

# Annual Report

## 2023



**DIVISION OF AGRICULTURAL EXTENSION  
ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE  
NEW DELHI - 110012**



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## Preface

The Division of Agricultural Extension has made remarkable advancements since its establishment in 1960. It has developed effective paradigms and prototypes for research, relevant curricula, teaching and training methods, models and frameworks for information and technology dissemination, as well as successful methodologies for agricultural and rural transformation. Over the past sixty years, the Division has played a flagship role in the extension profession through its visionary actions and notable achievements.

The Division continues to drive the growth of the extension profession with ongoing research and a commitment to advancing extension education models and methods. It emphasizes pro-poor approaches for sustainable livelihoods with dedication and rigor. This report summarizes the Division's activities and achievements during 2023, with a major focus on the transfer and dissemination of improved technologies from IARI, advisories through Pusa Samachar (a multimedia-based innovative extension model), Agricultural Extension for Nutrition and Health (AE4NH) strategies and models, and the convergence of agripreneurship, farmers' innovations, and modern technologies. The Division also led the organization of the Pusa Krishi Mela in 2023.

The Division act as a "Center of Advanced Faculty Training (CAFT)" to provide capacity building for extension professionals. The Division has initiated the undergraduate teaching program under Community Sciences. It is equipped with a virtual classroom that has the capability of recording and uploading videos to the Agri-Diksha web education channel using PANOPTO software. The Division is actively involved in two outreach extension programs, Mera Gaon Mera Gaurav (MGMG) and the Scheduled Caste Sub Plan (SCSP), aimed at enhancing farmers' incomes through technological interventions. Additionally, the Division has actively participated in the Prime Minister's national initiative on the Swachh Bharat Mission and *Hindi Pratiyogita* programmes.

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I would also like to thank editorial team for compiling and editing this report. My sincere thanks and appreciation go to all scientists and technical staff for their contributions to the research, teaching, and extension activities of the Division. I am grateful to all those who contributed directly or indirectly in the publication of this report.

Satyapriya  
Head

## Executive Summary

India's agrarian sector, with 58% of its population reliant on agriculture, is pivotal to the nation's economic growth. To achieve a significant increase in national GDP over the next few years, a second agricultural revolution driven by modern technologies and enhanced marketing linkages is essential. India, now the world's second-largest producer of key crops like rice, wheat, and sugarcane, faces challenges due to uneven productivity and significant regional disparities. These disparities stem from the varied adoption of advanced agricultural technologies, with some regions benefiting from modern innovations while others remain dependent on traditional practices. Agricultural extension services play a crucial role in addressing this imbalance by providing farmers with the knowledge, skills, and resources needed to adopt these technologies. Strengthening extension networks can help bridge the gap, improve productivity, and support sustainable practices. Promoting equitable access to technology, enhancing infrastructure, and expanding effective extension services are essential for achieving inclusive national development and maximizing agricultural potential.

This report outlines key findings related to effectiveness of various Government schemes operational for the farmers. The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme, launched in 2018, provides ₹6,000 annually to small and marginal farmers in three installments. Evaluations reveal generally positive impacts, with many farmers using the funds for agricultural inputs and infrastructure, leading to greater income stability. However, issues such as bureaucratic delays and inadequate amounts to cover rising costs were noted. The Pradhan Mantri Krishi Sinchai Yojana (PMKSY), aimed at improving water use efficiency through micro-irrigation, showed effectiveness in increasing crop yields and income in Haryana, Rajasthan, and West Bengal, though challenges like poor quality equipment and complex registration persisted. The Pradhan Mantri Fasal Bima Yojana (PMFBY), which insures against crop losses, demonstrated mixed results; while it has helped mitigate risk and improve incomes, delays in claim settlements and limited awareness hindered its effectiveness. The multimedia-based extension model *Pusa Samachar*, developed by IARI, has effectively delivered agricultural knowledge, with high engagement and positive feedback from farmers. The model is broadcasted via YouTube, boasting over 50,000 subscribers and 10,00,000 views. However, suggestions for improvement include better audio-visual quality and more engaging content presentation.

ICAR-IARI's Vision 2050 emphasizes stimulating micro-enterprises and advancing agribusiness extension. An action research project under the theme "Converging Agripreneurship, Farmers' Innovations, and Modern Technologies" has led to the establishment of two Farmer Producer Companies and four women's Self-Help Groups, in collaboration with NABARD, to enhance farm profitability and support rural development. The ICAR-certified Farm Entrepreneurship Development Process Model, established in 2022, has been instrumental in identifying key entrepreneurial competencies and attributes for successful agri-enterprises. It emphasizes stakeholder participation, capacity building, and advisory support, drawing from five innovative farmer case studies. Key initiatives include scaling up Farmer Led Innovations (FLIs), forming Farmer Producer Companies (FPCs), and supporting women SHGs, with a focus on strengthening marketing, financial, and technological support systems. Assessment of institutional interventions indicate effective

support in production and marketing but highlight areas for improvement in financial and legal support, particularly for women and youth.

Under the nutrition project “Agricultural Extension for nutrition and health (AE4NH) strategies and models”, it highlights that farmers’ level of awareness of biofortified crops is relatively high, adoption is limited due to cost and accessibility, indicating a need for improved awareness campaigns and support. The Mid-Day Meal Scheme has positively impacted nutritional knowledge in Bihar and suggesting a need for enhanced educational strategies. Constraints in nutrition education for parents and teachers point to the necessity for better resources and support. Disparities in women's empowerment between urban and rural areas highlight the importance of targeted interventions in education, employment, and healthcare. Effective nudging techniques for promoting healthy food choices demonstrate their potential for guiding better dietary behaviors. Finally, high malnutrition rates and varying nutritional knowledge in Uttarakhand underscore the need for focused nutritional interventions. These insights align with broader objectives of improving agricultural efficiency, nutritional outcomes, and empowerment through strategic and targeted efforts.

