Annual Report 2018

Melkassa Agricultural Research Center

Ethiopian Institute of Agricultural Research

Annual Report
January 1—31 December 2018

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Ahmed Ibrahim	Secretary
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Endriyas Gabrekiristos	Member
Laike Kebede	Member
Mulate Zerihun	Member
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Dec 2019
Melkassa

Preface

Bedru Beshir (PhD)
Center Director

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Agricultural Economics Research

Dereje Mersha

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The following are the major outputs of the Agricultural Economics Research Process in 2018

1. **Diagnosis of farm power sources and mechanization in major rice-growing areas in Ethiopia**

Only small proportion of farmers own or have access to modern mechanization technologies showing that the use of mechanical power such as tractors, combine harvester, and threshers was meager. Only 2% of the households use tractors accessed through hiring from private service providers. In contrast 21% of the rice producing farmers have access to rice polishing services while the majority selling unprocessed rice. Weeding is the most labor demanding activity consuming 66% of total labor used for rice production (Table 1).

Table 1. Total labor used (or hired) by the farm operation

Farm operation	Total labor used				Farm operation	Hired labor	
	Mean	SD	Share (%)	N		Mean	SD
Tillage [3]	5.00	5.32	3.15	242	Tillage [3]	4.25	4.71
Tillage [2]	8.64	8.46	4.82	343	Tillage [2]	6.34	8.49
Tillage [1]	9.04	9.89	5.45	343	Row planting	7.82	4.47
Harvest transport	11.02	9.04	4.96	119	Tillage [1]	8.24	9.63
Row planting	11.03	10.90	7.15	58	harvest transport	10.78	12.49
Threshing	18.02	24.12	9.89	330	Threshing	10.82	8.37
Weeding [6]	30.67	50.56	10.99	205	Weeding [6]	28.31	39.80
Harvesting	34.33	51.88	16.33	343	Harvesting	28.42	35.04
Weeding [5]	63.78	80.14	24.76	337	Weeding [5]	52.55	75.84
Weeding [4]	77.33	95.09	30.19	343	Weeding [4]	63.34	85.99

[1] primary tillage, [2] secondary tillage, [3] tertiary tillage. [4] first time weeding, [5] second time weeding and [6] third time weeding

The size of the land associated with the use of large machines, land-labor ratio (both total and rice land) is significantly higher for partially mechanized farms. Tractor users are living nearby small towns indicating that closer residence to towns may have advantages of road access for easy entry of tractors and improving access to information on the availability of service providers. There is a high gap in rice production between tractor and oxen users, where tractors users operating larger plots or farm lands (Table 2).

Table 2 Contrasting farm power uses for land preparation

Variable	Tractor users [1]	Oxen users	Total

2. On-farm validation of agricultural technologies for supporting common bean extension package formulation

The study was conducted to assess the economic performances of innovative treatments (seed rate (140kg/ha), spacing (40 cm between rows and 6–7 cm between plants), fertilizer (Nitrogen, Phosphorous, Sulfur (NPS) 1.5 qt./ha, Potassium Chloride (KCl) 1.0 qt/ha and Bio-fertilizer 500g/ha) and the recommended extension package (seed rate (100kg/ha), spacing (40 cm between rows and 10 cm between plants), fertilizer rate (NPS) 100kg./ha, & Bio-fertilizer 500g/ha) of common beans in the Central Rift Valley of Ethiopia. In 2018, on-farm experiment was conducted on two farm plots, in Shalla and Boset districts (two from each) and on station (Melkassa ARC and Negele Arsi sub center) on a plot size of 500m^2. Partial budget analysis showed that the yield obtained from the trials were higher (2379 kg/ha) than the country average of 1720kg/ha (CSA, 2017/18) across all sites (Table 3). However, the yield recorded at the different sites were not consistently higher in any of the two packages. The costs that vary due to the treatments were consistently higher for the innovation package than for the recommended extension package recommendations across all locations and the farmers' plots. The net benefits did not show consistent results favoring none of the two packages as they vary by location and from farmer to farmer.

