



CONTENTS

From the President's Desk	1
Executive Council Meeting	4
143 rd Meeting	4
NAAS Programs	5
Brainstorming Sessions	5
Other Activities	8
Activities of the Regional Chapters	10
Bengaluru	10
Coimbatore	10
Hyderabad	10
Kolkata	10
Lucknow	11
Palampur	11
Varanasi	12
Activities of NAAS-YUVA	12
Publications	14
Forthcoming Programs	14
Obituaries	14



Editors

Dr. V.K. Baranwal
Dr. R.K. Jain
Dr. R.K. Pal

From the President's Desk

Next Generation Agriculture (NGA): Transforming Agri-Food Systems from Food Security to Farmers' Fortune

1. Introduction

Indian agriculture has achieved a monumental success in transforming the nation from a food importer to a self-sufficient exporter, a journey that has



rightfully been a source of immense pride and celebration. Agriculture, however, today faces a complex combination of challenges that arise from the magnitude of climate variability, reduced natural resources, nutritional insecurity, and livelihoods stress, especially among

smallholder farmers. Climate extremes continue to pose serious threats to crop yields and farm income. Similarly, water scarcity and soil degradation threaten long-term productivity. Agriculture is no longer facing only a production challenge but also a systemic one entailing climate, nutrition, livelihoods, and environmental sustainability. The moment is here where agriculture requires a paradigm shift in envisioning and practicing agriculture. The emerging model, NGA, is about solving these challenges through integrated, technology-enabled, climate-resilient, and farmer-centric agri-food systems; an alternative that moves beyond yield-centric and input-intensive agriculture. This is a systemic transformation that brings together science, digital innovation, ecologically sound principles, and inclusive development, with a strong external facing to translate research into impact.

2. Features of NGA

NGA signals a paradigm shift from traditional production-attuned agriculture to systems-informed, outcome-linked agriculture that combines productivity growth and climate resiliency with environmental sustainability and nutritional or farmer wellbeing. Rather than addressing each of these elements in isolation, NGA considers them to be integrated elements of a single agri-food system. This includes smart crops, smart technology, smart products, smart markets, and smart farmers. This will have its primary focus on efficiency gains in terms of enhanced productivity, cost-effectiveness, environmental sustainability, and climate resiliency. Not to overlook its inclusive reach that includes smallholder farmers, especially those in dry- and rain-fed areas.



2.1. Innovation, Integration, and Impact Pathway: In NGA, the innovation is routed through to integration and then to impact. Scientific innovations arising out of cutting-edge research in genomics, phenomics, digital agriculture, and climate science are not treated as endpoints. Rather, these are brought together through extension systems, digital platforms, delivery mechanisms, and institutions to ensure that they can be scaled up. Thus, innovation no longer stays in the research station or among progressive farmers. Instead, innovation is brought down to meet the demands of the farm and the requirements of the market and policy makers, so that it gets converted into meaningful improvement in farm productivity, income, resilience, and sustainability.

2.2. Farmer-Centric and Inclusive Design: Farmers are given priority during the innovation process in NGA. They are viewed not only as adopters and beneficiaries, who use the technology, but also as innovators, experimenters, and producers themselves. Technologies are tailored to local agro-ecologies and are developed to complement local practices and economic circumstances. Of course, this farmer-driven approach to innovation remains critical to smallholder, female, and poor farmers. They not only design and drive the innovation process, with an emphasis on affordability, usability, and scalability, but farmer feedback loops and community learning grounds are essential for building greater trust and adoption.

2.3. Data as the Backbone of Transformation: Data is the backbone of NGA. The integration of various types of data, including geospatial, climate, soil and crop health, phenotypic, market, nutrition, and socio-economic, allows for informed decision-making. Rather than being limited to micro-level decision making, such as irrigation management, and macro-level decision making, such as eco-regional crop planning, NGA has the capability to integrate these levels for informed management and smart planning. The holistic approach to using data will allow agri-food systems to be more transparent, responsive, and resilient.

3. Technologies Powering NGA

Technological innovation forms the foundation of NGA by enabling precision, efficiency, and resilience across agri-food systems. Advances in digital technologies, biological sciences, and mechanization have transformed how agricultural decisions are made, shifting from generalized recommendations to data-driven, location-specific, and real-time interventions. These technologies support better management of natural resources, reduce production risks, improve productivity and profitability, and strengthen climate resilience. When integrated with institutional delivery systems and farmer-centric design, technology becomes a powerful enabler for translating scientific innovation into field-level impact.

3.1. Digital Connectivity and Mobile Platforms:

The widespread penetration of mobile phones has emerged as a foundational enabler of NGA. Mobile-based platforms deliver real-time, location-specific advisories on weather, pests, diseases, nutrient management, and crop planning. These platforms bridge the last-mile gap between research institutions and farmers, ensuring timely access to actionable information. Digital advisory systems are increasingly tailored to local contexts, languages, and cropping systems, enhancing usability and adoption. They also facilitate two-way communication, allowing farmers to share field data, images, and feedback.

3.2. Artificial Intelligence and Decision Support Systems:

Artificial intelligence (AI) and machine learning technologies play a critical role in transforming agricultural decision-making. AI-driven systems analyse large volumes of data from satellites, sensors, weather models, and field observations to generate predictive insights. Applications include early warning systems for pest and disease outbreaks, yield forecasting, and climate risk assessment. Image-based disease diagnostic tools enable rapid identification of crop health issues using smartphones, reducing response time and input misuse. These tools improve both productivity and resource efficiency while reducing risk for farmers.

3.3. Remote Sensing, Drones and Precision Tools:

Remote sensing technologies, including satellite imagery, drones, and spectral analysis, enable continuous monitoring of crop health and field variability. These tools allow early detection of biotic and abiotic stresses, such as pest infestations and nutrient deficiencies, through changes in spectral signatures. Precision agriculture technologies build on these insights to enable variable-rate application of inputs. Sensors, drones, and robotic systems apply fertilizers, pesticides, and water only where and when needed. This targeted approach reduces input costs, minimizes environmental impact, and improves crop performance.

3.4. Internet of Things (IoT) and Smart Resource Management:

IoT-based systems support real-time monitoring and management of agricultural resources. Sensor-based irrigation systems optimize water use by responding to soil moisture and crop demand. In aquaculture, IoT-enabled monitoring of dissolved oxygen, salinity, temperature, and water quality enhances productivity and reduces losses. In livestock systems, precision livestock farming technologies enable early detection of sub-clinical health conditions, improving animal welfare and productivity. These applications collectively enhance efficiency and resilience across farming systems.



