Training Course on Building Soil Organic Matter for Enhanced Productivity

Professional Development Training Course Outline

Category	Agriculture	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Soil organic matter (SOM) is the cornerstone of resilient, productive, and sustainable agriculture. With increasing challenges like soil degradation, climate change, and reduced crop yields, the importance of enhancing soil health through organic matter management has never been greater. Training Course on Building Soil Organic Matter for Enhanced Productivity equips participants with cutting-edge knowledge and hands-on skills in building and maintaining SOM to boost soil fertility, water retention, microbial activity, and long-term agricultural productivity.

Designed for agricultural professionals, development practitioners, and climate-smart agriculture advocates, this program integrates best practices in composting, cover cropping, conservation tillage, carbon sequestration, and integrated nutrient management. Participants will explore real-world case studies, learn through interactive modules, and apply strategic methods that drive sustainable land restoration and climate-resilient farming systems.

Programme Curriculum

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methods that drive sustainable land restoration and climate-resilient farming systems.

Course Objectives

1. Understand the role of soil organic matter in soil health and crop productivity.
2. Analyze the impact of SOM on climate resilience and carbon sequestration.
3. Apply sustainable land management practices to increase SOM levels.
4. Demonstrate composting techniques for enhancing soil fertility.
5. Integrate agroecological principles into SOM improvement strategies.
6. Utilize cover cropping and green manure systems for biomass buildup.
7. Employ reduced tillage and mulching to prevent SOM depletion.
8. Identify SOM indicators for assessing soil quality.
9. Implement site-specific SOM management plans.
10. Evaluate the economic and ecological benefits of SOM enhancement.
11. Utilize digital tools and data for SOM mapping and monitoring.
12. Facilitate farmer training on SOM-building practices.
13. Promote regenerative agriculture for climate-smart soil systems.

Target Audiences

1. Agricultural extension officers
2. Soil scientists and agronomists
3. Environmental and climate change professionals
4. Agroecology and permaculture practitioners
5. Development project managers
6. Organic and regenerative farmers
7. University researchers and students
8. NGO and community development facilitators

Course Duration: 10 days

Course Modules

Module 1: Introduction to Soil Organic Matter

- Definition and components of SOM
- Functions of SOM in soil ecosystems
- Factors influencing SOM levels
- Global SOM trends and concerns
- Relevance to climate change
- *Case Study: SOM Decline in Sub-Saharan Africa*

Module 2: Composting for Soil Health

- Types of compost and raw materials
- Aerobic vs anaerobic composting
- Composting processes and microbial activity
- Application rates and techniques
- Nutrient content and quality assessment
- *Case Study: Community Composting in Kenya*

Module 3: Cover Crops and Green Manure Systems

- Types of cover crops
- Role in nitrogen fixation and SOM increase

- Planting and termination practices
- Seasonal integration strategies
- Benefits for weed and pest control
- *Case Study: Leguminous Cover Crops in Brazil*

Module 4: Conservation Tillage Practices

- Types of tillage systems
- Impact on SOM retention
- Residue management
- Equipment and cost considerations
- Tillage and erosion control
- *Case Study: No-till Systems in the U.S. Midwest*

Module 5: Mulching and Crop Residue Management

- Organic mulch materials
- Soil moisture and temperature regulation
- Effects on microbial biomass
- Timing and layering techniques
- Integration into cropping systems
- *Case Study: Rice Straw Mulching in Asia*

Module 6: Agroforestry and SOM Accumulation

- Trees in farming systems
- Root biomass contribution to SOM
- Shading and microclimate effects
- Intercropping strategies
- Long-term productivity benefits
- *Case Study: Agroforestry in the Sahel*

Module 7: Livestock Integration and Manure Management

- Nutrient cycling with livestock
- Types of animal manure and handling
- Application methods and timing
- Composting manure
- Grazing systems and SOM impacts
- *Case Study: Integrated Crop-Livestock Systems in Ethiopia*

Module 8: Biochar and Soil Carbon Stability

- Biochar production techniques
- Soil amendment benefits
- Interactions with SOM
- Longevity and carbon sequestration
- Biochar in degraded lands
- *Case Study: Biochar Use in Southeast Asia*

Module 9: Soil Testing and SOM Monitoring

- Key SOM indicators
- Laboratory vs field-based testing
- Data interpretation for management
- Remote sensing for SOM assessment

- Frequency and sampling guidelines
- *Case Study: GIS-Based SOM Mapping in Rwanda*

Module 10: Climate Change and SOM Dynamics

- SOM as a carbon sink
- Greenhouse gas mitigation
- Soil-water-carbon interactions
- Climate-smart soil strategies
- International policy relevance
- *Case Study: SOM and NDC Commitments in Latin America*

Module 11: Soil Microbiology and Organic Matter Decomposition

- Microbial communities and SOM breakdown
- Rhizosphere interactions
- Nutrient mineralization
- Role of fungi and bacteria
- Enhancing soil biota
- *Case Study: Microbial Boosters in Indian Soils*

Module 12: SOM in Organic and Regenerative Agriculture

- Principles of organic systems
- Certification and sustainability standards
- Soil-building rotations
- Natural input use
- Economic benefits
- *Case Study: Regenerative Organic Practices in California*

Module 13: SOM Management in Arid and Semi-Arid Areas

- Challenges in dryland systems
- Water retention and SOM synergy
- Drought-resilient species
- Land preparation for SOM build-up
- Indigenous techniques
- *Case Study: Zai Pits and Composting in Burkina Faso*

Module 14: Digital Tools and Data for SOM Management

- Soil organic carbon calculators
- Mobile apps for field assessment
- Drone imagery and NDVI
- Integration with GIS platforms
- Data-driven decision-making
- *Case Study: Digital Extension Tools in Uganda*

Module 15: Policy, Advocacy & Community-Based SOM Programs

- Scaling best practices
- Multi-stakeholder engagement
- Training of trainers (ToT)
- Incentive programs and subsidies
- Community mobilization
- *Case Study: Farmer Field Schools in Tanzania*

Training Methodology

- Blended learning (in-person + online sessions)
- Participatory workshops and group discussions
- Field demonstrations and practical exercises
- Expert-led lectures and guest speaker panels
- Interactive case study analysis sessions
- Pre- and post-course assessments and certificates

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

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