY TYPE OF CROPS IN RURAL AREAS, BOTH SEASONS, FOR PRIVATE HOLDINGS

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	21244	292	1.37	39	0.18	16861	79.37	633	2.98
Grain Crops.....	21005	267	1.27	*	*	16696	79.49	622	2.96
Cereals .....	16098	259	1.61	*	*	15857	98.5	619	3.85
Teff .....	7983	99	1.24	-	-	7916	99.16	475	5.95
Barley .....	168	*	*	-	-	94	55.95	*	*
Wheat.....	7864	160	2.03	-	-	7816	99.39	134	1.7
Maize .....	48	-	-	*	*	21	43.75	-	-
Sorghum .....	27	-	-	-	-	*	*	-	-
Finger millet .....	*	-	-	-	-	*	*	-	-
Oats ('Aja').....	*	-	-	-	-	*	*	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses .....	4893	8	0.16	*	*	835	17.07	*	*
Horse beans .....	231	*	*	-	-	*	*	-	-
Field peas.....	54	*	*	-	-	*	*	-	-
Haricot beans .....	2	*	*	*	*	*	*	-	-
Chick peas .....	2544	*	*	-	-	454	17.85	-	-
Lentils.....	*	-	-	-	-	*	*	-	-
Vetch.....	1295	-	-	-	-	*	*	*	*
Soya .....	-	-	-	-	-	-	-	-	-
Fenugreek .....	205	-	-	-	-	75	36.59	-	-
Gibto .....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	14	-	-	-	-	*	*	*	*
Neug .....	*	-	-	-	-	-	-	-	-
Linseed .....	12	-	-	-	-	*	*	*	*
Ground nuts .....	-	-	-	-	-	-	-	-	-
Sufflower .....	*	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-	-
Rapeseed.....	1	-	-	-	-	*	*	-	-
Other Grains.....	*	-	-	-	-	*	*	-	-
Vegetables .....	46	4	8.7	18	39.13	27	58.7	*	*
Lettuce .....	*	*	*	*	*	*	*	-	-
Head cabbage .....	12	3	25	*	*	12 100.00	*	*	*
Kale.....	14	*	*	1	7.14	9	64.29	*	*
Tomatoes .....	*	*	*	*	*	*	*	-	-
Green peppers.....	1	-	-	-	-	*	*	-	-
Red peppers .....	-	-	-	-	-	-	-	-	-
Swiss chard.....	1	*	*	*	*	*	*	*	*
Others .....	16	*	*	*	*	4	25	*	*
Root Crops.....	167	21	12.57	19	11.38	129	77.25	*	*
Beet root .....	7	3	42.86	*	*	4	57.14	*	*
Carrot.....	138	18	13.04	*	*	113	81.88	*	*
Onions.....	2	*	*	*	*	1	50	*	*
Potatoes .....	7	-	-	*	*	*	*	-	-
Garlic .....	12	-	-	*	*	4	33.33	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	*	-	-	*	*	*	*	-	-
Others .....	*	-	-	*	*	*	*	*	*
Permanent Crops .....	26	*	*	*	*	10	38.46	*	*
Fruit Crops.....	*	*	*	*	*	*	*	-	-
Avocado.....	*	*	*	*	*	*	*	-	-
Bananas .....	*	-	-	-	-	-	-	-	-
Guava (Zeytuna).....	-	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-	-
Oranges.....	*	*	*	*	*	*	*	-	-
Papayas .....	-	-	-	-	-	-	-	-	-
Pineapples.....	-	-	-	-	-	-	-	-	-
Others .....	*	-	-	-	-	*	*	-	-
Stimulant Crops .....	23	*	*	*	*	7	30.43	*	*
Chat.....	1	-	-	*	*	1 100.00	-	-	-
Coffee .....	*	*	*	*	*	*	*	-	-
Hops .....	22	-	-	*	*	7	31.82	*	*

Others .....	-	-	-	-	-	-	-	-	-
Other Permanent Crops .....	2	*	*	*	*	1	50	-	-
Enset .....	1	-	-	*	*	*	*	-	-
Sugar Cane	*	*	*	*	*	*	*	-	-
Others	*	-	-	*	*	*	*	-	-

TABLE 6.1.1: RURAL MEHER

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	21196	285	1.34	15	0.07	16834	79.42	623	2.94
Grain Crops .....	20981	266	1.27	*	*	16689	79.54	622	2.96
Cereals .....	16078	259	1.61	*	*	15851	98.59	619	3.85
Teff .....	7983	99	1.24	-	-	7916	99.16	475	5.95
Barley .....	148	*	*	-	-	88	59.46	*	*
Wheat .....	7864	160	2.03	-	-	7816	99.39	134	1.7
Maize .....	47	-	-	*	*	21	44.68	-	-
Sorghum .....	27	-	-	-	-	*	*	-	-
Finger millet .....	*	-	-	-	-	*	*	-	-
Oats ('Aja') .....	*	-	-	-	-	*	*	-	-
Rice .....	-	-	-	-	-	-	-	-	-
Pulses .....	4889	*	*	-	-	834	17.06	*	*
Horse beans .....	231	*	*	-	-	*	*	-	-
Field peas .....	54	*	*	-	-	*	*	-	-
Haricot beans .....	1	-	-	-	-	*	*	-	-
Chick peas .....	2544	*	*	-	-	454	17.85	-	-
Lentils .....	*	-	-	-	-	*	*	-	-
Vetch .....	1295	-	-	-	-	*	*	*	*
Soya .....	-	-	-	-	-	-	-	-	-
Fenugreek .....	205	-	-	-	-	75	36.59	-	-
Gibto .....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	14	-	-	-	-	*	*	*	*
Neug .....	*	-	-	-	-	-	-	-	-
Linseed .....	12	-	-	-	-	*	*	*	*
Ground nuts .....	-	-	-	-	-	-	-	-	-
Sufflower .....	*	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-	-
Rapeseed .....	1	-	-	-	-	*	*	-	-
Other Grains .....	*	-	-	-	-	*	*	-	-
Vegetables .....	33	*	*	4	12.12	14	42.42	*	*
Lettuce .....	*	*	*	*	*	*	*	*	*
Head cabbage .....	3	*	*	*	*	3 100.00	*	*	*
Kale .....	14	*	*	*	*	8	57.14	*	*
Tomatoes .....	*	-	-	-	-	*	*	-	-
Green peppers .....	1	-	-	-	-	*	*	-	-
Red peppers .....	-	-	-	-	-	-	-	-	-
Swiss chard .....	*	*	*	*	*	*	*	*	*
Others .....	*	*	*	*	*	3	*	*	*
Root Crops .....	157	18	11.46	*	*	122	77.71	*	*
Beet root .....	4	*	*	*	*	4 100.00	*	*	*
Carrot .....	136	18	13.24	*	*	112	82.35	-	-
Onions .....	2	*	*	-	-	1	50	*	*
Potatoes .....	2	-	-	2 100.00	*	*	-	-	-
Garlic .....	12	-	-	*	*	4	33.33	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-	-	-
Sweet potatoes .....	*	-	-	*	*	*	*	-	-
Others .....	-	-	-	-	-	-	-	-	-
Permanent Crops .....	26	*	*	*	*	10	38.46	*	*
Fruit Crops .....	*	*	*	*	*	*	*	-	-
Avocado .....	*	*	*	*	*	*	*	-	-
Bananas .....	*	-	-	-	-	-	-	-	-
Guava (Zeytuna) .....	-	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-	-
Oranges .....	*	*	*	*	*	*	*	-	-
Papayas .....	-	-	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-	-	-
Others .....	*	-	-	-	-	*	*	-	-
Stimulant Crops .....	23	*	*	*	*	7	30.43	*	*
Chat .....	1	-	-	*	*	1 100.00	-	-	-
Coffee .....	*	*	*	*	*	*	*	-	-
Hops .....	22	-	-	*	*	7	31.82	*	*
Others .....	-	-	-	-	-	-	-	-	-
Other Permanent Crops .....	2	*	*	*	*	1	50	-	-
Enset .....	1	-	-	*	*	*	*	-	-
Sugar Cane .....	*	*	*	*	*	*	*	-	-
Others .....	*	-	-	*	*	*	*	-	-