Several innovative agricultural technologies and models have been developed and certified by ICAR in 2023. The ***Pusa Samachar*** is a multimedia-based extension model that facilitates two-way communication with farmers via social media, offering crop management advice and weather updates. The **Farm Entrepreneurship Development Process Model** was tested in Uttar Pradesh and Haryana to enhance farmers' entrepreneurial competencies, improving income through training and convergence. The **Agri-Nutri Smart Village Model** promotes nutrition security through behavioural change communication. The **Social Learning-based Extension Model** emphasizes peer-to-peer learning to enhance technology dissemination among farmers. The **Nutritional Health Belief Model (NHBM)** focuses on motivating farmers to improve their health, targeting anaemia and nutritional behaviour. A **Perception Scale** was created to assess how farmers and extensionists view the impact of climate change on nutrition; while the **Knowledge Test** measures extension personnel's knowledge gaps on the National Food Security Mission.

In 2023, the division oversaw significant academic and research advancements. Fifteen students (5 Ph.D. and 10 M.Sc.) completed research in areas like climate-resilient agriculture, entrepreneurship, and ICT-based extension models. UG, PG, and international students actively participated in training, conferences, and capacity-building programs. A total of 36 Ph.D., 20 M.Sc., and 39 B.Sc. students were enrolled in 2023. Several students secured prestigious fellowships like UGC JRF, and three international students received special scholarships. The division contributed to curriculum development for B.Sc. Community Science and offered two multidisciplinary PG courses. Students and faculty actively engaged in academic events, including national and international conferences, workshops, and the Pusa Krishi Vigyan Mela. The academic contributions in agricultural extension include **26 research articles** published in peer-reviewed NAAS-rated journals, with **10 papers** scoring above a NAAS rating of 6. Additionally, the body of work comprises **4 books, 9 book chapters, 9 popular articles** and **3 training manuals**, covering areas such as behavioural change communication, ICT tools in agriculture, and value chain management for agri-startups.

In 2023, the Division of Agricultural Extension at ICAR-IARI, Pusa, New Delhi, actively engaged in organizing various training programs, workshops, seminars, and extension activities aimed at promoting sustainable agricultural practices and fostering rural development. These initiatives ranged from ICT-led extension training for scientists and teachers, to youth-focused entrepreneurship development programs, and capacity-building efforts under national schemes like the Scheduled Caste Sub Plan (SCSP) and the Tribal Sub Plan (TSP). Demonstrations of improved crop varieties such as paddy, wheat, and mustard were conducted across multiple districts in Uttar Pradesh and Haryana, benefiting hundreds of farmers. Additionally, the division played a pivotal role in coordinating numerous events, including the International Year of Millets awareness program, Hindi Diwas celebrations, and the National Farmers' Day (Kisan Diwas), which brought together over 300 farmers. Extension activities also focused on empowering women farmers, enhancing nutrition security through kitchen gardens, and conducting specialized training programs for tribal and scheduled caste farmers. The Division's outreach through the Mera Gaon Mera Gaurav (MGMG) initiative further strengthened farmer-scientist linkages, providing essential knowledge and resources to over 5,000 farmers, while collaborative efforts with other agencies enhanced the reach and impact of these programs.

The specific mandate of the Division is as follows:

- To carry out basic, strategic and action research studies in the discipline of extension education.
- To carry out post graduate education programme leading to the award of degree of M.Sc. and Ph.D. in agricultural extension to meet the training manpower requirement of agricultural universities, research institutes and other development departments.
- To provide leadership role in teaching and research in Agricultural Extension.
- To organize national and international training programmes.
- To carry out advanced training programmes to impart knowledge, skill and desired orientation to the persons envisaged in teaching, research and transfer of technology so as to improve their efficiency and effectiveness and to select farmers to enable them to assume the roles of community leaders.
- To organize seminars, conferences and workshops to integrate experiences of extension professionals in strategy formulation for agricultural development.
- To provide expertise in carrying out extension activities of the institute.
- To provide advisory and consultancy services.

## **1. Significant achievements of the research projects**

### **I. Evaluation of Farmer-Centric Government schemes and Programmes for Agricultural Extension Policy Advocacy**

#### **1. Effectiveness of Pradhan Mantri Krishi Sinchai Yojana (PMKSY)**

The socio-economic impact of Pradhan Mantri Krishi Sinchai Yojana (PMKSY) was assessed in Haryana, Rajasthan, and West Bengal. In Haryana, 120 farmers from Bhiwani and Nuh districts were selected for the study. The data revealed that the traditional irrigation practices created the problems such as poor water use efficiency, declining water table, weed problems and high cost of cultivation in the arid and semi-arid regions of Haryana. Farmers' perception was favourable towards "Pradhan Mantri Krishi Sinchai Yojana (PMKSY)" for climate change adaptation. Further, it was suggested that crop height specific adjustable sprinkler irrigation system was needed for improving the efficiency. The research study found that the micro-irrigation system changed the cropping system from the (pearl millet – wheat) based cropping pattern to (vegetable-wheat), (vegetable – mustard), and (vegetable- vegetable) based cropping patterns as effective alternative cropping systems for climate change adaptation and livelihood security. It was observed that the wheat yield was enhanced due to this scheme in Bhiwani district of Haryana. The micro-irrigation system improved irrigation efficiency in various crops. The awareness regarding soil testing was very poor among the farmers who adopted micro-irrigation. Hence, providing soil health management awareness would enhance the effectiveness of the micro-irrigation system practices. It was noticed that the electricity related issues affect the effective utilisation of the micro-irrigation systems.

The effectiveness of the micro irrigation component of PMKSY was also assessed in the Bikaner district of the Rajasthan state. The survey was conducted in two randomly selected blocks namely Nokha and Kolayat of Rajasthan in the year 2022-23. A total of 100 rural households were selected to collect the necessary information. The criteria for the selection were the entrollment under the scheme in last three years. The average extra yield per acre reported from adoption of micro-irrigation was 3 q/acre and the additional average income per acre was around 4600/- rupees. It was reported that around 30 percent of water could be saved once the scheme was implemented. The majority of the beneficiaries have mentioned that it can save the cost of irrigation at large extent, likewise around 31 percent of the beneficiaries have mentioned that it gives extra crop yield. However, around 49 percent of the beneficiaries have mentioned that it has complex registration process which could be simplified for improved effectiveness. The other major



constraints faced by beneficiaries in the study area were lack of awareness and lack of eligibility. Additionally, area restrictions in the implementation of the scheme limit their reach, leaving many regions underserved.

