

**WORKSHOP PROCEEDINGS REPORT**

**On**

**THE SATOYAMA DEVELOPMENT MECHANISM (SDM) 2022 PROJECT:**

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

**Held on February 18-19, 2023**

**in**

**Daka Hotel, Bishoftu, Oromia, Ethiopia**

**Compiled by: Mr. Dese Yadeta**

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**EBI, Ethiopia**



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## LIST OF ABBREVIATIONS AND ACRONYMS

EBI	Ethiopian Biodiversity Institute
IUCN	International Union for Conservation of Nature
Nbs	Nature-based Solutions
SDM	Satoyama Development Mechanism



## SPEAKERS



**Mr. Dese Yadeta** is the SDM 2022 Project Coordinator and Focal Contact Point at the Ethiopian Biodiversity Institute (EBI). He is a Researcher in Natural Resources Economics at EBI. He has an academic background in Master of Forestry Economics and Management from Beijing Forestry University, Beijing, China. His area of research focuses on analysis of the value of ecosystem services, environmental economics, biodiversity conservation, capacity development, and raising awareness of the importance of species conservation, etc.



**Dr. Mussa Mohammed**, Jigjiga University President Office Directorate Director. He has extensive research experience on the *Cordeauxia edulis* and did his Doctor of Philosophy on *Cordeauxia edulis* (Yeheb): resource status, utilization and management in Ethiopia from the University of Wales, Bangor, UK.

## EXECUTIVE SUMMARY

Following the online inception workshop delivered by the SDM Secretariat on January 30, 2023, the Ethiopian Biodiversity Institute (EBI) has organized a 2-day launching workshop training on the Satoyama Development Mechanism (SDM) 2022 Project on the “**Restoration and conservation of globally endangered *Cordeauxia edulis* woody species in the drylands of Ethiopia’s Somali Region**” was held at Daka Hotel, Bishoftu, Ethiopia on 18-19 February 2023.

The restoration and conservation project was supported by the Satoyama Initiative through the Satoyama Development Mechanism (SDM) Fund.

The workshop brought together more than 70 multidisciplinary stakeholder participants including researchers, experts, soil scientists, botanists, ecologists, microbiologists, Geneticists, GIS specialists, livestock experts, academic professionals, local communities, and federal and regional state leaders.

The objectives of the workshop were to discuss and understand the objectives of the SDM project, raise awareness on the overviews of the planned project activities, project timelines, and project budget amounts, and facilitate its implementation. The workshop helped to facilitate its implementation and to raise awareness of the potential role that each stakeholder could play in the implementation of the project.

The workshop discussion aims to highlight the linkages between biodiversity health and climate, and the need to stop biodiversity loss through direct species conservation, emphasize the importance of applying the precautionary principle in nature-based and other climate adaptation solutions, coupled with better scientific understanding of ecosystems and ecological structures, and highlight the importance of local actors in conservation to protect biodiverse rich ecosystems crucial to addressing the combined crisis of biodiversity loss and climate change.

The SDM project is the first-ever project focused on the restoration and conservation of threatened *Cordeauxia edulis* species in the drylands of the Somali Region of Ethiopia to improve and upgrade its conservation status.

The workshop was opened with a keynote speech and welcome address delivered to the workshop participants by Dr. Melesse Maryo, Director General of the Ethiopian Biodiversity Institute (EBI). In his opening remarks, Dr. Melesse welcomed the participants and congratulated Mr. Dese Yadeta who initiated the project and organized the workshop. Following the opening remarks, Dr. Feleke Woldeyes, Deputy Director General of the Ethiopian Biodiversity Institute (EBI) also addressed the project launching workshop.



**Two presentations were presented at the SDM Project launching workshop:**

The first presentation was presented by Mr Dese Yadeta on an overview of the SDM project, its background, objectives, rationale, timeline, key planned activities, budget amount, project output, and project stakeholders and their roles. Under this session, about SDM, what is “Satoyama?,” and scope and SDM priority areas were presented. Moreover, the concepts and importance of nature-based solutions (NbS), and its principles and global standards for NbS were presented.

The second presentation was presented by Dr. Mussa Mohammed on the current conservation status, trends, utilization, potential threats, and management situations of *Cordeauxia edulis* (Yeheb) in Ethiopia.

In closing remarks and way forward, Dr. Melesse and Dr. Feleke thanked all individuals involved in organizing the forum, the facilitators, the participants of the workshop, and the Satoyama Development Mechanism (SDM) Project.



## 1. INTRODUCTION

The Satoyama Development Mechanism (SDM) fund project supports the threatened target species (*Cordeauxia edulis*) located in the southeastern Somali Region of Ethiopia. The specific location of the geographical area of the project is located in the Bookh district of the Somali Region.

