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Editors

Dr. R.K. Jain
Dr. R.K. Pal

From the President's Desk

Reimagining India's Agri-Food Systems for Viksit Bharat-2047



Recent statistics indicate that India has achieved a record food grain production of ~357.70 million tonnes (Mt) during 2024-25. Among these, India's rice production has touched global highest of 150.18 Mt, wheat has reached an all-time high of 117.94 Mt, and maize has crossed 43.40 Mt. In addition, oilseeds have also exhibited the record production level of 42.99 Mt. These milestones demonstrate the sustained impact of resilient crop varieties, improved production technologies, and supportive policy initiatives

that have strengthened agricultural systems across the country. Since 1950, adoption of modern technologies and improved crop management practices has resulted in the remarkable increase in food grains production more than 6.50 times; and pulses, oilseeds, sugarcane & cotton by 2.88, 7.69, 7.94 & 10.63 times, respectively.

The pace of agricultural growth has also accelerated in recent years. While the annual increment in food grains production during the Green Revolution period averaged about 4.10 Mt, it increased to around 8.10 Mt annually between 2014-15 and 2024-25. The horticulture sector has also witnessed significant growth, registering an annual increase of nearly 7.50 Mt, reflecting the diversification and intensification for meeting the rising demand for fruits, vegetables, and other high-value crops. Scientific breakthroughs have further strengthened agricultural innovation. Notably, the development of the world's first genome-edited rice varieties, namely, DRR Dhan 100 and DST Rice 1- represent an important milestone in crop improvement, offering higher yield potential, improved grain quality, early maturity and stress tolerance.

Despite these achievements, the challenges confronting agriculture today extend far beyond the goal of increasing production. Population growth, rapid urbanization, climate variability, and natural resource degradation require a broader and more integrated vision for the future of India's agri-food systems. Agriculture must now address multiple objectives simultaneously, ensuring food availability, improving nutritional outcomes, safeguarding natural resources, and enhancing the resilience of farming



communities. In this evolving context, agriculture must contribute not only to food security but also to nutritional well-being, environmental sustainability, and improved public health.

Major Challenges Confronting Agriculture

1. Population Growth: India currently feeds nearly 1.45 billion people, yet the demand of a rapidly growing and increasingly urbanized society will place additional pressure on agricultural systems. Estimates suggest that to meet the objectives of Viksit Bharat by 2047, the country will have to produce approximately 440 Mt of food grains, requiring an additional 82.30 Mt production. Production of key commodities such as maize, oilseeds, sugarcane, meat, fish, & eggs may have to double, while the production of fruits, vegetables, & milk may have to increase nearly three-folds to meet future demand. Achieving these targets, while conserving natural resources and growing complexity of climate variability will require technological breakthrough across the agri-food system value chain.

2. Nutrition: Despite improvement in food production, India is still facing triple burden of malnutrition characterized by under nutrition, micronutrient deficiency, and increasing prevalence of overweight, obesity, & diet-related non-communicable diseases (NCDs). Currently, it is estimated that almost 194 million people are undernourished in India, and around 43 million children under five years of age are stunted. Though, there is a decline in stunting from 52 percent in 1992-93 to around 38 percent at present, still it is a matter of serious health concern.

At the same time, obesity levels are rising rapidly, and projections indicate an increase in the individuals with obesity from 58.6 million in 2020 to almost 176 million in 2050. These factors are further exacerbating the prevalence of NCDs, such as diabetes, cardiovascular diseases, and certain types of cancer. The agri-food systems worldwide are estimated to impose hidden costs of approximately 8.1 trillion U.S. \$ annually, and the cost in India has been estimated to be 1.3 trillion U.S. \$. More than 73 percent of these costs are associated with unhealthy and unbalanced diets, such as excessive consumption high fat high salt (HFHS) processed foods, sugars, and insufficient consumption of whole grains, fruits, & vegetables.

3. Climate Change and Natural Resource Degradation: Agriculture today faces mounting pressures from climate change, land degradation,

deteriorating soil fertility, water scarcity, and biodiversity loss. Sustainable management of natural resources through climate-resilient & regenerative agriculture, improved water-use efficiency, integrated nutrient management, and conservation-based farming practices will therefore be essential. Small and marginal farmers, which dominate Indian agriculture, are likely to be more vulnerable.

Way Forward

Aforementioned challenges highlight the importance of reorienting agri-food systems toward nutrition and health, which must be guided by the principles of sustainability and resilience. In this regard, a mission-oriented framework like Science Excellence for Health through Agricultural Transformation (SEHAT) has tremendous potential for reimagining agri-food system by linking agriculture with human health. Enhanced co-operation between ICAR and Indian Council of Medical Research (ICMR) would be instrumental in developing sound scientific evidence on the linkages among food systems, disease prevention and human well-being.

1. Agriculture Diversification and Integrated Farming System: Agricultural systems must increasingly promote diversified production that enhances the availability and accessibility of nutrient-rich foods such as pulses, oilseeds, millets, fruits, vegetables, & animal-source foods. Diversified farming systems not only improve dietary diversity but also strengthen farm resilience, sustainability and small farmers livelihood. Integrated farming systems that combine crops, livestock, fisheries, & horticulture offer a holistic pathway to enhance nutrition, improve resource-use efficiency, and strengthen resilience against climatic risks. In this context, traditional crops such as millets, often referred to as “Shree Anna,” and other ancient grains have received renewed attention because of their nutritional richness and climate resilience. Initiatives such as the establishment of the Global Centre of Excellence on Millets- MAHARISHI (Millets and Other Ancient Grains International Research Initiatives) aim to strengthen research, value addition, and global promotion of these crops.

2. Bio-fortification: Improving the nutritional quality of food through bio-fortification represents another important strategy. Bio-fortification enhances the nutrient content of crops through plant breeding, genetic approaches, and agronomic practices, thereby improving the intake of essential



micronutrients, such as iron, zinc, and vitamin A. Similarly, animal-source foods- including milk, eggs, fish, and meat- play a critical role in providing bio-available nutrients and essential amino acids. For example, fish and fish-derived products provide high-quality protein and omega-3 fatty acids having significant benefits for human health. However, much of this progress remains fragmented and disconnected from measurable health outcomes. There is a pressing need to bridge the gap between agricultural innovations and public health, supported by robust evidence, including clinical validation and impact assessment.