TABLE 6.1.2: RURAL BELG

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	49	7	14.29	24	48.98	27	55.1	*	*
Grain Crops .....	*	*	*	*	*	*	*	*	*
Cereals .....	*	-	-	-	-	*	*	-	-
Teff .....	-	-	-	-	-	-	-	-	-
Barley .....	*	-	-	-	-	*	*	-	-
Wheat .....	-	-	-	-	-	-	-	-	-
Maize .....	*	-	-	-	-	*	*	-	-
Sorghum .....	-	-	-	-	-	-	-	-	-
Finger millet .....	-	-	-	-	-	-	-	-	-
Oats ('Aja') .....	-	-	-	-	-	-	-	-	-
Rice .....	-	-	-	-	-	-	-	-	-
Pulses .....	*	*	*	*	*	*	*	*	*
Horse beans .....	*	-	-	-	-	*	*	-	-
Field peas .....	*	-	-	-	-	*	*	-	-
Haricot beans .....	*	*	*	*	*	*	*	-	-
Chick peas .....	-	-	-	-	-	-	-	-	-
Lentils .....	*	-	-	-	-	-	-	-	-
Vetch .....	-	-	-	-	-	-	-	-	-
Soya .....	-	-	-	-	-	-	-	-	-
Fenugreek .....	-	-	-	-	-	-	-	-	-
Gibto .....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	-	-	-	-	-	-	-	-	-
Neug .....	-	-	-	-	-	-	-	-	-
Linseed .....	-	-	-	-	-	-	-	-	-
Ground nuts .....	-	-	-	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-	-
Rapeseed .....	-	-	-	-	-	-	-	-	-
Other Grains .....	-	-	-	-	-	-	-	-	-
Vegetables .....	*	3	*	*	*	*	*	*	*
Lettuce .....	*	*	*	*	*	*	*	*	*
Head cabbage .....	*	*	*	*	*	*	*	*	*
Kale .....	*	*	*	*	*	*	*	*	*
Tomatoes .....	*	*	*	*	*	*	*	-	-
Green peppers .....	*	-	-	-	-	-	-	-	-
Red peppers .....	-	-	-	-	-	-	-	-	-
Swiss chard .....	*	*	*	*	*	*	*	-	-
Others .....	*	-	-	*	*	*	*	-	-
Root Crops .....	10	*	*	10	100	7	70	*	*
Beet root .....	*	*	*	*	*	*	*	*	*
Carrot .....	1	*	*	1	100	1	100	*	*
Onions .....	*	-	-	*	*	*	*	-	-
Potatoes .....	*	-	-	*	*	*	*	-	-
Garlic .....	*	-	-	*	*	*	*	-	-
Taro ('Godere') .....	-	-	-	-	-	-	-	-	-
Sweet potatoes .....	-	-	-	-	-	-	-	-	-
Others .....	*	-	-	*	*	*	*	*	*



TABLE 6.2: AREA OF CROPLAND UNDER IMPROVED FARM MANAGEMENT PRACTICES BY TYPE OF CROPS IN URBAN AREAS, MEHER SEASON

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	3042	427	14.04	*	*	2539	83.46	1145	37.64
Grain Crops .....	2526	169	6.69	29	1.15	2065	81.75	1088	43.07
Cereals .....	2147	168	7.82	24	1.12	1990	92.69	1072	49.93
Teff .....	1200	69	5.75	13	1.08	1132	94.33	600	50
Barley .....	255	16	6.27	*	*	226	88.63	161	63.14
Wheat.....	659	81	12.29	5	0.76	621	94.23	307	46.59
Maize.....	17	1	5.88	*	*	6	35.29	*	*
Sorghum .....	15	-	-	-	-	*	*	*	*
Finger millet .....	-	-	-	-	-	-	-	-	-
Oats ('Aja') .....	*	-	-	-	-	*	*	-	-
Rice.....	-	-	-	-	-	-	-	-	-
Pulses .....	355	*	*	*	*	69	19.44	17	4.79
Horse beans .....	53	*	*	*	*	10	18.87	*	*
Field peas.....	40	*	*	*	*	29	72.5	*	*
Haricot beans.....	*	-	-	-	-	-	-	-	-
Chick peas .....	124	-	-	*	*	*	*	13	10.48
Lentils.....	*	-	-	-	-	*	*	-	-
Vetch .....	119	-	-	-	-	*	*	-	-
Soya.....	-	-	-	-	-	-	-	-	-
Fenugreek.....	*	-	-	-	-	*	*	-	-
Gibto.....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	23	-	-	-	-	*	*	-	-
Neug .....	23	-	-	-	-	*	*	-	-
Linseed .....	*	-	-	-	-	-	-	-	-
Ground nuts .....	-	-	-	-	-	-	-	-	-
Sufflower.....	-	-	-	-	-	-	-	-	-
Sesame.....	-	-	-	-	-	-	-	-	-
Rapeseed.....	-	-	-	-	-	-	-	-	-
Other Grains.....	-	-	-	-	-	-	-	-	-
Vegetables .....	199	*	*	186	93.47	179	89.95	*	*
Lettuce.....	26	*	*	*	*	*	*	*	*
Head cabbage .....	*	*	*	*	*	*	*	*	*
Kale .....	*	*	*	*	*	*	*	*	*
Tomatoes .....	*	-	-	*	*	*	*	-	-
Green peppers.....	*	-	-	*	*	*	*	*	*
Red peppers.....	-	-	-	-	-	-	-	-	-
Swiss chard.....	*	*	*	*	*	*	*	*	*
Others .....	*	*	*	*	*	*	*	*	*
Root Crops .....	*	*	*	*	*	*	*	*	*
Beet root .....	*	*	*	*	*	*	*	*	*
Carrot.....	*	*	*	*	*	*	*	*	*
Onions .....	*	*	*	*	*	*	*	-	-
Potatoes .....	39	*	*	36	92.31	34	87.18	*	*
Garlic.....	1	-	-	*	*	*	*	-	-
Taro ('Godere') .....	-	-	-	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-	-	-	-
Others .....	*	*	*	*	*	*	*	*	*
Permanent Crops .....	24	*	*	*	*	10	41.67	-	-
Fruit Crops .....	*	*	*	*	*	*	*	-	-
Avocado .....	*	*	*	*	*	*	*	-	-
Bananas .....	-	-	-	-	-	-	-	-	-
Guava (Zeytuna).....	*	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-	-
Oranges.....	-	-	-	-	-	-	-	-	-
Papayas.....	-	-	-	-	-	-	-	-	-
Pineapples.....	-	-	-	-	-	-	-	-	-
Others .....	*	*	*	*	*	*	*	-	-
Stimulant Crops .....	*	-	-	*	*	*	*	-	-
Chat .....	*	-	-	*	*	*	*	-	-
Coffee.....	*	-	-	*	*	*	*	-	-
Hops .....	*	-	-	*	*	*	*	-	-
Others .....	-	-	-	-	-	-	-	-	-
Other Permanent Crops.....	9	*	*	*	*	6	66.67	-	-
Enset.....	8	*	*	*	*	6	75	-	-
Sugar Cane .....	*	-	-	*	*	-	-	-	-
Others .....	*	*	*	-	-	-	-	-	-

