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Ethiopian Institute of Agricultural Research (EIAR)



UPDATE ON LIVESTOCK RESEARCH IN EIAR: ETHIOPIA

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Outline

- ❖ EIAR in Glance
- ❖ Livestock Research in EIAR



1. EIAR (Ethiopian Institute of Agricultural Research)

- ❑ Established in 1966

- ❑ A national organization responsible for **generating, improving and adapting suitable agricultural technologies** that respond to current and long-term agricultural development goals of the country:
 - ❖ Ensuring domestic food & nutritional security
 - ❖ Availing adequate raw materials for local agro-industries
 - ❖ Enhancing supply of agricultural commodities for export - foreign exchange earning
 - ❖ Ensuring sustainable natural resource management & utilization



1. EIAR – Vision and Mission

Vision

- ❑ *“To envisage improved livelihoods of all Ethiopians engaged in agriculture, agro-pastoralism and pastoralism through supply of market competitive agricultural technologies”*

Mission

- ❑ *“Conduct research and generate agricultural technologies that will contribute to increased agricultural productivity and nutrition quality, sustainable food security, economic development, and conservation of natural resources and the environment”*

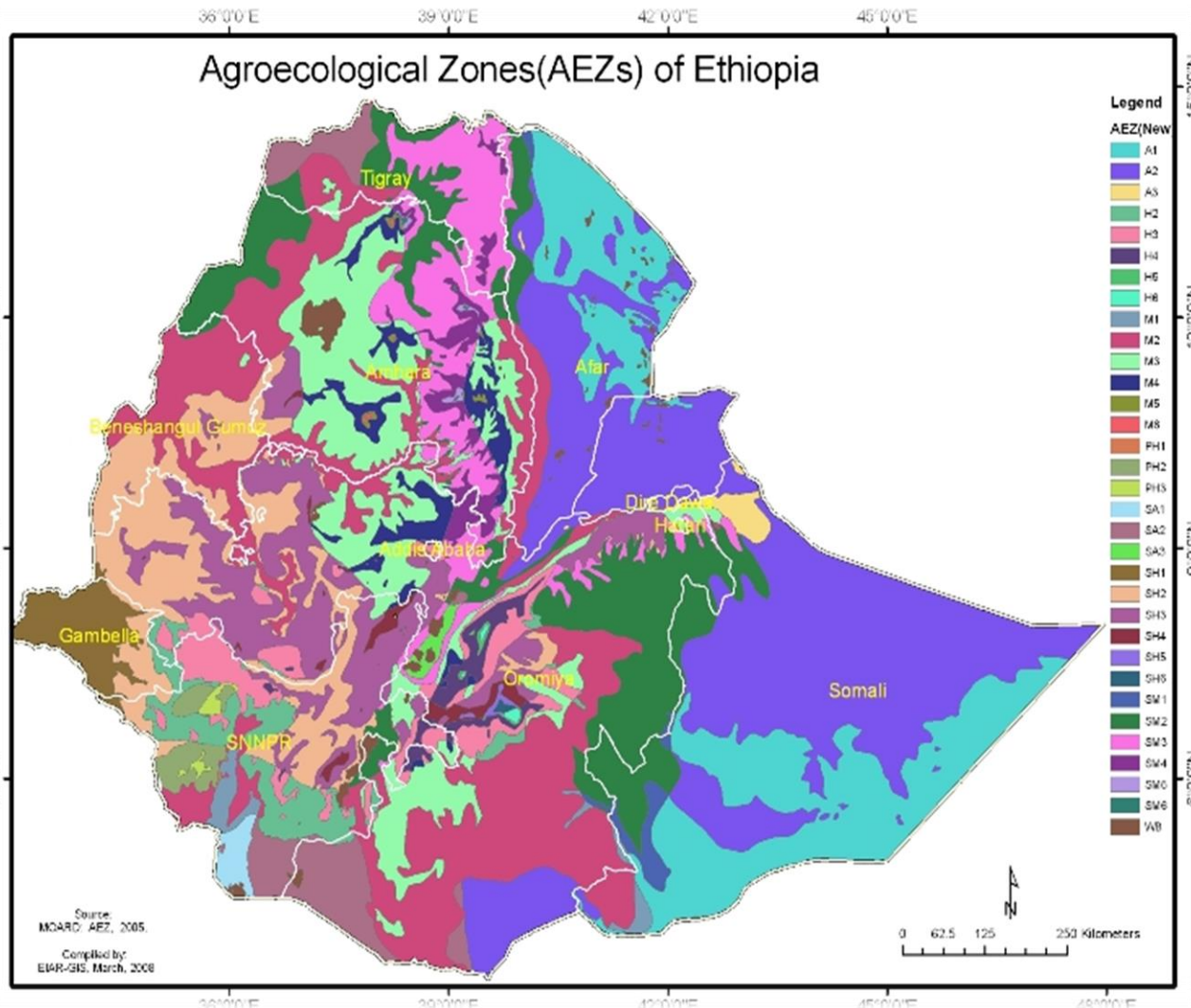


1. EIAR – Core functions

- ❑ Generation of agricultural technologies, knowledge and information which enhance productivity and quality of different agricultural commodities
- ❑ Technology demonstration and demand creation by users
- ❑ Initial/source technology multiplication
- ❑ Build agricultural research capacity (both human and physical capacity)
- ❑ Partnership and networking – with relevant national, regional, international stakeholders



1. EIAR – Research coverage



- 18 major agro-ecological zones (AEZs) fostering diverse crops and livestock species
- 18 research centers distributed across the various AEZs



1. EIAR – Major Research Areas

- Crops
- Livestock
- Natural resources
- Agricultural biotechnology
- Agricultural economics
- Agricultural extension
- Agricultural mechanization
- Climate and Geo-spatial
- Seed



2. Livestock Research

□ Ethiopia has huge and diverse livestock resource (CSA, 2017)

No	Species	Population (millions)	Breeds/Types	Prop. (%) of improved breeds