Results of the marginal analysis shows that, the rate of return for adopting the innovation package is about -5.91 % (Table 1). The implication is that for every one Birr invested in seed and fertilizer and their application, farmers loss of Birr 5.9 if they decide to change from recommended extension package to innovation package. However, the rate of return analysis depicts different results when disaggregated by location. Accordingly, in Boset the rate of return is in favor of the recommended extension package, while in Shalla the result is mixed (Table 3).

Table 3. On-farm partial budget analysis result of common bean (NASIR) production under innovation and extension package

Benefit-cost components	Innovation package plots					Extension package plots				
	Boset 1	**Boset 2**	**Shalla 1**	**Shalla 2**	**Combined**	**Boset 1**	**Boset 2**	**Shalla 1**	**Shalla 2**	**Combined**
Grain yield (kg)	2994	2707	2019	2740	2615	2743	2500	1583	2691	2379
Straw yield (kg)	6081	5276	3571	6548	5369	5946	5156	3571	4762	4859
Income from grain (Birr)	35932	32478	16153	21918	26620	32914	29995	12664	21530	24276
Income from straw (Birr)	10642	9233	5000	9167	8510	10405	9023	4999	6667	7773
Gross field benefit (Birr/ha)	**46574**	**41711**	**21153**	**31084**	**35130**	**43319**	**39018**	**17663**	**28197**	**32049**
Cost of fertilizer (Birr/ha)	3685	3685	3760	3760	3723	1510	1510	1560	1560	1535
Cost of labor for fertilizer application (Birr/ha)	381	365	384	468	399	359	366	422	468	404
Cost of seed (Birr/ha)	3360	3360	2660	2660	3010	2400	2400	1900	1900	2150
Cost of labor for planting (Birr/ha)	6081	833								

Agricultural Extension and Communication Research

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On-farm demonstration

Table 1: Summary of yield performance of improved onion varieties on farmers field

Location	Varieties	Yield (kg/ha)	% Yield advantage
Dugda	Nafis red	1677	12
	Nasik red	1616	8
	Bombay red (check)	1498	—
Lume	Nafis red	3204	19
	Nasik red	2574	-4
	Bombay red (check)	2692	—
Average	Nafis red	2441	16
	Nasik red	2095	—
	Bombay red (check)	2095	—

Table 2: Summary of yield result of maize varieties demonstrated, 2018

Parameter	MHQ-138	Melkassa-2	BHQ548	BHQY545	M-6Q
Minimum (Kg)	3100	2680	4800	5120	2500
Max (Kg)	5700	4640	5740	6800	4200
Mean (Kg)	4340	3824	5247	5973	3542

Table 3. Summary of yield result of maize spacing (cm) demonstrated for different varieties (N=46), 2018

Parameter	MHQ138		Melkassa-6Q		Melkassa-2	
	60*30	75*25cm^2	60*30	75*25	60*30	75*25
Minimum (kg)	41.67	41.67	29.67	27.33	33.33	26.33
Max (kg)	60.00	57.67	42.00	38.33	48.33	45.00
Mean (Kg)	48.42	47.29	35.00	33.08	41.67	38.13

Cluster based technology popularization

Training:

Table 4. Summary of trainee by technology and expertise and gender

Trainee	Onion			Maize			Fruit		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Farmers	47	5	52	89	37	126	128	50	178
DAs	9	1	10	55	17	72	31	19	50
Experts	17	3	20	33	7	40	20	10	30
Total	*73*	*9*	*82*	*177*	*61*	*238*	*177*	*79*	*256*
Grand Total		***576***							

Field days:

Total	*978*	*315*	*1293*

Print materials:

Agricultural Engineering Research

Laike Kebede
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Farm Power and Field Machinery Research Program

a. Four-wheel tractor driven multi crop planter

b. Four-wheel tractor driven ridge for onion and potato bed preparation

c. Four-wheel tractor driven potato planter

d. Two-wheel tractor attached cultivator

Postharvest Handling and Processing Engineering Research Program

a. **Mechanization survey**

b. Introduction of reaper harvesters

c. Introduction of household hermetic grain storage facilities

d. Modification of Amicho pulverize

enset

e. Assessment of existing dairy production system, processing and handling practices of cow in major milk producing areas

