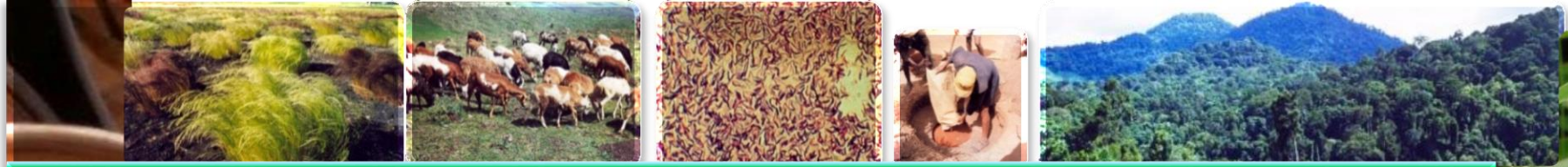

Ethiopian Biodiversity Institute
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CBD

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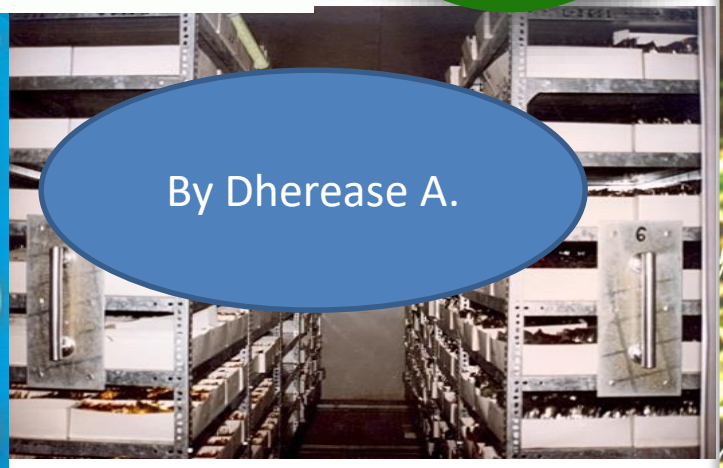


By Dherease A.

Dhaabbata Hedduummina Lubbu Qabeeyyii Itoophiya

Biodiversity conservation efforts in Ethiopia

International Biological Diversity Conservation Day, May 22, 2018

Jimma, Ethiopia

Outline

1. Introduction
2. BD conservation achievements
   - 2.1.Crop & HC BD
   - 2.2.Forest & RL BD
   - 2.3. Animal BD
   - 2.4. Microbial BD
   - 2.5. GR ABS
3. Challenges
4. The way forward

1. Introduction

- **Biodiversity -the variability among living organisms on Earth, manifested by 3 main components (gene, Species & ecosystem)**

- **Ethiopian is rich in biodiversity resources , and TK(Traditional knowledge)**

- **Centre of origin and diversity for many biodiversity, crops**

- **Some of the reasons for diversity in Ethiopian**
  - **altitudinal range (116m bsl - 4,620 masl)**
  - **Diverse agro-ecological areas,**
  - **Diverse cultural diversity**

Introduction contd..

- ✓ **Of 34 BD Hot spots of globe the 2 are in Ethiopia**
  - ➢ **Eastern Afromontane and Horn of Africa**
- ✓ **Ethiopia is a member of 20 Like Minded Mega Diverse countries**
- ✓ **Pillars of CBD >>>>Conservation, sustainable utilization and Access and Benefit sharing**

- ✓ **Human activities, including exotic species, climate change, popn pressure , etc. have caused dramatic losses of biodiversity.**

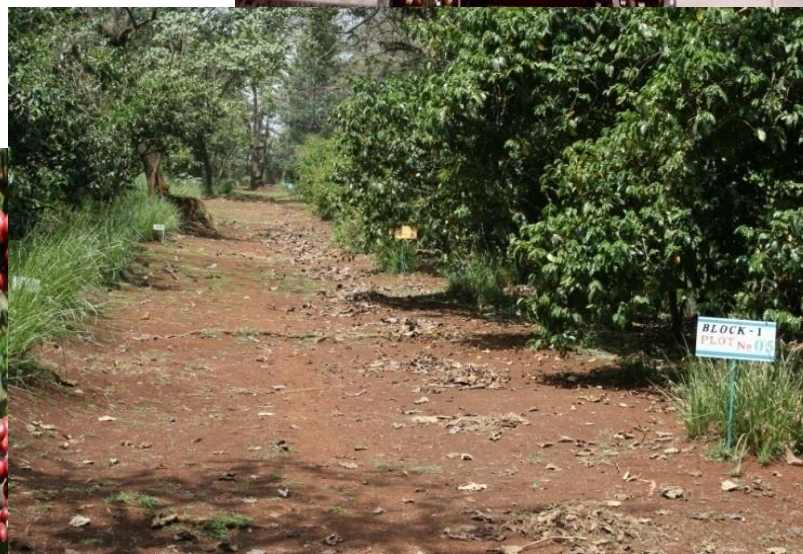
- ✓ **EBI is mandated for research, conservation and sustainable use of BD, and ensure fair & equitable BS.**

