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MINISTRY OF AGRICULTURE

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ETH-SOIL

DBFZ

Natural Resource Development State Minister

Soil Resource Development Lead Executive

Summary Report for 3rd Soil Symposium 2025 in Ethiopia

March, 2025

Addis Ababa/Ethiopia

1. Introduction

Agriculture, as the backbone of the Ethiopian economy, is vital for providing food to over 120 million people and generating raw materials for industries. This sector plays a significant role in employment generation, accounting for more than 72% of job creation in the country. To sustain and enhance agricultural productivity, it is essential to utilize all means of production, including fertile soils, improved crop varieties, effective fertilizers, agricultural mechanization, and adequate water resources. From the factors of production, soil resource is a crucial element that needs different development sectors to work on its health and fertility managements.

With the collaboration of Ministry of Agriculture and DBFZ/ Eth Soil, the 3rd Soil Symposium 2025 was conducted in Adama City starting from March 6th, brought together a diverse group of stakeholders to address the critical issues surrounding soil health and fertility in Ethiopia. The main objective of symposium is to create forum for the soil scientists and soil related fields to discuss and synthesis soil health and fertility improvement technologies for future action.

The 3rd Soil Symposium 2025 encompassed varies sector working on soil health and fertility improvement such as Ministry of Agriculture, higher learning institutes, National and regional agricultural research institutes, Regional Bureaus of Agriculture, Eth-Soil project staffs, relevant NGOs and projects, etc. The participated institutes and organizations clearly presented soil health and fertility improvement technologies, approaches, new findings, and explanations via opening speech, key note speech, panel discussion and general discussion chaired by leaders and Authorities of Ministry of Agriculture.

A key highlight of the symposium was the introduction of biochar-based fertilizers by the DBFZ/Eth-Soil project, which has been validated at institutions like Jimma University, Hawassa University, and the Oromia Bureau of Agriculture. Moreover, acid soil management strategies, organic fertilizer application methods such as vermicompost, biofertilizer, bone char preparation and application systems, and ISFM practices. Despite its potential, the dissemination of this technology has been limited. The symposium provided a platform for discussing solutions to these challenges and establishing a roadmap for effectively sharing agricultural innovations with end-

users. As we reflect on the insights gained and collaborations formed over these two days, we are optimistic about a future where soil health and agricultural productivity are significantly improved across Ethiopia.

2. Objective of the symposium

The main objective of conducting the soil conference/symposium is to create forum for the soil scientists and soil related fields to discuss and synthesis soil health and fertility improvement technologies for future action.

The specific objectives are:

- To raise awareness about the critical role of biochar-based fertilizer application in improving soil health and fertility,
- To enhance collaboration among Ministry of Agriculture, researchers, universities, development partners and policy makers in supporting soil resource Development interventions.
- To discuss how to advocate and influence policy makers the implications of improvement and management of soil on agricultural and environmental policies.
- To facilitate knowledge exchange through sharing of experience, research findings and best practices among diverse stakeholders and panel discussion.

3. Methodology

In conducting the soil symposium/conference, different approaches and strategies were employed.

I. Interactive arrangements were made for the following activities
   - Keynote speeches
   - Poster presentations
   - Panel discussions
   - Presentations on best practices, sharing experiences, research findings ..
   - Virtual presentations
   - General discussions

II. Rapporteur(s) and data collectors were assigned who summarize and report on the discussions, findings, and outcomes of a conference,

III. Reporters and photographers were assigned that prepare a comprehensive report summarizing key discussions, outcomes, and recommendations for future actions.

IV. The way forward and closing remark were made by higher officials

4. Key Themes and Topics

The 3rd soil Symposium 2025 was celebrated by the motto of "**Health Soil for Our Prosperity**" where this slogan was used while the national water shade management campaign was launched in March 2025. In the 3rd soil symposium 2025, so many different soil health and fertility improvement issues were raised. The discussions were focused on soil resource development technologies and approaches to be implemented and followed in the future. Invaluable experiences were presented that will support the interactive approach among different partners, stakeholders, governments and private sectors with the main theme of;

- Soil health and fertility improvement approach using ISFM practices and BBF emerging technologies in the Ethiopian agricultural extension system
- Sustainable agricultural development approach using soil resource restoration focusing on biochar-based fertilizer for minimizing the use of inorganic fertilizer at least by half of the current application rate
- Modernization of soil resource data handling system; data-based soil health and fertility improvement intervention using georeferenced data, tools and applications
- Impacts of biochar on C sequestration, soil quality, crop yield, and GHG emission

5. Presentations and Keynote Speakers

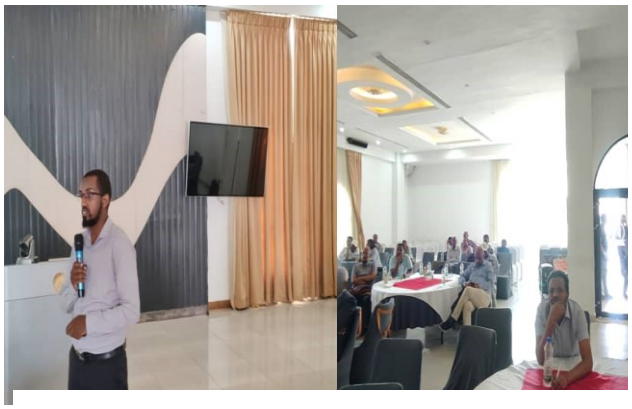
- The symposium was commenced by the welcome address and speech on soil resource development situation of the country by Mr. Lire Abiyo; Lead Executive of Soil Resource development under Natural resource development sector. Following the welcoming address, HE. Professor Eyasu Elias was invited and delivered official opening speech noted as bellow.
- Highlighted that soil resource degradation increases time after time and the government of Ethiopia allocated 1% from the annual budget
- Moreover, different development partners have been supporting the country to rehabilitate and restore our soil . Among them isthe ETH-Soil Project that has introduced an innovative approach to address r soil health/soil fertility problems. Through the energetic and material use of agricultural residues, and bio-fertilizers derived from pyrolysis, and the integration

of biochar-based soil amendments, this initiative is set to revolutionize soil management practices in Ethiopia.