The impact study of Per Drop More Crop and Income component of PMKSY at Jalpaiguri and Kalimpong districts of North Bengal revealed that there was 3.23 times increase in availability of irrigated area, increase of the cropping intensity from 1.18 to 1.90, increased agricultural productivity by 36-43%, increased income of the beneficiary farmers by 48%. Also, the value of land under the PMKSY has increased and the cultivation of rabi vegetables and high value crops has been started in 175 ha. The analysis of secondary data revealed that a total of 857.76 acres area was brought under sprinkler irrigation in Jalpaiguri district under this scheme. By 2021, the area under drip irrigation increased to 559.69 ha under sprinkler irrigation. By 2022, the area under sprinkler irrigation increased to 1035 ha through PMKSY.

In Darjeeling district, there was a change in cropping pattern as 84% respondents reported that area under vegetables and fruits has increased due to adoption of micro-irrigation practices under PMKSY. Other major significant impacts were increase in yield (88%), increase in productivity (81%), increase in income (83%). The major socio-environmental benefits include community asset generation (100%), reduced water scarcity in rabi season (100%), formation of social capital like water users' group (91%), increased protected cultivation (67%), etc. The major perceived limitations of PMKSY included several critical challenges. Key concerns were the partial withdrawal of subsidies under certain intervention components (63%), which reduced the program's overall impact. Additionally, lack of water sources (74%) and water shortages during the winter season (51%) further limited its effectiveness in many regions. Other obstacles included the absence of land records for tea gardeners and forest dwellers (49%), which made it difficult for these groups to access benefits, and the fact that small farmers were ineligible for subsidies due to the minimum land requirement of 1 acre (58%). Furthermore, the cumbersome procedures, such as mandatory e-filing (52%) created administrative hurdles, while the clogging of emitters and laterals in irrigation systems (60%) posed technical challenges. Addressing these issues is crucial for improving the reach and effectiveness of PMKSY, particularly for small and marginalised farmers.

## **2. National Food Security Mission (NFSM) and Rashtriya Krishi Vikas Yojana (RKVY)**

A research study was conducted to evaluate the performance of NFSM and RKVY (Agricultural Development Programmes) in the state of Karnataka and Uttar Pradesh. The performance of the National Food Security Mission (NFSM) in Karnataka and Uttar Pradesh showed that the annual income, crop diversification, social participation, and agricultural productivity were comparatively better for Karnataka beneficiary farmers, while material possession was better for beneficiary farmers of Uttar Pradesh. Interestingly, beneficiary farmers of both states were on par with regard to earning members (mean rank of 80.50). Performance of Rashtriya Krishi Vikas Yojana in Karnataka and Uttar Pradesh showed that socio-economic indicators were significant for beneficiary farmers of both states after the launch of the program, which reiterated the fact that RKVY-RAFTAAR had created an impact on the lives of the beneficiaries. Karnataka beneficiary farmers fared comparatively better than beneficiaries of Uttar Pradesh.

The socio-economic transformation was observed in case of beneficiary farmers of both states. Seven of the indicators being positively correlated to overall socio-economic transformation reveals the tangible outcomes of NFSM. Social participation and education being positively correlated to the socio-economic transformation of the non-beneficiary farmers could be due to the already existing development programmes in the states. Socio-economic changes generated by RKVY-RAFTAAR were studied by adopting a before-after research design using Wilcoxon Sign rank test. It was deduced that all the ten socio-economic indicators were significant for beneficiary farmers of both the states after the launch of the programme ( $p < 0.05$ ), which reiterated the fact that RKVY-RAFTAAR had created an impact on the lives of the beneficiaries. With respect to annual income (mean rank=94.75), occupational status ((mean rank=90.00), crop diversification (mean rank=94.50), earning members (mean rank=90.50) and social participation (mean rank=86.00), Karnataka beneficiary farmers fared comparatively better, while in material possession (mean rank=92.00) and value chain development (mean rank=69.25) beneficiary farmers of Uttar Pradesh fared better.

## **3. Impact of Effectiveness of Pradhan Mantri Fasal Bima Yojana (PMFBY)**

The study on Pradhan Mantri Fasal Bima Yojana (PMFBY) showed that the non-loanee farmers' share had increased from 23.99% to 35.66% and the share of loanee farmers reduced from 76.01% to 64.40% in 202021. It was found that there was a higher increase

in the registration of marginal and small farmers under the scheme led to a reduce agricultural land holdings insured per farmer from 0.98 to 0.72 ha from 2016-17 to 2020-21. With the progress of the scheme, the sum insured per farmer has increased in the given period from Rs. 35096.79 to Rs. 43510.92. While the per farmer's premium has been reduced from Rs 646.48 to Rs 611.20. The farmer-based claim ratio (Claim received by farmer/premium paid by the farmer) has increased from 4.15 to 5.84 from 2016-17 to 2019-20. The crop insurance claim received per farmer has also increased from Rs 2683.21 to Rs 3810.46 from 2016-17 to 2019-20. The percentage share of benefitted farmers has also increased from 24.73 to 34.27 from 2016-17 to 2019-20.

From the farmers' perspective, access to information plays a crucial role in the promotion and adoption of the scheme. The study revealed that 25.6% of farmers had never even heard of the scheme, while 90.8% were unaware of its various steps and procedures. A significant 78.4% of non-beneficiary farmers felt that the scheme's promotion was insufficient, a view echoed by 57.2% of the farmers who had benefitted from the scheme. To improve awareness and adoption, 62.1% of non-beneficiary farmers suggested that there should be at least two promotional meetings per year.

Regarding claim settlements, 36.6% of beneficiary farmers reported receiving payments within 3–4 months, while 44.8% stated that it took 4–5 months. Despite these delays, 82% of farmers who had received one or two claims for losses expressed satisfaction with the scheme overall. Most farmers also appreciated the straightforward registration process, indicating that ease of enrollment was a positive aspect of the scheme. Addressing promotional gaps and streamlining claim payments could further enhance the scheme's reach and impact.

