

Field Report on Yeheb Project



**Narrative Report on Yeheb Nut Transboundary Project Gambarey site and
Bokh, Lehel yu'ub, Warder, Galhamur Woredas of Dollo Zone, SRS**

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Predominantly Yeheb distributed field observation and delineations at lehel yu'ub and Bokh fields

1. Introduction and Background

Cordeauxia edulis (Fabaceae) commonly called Yeheb or Yicib (in Somali), is a small tree or shrub species endemic to Ethiopia and Somalia. The plant is hardy to drought and a source of food for both animals and humans. It is a multi-branched evergreen shrub that belongs to the family Fabaceae or Leguminosae (Ali, 1988). It is a multi-purpose plant where most parts of the plant are used and produces seeds known as yeheb-nut. The seeds are edible and eaten fresh, roasted, boiled or dried (Teketay and Eshete, 2004). The nut is the staple food for the local people, which is the same as food of rice and dates. (Kazmi, 1979). Additionally, due to its nutritious food, the local people in the borderline between Somalia and Ethiopia often prefer to as a stable food like maize and sorghum. The harvested nut is sold on the market and even exported to the coastal cities of Somalia as source of income to the local people (Miège and Miège, 1978, Bally, 1966, Mussa, 2010, Brink, 2006).

The yeheb plant species are almost disappearing from many areas due to overgrazing, over harvesting, cutting for construction and firewood, erosion and drought. Similarly, the size of the wild population of *C. edulis* in its natural habitat is reported to decline rapidly, owing to habitat fragmentation, overexploitation, a low rate of regeneration. This leads to poor, or no natural regeneration, in line with, the species has been classified as endangered species by the International Union for Conservation of Nature (IUCN, 1997, Hemming, 1966, Bally, 1966, Kazmi, 1979; Nerd et al, 1994).

The transboundary area between Ethiopia and Somaliland at borderline is called Haud where threatened yeheb plant is found and lies both the territory of Ethiopia and Somaliland. Haud plateau sloping southeast ward and spanning the northern Ethiopian-Somali border, southeast of the northern Somaliland highlands. It covers an area of about 25,000 square miles (64,750 square km) and slopes from about 4,000 feet (1,220 m) in the northwest to about 1,500 feet (450 m) in the southeast. It is a vast savannah of varying fertility and is a major wet-season grazing area for herds of camels, goats, and sheep kept by the Somali pastoralists. The Haud Plateau has few permanent wells (except for areas in the west) and is thus mostly uninhabited during the dry season (January to April). Some natural depressions, filled during the rainy season from April to June, provide fresh pasturage for as long as five to six months.

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Agriculture and livestock production is the largest sector in the area and live animals are a significant source of export income. The population around trans-boundary area between Ethiopia and Somaliland are nomadic and moves seasonally with the livestock depending on availability of pasture and water. The people rely on milk and meat as a source of staple food and cash income. The pastoralists are highly dependent on the environment and its natural resources and are threatened by droughts, political marginalization, food shortages and other land use practices.

1.1. Restoration Experience in Ethiopia

There are several interventions made to conserve and restore yeheb plant where is used to grow in Ethiopia especially somali region. Somali pastoral and agro pastoral research institute (SoRPARI) has been working restoration projects with community participation for the last ten years in Gamaberey village under bookh woreda near border line of somalia. The restoration efforts include establishing nursery sites to produce yeheb seedlings, establishment of protected large area enclosures of 50ha for conservation of endangered yeheb plants and provide capacity building for the community to protect and reduce further eradication of the plant. In addition to the restoration, attempts to establish the plant on an experimental scale of direct sowing the seed in the field have been carried out and successfully germinated but slow growth performance was experienced.

The people in the village are aware of Yehebs' usefulness and due to the diminishing number of plants, they have started to grow them and produce tree seedlings in small scale farms but mostly didn't survive due to lack water and poor conservation techniques.

Currently, due to low financial capacity of Somali research institute. restoration activities have been concentrated in one of the ten villages *Cordeauxia edulis* existed at gambarey village, where nurseries established for raising many seedlings and transplanted in a protected area enclosure to evaluate the growth performance and duration of its maturity. The rest of the villages previously mentioned has no intervention made due to lack of capacity and the plant is still diminishing through cutting, overgrazing, overharvesting, land degradation and drought. The restoration site is about 160km away from Somaliland border, the nearest district is buhodle, yu'ub yaboh and durugsi with a distance of 160km, 190km 215km respectively, where *Cordeauxia edulis* has been vanished many years ago from Somaliland side.