3. **Nutraceuticals, Functional Foods, and Dietary Transformation:**

Animal products such as milk, eggs, fish, and meat are rich sources of bio-available nutrients and essential amino acids. In addition, aquatic products and plant-based products such as fruits and vegetables are rich sources of bio-active compounds that possess antidiabetic, anti-inflammatory, and cardioprotective properties. Moreover, the promotion of value-added products from crops such as millets, aonla, jamun, and pomegranate can help tackle lifestyle disorders and generate new avenues for growth. At the same time, behavioral changes and dietary transformations are the need of the hour to popularize the consumption of a variety of diets to minimize the consumption of ultra-processed foods.

4. **One Health Approach:** Climate change, antimicrobial resistance, zoonotic diseases, and socio-economic inequalities are adding new dimensions to the agri-food system. The One Health approach provides an important framework for addressing these interconnected challenges. Healthy soils support nutritious crops; healthy crops contribute to safe and diverse diets; and healthy livestock systems provide nutrient-rich foods while sustaining rural livelihoods. By integrating these dimensions, the One Health framework promotes a holistic understanding of agriculture as a system that directly influences both human health and environmental sustainability.

5. **Digital, Data-driven, and Climate-smart Systems:** Technological advancement such as precision agriculture, artificial intelligence, quantum computing and improved value chains offer significant opportunities to transform the agri-food systems. Climate-smart and circular agriculture, which include efficient use of resources, recycling of agricultural waste, and reduction of emissions, will improve the health of

soil, water, and air, thereby promoting ecosystem and human health.

6. **Aligning Complementary Institutional Landscapes:**

The transformation of India's agri-food systems requires a comprehensive and integrated approach that brings together science, innovation, policy, and practice. It calls for reorienting research priorities, strengthening delivery mechanisms, and fostering partnerships across institutions and stakeholders for greater synergy and coherence. Stronger partnerships between agricultural and health research institutions can generate robust "farm-to-plate-to-health" evidence, ensuring that agricultural innovations are not only evaluated for productivity but also for their contributions to dietary quality and public health.

7. **Occupational Health and Human Well-being:**

Occupational health hazards, for example, heat stress, pesticide toxicity, respiratory infections, and musculoskeletal disorders, can have significant impact on productivity and quality of life. Overcoming these issues with improved safety standards, use of technology, and awareness can help improve the productivity of the workforce as well as the quality of life in rural areas.

India's experience during the COVID-19 pandemic demonstrated the resilience and importance of its agricultural systems. Even during a period of global disruption, agriculture continued to supply food, sustain livelihoods, and support the national economy. Over decades, improved access to food and better nutrition have also contributed to significant improvements in human well-being. Life expectancy in India has increased from around 30-32 years at the time of Independence to more than 70 years today.

The Academy continues to remain committed to advancing Science, sharing knowledge, fostering dialogue, and supporting evidence-based policy on emerging challenges in agriculture and allied sectors. Reimagining India's agri-food systems with a focus on health, sustainability, and resilience will be central to building a well-nourished and prosperous nation. By aligning agricultural production with nutritional outcomes and sustainable practices, India can build a food system that not only nourishes its people but also protect its natural resources.

(M.L. Jat)
President



Executive Council Meeting

144th Meeting

The 144th meeting of the Executive Council (EC) was held in hybrid mode on February 20, 2026, under the Chairmanship of Dr. M.L. Jat (President). The meeting commenced with a welcome address by Dr. Ashok K. Singh (Secretary). Key agenda items discussed during the meeting were as follows:



- Progress on the Academy Bye-Laws and Rules revision was reviewed. The Committee will submit its final report before the forthcoming Annual General body Meeting (AGM).
- The status of Academy's International Chapters (Western and Eastern), launched in 2025, was reviewed. Further strengthening of global outreach and diaspora engagement were emphasized.
- The Agricultural Science Congress (ASC) will be organized once in three years instead of two years, aligning with the tenure of office bearers. The matter will be placed before the AGM for approval. However, Academy will organize focused workshops. For 2026, a workshop focusing on infrastructure systems, data integration, and emerging national priorities was proposed.
- The program for 33rd AGM and Foundation Day (June 4-5, 2026) was finalized. It was decided

to organize Section-wise group presentations by newly elected Fellows and also to hold an "AI Summit for the National Agricultural Research System (NARS)" during AGM.

- Newly elected NAAS Fellows as well as Padma Awardees (2026) will be felicitated during AGM. In addition, exemplary farmers along with distinguished industry leaders and media personnel were identified for felicitation. It was also decided to obtain brief profiles from awardees for inclusion in the NAAS News.
- Programs for 2026 including brainstorming session/strategy workshops were finalized.
- The proposal to resume printing of 200 hard copies of Academy's publications was approved for wider dissemination, However, NAAS News will be published in electronic format only.
- The Academy's participation in the World Food Prize Foundation Event 2026 (October 20-22, Des Moines, Iowa) was approved. EC supported student, participation, booth establishment, and youth-focused initiatives, including the theme "*Women Farmers in Agriculture*".
- Academy's theme for 2026, "Women and Youth-led Agri-Food System Innovations and Enterprises," was finalized and activities to be conducted in collaboration with PAAS.
- Revised hiring charges aligned with ICAR standards for NAAS Conference facilities were approved.
- A Committee for Journal Scoring (2027-2029) was constituted and criteria for evaluation of non-impact factor journals were finalized.
- Progress of the Academy's journal "Agricultural Research" was reviewed.

Meeting ended with a formal vote of thanks by Dr. B.S. Dwivedi (Secretary).

NAAS Programs

New Year Get-together-2026

The Academy organised New Year Get-Together on January 01, 2026, bringing together Fellows and Associates to celebrate the achievements during 2025 and reflect on the Academy's vision for the future. Dr. A.K. Singh (Secretary), extended a warm welcome and introduced the newly elected office-bearers: Dr.