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Publications

Animal Science Research

E-mail:abiyt2005@gmail.com; Phone: +251911761134

Apiculture and Sericulture Research program

Apiculture and Sericulture Research

-
- (*Ricinus communis*
- (*Manihot spp*)
-

-
-

Feeds and nutrition research

Apiculture and Sericulture Research

-
-

Publications

Crop Research

Field Crops

Lowland Pulses Research Program

E-mail: berhanufenta@gmail.com, Phone: 0911796237

Variety Release

Technology multiplication

Establishing /Strengthening of Common Bean Multi-Stakeholder Innovation platform

Demonstration and field day

Publications

Phaseolus vulgaris

Zabrotes subfasciatus

Vigina Unguiculata

Vigna unguiculata

et al.

Phaseolus vulgaris

]2[1]

Phaseolus vulgaris

Vigna unguiculata

Phaseolus vulgaris

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Maize Improvement for Drought Stress, Heat Prone and Irrigated Areas

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Major achievements

A. Technology generation

B. Seed multiplication and distribution

Table1. Seed production and distribution by the breeding section.

Variety	Seed class	Area	Amount produced	Amount distributed	Organization Received seed
Melkassa2	Breeder seed	0.25ha	900kg	225kg	Ethiopian Seed Enterprise MARC seed production unit
Melkassa4	Breeder seed	0.25ha	900kg	150	ESE, MARC seed production unit
CML547	Breeder seed	0.0125ha	-	-	Maize Lathal necroses Infected and destroyed
CML444	Breeder seed	0.0125ha	400kg Expected	400kg	There were some impurities with the seed and it should not be used for further seed multiplication and was rejected
CZL0814	Breeder seed	0.0125ha	400kg Expected	-	Stolen from the field and no seed was harvested
POOL15QPM	Breeder seed	0.0125ha	100kg Expected	60kg	Harvested and stored
Parental Lines and advanced inbred lines (58)	Nucleus seed		1-2kg per lines expected	NA	NA
CML144	Breeder seed	0.0125ha	400kg Expected	500	Produced by the seed production unit
CML159	Breeder seed	0.0125ha	400kg Expected	500	Produced by the seed production unit
Melkassa6Q	Breeder seed	0.0125ha	400kg Expected	400kg	Harvested but not trashed yet
MH138Q	Certified	0.0125ha	400kg Expected	300	Harvested and stored

Miscellaneous activities

Sorghum Improvement Research Program

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1. Major achievements by discipline

1.1 Technology Generation

1.2 Pre extension demonstration


Fig 1. Cluster based sorghum improved sorghum production in 220 hectares of land at North Wello Abuare Kebele in 2018.

Fig 2. Cluster based sorghum improved sorghum production in 150 hectares of land at North western Tigray Asgede Tsemebela and Taytay Adiyabo in 2018

1.3 Seed multiplication and distribution

1.4 Training (farmers and development agents)

Agronomy and Crop Physiology Research project

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Publications

Horticultural Crop Research

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Sub-tropical Fruit Research program

a. Technology generation

b. Pre-extension demonstration

c. Seed multiplication and distribution

d. Training (farmers and development agents)

e. Research capacity building and new facility/items

Publications

Mangifera indica

Tropical Fruit Research Program

Major achievements

Technology generation

From Assessment of postharvest diseases of banana in Central Rift valley of Ethiopia

Technology multiplication and demonstration

Publication

Warm Season Vegetable Crops Research Program

tesfa25@gmail.com; Phone: +251912688864

Major achievements

Crop Variety Released/Registered

-
-
-

Pre-extension Demonstration

Seed Multiplication and Distribution

-

-

Trainings (stakeholders)