3. Major achievements

i. – Crop & HOR

- **79,354 accessions of 89 Crop & horticulture spp have been collected-cold room (-10 and +4 ^{o}C) (cereals, pulses, oil crops)**

- **6,720 *accessions* coffee, root and tuber crops, spices and fruits GRs are conserved in Choche, Angacha, Yirga Chafe, Badessa and Yayu field genebanks**



Crop contd..

On-farm/Insitu conservation

- **Indigenous crop varieties maintained by farmers in dynamic agro-ecosystems on on-farm conservation sites & community gene banks were established – Since 1994.**

- **25 community seed banks have been established /CSBs (4 Tigray, 5 Amhara, 8 Oromia and 8 SNNPR states , and crop conservation associations are organized).**

- **4 Additional CSBs under construction**

- **61 Farmers varieties of 34 field and hort. crop spp. have been conserved in CSBs and on-farm conservation sites**

Crop contd..

Multiplication, Regeneration and Restoration

- **Multiplication -the reproduction of germplasm samples in different sites to increase the number of seeds to the required sample size for long-term storage and use**
- **Regeneration -the renewal of conserved seeds of a given crop collection(s) with decreased viability**
- **70,963 accessions have been multiplied and regenerated**
- **24 field & hort. crop spp. (36 varieties) have been restored in different parts of the country**

Crop contd..

Characterization, evaluation and distribution of genetic resources

- **14,256 accessions of field & hort. crops have been characterized using morphological traits**

- **> 4000 accessions (of Tef, Wheat, Barley, Sorghum, Field pea, Grass pea, Finger millet, Fenugreek and Enset) have been analysed for nutrient content (protein, fiber, fat, total mineral, and water content)**

- **184,203 field and hort. crop accessions have been distributed to different germplasm users**

ii. Major achievements - Forest

- Over 15.5 % area of Ethiopia is occupied by natural forests and woodlands as well as plantation forests

1. *In-situ* conservation

- 18 *in-situ* conservation sites
- About 400 ha degraded areas afforested/restoration

- 2. *Ex-situ* conservation
- Over 3037 accessions of 959 forest, medicinal and forage spp. have been conserved *ex-situ*

Forest contd…

a. 15 field gene banks were established to conserve forest trees, forage and MPs

- 494 plant spp conserved
  - (297 forest tree,
  - 13 forage , and
  - 275 are medicinal plant species.

b. 2 botanical gardens were established for conserving native plant species, for research and teaching/demonstration purposes

c. Cold room

- A total of 460 spp. (7165 accessions), of which
  - ✓ 291/4129 forest tree
  - ✓ 82/1759 medicinal , and
  - ✓ 87/1277 forage species/accessions respectively.

- Herbarium service - for researcher institutes, MSc/PhD students

iii. Major achievements – Animal BD

1. *In-situ* conservation

- ✓ 11 dometic animals breeds are conserved in different regions of the country
- ✓ 10 ecosystem-based *In-situ* conservation of wild/ and aquatic AnGR
- ✓ 23 breeds/ecotypes are characterized and ready for further research and use,

2. *Ex-situ* cnservation

- ➢ 56,200 straws of semen has been conserved to sustainably utilize AnGR

- ➢ Zoological museum established, 650 samples of 217 species of mammals, insects, reptiles, amphibians

Animal contd...

Identification and valuation of wild and aquatic AnGR

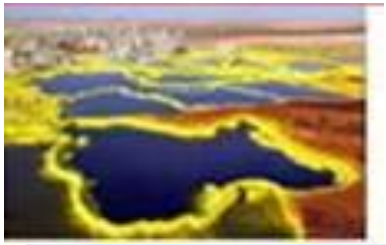
- **The status and threats of endemic and endangered AnGR** (Walia ibex, Ethiopian wolf etc. are known)

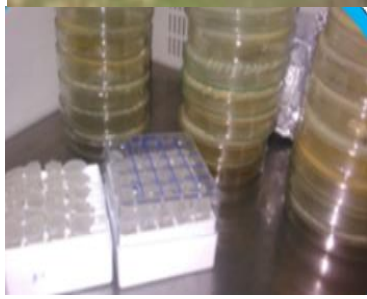
- **Economically important AnGR - Naked mole and Civet cat were identified**