*Cordeauxia edulis* commonly called Yeheb is a small evergreen tree/shrub species endemic to Ethiopia and Somalia. In Ethiopia, *Cordeauxia edulis* is confined only to the Bookh district in the southeastern Somali Region, where it thrives between 400 and 500 meters above sea level in areas of arid and moisture-deficient. *Cordeauxia edulis* is a drought-resilient and climate-smart wild crop with potential for ecological function, food security, and livelihood income.

However, the population numbers of *Cordeauxia edulis* are decreasing, its natural regeneration is negligible, and the quality of its habitat is declining due to multiple combined threats such as habitat loss, overexploitation, unsustainable use, overgrazing, prolonged drought, lack of on-the-ground conservation interventions, lack of land management systems, and lack of evidence-based species conservation action plans. Currently, *Cordeauxia edulis* has vanished from Somalia and is found only in the Bookh district, Somali Region of Ethiopia (Ismail et al., 2015). *Cordeauxia edulis* is currently recognized as a globally endangered species on the IUCN Red List of Threatened Species (Beech et al., 2021).

The overall objective of the project was to restore and conserve globally endangered *Cordeauxia edulis* woody species in the drylands of Ethiopia's Somali Region.

To overcome these threats, the following project activities were implemented: (1) Capacity-building training and awareness-raising; (2) Mapping of *Cordeauxia edulis* distribution, ecosystem services (socio-ecological importance), and threats; (3) In-situ, field gene bank, and nursery establishment; (4) Seed collection and planting tree seedlings.



## 2. OPENING PROGRAM

### Welcome Remarks



**Dr. Melesse Maryo,**

**Director General**

**Ethiopian Biodiversity Institute (EBI)**

In his welcome remarks, Dr. Melesse Maryo delivered the welcome address and keynote remarks to the workshop participants. In his opening remarks, Dr. Melesse congratulated Mr. Dese Yadeta who initiated the project and organized the workshop. In his keynote address, Dr. Melesse noted the significance of the *Cordeauxia edulis* and its many socio-economic and ecological benefits, and suggested that in the future the *Cordeauxia edulis* could generate income for the country and local communities. This can only be ensured if strict protection and conservation are taken. Dr. Melesse highlighted that the mandate of the Ethiopian Biodiversity Institute is to conserve and restore Ethiopia's endemic, economically important, and endangered/threatened flora and fauna species. Dr. Melesse highlighted that multidisciplinary research should be needed on *Cordeauxia edulis* species adaptation to similar environments, distribution, seed condition, and storage behavior. Dr. Melesse acknowledged how the efforts of such a project could inspire other researchers and emphasized that the initiative is a problem-solver. He also expressed his gratitude for the financial support provided by the Satoyama Development Mechanism (SDM) Project.



**Dr. Feleke Woldeyes,**

**Deputy Director General**

**Ethiopian Biodiversity Institute (EBI)**

Following the opening remarks, Dr. Feleke also addressed the project launching workshop. He states that the SDM fund is a great opportunity for our institute and the conservation of *Cordeauxia edulis*. Dr. Feleke stressed the importance of strengthening cooperation with Jigjiga University and other stakeholders to protect the *Cordeauxia edulis* species and associated ecosystems.

### 3. PRESENTATION

Two presentations were presented at the SDM Project launching workshop:

**3.1 PRESENTATION SESSION 1:** Introduction to the Satoyama Development Mechanism (SDM) 2022 Project on “Restoration and conservation of globally endangered *Cordeauxia edulis* woody species in the drylands of Ethiopia’s Somali Region”

**By Mr. Dese Yadeta, the SDM Project Coordinator and Focal Contact Point at EBI, and Researcher**

In his presentation, Mr. Dese presented a summary of the Satoyama Development Mechanism (SDM), the Satoyama term, the vision and mission of SDM, the scope of SDM, and the priority areas of SDM. Next, he presented an overview of the Satoyama Development Mechanism (SDM) project, project objectives and timelines, funding amount, planned project activities and deliverables, project stakeholders and their roles, project location, current conservation status and trends of *Cordeauxia edulis*, and potential threat to *Cordeauxia edulis* and its habitat. Furthermore, he presented the concepts and importance of nature-based solutions (NbS) in biodiversity conservation and reducing societal challenges. Finally, he acknowledged the Satoyama Initiative for its financial support through the Satoyama Development Mechanism (SDM) Fund and the workshop participants for attending and sharing their thoughts on the planned project.