TABLE 6.3: AREA OF CROPLAND UNDER IMPROVED FARM MANAGEMENT

PRACTICES BY TYPE OF CROPS IN RURAL

&amp; URBAN AREAS, BOTH SEASON

TYPE OF CROP	Total Crop	Improved Seed		Irrigation		Fertilizer		Pesticide	
	Hectares	Hectares	%	Hectares	%	Hectares	%	Hectares	%
TOTAL .....	24286	719	2.96	*	*	19400	79.88	1779	7.33
Grain Crops .....	23531	436	1.85	30	0.13	18761	79.73	1710	7.27
Cereals .....	18246	427	2.34	24	0.13	17847	97.81	1690	9.26
Teff .....	9183	168	1.83	13	0.14	9047	98.52	1075	11.71
Barley .....	423	16	3.78	*	*	320	75.65	170	40.19
Wheat .....	8523	241	2.83	5	0.06	8437	98.99	441	5.17
Maize .....	65	1	1.54	*	*	28	43.08	*	*
Sorghum .....	42	-	-	-	-	9	21.43	*	*
Finger millet .....	*	-	-	-	-	*	*	-	-
Oats ('Aja') .....	*	-	-	-	-	*	*	-	-
Rice .....	-	-	-	-	-	-	-	-	-
Pulses .....	5248	9	0.17	*	*	903	17.21	19	0.36
Horse beans .....	283	*	*	*	*	78	27.56	*	*
Field peas .....	94	*	*	*	*	35	37.23	*	*
Haricot beans .....	3	*	*	*	*	*	*	-	-
Chick peas .....	2668	*	*	*	*	476	17.84	13	0.49
Lentils .....	*	-	-	-	-	*	*	-	-
Vetch .....	1414	-	-	-	-	*	*	*	*
Soya .....	-	-	-	-	-	-	-	-	-
Fenugreek .....	219	-	-	-	-	76	34.7	-	-
Gibto .....	-	-	-	-	-	-	-	-	-
Oil Seeds .....	37	-	-	-	-	10	27.03	*	*
Neug .....	25	-	-	-	-	*	*	-	-
Linseed .....	12	-	-	-	-	*	*	*	*
Ground nuts .....	*	-	-	-	-	-	-	-	-
Sufflower .....	*	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-	-
Rapeseed .....	1	-	-	-	-	*	*	-	-
Other Grains .....	*	-	-	-	-	*	*	-	-
Vegetables .....	245	*	*	203	82.86	206	84.08	*	*
Lettuce .....	26	*	*	*	*	*	*	-	-
Head cabbage .....	20	5	25	18	90	18	90	12	60
Kale .....	91	*	*	*	*	75	82.42	*	*
Tomatoes .....	*	*	*	*	*	*	*	-	-
Green peppers .....	1	-	-	*	*	*	*	*	*
Red peppers .....	-	-	-	-	-	-	-	-	-
Swiss chard .....	*	*	*	*	*	*	*	*	*
Others .....	33	*	*	*	*	20	60.61	*	*
Root Crops .....	461	*	*	*	*	*	*	16	3.47
Beet root .....	16	*	*	*	*	14	87.5	*	*
Carrot .....	*	*	*	*	*	*	*	*	*
Onions .....	*	*	*	*	*	*	*	-	-
Potatoes .....	46	*	*	42	91.3	39	84.78	*	*
Garlic .....	13	-	-	*	*	5	38.46	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-	-	-
Sweet potatoes .....	*	-	-	*	*	*	*	-	-
Others .....	*	*	*	*	*	*	*	*	*
Permanent Crops .....	49	*	*	*	*	20	40.82	*	*
Fruit Crops .....	*	*	*	*	*	*	*	-	-
Avocado .....	*	*	*	*	*	*	*	-	-
Bananas .....	*	-	-	-	-	-	-	-	-
Guava (Zeytuna) ..	*	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-	-
Oranges .....	*	*	*	*	*	*	*	-	-
Papayas .....	-	-	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-	-	-
Others .....	*	*	*	*	*	*	*	-	-
Stimulant Crops .....	37	*	*	*	*	11	29.73	*	*
Chat .....	1	-	-	*	*	1	100.00	-	-
Coffee .....	*	*	*	*	*	*	*	-	-
Hops .....	36	-	-	*	*	10	27.78	*	*
Others .....	-	-	-	-	-	-	-	-	-
Other Permanent Crops ..	11	*	*	*	*	8	72.73	-	-
Enset .....	10	*	*	*	*	8	80	-	-
Sugar Cane .....	*	*	*	*	*	*	*	-	-
Others .....	*	*	*	-	-	*	*	-	-

TABLE 6.3: NUMBER OF HOLDERS APPLYING FERTILIZERS, FERTILIZED AREA, AND QUANTITY OF FERTILIZERS BY CROP TYPE IN RURAL AREAS FOR BOTH SEASONS