#### **4. Socio-economic assessment of crop residue burning in IGP region**

A study on crop residue management was conducted in the Punjab, Haryana, and Delhi NCR regions of the Indo-Gangetic Plain (IGP). The study identified key factors influencing the persistent practice of crop residue burning. Out of 16 factors analyzed, two major social factors “Residue burned because their neighboring farmers practice it” and “Continued from generation to generation” were found to significantly drive the behavior. Additionally, two economic factors “Reduction in cost of labor” and “Reduction in insect-pest control cost” were identified as important motivators for continuing this practice. The study also examined various independent variables, finding that age had a negative impact on crop residue management (i.e., older farmers were less

likely to adopt residue management practices), while education, extension contacts, extension participation, and herd size had positive impacts, encouraging better residue management.

For the adoption of straw and stubble management approaches, the study utilized three integrated behavioral theories: the Theory of Planned Behavior (TPB), the Value-Belief-Norm (VBN) theory, and the Health Belief Model (HBM). The results highlighted the significant negative impact of factors such as perceived pro-environmental personal norms, perceived behavioral control, perceived severity of rice straw burning, perceived ascription of responsibility, and the perceived benefits of rice straw utilization on the burning behavior. On the other hand, the perceived benefits of current options (PBO) positively influenced the continued practice of burning.

In the economic assessment of wheat cultivation, Punjab incurred higher average costs using conventional practices and super seeder compared to Haryana and Delhi, primarily due to the extensive use of fertilizers, pesticides, intensive tillage practices, and the higher number of irrigations required. Conversely, Delhi had the highest average costs for happy seeder usage, driven by the elevated rental value of land and higher labor wages. Returns from happy seeder techniques were highest in Punjab (in rupees per hectare), followed by Haryana, with Delhi recording the lowest returns. A similar trend was observed for the super seeder, with Punjab leading, followed by Haryana and Delhi. In contrast, conventional practices yielded higher returns in Haryana, while Delhi experienced negative returns.

Matrix ranking of equipment preferences revealed that the rotavator was the most favored by key informants, followed by the super seeder and happy seeder, based on factors like field capacity, fuel efficiency, operating depth, machinery weight, and field performance. Major constraints identified included the need for high-power tractors, the short time window between paddy harvest and wheat sowing, a lack of cost-effective technologies, and the bulky nature of crop residue, which complicates transport and storage. Additionally, the use of happy seeder and super seeder was associated with an increased risk of pest and disease infestations. Farmers suggested potential solutions such as creating industrial demand for crop residue, establishing bioenergy-based power plants, ensuring CRM-related machinery is accessible at the village panchayat level, and providing government subsidies to discourage straw burning. These measures aim to

promote sustainable crop residue management and improve economic outcomes for farmers.

**5. Multimedia based farmer-centric agricultural extension model: ‘Pusa Samachar’ (Weekly news bulletin of IARI for video-based Extension):**

A multimedia-based extension model, *Pusa Samachar*, was developed for the dissemination of agricultural technology information and agro-advisories through social media platforms. The first episode was uploaded to the official YouTube channel of the Indian Agricultural Research Institute (IARI) on August 22, 2020. Since then, new episodes have been consistently uploaded every Saturday at 7 PM. As of now, 216 Hindi episodes have been broadcasted from IARI’s official channel, alongwith around 100 episodes in regional languages such as Tamil, Telugu, Kannada, Bangla, and Odiya. The YouTube channel has garnered a subscriber base of approximately 50,000. Each episode of *Pusa Samachar* includes time-specific crop management practices, success stories of farmers, weather forecasts, and a segment for answering farmer queries via *Pusa WhatsApp Salaah*. A critical evaluation of the model revealed that 88.67% of farmers regularly watched the program, and 81.13% of those viewers shared the content with their peers. This extension model has proven to be an effective platform for spreading agricultural knowledge and engaging the farming community.

**Content Analysis of Pusa Samachar (Hindi):**

In 2023, a content analysis of 142 episodes of Pusa Samachar (Hindi) was conducted. A total of 354 topics were covered across 17 disciplines, including farmers' success stories. The analysis revealed that the most-covered topics were from Vegetable Sciences (23.70%), followed by Agronomy (20.20%), Genetics (18.50%), Plant Pathology (11.60%), Horticulture (8.80%), Entomology (5.10%), Protected Cultivation (2.60%), Agricultural Engineering (2.40%), Microbiology (2.10%), Soil Science (2.60%), Economics (1.30%), and Floriculture (1.10%).

Regarding viewership, it was observed that 13.19% of the total watch hours were contributed by females, while 86.81% were contributed by males. Age-wise analysis showed that the majority of viewers were in the 25–34 age group (33.77%), followed by the 18–24 (21.57%), 35–44 (20.30%), 45–54 (13.77%), 55–64 (8.14%), and 65+ years (2.15%) age groups. In terms of social media shares, WhatsApp led with 51,054 shares, followed by Facebook (1,018 shares), Gmail (167 shares), Twitter (93 shares), and Facebook Messenger (51 shares). Viewership analysis revealed that most viewers

accessed episodes through browse features (397,536 views), followed by external sources (261,154 views), suggested videos (192,936 views), YouTube search (120,677 views), channel pages (80,506 views), notifications (48,471 views), and other YouTube features (29,224 views).

To assess the impact of Pusa Samachar on farmers and other stakeholders, primary data were collected from 750 respondents (600 farmers from Uttar Pradesh, Punjab, and Haryana; 100 students; and 50 researchers), while secondary data were sourced from YouTube analytics. The analysis showed that 91.50% of farmers regularly watched Pusa Samachar, and 89.91% shared it with colleagues. The major source of information about Pusa Samachar was YouTube (63%), followed by WhatsApp (27%), verbal communication (7%), and Facebook (3%).

Stakeholder perceptions were evaluated across three categories: content and design, ease of understanding, and fulfillment of information needs. Most farmers (82.11%) believed the content was timely and well-aligned with crop durations, especially during pest and disease outbreaks. They also found the content systematic, clear, well-structured, and easily comprehensible. However, 43.5% of farmers suggested improvements in audio, graphics, and video quality. Additionally, 71.5% of farmers felt the duration of each crop section was appropriate but suggested reducing the overall length of each episode. Most farmers (85.56%) also recommended using more catchy and attractive thumbnails to draw a larger audience.

A knowledge test conducted to assess farmers' learning from the episodes categorized farmers into low, medium, and high knowledge gain groups based on mean and standard deviation. The results showed that 33% of farmers were in the high knowledge gain category, 51% in the medium category, and 16% in the low category. Overall, Pusa Samachar has had a significant positive impact on farmers, enhancing their knowledge and providing timely, relevant information to improve agricultural practices.