**3.2 PRESENTATION SESSION 2:** Introduction to current conservation status, trends, utilization, potential threats, and management scenarios of *Cordeauxia edulis* (Yeheb) in Ethiopia

**By Dr. Mussa Mohammed, Jigjiga University President Office Directorate Director**

In his presentation, Dr. Mussa presented the current resource status of *Cordeauxia edulis* (Yeheb), utilization, management, challenges, and threats that this species and associated habitat face. In his presentation, Dr. Mussa briefly explained the socio-ecological importance of *Cordeauxia edulis* to the livelihoods of dryland pastoralists. Local people eat *Cordeauxia edulis* seeds raw, roasted, boiled, and in soup form. He mentioned that *Cordeauxia edulis* is a drought-resilient wild crop with the potential for food security. In his presentation, Dr. Musa also highlighted the gaps in comprehensive research on *Cordeauxia edulis*. He added that *Cordeauxia edulis* and its habitat species are under anthropogenic and natural pressure. He urged that every government organization should be involved in efforts to prevent the extinction of the *Cordeauxia edulis* species. He warned that if immediate action is not taken, the plant could become extinct.



#### 4. OPEN FORUM and GENERAL DISCUSSION

Following the topics presented, the forum was opened and chaired by Dr. Melesse Maryo and Dr. Feleke Woldeyes.



**Dr. Feleke Woldeyes** (left), Deputy Director General of Ethiopian Biodiversity Institute (EBI), and **Dr. Melesse Maryo** (right) Director General of Ethiopian Biodiversity Institute (EBI)

Regarding the project and both presentations, the workshop training participants discussed and raised various ideas, questions, and suggestions, and suggested possible ways of achieving the project objectives and planned activities. Workshop participants expressed their views on the importance of the planned project for the restoration and conservation of the globally threatened *Cordeauxia edulis* and the various issues presented in the presentations. The workshop participants also discussed ways to restore, protect, and develop *Cordeauxia edulis* and its habitat in the future, and set future directions.

## 5. OUTPUT OF THE WORKSHOP

- The workshop participants understood an overview of the planned project (the project's objectives, key planned activities, timeline, budget amount, and geographical location where the project was proposed).
- Participants' knowledge was improved relating to *Cordeauxia edulis*, its values, socio-ecological function, current conservation status and trends, challenges, and the consequences of its loss.
- The workshop training raised awareness among stakeholders drawn from multi-disciplinary sectors on the importance of biodiversity conservation and living in harmony with nature.
- Participants of the workshop understood the concept of nature-based solutions (NbS), its principles and global standards, and its importance in reducing societal challenges.
- The workshop provided capacity-building training knowledge on how to effectively use and apply nature-based solutions in species conservation.
- Participants of the workshop learned about the contribution of the *Cordeauxia edulis* species to social, economic, and ecological functioning for the local pastoral communities.

## 6. RECOMMENDATIONS

The following conservation actions were suggested by workshop participants to mitigate the problems currently faced by *Cordeauxia edulis* and associated habitats:

### 6.1 RESEARCH and INVENTORY

- The need for comprehensive research on *Cordeauxia edulis* was highlighted during the workshop training
- Studies should be conducted to monitor the use of this species in the region.
- Scientific research should be conducted to map *Cordeauxia edulis* resources, generate evidence-based conservation interventions, and ensure that the best available data, information, and knowledge are accessible to decision-makers, practitioners, and the public to guide effective and equitable governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, and knowledge management
- A multidisciplinary research approach should be required to adapt the species *Cordeauxia edulis* to similar environments, and its distribution, species status, and storage behaviors.
- The importance of soil analysis to identify the type of soil conditions necessary for growing *Cordeauxia edulis* was highlighted so that adaptations can be done in other similar agroecologies. In addition, the importance of testing the soil bacterial species associated with the growth of *Cordeauxia edulis* at the laboratory level was also recommended by the participants during the workshop discussions.



## 6.2 CAPACITY DEVELOPMENT, AWARENESS, AND EDUCATION PROGRAMME

- Strengthening national, regional, and local institutions' capacities.
- Capacity-building, awareness-raising, and education programmes should be launched for local communities to increase the knowledge of the rarity of this plant and to encourage sustainable harvesting of the seeds and plants.
- Workshop participants highlighted the importance of raising awareness among stakeholders and local communities on the conservation and sustainable use of *Cordeauxia edulis*
- Strengthen the capacity of local communities in conservation through training and awareness-raising
- Workshop participants suggested that changing local communities' perceptions of restoration and conservation, the importance of species conservation, and the consequences of biodiversity loss on human health and the planet would be beneficial
- Local community understanding of *Cordeauxia edulis* species ownership needs to be improved
- Facilitating the sharing of knowledge and best practices among existing national and local science-policy platforms

