Sustainable Soil Management for Higher Crop Yield

Carbon Farming and Regenerative Agriculture Training for the Varuna project :

Sustaining life below Ground: Harnessing Carbon Farming to protect Soil Biodiversity in Mauritius

1.0 Theory (In-Class): 6 hours

1.1 Introduction (1 h)

- Overview of carbon farming and regenerative agriculture.
- Benefits and global relevance.
- Case studies and success stories.

1.2 Soil Health (1 h)

- Biological, chemical, and physical properties of soil.
- Importance of organic matter and carbon in soil health.

1.3 Soil Testing and Interpretation (0.5 h)

- Types of soil tests and their significance.
- How to interpret soil test results.

1.4 Implementing Carbon Farming Practices (1 h)

- Overview of composting, biochar, mulching, cover cropping, and reduced tillage.

1.5 Enhancing Biodiversity and Ecosystem Services (1 h)

- Importance of biodiversity and ecosystem services in agriculture.
- Methods to promote biodiversity.

1.6 Sustainable Nutrient Management (1 h)

- Using organic fertilizers and soil amendments.
- Managing soil pH and nutrient levels naturally.

1.7 Monitoring and Continuous Improvement (0.5 h)

- Techniques for monitoring soil health and crop performance.
- Developing a continuous improvement plan.

2.0 Practical (In-Field): 18 hours

2.1 Soil Health (2 h)

- Demonstration of soil properties (texture, structure, and porosity).
- Hands-on assessment of soil organic matter.

2.2 Soil Testing and Interpretation (4 h)

- Soil sampling techniques and best practices.
- Conducting soil tests on-site.
- Interpreting test results and making informed decisions.

2.3 Implementing Carbon Farming Practices (6 h)

- Composting: Setting up compost piles, managing compost, and using compost in fields.
- Biochar: Production, activation, and application of biochar.
- Mulching: Choice of mulch and techniques of preparation and application
- Cover Cropping and Crop Rotation: Planting and managing cover crops, planning crop rotations.
- Reduced Tillage and No-Till Farming: Techniques for minimizing soil disturbance.

2.4 Enhancing Biodiversity and Ecosystem Services (2 h)

- Agroforestry: Planting and managing trees and shrubs in agricultural systems.
- Integrated Pest Management (IPM): Implementing natural and sustainable methods to control pests and diseases, enhancing biodiversity and reducing chemical use.

2.5 Sustainable Nutrient Management (2 h)

- Applying organic fertilizers and soil amendments.

- Monitoring and adjusting soil pH and nutrient levels.

2.6 Monitoring and Continuous Improvement (2 h)

- Setting up and using monitoring tools.
- Collecting and analyzing data for informed decision-making.
- Implementing and adjusting the continuous improvement plan.