-

Capacity development

-

•

Planting material/seed produced and distributed

•

Publications

Food Science and Nutrition Research

Email: mulatezerihun@yahoo.com; Phone: +251 918597350

Major Achievements

1. Physio-chemical profiling of different released papaya varieties and sensory evaluation

2. Physicochemical profiling of different improved banana varieties

3. Assessment of heavy metal contamination through MP-AES in Central Rift Valley, Ethiopia

4. Evaluating nutritional composition of cooking banana recipes and demonstration

Table 1. Training participants

Training	Sorghum food recipes development and demonstration			Common beans food recipes development and demonstration			Bannana and tomato food recipes development and demonstration		
	Male	Women	Total	Male	Women	Total	Male	Women	Total
Farmers	65	105	170	20	65	85	28	54	82
DA	4	0	4	5	2	7	3	1	4
Experts	5	1	6	7	3	10	4	2	6
Total	74	106	180	32	70	102	35	57	92

Laboratory service: Food science and nutrition laboratory serve a lot of samples for external stakeholders and internal (MARC) customers/stakeholders. In 2018 budget year a total of 1905 samples were processed both in grain quality characterization and product development of sorghum (1567), common beans and wheat (148) and other crops (190).

Table 2. List of publications produced by Food Science and nutrition in 2018

No	Title	Status	Type
1	Optimization of Common Bean and Finger Millet Blends for Porridge (Wabi Bajo, Alemayehu Gudisa and Yohannes Nigusu)	Published	Proceeding
2	Evaluation of Traditional Bread Prepared from Wheat, Cowpea and Mung Bean Composite Flours (Wabi Bajo[1]*, Alemayehu Gudisa[1] and Yohannes Nigusu[1])	Published	Proceeding
3	Physico-chemical and Canning Quality Characteristics of Common Bean Varieties (Masresha Minuye Tasie and Demirew Abera)	Published	Proceeding
4	Physico-Chemical, Nutritional and Anti-Nutritional Composition of Sorghum Varieties (Masresha Minuye Tasie, Belay Gezahegn Gebreyes)	Published	Proceeding
5	Physico-Chemical and Nutritional Composition of Mango (Masresha Minuye Tasie)	Published	Proceeding
6	Effects of Pure Compounds of Prosopis juliflora against Groundnut Aphids (Mulate Zerihun[1]and Estifanos Ele[2])	Published	Proceeding
7	Zerihun M, Ele E (2018). Insecticidal Activities of Leaf, Seed and Stem Bark Extracts of *Prosopis Juliflora* against the Cotton (Aphis Gossypii Glover) Aphid. Acad. Res. J. Agri. Sci. Res. 6(3): 202-221	Published	Journal
8	Zerihun M, Berhe H (2018). Comparative Assessment of Some Physicochemical Properties of Different Groundnut Varieties and Oil Yield in Afar Region, Ethiopia. Acad. Res. J. Agri. Sci. Res.6(2), 105-155	Published	Journal
9	Zerihun M, Berhe H (2018). Physicochemical properties of Cotton seeds oil and its comparison with released and improved cotton varieties in Ethiopia. Acad. Res. J. Agri. Sci. Res.6(7), 443-452	Published	Journal

Natural Resource Management Research

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Integrated Soil Fertility and Health Management Research Program

Major achievements

Response of Maize to Blended (NPSB) Fertilizers in Central Rift Valley of Ethiopia

Response of Maize to Blended (NPS) Fertilizers at Central Rift Valley of Ethiopia

Verification of rhizobial strains for common bean production and productivity enhancement

Evaluation of integrated soil management technologies for moisture conservation and soil fertility improvement on Sorghum

Irrigation and Drainage Research Program

Determination of Crop Water Requirement and Crop Coefficient for Wheat and Tef Using Lysimeter

Integrated Watershed Management Program

Plant Biotechnology Research

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Major achievements

-
-
- *In vitro*

  In vitro
-
-
-

Plant Protection Research

E-mail: endriasgabre@gmail.com; Phone: +251916000330

Agricultural Entomology Program

- *Tuta absoluta*
- *Tuta absoluta*
-
-
-
- *Ophomya*

- *Zabrotus subfacictus*
-
- *Callosobrucus maculatus*
-
-
-

Plant Pathology Program

- *Colletotrichum*
-
-

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Publications

Fusarium oxysporum

Leveillula taurica

Technology Multiplication and Seed Research

E-mail: *; Phone: +251949823670*

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Annex 1: List of researchers working at MARC by sex and area of training, 2018

