

International ITEC Training Programme on 'Innovative Agri-Solutions for Food Security & Climate Resilience' at MANAGE, Hyderabad

(14 Days Programme)

Rationale and justification for the ITEC programme at MANAGE, Hyderabad

Food systems across the world are facing unprecedented challenges due to climate change, rapid urbanization, natural resource degradation, and growing demand for nutritious food. Innovative agricultural solutions such as urban agriculture, hydroponics, vertical farming, smart farming technologies, circular bio-economy approaches, and agribusiness innovations are emerging as viable pathways to ensure food security and climate resilience.

This program is designed to provide participants with practical knowledge, technological insights, and entrepreneurial perspectives on innovative agricultural systems that can be adapted to diverse agro-climatic and socio-economic conditions across developing countries.

Aims and Learning Objectives

- Understand the interlinkages between food security, climate change, urbanization, and sustainable agriculture.
- Examine innovative agricultural technologies and climate-smart solutions for enhancing food production and resilience.
- Gain knowledge of urban agriculture systems including rooftop farming, community gardening, hydroponics, and vertical farming.
- Understand the application of Internet of Things (IoT), artificial intelligence, sensors, drones, and digital agriculture tools.
- Explore sustainable waste management, composting, bio-inputs, and circular economy approaches.
- Learn principles and practices of organic farming, agroecology, and regenerative agriculture.
- Analyze agribusiness opportunities, value chains, and entrepreneurship models in innovative agriculture.
- Study successful Indian experiences and global best practices relevant to Asia, Africa, and Latin America.

- Develop country-specific action plans for promoting innovative agriculture and climate resilience.

Tentative Program Schedule

	Day – 1 Global Food Security and Climate Resilience
9.30 am – 10:00 am	Registration
10.00 – 11:00 am	Inaugural session Program Introduction and Expectations Mapping
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Global Food Security Challenges and Emerging Trends
1.00 – 2.00 pm	Lunch Break
2.00 – 3.30 pm	Climate Change Impacts on Agriculture and Food Systems
3.30 – 4.00 pm	Tea Break
4.00- 5.15 pm	Climate-Smart Agriculture: Concepts and Approaches
5.15 - 5:30 pm	Wrap up
	Day- 2 Urban Agriculture for Sustainable Cities
9:30 – 11:00 am	Urban Agriculture: Concepts, Scope and Global Experiences
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Urban Food Systems and Circular Economy Approaches
1.00 – 2.00 pm	Lunch Break
2.00 – 3.30 pm	Rooftop Gardening, Kitchen Gardens and Container Farming
3.30 – 4.00 pm	Tea Break
4.00- 5.15 pm	Community Gardening for Nutrition Security and Social Inclusion
5.15 - 5:30 pm	Wrap up
	Day -3 Hydroponics and Soilless Cultivation
9:30 – 11:00 am	Introduction to Hydroponic Farming Systems
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Nutrient Management and Water Efficiency in Hydroponics
1.00 – 2.00 pm	Lunch Break
2.00 – 3.30 pm	Commercial Hydroponics: Enterprise Models and Economics
3.30 – 4.00 pm	Tea Break

4.00- 5.15 pm	Hydroponics for Urban and Climate-Resilient Agriculture
5.15 - 5:30 pm	Wrap up
(Saturday)	Day – 4 Exposure Visit
	Field Visit (Agri start-ups & Incubation Centers in Hydroponics, Protected cultivation)
(Sunday)	Day - 5
	Visit to Ramoji Film City
	Day 6 Vertical Farming and Controlled Environment Agriculture
9:30 – 10:30 am	Vertical Farming Technologies and Design Principles
10:30-11:30 am	Low-tech greenhouse construction, shade-netting installations and micro-climate management for hillside or arid environments
11.30- 11.45 am	Tea Break
11.45 am – 1.00 pm	Controlled Environment Agriculture and Protected Cultivation
1.00 – 2.00 pm	Lunch
2.00 – 3.30 pm	Automation, Lighting and Environmental Control Systems
3.300 – 4.00 pm	Tea Break
4.00- 5.15 pm	Investment, Business Models and Commercial Viability
5.15 - 5:30 pm	Wrap up
	Day- 7 Smart Agriculture and Digital Innovations
9:30 – 11:00 am	Precision Agriculture and Climate Resilience
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	IoT Applications in Agriculture
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Sensors, Automation and Smart Irrigation Systems
3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Artificial Intelligence, Drones and Digital Advisory Services
5.00 - 5:15 pm	Wrap up
	Day – 8 Organic Farming and Agroecology
9:30 – 10:30 am	Principles and Practices of Organic Farming
10:30 – 11.30 am	Crop Rotation Schedule & Inter-cropping practices
11.30- 11.45 am	Tea Break
11.45 am – 1.00 pm	Organic Certification and Market Opportunities
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Agroecology and Regenerative Agriculture
3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Natural Farming Approaches for Climate Resilience

5.00 - 5:15 pm	Wrap up
	Day – 9 Composting and Circular Bioeconomy
9:30 – 11:00 am	Organic Waste Management and Resource Recycling
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Composting Technologies and Vermicomposting
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Biofertilizers, Biostimulants, Biopesticides and Soil Health
3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Circular Bioeconomy Models for Sustainable Agriculture
5.00 - 5:15 pm	Wrap up
	Day-10 Water-Smart and Climate-Resilient Agriculture
9:30 – 10:30 am	Water Security and Climate Adaptation Strategies
10:30 am – 11.30 am	Water-Use Efficiency and Rainwater Harvesting Infrastructure.
11.30- 11.45 am	Tea Break
11.45 am – 1.00 pm	Micro-Irrigation, Drip Irrigation, Solar Powered Water Pumping
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Climate Risk Management in Agriculture
3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Carbon-Smart Agriculture and Sustainable Resource Management
5.00 - 5:15 pm	Wrap up
(Saturday)	Day-11
	Visit to Institutions
(Sunday)	Day-12
	Local city Visit
	Day-13 Agribusiness Management and Entrepreneurship
9:30 – 11:00 am	Agribusiness Opportunities in Innovative Agriculture
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Business Planning and Enterprise Development
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Agricultural Value Chains, Branding and Marketing
3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Access to Finance, Investment and Agri-Enterprise Growth
5.00 - 5:15 pm	Wrap up
	Day-14 Country Action Plans, Valediction and Way Forward
9:30 – 11:00 am	Preparation of Country Action Plans
11.00- 11.30 am	Tea Break
11.30 am – 1.00 pm	Group Presentations and Peer Review
1.00 – 2.00 pm	Lunch
2.00 – 3.00 pm	Post-Training Test Review and Feedback of the Training Programme

3.00 – 3.30 pm	Tea Break
3.30- 5.00 pm	Valedictory
5.00 - 5:15 pm	Wrap up

Expected learning outcomes from the course

- Gain exposure to innovative technologies and business models.
- Understand scalable urban and climate-smart agricultural practices.
- Enhance capacities in agribusiness management and entrepreneurship.
- Establish international networks for knowledge exchange and collaboration.
- Prepare actionable strategies for implementation in their respective countries.

Eligibility Conditions of the participants

1. Reasonable level of experience in Public/ Private/ Civil Societies in Agriculture and allied sectors in the training theme area.
2. Applicant shall possess physical and mental skills and abilities for successfully completing the program.
3. Working knowledge of English is mandatory to understand the training content on sustainable agriculture development.