

“Restoration and conservation of globally endangered *Cordeauxia edulis* woody species in the drylands of Ethiopia’s Somali Region”

Implemented by: Ethiopian Biodiversity Institute (EBI)

Presenter: **Dese Yadeta Edesa**

The SDM Project Coordinator and Focal Contact Point at EBI

29 January 2024

1/29/2024



Location of the project site - Ethiopia's Somali Region



SEPLS of Ethiopia's Somali Region - Ecosystems

- Drylands
- Arid and semi-arid climates
- Grasslands and shrublands
- Acacia-Commiphora woodland

Drylands



Acacia-Commiphora woodland



Grasslands and shrub lands



SEPLS of Ethiopia's Somali Region - Livelihoods

➤ More than 85% of the local community is pastoralist and the main their livelihood is livestock husbandry

Goats and Sheep



Camels



Cattle



SEPLS of Ethiopia's Somali Region - *Cordeauxia edulis* (Yeheb)

❖ *Cordeauxia edulis* (Yeheb)

- A small tree/shrub **endemic to Ethiopia and Somalia**
- Drought-resilient and climate-smart wild crop
- **Specific location in Ethiopia:** found **only** in the Bookh district of Somali Region bordering with Puntland State of Somalia
- Altitudinal range: grows between **400 - 500m**



Cordeauxia edulis grows naturally on **red sandy soil**- in dryland and multi-stemmed evergreen through the year with low moisture

SEPLS of Ethiopia's Somali Region - *Cordeauxia edulis* (Yeheb)

❖ Importance of Yeheb

- 1. Food security and economic benefits to local pastoralists
 - Most expensive wild crop next to coffee in Ethiopia
 - 100kg = > 30,000 to 40,000 Ethiopian birr ≈ 500 to 700USD
- 2. Medicinal purpose: traditionally local communities use Yeheb seeds to treat:
 - gastric secretion (anti-inflammatory), diabetes, AIDS/HIV(improving immunity), bone elbow, improve endurance during sexual intercourse



Selling *C.edulis* seeds at Gambareey Village Center



SEPLS of Ethiopia's Somali Region - *Cordeauxia edulis* (Yeheb)

❖ Importance of Yeheb (cont.)

➤ 3. Construction materials

- House, fences, etc
- Fuel wood

➤ 4. Fodder

- For livestock at dry time



A house & fence built of *C.edulis* trees in Gambareey Village



Camels browsing *C.edulis* tree in Gambareey Village

1/29/2024

SEPLS of Ethiopia's Somali Region - *Cordeauxia edulis* (Yeheb)

❖ Importance of Yeheb (cont.)

➤ 5. Ecological/ecosystem services

- Living spaces [**shelter**, and **shade**] for people, livestock and wildlife {birds, **rodents**,...}
- **Regulation** - climate and heat
- **Protect and control**- flood, soil erosion, storm, and wind
- Soil formation and nutrient cycling (can **fix Nitrogen (N₂)**)

Rest under the shade of **Yeheb** trees in Gambareey Village while taking inventory



Rodents create holes and live underneath **Yeheb** trees



Camel resting in the shade of **Yeheb** trees in Gambareey Village

SEPLS of Ethiopia's Somali Region - Challenges

❖ Multiple combined threats to *C.edulis*:

- Overexploitation
- Overgrazing, prolonged drought
- Habitat loss due to lack of integrated landscape management systems
- Known in the wild- no adaptation trial in other ecologies
- Restricted to a narrow geographic range
- Open access-common resource
- Lack of infrastructure & alternative livelihood

❖ Conservation status: Endangered (IUCN Red List of Threatened Species)

Project objective and activities

❖ The overall objective of the project was to restore and conserve globally endangered *Cordeauxia edulis* and associated habitats in the drylands of Ethiopia's Somali Region

❖ Project Activities

➤ We applied a **three-pronged approach (RAP)**:

* **Research**-survey and make an inventory for mapping the distribution of existing population, understanding the current conditions, etc.

* **Action**- capacity strengthening, awareness-raising, ins-situ conservation, tree planting