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Therefore, as part of the routine activity of the HoAYeheb Restoration Project there is a need to maintain the community awareness creation at Gambarey and nearby village communities at the same time refresh and strengthen the established community level Yeheb protection and conservation Task force and capacitate conservation site facilities (Store)

2. Objectives:

- ❖ The general objective is to Conserve and propagate of Yeheb plant species (*Cordia edulis*) and Raise more awareness at community and administrative level.

2.1 Specific Objectives

- Oversee functionality and networking of the Established Yeheb Protection and conservation Taskforce at Zonal, Woreda and Kebele community levels so as to address and strengthen any short comings of the committee
- Conduct consultative workshop and refresher training on Yeheb protection and conservation for the community
- Physically capacitate Gambarey site and collect the data on Yeheb growth performance in accord to the Parameters set
- Geographically and/or Spatially Map and exactly locate *cordoxia edulis* plant species distribution in Somali Region to bring the attention of the concerned stakeholders future protection and conservation interventions.
- Determine the optimal growth conditions for yeheb plant species in grow boxx, including parameters such as plant height, number of leaves, number of branches, and leaf length and width.
- Assess the survival rate of yeheb seedlings propagated in grow boxx compared to those grown using direct transplant methods or without grow box
- To protect and conserve, *Cordeauxix-eduls* (*yicib*) in ex-situ methods based on research and development intervals.

3. Scope of the Field Mission

3.1 Thematically: Yeib nut growth performance evaluation and conservation, Community and Administration Level Awareness Creation, Refresher Trainings on Yeheb conservation and

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protection, Data collection, Delineation of *Cordeauxia edulis* (Fabaceae) and capacitation of Gambarey site staff delivery and construction of transportation means and guardian shelter / site store.

3.2 Spatially: Gambarey research site, Bokh, Wardher, Galhamudh, Lehel yu' ub and Degahbur Woredas of Dollo and Jerer Zones

4. Methodologies Employed During the field visit

- Closely Examined the Established Taskforce collaboration at their respective level and stations (members from Zone, Woreda and kebele/ Community)
- Addressed the short comings uncovered if any by conducting participatory community workshop and refresher training
- Feedback the outcomes of the participatory and consultative workshop to the Zonal and Woreda Admins to play their role
- Constructing Shelter /store at Gambarey site from locally available materials and deliver Motorcycle
- Conduct Focus group discussion to gain the input and guidance of the local people
- Area observation and take coordinates to delineate the Yeheb boundaries
- Experimental filed data collection

4.1 Summary of the Implemented Activities During the Field trip

- As part of the Yeheb conservation effort both Zonal and Woreda Administration and community level Awareness creation was conducted through meetings consultative discussions and refresher trainings in different levels
- As per the parameters set Data collection was made on the growth performance of *Cordeauxia edulis* (Fabaceae) Yeheb Plant spp.
- To generate *Cordeauxia edulis* (Fabaceae) distribution map GPS coordinates have been taken from all the Yeheb predominantly distributed areas in the region.
- Transportation means have been delivered (Motor cycle) and on top of that Constructed field shelter / site store for Gambarey site staff to capacitate them.
- First observation was made and seedling growth performance was measured from both control and treatment field and data is ready for analysis

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- To map the area distribution of the species the first activity of ground data collection (control points) was done therefore followings are the detailed activities carried out in this field trip.

4.1.2. Established Taskforce Collaboration

During the field visit, we closely examined the collaboration of the Yeheb Protection and Conservation Taskforce at their respective levels and stations. The taskforce is made up of members from the Zone, Woreda, and Kebele/Community levels. We found that the collaboration among the taskforce members was effective, and they were working together to achieve the project objectives. However, we identified some shortcomings that needed to be addressed.

4.1.3. Participatory Community Workshop and Refresher Training

To address the shortcomings identified, we conducted a participatory community workshop and refresher training on Yeheb protection and conservation. The workshop was attended by community members, taskforce members, and other stakeholders. The workshop focused on the importance of Yeheb plant species, the threats facing the plant, and the measures that can be taken to conserve it. We also provided refresher training to the taskforce members on their roles and responsibilities.

4.1.4. Feedback to Zonal and Woreda Admins

We provided feedback on the outcomes of the participatory and consultative workshop to the Zonal and Woreda Administrators to play their role in addressing the challenges and strengthening the Yeheb Protection and Conservation Taskforce.