1	Cattle	60.4	25-27	1.8
2	Sheep	31.3	12-14	0.12
3	Goats	32.7	12	
4	<i>Equines</i>	12.8		
	▪ Horses	2.01		
	▪ Donkeys	8.9		
	▪ Mule	0.46		
5	Camel	1.4		
6	Chicken	60.0	~10	11.5
7	Bee colony/hives	6.5		
8	Fish (1000 tons)	100	~200 spp	



2. Livestock Research

- Important features of livestock production
 - Indigenous breeds mainly evolved for adaptation than production
 - Production mainly subsistent – (low input – low output system)
 - Diversified uses including as sources of draft power for traditional agriculture, social and cultural roles

- ❖ Generally, low productivity with the consequent low supply and high cost of livestock products





3. Important indicators of low productivity

□ Per capita availability of different livestock commodities

Commodity	Per capita availability	Source
Milk (L/year)	~ 36	CSA, 2017
Red Meat (kg/year)	12	LMP, 2015
Chicken meat (kg/year)	0.6	FAO, 2016
Eggs (kg/year)	1.42 eggs	CSA, 2017
Fish (kg/year)	0.5	FAO, 2016



2. Livestock Research - Milestones

- ❑ Conduct research and avail technological innovations, information and knowledge which will help to improve productivity (supply), quality and market competitiveness of different livestock commodities



2. Livestock Research – Programs

- 12 nationally coordinated research programs

Livestock Research

1. Dairy Cattle
2. Beef Cattle
3. Sheep
4. Goats
5. Camel
6. Poultry
7. Fishery
8. Apiculture
9. Sericulture
10. Animal Health
11. Feeds and Nutrition
12. Rangeland Improvement



2. Livestock Research – Progresses and Achievements

□ Dairy Cattle Research

- Crossbreeding as an approach – Frisian sire and selected indigenous breeds (Boran, Fogera, Horro, etc as dam lines)
- Lactation performance under sub-optimal management

Category	Liters
Indigenous (Boran)	563
50% HF*Boran	2335
75% HF*Boran	~ 2800

- Recommendations on management packages (feeding, health care, housing, husbandry, etc)
- Case under model farmers – up to 40L/d during peak lactation from upgraded cows





2. Livestock Research – Progresses and Achievements

☐ Beef Cattle Research

- Selected breeds have been characterized for beef production potential
- Target – desired market weight as early as possible (~300kg at three years of age)
- Recommendations on feeding management using locally available feed resources





