Training Course on Flood and Drought Risk Management in Agricultural Landscapes

Professional Development Training Course Outline

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

Course Introduction

Climate change has increasingly intensified the frequency and severity of floods and droughts, posing a critical threat to global agricultural landscapes. These extreme weather events jeopardize food security, livelihoods, water availability, and rural economies. Managing climate risks through proactive flood and drought mitigation strategies is now a top priority for sustainable agricultural production. Training Course on Flood and Drought Risk Management in Agricultural Landscapes addresses the complex interactions between hydrological extremes and land-use practices, offering tools and frameworks to reduce vulnerability and enhance resilience in farming communities.

Through a multi-disciplinary approach, this course will equip participants with the latest knowledge in disaster risk reduction (DRR), climate-smart agriculture, ecosystem-based adaptation, and agro-hydrological planning. Participants will learn to assess hazards, map risk, design integrated land and water management systems, and develop early warning systems and contingency plans. This training incorporates real-life case studies, participatory learning, and cutting-edge tools to ensure practical implementation in vulnerable regions.

Programme Curriculum

Training Course on Flood and Drought Risk Management in Agricultural Landscapes

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Course Objectives

1. Understand the impact of climate change on flood and drought frequency in agricultural zones.
2. Analyze the hydrological cycle and its disruption due to extreme weather events.
3. Apply GIS and remote sensing for risk mapping and vulnerability assessment.
4. Design climate-resilient farming practices for risk reduction.
5. Implement early warning systems and real-time monitoring solutions.
6. Promote community-based disaster risk management (CBDRM) strategies.
7. Evaluate the socio-economic impact of agro-climatic disasters.
8. Integrate ecosystem-based approaches in landscape restoration.
9. Develop and execute flood and drought contingency plans.
10. Enhance multi-stakeholder coordination for effective disaster response.
11. Utilize smart water management in drought-prone landscapes.
12. Foster policy advocacy for sustainable risk governance.
13. Measure the effectiveness of adaptive agricultural technologies.

Target Audiences

1. Agricultural extension officers
2. Disaster risk reduction practitioners
3. Environmental planners
4. Climate change adaptation professionals
5. Policy makers in agriculture and water sectors
6. Researchers and academic institutions
7. NGOs and community development workers
8. Agribusiness professionals

Course Duration: 10 days

Course Modules

Module 1: Climate Science and Hydrological Extremes

- Basics of climate variability and change
- Hydrological cycles in agricultural systems
- Drivers of flood and drought events
- Impacts on crop productivity and rural livelihoods
- Forecasting techniques and tools
- **Case Study: East African Drought Impact on Maize Production**

Module 2: Flood Risk Mapping and Analysis

- Risk zoning using GIS
- Satellite imagery interpretation
- Hydrological modeling tools
- Vulnerability indices
- Data integration for planning
- **Case Study: Bangladesh Floodplain Risk Mapping**

Module 3: Drought Risk Assessment and Early Warning

- Indicators of drought onset
- Real-time monitoring technologies
- Data-driven early warning systems
- Agro-climatic drought classification
- Integrating indigenous knowledge
- **Case Study: Drought Early Warning System in Kenya**

Module 4: Climate-Smart Agriculture (CSA) Practices

- Conservation agriculture
- Agroforestry systems
- Crop diversification techniques
- Water-efficient irrigation
- Resilient seed systems
- **Case Study: CSA Adoption in Malawi Smallholder Farms**

Module 5: Integrated Water Resource Management (IWRM)

- Watershed planning
- Water harvesting methods
- Demand-driven irrigation
- Groundwater recharge strategies
- Governance of water resources
- **Case Study: IWRM in the Limpopo River Basin**

Module 6: Soil and Land Management for Risk Reduction

- Contour farming and terracing
- Soil moisture retention techniques
- Erosion control measures
- Salinity and waterlogging management
- Restoration of degraded land
- **Case Study: Soil Rehabilitation in Sahel Region**

Module 7: Building Community Resilience

- Community vulnerability assessment
- Participatory planning tools
- Training and capacity building
- Livelihood diversification
- Empowering women and youth
- **Case Study: Community DRR in Nepalese Farming Villages**

Module 8: Ecosystem-based Adaptation (EbA)

- Natural buffer zones
- Riverbank restoration
- Wetland rehabilitation
- Agro-biodiversity conservation
- Integration with CSA
- **Case Study: Mangrove Restoration in Coastal Vietnam**

Module 9: Sustainable Infrastructure for Risk Management

- Flood control barriers

- Irrigation canals and check dams
- Rainwater harvesting tanks
- Roads and drainage planning
- Infrastructure maintenance systems
- **Case Study: Terracing and Flood Barriers in Ethiopia**

Module 10: Disaster Preparedness and Emergency Planning

- Developing disaster preparedness plans
- Communication protocols
- Coordination with local authorities
- Risk drills and simulations
- Stockpiling and logistical planning
- **Case Study: Cyclone-Ready Farming in Odisha, India**

Module 11: Institutional and Policy Frameworks

- National DRR policies
- Climate adaptation frameworks
- Policy mainstreaming in agriculture
- Stakeholder roles and responsibilities
- Legal frameworks and compliance
- **Case Study: Policy Impact on DRR in the Philippines**

Module 12: Gender and Social Inclusion in Risk Management

- Gender-specific impacts of disasters
- Inclusive planning processes
- Empowerment through training
- Reducing inequalities in access
- Monitoring gender-sensitive indicators
- **Case Study: Women's DRR Network in Uganda**

Module 13: Financing Risk Reduction and Resilience

- Budget planning for resilience
- Climate finance instruments
- Agricultural insurance models
- Public-private partnerships
- Cost-benefit analysis tools
- **Case Study: Index Insurance in Rural Senegal**

Module 14: Technology and Innovation in DRR

- Mobile-based advisory services
- Smart sensors and IoT
- Blockchain in disaster logistics
- Drones in damage assessment
- Digital platforms for knowledge sharing
- **Case Study: FAO Mobile App for Weather Alerts in Asia**

Module 15: Monitoring and Evaluation of Risk Interventions

- Indicators of success
- Results-based management
- Data collection and reporting tools

- Impact assessment approaches
- Adaptive management practices
- **Case Study: M&E Framework in African Union CSA Projects**

Training Methodology

- Interactive presentations and expert lectures
- Case-based group discussions
- Hands-on GIS and remote sensing exercises
- Role-play simulations and community mapping
- Real-world project development
- Field exposure (if applicable)

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
16 Nov 2026	27 Nov 2026	Online	$2,000
16 Nov 2026	27 Nov 2026	Physical	$3,000
16 Nov 2026	27 Nov 2026	Physical	$6,000

Start Date	End Date	Location	Price
16 Nov 2026	27 Nov 2026	Physical	$6,000
16 Nov 2026	27 Nov 2026	Physical	$12,000
16 Nov 2026	27 Nov 2026	Physical	$9,000
16 Nov 2026	27 Nov 2026	Physical	$12,000
16 Nov 2026	27 Nov 2026	Physical	$12,000

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