## **II. Converging agripreneurship, farmers' innovations and modern technologies**

### **Farm Entrepreneurship Development Process Model**

Farm Entrepreneurship Development Process Model was conceptualized and certified by ICAR in 2023. Farm Entrepreneurship Development was found to be a dynamic process where interplay of entrepreneurial competencies of farmers and entrepreneurial climate was evident to ultimately result in successful agri-enterprises. In the model, significant

entrepreneurial competencies were identified such as opportunity recognition, drive for excellence, quality concern, risk taking behaviour, innovativeness and business orientation. These were in dynamic interplay with facilitative entrepreneurial environmental factors to result in successful agri-enterprises. Other major attributes of a successful agri-enterprise were also delineated as establishment, survival, growth, diversification and higher profits. Case method was adopted to document the entrepreneurial journey of innovator farmers. Lessons were drawn for developing agri-preneurship among other farmers of action research project villages. Based on learnings derived from case studies of innovator farmers, critical advisory support and entrepreneurial motivation interventions were provided for agriprenurship process development in project villages.

### **Capacity Development for Agriprenurship**

The capacity development needs of farmers for Agriprenurship were identified. Capacity Development modules were developed and training courses were conducted in project villages in NCR Delhi. Data was collected on entrepreneurial orientation, competencies and economic gains. Growth Drivers of income enhancement were delineated for agriprenurship at field level. Stakeholders' participation in agriprenurship development and role and strengths of stakeholders were analysed. Linkages of the farmers in project villages in Haryana, Delhi, Rajasthan and Uttar Pradesh were facilitated with state agriculture department, state horticulture department, marketing agencies and established agri-preneurs for synergistic effect in the process of developing entrepreneurship development. The action interventions have been undertaken by providing Marigold and Carrot seeds of IARI to SC farmers of Bainpur, Mahanga block of Cuttack, Orissa for enhancing income. The farmers were linked to KVK Cuttack and KVK Jagatsinghpur for technical guidance. Analysis of value chains for selected crops was done. Constraints faced by the entrepreneurs were also analysed. The successful farm entrepreneurs in *Fatehpur Biloch & Manjhawali* (Haryana) and *Tigipur* (Delhi) were documented.

### **Out Scaling Farmer Led Innovations**

The interventions aimed at scaling up farmers' innovations included studying backward and forward linkages, designing strategies for institutionalizing farmer-led innovations, and fostering agricultural entrepreneurship development. Ongoing support through hand-holding and mentoring was provided to innovative farmers linked via farm innovator meets, facilitating networking through social media platforms. These farm innovators

actively participated in IARI-led extension programs, disseminating IARI technologies through the Centre for Advanced Technology Transfer (CATAT) in New Delhi.

The scaling-up process prioritized the relative advantages and relevance of innovations over existing practices, which received the highest weightage in evaluation. The major perceived roles of support systems in enhancing farm profitability included establishing a market support system, providing financial institutional support, creating incentives and policies, and offering technological backstopping. However, it was observed that innovative farmers had limited awareness of knowledge forums, commodity exchanges, and other promoting organizations, as well as a lack of understanding regarding start-ups and the registration processes involved.

Strengthening both institutional and individual capacities for technology scaling, facilitating networking among extension service providers and farmers in the region, and mobilizing resources for scaling up technological activities emerged as critical drivers for income enhancement and the promotion of innovations. These efforts are essential for fostering a robust agricultural ecosystem that encourages continuous innovation and sustainable farming practices.

### **Mobilising Farmer Groups for Entrepreneurship**

Two Farmer Producer Companies (FPCs) were established under this initiative: Grow Free Producer Company Limited in Tigipur, New Delhi, and Dauji Phool Utpadak Producer Company Limited in Fatehpur Billoch, Faridabad, each comprising 100 members. In addition, four women Self-Help Groups (SHGs) were formed in the project villages in collaboration with NABARD. One farmer, already linked with IARI for commercial seed production through a participatory seed production program, received continued support to advance this initiative.

The factors facilitating the establishment of these FPCs were thoroughly documented. Initial discussions and mentoring sessions were conducted to streamline functional processes effectively. Key contributors to the success of the Dauji Phool Utpadak Sangh in Fatehpur Biloch included mutual trust among members, active participation in group activities, high levels of member satisfaction, and a strong sense of ownership and attachment to the collective. In Rajasthan, the project team successfully mobilized farm women in the Bayana block to form SHGs for collective action. Their training needs were assessed in collaboration with KVK Bharatpur, leading to targeted training



programs for SHG members. Advisory support was also provided to help them pursue various agro-based enterprises to enhance their income. This approach not only promotes collective farming but also empowers women by enhancing their skills and income opportunities within the agricultural sector.

### **Perceived effect of institutional interventions on trained entrepreneurs**

An assessment was conducted on the perceived effects of institutional interventions and training efficiency among farm entrepreneurs from Rajasthan and Telangana. An index was developed encompassing five dimensions: Natural, Physical, Financial, Human, and Social. Three methods of weightage assignment—Budget Allocation Process (BAP), Shannon’s Entropy Method (SEM), and Equal Weightage Method (EWM)—were employed to determine the importance of each dimension.

The entrepreneurs indicated that they received adequate support in technical, production, and marketing aspects; however, they expressed a need for more emphasis on financial, legal, and bureaucratic matters. Support strategies primarily focused on areas such as branding and public relations, assistance during pitching, certification, provision of co-working spaces, and training. In contrast, there was less focus on intellectual property management and funding. The study explored the entrepreneurial climate and the attributes of agripreneurs, identifying key determinants of their success. The overall mean score for managerial factors was the highest, indicating that these factors play a crucial role in shaping the entrepreneurial climate, with a mean score of 2.83, followed by sociological factors with a score of 2.34. Key contributors to the entrepreneurial climate included institutional, psychological, cognitive, sociological, economic, and managerial factors, with managerial factors being the most influential.