M.L. Jat (President), Dr. B.S. Dwivedi (Secretary), Dr. R.K. Pal (Editor), and EC Members, Dr. Dilip Jain; Dr. D.L.N. Rao; Dr. K. Madhavi Reddy; and Dr. Rajarshi Roy Burman. Besides, the outgoing office bearers and EC members: Dr. Himanshu Pathak; Dr. W.S. Lakra; Dr. V.K. Baranwal; Dr. Anjani Kumar; Dr. A.S. Raghvendra; Dr. E.V.S. Prakasa Rao; and Dr. R.T. Patil were felicitated in recognition of their service to



the Academy. The event also featured the release of Academy's Year Book and Year Planner 2026.

The program was enriched with reflections and remarks by Past Presidents, Dr. Himanshu Pathak, Dr. T. Mohapatra, Dr. R.B. Singh, and Dr. R.S. Paroda. They highlighted the Academy's journey, scientific advancements, and the need for continued collaborative efforts to strengthen Indian agriculture. It was emphasized that agriculture remains central to economic development, livelihoods, & food security and Academy must continue to function as an independent science-based advisory body. Continuous introspection, inclusivity, and responsiveness are essential for institutional growth. Dr. M.L. Jat (President) delivered New Year address emphasising innovation, inclusiveness and forward-looking strategies for science-led agricultural transformation. The program concluded with a formal vote of thanks by Dr. B.S. Dwivedi (Secretary).

OTHER ACTIVITIES

Regional Chapter's Conveners Meeting

A meeting of the Conveners of Regional Chapters was held on January 27, 2026 in hybrid mode to review the activities conducted by the Regional Chapters during 2025 and to discuss the proposed programs for 2026. The meeting was chaired by Dr. B. S. Dwivedi (Secretary).

Conveners of the Regional Chapters briefly presented activities conducted during 2025-26 along with current



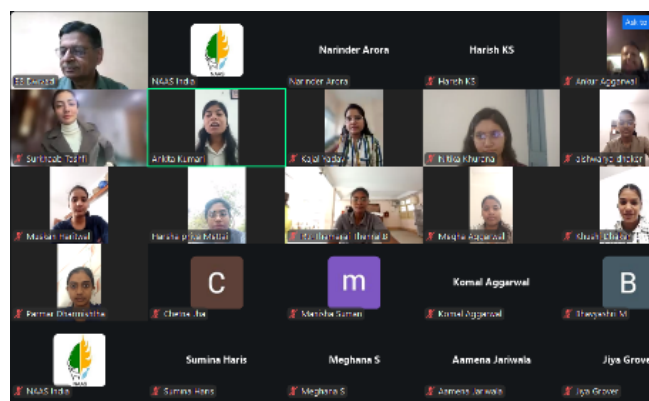
financial status and proposed plan of activities for 2026-27. After detailed deliberations, the following action points emerged:

- To design region-specific programs addressing local agricultural, climatic, and socio-economic challenges.
- To organize at least one brainstorming session on region-specific agricultural problems and submit major recommendations to the Academy.
- Greater emphasis on farmer-centric, student-oriented, and Young scientists' engagement activities, including celebration of National Science Day on February 28, 2026.
- Each Regional Chapter shall create a WhatsApp group comprising Fellows and Associates of their region to facilitate communication and ensure their active participation.
- Timely submission of utilization certificates (UCs) and financial statements to the Academy for budget review and release of funds.
- To prepare revised calendar of activities for 2026 and submit to the Academy in advance for review and timely release of funds.

Interaction Meeting with "Smt. Kanak Aggarwal NAAS Girls Scholarship" recipients

An interactive session with the recipients of the "Smt. Kanak Aggarwal NAAS Girls Scholarship" was held in virtual mode on March 31, 2026 to connect meritorious girl students pursuing agricultural education with the sponsor M/s Crystal Crop Protection Ltd (CCPL), and provide them guidance on future career pathways.

The session was chaired by Dr. B.S. Dwivedi (Secretary), He underlined the current challenges before Indian agriculture and role of the younger generation in their redressal. Mr. Ankur Aggrawal (CEO, CCPL), along with HR leadership interacted with the students and shared valuable insights on emerging





career opportunities in agriculture, including roles in corporate sectors, startups, research, and civil services. Discussions also covered contemporary themes such as digital agriculture, artificial intelligence, precision farming, and climate-smart practices.

The meeting concluded with a formal vote of thanks by Ms. Deeksha Gupta (Executive Director) acknowledging the scholarship's role in empowering young women in agriculture and fostering industry-academia collaboration.

Activities of the Regional Chapters

Barapani Chapter

- Organized a regional workshop on “*Livestock Disease Control Strategies in Northeast India*” on March 23, 2026 at ICAR–National Research Centre on Mithun, Nagaland in collaboration with ICAR Institutes. The workshop focused on major livestock diseases including PPR, FMD, LSD, and pig and poultry diseases, covering epidemiology, diagnostics, and control strategies. Around 100 stakeholders participated, and deliberations led to the formulation of strategic recommendations & development of a comprehensive document.



Bengaluru Chapter

- Organized a workshop on “*Future-Ready Dairying: Innovative Reproductive Technologies for Profitable Dairy Farming*” on March 24, 2026 in collaboration with ICAR-National Dairy Research Institute (Southern Regional Stations). The program focused on advanced reproductive technologies, fertility evaluation, and nutritional strategies for improving dairy productivity. Seventy



three (73) field veterinarians participated and gained practical insights for field-level applications.

Hyderabad Chapter

- Organized a workshop on “*Application of Bioinformatics in Accelerating Biological Research*” during January 20-21, 2026 at ICAR–National Academy for Agricultural Research Management (NAARM), Hyderabad emphasizing computational tools and genomic data analysis.



- Arranged a lecture on “*Bio Economy and One Health in Indian Agriculture*” on February 13, 2026 at ICAR-Indian Institute of Rice Research (IIRR), Hyderabad in association with the Society for Advancement of Rice Research, highlighting sustainable and integrated agricultural approaches.



- Arranged a national seminar-cum-exhibition on “*Organic and Natural Farming*” during February 27-28, 2026 in Hyderabad in collaboration with Agri-Horticultural Society and National Centre for Organic & Natural Farming along with ICAR



Institutes, focusing on eco-friendly agricultural practices.

- Celebrated National Science Day was on February 28, 2026 at ICAR-IIRR, Hyderabad, engaging around 200 students through interactive sessions and awareness programmes on science and agriculture.