2. Livestock Research – Progresses and Achievements

❑ Sheep Research

- Selection, identification and promotion of superior rams for community based sheep breeding/improvement
- Feeding and other management packages for attaining the desired market weight early (~30kg at one year of age)
- Crossbreeding selected indigenous breeds (like Menze) with exotic breeds (Dorper, Awassi) to improve the desired traits





2. Livestock Research – Progresses and Achievements

□ Goats Research

- Selection and promotion of superior bucks for community based breeding
- Recommendations on feeding packages and other management practices

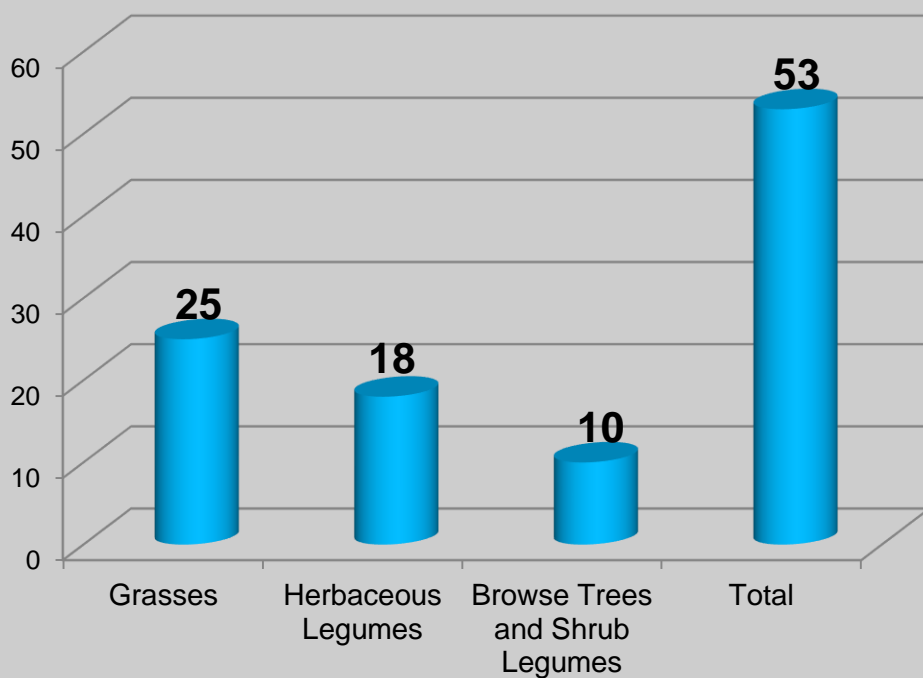




2. Livestock Research – Progresses and Achievements

□ Feed Resources Research

Fig. Number of released forage varieties in Ethiopia





2. Livestock Research – Progresses and Achievements

□ Poultry Research

- Characterization, selection and development of potential indigenous breeds such as Horro for semi-scavenging production system
- Introduction, evaluation and recommendations of suitable (adaptable and productive) breeds (layers, broilers, dual-purpose) for commercial production system
- Various recommendations on feeding and other management practices
- Demonstrations to selected farmers
- Foundation day-old-chick supply to chicken multiplication centers





2. Livestock Research – Progresses and Achievements

□ Fishery Research

- Characterization of suitability of water bodies for fish production
- Periodic stock assessment and management recommendations
- Integrated agriculture-aquaculture production technologies
- Fish feed formulations using locally available feed resources
- Fishing gear technologies
- Fish post-harvest handling and processing methods
- Fingerling multiplication and incorporations into potential water bodies





2. Livestock Research – Progresses and Achievements

□ Apiculture Research

- Bee genetics - Honeybee colony multiplication techniques
- Bee forage – a book on honey bee flora of Ethiopia
- Bee health - pest and disease control methods (Ant, Wax moth, Chalk brood disease, etc)
- Bee product diversification, processing and handling techniques





2. Livestock Research – Progresses and Achievements

❑ Sericulture

- Characterization and identification of suitable/adaptable silkworm races
- Identification of suitable silkworm forage (castor, mulberry) varieties with their management recommendations
- Silkworm management, cocoon production and processing techniques
- Demonstration and promotion of silk production technologies