3.5. Robotics, Automation and Smart Mechanization:

Robotics and automation are redefining agricultural mechanization. Automated systems improve efficiency in planting, spraying, harvesting, and post-harvest operations. Machine vision technologies support quality monitoring, grading, and sorting of horticultural produce, improving value realization and reducing post-harvest losses. Automation is particularly valuable in addressing labour shortages and improving precision in time-sensitive operations. When combined with digital decision-support systems, smart mechanization enhances overall system performance.

3.6. Genomics, Phenomics and Advanced Breeding:

Advances in genomics and plant phenomics are central to NGA. Genomics-assisted breeding accelerates the development of climate-resilient, high-yielding, and stress-tolerant crop varieties. High-throughput phenotyping platforms enable detailed evaluation of plant traits across growth stages and environments. Whole-plant phenomics facilities allow researchers to capture dynamic responses of crops to stress, supporting faster and more accurate selection. These tools significantly shorten breeding cycles and improve the precision of varietal development.

3.7. Blockchain and Traceability Systems:

Blockchain-based systems enhance transparency and traceability across agri-value chains. By recording transactions and movements of produce, these systems improve food safety, quality assurance, and consumer trust. They also support fair pricing, certification, and compliance with sustainability standards. Traceability is increasingly important in linking farmers to high-value markets and ensuring accountability across supply chains.

4. Applications Across Production, Nutrition and Value Chains

When NGA is used throughout various agricultural systems and value chains, it truly becomes valuable. NGA combines different technologies and approaches to ensure that the result achieved through innovation also reaches the farm level. It addresses agriculture-related activities, including agricultural commodities, livestock, post-harvest management, nutrition-sensitive agriculture and market access, to ensure that the productivity and resilience achieved are associated with economic and nutritional benefits.

4.1. Climate-Resilient Crop Improvement:

NGA promotes and develops climate-resilient varieties/hybrids of field and horticultural crops. Improved varieties of rice, wheat, and pulses are already developed using genomics-assisted breeding and phenotyping tools.

4.2. Precision and Regenerative Farming Practices:

Precision agriculture enables judicious input use through soil health cards, leaf colour charts,

neem-coated urea, nano-fertilizers, and urea deep placement. Regenerative practices restore soil health and improve water-use efficiency through renewable energy-based micro-irrigation systems.

4.3. Digital Crop, Livestock and Aquaculture Management:

Digital tools enable real-time management of crops, livestock, and fisheries. Sensor-based irrigation improves water efficiency, IoT-enabled aquaculture systems monitor water quality parameters, and precision livestock farming supports early disease detection and improved productivity.

4.4. Urban, Protected and Emerging Farming Systems:

Protected cultivation, vertical farming, and hydroponics are gaining momentum, particularly among youth and entrepreneurs. These systems offer resource-efficient solutions for peri-urban and urban food production.

4.5. Post-Harvest Management and Value Addition:

Advanced storage, grading, and processing technologies reduce post-harvest losses. Smart supply chains improve quality monitoring and value addition, particularly for fruits and vegetables.

4.6. Market Access and Efficient Delivery Systems:

Farmer Producer Organizations, contract farming, and e-marketplaces can bring small farmers closer to markets. Climate smart villages are comprehensive implementation platforms, where technology, institutions, and participation are aligned to strengthen the adaptive abilities of farmers.

5. Way Forward

NGA can provide a transformative approach towards the development of resilient, efficient, and inclusive agri-food systems. It can help agriculture more productive, protective, predictive, precise and profitable. However, the success of this approach is not only tied to enhancing technological development, but also integrally linked to its amalgamation or complementation with knowledge, institutional structures, or policy settings. Farmers, women and youth need to emerge as innovators and agents of agricultural transformation as well as leaders or entrepreneurs. The path ahead will need investments in agricultural science, digital infrastructure, skills, and multi-stakeholder partnerships. The overall strategy will be to ensure innovation that leads to impact and this can only happen by *“taking science to the farmer and putting the farmer in the center of innovation story.”* With the principles of sustainability and resilience, NGA has the promise to ensure food, nutrition, and environmental security for this and future generations

Himanshu Pathak
President



Executive Council Meeting

143rd Meeting

The 143rd meeting of the Executive Council (EC) was held on November 8, 2025, in hybrid mode under the Chairmanship of Dr. Himanshu Pathak (President). The meeting addressed key agenda items, including progress updates, elections, fellowship announcements, and institutional developments. The EC felicitated the outgoing office bearers, which included Dr. Himanshu Pathak (President), Dr. W.S. Lakra (Secretary), Dr. V.K. Baranwal (Editor), Dr. Anjani Kumar, Dr. A.S. Raghvendra, Dr. E.V.S. Prakasa Rao and Dr. R.T. Patil (Members). Thereafter, the agenda items were taken up for discussion.

- The EC reviewed the progress of the Committee constituted to revise the Bye-laws, Rules and Regulations of the Academy. It was agreed to expand the Committee by including Dr. Anupam Varma, Dr. J.C. Katyal and Dr. P.K. Joshi and the revised Committee to submit its report by January 15, 2026, which will be circulated before the next EC meeting scheduled for February 2026.
- The EC approved the establishment of two International Chapters to enhance the global engagement and academic outreach of the Academy. Global West Chapter will cover North America, Europe, Africa and Latin America with Dr. P.V. Vara Prasad (USA) as the Convener. Global East Chapter will cover Australia, New Zealand, South-East Asia, East Asia, South Asia and Central Asia with Dr. Harbans Singh Bariana (Australia) as the Convener. Each chapter will have a Co-Convener, and will be coordinated by the Foreign Secretary (NAAS).



- “Women and Youth-led Agri-Innovations and Enterprises” was identified as the theme for NAAS 2026. PAAS Societies will be encouraged to align events with the theme and present consolidated recommendations during the annual National conference.
- Prof. Anupam Varma’s suggestion to include the NAAS journal “Agricultural Research” as a regular EC agenda item was favourably considered and Dr. N.K. Singh was appointed as the additional Chief Editor.

