



# CROP AGROBIODIVERSITY CONSERVATION AND MONITORING STATUS IN ETHIOPIA

alignements

DELESSA ANGASSA  
ETHIOPIAN BIODIVERSITY INSTITUTE

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**Ethiopian Biodiversity Institute**

# Outline of presentation

## 1. Introduction

## 2. Conservation of Crop Genetic Resources

➤ *Ex-Situ*

➤ *On-Farm*

## 3. Crop Agrobiodiversity Monitoring status in Ethiopia

## 4. Expectation

# 1. Introduction

- ➔ Ethiopia has rich crop agrobiodiversity resources
- ➔ Vavilov recognized the country as one of centers of origin/diversity around the world.  
Due to:-
  - ➔ Presence of wide altitude ranges/topography
  - ➔ Variable/diverse climatic condition
  - ➔ Diverse soil conditions

# Introduction (cont....)

## Domestication Crop plants

- The country is a primary center of many crop plants.
- Indigenous crops such as *Eragrostis tef*, *Giuizotia abyssinica*, *Enste ventricosum*, *Coffee arabica* were domesticated in Ethiopia.
- Also *Coccinia abyssinica*, *Plectranthus edulis*, *Abelmoschus esculentus* originated in Ethiopia.
- *Triticum spp.*, *Hordium vulgare*, grain legumes and numerous oil crops domesticated elsewhere have their center of diversity.

# Introduction (cont....)

## Agricultural uses of CABD

- Basis for food security and sustainable agricultural development.
- Used in the national and international crop improvement programs
  - High yielding varieties
  - Disease resistance
  - Drought tolerance
  - Pest tolerance

## Introduction (cont....)

### Causes for decline in Crop agrobiodiversity

- Displacement of land races by improved varieties
- Land use change
- Climate change
- Population growth
- Deforestation/habitat loss
- Invasive alien species

# Introduction (cont....)

➔ In recognition of the existence of valuable crop agrobiodiversity, Ethiopian Biodiversity Institute under take different activities with the objectives of:-

- ☞ Conservation
- ☞ Sustainable utilization
- ☞ Access and benefit sharing arising from the use of genetic resources

## 2. Conservation Crop Genetic Resources

### 2.1. Collection

- Several exploration missions have been carried out since the establishment of EBI
- Germplasm collection priority is based mainly on the degree of threat, economic importance, endemism and diversity.



# Collection (cont....)

S.N	Crop type	Total no. of Accessions
1	Cereal crops	50988
2	Pulse crops	7838
3	Oil crops	7855
4	Horticultural crops	5812
5	Industrial crops	759
	<b>Total Accessions</b>	<b>73337</b>

# Conservation strategies



# Ex-Situ

## 1. Cold room

- ➔ Long term storage
- ➔ kept at -10 degrees Celsius
- ➔ Base for conservation
- ➔ Active for distribution

- ☞ Seeds for multiplication
- ☞ stored in the temporary storage at +4 degrees Celsius



Total - 68397

# Ex-Situ (cont....)

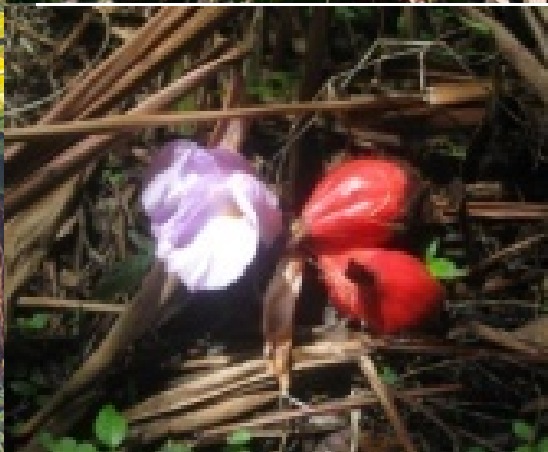
## 2. Field Genebank

Coffee - 5466

Root crops - 462

Spices- 242

Total- 6170



## 2. On-farm conservation

- **In 1994** UNDP/GEF supported the implementation of project A Dynamic Farmers Based Approach to the Conservation of Ethiopian's Plant Genetic Resources “
- Main objectives
  - To demonstrate the effectiveness of small-scale farmers in the conservation and utilization of their local plant genetic resources.
  - How farmers conservation activities can be integrated into the national plant genetic resources conservation institutional frame work;
- Thus serving as a model and therefore a learning process from which the country can benefit.