Ser No	Name	Sex	Training (BSc/ MSc/PhD)	Area of their Specialization/Training
1	Abebe Bezu Bedada	Male	MSc	Land Resources Mngmt
2	Abebe Gezegehn Bekele	Male	MSc	Plant Science
3	Abebe Teshome Gurmu	Male	MSc	Agr. Resource Eco. & Mngmt
4	Abel Debebe Mitiku	Male	MSc	Plant Breeding
5	Abel Moges Firew	Male	MSc	Crop Science
6	Abera Asefa Biratu	Male	MSc	Animal Nutrition
7	Abera Tesfaye Tefera	Male	MSc	Water Resource & Irr. Mngmt
8	Abiy Fegadu Dibaba	Male	MSc	Plant Science
9	Abiy Solomon Haile	Male	MSc	Agri. Eng. & Mech.
10	Abiy Tilhun Adugna	Male	MSc	Entomology
11	Adem Nemo Iresso	Male	BSc	Economics
12	Adene Gebreyohannes Woldetensay	Male	MSc	Biology (Applied Genetics)
13	Adugna Mosia Kajela	Male	MSc	Plant Science
14	Agere Lupi Edao	Male	MSc	Environmental Science
15	Ahemd Umer Ahmed	Male	BSc	Mechanical Eng.
16	Ahmed Ibrahim Yuya	Male	MSc	Agri. Entomology
17	Aklilu Mekasha Gebremariam	Male	PhD	Agronomy
18	Alemeyehu Gudisa Hude	Male	BSc	Biology
19	Alemu Tirfesa Woldetensay	Male	PhD	Plant Breeding
20	Amanuel Erchafo Ertebo	Male	BSc	Agri. Eng.
21	Amare Fufa Beyene	Male	MSc	Crop Protection
22	Amare Nega Mamo	Male	MSc	Plant Science
23	Amare Syoum Hailesillae	Male	MSc	Plant Breeding
24	Ashebir Tegegn Abitew	Male	MSc	Range Ecology and Mngmt
25	Asmare Degnew Moges	Male	PhD	Horticulture
26	Asres Yenesew Mose	Male	BSc	Biology
27	Bedru Beshir Abdi	Male	PhD	International Dvpt
28	Behailu Tesfaye Ergete	Male	BSc	Plant Science
29	Behiru Tilahun Woyessa	Male	MSc	Plant Science
30	Belay Tadesse Roba	Male	BSc	Rural Dev. & Agr. Ext.
31	Berhanu Amsalu Fenta	Male	PhD	Plant Science
32	Beyene Seboke Wakene	Male	MSc	Mgt.of Agr. Knowledge
33	Birhanu Sisay Amare	Male	MSc	Horticulture
34	Bisrat Getinet Aweke	Male	MSc	Agri. Machinery Eng.
35	Bulo Debesa Gobu	Male	BSc	Plant Science
36	Chalachew Endalemehu Engida	Male	MSc	Crop Science
37	Dagmawit Tsegaye Arega	Female	MSc	Plant Science & Protection
38	Daniel Bekele Mersha	Male	PhD	Soil & water conservation Eng.
39	Daniel Nadew Teklu	Male	BSc	Plant Science
40	Dejene Abera Hora	Male	PhD	Plant Science
41	Demirew Abera Ketema	Male	MSc	Chemistry
42	Dereje Alemu Anawtie	Male	MSc	Agri. Eng. & Mech.
43	Dereje Ayalneh Tamirat	Male	BSc	Plant Science
44	Dereje Mersha Woldekirkos	Male	MSc	Agri. Economics
45	Dereje Yihun Amare	Male	MSc	Biosystems Eng.
46	Desie Belay Tiruneh	Male	BSc	Agri. Mech. Eng.
47	Edossa Etissa Chala	Male	PhD	Agronomy/Crop Physiology
48	Endiras Gebrekiristos Kebeto	Male	MSc	Plant Science
49	Eshetu Zewdu Tegegn	Male	MSc	Meteorology Science