CROP	Application of total Fertilizers		Application of Fertilizers by Type and Quantity				
	Holders	Hectares	Natural		Chemical – DAP		
			Holders	Hectares	Holders	Hectares	Quintals
TOTAL .....	11563	16861	2061	96	1670	635	832
Grain Crops .....	11059	16696	847	74	1403	595	682
Cereals .....	10926	15857	627	47	534	273	482
Teff .....	10012	7916	53	*	296	129	239
Barley.....	271	94	38	*	96	26	43
Wheat.....	8988	7816	*	*	318	117	199
Maize .....	698	21	537	11	*	*	*
Sorghum .....	*	*	*	*	-	-	-
Finger millet .....	*	*	*	*	-	-	-
Oats ('Aja').....	*	*	-	-	-	-	-
Rice .....	-	-	-	-	-	-	-
Pulses.....	2761	835	319	26	922	322	200
Horse beans .....	626	*	300	17	*	*	*
Field peas.....	*	*	*	*	-	-	-
Haricot beans .....	46	*	-	-	-	-	-
Chick peas .....	1348	454	*	*	561	195	108
Lentils .....	590	*	-	-	*	16	*
Vetch.....	450	*	-	-	301	*	*
Soya .....	-	-	-	-	-	-	-
Fenugreek .....	664	75	*	*	229	17	*
Gibto .....	-	-	-	-	-	-	-
Oil Seeds .....	51	*	*	*	*	*	*
Neug.....	-	-	-	-	-	-	-
Linseed .....	*	*	*	*	-	-	-
Ground nuts .....	-	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-
Rapeseed .....	36	*	*	*	*	*	*
Other Grains .....	*	*	-	-	-	-	-
Vegetables .....	1407	27	722	7	*	*	*
Lettuce .....	36	*	29	*	*	*	-
Head cabbage.....	190	12	26	*	-	-	-
Kale.....	975	9	385	*	*	1	*
Tomatoes .....	48	*	*	*	-	-	-
Green peppers.....	207	*	108	*	-	-	-
Red peppers .....	-	-	-	-	-	-	-
Swiss chard.....	67	*	50	*	-	-	-
Others.....	393	4	342	2	*	*	*
Root Crops .....	2505	129	906	6	*	*	*
Beet root .....	90	4	31	*	-	-	-
Carrot.....	792	113	43	*	*	*	*
Onions.....	233	1	197	1	*	*	*
Potatoes.....	50	*	26	*	-	-	-
Garlic .....	*	4	671	2	*	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-
Sweet potatoes .....	*	*	*	*	-	-	-
Others.....	*	*	-	-	-	-	-
Permanent Crops.....	621	10	590	9	*	*	-
Fruit Crops .....	*	*	*	*	-	-	-
Avocado .....	*	*	*	*	-	-	-
Bananas.....	-	-	-	-	-	-	-
Guava (Zeytuna).....	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-
Oranges.....	*	*	*	*	-	-	-
Papayas .....	-	-	-	-	-	-	-
Pineapples.....	-	-	-	-	-	-	-
Others.....	*	*	-	-	-	-	-
Stimulant Crops .....	481	7	464	7	-	-	-
Chat.....	59	1	59	1	-	-	-
Coffee .....	47	*	47	*	-	-	-
Hops .....	466	7	449	7	-	-	-
Others.....	-	-	-	-	-	-	-
Other Permanent Crops.....	216	1	208	1	*	*	-
Enset .....	124	*	124	*	-	-	-
Sugar Cane.....	*	*	*	*	-	-	-
Others.....	74	*	66	*	*	*	-

TABLE 6.3 CONTD.

CROP	Application of Fertilizers by Type and Quantity					
	Chemical – UREA			Chemical - DAP & UREA		
	Holders	Hectares	Quintals	Holders	Hectares	Quintals
TOTAL .....	488	51	43	10568	16079	33198
Grain Crops.....	238	45	30	10459	15982	32993
Cereals .....	143	28	24	10430	15509	32607
Teff .....	*	*	*	9787	7767	17448
Barley.....	21	*	*	131	*	*
Wheat.....	56	20	*	8705	7670	15009
Maize .....	*	*	*	99	*	*
Sorghum.....	-	-	-	*	*	*
Finger millet .....	-	-	-	-	-	-
Oats ('Aja').....	-	-	-	*	*	*
Rice .....	-	-	-	-	-	-
Pulses .....	117	17	6	1600	469	373
Horse beans .....	*	*	*	*	*	*
Field peas .....	*	*	*	-	-	-
Haricot beans .....	*	*	*	*	*	*
Chick peas .....	*	*	*	857	246	171
Lentils .....	*	*	*	*	*	*
Vetch.....	*	*	*	*	*	*
Soya .....	-	-	-	-	-	-
Fenugreek .....	*	*	*	*	*	14
Gibto .....	-	-	-	-	-	-
Oil Seeds .....	*	*	-	*	*	*
Neug.....	-	-	-	-	-	-
Linseed.....	-	-	-	*	*	*
Ground nuts .....	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-
Rapeseed.....	*	*	-	-	-	-
Other Grains .....	-	-	-	*	*	*
Vegetables .....	82	1	*	*	18	75
Lettuce .....	-	-	-	-	-	-
Head cabbage.....	*	*	-	160	12	*
Kale.....	66	*	1	*	*	*
Tomatoes .....	-	-	-	*	*	*
Green peppers.....	-	-	-	*	*	*
Red peppers .....	-	-	-	-	-	-
Swiss chard.....	*	*	*	*	*	*
Others.....	-	-	-	*	*	*
Root Crops.....	227	5	11	*	79	129
Beet root .....	*	*	*	48	3	*
Carrot .....	77	4	*	*	68	95
Onions.....	*	*	*	*	*	*
Potatoes.....	-	-	-	25	*	*
Garlic .....	*	*	*	*	*	*
Taro ('Godere') .....	-	-	-	-	-	-
Sweet potatoes.....	-	-	-	-	-	-
Others.....	-	-	-	*	*	*
Permanent Crops.....	-	-	-	*	*	*
Fruit Crops.....	-	-	-	*	*	*
Avocado.....	-	-	-	-	-	-
Bananas.....	-	-	-	-	-	-
Guava (Zeytuna).....	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-
Mangoes.....	-	-	-	-	-	-
Oranges.....	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-
Others.....	-	-	-	*	*	*
Stimulant Crops.....	-	-	-	*	*	*
Chat.....	-	-	-	-	-	-
Coffee .....	-	-	-	-	-	-
Hops .....	-	-	-	*	*	*
Others.....	-	-	-	-	-	-
Other Permanent Crops.....	-	-	-	-	-	-
Enset .....	-	-	-	-	-	-
Sugar Cane.....	-	-	-	-	-	-
Others .....	-	-	-	-	-	-