## 6.3 ACTIONS

- Participants urged everyone to take immediate action to protect the threatened species from extinction and live in harmony with nature.
- Workshop participants highlighted that actions such as creating alternative livelihoods for local communities and strengthening law enforcement at the local level have been effective in reversing threatened species and their associated habitats.
- The workshop participants urged the regional government to emphasize the need to take action on restoration and conservation to maximize the benefits associated with the *Cordeauxia edulis* species.
- The Somali Regional government should also adopt a large-scale *Cordeauxia edulis* conservation initiative
- Because the *Cordeauxia edulis* species is rare and unique, conservation efforts should be encouraged
- They added that local elders and religious leaders should be involved to strengthen conservation efforts
- Participants commended strengthening area-based conservation measures such as in-situ conservation and planting of trees focused on areas where the plant grows naturally
- The workshop participants called for urgent action in reversing globally threatened *Cordeauxia edulis* and associated ecosystems, and a holistic approach is needed to achieve long-term sustainable conservation for future benefits
- The existing populations should be protected and sustainable harvesting is necessary to ensure the protection of this species
- Plantations could be created as a sustainable source of seeds



- The workshop participants discussed the importance of promoting market-based mechanisms and value chains to support sustainable production and maximize the benefits of *Cordeauxia edulis* for local communities
- Community involvement is vital in the preservation of an endangered species
- A conservation plan and long-term population monitoring program are recommended

#### 6.4 COLLABORATIVE ACTIVITIES

- Workshop participants recommended broader collaborative research regarding *Cordeauxia edulis* on future development and generating evidence-based scientific data for conservation intervention, decision-makers, and policy adoption
  - Workshop participants stressed the importance of all organizations helping and supporting the achievement of the project
  - Strengthen cooperation with the Jigjiga University and other stakeholders to protect the *Cordeauxia edulis* species and its associated ecosystems
  - Workshop participants emphasized the importance of collaborative activities between EBI and Jigjiga University to ensure the conservation of threatened species and associated ecosystems in the Somali Region
  - Participants were advised to hold a joint forum in the future
  - Workshop participants suggested that the support of all local political parties is important and should be involved in mobilizing local community efforts for the long-term conservation of the *Cordeauxia edulis* species and associated habitats
- Community involvement and close collaboration with the government remains key for sustained success

#### 6.5 ADAPTATION TRIAL

- Using GIS, species distribution model interventions are suggested for future adaptation of *Cordeauxia edulis* in other similar agro-ecologies to increase their population size
- Workshop participants highlighted the importance of future adaptation experimental trials in similar agro-ecologies to save *Coredeauxia edulis* from extinction
- Future adaptation experimental studies of *Cordeauxia edulis* should be conducted in collaboration under similar soil and environmental conditions
- Frequent communication with local governments on monitoring and evaluation
- Workshop participants suggested the need to propose other projects to raise funds to continue the conservation of *Cordeauxia edulis* and other ecosystems in the future
- Participants recommended that the Somali government and Jigjiga University should contribute financially to stop the eradication of *Cordeauxia edulis* species and work on its large-scale conservation
- Participants suggested the need for efforts to cultivate *Cordeauxia edulis* through irrigation development in the future



- Seeds of *Cordeauxia edulis* species should be preserved in a gene bank to preserve its genetic resources for future scientific research, education, and demonstration

## 7. CLOSING REMARKS AND WAY FORWARD

In closing remarks and way forward, Dr. Melesse and Dr. Feleke thanked all individuals involved in organizing the forum, the facilitators, the participants of the workshop, and the Satoyama Development Mechanism (SDM) Project. They stressed the importance of collaborative work to strengthen communication and awareness creation regarding the threatened *Cordeauxia edulis* and its associated ecosystem conservation. They both urged workshop participants and project stakeholders to support and that everyone should take responsibility for the conservation of the *Cordeauxia edulis* species and associated habitat. Further, Dr Melesse reminded frequent communication with local governments on long-term monitoring and evaluation. Finally, on day two, the workshop's events were officially closed.



## 8. ACKNOWLEDGEMENTS

This project was undertaken with the support of The Satoyama Development Mechanism (SDM) 2022 Fund. We gratefully acknowledge the International Partnership for the Satoyama Initiative (IPSI) for financial support through the SDM fund (Project Budget ID: C111177).



APPENDIX: PHOTOS TAKEN FROM THE WORKSHOP



Figure 1: A group photo of workshop participants (Photo Credit: Dese Yadeta)



Figure 2: Group discussion on presented topics





**Figure 3:** A general discussion of the overview of the project and the topics presented



**Figure 4:** Presentation on the status of *Cordeauxia edulis* by Dr. Mussa Mohammed, Jigjiga University President Office Directorate Director