Elected new office bearers and members of the EC from January 1, 2026

1. **President:** Dr. Mangi Lal Jat
2. **Secretary:** Dr. Brahma Swaroop Dwivedi
3. **Editor:** Dr. Ram Krishna Pal
4. **Members (4):** Dr. Dilip Jain; Dr. (Ms.) Kambham Madhavi Reddy; Dr. D.L.N. Rao; and Dr. Rajarshi Roy Burman

The EC also ratified the election of the following Scientists to the Academy Fellowship 2026:

Section I: Crop Sciences

Dr. Appunu Chinnaswamy
Dr. Satendra Kumar Mangrauthia
Dr. Raveendran Muthurajan
Dr. Vignesh Muthusamy
Dr. Ashok Kumar Parihar
Dr. Mohar Singh

Section II: Horticultural Sciences

Dr. Gopal Lal
Prof. Akhilesh Sharma
Dr. Binod Kumar Singh

Section III: Animal Sciences

Dr. Ashim Kumar Biswas
Dr. Gyanendra Kumar Gaur
Dr. Manishi Mukesh
Dr. Girish Patil Shivanagowda

Section IV: Fisheries Sciences

Dr. Martin Xavier
Dr. Ajit Kumar Verma

Section V: Natural Resource Management Sciences

Dr. (Ms.) Arti Bhatia
Dr. Shankar Lal Jat
Dr. Nagabovanalli Basavarajappa Prakash
Dr. Parvender Sheoran
Dr. Naresh Kumar Soora



Section VI: Plant Protection Sciences

Dr. Amalendu Ghosh
 Dr. Arup Kumar Mukherjee
 Prof. Sengottayan Senthil-Nathan
 Prof. Zaki Anwar Siddiqui

Section VII: Agricultural Engineering & Technology

Dr. Debabandya Mohapatra
 Dr. Narayan Lal Panwar

Section VIII: Social Sciences

Dr. Mahesh Chander
 Dr. Rajiv Pandey
 Dr. A. Amarender Reddy

Foreign Fellows

Dr. Serge Savary

Pravasi Fellows

Prof. Channapatna Sundar Prakash
 Dr. Vijay Singh
 Prof. (Ms.) Mywish Karimbhai Maredia

NAAS Associates selected for 2026

Name	Section
Dr. Hari Krishna	Crop Sciences
Dr. (Ms.) Niharika Mallick	Crop Sciences
Dr. (Ms.) Jyoti Devi	Horticultural Sciences
Dr. (Ms.) Rashmi H.M.	Animal Sciences
Dr. (Ms.) Heena Sharma	Animal Sciences
Dr. Niladri Sekhar Chatterjee	Fisheries Sciences
Dr. Paramesha V	Natural Resource Management Sciences

Name	Section
Dr. (Ms.) Venugopalan Visha Kumari	Natural Resource Management Sciences
Dr. Nagendran Krishnan	Plant Protection Sciences
Dr. Guru Pirasanna Pandi G	Plant Protection Sciences
Dr. Murali S	Agricultural Engineering and Technology
Dr. Sujit Sarkar	Social Sciences

Young Scientists' Awards 2026

Section	Name
Crop Sciences	Dr. Neeraj Kumar Scientist (Senior Scale), Indian Agricultural Research Institute, New Delhi
Horticultural Sciences	Dr. (Ms.) Twahira Begum Scientist C, CSIR-North East Institute of Science and Technology, Jorhat
Natural Resource Management Sciences	Dr. Owais Ali Wani Scientist, SKUAST, Kashmir
Plant Protection Sciences	Dr. Shivaji Hausrao Thube Scientist, ICAR-Central Institute for Cotton Research, Nagpur
Agril. Engineering and Technology	Dr. Samarth Godara Scientist, Indian Agricultural Statistics Research Institute (IASRI), New Delhi
Social Sciences	Dr. Md Yeasin Scientist, IASRI, New Delhi

NAAS Programs

BRAINSTORMING SESSIONS

“Enhancing Efficiency and Sustainability of Farmer Producer Organizations: Challenges and Strategies” (Conveners: Dr. Pratap Birthal (Director), and Dr. Vinayak Nikam (Senior Scientist), National Institute of Agricultural Economics and Policy Research (NIAP), New Delhi)

The Academy organised a brainstorming session (BSS) in hybrid mode on “*Enhancing Efficiency and*

Sustainability of Farmer Producer Organisations (FPOs): Challenges and Strategies” on October 17, 2025 under the Chairmanship of Dr. Himanshu Pathak, (President).





Dr. W.S. Lakra (Secretary), while welcoming the audience, emphasized the significance of FPOs in India. Dr. Pratap Birlhal highlighted various issues pertinent to the viability of FPOs. Dr. Vinayak Nikam presented the evolution of FPOs, their present status, activities, impact, viability factors, and constraints. Dr. Pathak suggested linking FPOs with research and development institutions. The session also featured a panel discussion highlighting various policy issues.

“Semiochemicals-driven Strategies for Sustainable Pest Management in Indian Agriculture” (Convener: Dr. (Ms.) P. D. Kamala Jayanthi (ICAR-National Professor), ICAR-Indian Institute of Horticultural Research, Bengaluru)

The Academy organized a BSS on “*Semiochemicals-driven Strategies for Sustainable Pest Management in Indian Agriculture*” in hybrid mode on November 21, 2025. The session was chaired by Dr. Ashok K. Singh (Secretary). In his welcome address, Dr. Singh highlighted the growing importance of semiochemicals in developing long-term, sustainable pest management strategies. Dr. Kamala Jayanthi then delivered a thematic presentation, followed by a panel discussion featuring national and international experts from



academia, government, and industry. Participants shared their perspectives on current challenges, emerging opportunities, and the way forward for mainstreaming semiochemicals in Indian agriculture. The deliberations aimed at developing the roadmap for strengthening semiochemicals-based pest management in the context of Indian agriculture.

A wide range of themes, including advances in semiochemical discovery and development, field deployment strategies, integration with agro-ecological practices, synthesis and formulation technologies and the regulatory & policy landscape were covered. Participants also highlighted the need for intensive research to identify new behaviour-modifying cues; addressing commercialization barriers; strengthening

public-private partnerships; and enhancing farmer awareness. The importance of upscaling production, ensuring quality control, resolving procedural hurdles during CIB&RC registration, securing strong regulatory support, aligning with global guidelines, improving cost-effectiveness and field efficacy, exploring dedicated funding opportunities and establishing efficient traceability systems was also underscored.