Karnal Chapter

- Arranged New Year Get-Together on January 13, 2026 at GSFRED Research Centre, Karnal with a lecture on “Milk: White Gold of India.”
- Celebrated National Science Day on February 28, 2026 at GSFRED Research Centre, Karnal with participation of school students.
- Organized a national conference on “Climate Smart Regenerative Agriculture” during March 20-21, 2026 at GSFRED, Karnal, with participation of around 300 delegates focusing on climate resilience, sustainable farming systems, and environmental security.



Lucknow Chapter

- Organized an awareness programme on “Life Below Water (SDG-14)” on February 28, 2026 in collaboration with ICAR-National Bureau of



Fish Genetic Resources (NBFG), Lucknow. The program included expert lectures on sustainable agriculture, water resource management, and ecological conservation. Over 100 students and stakeholders participated, enhancing awareness on biodiversity conservation and sustainable development.

Ludhiana Chapter

- Conducted an awareness program on “Poultry Farming as a Subsidiary Occupation” on January 15, 2026 at Krishi Vigyan Kendra, Bahawal, Hoshiarpur, focusing on scientific poultry management and income generation for farmers.



- Conducted an awareness program on “Integrated Nutrition Gardening” on February 12, 2026 at Krishi Vigyan Kendra, Bahawal, Hoshiarpur, promoting household nutritional security and sustainable gardening practices.



- Celebrated National Science Day on February 27, 2026 at Punjab Agricultural University, Ludhiana in association with the Indian Society of Agronomy, featuring a special lecture on “Advancing Sustainable Crop Production through International Graduate Student Training and Collaboration” and a poster competition on “Conservation Agriculture” with participation of PG students.



- Organized a lecture on “*Interfacing Single Gene Characterization with Genomic Variation for Nitrogen Use Efficiency and Grain Quality*” on March 6, 2026 at G.S. Khush Institute of Genetics, Plant Breeding and Biotechnology, Punjab Agricultural University, Ludhiana.



24, 2026 at Krishi Vigyan Kendra, Bahawal, Hoshiarpur, focusing on food safety, detection of adulterants, and healthy dietary practices.

Palampur Chapter

- Conducted outreach and awareness programs for students and farmers on January 6 & 21, 2026 and February 5, 2026, promoting scientific learning, medicinal plant cultivation, and sustainable agricultural practices.



- Organized an awareness program on “*Career Opportunities in the Agriculture Sector*” on January 20, 2026 at Krishi Vigyan Kendra, Sangrur, with participation of school students to promote agricultural education and awareness of KVK activities.



- Arranged exposure visits for students on February 2, 2026 and March 2, 2026, focusing on Himalayan ecosystems, biodiversity, and climate change impacts.



- Organized an awareness program on “*Benefits of Consuming Safe and Healthy Food*” on March



- Arranged hands-on training programs, including herbarium preparation on February 17, 2026 and biotechnology skill development programme during February 5-10, 2026 to strengthen technical competencies of students.



Pune Chapter

- Organized a workshop on “*Droplet Deposition and Sprayer Calibration for Efficient Pesticide Application*” in collaboration with ICAR-National Research Centre for Grapes (ICAR-NRCG), Pune on February 23, 2026 focusing on improving pesticide use efficiency through proper sprayer calibration, droplet size optimization, and uniform deposition techniques for sustainable viticulture.



- Celebrated National Science Day on February 28, 2026.



- Arranged a program on precision plant protection and efficient pesticide application technologies on March 24, 2026, emphasizing adoption of improved spraying techniques, resource-use efficiency, and awareness among farmers and stakeholders for environmentally safe crop protection practices.

Varanasi Chapter

- Celebrated National Science Day under the inspiring tagline “*Aao Hath Badhayen, Vigyan Ko Vistar Dilayen*” on February 27, 2026 at Mahila Mahavidyalaya, Banaras Hindu University, Varanasi, engaging school and undergraduate students through interactive scientific demonstrations and activities to promote scientific awareness.



- Organized an awareness workshop on “*Water and Livelihood Security for ST Farmers in the Dryland Region of Sonbhadra*” on March 22, 2026 at Myorpur, Sonbhadra, under DST-sponsored program, focusing on climate-resilient agricultural practices, water conservation, and distribution of quality seeds to farmers.





Activities of NAAS-YUVA

Webinar on “Empowering Young Minds: Lessons from the COVAXIN Journey”

NAAS–YUVA organized an inspiring webinar on January 9, 2026 featuring Dr. Pragya D. Yadav (Director-in-Charge, National Institute for One Health, Nagpur, and Scientist ‘F’, ICMR National Institute of Virology, Pune). Drawing from her frontline experience in the rapid isolation of SARSCoV2—an achievement that enabled the development of COVAXIN, she highlighted the importance of biosafety, indigenous vaccine development, team work, and pandemic preparedness under the One Health framework.

Her talk strongly motivated young researchers to pursue translational science with integrity and national commitment. Over fifty students, researchers, and faculty members from throughout the nation enthusiastically participated in the session. The webinar was moderated by Dr. S.K. Sharma (Member) and Dr. Haritha Bollinedi (Convenor) appraised the audience and speaker on various activities of NAAS-YUVA.

Interactive Workshop on Career Pathways in Agriculture & Allied Sciences

Organized an interactive workshop on “NextGen Agri Leaders: Career Pathways in Agriculture & Allied Sciences” on February 3, 2026 in collaboration with INSA–INYNAS, and ICAR–CMFRI. The event engaged students from Classes X–XII, offering them a comprehensive overview of emerging opportunities across agricultural and allied sectors.

Journey to the Global Youth Institute (GYI), Des Moines, USA: Students Experience



Dev Karan (XII)

Delhi Public School, Noida

I am deeply grateful for the chance to attend World Food Prize Foundation (WFP) event 2025 at the Global Youth Institute in Des Moines, USA. The week widened my world: I listened, questioned, and then spoke about my own work in rooms filled with scientists, mentors, global laureates, and youth researchers from many countries. What stayed with me most was how tightly soil, food, farmers, and policy are stitched together, and how responsibility begins the moment you truly see that link. I returned more grounded, more focused, and more certain of my direction. This experience strengthened my path, and I have been selected as a 2026 Borlaug-Ruan International Intern at the International Potato Center (CIP) in Nairobi, Kenya.