3. Livestock Research – Drivers of our research planning

- ❑ National Livestock Development Master plan - Targets set for different livestock commodities
- ❑ National Growth and Transformation Plan (GTP) – planned every five years including livestock development
- ❑ Research Strategy (2016 – 2030) – revised every 15 years
- ❑ Other Emerging Issues



4. Livestock Research – Projects and activities

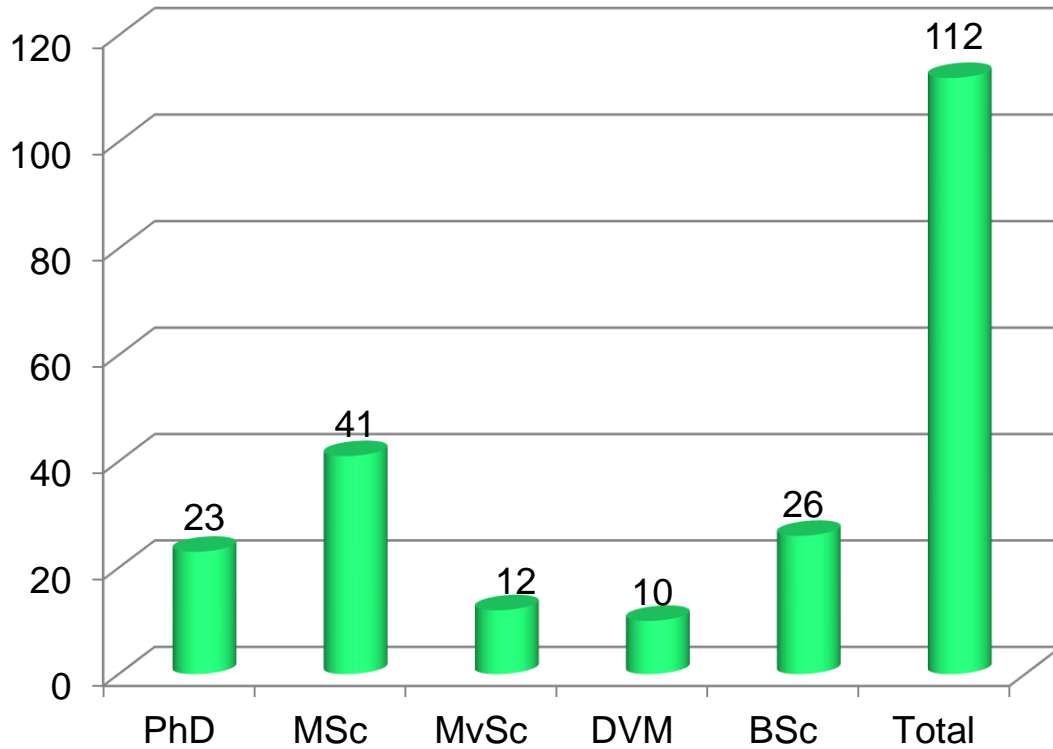
□ Number of currently ongoing research projects and activities

No	Program	No. of projects	No. of activities
1	Dairy cattle	4	45
2	Beef cattle	1	14
3	Sheep	1	29
4	Goats	1	17
5	Camel	1	9
6	Poultry	4	44
7	Fishery	8	43
8	Apiculture	1	25
9	Sericulture	1	17
10	Animal health	4	37
11	Feeds and nutrition	3	93
12	Rangeland improvement	1	20
Total		30	393