4.1.5. Shelter/Store Construction and Delivery of Motorcycle

to facilitate the work of the Gambarey research site staff, we constructed a shelter/store using locally available materials. We also delivered a motorcycle to the Gambarey research site staff to facilitate their movement and data collection.

4.1.6. Focus Group Discussion and Yeheb Boundaries Delineation

We conducted focus group discussions with the local people to gain their input and guidance on the Yeheb plant species. We also carried out area observation and took coordinates to delineate the Yeheb boundaries.

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The geographical and/or spatial mapping of the *Cordoxia edulis* plant species distribution in the Somali Region was also carried out to bring the attention of the concerned stakeholders to future protection and conservation interventions.

4.1.7. Collecting Parameters Data

To collect data on the growth performance of *Cordoxia edulis* (Fabaceae) Yeheb Plant species, we used a data collection method for plant species. We visited the Gambarey research site, which is one of the areas where the Yeheb plant species research is going on, we observe the plants and recorded their growth performance. We also collected data on the number of plants, leaves, branches their height and diameter, survival rate, as well as general health status of the Plants.

5. Accomplished Activities of in the Project So far

In the project, several critical activities have been accomplished, including awareness creation, seedling raising, experimental design and layout, soil sample collection and analysis, and data collection and interpretation.

Awareness creation was conducted through community meetings, workshops, and awareness creation programs. The project team engaged with the local community and stakeholders to create awareness about the project's goals, objectives, and expected outcomes. The awareness creation activities were successful in educating the local community about the importance of the yeheb nut, and the community showed enthusiasm and support for the project.

Seedling raising was also accomplished successfully. The project team raised yeheb nut seedlings in a controlled environment until they were strong enough to be transplanted into the field. The seedlings were grown in nurseries using specialized knowledge and skills to ensure their health and strength. The successful raising of the seedlings was essential for establishing a healthy and robust yeheb nut population for the project.

Experimental design and layout were also accomplished successfully. The project team planned and set up the experiment in a way that ensured accurate and reliable data collection. The experimental design considered factors such as the number of replicates, treatment groups, and controls. The layout was optimized for efficient resource use, such as land, labor, and equipment. Proper experimental design and layout ensured that the results obtained were valid and reliable.

Soil sample collection and analysis were also accomplished successfully. The project team collected soil samples from various locations to analyze their physical and chemical properties,

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such as pH, nutrient content, and organic matter. The results of the analysis helped in determining the soil's suitability for yeheb nut cultivation and the necessary amendments required to improve soil fertility.

Data collection and interpretation were also accomplished successfully. The project team systematically collected and recorded data using appropriate techniques and methods. The data collected were analyzed using statistical software to determine the significance of the results. The interpretation of the data helped in drawing conclusions and making informed decisions. Accurate data collection and interpretation were crucial in evaluating project outcomes and determining future directions.

5. Important lessons learned:

During our stay and as a result of SoRPARI interventions (community orientations, creation of Yeheb protection and conservation task force at deferent levels “kebele woreda and Zonal” awareness creation workshops and trainings besides the routine research activities) most of the surrounding kebeles other than our intervention kebeles poses excessive deforestation specially the already endangered cordoxia edulis where deforestation of this plant species is banned in and around SoRPARI intervention kebeles unlike the neighboring ones Eg. One can practically observe how Gambarey center cordoxia edulis is protected, conserved and restored.

So we can learn here the more community is involved and empowered the more interventions sustains even beyond the project lifespan.

6. Way forward

- A Fresh and vigorously grown Yeheb nut Seed is to be purchased and replanted and sowed at Degahbur and Gabridahar nurseries as part of the research project of Yeheb.
- Provide seed to Somali land based local NGO of Barwako as part of the HoA Project aim and networkings between the implementing partners.
- Obtaining required material (high resolution satellite images) for the mapping process
- Processing and analysis of the remotely sensed data (satellite data) and cross check with the ground collected data
- Experience sharing with Ethiopian remote sensing institute

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- Generation of the area distribution map of the yicib species

7. Filed Pictorial Show

7.1 Field Data Collection Pics (growth performance and flower and fruiting stage under d/t conditions)



Yeheb in the research site at flowering stage

6.1.2 Cordeauxia edulis dominated area field observations and GPS coordinate points taking



6.1.3 FGDs with conservation and protection Task force awareness creations and Consultative Discussions with Woreda and Zonal Administrations



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6.1.4. Physically capacitation of Gambarey research site (Site shelter and Motorcycle)