TABLE 6.3.1: RURAL MEHER

CROP	Application of total Fertilizers		Application of Fertilizers by Type and Quantity				
	Holders	Hectares	Natural		Chemical – DAP		
			Holders	Hectares	Holders	Hectares	Quintals
<b>TOTAL</b>	11534	16834	2043	90	1665	634	832
Grain Crops .....	11041	16689	830	69	1398	593	682
Cereals .....	10908	15851	605	42	529	271	481
Teff .....	10012	7916	53	*	296	129	239
Barley .....	263	88	*	*	91	25	42
Wheat .....	8988	7816	*	*	318	117	199
Maize .....	680	21	519	11	*	*	*
Sorghum .....	*	*	*	*	-	-	-
Finger millet .....	*	*	*	*	-	-	-
Oats ('Aja') .....	*	*	-	-	-	-	-
Rice .....	-	-	-	-	-	-	-
Pulses .....	2758	834	315	26	922	322	200
Horse beans .....	622	*	296	17	*	*	*
<b>Field peas</b>	*	*	*	*	-	-	-
Haricot beans .....	*	*	-	-	-	-	-
Chick peas .....	1348	454	*	*	561	195	108
Lentils .....	590	*	-	-	*	16	*
Vetch .....	450	*	-	-	301	*	*
Soya .....	-	-	-	-	-	-	-
Fenugreek .....	664	75	*	*	229	17	*
Gibto .....	-	-	-	-	-	-	-
Oil Seeds .....	51	*	*	*	*	*	-
Neug .....	-	-	-	-	-	-	-
Linseed .....	*	*	*	*	-	-	-
Ground nuts .....	-	-	-	-	-	-	-
Sunflower .....	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-
Rapeseed .....	36	*	*	*	*	*	-
Other Grains .....	*	*	-	-	-	-	-
Vegetables .....	1320	14	712	7	*	*	*
Lettuce .....	*	*	*	*	*	*	-
Head cabbage .....	75	3	26	*	-	-	-
Kale .....	954	8	375	*	*	1	*
Tomatoes .....	*	*	-	-	-	-	-
Green peppers .....	207	*	108	*	-	-	-
Red peppers .....	-	-	-	-	-	-	-
Swiss chard .....	46	*	41	*	-	-	-
Others .....	365	3	342	2	*	*	*
Root Crops .....	2458	122	870	5	*	*	*
Beet root .....	84	4	31	*	-	-	-
Carrot .....	781	112	43	*	*	*	*
Onions .....	219	1	183	1	*	*	*
Potatoes .....	25	*	*	*	-	-	-
Garlic .....	*	4	653	2	*	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-
Sweet potatoes .....	*	*	*	*	-	-	-
Others .....	-	-	-	-	-	-	-
Permanent Crops .....	621	10	590	9	*	*	-
Fruit Crops .....	*	*	*	*	-	-	-
Avocado .....	*	*	*	*	-	-	-
Bananas .....	-	-	-	-	-	-	-
Guava (Zeytuna) .....	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-
Oranges .....	*	*	*	*	-	-	-
Papayas .....	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-
Others .....	*	*	-	-	-	-	-
Stimulant Crops .....	481	7	464	7	-	-	-
Chat .....	59	1	59	1	-	-	-
<b>Coffee</b>	47	*	47	*	-	-	-
Hops .....	466	7	449	7	-	-	-
Others .....	-	-	-	-	-	-	-
Other Permanent Crops .....	216	1	208	1	*	*	-
Enset .....	124	*	124	*	-	-	-
Sugar Cane .....	*	*	*	*	-	-	-
Others .....	74	*	66	*	*	*	-

TABLE 6.3.1 CONTD.

CROP	Application of Fertilizers by Type and Quantity					
	Chemical – UREA			Chemical - DAP & UREA		
	Holders	Hectares	Quintals	Holders	Hectares	Quintals
TOTAL .....	477	51	39	10525	16060	33117
Grain Crops .....	238	45	30	10459	15981	32993
Cereals .....	143	28	24	10430	15509	32607
Teff .....	*	*	*	9787	7767	17448
Barley .....	21	*	*	131	*	*
Wheat .....	56	20	*	8705	7670	15009
Maize .....	*	*	*	99	*	*
Sorghum .....	-	-	-	*	*	*
Finger millet .....	-	-	-	-	-	-
Oats ('Aja') .....	-	-	-	*	*	*
Rice .....	-	-	-	-	-	-
Pulses .....	117	17	6	1600	469	373
Horse beans .....	*	*	*	*	*	*
Field peas .....	*	*	*	-	-	-
Haricot beans .....	*	*	*	*	*	*
Chick peas .....	*	*	*	857	246	171
Lentils .....	*	*	*	*	*	*
Vetch .....	*	*	*	*	*	*
Soya .....	-	-	-	-	-	-
Fenugreek .....	*	*	*	*	*	14
Gibto .....	-	-	-	-	-	-
Oil Seeds .....	*	*	-	*	*	*
Neug .....	-	-	-	-	-	-
Linseed .....	-	-	-	*	*	*
Ground nuts .....	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-
Rapeseed .....	*	*	-	-	-	-
Other Grains .....	-	-	-	*	*	*
Vegetables .....	71	*	1	*	5	15
Lettuce .....	-	-	-	-	-	-
Head cabbage .....	*	*	-	45	2	8
Kale .....	66	*	1	*	*	*
Tomatoes .....	-	-	-	*	*	*
Green peppers .....	-	-	-	*	*	*
Red peppers .....	-	-	-	-	-	-
Swiss chard .....	-	-	-	*	*	-
Others .....	-	-	-	*	*	*
Root Crops .....	221	5	*	*	72	109
Beet root .....	*	*	-	48	3	*
Carrot .....	71	4	*	*	67	89
Onions .....	*	*	*	*	*	*
Potatoes .....	-	-	-	*	*	*
Garlic .....	*	*	*	*	*	*
Taro ('Godere') .....	-	-	-	-	-	-
Sweet potatoes .....	-	-	-	-	-	-
Others .....	-	-	-	-	-	-
Permanent Crops .....	-	-	-	*	*	*
Fruit Crops .....	-	-	-	*	*	-
Avocado .....	-	-	-	-	-	-
Bananas .....	-	-	-	-	-	-
Guava (Zeytuna) .....	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-
Oranges .....	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-
Others .....	-	-	-	*	*	-
Stimulant Crops .....	-	-	-	*	*	*
Chat .....	-	-	-	-	-	-
Coffee .....	-	-	-	-	-	-
Hops .....	-	-	-	*	*	*
Others .....	-	-	-	-	-	-
Other Permanent Crops .....	-	-	-	-	-	-
Enset .....	-	-	-	-	-	-
Sugar Cane .....	-	-	-	-	-	-
Others .....	-	-	-	-	-	-