4. Livestock Research – Workforce

Number of researchers currently on duty

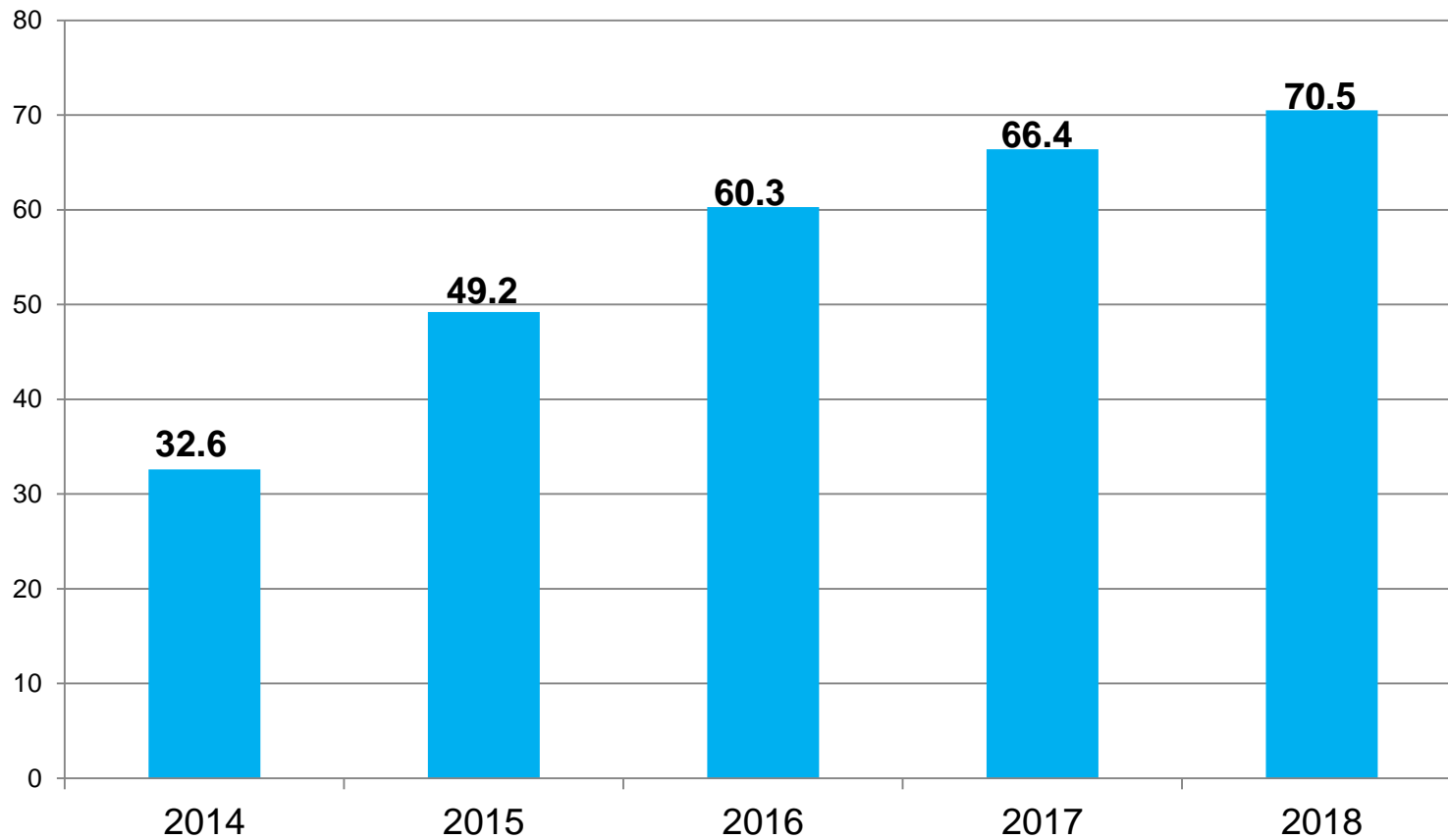


Staff on training	
Level	No
PhD	22
MSc	16
MvSc	4
BSc	4
<i>Total</i>	<i>46</i>



5. Livestock Research – Financial resource

□ Budget allocated to livestock research in the last 5 years (Million Birr)





6. Future directions

- ❑ Ensure effective implementation of research activities in-line with strategic issues outlined in the 15 years research strategy and government initiatives in livestock development
- ❑ Strengthen demonstration and promotion of technologies, knowledge and information developed thus far
- ❑ Build human and physical resources capacities
- ❑ Establish/strengthen linkages and partnerships with potential partners – national, regional and international



6. Future directions – No. of project frameworks developed based on the 15 years research strategy

No	Program	Existing projects	Proposed based on strategy
1	Dairy Cattle	4	5
2	Beef Cattle	1	2
3	Sheep	1	4
4	Goats	1	3
5	Camel	1	2
6	Poultry	4	6
7	Fishery	8	5
8	Feeds and Nutrition	3	7
9	Range	1	5
10	Animal Health	4	5
11	Apiculture	1	4
12	Sericulture	1	2
	Total	30	50



Thank You!