ICAR Sponsored Ten Days Short Course
on
Frontiers in Next-Generation Technologies and Socio-Economic Methodologies for Climate-Smart Livestock Systems

9th to18th February, 2026

Dr. Sunesh Balhara
Course Director

Dr. Gururaj Makarabbi
Course Coordinator

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Course Coordinator

Sponsored by
**Agricultural Education Division
Indian Council of Agricultural Research**

Organised by
ICAR-Central Institute for Research on Buffaloes
Hisar (Haryana) 125001

Climate-smart livestock systems have become essential for addressing the growing challenges posed by climate variability, resource stress, and the rising demand for sustainable animal production. Increasing temperatures, changing disease patterns, and pressure on natural resources are transforming livestock management, creating the need for an approach that combines technological innovation with socio-economic insight. Emerging tools such as IoT-based monitoring, artificial intelligence, thermal imaging, GIS, automation, machine learning, and simulation modelling are reshaping how livestock health, productivity, and environmental performance are assessed and improved.

Socio-economic approaches play an equally important role in understanding how farmers interact with these innovations. Methods including propensity score matching, difference-in-differences, composite index construction, multi-criteria decision-making, willingness-to-pay estimation, social network analysis, and psychometric scaling provide robust analytical avenues for studying behavioural patterns, measuring technology uptake, and generating credible evidence on how livestock technologies influence productivity, resilience, economic outcomes, and household well-being.

This training programme is designed to build interdisciplinary competencies that bridge emerging technologies with advanced analytical and socio-economic methods. Through expert lectures, hands-on sessions, field visits, and practical demonstrations, participants will gain comprehensive exposure to tools and techniques essential for evaluating technologies, interpreting evidence, and guiding climate-smart transformation in livestock systems. The programme aims to prepare professionals capable of contributing to resilient, inclusive, and sustainable livestock development.

Objectives

1. To train participants in next-generation technologies for climate-smart livestock systems.
2. To build competence in advanced socio-economic and statistical methods for livestock research.
3. To integrate digital tools and analytical techniques for evidence-based livestock decision-making.

Course Outline

1. Climate-Smart Livestock Systems: Concepts, Challenges, and Emerging Opportunities
2. Next-Generation Technologies: IoT, AI, Thermal Imaging, GIS, and Automation
3. Digital Ecosystems and Smart Monitoring for Buffalo Health and Activity
4. Statistical Tools for Livestock Research: Introduction to Stata and Python
5. Impact Evaluation Techniques: PSM, DiD, and IPWRA Applications
6. Systematic Review and Meta-Analysis for Livestock Technology Evidence
7. Composite Index Development and Multi-Criteria Decision-Making Approaches
8. Farmer Behaviour Analysis: Choice Modelling and Willingness-to-Pay Estimation
9. Artificial Intelligence, Machine Learning, and Neural Networks in Livestock Systems

10. Design and Evaluation of Field Trials and Randomized Controlled Trials
11. Psychometric Scaling and Social Network Analysis for Innovation Diffusion
12. Simulation Modelling, Scenario Analysis, and Field Exposure Visits

Venue, Date and Duration

The short course will be conducted at ICAR-CIRB, Hisar
for 10 days from 9 to 18 February

Application and Registration

1. Scan the QR code given in the brochure
2. Fill in all the personal and professional details accurately in the Google form
3. Upload the scanned copy of the approved application form (available in the brochure)
4. After submitting the Google Form,you may additionally email your duly approved and scanned application to the following mail ID: **cirbshortcourse26@gmail.com**

Eligibility

The programme is designed for Scientists/Assistant Professors/Ph.D. Scholars/Research Assistants/YP-II/SRF working in Dairy Extension, Dairy Economics, Agricultural Extension, Agricultural Economics, Veterinary Extension, Computer Applications, Agricultural Statistics, Livestock Production Management, and other Veterinary Science disciplines.

Important Dates

Last date for receiving the filled Google form: 10th January, 2026
Intimation of Selection: 15th January, 2026
Confirmation by Participants: 18th January, 2026

Travel, Boarding & Lodging

The selected participants are eligible to travel by their entitled class (not above AC II train fare) or by bus. Actual TA will be reimbursed on production of certificate and tickets by the participants. The Tickets have to be booked through IRCTC Website. Free boarding and lodging will be provided to the participants within the budgetary provisions as per ICAR norms. The local participants are not eligible for boarding and lodging, however, working lunch and refreshments will be provided. No accompanying persons will be allowed.

Institute Information

ICAR–Central Institute for Research on Buffaloes (ICAR-CIRB), Hisar, is the only dedicated national institute committed exclusively to strengthening India's buffalo sector through targeted, science-driven interventions. The institute undertakes frontier research on selective breeding, genomic tools, advanced reproductive biotechnologies, precision nutrition, and disease-resilient management, with a strong emphasis on improving elite breeds such as Murrah and Nili-Ravi. CIRB's work extends beyond laboratory research to developing practical, field-ready solutions that enhance reproductive efficiency, climate adaptation, and overall farm profitability. The institute also serves as a national resource centre for skill development, farmer capacity building, and technology transfer, enabling buffalo rearers to adopt innovations confidently. With state-of-the-art laboratories, nucleus breeding herds, and collaborative international and national project, ICAR-CIRB plays a transformative role in modernising buffalo husbandry. Its contributions directly support livelihood security, women's involvement in livestock care, and sustainable growth of India's buffalo-based dairy sectors.

Correspondence

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on

**"Frontiers in Next-Generation Technologies and
Socio-Economic Methodologies for Climate- Smart Livestock Systems"
9th to 18th February, 2026**

Application Form

Name of the Applicant :...

Designation :...

Employer Address :...

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Discipline :..

Permanent Address :...

....

Correspondence Address :...

....

Email :..

Mobile : ....

Research Experience : ....

....

Number of Courses attended in last 5 years : ....

Signature of the Head of the Institution   **Signature of the Participant**
(With Seal and Date)