TABLE 6.3.2: RURAL BELG

CROP	Application of total Fertilizers		Application of Fertilizers by Type and Quantity				
	Holders	Hectares	Natural		Chemical – DAP		
			Holders	Hectares	Holders	Hectares	Quintals
<b>TOTAL</b>	251	27	54	*	*	*	*
Grain Crops .....	45	*	*	*	*	*	*
Cereals .....	*	*	*	*	*	*	*
Teff .....	-	-	-	-	-	-	-
Barley .....	*	*	*	*	*	*	*
Wheat .....	-	-	-	-	-	-	-
Maize .....	*	*	*	*	-	-	-
Sorghum .....	-	-	-	-	-	-	-
Finger millet .....	-	-	-	-	-	-	-
Oats ('Aja') .....	-	-	-	-	-	-	-
Rice .....	-	-	-	-	-	-	-
Pulses .....	*	*	*	*	-	-	-
Horse beans .....	*	*	*	*	-	-	-
<del>Field peas</del>	*	*	*	*	-	-	-
Haricot beans .....	*	*	-	-	-	-	-
Chick peas .....	-	-	-	-	-	-	-
Lentils .....	-	-	-	-	-	-	-
Vetch .....	-	-	-	-	-	-	-
Soya .....	-	-	-	-	-	-	-
Fenugreek .....	-	-	-	-	-	-	-
Gibto .....	-	-	-	-	-	-	-
Oil Seeds .....	-	-	-	-	-	-	-
Neug .....	-	-	-	-	-	-	-
Linseed .....	-	-	-	-	-	-	-
Ground nuts .....	-	-	-	-	-	-	-
Sunflower .....	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-
Rapeseed .....	-	-	-	-	-	-	-
Other Grains .....	-	-	-	-	-	-	-
Vegetables .....	208	*	*	*	-	-	-
Lettuce .....	*	*	*	*	-	-	-
Head cabbage .....	*	*	-	-	-	-	-
Kale .....	*	*	*	*	-	-	-
Tomatoes .....	42	*	*	*	-	-	-
Green peppers .....	-	-	-	-	-	-	-
Red peppers .....	-	-	-	-	-	-	-
Swiss chard .....	*	*	*	*	-	-	-
Others .....	*	-	-	-	-	-	-
Root Crops .....	126	7	46	*	-	-	-
Beet root .....	*	*	-	-	-	-	-
Carrot .....	40	1	-	-	-	-	-
Onions .....	*	*	*	*	-	-	-
Potatoes .....	26	*	*	*	-	-	-
Garlic .....	*	*	*	*	-	-	-
Taro ('Godere') .....	-	-	-	-	-	-	-
Sweet potatoes .....	-	-	-	-	-	-	-
Others .....	*	*	-	-	-	-	-
Permanent Crops .....	251	27	54	*	*	*	*
Fruit Crops .....	45	*	*	*	*	*	*
Avocado .....	*	-	*	*	*	*	*
Bananas .....	-	-	-	-	-	-	-
Guava (Zeytuna) .....	*	*	*	*	*	*	*
Lemons .....	-	-	-	-	-	-	-
Mangoes .....	*	*	*	*	-	-	-
Oranges .....	-	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-
Others .....	-	-	-	-	-	-	-
Stimulant Crops .....	*	*	*	*	-	-	-
Chat .....	*	*	*	*	-	-	-
<del>Coffee</del>	*	*	*	*	-	-	-
Hops .....	*	*	-	-	-	-	-
Others .....	-	-	-	-	-	-	-
Other Permanent Crops .....	-	-	-	-	-	-	-
Enset .....	-	-	-	-	-	-	-
Sugar Cane .....	-	-	-	-	-	-	-
Others .....	-	-	-	-	-	-	-

TABLE 6.3.2 CONTD.

CROP	Application of Fertilizers by Type and Quantity					
	Chemical – UREA			Chemical - DAP & UREA		
	Holders	Hectares	Quintals	Holders	Hectares	Quintals
TOTAL .....	*	*	*	186	19	81
Grain Crops .....	*	*	*	*	*	*
Cereals .....	-	-	-	-	-	-
Teff .....	-	-	-	-	-	-
Barley .....	-	-	-	-	-	-
Wheat .....	-	-	-	-	-	-
Maize .....	-	-	-	-	-	-
Sorghum .....	-	-	-	-	-	-
Finger millet .....	-	-	-	-	-	-
Oats ('Aja') .....	-	-	-	-	-	-
Rice .....	-	-	-	*	*	*
Pulses .....	-	-	-	-	-	-
Horse beans .....	-	-	-	*	*	*
Field peas .....	-	-	-	-	-	-
Haricot beans .....	-	-	-	*	*	*
Chick peas .....	-	-	-	-	-	-
Lentils .....	-	-	-	-	-	-
Vetch .....	-	-	-	-	-	-
Soya .....	-	-	-	-	-	-
Fenugreek .....	-	-	-	-	-	-
Gibto .....	-	-	-	-	-	-
Oil Seeds .....	-	-	-	-	-	-
Neug .....	-	-	-	-	-	-
Linseed .....	-	-	-	-	-	-
Ground nuts .....	-	-	-	-	-	-
Sufflower .....	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-
Rapeseed .....	-	-	-	-	-	-
Other Grains .....	-	-	-	-	-	-
Vegetables .....	*	*	*	*	*	*
Lettuce .....	-	-	-	*	*	*
Head cabbage .....	-	-	-	*	*	*
Kale .....	-	-	-	*	*	*
Tomatoes .....	-	-	-	*	*	*
Green peppers .....	-	-	-	-	-	-
Red peppers .....	-	-	-	-	-	-
Swiss chard .....	*	*	*	-	-	-
Others .....	-	-	-	*	*	*
Root Crops .....	*	*	*	80	6	21
Beet root .....	*	*	*	-	-	-
Carrot .....	*	*	*	40	*	6
Onions .....	-	-	-	-	-	-
Potatoes .....	-	-	-	*	*	*
Garlic .....	-	-	-	-	-	-
Taro ('Godere') .....	-	-	-	-	-	-
Sweet potatoes .....	-	-	-	-	-	-
Others .....	-	-	-	*	*	*
Permanent Crops .....	*	*	*	186	19	81
Fruit Crops .....	-	-	-	*	*	*
Avocado .....	-	-	-	-	-	-
Bananas .....	-	-	-	-	-	-
Guava (Zeytuna) .....	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-
Oranges .....	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-
Others .....	-	-	-	-	-	-
Stimulant Crops .....	-	-	-	*	*	*
Chat .....	-	-	-	-	-	-
Coffee .....	-	-	-	-	-	-
Hops .....	-	-	-	*	*	*
Others .....	-	-	-	-	-	-
Other Permanent Crops .....	-	-	-	-	-	-
Enset .....	-	-	-	-	-	-
Sugar Cane .....	-	-	-	-	-	-
Others .....	-	-	-	-	-	-