Ser No	Name	Sex	Training (BSc/ MSc/PhD)	Area of their Specialization/Training
50	Estifanos Hailemariam Demise	Male	BSc	Mngmt
51	Etaferehu Kassa Ejigu	Female	MSc	Env. Eco. & Natural Res.
52	Fekadu Getachew Woldehana	Male	MSc	Meteorology Science
53	Fitsum Abebe Telila	Male	MSc	Agri. Machinery Eng.
54	Fitsum Ademe Mamo	Male	MSc	Soil Science
55	Fitsum Merkebe Endale	Female	MSc	Agronomy
56	Fitsum Mitsum Gebrewahid	Male	MSc	Rural Dvpt & Agri. Extension
57	Gadisa Ejersa Ware	Male	BSc	Rural Dvp & Agri. Ext.
58	Gashawbeza Ayalew Chekol	Male	PhD	Agri. Entomology
59	Gebeyehu Ashemi Bikila	Male	MSc	Water Resource & Irr. Mngmt
60	Gebeyehu Wondimu Gebreyes	Male	MSc	Horticulture
61	Gemmechu Olani Negera	Male	MSc	Biotechnology
62	Getachew Ayana Hordofa	Male	PhD	Plant Pathology
63	Getinet Adugna Iskeziya	Male	MSc	Agronomy
64	Girma Kebede Ketsela	Male	MSc	Agri. & Bioresource Eng.
65	Girma Kebede Shelemo	Male	MSc	Horticulture
66	Girma Mamo Diga	Male	PhD	Agrometrology
67	Girum Kifle Ejigu	Male	MSc	Plant Sc.& Protection
68	Gobena Dirirsa Bayisa	Male	MSc	Soil & Water Eng. & Mngmt
69	Habte Nida Chiksa	Male	MSc	Plant Science/Agronomy
70	Hailemariam Solomon Demise	Male	MSc	Plant Science
71	Israel Bekele Tirune	Male	MSc	Soil Science
72	Iyob Hailu Taye	Male	BSc	Mechanical Eng.
73	Jemel Bekere Adem	Male	BSc	Plant Science
74	Jibicho Geleto Bude	Male	MSc	Plant Science
75	Jibril Mohammd Bedaso	Male	BSc	Plant Science
76	Kalkidan Fikre Befekadu	Female	MSc	Watershed Mngmt
77	Kasaye Negash Dinagde	Male	MSc	Plant Science
78	Kebede Dida Ariti	Male	BSc	Biology
79	kedir Kebero Jebo	Male	BSc	Food Sc. & Post Harvest Tech.
80	Kedir Oshone Husen	Male	MSc	Seed Science & Technology
81	Kedir Shifa Usman	Male	MSc	Applied Entomology
82	Ketema Tezera Bizune	Male	MSC	Water Resource & Irr. Mngmt
83	Kidane Tumsa Hurisa	Male	MSc	Plant Pathology
84	Kiya Aboye Telila	Female	MSc	Plant Science
85	Laike Kebede Woldetensay	Male	MSc	Food Sc. & Post Harvest Tech.
86	Lealem Tilahun Amenu	Male	MSc	Plant Science
87	Lemma Ayele Bekete	Male	MSc	Horticulture
88	Ligaba Ayele Demise	Male	BSc	Plant Science
89	Manaye Ayalew Desta	Male	BSc	Manufacturing
90	Masresha Minuye Tase	Male	BSc	Chemistry
91	Mekonnen Sime Kidane	Male	PhD	Agr. Eco.
92	Melat Eshetu Bayu	Female	MSc	Soil Res.& Watershed Mngmt
93	Melkam Anteneh Alemu	Male	MSc	Seed Science & Tech.
94	Melkamu Ensermu Dufera	Male	MSc	Horticulture
95	Merkebu Ayalew Kebede	Male	MSc	Horticulture
96	Meseret Abebe Wakjira	Male	MSc	Agri. Eng. & Mech.
97	Mesfin Hundesa Mosisa	Male	MSc	Plant Science
98	Meskerem Mekonnen Hailemeriam	Female	BSc	Agriculture & Bioprocess Eng.
99	Metasebia Tefera Zewde	Male	MSc	Plant Pathology
100	Midekesa Bekele Tulu	Male	BSc	Plant Science
101	Mikiyas Demtew Guche	Male	MSc	Horticulture

