

## ICAR-IARI Organized National Workshop on Next Gen Agricultural Physics

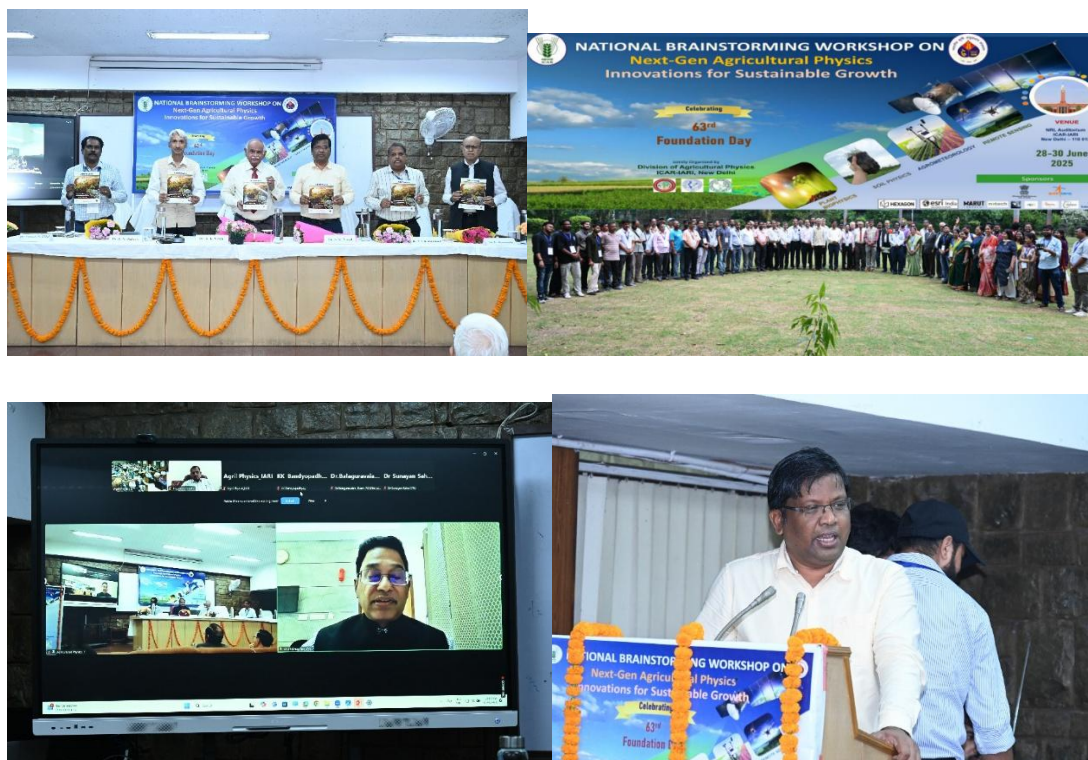
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Division of Agricultural Physics at ICAR-Indian Agricultural Research Institute, New Delhi organized National Brainstorming Workshop titled “*Next-Gen Agricultural Physics: Innovations for Sustainable Growth*” during June 28-30, 2025 on the eve of its 63<sup>rd</sup> Foundation Day. The event saw enthusiastic participation from around 110 distinguished alumni, both online and offline. The workshop was inaugurated with the Foundation Day lecture delivered by Dr. A.K. Nayak, DDG (NRM), ICAR on the theme “Smart Agriculture: Ensuring Sustainability and Resilience - Role of Agricultural Physics” under the chairmanship of Dr. A.K. Singh, Ex-DDG (NRM) and Vice Chancellor, RVSKVV, with the gracious presence of Mr. C. Vishwanth, IAS (Rtd), son of Dr. C. Dakshinamurthy, the founding head of the Division, Dr. R.N. Padaria, Joint Director (Extension), IARI Dr. P.S. Brahmanand, Project Director, WTC, IARI and Dr. Subash N. Pillai, Head, Division of Agricultural Physics. Dr. A.K. Nayak explained the importance of smart soil monitoring, smart field machinery, smart irrigation and smart field monitoring and also need to integrate with existing Govt Schemes/Plans – direct benefit to farmers in terms of income, productivity gain and environmental security.

The plenary talk on “Farmer Centric Research: Systemic Integration with livelihood system and resilience” by illustrious alumni, Dr. Debapriya Dutta, Former Scientist G/Advisor, DST, GoI emphasised systemic integration of agricultural physics with livelihood systems and highlighted gaps in knowledge dissemination and collaboration.

The three panel sessions on next-generation technologies was organized covering a broad themes on soil physics, agrometeorology and remote sensing respectively. Main points emerged during panel discussions viz., advanced sensors for estimation of soil moisture/nutrients, use of AI/ML for assessment of different soil physical parameters, microwave remote sensing for profile moisture estimation and how this can be used for irrigation scheduling, farmer centric agromet advisory system rather than a generic advisory system at the local level, AI/ML, IoT, remote sensing etc for accurate pest-warning, downscale weather forecast to level – automation of agromet advisory services, development of cost-effective scalable sensors – ground based systems, UAVs, satellites – deployment across scales for data collection, need for high spatial and temporal resolution sensors to monitor crop, soil – enable crop discrimination, growth tracking and stress detection, promote public-private – innovation, India centric Earth Engine and capacity building to all levels of staff.

In addition to technical discussions, the workshop hosted poster presentations by students and oral presentations by alumni, showcasing ongoing research and innovations. The event concluded with a valedictory function graced over by Dr. Ch. Srinivasa Rao, Director & VC, ICAR-IARI, New Delhi, who commended the division's contributions and the critical role of agricultural physics in promoting sustainable, resilient farming systems, how to fasten the micro-irrigation across the country, soil fertility and soil water synergy, climate analogues for the country, technical support for crop insurance, crop residue burning data for crop advisory, resolve horticulture and protective cultivation etc. using next generation technologies.



Source: ICAR-Indian Agricultural Research Institute, New Delhi