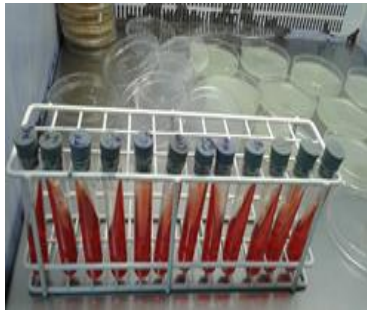
- **Valuation of 2 lakes & 1 wetland ecosystem**

- **Cataloges & manuals on conservation and sustanable utilization of AnGRs were prepared** (7 – wild and aquatic animals, 6 – domestic animals).

iv. Major achievements - Microbe







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Microbial Biodiversity Directorate

- Bacterial and Fungal BD Case Team
- Microbial Molecular Characterization and GeneBank Case Team
- Microalgal BD Case Team

S/No	Conserved MBD	Gene Bank/EBI-Ex situ			Distributed
		species	varieties	accessions	species
1.	Bacteria	687	-	-	212
2.	Fungi	251	-	-	14
3.	Microalgae	26	-	-	0
		964			226

V. Major achievements – ABS

- **Ethiopia has issued a proclamation on Access to GRs & Community Knowledge, and Community Rights:**
  - ✓ Proclamation No. 482/2006, and
  - ✓ Regulation No. 169/2009
    - ✓ focus on PIC, MAT, Multilateral System of Access

The Directorate is authorized t

- regulate access to GR, and
- ensure fair and equitable BS arising from the utilization of GRs/TK

ABS Contd…

- Over 560 GR Access permits (for non commer purposes)

- ABS agreement on 10 species -for commercial purposes with foreign and loca companies.
- Translated National ABS Law , Nagoya protocol, CBD texts into different domestic languages
- Bioprospecting
- Impact assessment of > 10 Invasive species

- 9705 samples were repatriated

Awarness & Community Services of EBI

- **Forums: stakeholder , public wing**
- **Electronic and Print Media**
- **Training: internships, attachments , development agents**
- **Participatory meetings at community level**
- **Awareness creation: policy makers**
- **Facility visits: – students (Elementary to university level (G/PG), researchers**
  - **about 20,000 people have visited the genebank**

3. Challenges

- **Capacity gap: infrastructure, facilities, human resource**
- **Inadequate facilities: offices, labs, lab equipment, Herbarium and cold room** (for seed processing, drying, storage)
- **Unavailability of lab chemicals , biologicals and consumables**
- **Limited Logistic service,** e.g., field vehicles, field equipment for seed collection
- **Inadequate budget**
- **Weak national BD database**

4. The way forward

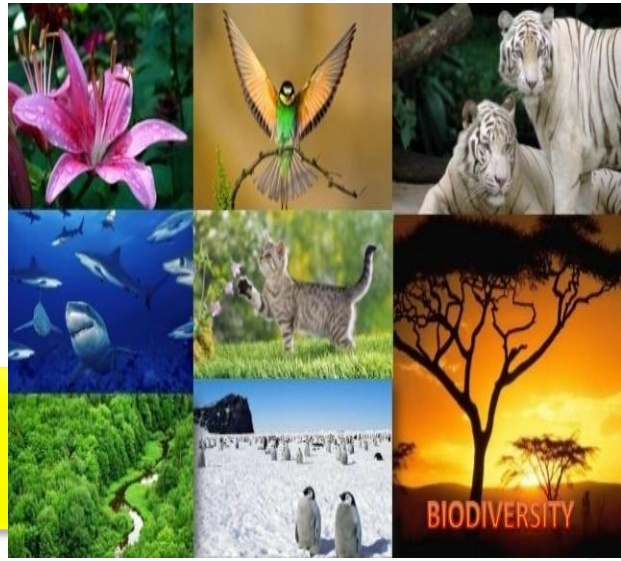
- **Strengthening International collaboration on Research, Human Resources Development, Technology and Scientific Knowledge Transfer for BD**
- **Strengthening fund soliciting and resource mobilization strategies, esp international funds**

- **Comprehensive assessment of the country's BD towards a complete map of the resource and national database**

The way forward contd…

- Raising community and stakeholders awareness on conservation and sustainable utilization of BD resources
- Develop ABS bio-cultural community protocols and traditional knowledge registers
- Restructuring the organizational setup for better accomplishment of EBI objectives

BIODIVRSITY



Thanks