“Horticultural Innovations to Enhance Export from India” (Convener: Dr. Sudhakar Pandey (ADG), ICAR, New Delhi; Co-Convener: Dr. Sant Kumar (Principal Scientist), ICAR-NIAP, New Delhi)

The Academy organized a BSS on “*Horticultural Innovations to Enhance Export from India*” under the Chairmanship of Dr. Himanshu Pathak (President), and Co-Chairmanship of Dr. Sanjay Kumar Singh (DDG, ICAR, New Delhi) in hybrid mode on November 28, 2025.



Dr. Ashok K. Singh (Secretary) in his welcome address highlighted the significance of the Indian horticulture sector and its contribution to global horticulture production, and emphasized the need for a policy framework to strengthen strategies aimed at boosting India’s horticulture exports. He also suggested the need for more investment in research and development. In his opening remarks, Dr. Singh (DDG, ICAR) highlighted research infrastructure and multiple crop clusters and the urgent need for enhanced infrastructure development and policy support. Subsequently, Dr. Pandey and Dr. Sant Kumar, made presentations on “*Horticulture Sector in India: Present Status, Challenges, and Research Roadmap*” and “*Horticulture in India: Growth, Export Performance and Issues*”, respectively and two panel discussions were held, during which National and International experts shared their views.

National experts from ICAR, and other organizations, NITI Aayog, APEDA, BARC, NHB, NMPB (Ayush



Ministry), FFDC, Private sector, Spices Board, and others including international experts from IFPRI, NAAS-fellows and Scientists from different horticultural institutions and Universities participated and expressed their valuable views. Deliberations focused on addressing required production technologies to meet the emerging demand, infrastructure and logistics, quality and regulatory standards and other issues covering lack of farmers' awareness and access to information. In addition, research needs, policy development, regulatory measures, and need for research and market intelligence to make the sector more vibrant were covered.

“Artificial Intelligence and Its Applications in Agriculture and Agricultural Research” (Convener: Dr. B.M. Prasanna (CIMMYT Distinguished Scientist & Regional Director for Asia; Managing Director, Borlaug Institute of South Asia (BISA), New Delhi); Co-Conveners: Dr. Rajender Parsad (Former Director), ICAR-IASRI, New Delhi, and Dr. Rabi N. Sahoo (Principal Scientist), ICAR-IARI, New Delhi)

The Academy organized a BSS on “*Artificial Intelligence (AI) and its Applications in Agriculture and Agricultural Research*” on December 12, 2025, in hybrid mode. The session was co-chaired by Dr. Himanshu Pathak (President), and Dr. M.L. Jat (Secretary, DARE & Director General, ICAR). The session brought together distinguished Fellows of the Academy, Scientists from ICAR and CGIAR Institutions an representatives from international research organisations, industry experts, and digital agriculture practitioners to deliberate on emerging opportunities and challenges of AI in the agricultural sector. Dr. Ashok K. Singh (Secretary) in his welcome address underscored the transformative potential of artificial intelligence in enhancing agricultural productivity, sustainability, and resilience. In the

lead presentation, Dr. B.M. Prasanna highlighted the growing importance of AI-driven approaches in crop improvement, particularly in accelerating breeding cycles, managing large-scale phenotypic and genotypic data, and addressing climate-induced stresses. The open discussion session, moderated by Dr. Rajender Parsad, featured inputs from distinguished Fellows and invited experts, who emphasized the critical importance of high-quality and standardized data, capacity building in AI and data science, ethical deployment of AI, and the need for coordinated national efforts to avoid duplication and fragmentation. The session also highlighted the necessity of aligning AI initiatives with national digital agriculture programmes and developing indigenous, affordable AI solutions tailored to Indian agriculture.

Dr. P.K. Joshi and Dr. B.S. Dhillon (Vice-Presidents) concluded the session summarizing the key deliberations and underscored the need for sustained policy support, institutional collaboration, and investment in digital infrastructure.

“Fisheries Research and Development Priorities for Partnership in South Asia” (Convener: Dr. W. S. Lakra (Former Director), ICAR-CIFE; Co-Conveners: Dr. B. K. Das (ICAR-CIFRI) and Dr. Grinson George (ICAR-CMFRI)

The Academy organized a BSS on “*Fisheries Research and Development Priorities for Partnership in South Asia*” in virtual mode on December 27, 2025. The session was chaired by Dr. Himanshu Pathak (President), and co-chaired by Dr. P. K. Joshi (Vice-President). In his welcome address, Dr. W. S. Lakra highlighted the growing importance of fisheries and aquaculture in South Asia for food and nutrition security, livelihoods, and inclusive growth, and underscored the need for coordinated regional research efforts in view of climate change, environmental degradation, and governance challenges. The BSS provided a high-level and action-oriented platform to identify priority





research areas and strengthen regional cooperation for sustainable and resilient fisheries systems across South Asia.

In his opening remarks, Dr. Himanshu Pathak emphasised strengthening Global South cooperation involving NAAS, National Agricultural Research, Education, and Extension System (NAREES), and CGIAR Centres, and highlighted the need to expand such partnerships in the fisheries sector. This was followed by three lead presentations by Dr. B. K. Das, Dr. Grinson George (Co-Conveners) and, Dr. P. Krishnan, Director, Bay of Bengal Programme (BOBP) on inland fisheries, marine fisheries, and ocean research and development, respectively. The session included panel discussions and country perspectives from experts representing ICAR fisheries Institutes, BoBP-IGO, and South Asian countries, including Bangladesh, Maldives, Sri Lanka, Bhutan, and Nepal. The deliberations focused on key regional matters such as Illegal, Unreported and Unregulated (IUU) fishing, maritime security, climate vulnerability of small-scale fisheries, transboundary water and shared stock management, post-harvest losses, data and capacity gaps, and issues of social and gender equity. Participants emphasised the importance of harmonised management of shared resources, joint capacity building, technology transfer, regional data-sharing mechanisms, and inclusive development approaches.

The session also highlighted key initiatives undertaken by the Government of India and partner agencies, and the role of global expertise in advancing knowledge exchange and supporting scalable solutions beyond national boundaries. The BSS reaffirmed that regional partnership is critical in fisheries research and development, as shared ecosystems demand shared solutions. The participants recommended pooling knowledge and best practices, developing collective responses to climate and disaster risks, harmonising policies and trade frameworks, and strengthening regional capacity building and knowledge sharing to ensure sustainable fisheries in South Asia. Dr. Ashok K. Singh (Secretary) proposed formal vote of thanks to the distinguished participants.