# On-farm conservation-----

- Establishing of twelve community seedbank in four regions of six districts
- Train farmers conservators to curate and manage the CGB

# On-farm conservation-----

**Distribution of community seedbanks in the country**



# On-farm conservation-----

## Achievements

- Farmers were trained and shared experiences
- Several Landraces conserved;
- Displaced and lost farmers varieties restored
- Farmers benefited from the on-farm conservation practice;
- CGB's served as the source of seed security for farmers
- Farmers empowered to manage and utilize their crop genetic resources.
- Women involvement has been enhanced

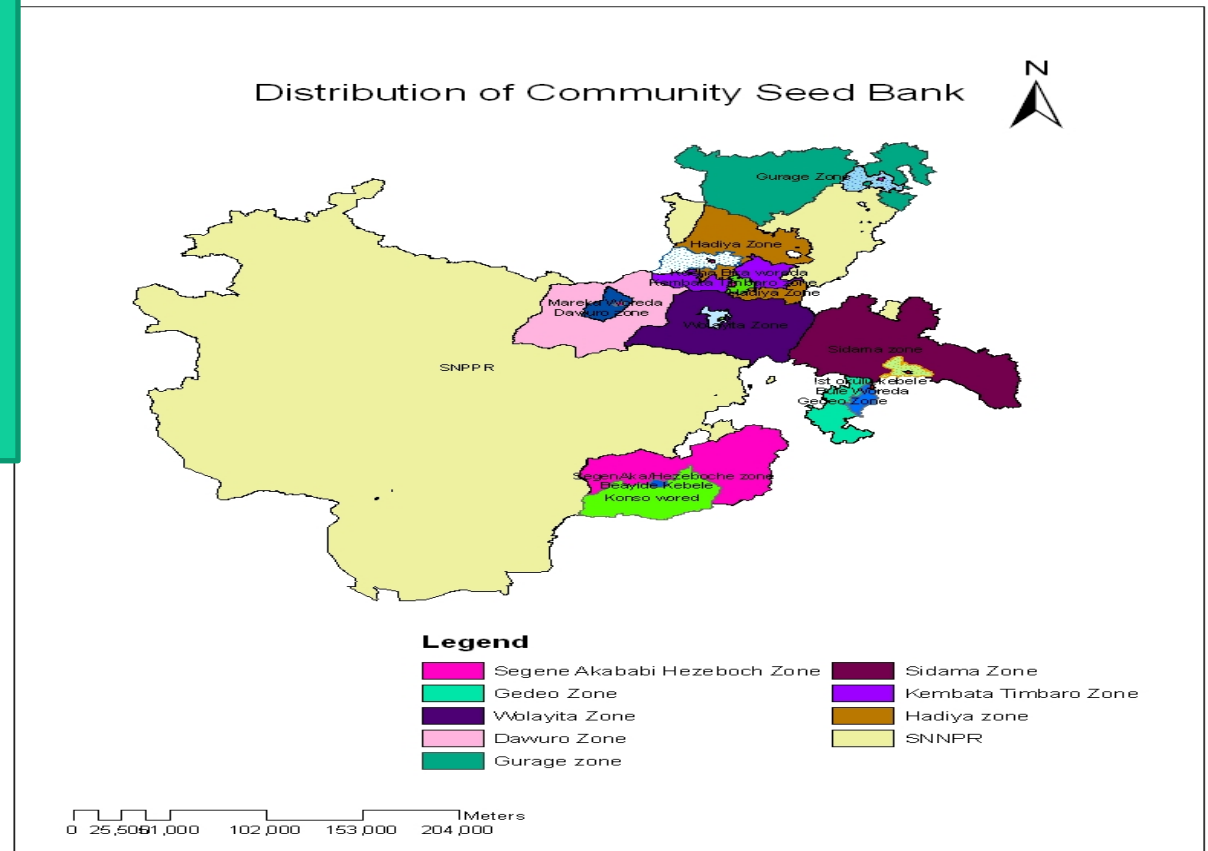


# On-farm conservation -----



# Additional establishment of CGB

8 community seed banks has been established in South Region of the country

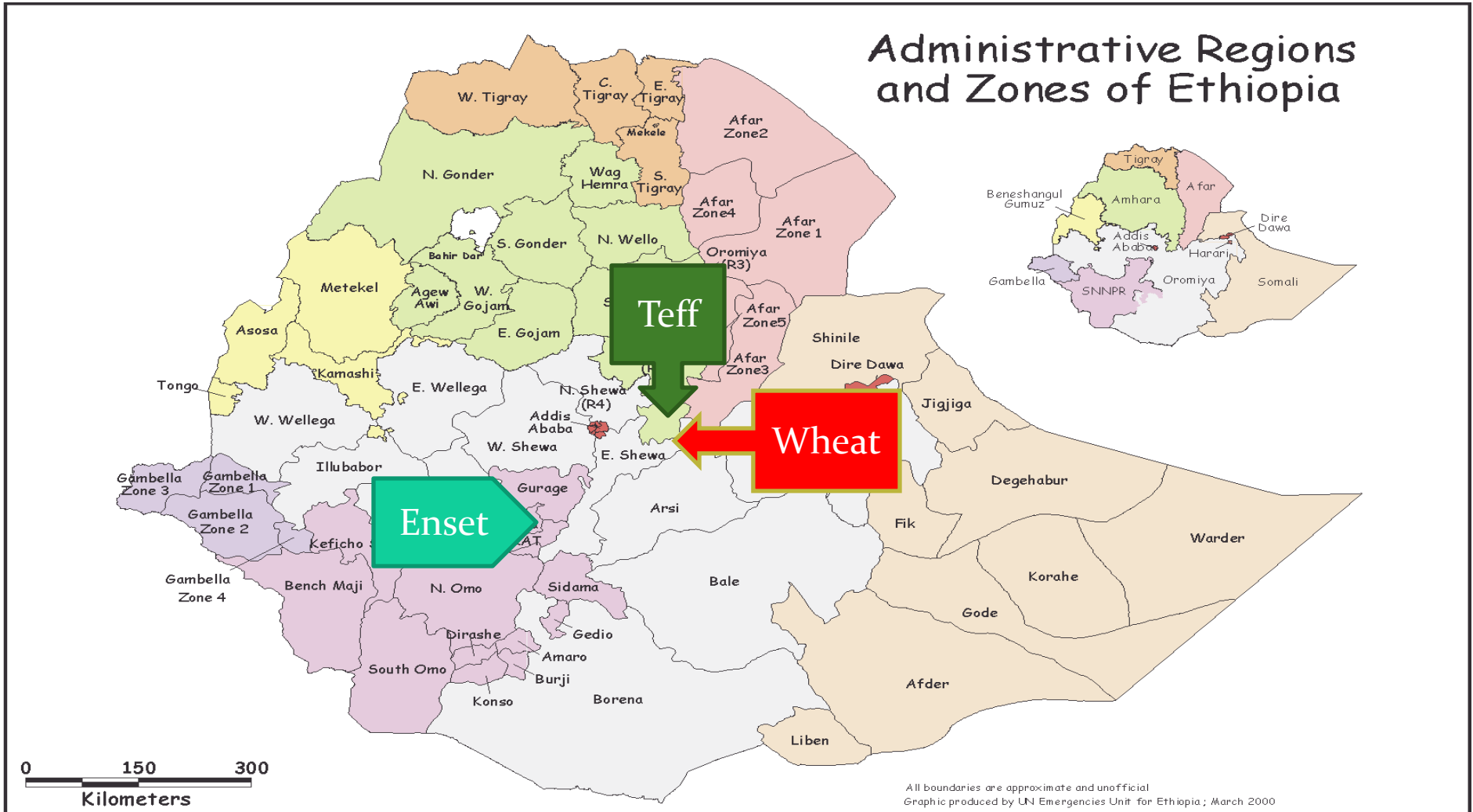


★ 6 CSB are under establishment Northern and Central part of the country.

### 3. Crop Agrobiodiversity Monitoring status in Ethiopia

- ☞ Proper conservation of crop agrobiodiversity needs regular survey and documentation of status, influences and measures to maintain agrobiodiversity.
- ☞ In Ethiopia inventory of Teff, wheat and Enset were carried out in 2011 in major potential growing areas of these crops as pilot by mainstreaming of agrobiodiversity project.
- ☞ To evaluate status of farmers varieties, identify possible factors for the loss and recommend measures to support sustainable utilization of crop agrobiodiversity in the areas

# CAB Monitoring status in Ethiopia-----



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## Accomplishments

- The status of Teff, Wheat and Enset was identified and documented
- Farmers have been empowered through awareness raising and training to conserve and utilize their crop genetic resources.
- Restoration of displaced and lost Farmers varieties
- Establishment of two community seed banks for teff and wheat growing areas and on field genebank for enset growing area.

# CAB Monitoring status in Ethiopia-----

## Future plan

- Strengthen conservation activities using both *in-situ* and *ex-situ* methods
- Conducting base line survey the status of crop agrobiodiversity by setting the priority
- Documentation of the status of the crop agrobiodiversity resouces
- Conduct awareness raising for the community and decision makers
- Restoration of displaced and lost crop agrobiodiversity resouces

# Expectation

- Experience sharing from participants on monitoring of crop agrobiodiversity
- Documentation
- On- farm conservation practices





**Thank you for your  
attention**

Ethiopian Biodiversity Institute