Training Course on Recycled Wastewater Use in Agriculture: Risks and Best Practices

Professional Development Training Course Outline

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

Course Introduction

The global rise in water scarcity and climate variability is driving the agricultural sector to explore sustainable water resource alternatives. Recycled wastewater use in agriculture is emerging as a viable solution for enhancing irrigation efficiency and ensuring food security. However, its implementation requires a comprehensive understanding of associated health, environmental, and agronomic risks, alongside the application of scientifically proven best practices. Training Course on Recycled Wastewater Use in Agriculture: Risks and Best Practices provides an in-depth exploration of wastewater reuse, addressing the critical need for informed decision-making and regulatory compliance in agricultural water management.

This course empowers professionals with practical knowledge and tools to assess, treat, and apply recycled wastewater safely and effectively in farming systems. It focuses on sustainable irrigation, crop safety, pathogen control, nutrient management, and environmental protection. Participants will gain the capacity to implement risk mitigation strategies, design safe reuse schemes, and promote climate-smart agriculture. Designed for technical experts, policymakers, and stakeholders across the agricultural value chain, this course promotes circular economy principles and enhances climate resilience.

Programme Curriculum

Training Course on Recycled Wastewater Use in Agriculture: Risks and Best Practices

Introduction

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Course Objectives

1. Understand the fundamentals of wastewater reuse in agriculture.
2. Analyze the environmental risks and public health concerns related to recycled water use.
3. Evaluate wastewater treatment technologies for agricultural reuse.
4. Apply crop-specific irrigation strategies using recycled water.
5. Identify regulatory frameworks and global policies on wastewater reuse.
6. Assess soil health impacts from prolonged wastewater application.
7. Implement risk management frameworks for safe wastewater use.
8. Promote climate-smart agriculture practices through reuse.
9. Design effective monitoring and evaluation systems for wastewater irrigation.
10. Explore economic feasibility and cost-benefit analysis of reuse projects.
11. Address social acceptance and behavior change challenges.
12. Integrate GIS and remote sensing tools for wastewater use planning.
13. Develop sustainable agricultural water reuse plans tailored to local contexts.

Target Audiences

1. Agricultural extension officers
2. Irrigation engineers
3. Environmental health practitioners
4. Policy makers and government agencies
5. Wastewater treatment plant operators
6. Researchers and academicians in agriculture and environment
7. NGOs and development partners
8. Commercial and smallholder farmers

Course Duration: 5 days

Course Modules

Module 1: Introduction to Wastewater Reuse

- Definitions and scope of recycled wastewater
- Historical and global trends
- Benefits and challenges
- Key terminologies and classifications
- Reuse potentials in water-scarce regions
- **Case Study:** Israel’s National Wastewater Reuse Program

Module 2: Risk Assessment in Agricultural Reuse

- Risk types: chemical, microbial, physical
- Exposure pathways for humans and environment
- WHO and FAO guidelines on safety

- Quantitative microbial risk assessment (QMRA)
- Risk communication techniques
- **Case Study:** Risk Mitigation in India's Urban Peri-Agriculture

Module 3: Wastewater Treatment for Agriculture

- Primary, secondary, tertiary treatment levels
- Advanced treatment methods (membranes, UV, ozone)
- Pathogen removal techniques
- Nutrient recovery and reuse
- Maintenance and monitoring of treatment systems
- **Case Study:** Constructed Wetlands in Kenya for Reuse

Module 4: Irrigation Practices Using Recycled Water

- Surface vs subsurface irrigation with effluent
- Crop selection for safe reuse
- Scheduling and water quality considerations
- Avoiding foliar contamination
- Irrigation efficiency technologies
- **Case Study:** Treated Effluent Irrigation in Tunisia's Olive Farms

Module 5: Soil and Crop Health Monitoring

- Impacts of salinity and heavy metals
- Crop uptake mechanisms
- Bioaccumulation risks
- Soil amendment and remediation strategies
- Indicators for monitoring soil quality
- **Case Study:** Long-Term Soil Monitoring in California Vineyards

Module 6: Legal, Regulatory and Ethical Frameworks

- National and international regulations
- Permitting and licensing processes
- Ethical concerns and public perception
- Compliance monitoring tools
- Institutional roles and governance
- **Case Study:** WHO-Funded Policy Implementation in South Africa

Module 7: Economic and Social Dimensions

- Cost-benefit analysis of reuse systems
- Financing models and subsidies
- Public awareness and education campaigns
- Farmer perceptions and adoption barriers
- Community engagement and inclusivity
- **Case Study:** Community-Led Wastewater Reuse in Bolivia

Module 8: Innovations and Future Directions

- AI and IoT in water reuse
- GIS and remote sensing for irrigation planning
- Mobile-based monitoring platforms
- New biotechnologies in pathogen reduction
- Integrating reuse in climate adaptation plans

- **Case Study:** Smart Water Systems in the Netherlands

Training Methodology

- Interactive expert-led lectures
- Hands-on practical demonstrations
- Group discussions and collaborative learning
- Real-life case study analysis
- Field visit (optional depending on region)
- Action planning and post-training mentoring

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

Start Date	End Date	Location	Price
09 Nov 2026	13 Nov 2026	Physical	$6,000
09 Nov 2026	13 Nov 2026	Physical	$4,500
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:

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