“Genome Editing in Agriculture – Prospects and Challenges” (Conveners: Dr. Viswanathan, C. (Joint Director, Research); Dr. Ashok K. Singh (Former Director), ICAR-IARI, New Delhi; and Dr. D.K. Yadava (DDG, Crop Science), ICAR, New Delhi)

The Academy organized a BSS on “*Genome Editing in Agriculture – Prospects and Challenges*” in hybrid



mode on December 31, 2025. The programme was held under the Chairmanship of Dr. Himanshu Pathak (President), and co-chaired by Dr. D.K. Yadava. The programme began with the welcome address and introductory remarks by Dr. Ashok K. Singh (Secretary), followed by a lead presentation on “*Genome Editing in Agriculture – Progress & Prospects*” by Dr. Viswanathan. Dr. Pathak delivered the opening remarks, setting the tone for insightful discussions ahead.

Technical talks covered diverse aspects including industry perspectives, indigenous genome editing tool development, and IP Scenario of genome editing in agriculture, with contributions from experts representing ICAR Institutes, research organisations and industry. A comprehensive panel discussion brought together eminent experts from diverse sectors including crops, horticulture, fisheries & marine sciences, livestock & animal sciences, microbes, agricultural & process engineering. They deliberated on current advancements, sector-specific research priorities, regulatory frameworks, and collaborative pathways to accelerate translational applications of genome editing. An open discussion session further enriched the dialogue by bringing practical insights and futuristic perspectives in agriculture.

OTHER ACTIVITIES

NAAS Participation in World Food Prize 2025 Event

The National Academy of Agricultural Sciences (NAAS) participated in the World Food Prize 2025 event held during October 21-23, 2025 at Des Moines, Iowa, USA. A special Roundtable meeting on “*Empowering Youth for Enhanced Engagement in Agriculture and Food Systems in India*” chaired by Dr. Himanshu Pathak (President) was organized the meeting was attended by Dr. W.S. Lakra and Dr. Ashok K. Singh (Secretaries); Prof. K.M. Maredia (Foreign Secretary), and Dr. Haritha Bollinedi, (Convener, NAAS-YUVA) along with several NAAS



Foreign and Pravasi Fellows. The Roundtable brought together international experts and academicians to deliberate on enhancing youth engagement and innovation in agriculture and food systems. In addition, six school students from India participated in the World Food Prize 2025 event, representing the country on a global platform and interacting with international experts and peers. The Academy also showcased India's achievements in agricultural research, innovation, and policy through its exhibition booth, reaffirming the nation's commitment to global food and nutritional security.

International workshop on “Best Practices in Agricultural Cooperatives in the Global Arena: Empowering Cooperatives in India for Sustainable Economic Growth and Rural Transformation”

The Academy and Indian Council of Agricultural Research (ICAR) jointly organized an international workshop on “*Best Practices in Agricultural Cooperatives in the Global Arena: Empowering Cooperatives in India for Sustainable Economic Growth and Rural Transformation*” on December 15–16, 2025 at NASC Complex, New Delhi.



During the inaugural programme on December 15, 2025, welcome address by Dr. W.S. Lakra (Secretary) was followed by an overview of the workshop by Prof. K.M. Maredia (Foreign Secretary). Dr. P.K. Joshi (Vice-President) underscored the transformative role of agricultural cooperatives in enhancing farmers' income, inclusiveness and market access.

While delivering the inaugural address Dr. M.L. Jat (Secretary, DARE & Director General, ICAR), emphasized that the cooperatives were pivotal to achieving sustainable agricultural growth, rural prosperity, and food security. He highlighted the need for innovation-driven, market-oriented, and technology-enabled cooperatives, aligned with global best practices, climate resilience, and value-chain integration. Dr. Jat also stressed the importance of capacity building, digitalization, and strong institutional linkages to empower farmer collectives and realize India's vision of a resilient and inclusive rural economy. The programme was concluded with formal vote of thanks by Dr. Ch. Srinivasa Rao (Director, ICAR-IARI, New Delhi).

On December 16, 2025, international perspectives were shared by Mr. Peter Lemmer (USA), Mr. Douglas Dwight Chapin (USA), Mr. Binay Agarwal (France), Dr. Honest Kessy (Tanzania), Ms. Maria Victoria S. Anahaw (Philippines), Mr. Klever José Coral (Brazil), Dr. Romi Novriadi (Indonesia), Mr. J.L. Chaminda (Sri Lanka), and Ms. Sunita Nhemaphuki (Nepal). They highlighted successful cooperative models, innovations in governance, financing, digitalization, and market integration.

Indian experiences were presented by experts from diverse cooperative sectors, including National Dairy Development Board (NDDB), Horticulture, Sugar Cooperatives, Indian Farmers Fertiliser Cooperative Limited (IFFCO), National Agricultural Cooperative Marketing Federation of India Limited (NAFED), Mulkanoor Cooperative, and Integrated Rural and Agricultural Development Agency (IRADA), showcasing the role of cooperatives in enhancing farmers' income, livelihoods, and rural development. The workshop also featured experience sharing by Professional Associations of Agricultural Sciences (PAAS) and breakout group discussions, followed by a panel discussion on the way forward for strengthening agricultural cooperatives.

The entire deliberations underscored the need for innovation-driven, market-oriented, and technology-enabled cooperatives, supported by strong institutional linkages, capacity building, and policy support, to strengthen India's cooperative ecosystem and advance sustainable rural transformation.



Activities of the Regional Chapters

Bengaluru Chapter

Bengaluru Chapter in association with state animal husbandry department organized *Rabies Prevention and Awareness Day* on the occasion of World Rabies Day (September 28, 2025). Professionals from veterinary and medical colleges and Bangalore City Corporation and more than 250 veterinary doctors and students participated in this event. Recent developments in rabies control and its prevention were discussed and deliberated. Technical leaflets on this topic were distributed and free rabies vaccination program was conducted.

Coimbatore Chapter

Coimbatore Chapter organized “*An Awareness-cum-Sensitization Workshop*” on November 25, 2025 to motivate sugarcane farmers engaged exclusively in jaggery production. Farmers known for their traditional innovative cultivation practices and holders of the GI tag for Maraiyur Jaggery participated in this programme. A training on ‘Maximizing Sugarcane Productivity’ (TMSP-25) was also conducted for the farmers (50) from Kottayam, (Kerala). Recent technologies for sugarcane cultivation developed by the Institute and elsewhere were discussed and demonstrated to encourage farmers to expand the area under sugarcane cultivation and enhance productivity for jaggery making.