TABLE 6.4: NUMBER OF HOLDERS APPLYING FERTILIZERS, FERTILIZED AREA, AND QUANTITY OF FERTILIZERS BY CROP TYPE  
IN URBAN AREAS FOR MEHER SEASON

CROP	Application of total Fertilizers		Application of Fertilizers by Type and Quantity					
	Holders	Hectares	Natural		Natural & Chemical		Chemical	
			Holders	Hectares	Holders	Hectares	Holders	Hectares
<b>TOTAL</b>	2295	2539	377	116	1863	2013	256	*
Grain Crops .....	1776	2065	167	89	1657	1919	75	56
Cereals .....	1776	1990	167	89	1657	1844	75	56
Teff .....	1402	1132	*	*	1320	1079	*	*
Barley .....	516	226	36	13	427	186	54	*
Wheat .....	1244	621	63	27	1144	572	54	*
Maize .....	78	6	43	4	31	2	*	*
Sorghum .....	*	*	-	-	*	*	-	-
Finger millet .....	-	-	-	-	-	-	-	-
Oats ('Aja') .....	*	*	-	-	*	*	-	-
Rice .....	-	-	-	-	-	-	-	-
Pulses .....	146	69	-	-	146	69	-	-
Horse beans .....	34	10	-	-	34	10	-	-
<b>Field peas</b>	79	29	-	-	79	29	-	-
Haricot beans .....	-	-	-	-	-	-	-	-
Chick peas .....	*	*	-	-	*	*	-	-
Lentils .....	*	*	-	-	*	*	-	-
Vetch .....	14	*	-	-	14	*	-	-
Soya .....	-	-	-	-	-	-	-	-
Fenugreek .....	*	*	-	-	*	*	-	-
Gibto .....	-	-	-	-	-	-	-	-
Oil Seeds .....	24	*	-	-	24	*	-	-
Neug .....	24	*	-	-	24	*	-	-
Linseed .....	-	-	-	-	-	-	-	-
Ground nuts .....	-	-	-	-	-	-	-	-
Sunflower .....	-	-	-	-	-	-	-	-
Sesame .....	-	-	-	-	-	-	-	-
Rapeseed .....	-	-	-	-	-	-	-	-
Other Grains .....	-	-	-	-	-	-	-	-
Vegetables .....	507	179	88	*	262	67	162	*
Lettuce .....	243	*	54	*	94	*	95	*
Head cabbage .....	32	*	-	-	*	*	20	*
Kale .....	405	*	75	*	216	*	118	*
Tomatoes .....	*	*	*	*	-	-	*	*
Green peppers .....	*	*	*	*	-	-	-	-
Red peppers .....	-	-	-	-	-	-	-	-
Swiss chard .....	353	*	50	1	185	16	118	*
Others .....	48	*	-	-	*	*	23	*
Root Crops .....	332	*	60	*	128	26	149	*
Beet root .....	53	*	*	*	*	*	19	*
Carrot .....	258	*	46	*	96	14	116	*
Onions .....	*	*	*	*	30	5	*	*
Potatoes .....	86	34	*	*	25	4	55	*
Garlic .....	*	*	*	*	*	*	*	*
Taro ('Godere') .....	-	-	-	-	-	-	-	-
Sweet potatoes .....	-	-	-	-	-	-	-	-
Others .....	*	*	-	-	*	*	5	*
Permanent Crops .....	175	10	152	*	*	*	*	*
Fruit Crops .....	15	*	15	*	-	-	-	-
Avocado .....	*	*	*	*	-	-	-	-
Bananas .....	-	-	-	-	-	-	-	-
Guava (Zeytuna) .....	-	-	-	-	-	-	-	-
Lemons .....	-	-	-	-	-	-	-	-
Mangoes .....	-	-	-	-	-	-	-	-
Oranges .....	-	-	-	-	-	-	-	-
Papayas .....	-	-	-	-	-	-	-	-
Pineapples .....	-	-	-	-	-	-	-	-
Others .....	*	*	*	*	-	-	-	-
Stimulant Crops .....	89	*	78	*	-	-	*	*
Chat .....	*	*	*	*	-	-	-	-
<b>Coffee</b>	*	*	*	*	-	-	-	-
Hops .....	68	*	57	*	-	-	*	*
Others .....	-	-	-	-	-	-	-	-
Other Permanent Crops .....	92	6	81	2	*	*	*	*
Enset .....	92	6	81	2	*	*	*	*
Sugar Cane .....	-	-	-	-	-	-	-	-
Others .....	-	-	-	-	-	-	-	-

TABLE 6.5: Holders Applying Agricultural Inputs and Participating in Extension Programs by Level of Education in Rural and Urban Areas, for Private Holdings

[illegible]

TABLE 6.5.1: RURAL HOLDINGS

[illegible]

TABLE 6.5.2: RURAL MEHER

[illegible]





TABLE 6.5.3: RURAL BELG

[illegible]

TABLE 6.5.4: URBAN HOLDINGS

[illegible]



Annex - TABLE 6.1: AREA UNDER FARM MANAGEMENT PRACTICES WITH THEIR STANDAD ERRORS AND COEFFICIENT OF VARIATION IN RURAL AREAS FOR MEHER SEASON