Rajeev (XII)

PM Shri Kendriya Vidyalaya
Harsinghpura, Karnal

My visit to the USA for WFP event 2025 truly reshaped my mindset about agriculture and food systems.

The experience inspired me to see agriculture not only as production, but as a mission to fight food insecurity and hunger. I learned that a developed world cannot be built on empty stomachs. Interacting with global experts and youth leaders motivated me to take action beyond ideas. Guided by these inspirations, I initiated an iron nutrition program for adolescent girls called NutriSetu, aimed at improving awareness and access to nutritious diets. This visit strengthened my commitment to build sustainable, people-centered agricultural solutions for the future.



Shruthi Kumaran (XII)

PM Shri Kendriya Vidyalaya,
Coimbatore

Representing India at GYI, Iowa, USA was one of the most enriching experiences of my life. It gave me the platform to learn from global leaders, scientists, and students working toward addressing world hunger. My journey began with the national selection drive by NAAS-YUVA, and being selected to represent India felt like a huge responsibility. After an orientation in New Delhi, we travelled to Des Moines, Iowa for the Global Youth Institute. Over three days, I attended the Borlaug Dialogue, joined discussions on agriculture and food security, and presented my research on crop disease resistance. Visiting farms and meeting delegates from many countries made the experience meaningful.



Sanyukta Dalal (XII)

PM Shri Kendriya Vidyalaya,
Vayusena Nagar, Nagpur

I am thrilled to share my experience of representing India at GYI, Iowa, USA. The opportunity to be part of a global platform that brings together young leaders from around the world to discuss food security and sustainability was a dream come true.

Representing India at (GYI) was a transformative experience focused on global food security and sustainability. The journey began with a rigorous selection process by the Academy, involving a quiz, presentation, and interview that tested knowledge, ideas, and communication skills.



At GYI, participants from multiple countries and U.S. states engaged in keynote sessions, panel discussions, workshops, and networking. Interactions with peers and global experts provided valuable insights into innovative agricultural solutions and strengthened understanding of global food challenges.

Key learnings included the importance of sustainable agricultural practices, the role of technology and innovation in enhancing productivity, the need for collaboration among stakeholders, and the significance of policy and advocacy in shaping food security.

Beyond academic exposure, the experience contributed significantly to personal growth by enhancing communication skills, confidence, and the ability to work in diverse environments. It also helped in identifying personal strengths and deepened commitment to contributing to food security and sustainability.

Overall, visit to GYI was a life-changing opportunity that reinforced the value of global collaboration and inspired a continued effort toward building a sustainable and food-secure future.



Roshan Godara (XII)
Rajdhani Educational Group, Jaipur

The entire process of selection through NAAS-YUVA and the subsequent visit to GYI, Iowa, USA was indeed a transformational experience. Not only did the selection process hone my skills of critical thinking, problem-solving using scientific knowledge, and presentation, but it also taught me the significance of aligning research work to its practical application.

At GYI, I got to interact with young professionals who are working across geographies on issues related to food security, sustainability, and innovation. Through this experience, I not only learned about different technological advancements such as artificial intelligence, remote sensing, and genetic modification of crops but also realized the importance of policy and equitable approaches towards sustainable agriculture practices.

During the event, my greatest learning came to light when I understood the concept of “the triple challenge” of ensuring the food supply chain with respect to quantity, quality, and sustainability, particularly in the wake of the ongoing climate crisis. Additionally, I have become more conscious of important issues related to post-harvest losses and logistics challenges.

Overall, apart from the academic learning, the entire experience has also been beneficial for me in terms of personal development and has had a profound impact on my future career objectives.



Tanuja Premanand Karne (XII)
PM Shri Kendriya Vidyalaya,
Chhatrapati Sambhajnagar

I feel profoundly honored and privileged to have been granted the extraordinary opportunity to visit GYI, Iowa, USA. This transformative experience allowed me to immerse myself in critical discussions on global food security, present my research to a distinguished international audience, and exchange ideas with world-renowned experts, visionary leaders, and passionate young minds from across the globe. As Malala Yousafzai beautifully reminds us, *“Let us make our future now, and let us make our dreams tomorrow’s reality”*. This experience has been a testament to the power of opportunity, knowledge, and purpose converging to make a positive impact on the world. The words of Albert Einstein resonate deeply with me: *“Strive not to be a success, but rather to be of value”*. The Global Youth Institute has been far more than an academic or professional milestone—it has been a transformative journey of learning, inspiration, and self-discovery. It has strengthened my resolve to pursue research, innovation, and leadership, and ignited a lifelong commitment to serve society through science and sustainable solutions. I remain eternally grateful for this extraordinary opportunity, a beacon of inspiration that will illuminate my path and guide my endeavors to make meaningful contributions to the world.

Publications

Policy Paper (PP)

PP-142: Enhancing India’s Agricultural Exports: Prospects and Challenges



Strategy Paper (SP)

SP-22: Microplastics Pollution: Remediation Strategies for Sustainable Environmental Management.





Programs 2026

Brainstorming Sessions

- Enhancing India's Agricultural Competitiveness in Changing Global Trade Dynamics
- Roadmap for Atmanirbharta in Fertilizers
- Nutraceuticals and Functional Foods: Potential, Policy Challenges and Regulatory Framework
- Climate Resilient Aquaculture Systems and Practices: Policy Perspective
- Enhancing Oilseed Production: Policies and R&D Initiatives
- Preventing the Use of Spurious Pesticides in Agriculture
- Future of Next Generation Small Farms: Ensuring Profitability and Viability
- Cross-cutting Conversations for Diet Diversity: Harnessing Agriculture for Nutritional Wellness of the Nation

Strategy Workshops

- Reimagining Climate Resilience in Rainfed Agriculture Landscapes
- Harnessing Global Wisdom in Innovations and Education Domains to Develop Strategies for Higher Agricultural Education Institutions towards Viksit Bharat 2047
- Strategies for 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
- Deep Sea Fisheries: Prospects, Challenges and Policy for Commercial Exploitation

Obituaries



Prof. Rajendra Prasad
(1936-2026)

The agricultural science fraternity deeply mourns the passing of Prof. Rajendra Prasad, an eminent agronomist and distinguished fellow of Indian National Science Academy (INSA), National

Academy of Science India (NASI), NAAS, and Indian Society of Agronomy (ISA). His demise on January 21, 2026 marks the loss of one of India's most influential scientists in agronomy and fertilizer-use efficiency.

