



Winter School

on

Climate Change & Abiotic Stresses Management Solutions for Enhancing Water Productivity, Production Quality and Doubling Farmers Income in Scarcity Zones

January 5-25, 2023

Important Dates

Last date for receipt of applications	: 09 December 2022
Intimation to selected candidates	: 12 December 2022
Confirmation by the selected candidates	: 15 December 2022



Organised by

School of Water Stress Management

ICAR-National Institute of Abiotic Stress Management

Baramati, Pune, Maharashtra 413115

Sponsored by

Capacity Building Program

Agricultural Education Division

Indian Council of Agricultural Research

Ministry of Agriculture & Farmers Welfare

Government of India, New Delhi-11001

Background:

Climate change induced abiotic stresses are becoming major challenges for ensuring food and nutrition security to India's burgeoning population. Abiotic stresses caused by atmospheric, water and edaphic factors reduce crop quality and productivity by 50 percent. Nevertheless, these stresses are predicted to be exacerbated due to climate change and land degradation. Thus there is a pressing demand for reducing the adverse impacts of these stresses on agriculture. In this situation, our focus should be on intensification of sustainable agriculture with abiotic stress adaptation and mitigation strategies including crop diversification. The much-needed resilience in agriculture can only be maintained and enhanced with continued research and extension efforts. This should be tailored to tackle the dynamic challenges arising particularly due to increasing climatic aberrations, shifting seasons and market price fluctuations of agriculture commodities. With this background, the present winter school is designed to deliver and sensitize the researchers, academicians and extension faculties with basic knowledge in the sphere of "Climate Change and Abiotic Stress Management" based solutions, technologies and strategies and their potential applicability for enhancing crop/water productivity, quality production, and farmers' income by alleviating abiotic stresses in scarcity zones.

The course schedule is enunciated in such a way that the trainees will have hands-on experience with the latest climate resilient technologies/strategies and their applications for transforming and reorienting agricultural development under the new realities of climate change and abiotic stress management.

Course Content:

Abiotic Stresses: Introduction to major abiotic stresses and its impact on agriculture; abiotic stresses mitigation and adaptation strategies in crops, animals, and fisheries. Current status, need-based climate-smart agriculture approaches and solutions for enhancing crop yield, quality and farmers' income in scarcity zones.

Climate change, food security, and climate-smart agriculture (CSA): Climate change, challenges, impact and policies to ensure food security; environmental indicators; key characteristics of CSA; application of drones, ICT's and mobile apps for CSA.

Soil & water management for enhancing productivity: Water energy food nexus; carbon sequestration; soil-water-plant relationship; conversion of degraded lands to arable lands; crop water productivity functions and low external



input and sustainable agricultural practices; irrigation scheduling and water management strategies.

Climate resilient crop production system: Conservation agriculture (CA) and CA machineries; precision farming; agro-forestry; crop residue management; tillage and nutrient management system; integrated pest management and climate smart integrated farming.

Climate resilient horticulture: Climate resilient approaches and practices for managing abiotic stresses in major horticulture crops; protected horticulture; secondary and tertiary value addition.

Alternative crops: Cultivation and value addition of unexplored alternative crops and halophytes viz., dragon fruit, quinoa, chia, mushrooms, medicinal and aromatic plants for improving yield, production quality and farmers' incomes under scarcity zones.

Novel microbial, biotechnological, phenomics and nano-technological approaches: Microbial and nano-technological applications for abiotic stress alleviation; conventional breeding vis-a-vis biotechnological approaches for enhancing climate resilience in crops and phenomics for screening and identifying traits for abiotic stress tolerance.

Location, Weather Conditions and How to Reach:

Baramati has a pleasant weather and is well connected by road, rail, and air (Pune). Baramati is located 120 km from Pune, Maharashtra. Daund is nearest railway junction (60 km). The temperature during the training period will be around 26-30°C (day) and 15-20°C (night). Please refer institute website <https://niasm.icar.gov.in/how-to-reach> to reach at ICAR-NIASM campus.

Eligibility:

The applicant should be working in a position not below the rank of Scientist/Assistant Professor/Lecturer/Subject Matter Specialists or Equivalent with specialization of Agriculture, Horticulture, Agricultural Engineering, Animal Sciences and allied disciplines (ICAR, SAUs, KVK, Universities /Institutes, etc.). A maximum of 20-25 participants will be selected for this course based on their qualification, experience, area of work and ICAR guidelines.



Note: The participants are required to pay a sum of Rs. 50/- (Rupees Fifty only) as registration fee (Non-refundable). Applicants should upload the draft/payment receipt along with complete application. The fee may be paid to **ICAR UNIT NIASM BARAMATI (Account No. 30862846914), SBI Baramati Branch, IFSC Code: SBIN0000321, Abdulpurkar Buidling Bhigwan Road, Baramati, Maharashtra-413102.**

About ICAR-NIASM:

The ICAR-National Institute of Abiotic Stress Management (NIASM) is established in 2009 as Deemed to be University of its kind, focusing on cutting multidisciplinary research in the area of abiotic stresses and providing policy support for their management in agriculture through mitigation and adaptation technologies.

Mission

Managing abiotic stresses for sustainable agriculture.

Mandate

- ◆ Basic and strategic research to manage abiotic stresses in crops, livestock and fisheries.
- ◆ Repository of information on abiotic and biotic stresses adaptation and mitigation strategies and policies.
- ◆ Building sustainable agriculture in multi-stressed agro-ecosystems.
- ◆ Serve as Center of Academic Excellence in managing multiple stresses in agriculture.

Objectives

- ◆ Assess the vulnerability of crops, horticulture, livestock, fisheries and microbes to abiotic stresses.
- ◆ Develop technologies and policies for adaptation and mitigation of atmospheric, water and soil stresses with frontier science.
- ◆ Develop repository of information on abiotic stress management for climate-smart agriculture.
- ◆ Establish Center of Academic Excellence for human resource development to manage multiple stresses in agriculture.



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Boarding and Lodging:

Participants will be provided rent-free accommodation, wholesome meals and refreshments. Local participants will be provided lunch and inter-sessions tea only.

Travel:

Participants will be paid to and from fare for journey performed by the shortest route by rail or bus or other means of transport. The payment will be made as per their entitlement but restricted to the maximum of AC II tier train fare. If any participant chooses to travel by Air, he/she may do so, but their claim shall be restricted to AC II tier train fare.

Selection Procedure:

Final selection will be made only after the receipt of a copy of the application forwarded by the competent authority on merit and first come-first serve basis. The selected candidates will be informed by post or email within a week after the last date of receiving the application.

How to Apply?

As per the ICAR instructions, the interested participants should register and apply online through 'Capacity Building Program (CBP)' by the Agricultural Education Division, ICAR nomination portal as below:

- Visit the website <https://cbp.icar.gov.in> or click on Capacity Building Programme link under <https://www.icar.org.in>
- Log in using your user ID and Password. To create user ID use "Create New Account" link.
- After login, click on "Participate in Training" link and fill the proforma and send the duly signed copy through proper channel to The Course Director.

The advance scanned copy of the nomination may be sent by email to the Course Director gc.wakchaure@icar.gov.in, goraksha.wakchaure@gmail.com.

Participants are advised to depart to ICAR-NIASM, Baramati, Pune only after the receipt of participation confirmation email from the Course Director.