Type of crop	Improved Seed Applied			Irrigation			Ferertilizer Applied			Pesticide Applied		
	Hectare	S.E	C.V	Hectare	S.E	C.V	Hectare	S.E	C.V	Hectare	S.E	C.V
TOTAL	7737	700	9	106	37	34	1188	298	25	2719	497	18
Grains Crops	6665	627	9	101	37	36	783	239	31	2153	384	18
Cereals	6426	600	9	93	35	38	775	239	31	2037	351	17
Teff	-	-	-	-	-	-	-	-	-	-	-	-
Barley	3	3	77	-	-	-	-	-	71	1	1	76
Wheat	3	2	62	-	-	-	1	1	101	1	1	75
Maize	257	56	22	14	13	93	108	37	35	82	31	37
Sorghum	6160	600	10	79	31	39	666	214	32	1952	349	18
Millet	2	2	108	-	-	-	-	-	-	-	-	-
Oats	-	-	98	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-	-	-	-
Pulse	204	60	30	8	4	55	6	3	51	99	39	39
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	201	60	30	8	4	55	6	3	51	97	39	40
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
Soya	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	2	2	93	-	-	-	-	-	-	1	1	98
Gibto	-	-	-	-	-	-	-	-	-	-	-	-
Oile seed	34	14	40	-	-	-	1	-	99	17	6	37
Nueg	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	25	12	47	-	-	-	-	-	-	14	6	43
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	10	9	87	-	-	-	1	-	99	3	2	80
Rapeseed.	-	-	-	-	-	-	-	-	-	-	-	-
Other Grain	1	1	63	-	-	-	1	1	102	1	1	60
Vegetables.	30	10	33	3	2	58	27	9	34	19	8	44
Lettuce	-	-	-	-	-	-	-	-	-	-	-	-
Cabbage	-	-	-	-	-	-	-	-	-	-	-	-
Kale	-	-	-	-	-	-	-	-	-	-	-	-
Tomatoes	29	10	34	3	2	58	27	9	34	19	8	44
Green pepper	-	-	92	-	-	-	-	-	101	-	-	108
Red paper	-	-	-	-	-	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	107	-	-	-	-	-	-	-	-	-
Root Crops	85	23	27	-	-	-	28	10	34	38	10	27
Beet root	-	-	-	-	-	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-	-	-	-	-	-
Onion	14	9	67	-	-	-	2	1	47	9	6	65
Potatoes	7	5	77	-	-	-	1	1	62	3	2	69
Garlic	-	-	107	-	-	-	-	-	107	-	-	107
Godere	-	-	-	-	-	-	-	-	-	-	-	-
Sweet potatoes	64	18	27	-	-	-	24	9	36	25	7	28
Others	-	-	-	-	-	-	-	-	-	-	-	-
Permanet crops	957	150	16	3	1	40	350	93	27	509	128	25
Fruit Crops	144	51	35	2	1	53	92	42	46	94	42	45
Avocado	-	-	-	-	-	-	-	-	-	-	-	-
Bannas	6	3	41	-	-	-	5	2	45	3	1	43
Guava(Zeytuna)	9	5	54	-	-	-	9	5	54	5	3	58
Lemons	1	1	52	-	-	103	1	1	75	1	1	89
Mangos	9	4	46	-	-	-	5	2	46	5	3	60
Oranges	3	2	54	-	-	-	2	1	55	2	2	68
Papayas	43	17	39	1	1	77	32	15	48	37	16	44
Pineapples	-	-	-	-	-	-	-	-	-	-	-	-
Others	72	32	45	1	1	83	38	26	67	41	24	60
Stimulant Crop	813	137	17	1	1	65	258	70	27	415	118	28
Chat	752	136	18	-	-	-	210	62	29	382	118	31
Coffee	61	18	30	1	1	65	48	15	31	33	10	31
Gesho.	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Other Permanent	-	-	-	-	-	-	-	-	-	-	-	-
Enset	-	-	-	-	-	-	-	-	-	-	-	-
Sugar Cane	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-

### VARIATION IN URBAN AREAS FOR MEHER SEASON

Type of crop	Improved Seed Applied			Irrigation			Fertilizer Applied			Pesticide Applied		
	Hectare	S.E	C.V	Hectare	S.E	C.V	Hectare	S.E	C.V	Hectare	S.E	C.V
TOTAL	190	36	19	22	10	45	95	20	22	28	10	37
Grains Crops	149	32	21	18	9	51	62	18	28	15	5	32
Cereals	149	32	21	18	9	51	62	18	28	15	5	32
Teff	-	-	-	-	-	-	-	-	-	-	-	-
Barley	-	-	95	-	-	-	-	-	-	-	-	-
Wheat	-	-	-	-	-	-	-	-	-	-	-	-
Maize	11	4	36	-	-	65	9	4	41	2	1	73
Sorghum	138	30	22	18	9	51	52	16	30	13	5	36
Millet	-	-	-	-	-	-	-	-	-	-	-	-
Oats	-	-	-	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-	-	-	-
Pulse	-	-	-	-	-	-	-	-	-	-	-	-
Horse beans	-	-	-	-	-	-	-	-	-	-	-	-
Field peas	-	-	-	-	-	-	-	-	-	-	-	-
Haricot beans	-	-	-	-	-	-	-	-	-	-	-	-
Chick peas	-	-	-	-	-	-	-	-	-	-	-	-
Lentiles	-	-	-	-	-	-	-	-	-	-	-	-
Vetch	-	-	-	-	-	-	-	-	-	-	-	-
Soya	-	-	-	-	-	-	-	-	-	-	-	-
Fenugreek	-	-	-	-	-	-	-	-	-	-	-	-
Gibto	-	-	-	-	-	-	-	-	-	-	-	-
Oile seed	-	-	-	-	-	-	-	-	-	-	-	-
Nueg	-	-	-	-	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-	-	-	-	-
Ground nuts	-	-	-	-	-	-	-	-	-	-	-	-
Sunflower	-	-	-	-	-	-	-	-	-	-	-	-
Sesame	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed.	-	-	-	-	-	-	-	-	-	-	-	-
Other Grain	-	-	-	-	-	-	-	-	-	-	-	-
Vegetables.	1	-	50	-	-	58	1	-	50	1	-	47
Lettuce	-	-	-	-	-	-	-	-	-	-	-	-
Cabbage	-	-	-	-	-	-	-	-	-	-	-	-
Kale	-	-	-	-	-	-	-	-	-	-	-	-
Tomatoes	1	-	50	-	-	58	1	-	50	1	-	47
Green pepper	-	-	-	-	-	-	-	-	-	-	-	-
Red paper	-	-	-	-	-	-	-	-	-	-	-	-
Swiss chard	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Root Crops	1	-	66	-	-	-	1	-	66	-	-	95
Beet root	-	-	-	-	-	-	-	-	-	-	-	-
Carrot	-	-	-	-	-	-	-	-	-	-	-	-
Onion	1	-	66	-	-	-	1	-	66	-	-	95
Potatoes	-	-	-	-	-	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-	-	-	-	-	-
Godere	-	-	-	-	-	-	-	-	-	-	-	-
Sweet potatoes	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Permanet crops	40	10	26	4	4	103	31	9	28	11	6	50
Fruit Crops	38	10	27	4	4	103	31	9	28	11	6	50
Avocado	-	-	-	-	-	-	-	-	-	-	-	-
Bannas	-	-	-	-	-	-	-	-	-	-	-	-
Guava(Zeytuna)	-	-	-	-	-	-	-	-	-	-	-	-
Lemons	1	1	95	-	-	-	1	1	95	-	-	-
Mangos	6	3	44	-	-	-	5	2	44	1	-	44
Oranges	14	4	30	2	2	103	11	4	34	4	2	45
Papayas	2	1	54	-	-	-	2	1	60	-	-	-
Pineapples	-	-	-	-	-	-	-	-	-	-	-	-
Others	16	5	35	2	2	103	12	5	37	7	4	56
Stimulant Crop	1	1	55	-	-	-	-	-	73	-	-	-
Chat	1	1	66	-	-	-	-	-	105	-	-	-
Coffee	-	-	84	-	-	-	-	-	84	-	-	-
Gesho.	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Other Permanent	-	-	-	-	-	-	-	-	-	-	-	-
Enset	-	-	-	-	-	-	-	-	-	-	-	-
Sugar Cane	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-