Hyderabad Chapter

- Hyderabad Chapter, in association with ICAR-National Academy for Agricultural Research Management (NAARM), participated in Sankalp 10.0, which ignites the entrepreneurial spirit among graduates. Of 13,759 registrations from 1,867 Institutions across India competing for ten business challenges, 70 finalists reached the



final round. Students from premier Institutions, including IIMs, NITs, IRMA, and MANAGE, won cash awards. During the valedictory programme, Dr. Bijay Kumar Behera (Chief Executive, NFDB, Hyderabad) distributed prizes to the winners and he urged graduates to become job creators and highlighted the Government of India schemes in the fisheries sector that support budding entrepreneurs. He emphasized that the future lies in the ability to innovate and build sustainable enterprises.

- Dr. Venkatesan Sundaresan (Professor) with his colleagues from University of California (UC), Davis (USA) and others from Innovative Genomics Institute (IGI), UC, Berkeley presented a webinar on “*One-Line Hybrid Crops by Apomixis*” at the ICAR-Indian Institute of Rice Research, Hyderabad.



Kolkata Chapter

- Kolkata Chapter along with ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore organized awareness camps at Pancha and Govindopur Primary School, Purulia on October 25, 2025 to promote community-managed fish farming and to enhance livelihood opportunities and nutritional security in drought-prone regions.



- A Farmer-Scientist interaction session was organised on November 19, 2025, at ICAR-CIFRI for fish farmers (220) from Khalsi, Sindrani, Kumili, Chamta, Chamardaha and Akaipur beel. The session facilitated knowledge sharing and discussion on inland fisheries practices.
- Mahila Matasyajibi Sammelan 3.0 (Women Fishers' meet) was organised on November 22, 2025 at Kultali, Sundarbans by Kolkata Chapter along with ICAR-CIFRI in collaboration with the Kultali Milan Tirth Society to mark World Fisheries Day. The event drew over 4,500 women fishers, celebrating their contribution to fisheries-based livelihoods.
- An awareness programme was organised on November 24, 2025 by Kolkata Chapter in association with ICAR-CIFRI, as part of World Antimicrobial Awareness Week 2025, themed "Act Now: Protect Our Present, Secure Our Future."
- A BSS on *Transboundary Hilsa Fisheries Management* was organized on December 02, 2025 at ICAR-CIFRI, Barrackpore in association with BOBP-IGO, Chennai. A total of 40 participants, including fishermen from Kakdwip Hilsa Fishers Association, NGO representatives from South 24 Parganas, and international scientists from Bangladesh and Myanmar attended the session.

Lucknow Chapter

- Lucknow Chapter organized a BSS on "Regional Priorities in Agriculture and Allied Sciences in the context of *Viksit Krishi*," which was hosted at ICAR-National Bureau of Fisheries Genetic Resources (NBFGR), Lucknow on October 17, 2025 to identify and outline strategies to accelerate agricultural production and productivity in line with the Hon'ble Prime Minister's vision for *Viksit Bharat 2047*.



- An awareness programme on "Innovation to Impact: Inspiring Youth Careers in Agriculture and Allied Sectors through Intellectual Property Awareness", in collaboration with ICAR-NBFGR and Aquatic Biodiversity Conservation Society was organized by the Lucknow chapter on December 11, 2025. Dr. Kajal Chakraborty (Director, NBFGR) emphasized that increasing IP literacy among scientists, students, and researchers was crucial in maximizing their creative potential and promoting innovation-driven growth within the agriculture and related sectors. Over 110 participants joined the awareness programme.

Palampur Chapter

- Palampur Chapter in collaboration with Anusandhan National Research Foundation-Scientific and Social Responsibility (ANRF-SSR) and under the umbrella of *ViksitBharat@2047* organized an



exposure visit-cum-hands-on training programme in the field of Biotechnology on November 7, 2025. The programme was designed to provide practical exposure and skill-oriented training to graduate students and faculty members (26) from Government College Dhaliara, Kangra (Himachal Pradesh).

- An *educational visit-cum-hands-on training programme* was organized for students and faculty member from Sardar Patel University, Mandi (Himachal Pradesh)



(November 11, 2025) and Shaheed Captain Vikram Batra Government College, Palampur (December 10, 2025) under CSIR–Integrated Skill Initiative. The participants visited various state-of-the-art research facilities of CSIR–Institute of Himalayan Bioresource and Technology (CSIR-IHBT), Palampur were exposed to advanced research infrastructure and ongoing scientific activities, thus providing them practical insights into modern research methodologies and applications.

Varanasi Chapter

- Varanasi Chapter organized a BSS in partnership with the ICAR-Indian Institute of Vegetable



Research (IIVR), Varanasi on October 6, 2025 to help farmers become self-sufficient by *growing vegetables using PPP Model*.

- An educational tour for high school students from the Government Girls High School, Bhadohi (Uttar Pradesh) to IIVR, Varanasi was arranged on October 9, 2025 to create interest among rural students in science.
- A special lecture on ‘*From Waste to Value: Circular Economy Case Studies in Developing Cities*’ was organized on November 29, 2025 for students. Dr. Edza Aria Wikurendra (Associate Professor, Universitas Nahdlatul Ulama Surabaya, Indonesia) delivered the lecture at Rajiv Gandhi South Campus, Banaras Hindu University, Barkacha, Mirzapur and emphasized the importance of circularity principles for converting municipal solid waste from developing cities into value-added products, and for their role in low-input, sustainable urban and peri-urban agriculture.



Activities of NAAS-YUVA

Participation in Global Youth Institute, Conference

Six high school students’ delegation for the first time participated in the *Global Youth Institute (GYI) Conference* held in Des Moines, Iowa (USA) during October 21-24, 2025 (See Box), accompanied by Dr. Haritha Bollinedi as Chaperone. Senior NAAS leadership, including Dr. Himanshu Pathak, (President) and Dr. W. S. Lakra and Dr. A. K. Singh, (Secretaries), also attended the event and encouraged the students.