Born on January 01, 1936 in Haiderabad (Unnao, Uttar Pradesh), Prof. Prasad was an outstanding scholar throughout his academic career. After earning Ph.D. from Mississippi State University, (USA), he devoted his professional life largely to the ICAR-Indian Agricultural Research Institute (IARI), New Delhi, serving as Professor and Professor & Head, Division of Agronomy, and later as ICAR National Professor. He also served as INSA Senior Scientist as well as Honorary Scientist, thus remained scientifically active well beyond retirement.

Prof. Prasad was internationally renowned for his pioneering work on fertilizer nitrogen management, particularly in rice and rice-wheat cropping systems. His discovery of neem's nitrification-inhibiting properties

and the development of neem-coated urea technology revolutionized nitrogen-use efficiency in Indian agriculture. This innovation had a lasting national impact, with neem-coated urea now universally adopted in India. His later work on zinc-coated urea and agronomic biofortification significantly contributed to address micronutrient deficiencies in soils and food systems.

An inspiring teacher and mentor, Prof. Prasad guided 30 Ph.D. scholars and immensely contributed to postgraduate teaching and capacity building in agronomy. His scholarly output—nearly 300 research papers, numerous reviews, manuals, and authoritative textbooks—has shaped agronomic research, education, and policy in India & abroad.

Prof. Prasad received several prestigious honors, including the Rafi Ahmed Kidwai Award (ICAR), Hooker Award (IARI), Indian Society of Agronomy Gold Medal, and Lifetime Achievement Award (ISA).

Prof. Prasad will be remembered as a Scientist of rare distinction, dedicated teacher, and visionary who seamlessly linked agronomic science with national food security and sustainability. His legacy will continue to inspire future generations of agronomists and agricultural scientists.

Dr. Yashbir Singh Shivay

*Principal Scientist and Professor,
Indian Agricultural Research Institute, New Delhi*



Dr. E.A. Siddiq
(1937-2026)

A world-renowned Ilyangudi (Tamil Nadu) born rice geneticist and breeder, Prof. E.A. Siddiq left for his heavenly abode on January 22, 2026, at the age of 88 in Hyderabad. After acquiring B.Sc. degree from St. Joseph's College, Tiruchirapalli and M.Sc. in Botany (1964), he obtained Ph.D. in Genetics (1968) with specialization in Cytogenetics from the Indian Agricultural Research Institute (IARI), New Delhi, under the guidance of Prof. M.S. Swaminathan.

Prof. Siddiq started his professional journey as a cytogeneticist from IARI in 1968 and made pioneering contribution in understanding genetics of Basmati quality traits. He initiated a systematic Basmati rice breeding programme with a view to combine the quality of traditional Basmati into high yielding background, which led to the development of Pusa Basmati 1, the first ever semi-dwarf high yielding Basmati rice variety in 1989. He also developed Pusa 44, a high yielding non-Basmati rice variety with realised yield level of 8-10 tons/ha. This variety ruled the state Punjab for decades because of its strong culm, high response to input and amenability to mechanical harvesting. He was a teacher par excellence and most sought-after advisor by the Ph.D. students at IARI. Prof. Siddiq also served as a Rice Expert in Egypt on behalf of the International Rice Research Institute (IRRI), Philippines during 1983-1986. On return, he joined IARI as Professor, Division of Genetics for a short while. Then, he took over as Project Director, Directorate of Rice Research (now ICAR-Indian Institute of Rice Research), Hyderabad (1987-1994), wherein he initiated many path-breaking projects in rice including hybrid rice. Later, he served as the Deputy Director General (Crop Science), Indian Council of Agricultural Research (ICAR) (1994-97).

After superannuation from the position of DDG (Crop Science), ICAR, Prof. Siddiq served as ICAR-National Professor (1997-2002) and mentored students at University of Hyderabad and Professor Jayashankar Telangana State Agricultural University till his last breath. One of the most unique qualities that distinguished Dr. Siddiq from his contemporaries was his ability of disruptive innovations and adoption of latest development in science of genetics including molecular breeding and genomics.

Prof. Siddiq's contribution to science and society were well recognised. He was bestowed with several prestigious awards, including Dr. Norman Borlaug Award, Rafi Ahmed Kidwai Award and Om Prakash Bhasin Award. He was also elected to the fellowship

of premier science academies of India such as Indian National Science Academy (INSA), National academy of Sciences India (NASI) and National academy of Agricultural Sciences (NAAS). In the honour of his outstanding scientific contribution for welfare of Indian farmers and consumers, Govt. of India conferred upon Prof. Siddiq country's fourth highest civilian award, Padma Shri, in 2011.

Prof. Siddiq was a great human being, characterized by kindness, empathy, integrity, and humility, acting selflessly to make a positive difference in scientific world. He will always be remembered by the scientific fraternity and the farmers of country. The Academy pays its respectful homage to one of the most brilliant and outstanding agricultural Scientists of the country.

Dr Ashok. K. Singh

*Former Director, Indian Agricultural Research Institute,
New Delhi*



Prof. Rameshwar Prasad Sharma
(1940-2026)

Prof. Rameshwar Prasad Sharma, a distinguished Scientist, was a founding member as well as former Project Director, National Research Centre on Plant Biotechnology (NRCPB), New Delhi (now ICAR-National Institute for Plant Biotechnology, Pusa Campus, New Delhi). Born on February 20, 1940 in Molhna, Roorkee (Uttarakhand), Prof. Sharma completed his M.Sc. from Agra University in 1962 and earned his Ph.D. in 1969 from the Indian Agricultural Research Institute (IARI), New Delhi, under the mentorship of Prof. M.S. Swaminathan.