* **Partnerships** – collaboration with stakeholders

Project Results

1. Capacity strengthening was conducted

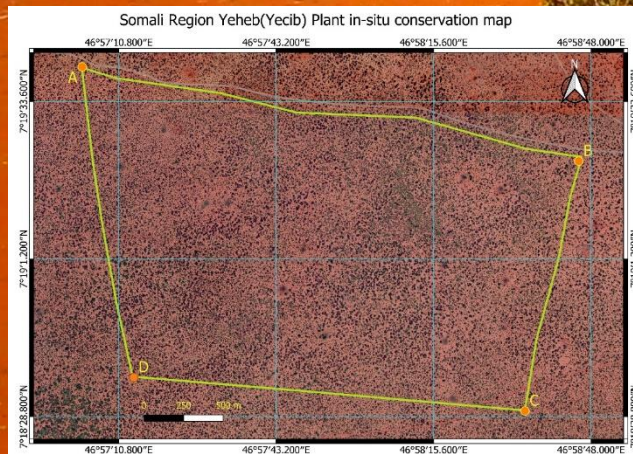
- A two-day workshop was held with the participation of stakeholders from various disciplines and professionals
- At least 1,000 people attended workshop, capacity-building, and awareness raising
- 2,000 households (> 8,000 families) benefiting from the project
- **Proceeding** of the workshop was submitted to IPSI



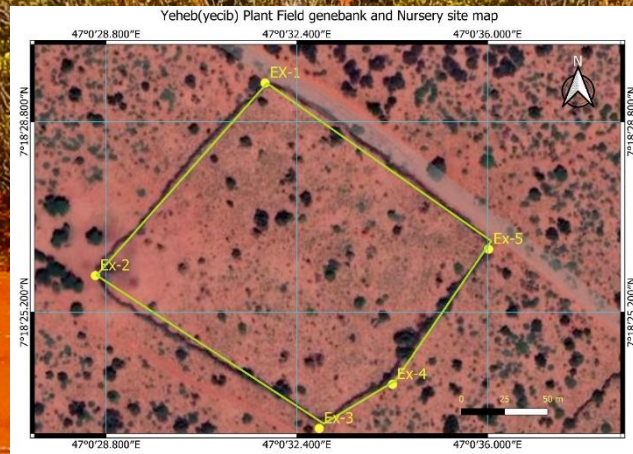
Participants of the workshop and capacity-building

Project Results (cont.)

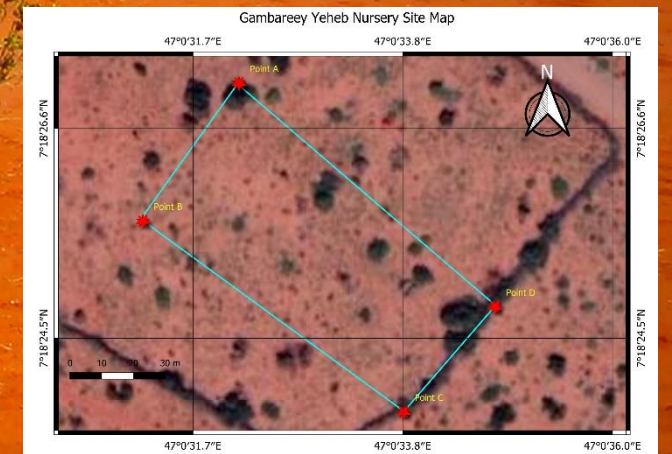
- 2. Mapping *Cordeauxia edulis*
- Research (Survey and inventory) was conducted
- GIS maps were created for the designated area of OECMs, field gene bank and nursery Site



In-situ/OECMs map



Field gene bank map



Nursery site map

Project Results(cont.)

- 3. In-situ conservation site/OECMs, Field gene bank, and Nursery establishment
 - 504 ha of a potential OECMs was established and uses as legally protected
 - OECMs brought under ecological restoration for policy support and uptake
 - MoU was signed to confirm the registration and official recognition by the government
 - MoU serve as a conservation law enforcement framework
 - Nursery was established and more than 170,000 seedlings of Yeheb were raised for the next plantation
 - The project website was created (<http://geo.portal.ebi.gov.et/sdm/activities/activities/>)

Project Results(cont.)

- MoU was signed among EBI, Bookh district and Gambareey Village Administration
- The MoU document was submitted to IPSI

A Memorandum of Understanding (MoU) for the joint protection of an in-situ site/field gene bank established for the conservation of endangered *Cordeauxia edulis* (Yeheb/Yeheb) species

1. The Contractors

This Agreement between the Ethiopian Biodiversity Institute, Bookh District, and Gambareey Village Administration of Dollo Zone of the Somali Region of Ethiopia (hereinafter referred to as the "Parties") for the establishment of in-situ and field gene bank sites in Bookh district of Ethiopia's Somali Region

2. Introduction

Ethiopia is one of the world's richest biodiversity countries. Strong and comprehensive conservation measures need to be implemented to ensure the sustainable use of these resources. Forest biodiversity is one of the country's biodiversity assets.

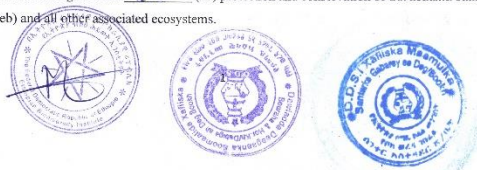
To protect this resource, the Ethiopian Biodiversity Institute has established various In-situ and Ex-situ Protection and Conservation Areas. The management of these sites and the conservation activities established in the future can achieve their objectives if implemented in ways that are inclusive and involve various stakeholders.