Name	Standard	Affiliation
 Shruthi K.	12 th	PM Shri Kendriya Vidyalaya, Coimbatore (Tamil Nadu)
 Tanuja P. Karne	12 th	PM Shri Kendriya Vidyalaya, Chhatrapati Sambhajinagar (Maharashtra)



Name	Standard	Affiliation
 Sanyukta Dalal	12 th	PM Shri Kendriya Vidyalaya, Nagpur (Maharashtra)
 Roshan Godara	12 th	Rajdhani Educational Group, Jaipur (Rajasthan)
 Dev Karan	12 th	Delhi Public School, Noida (Uttar Pradesh)
 Rajeev	12 th	PM Shri Kendriya Vidyalaya, Karnal (Haryana)

During the conference, plenary lectures by eminent global leaders, policy makers, World Food Prize Laureates, and renowned scientists provided insights on global food systems, agricultural innovation, climate resilience, and sustainable development. Besides, a wide range of thematic breakout sessions covering critical areas such as addressing rural food insecurity, advancing climate-smart agriculture, translating agricultural policy into action, supporting small-scale farmers, seed science and innovation, and the role of veterinary science in modern agriculture were arranged.

Through sessions on the *Borlaug-Ruan International Internship (BRI)* exploration programme, students

were introduced to pathways for pursuing international research internships, mentorship opportunities, and long-term engagement with global agricultural institutions and networks associated with the World Food Prize Foundation.

In addition, participation in the Borlaug Dialogue, innovation showcases, and the Innovate for Impact Awards Ceremony enabled students to interact with entrepreneurs, researchers, and youth innovators working on transformative agri-food solutions.

Overall, participation in GYI 2025 provided the NAAS-YUVA students with valuable international exposure, academic enrichment, networking opportunities, and inspiration to pursue future careers in agricultural science, policy, and innovation.

A special Roundtable meeting on “Empowering Youth for Enhanced Engagement in Agriculture and Food System in India”

The Academy in collaboration with Michigan State University (MSU), USA, organized a special Roundtable meeting during the World Food Prize Symposium in Des Moines (USA) on October 21, 2025. The meeting brought together over 30 agricultural leaders from India and USA, including Ms. Jeanie Borlaug Laube (daughter of Dr. Norman E. Borlaug) and World Food Prize Laureates Dr. Gurdev Singh Khush and Dr. Rattan Lal. Significant outcome of the meeting was *signing of Letter of Intent (LoI) between NAAS and the World Food Prize Foundation* for long-term collaboration. The Roundtable emphasized mentorship by agricultural leaders, creation of international internship and fellowship pathways (including Borlaug–Ruan linkages), and mobilization of institutional, philanthropic, and CSR-based support to ensure sustained participation of Indian youth in global agri-food leadership platforms.





Publications



Policy Papers (PP)

PP-140: Underutilized Fruits and Vegetables for Nutritional and Health Security

PP-141: Preparing Youth for Agri-preneurship Development

Forthcoming Programs

Strategy Workshops

- Unlocking Pulses Sector: Innovations, Policies and Outreach
- Enhancing Rainfed Maize Systems: A Roadmap for Sustainable Productivity and Prosperity.
- Organic Fruits and Vegetables: Profitability and Certification Challenges
- Leveraging Bioproducts Processing for livestock and Poultry Sector Waste Towards Circular Bioeconomy
- Higher Agricultural Education Institutions (HAEIs) Strategies Towards Viksit Bharat 2047
- Deep Sea Fisheries: Prospects, Challenges and Policy for Commercial Exploitation
- Regenerative and Sustainable Agriculture for Improving Efficiency and Reducing Vulnerability

Brainstorming Sessions

- Nutraceuticals and Functional Foods: Policy Challenges and Regulatory Framework

- Climate Resilient Aquaculture System and Practices
- Digital Surveillance and Digital Support System in Plant Protection
- Preventing the Use of Spurious Pesticides in Agriculture
- Harnessing from World Food Prize Innovations for Prioritizing Agricultural Research, Education and Technology Transfer in India
- Future of Next Generation Small Farms: Ensuring Profitability and Viability
- Agri-Trade under Green Protectionism: Research Challenges and Institutional Readiness
- Cross-cutting Conversations for Diet Diversity: Harnessing Agriculture for Nutritional Wellness of the Nation
- Uncertainty in International Trade: Implications on Agriculture Sector

Obituaries



Dr. K.V. Devaraj
(1937-2025)

Dr. Devaraj was born in Chikkaballapur in Karnataka on January 29, 1937 and had his early education in Bangalore. His journey to fisheries started after he acquired his Master's degree from Central College, Bangalore. He joined the Department of Fisheries, Government of Karnataka in 1962 as Research Assistant. He was then deputed to do Postgraduate Diploma in Fisheries Science (D.F.Sc.) from Central Institute of Fisheries Education (CIFE), Mumbai

(1965-67). At that time, this was the only formal training Centre in fisheries sciences available in India. Following this training in fisheries, he was deputed to Auburn University, Alabama (USA) for Ph.D. when he returned to India, the University of Agricultural Sciences, Bangalore (UASB) had established the first College of Fisheries of the country in 1969 and Dr. Devaraj was appointed as Assistant Professor in this College in 1970. His interest in putting into practice the knowledge on aquaculture that was at early stage of development in India at that time led to his acceptance of the responsibility to manage



the fisheries research station of UASB as Fisheries Research Officer in 1974. Later, he rose to become the Chief Scientific Officer and Head, Inland Fisheries Division of UASB.

Dr. Devaraj's ability to organize and mentor research led him to become the Director (Research), UASB in 1990 and Dean (Academics) in 1992. Dr. Devaraj's administrative acumen was soon recognized by the Government of Karnataka and he was appointed as Vice Chancellor (1992-95), becoming the first fisheries scientist to head an agricultural university in India.

Dr. Devaraj was a soft spoken but firm academic leader with progressive thinking and compassionate heart. His academic excellence was recognized by several professional Societies and Organizations that conferred awards on him. He was awarded Doctor of Science (honoris causa) by CIFE, Mumbai (Deemed to be University) in 2011. He was decorated with Lifetime Achievement awards by the Asian Fisheries Society in 2017 and the Forum of Fisheries Technologists in 2018. Dr. Devaraj was elected Fellow of the National Academy of Agricultural Sciences (NAAS) in 2001. Dr. Devaraj's rich legacy will inspire generation of fisheries students and scientists. In his honour, the Professional Fisheries Graduates Forum has instituted Dr. K.V. Devaraj Award for the best fisheries graduate of the Country. With passing away of Dr. Kamarath Viduran Devaraj, popularly known as Dr. K.V. Devaraj, on November 4, 2025, we lost a doyen of fisheries and agricultural sciences.