Ser No	Name	Sex	Training (BSc/ MSc/PhD)	Area of their Specialization/Training
102	Mohammed Yesuf Mohammed	Male	PhD	Plant Pathology
103	Mubarek Mohammed Isa	Male	MSc	Agri. Eng. & Mech.
104	Muhammed Rabo Usha	Male	BSc	Natural Resource Mngmt
105	Muhammed Selah Hamid	Male	BSc	Agri. Economics & Mngmt
106	Mulate Zerihun	Male	MSc	Food Science
107	Mulatwa Wondimu Getaneh	Female	MSc	Plant Entomology
108	Mulugeta Teamir Sisay	Male	PhD	Tech. of Meat & Food
109	Rebuma Merera Gerbaba	Male	MSc	Plant Science
110	Sefiya Nur Mohammed	Female	BSc	Plant Science
111	Selamawit Keteme Ashine	Female	MSc	Horticulture
112	Semir Hashim Geletu	Male	BSc	Horticulture
113	Sewmehon Siraw Belay	Male	BSc	Plant Science
114	Shemelis Aklilu Alemu	Male	PhD	Horticulture
115	Surafel ShibruTekelmariam	Male	MSc	Tropical Agri.
116	Syoum Woldesenbet Adise	Male	MSc	Farm Mech.
117	Tahir Tune Geleto	Male	BSc	Biosystems Eng.
118	Tamirat Bejiga Mosisa	Male	MSc	Plant Science
119	Tamirat Fikadu Mosisa	Male	MSc	Agri. Economics
120	Tamirat Lema Nurge	Male	MSc	Agri. Eng. & Mech.
121	Tatak Wondimu Negash	Male	BSc	Water Resource & Irr. Eng.
122	Tefera Mitiku Biru	Male	BSc	Plant Science
123	Telef Wondwosen Woldeamanuel	Female	MSc	Plant Science
124	Tesfa Binalfew Fetene	Male	MSc	Horticulture
125	Tesfaye Asefa Aboy	Male	BSc	Agr. & Bioprocess Eng.
126	Teshome Bulo Gutema	Male	MSc	Civil Eng.
127	Teshome Feyera Tujo	Male	MSc	Post-Harvest Mngmt
128	Tewodros Mesfin Abebe	Male	PhD	Agronomy
129	Tewodros Sisay Hailu	Male	MSc	Natural Res. & Env. Mngmt
130	Tigist Shiferew Girsil	Female	PhD	Entomology
131	Tilahun Hordofa Nebi	Male	PhD	Irrigation. Eng.
132	Tola Demiyo Gelato	Male	BSc	Plant Science
133	Wakjira Chifra Mengesha	Male	BSc	Plant Science
134	Wobi Bejo Nagasa	Male	BSc	Post-Harvest Mngmt
135	Wogayehu Assefa Yebalework	Male	MSc	Horticulture
136	Yaya Tesfa Tola	Male	BSc	Horticulture
137	Yitayal Abebe Kebede	Male	MSc	Agri. Economics
138	Yitayih Gedefaw Kase	Male	MSc	Plant Science
139	Yonas Lemma Demeke	Male	MSc	Agri. Machinery Eng.
140	Yonas Mulatu Geletu	Male	MSc	Agri. Eng. & Mech.
141	Yosef Alemu Bekele	Male	MSc	Plant Breeding
142	Zeraye Mehari Haile	Male	PhD	Plant Pathology

NB. Agr. Agricultural/Agriculture, Agr. Eco.: Agricultural Economics; Dvpt.: development; Env. =Environment, Eng. Engineering; Irr.: Irrigation; Mngmt= management, Mecha. Mechanization; Res.=Resource, Tech.; technology;