Accordingly, the in-situ and field gene bank protection and conservation areas were established by the joint agreement of the Parties referred to in No. 1 above in Somali Region; Dollo Zone; Bookh District Administration in Gambareey Village.

3. Purpose

This Agreement was entered into for the following reasons:

1. To protect and conserve the genetic resource of the threatened *Cordeauxia edulis* (Yeheb) tree/shrub species in Ethiopia through in-situ and field gene bank conservation.
2. To continually protect and conserve the habitat selected for the protection of the species
3. To develop and implement spatial management plans established for the in-situ soyha (ha), and or field gene bank 2.2 (ha) protection and conservation of *Cordeauxia edulis* (Yeheb) and all other associated ecosystems.



Therefore, to achieve the aforementioned objectives and carry out the management of the in-situ/field gene bank conservation, the Parties shall have the aforementioned duties and responsibilities.

4. The Duties and Responsibilities of the Parties

A. Ethiopian Biodiversity Institute

1. The institute, together with other stakeholders, selects and delineates the size and boundaries of in-situ and field gene bank protection and conservation areas.
2. The institute, in collaboration with other stakeholders, develops site management plans for in-situ and ex-situ conservation areas.
3. Provide awareness, education, and training to local communities and other stakeholders.
4. Conduct forest inventories and socio-economic surveys in collaboration with other stakeholders.
5. Develops, compiles, and distributes databases of in-situ and field gene bank-protected sites.
6. Undertake comprehensive monitoring and evaluation activities annually or bi-annually and five-yearly as required.

B. The Bookh District Administration

1. Carry out coordination activities regarding the overall management of environmental protection.
2. Monitor and evaluate in-situ and field gene bank conservation activities involving local and community stakeholders.
3. Provides appropriate solutions to problems and reports to the appropriate department when it is beyond its capacity.
4. In addition, the activities described in order No. A/1-6 above shall be carried out in accordance with the guidelines issued by the Ethiopian Biodiversity Institute.



C. The Gambareey Village Administration

1. The in-situ and field gene bank site established is protected by coordinating the village communities.
2. Report to the District Administration (Natural Resources Office) when problems beyond their capacity/control occur.
3. In addition, the Ethiopian Biodiversity Institute and other activities provided by the Bookh District Administration will help to implement the agreement.

5. Term of the Agreement

The parties may amend this Agreement by mutual consent at any time. This memorandum of understanding shall become effective on 19/11/2023 G.C when signed by the parties.

An attached 6 pages showing the size, boundary, latitude, longitude, and elevation above sea level of the in-situ and field gene bank protected area established is attached to this agreement document/memorandum of understanding.

1. Ethiopian Biodiversity Institute

Name of the Authority: Melesse Maryo Salama (PhD)
Director General

Signature: [Signature]

Date: 12-12-2023



2. The Bookh District Administration

Name of the Authority: Abdulkadir Mohamed Ali (Agriculture and NRD head)

Signature: [Signature]

Date: 30/11/2023



Lessons Learned

- **Lack of species action plans**, research, public awareness, and landscape approaches are contributing to biodiversity loss
- Integrating **research, action, and partnerships** - crucial for long-term biodiversity conservation goals
- **Financial support, Strengthening capacity and raising awareness** - plays a critical role in halting and reversing biodiversity loss
- **Livelihood diversification (economic or in-kind incentives)** crucial to improve biodiversity loss and climate change adaptation
- Designing **nature-based solutions (NbS)** - crucial in ecological restoration and conservation interventions

Monitoring of the long-term sustainability of the project

- 🚧 EBI will persist in its endeavors to conserve and monitor the project area
- 🚧 Research/reassessment (field surveys and inventories)
- 🚧 Participatory monitoring programs (citizen science)
- 🚧 Frequent communication with local governments
- 🚧 Strengthening institutional capacity and local communities
- 🚧 Update information over time
- 🚧 Document lesson learned, share and disseminate

Outreach & Communication

- IPSI website https://sdm.satoyama-initiative.org/projects/2022_ethiopia/
- Our Project website (<http://geo.portal.ebi.gov.et/sdm/activities/>) - data and information will be updated
- The project's outputs & lessons learned will be disseminated & communicated to stakeholders through various communication platforms

Message

- 🚩 Biodiversity is a shared resource that is everyone's responsibility to protect and live in harmony with nature
- 🚩 Nature does not have an own prosecutor, so we should act as its prosecutor

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Thank you very much for your attention!!

29 January 2024

Online