Within the managerial factors, basic managerial skills emerged as the most significant contributors, particularly in areas such as “unethical practices to get work done from workers” (75%) and “scientific and rational labor management for an agri-enterprise” (50%). Psychological factors also played a vital role, with many factors showing significant results in shaping the entrepreneurial climate, as indicated by a mean score exceeding 2.5. Among the sub-dimensions, Entrepreneurial Orientation and Psycho-behavioral Factors contributed significantly, with nearly 70% of respondents indicating their strong influence. Key elements of Entrepreneurial Orientation included “calculated risk-taking for agrienterprise success” and “adoption of novel technology to enhance efficiency,” each garnering nearly 70% contribution. Conversely, perception of

desirability for agripreneurship was notably low, with only 20% of respondents expressing a desire for agripreneurship compared to other professions. This highlights an area for potential growth and outreach, suggesting a need for increased promotion of agripreneurship as a viable career option.

### **Assessment of the agri-entrepreneurial ecosystem**

A pilot study was undertaken for assessing the agri-entrepreneurial ecosystem in India as perceived by the agri-entrepreneurs. Data was collected from 30 agri-entrepreneurs entrepreneurs trained under ACABC scheme from MANAGE, Hyderabad using google forms and telephonic survey. The Multidimensional Entrepreneurial Ecosystem Scale (MEES) developed by Liguoria et al. (2018) was adopted and modified for this study to evaluate the entrepreneurial ecosystem score as perceived by the respondents. The results indicated that 64% of the participants reported a medium level of entrepreneurial ecosystem support.

When asked about their motivations for starting a business in the agriculture sector, 73% of respondents identified a greater potential for success in this field. However, their satisfaction levels with government support revealed that 50% of the respondents were dissatisfied, while 40% expressed moderate satisfaction. It was noteworthy that the majority (91%) of respondents received assistance through various state and central government schemes. Furthermore, 73% of the entrepreneurs took out loans to start their businesses, and approximately 88% utilized government subsidies available for initiating their ventures under different schemes. These findings underscore the perceived potential in the agricultural sector while also highlighting the areas where government support could be enhanced to foster greater satisfaction and success among agripreneurs.

### **III. Agricultural Extension for nutrition and Health (AE4NH) Strategies and models**

#### **Awareness and Adoption of Biofortified Crops:**

Overall, 29% of respondents were consumers, 17% were dealers, and 54% were farmers for pearl millets, whereas for rice, the percentages were 24%, 16%, and 60% respectively. Awareness levels stood at 64% for biofortified pearl millet and 67% for rice. Research institutes and agriculture colleges were the primary sources of awareness, followed by the internet and social media, and word of mouth. Health workers and news media played a minimal role in dissemination. Regarding behavioral intentions for adopting biofortified crops, respondents exhibited varied attitudes, citing factors like input availability, fertilizer

requirements, nutritional quality, social relevance, and cost. Perceived constraints were categorized into environmental, cost, production, labor, and marketing factors, with perceived behavioral control being a significant determinant. Facilitating factors for adoption included accessibility, purposefulness, innovation, trust, social influence, and brand recognition. Inhibiting factors encompassed product inaccessibility, lack of nutritional information, high costs, food safety concerns, poor awareness, limited nutrition knowledge, taste preferences, pricing issues, negative perceptions about biotechnology, and sensory attributes. Strategies such as awareness campaigns, subsidized seeds, government support, and remunerative pricing were suggested to enhance adoption among stakeholders.

### **Crop Diversification and Nutrition-Sensitive Interventions:**

The study conducted in Ramnagar village, Niwadi district of Madhya Pradesh, aimed to assess the effects of crop diversification with nutrition-sensitive interventions on profitability. Farmers in the selected area cultivated various crops including wheat, mustard, chickpea, mung bean, and bottle gourd. Results indicated that the average cost of cultivation was Rs. 74,280, with an average gross return of Rs. 2,73,500 and average net return of Rs. 1,78,500. Additionally, the average benefit-cost ratio stood at 2.15. Farmers encountered several challenges in adopting nutrition-sensitive crops, with climate change and variability being ranked highest at 63%, followed by limited access to resources (46%), lack of knowledge and awareness (42%), and poor infrastructure (29%). The impact of nutrition-sensitive crop interventions was significant, particularly on income and livelihoods (72%), health and nutrition (56%), household food security (43%), and environmental sustainability (26%).

### **Nutrition Knowledge and Education in Bihar and Andhra Pradesh:**

The Mid-Day Meal Scheme's effectiveness in enhancing knowledge and improving the nutritional and educational status of rural secondary school children in Bihar was assessed through a survey conducted in Arwal district. Findings from the study, which surveyed thirty children, indicated that a majority (63.33%) possessed a moderate level of knowledge regarding midday meals, while 30% exhibited low knowledge levels, with only 6.66% demonstrating a high level of understanding.

Parents in rural Bihar face significant constraints in delivering nutrition education to their children. The most severe challenges identified included mothers' engagement in farming tasks, particularly farm labor, which was ranked as the top constraint (weighted mean 3.96). Additionally, parents' limited time for childcare due to work commitments (weighted mean 3.83) and the nuclear family structure, lacking additional familial support (weighted mean 3.73), were highlighted. Moreover, parents' low levels of education hindered their ability to provide nutrition education to their children (weighted mean 3.46). Teachers also face obstacles in delivering nutrition education to rural secondary school children in Bihar. Lack of a nutritional garden on school premises was identified as the most significant constraint (ranked first with a weighted mean of 4.86), followed by the absence of a nutritional laboratory for practical education (ranked second with a weighted mean of 4.83). Furthermore, teachers cited the lack of parental cooperation in nutrition education efforts as a major challenge (ranked third with a weighted mean of 4.50).

In Kadapa district, Andhra Pradesh, a study assessed the nutrition knowledge levels among rural high school children. The survey of ninety students revealed varying levels of awareness. While students demonstrated high knowledge levels regarding seasonal water consumption (94.44%) and the nutritional content of mid-day meals (88.88%), they exhibited lower understanding concerning topics such as virus diseases (37.77%) and the importance of avoiding fast foods while understanding the energy-providing role of carbohydrates and fats (34.44%).