Prof. Sharma was well-known for his pioneering research on mutagenesis in *Drosophila*, particularly the historic discovery of the wingless (*wg*) mutant, characterized by the absence of wings and halteres, and its subsequent characterization in 1973. This mutant, now a citation classic, is a key tool in understanding *Drosophila* development and has far-reaching implications in the area of developmental biology, cancer biology and tissue regeneration, paving the way for the treatment of heart ailments, neurodegenerative disorders and cancer. He also identified Maternal Effect Lethal mutants and Ovarian Tumour mutants. In addition, he developed 'Pusa Hara Chana', the green-seeded & high-protein chickpea variety rich in fibre, and vitamins A & C.

Prof. Sharma made significant contributions in the area of agricultural biotechnology. He conceived and led an important project aimed at creating EMS-induced mutations in rice cv. Nagina 22 for functional genomics. Prof. Sharma's brainchild, the herbicide-tolerant mutant



(Robin), identified from this Nagina 22 mutant resource, subsequently gave rise to the development of non-transgenic herbicide-tolerant rice variety.

As one of the visionary leaders of the Biotechnology Centre at IARI, Prof. Sharma played a pivotal role in advancing plant biotechnology in the ICAR system, particularly in transgenic crop research and marker-assisted breeding. Under his guidance, the prestigious International Rice Genome Sequencing project was successfully executed at NRCPB. He also contributed significantly to developing India's first biosafety guidelines for transgenic crop research under the Department of Biotechnology.

Prof. Sharma's dedication to science and Institution-building brought him many laurels. He served as Consultant/Chief Advisor to the FAO (Vietnam, 1992) and as Project Director (NRCPB) (1993–2000). He was Fellow of all the science academies - Indian National Science Academy (INSA), NAAS, National Academy of Sciences India (NASI), and Indian Academy of Science (IA Sc). & received many honours, including the Om Prakash Bhasin Award (1999); Science Congress Millennium Plaque of honour (2003); and INSA Silver Jubilee Commemoration Medal (2013). As a founding member of the XV International Genetics Congress Trust, he remained actively involved in promoting science amongst young impressionable minds until his final days. Prof. Sharma's passion, dedication, vision, and mentorship shaped generations of plant biotechnologists. He passed away on January 7, 2026, leaving a legacy as well as a vacuum in plant science.

Dr. R. Bhattacharya

Director, ICAR-National Institute of Plant Biotechnology (NIPB), New Delhi



Dr. Madhava Gadgil (1942-2026)

Dr. Madhava Gadgil, doyen of Indian Ecology and an enduring voice for environmental science & policy, passed away at the age of 83 in Pune. His loss is felt deeply across scientific, policy and conservation communities in India and around the world. With the passing of Dr. Gadgil, a powerful voice constantly issuing loud warnings from the environmental heart of Western Ghats, fell silent and marked the departure of a shining star from the sky of global environmental science.

Born in 1942 in Pune to Pramila and the distinguished economist, Dhananjay Ramachandra Gadgil, he grew early in a landscape blended with intellectual enquiry and cultural diversity, which had a strong influence in

directing his lifelong commitment to integrate scientific excellence with social justice

He earned his Ph. D. from Harvard University under the guidance of William H. Bossert. He could have continued his career abroad like many of his peers, but Dr. Gadgil dedicated himself to build India's research capacities and potential. In 1983, he established a Centre for Ecological Sciences at Indian Institute of Science, Bengaluru, which is now considered as nation's pioneer hub for research on ecology, conservation biology and environmental policy. His early contributions paved the way in identifying Nilgiris as India's first biosphere reserve. Dr. Gadgil spent long years in the Western Ghats conducting extension work and quite often engaged with local communities in unravelling traditional ecological knowledge.

One of his unmatched contributions was visible when he chaired Western Ghats Ecology Expert Panel (WGEEP) popularly called as Gadgil Commission, where he classified 64 per cent of the Western Ghats as ecological sensitive. The panel report is authored through extensive field visits, consultations with local communities, civil society, forest dwellers and experts. Despite the fact that the Gadgil commission attracted widespread and intensive debate in public, the report continued to shape the course of sustainable development of Western Ghats, one of India's most fragile ecosystems today.

Dr. Gadgil had a profound influence on public policy particularly during late 1970s and early 1980s. He played a very significant role in ecological campaigns such as Sure Silent Valley Movement; Protection of Forest in Bastar; Ecological Direction to Botanical Survey of India; and Zoological Survey of India. His contributions continued in national conservation on environment and sustainability, while serving on the Scientific Advisory Council of the Prime Minister.

Dr. Gadgil also had a privilege of drafting the Biological Diversity Act 2002 and tabled the concept of Peoples Biodiversity Registers, a tool to empower local communities in protection of ecological heritage. An author of over 250 scientific publications and numerous books on human ecology, ecological history and population biology. All his writings bridged science and society and brought ecological insight to the public.

Dr. Gadgil's outstanding contributions earned him several awards and honours, including Padma Shri; Padma Bhushan; Volvo Environment Prize, the Tyler Prize for environment Achievement; and United Nations Champions of Earth Award etc.

Dr. Gadgil is a true scholar, gentle, unassuming and enriched with empathy and humility, yet possessed an



ocean of knowledge. His teachings and learnings will continue to guide us who believe, society and nature are inseparably interconnected. Salute the man of nature who foresaw the future.

Dr. M.K. Naik

Former Vice Chancellor, Keladi Shivappa Nayaka University of Agriculture & Horticulture Sciences, Shivamogga



Prof. Harindra Singh Balyan
(1951-2026)

Prof. Harindra Singh Balyan, who breathed his last on January 22, 2026, was born on August 11, 1951 in the village Khagoi (District Hapur, Western Uttar Pradesh). He received his early education at R.S.K. Inter College, Simbhaoli (1961–68), completed his B.Sc. from Meerut College, Meerut (1968–70) and M.Sc. (Botany) from J.V. College, Baraut (1970–72). He joined us for his M.Phil. degree in 1972 and later completed his Ph.D. with me in 1979. Subsequently, he worked as a CSIR Post-Doctoral Fellow for a brief period before beginning his academic career as a Lecturer, later serving as Reader, and then as Professor at Meerut University (now Chaudhary Charan Singh (CCS) University), where he also held several academic responsibilities, including Dean, Faculty of Agriculture. He was also honoured as the Best Teacher of the University.

