Training Course on Carbon Farming and Soil Carbon Sequestration Techniques

Professional Development Training Course Outline

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

Course Introduction

In response to escalating climate change concerns and the urgent need to mitigate greenhouse gas emissions, carbon farming has emerged as a revolutionary approach to sustainable agriculture. Training Course on Carbon Farming and Soil Carbon Sequestration Techniques explores carbon farming, soil health regeneration, and carbon sequestration techniques, providing a roadmap for farmers, land managers, agribusiness professionals, and environmental practitioners. Participants will learn how to transform agricultural systems into powerful carbon sinks while boosting soil fertility, crop yield, and climate resilience.

Designed with practical and scientific insights, this course integrates climate-smart agriculture, regenerative farming, and ecosystem-based soil management to equip stakeholders with proven carbon sequestration strategies. Through real-world case studies, hands-on techniques, and digital tools, participants will explore the economic, environmental, and policy dimensions of soil carbon capture. The course is aligned with global sustainability goals, positioning learners to lead the future of climate-positive agriculture.

Programme Curriculum

Training Course on Carbon Farming and Soil Carbon Sequestration Techniques

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Course Objectives

1. Understand the principles and science of carbon farming and carbon cycle dynamics.
2. Identify and implement soil carbon sequestration strategies for various land uses.
3. Analyze the role of regenerative agriculture in climate adaptation and mitigation.
4. Explore carbon offset markets and income opportunities for farmers.
5. Improve soil health using cover cropping, composting, and agroforestry.
6. Assess carbon auditing tools and digital platforms for monitoring soil carbon.
7. Integrate climate-smart agricultural practices into existing farm operations.
8. Address challenges in measuring, reporting, and verification (MRV) of carbon credits.
9. Evaluate biochar, no-till farming, and organic amendments for carbon retention.
10. Understand government and international climate policy frameworks and incentives.
11. Design carbon-positive land-use systems using GIS and precision agriculture.
12. Conduct field assessments for soil organic carbon (SOC) stocks.
13. Promote community-led carbon farming models for sustainable development.

Target Audiences

1. Smallholder and commercial farmers
2. Agricultural extension officers and field agents
3. Environmental scientists and soil specialists
4. Policy makers in agriculture and climate change
5. Non-profit organizations working on climate resilience
6. Carbon project developers and MRV experts
7. Students in environmental and agricultural sciences
8. Investors and stakeholders in carbon markets

Course Duration: 10 days

Course Modules

Module 1: Introduction to Carbon Farming

- Definition, principles, and importance
- Carbon cycle and agriculture’s role
- Global climate change context
- Climate-smart agriculture overview
- Potential co-benefits of carbon farming
- **Case Study**: Australia’s Carbon Farming Initiative

Module 2: Science of Soil Carbon

- Soil carbon types: organic and inorganic
- Soil organic matter (SOM) function
- Factors influencing carbon sequestration
- Role of microorganisms and root systems
- SOC measurement tools and techniques
- **Case Study**: Iowa State University’s long-term carbon trials

Module 3: Regenerative Agriculture Practices

- Cover cropping and green manures
- Conservation tillage and mulching
- Crop rotation for soil vitality
- Holistic grazing management
- Role of legumes and biodiversity
- **Case Study**: Gabe Brown’s regenerative ranching in North Dakota

Module 4: Compost and Organic Amendments

- Benefits of compost on soil carbon
- Application methods and compost quality
- Vermicomposting and waste management
- Integration with crop cycles
- Reduction of chemical input reliance
- **Case Study**: Nairobi urban composting project impact

Module 5: Agroforestry Systems

- Carbon potential of trees on farms
- Silvopasture and alley cropping
- Native tree integration and biodiversity
- Ecosystem services and water management
- Long-term soil carbon benefits
- **Case Study**: Kenya’s Green Belt Movement

Module 6: No-Till and Low-Till Practices

- Soil disturbance and carbon loss
- Equipment for no-till farming
- Weed management alternatives
- Soil structure and water retention
- Transition challenges and solutions
- **Case Study**: Argentina’s national no-till movement

Module 7: Biochar and Soil Carbon Stabilization

- Biochar production and properties
- Application techniques and dosage
- Soil pH and microbial impacts
- Long-term carbon retention capacity
- Biochar vs. compost comparison
- **Case Study**: Amazonian Terra Preta study

Module 8: Livestock and Soil Carbon Interactions

- Grazing techniques and SOC levels
- Manure management practices
- Mixed farming systems
- Methane reduction through feed
- Rotational grazing benefits
- **Case Study**: Savory Institute’s holistic grazing model

Module 9: Carbon Markets and Offset Schemes

- Voluntary vs. compliance carbon markets

- Carbon credit generation from farming
- Price trends and demand forecasts
- Certification standards and registries
- Risks and opportunities for farmers
- **Case Study**: Indigo Ag carbon marketplace

Module 10: MRV – Measuring, Reporting, Verification

- Key MRV components and tools
- Remote sensing and satellite data
- SOC sample collection and lab analysis
- Carbon baseline creation
- Data reporting protocols
- **Case Study**: FAO EX-ACT carbon accounting tool

Module 11: Digital Tools and Precision Agriculture

- Smart sensors and IoT in carbon farming
- Soil scanning and mapping
- AI in predicting carbon potential
- Drone-based imaging for assessment
- GIS for carbon planning
- **Case Study**: Climate FieldView carbon data dashboard

Module 12: Climate Policy and Regulatory Frameworks

- Paris Agreement and agriculture
- Nationally Determined Contributions (NDCs)
- Incentive programs and subsidies
- Compliance requirements for carbon credits
- Farmer-level policy engagement
- **Case Study**: EU’s Common Agricultural Policy (CAP)

Module 13: Soil Restoration and Desertification Control

- Reversing land degradation
- Water harvesting techniques
- Salinity and erosion control
- Reforestation and soil binders
- Community-based restoration programs
- **Case Study**: The Great Green Wall in the Sahel

Module 14: Community Engagement and Knowledge Sharing

- Farmer Field Schools (FFS)
- Indigenous knowledge integration
- Gender-sensitive farming practices
- Cooperative carbon projects
- Outreach through digital media
- **Case Study**: India’s Self Employed Women’s Association (SEWA)

Module 15: Designing Your Carbon Farm Plan

- Site-specific soil assessment
- Goal setting and timelines
- Monitoring indicators for success

- Cost-benefit analysis
- Integrating modules into one plan
- **Case Study**: A 10-hectare carbon-positive farm design

Training Methodology

- Interactive workshops and expert-led lectures
- Hands-on field demonstrations and soil labs
- Digital tool simulations and software training
- Case study presentations and group discussions
- Participant-designed farm-based projects
- Pre- and post-training evaluation assessments

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

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

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