- This symposium reflects our government's commitment to an evidence-based and multidisciplinary approach to addressing soil health challenges. We must, therefore, work together to bridge the gap between research, policy, and practice, ensuring that our agricultural systems remain productive, resilient, and sustainable. If we succeed in preserving our soil's health and fertility, we can secure the delicate balance of food, water, energy, carbon, and biodiversity, ultimately safeguarding the well-being of future generations.
- HE extended his gratitude to DBFZ/Eth Soil project for the introduction of biochar-based fertilizer formulations is a promising strategy that we are exploring. This not only enhances soil fertility but also contributes to carbon sequestration, playing a role in climate change mitigation. Furthermore, finally he quoted that the BBF technology will be actively incorporated in to soil issues and the Ministry will provide support for the popularization of this technologies through incorporating in to agricultural extension system after further demonstration and research results.
- After the opening speech, various presentations were displayed and discussed on each point; Introduction of the ETH-Soil project by Kerstin (Video online presentation) for the audience was made that clarify the project objectives and goals.
- The presentations and keynote speeches were by soil scientists and agronomists focused on Biochar biomass assessment, different methods of biochar production and application, BBF formulation, biochar nutrient loading mechanisms, research findings for BBF rate of application, Artisan C-Sink, Other organic fertilizer like vermicompost, Biofertilizer production and application were presented and discussed. Moreover, Geo-Information in the Bio-Resource Nexus: Evaluation and Visualization of Regional Biomass Distribution to Support Decision Making, Spatial Analysis of Fecal Waste Potential and Barriers to Adopt as Resource in Oromia, Soil acidity management road map for Amhara region, Integrated Management of Acid Soils, Ethio NSIS, from Data to Action: Integrated Organic Amendments in Soil Health Decision Support Tool (DST) for Ethiopia were the main topics presented in the soil symposium.

❖ Panel discussion and poster presentation on BBF, Organic fertilizer application and generally on soil health and fertility improvement technologies were also among the important presentations during the soil symposium event. Participant panelists were assigned from universities and agricultural research institutes.


Opening speech delivered by HE Prof Eyasu Elias State Minister of Natural Resource Development sector




Presentation from Jimma University (left) and Haramaya University (right)


Presentation from Eth Soil (left) and from regional research Institutes (right)

6. Outcome from the 3rd soil Symposium 2025

- Increased knowledge among participants about soil management practices in general and BBF technology in particular
- New collaborations established among stake holders differently involved in soil resource development interventions
- Awareness was created on biochar-based fertilizer application in improving soil health and fertility assisting crop production and productivity
- Valuable Experience and best practices were shared among the participants conducive for future popularization.
- Soil health and fertility improvement Technologies/ best Practices identified for demonstrations and disseminations to incorporate in the Agricultural extension system
- National Soil Information System (NSIS) and Soil health Decision Tools (DST) for Ethiopia were learnt and identify.

7. The way forward and action plan for implementation

Upon general discussion by the participants and closing remark by the Natural Resource Development sector, Dr. Mitiku Ayele and Soil Resource Development Lead Executive, the following consensus reached and direction given;

- BBF is an additional option in mitigating soil acidity and increasing soil organic carbon so that further research should be done to determine the correct rate of application.
- Based on the previous research findings, national technical manual should be developed for BBF production, application, and distribution system
- The effort of German Government to introduce the BBF technology at the time when the price of inorganic fertilizer increased is appreciated and thankful and hope the ETH Soil project will continue supporting the dissemination of this technology.
- All stakeholders involving in soil health and fertility improvement intervention should work together in collaborative approach to save our soils.

General discussion and closing remark chaired by Dr. Mitiku Ayele and Mr. Lire Abiyo

8. Conclusion

Soil degradation and soil organic carbon depletion increases due to misuse of farm land, total removal of crop residues, use of inappropriate soil acidifying nitrogen fertilizers and poor cropping system. Different organizations have been trying to restore the soil even though the situation can't be improved. This may be from the intervention of stakeholders in unorganized way.

The 3rd soil symposium 2025 brings a one step forward to bring different soil sectors together to discuss on this worsening issues. The Eth Soil through DBFZ project introduces a very important BBF technology studying the importance of it in collaboration with universities and research institutes to incorporate in to agricultural extension system.

These relevant stake holders working with DBFZ/Eth Soil came together and presented the result of biochar and BBF technology which is promising for our soils. From the symposium discussion; presentations, panel discussions and poster presentation on the significant result of BBF, Vermicompost, and other organic fertilizer, nationally executable BBf manual will be developed for further technology popularization.

From this symposium our country gets the new insight of biochar-based fertilizer technology to restore the soil