Training Course on Salinity Management and Drainage in Irrigated Agriculture

Professional Development Training Course Outline

Category	Agriculture	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Salinity and poor drainage are among the most critical challenges facing irrigated agriculture globally, reducing productivity, degrading soil health, and threatening food security. With climate change intensifying water scarcity and increasing salt accumulation in farmlands, it is imperative to equip agricultural professionals, farmers, and policymakers with innovative solutions and best practices for salinity management and efficient drainage systems. Training Course on Salinity Management and Drainage in Irrigated Agriculture offers a cutting-edge, evidence-based framework to mitigate these issues and enhance sustainable land and water use.

This highly practical and interactive course integrates modern salinity control techniques, real-time data applications, and sustainable drainage solutions. It targets key stakeholders in agriculture and rural development and offers a platform to build technical skills, foster knowledge sharing, and promote resilient farming systems. Participants will benefit from case studies, hands-on modules, and expert-led discussions on improving soil quality, irrigation efficiency, and climate-resilient agriculture.

Programme Curriculum

Training Course on Salinity Management and Drainage in Irrigated Agriculture

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Course Objectives

By the end of this training, participants will be able to:

1. Understand the science of soil salinity and its impact on crop productivity.
2. Identify the causes and indicators of salinization in irrigated lands.
3. Apply effective salinity monitoring tools and technologies.
4. Design and implement sustainable drainage systems.
5. Utilize GIS and remote sensing for salinity assessment.
6. Analyze the economic impact of salinity on agricultural livelihoods.
7. Implement best irrigation practices to minimize salt buildup.
8. Integrate climate-smart agriculture techniques for salinity control.
9. Promote community-based drainage management solutions.
10. Assess and improve soil and water quality under saline conditions.
11. Develop policy frameworks for national salinity management programs.
12. Interpret case studies on successful salinity mitigation projects.
13. Build resilience in irrigated agriculture systems through adaptive practices.

Target Audience

1. Agricultural extension officers
2. Irrigation and water resource engineers
3. Farm managers and agronomists
4. Rural development officers
5. Agricultural policy makers
6. Environmental consultants
7. NGOs working in sustainable agriculture
8. University researchers and students

Course Duration: 5 days

Training Modules

Module 1: Fundamentals of Salinity in Irrigated Agriculture

- Definition and classification of saline soils
- Causes of salinization in irrigation
- Soil-water-plant relationships under saline conditions
- Types of salinity (primary vs secondary)
- Impact on crop yields and soil health
- **Case Study: Salt-affected lands in Punjab, India**

Module 2: Salinity Monitoring and Assessment Techniques

- Soil salinity measurement methods
- Electrical conductivity and soil sampling
- Remote sensing and GIS in salinity mapping
- Monitoring groundwater salinity
- Use of salinity sensors and data platforms

- **Case Study: Precision monitoring in Australia's Murray-Darling Basin**

Module 3: Designing Effective Drainage Systems

- Surface vs subsurface drainage
- Design principles for drainage systems
- Drainage materials and construction
- Maintenance and performance evaluation
- Drainage water reuse and management
- **Case Study: Subsurface drainage in the Nile Delta, Egypt**

Module 4: Irrigation Management to Control Salinity

- Irrigation scheduling and water application
- Leaching requirement and salt balance
- Irrigation systems (sprinkler, drip, etc.)
- Water quality standards for irrigation
- Blending and cyclic use of poor-quality water
- **Case Study: Drip irrigation in saline zones of Israel**

Module 5: Soil and Crop Management Strategies

- Salt-tolerant crop varieties
- Soil amendments (gypsum, organic matter)
- Conservation agriculture in saline soils
- Mulching and soil cover practices
- Crop rotation and intercropping
- **Case Study: Reclamation of saline sodic soils in Pakistan**

Module 6: Climate-Smart and Sustainable Approaches

- Integrated water resource management
- Climate change impact on salinity dynamics
- Agroforestry and biodiversity in saline areas
- Community-based resilience programs
- Climate-smart irrigation practices
- **Case Study: Farmer-led adaptation in Sub-Saharan Africa**

Module 7: Policy, Governance, and Institutional Frameworks

- National salinity control policies
- Land tenure and water rights issues
- Role of institutions in drainage management
- Incentives and subsidies for salinity control
- Participatory water governance models
- **Case Study: Institutional success in the Indus Basin Irrigation System**

Module 8: Action Planning and Scaling Up

- Creating localized salinity action plans
- Participatory rural appraisal tools
- Scaling best practices through innovation platforms
- Monitoring and evaluation indicators
- Mobilizing funding and partnerships
- **Case Study: Scaling salt-smart innovations in Central Asia**

Training Methodology

- Expert-led technical presentations
- Practical demonstrations and field simulations
- Group discussions and problem-solving sessions
- Interactive case study analysis
- Real-time data tools and GIS applications
- Participant-driven action planning exercises

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
09 Nov 2026	13 Nov 2026	Online	$1,000
09 Nov 2026	13 Nov 2026	Physical	$1,500
09 Nov 2026	13 Nov 2026	Physical	$3,000
09 Nov 2026	13 Nov 2026	Physical	$3,000
09 Nov 2026	13 Nov 2026	Physical	$6,000
09 Nov 2026	13 Nov 2026	Physical	$4,500

Start Date	End Date	Location	Price
09 Nov 2026	13 Nov 2026	Physical	$6,000
09 Nov 2026	13 Nov 2026	Physical	$6,000

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

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com