My association with Prof. Balyan spanned 53 years, beginning in 1972 when he joined as a student, and continued until his last days as a valued colleague and collaborator. Over the years, he evolved from a promising student to a distinguished teacher and scientist of great merit, becoming an asset not only to me but to the entire department of Genetics and Plant Breeding, CCS University, Meerut.

With profound sorrow, the community of geneticists, plant breeders, colleagues, students, and loved ones mourns the passing away of Professor Balyan, an eminent geneticist, inspiring teacher, and one of the leading figures in Indian agricultural genetics. His death is an irreparable loss to the scientific community, particularly in the fields of wheat genetics, cytogenetics, and molecular breeding, to which he devoted his life with extraordinary dedication.

During his career, he visited several countries, including the USA, Canada, Mexico, Germany, and Japan, under various academic programs. His stay in Canada was especially significant, where we together learned and initiated work on molecular marker techniques, marking the beginning of an era that brought our department onto the global map in the field of molecular marker technology and its use in the field of genetics and molecular breeding.

Prof. Balyan's stature was recognized through his election as Fellow of the National Academy of Sciences India (NASI), Indian National Science Academy (INSA), and National Academy of Agricultural Sciences (NAAS). Despite these distinctions, he remained modest, approachable, and deeply humane, always ready for discussion and collaboration as we explored new research areas together.

Even after my retirement from active service in 1996-97, Prof. Balyan continued to work with me for nearly three decades as Co-Principal Investigator in various research projects funded by DBT, DST, BARC, and other agencies, focusing on wheat biotechnology and DNA-based molecular markers. Only a day before his passing away, he expressed spoken to me, expressing his desire to resume work after a brief medical leave. At present, one of our joint manuscripts is under review and another being prepared for submission — a testimony to his unwavering scientific engagement. I will deeply miss his companionship in research and writing.

Prof. Balyan's scientific contributions were marked by depth, rigor, and vision. He made significant advances in wheat genetics and cytogenetics, enhancing our understanding of chromosome behaviour, genome organization, and gene inheritance of genes/QTLs in this complex polyploid crop. His work helped bridge classical cytogenetics and modern molecular approaches, including gene and QTL mapping, and the use of SSRs, SNPs, and other molecular markers, integrating cytological tools with molecular breeding.

Equally important was his role as a teacher, mentor, and builder of scientific human resources. He guided numerous students and young researchers, many of whom now hold important academic and research positions in India and abroad. His students remember him as a patient teacher, a meticulous scientist, and a person of integrity who emphasized clarity, sound methodology, and honesty in research.

To me personally, he was not only a former student and long-time colleague but also a source of immense pride and satisfaction. His achievements embody a teacher's greatest fulfilment -seeing the next generation becoming an asset for extending the frontiers of knowledge.

Prof. Balyan leaves behind a rich scientific legacy in the knowledge he generated, the students he trained, and the values he upheld. His contributions to wheat genetics and agricultural science will continue to influence research and crop improvement for years to come.



He is survived by his wife Mrs. Chandra Balyan, his brother Mr. Yogendra Singh (retired IPS), and his daughter Tanvi Singh, married to Akshit Panwar.

He will be remembered with deep respect, gratitude, and affection.

Prof. Pushendra Kumar Gupta
*Hon. Emeritus Professor,
Ch. Charan Singh University, Meerut*



Dr. D. Damodar Reddy
(1967-2026)

Dr. Damodar Reddy was born in Telangana on June 15, 1967. His early education was at Government Zilla Parisad High School, Karwanga, and Government Junior College Alia, Hyderabad and higher education at Andhra Pradesh Agricultural University (PJTSAU), Hyderabad (B.Sc.Ag) and Indian Agricultural Research Institute, New Delhi (M.Sc. Ag. & Ph.D). He has the distinction of working at the Indian Institute of Soil Science, Bhopal over 12 years (1995-2007), starting with the position of Scientist and attaining the level of Principal Scientist. In his next stint at Central Tobacco Research Institute (CTRI) (now NIRCA), he held the position of Head of the Division for five years and Director (2014-2022) for about eight years. In the last four years (2022-2026), he served at NAARM, Hyderabad as Principal Scientist.

As an active, enthusiastic and ambitious researcher at IISS (Bhopal), he devoted his energies on projects focused on key areas of research on phosphorus in soil-plant system. His research has elucidated soil phosphorus transformations and speciation in response to P inputs and cropping. He clarified source-sink nature of soil P fractions for plant available P, paving the way for management of legacy (residual) P in agricultural soils. His innovative agro-techniques/products such as soil-test maintenance P fertilization, rock-phosphate-P mobilization, local resource based INM modules, modified fertilizer urea,

crop residue management strategies etc. proved effective in improving the nutrient use efficiency and crop productivity. He not only did excellent research and development work himself but also inspired and encouraged young students and researchers.

At CTRI, he created Seed Hubs for increasing pulses production in India with state-of-the-art seed processing and storage structures. During his tenure as Director, he was instrumental in the development and release of four tobacco varieties- CTRI-Sulakshana, NBD 209, Nandyala Pogaku-1(NBD119) and LT Kanchan (JS117). He also developed region-specific packages of practices for sustainable FCV tobacco production in AP & Karnataka and effective analytical methods for nutrient & pesticide residue assay. At NAARM, he contributed towards the human resource development of NARES.

He has published more than 100 research papers in reputed journals. With Dr. J.S. Kanwar, Dr. Reddy co-authored an ICAR publication- 'Phosphorus Fixation and Management in Indian Soils'.

As a young researcher, he received Lal Bahadur Shastri Young Scientist award (ICAR) and Golden Jubilee Commemoration young scientist award & the 12th International Congress Commemoration award (Indian Society of Soil Science). He received IMPHOS-FAI award twice in 2003 and 2009. He was also recipient of the Tobacco Board award of the Indian Society of Tobacco Science and FTCCI award of excellence in 2019. He was Fellow of the Indian Society of Soil Science, National Academy of Agricultural Sciences, Andhra Pradesh Academy of Sciences and Indian Society of Tobacco Science.

His untimely demise is an irreparable loss to the agricultural scientific fraternity. He will always be remembered for his valuable research and development contributions and his noble personality.

Dr. A. Subba Rao
*Former Director, ICAR-Indian Institute of
Soil Science, Bhopal*

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