Dr. I. Karunasagar

Senior Fish Safety and Quality Specialist, Fisheries and Aquaculture Department Food & Agriculture Organisation of UN, Subba Meena, Jayanagar, Mangalore



Dr. P. Pushpangadan (1944-2025)

India lost one of its most distinguished plant scientists and institution builders with the passing away of Dr. Palpu Pushpangadan, an internationally respected ethnobotanist whose life and work profoundly shaped Indian botanical science, ethnopharmacology, and biodiversity governance. His demise marks the end of an era, though his legacy will continue to guide generations of scientists, policymakers, and community practitioners.

Dr. Pushpangadan held several eminent leadership positions during his illustrious career. He served as Director, Tropical Botanic Garden and Research Institute (TBGRI) and subsequently, National Botanical Research Institute (NBRI), Lucknow. Under his

visionary stewardship, both institutions witnessed significant advances in interdisciplinary research, national capacity building, technology development, and international scientific cooperation, strengthening their standing as centres of excellence in plant science and biodiversity research.

In addition, he served as Director, Rajiv Gandhi Centre for Biotechnology (RGCB) & Central Institute of Medicinal and Aromatic Plants (CIMAP), and Director General, Amity Institute for Herbal and Biotech Products Development. Across these roles, he played a transformative part in strengthening institutional governance, fostering translational research, and integrating traditional knowledge systems with modern biotechnology for societal benefit.

A scholar of exceptional depth, Dr. Pushpangadan's academic journey was marked by rigorous field-based research, interdisciplinary thinking, and a rare ability to connect indigenous knowledge with contemporary science. He authored and edited a vast body of scientific literature, policy documents, and scholarly books that significantly influenced discourse on medicinal plants, biodiversity conservation, and traditional knowledge systems in India and globally.

In recognition of his exceptional contributions, Dr. Pushpangadan was conferred Padma Shri (2010), along with several prestigious national and international honours including the UN Equator Initiative Prize, the Norman Borlaug Award, and the John W. Harshberger Medal. He served as President of several national and international ethnobotanical and ethnopharmacological Societies. He was also Fellow of multiple scientific academies, and maintained extraordinary scientific productivity with over 500 research publications, more than 20 books, and over 200 patents.

A defining dimension of his life's work was his pioneering contribution to biodiversity access-and-benefit-sharing (ABS). He was among the earliest Indian scientists to advocate fair, ethical, and community-centric sharing of benefits arising from the use of biological resources and traditional knowledge. His efforts led to the development of India's first structured benefit-sharing model, ensuring equitable recognition and tangible returns for tribal and indigenous communities.

True to his ethical convictions, Dr. Pushpangadan dedicated the Equator Award prize money to Society by instituting the Pushpangadan Biodiversity ABS Award, administered by the Dr. Palpu Pushpangadan Charitable Society. The award recognizes eminent scientists, academicians, and social workers for



outstanding contributions to tribal welfare, biodiversity conservation, and equitable benefit sharing, and stands today as a living institutional legacy of his values.

Beyond his professional achievements, Dr. Pushpangadan will be remembered as a humble, compassionate mentor who combined scientific rigor with cultural sensitivity and human warmth. His legacy lives on in the institutions he strengthened, the policies he shaped, the communities he empowered, and the countless lives he inspired.

Dr. Ajit Kumar Shasany

Director, CSIR-National Botanical Research Institute, Lucknow



Prof. A.K. Srivastava

(1957-2025)

Born on August 01, 1957 in Varanasi, he earned his B.V.Sc. & A.H. and M.V.Sc. from Veterinary College, Mathura and Ph.D. in Veterinary Pharmacology from Punjab Agricultural University (PAU), Ludhiana. He pursued Post-Doctoral Research at GSF Institute of Toxicology, Munich, Germany as DAAD Fellow, which enriched his scientific perspective and global outlook. Beginning his career at PAU, Ludhiana as Assistant Professor, he later headed the Department of Pharmacology & Toxicology and significantly strengthened research on drug residue monitoring, toxicology and veterinary pharmacology. His leadership at Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Jammu as Dean and Director of Resident Instructions marked a phase of institutional strengthening, academic reform and transformative student mentoring.

Prof. Srivastava's most illustrious contribution came as Director & Vice-Chancellor (NDRI), where he modernized infrastructure and promoted translational research & international collaboration. Under his stewardship, India achieved the historic milestone of producing the world's first cloned buffalo, positioning the nation at the global forefront of animal biotechnology. He was the architect of the National Referral Centre for Milk Quality and Safety (NRCQS)

which led to the development of rapid diagnostic kits for milk adulterants, strengthening national food safety and public health. In policy and governance, he chaired major national committees, including the Planning Commission Working Group on Animal Husbandry & Dairying (XII FYP) and R&D Committee, Ministry of Food Processing Industries.

Prof. Anil Kumar Srivastava, former Vice-Chancellor, DUVASU, Mathura and former Director, ICAR-National Dairy Research Institute (NDRI), Karnal, passed away on December 25, 2025. He was a distinguished scientist, visionary leader, institution builder and mentor to generations, Prof. Srivastava served the nation in several key capacities including Vice-President, NAAS; Chairman, Agricultural Scientists Recruitment Board (ASRB); and Member of Food Authority, FSSAI. His demise is an irreparable loss to the agricultural, dairy and veterinary science community across India and abroad.

Author of 250+ research papers, 10 books and 12 policy papers, he guided more than 25 Masters/Ph.D. scholars. His stellar scientific contributions earned him several prestigious awards such as ICAR Jawaharlal Nehru Award, International NOCIL Award, German Academic Exchange Award, ASET Gold Medal, National Education Award 2016, and many lifetime achievement honours including Dr. Verghese Kurien Memorial Award. He was conferred D.Sc. (*Honoris Causa*) by DUVASU, (Mathura) and NDVSU, (Jabalpur) and Indian Veterinary Research Institute (Izatnagar).

The NAAS fraternity deeply mourns the passing of Prof. Srivastava — a scholar of unmatched clarity, an orator of conviction and a leader who blended science with service. We extend heartfelt condolences to his wife, two sons and the bereaved family. His legacy shall live through the institutions he strengthened, policies he shaped and countless students he inspired.

May his noble soul rest in eternal peace.

Dr. Ashish K. Singh

Joint Director (Academic)

ICAR-National Dairy Research Institute, Karnal

Editors: Drs. V.K. Baranwal, R.K. Jain and R.K. Pal

Published by: Executive Director, on behalf of the National Academy of Agricultural Sciences, NASC, Dev Prakash Shastri Marg, New Delhi 110012; Tel. (011) 25846051-52, Fax. 25846054; Email: naas-mail@naas.org.in; Webside: <http://naas.org.in>