### **Women's Empowerment and Nutritional Outcomes:**

An analysis using NFHS 5-unit level data has been conducted to examine women's empowerment at the state level, focusing on both rural and urban households. Additionally, regression analysis has been carried out to understand the extent to which women's empowerment varies based on specific variables. In urban areas, 72% of women reported having decision-making power in household finances, compared to 45% in rural areas. Access to education showed a strong correlation with empowerment; 80% of women with a college degree in urban settings felt empowered, whereas only 30% of rural women with less than secondary education felt similarly. Employment status also played a critical role; 65% of employed women in urban areas felt empowered, while only 40% of rural women with employment reported the same. In terms of health and safety, 85% of urban women had access to healthcare services, contributing to their empowerment, compared to 55% in rural areas. The determinants analysis revealed that educational attainment, employment

status, and access to healthcare services were significant variables influencing women's empowerment. Specifically, education emerged as a pivotal factor, with higher levels of education correlating strongly with increased feelings of empowerment across both rural and urban settings. Employment provided financial independence and personal agency, further enhancing empowerment, particularly in urban areas where job opportunities and social support structures are more robust. Access to healthcare was another critical determinant, as it not only ensured physical well-being but also contributed to overall quality of life and empowerment. These findings underscore the need for targeted interventions aimed at improving educational opportunities, employment prospects, and healthcare access to enhance women's empowerment, particularly in rural areas where these factors are less accessible.

### **Nudging and Healthy Food Choices:**

A quasi-experimental study was conducted at the ICAR-IARI Golden Jubilee Cafeteria to investigate the impact of different nudges on students' healthy food choices. Over the course of a month, healthy foods were introduced without any nudging techniques for the first two weeks, serving as a control. Subsequently, various nudging techniques were implemented for the following two weeks, including healthy messages such as "Boost Your Mood with Millets" and "If we do not plan for eating healthfully, then we better plan for illness," as well as nutrition labeling of millet products. The study revealed an increased sale of millet-based products during the experimental phase, suggesting that nudging is an effective, low-cost, and easy-to-implement strategy for promoting healthy food choices. It highlights the potential of gently nudging individuals towards healthier options through choice architecture, thereby encouraging optimal decision-making.

### **Bibliometric Analysis on Healthy Food Choices:**

To bridge the knowledge gap regarding current trends and future research directions on healthy food choices, a bibliometric analysis was conducted on 154 publications retrieved from SCOPUS. The analysis focused on identifying influential authors, leading countries, key terms related to healthy food choices, and prominent sources. Utilizing VOS viewer software (version 1.6.18), the main themes in healthy food choices were visualized and analyzed through Network Visualization. The findings revealed an increasing trend in publications on healthy food choices from 1987 to 2022, with a notable surge in studies published in 2018, 2019, and 2022. For instance, while only 6 articles were published in

2013, this number escalated to 17 in 2022, indicating a growing interest and research focus in this area.

### **Study on Nutrition status and awareness in Uttarakhand:**

Anthropometric analysis revealed concerning trends in Body Mass Index (BMI) among men, women, and children in Almora and Nainital districts. In Almora, 21% of men, 43% of women, and 37% of children had inadequate BMI, while in Nainital, 27% of men, 53% of women, and 41% of children exhibited inadequate BMI. Overall, 17% of men, 29% of women, and 45% of children fell into underweight, severely underweight, or very severely underweight categories, highlighting the prevalence of malnutrition. Participants' knowledge and perception of a healthy diet were assessed, with 57% emphasizing the importance of a balanced diet for health. Women demonstrated higher nutrition knowledge levels, often relying on *anganwadi* workers for information, while men and children leaned towards television and social media platforms. Individual Diet Diversity Score (IDDS) analysis revealed higher scores among males and children (6.9 and 7.1 respectively) compared to females (5.9), attributed to greater consumption of milk products and school meals. Similarly, the Simpson Index of Dietary Diversity (SIDDD) indicated richer and more varied food intake among males and children, with scores of 0.67 and 0.73 respectively, compared to females (0.56). Regarding information sources, females predominantly sought nutrient-related information from *anganwadi* workers (61%), while males (74%) and children (83%) relied on television and social media. Moreover, 57% of women expressed a willingness to utilize social media and video-based modules for nutritional guidance.

### **Psychological Factors and Eating Habits:**

In a cross-sectional study involving 200 students from various agricultural universities, eating habits and psychological factors influencing dietary habits were examined using the validated Compulsive Eating Scale (CES). Normal weight was more prevalent among males (61%) compared to females (53%), with higher rates of obesity and underweight observed in females (17.8% and 11.4%) compared to males (9.8% and 8.1%) respectively. Among thirteen psychological and social factors analyzed, eight were significantly associated with eating habit scores, underscoring the complex interplay between psychological factors and dietary behaviors.

### **Nutrition related health behaviour of college students:**

The nutrition related health behaviour was assessed among college students in Kerala. The data was collected from 103 undergraduate students by using google form. Regarding millet consumption, questions were asked to the participants and it was found that 72% of them do not consume millets in their daily diet. Majority (60%) of them were aware about the nutritional aspects of millets. The major reasons for non-consumption of millets were found out. Interestingly 27% of the respondents do not like the taste of millets. The correlates of willingness to pay extra amount for nutritious foods were determined. Linear probability model (LPM) was used to fulfill this objective. Robust standard errors were used to make the model Heteroskedasticity consistent. It was found that factors like age, affordability, perceived knowledge regarding nutrition and health and training need are significant at 5% level of significance. Most of the predicted probabilities lie between 0 and 1 which shows the appropriateness of the model. The respondents were also asked for the food safety practices followed and it was found that majority of them were used to wash their hands before cooking (82%) and stored the food properly maintaining the hygiene (79%).

#### **Capacity Building and Demonstrations:**

Various capacity building activities and demonstrations were undertaken under Agri-Nutri (A2N) Smart Village Model. The nutri rich seeds of IARI variety (under A2N Village Model) i.e. Spinach, Fenugreek, Quality Protein Maize (QPM) and Nutri kitchen garden kits (400) in project villages were demonstrated.

## 2. Technologies/ Models/ Methodologies certified by ICAR

S. No	Technologies/ Models/ Methodologies	Certificate Number/ Technology Code	Lead Developer/ Co-developer	Details
1.	Pusa Samachar-Multimedia based extension model for information dissemination through social media	ICAR-AEXT-IARI-Technology-2023-002	<p><b>Lead Developer</b> Dr. A. K. Singh, Dr. R. N. Padaria, Dr. R. R. Burman, Dr. Girijesh Singh Mahra</p> <p><b>Associate Developers:</b> Dr. Gyan P. Mishra Dr. Anjali Anand Dr. Ananta Vashisth Dr. Vishal Somvanshi Dr. Kapila Shekhawat Dr. Shalini Gaur Rudra Dr. Bipin Kumar Dr. Seema Sangwan Dr. Subhashree Sahu Dr. Sitaram Bishnoi Dr. Pravin Kumar Upadhyay Dr. Sunita Yadav Dr. Bindvi Arora</p>	A multimedia-based extension model named 'Pusa Samachar' was developed for two-way information sharing through social media. Timely, location-specific and need-based information on management practices of major crops, technological videos along with weather information was broadcasted through Institute's official YouTube channel. A dedicated Pusa WhatsApp number has been added to it, through which farmers send their farm problems with pictures and are resolved promptly by the scientists.
2.	Farm Entrepreneurship Development Process Model	ICAR-AEXT-IARI-Model- 2023-011	<p><b>Lead Developer</b> Dr. Rashmi Singh</p> <p><b>Associate Developers</b> Dr. M. S. Nain Dr. J. R. Mishra Dr. A. K. Singh</p>	A Farm Entrepreneurship Process Model was developed and validated in six villages of Uttar Pradesh and Haryana in collaboration with NABARD, NGOs, NSC, Marketing Agencies, KVKs and state agricultural departments of the project villages. The data for the model on Farm Entrepreneurship was collected from over 500 farmers and 91 achiever farmers from seventeen states of India. Data on pre and post-training entrepreneurial competencies of innovative farmers was generated. The entrepreneurial convergence model maximized farmer's income.
3.	Nutritional health belief model NHBM for understanding motivational health belief of farmers	ICAR-AEXT-IARI-Model- 2023-015	<p><b>Lead Developer</b> Dr. Satyapriya</p> <p><b>Associate Developer</b> Dr. Sitaram Bishnoi</p>	Nutritional Health Belief Model (NHBM) was developed, validated and tested to understand the motivation to improve health, in context of anemia and nutritional health behavior among 100 farmers of backward districts of Uttar Pradesh and Haryana. A basic framework was designed to elucidate NHBM from the existing model health beliefs.



				The Mokken's Scaling Analysis (MSA) was used to select farmer's perspectives on nutritional health and motivational factors that influence their nutritional health beliefs. The NHBM complying with health consciousness and related key factors was the major deciding factor in agri-nutri linkage to health. The NHBM was suggested as a remedy for alleviating anemia and to change nutritional attitudes/ behaviour of people.
4.	Perception scales of farmers and extensionist regarding impact of climate change on nutrition	ICAR-AEXT-IARI-Technology-2023-014	<p><b>Lead Developer</b> Dr. Satyapriya</p> <p><b>Associate Developer</b> Dr. Sitaram Bishnoi</p>	A perception scale was developed and validated to study the perceptions of 100 farmers and extensionists in Uttar Pradesh and Odisha regarding impact of climate change on nutrition. The scale can be used by various stakeholders for designing interventions for climate and nutrition smart agriculture. Climate change and agriculture needs to be seen through a nutrition and gender lens for convergence to ensure food and nutritional security.
5.	Agri-Nutri (A2N) smart village model	ICAR-AEXT-IARI-Model- 2023-013	<p><b>Lead Developer</b> Dr. V. Sangeetha</p> <p><b>Associate Developers</b> Dr. Satyapriya Dr. Sukanya Barua Dr. P. Venkatesh Dr. V. Lenin Dr. Sudipta Paul Dr. L. Muralikrishnan Dr. Sitaram Bishnoi Dr. A. K. Singh</p>	Conceptualized and validated Agri-Nutri model to improve the nutrition security of village masses. Using behavioural changing communication (BCC) techniques, it was deliberately sought to bring about the required behavioural changes among many stakeholders including women, men, and children, regarding optimal nutrition practices at production and consumption. Farmers' attitude towards nutri-rich crops and varieties were positively influenced by field demonstrations, field days, scientist-stakeholders interaction meetings, exposure visits, kitchen garden kits demonstrations etc. To create the habit of consuming nutri-foods, streamed videos on healthy practices and nutri-rich varieties,

				along with capacity-building programs on minimal processing techniques.
6.	Knowledge test for extension personnel on national food security mission	ICAR-AEXT-IARI-Technology-2023-012	<p><b>Lead Developer</b> Dr. Bhagya Vijayan</p> <p><b>Associate Developers</b> Dr. M. S. Nain Dr. Rashmi Singh Dr. N. V. Kumbhare</p>	A knowledge test was developed to measure knowledge level of Extension Personnel on National Food Security Mission keeping the study locale under consideration. Based on the scores obtained from the relevancy testing, pretesting, item analysis eliciting difficulty index, discrimination index and point biserial correlation, 24 items were selected, with difficulty index ranging from 0.2-0.8, discrimination index > 0.1 and point biserial correlation significant at 5% level of significance. The knowledge test can accurately measure the knowledge gap existing among the extension personnel which may be addressed by equipping them with right kind of information on NFSM through trainings.
7.	Social learning based Extension Model	ICAR-AEXT-IARI-Model- 2023-016	<p><b>Lead Developer</b> Dr. Priti Priyadarshni</p> <p><b>Associate Developers</b> Dr R. N. Padaria Dr. R. R. Burman Dr. Rashmi Singh Dr. Sujit Sarkar Dr. Pramod Kumar Dr. Sanjay Bandyopadhyay Dr. Arpan Bhowmik</p>	The social learning-based extension model represents a transformative approach to agricultural extension, aiming to overcome the limitations of traditional one-to-one interactions between farmers and extension agents. In contrast to the conventional method, where the low extension agent to farmers' ratio (1:5000) impedes widespread technology dissemination, the social learning model promotes a more inclusive and community-centric approach. In this model, farmers learn about agricultural technologies not solely from extension agents but also through peer-to-peer interactions.

### 3. Collaboration and Externally Funded Projects

Sr. No	Name of Externally funded Projects	Funding agency	Name of PI/ Co-PI/ CCPI	Status of Project
1.	Impact Evaluation of Watershed Development and Micro- irrigation Components of PM Krishi Sinchai Yojana in select areas of Punjab and Haryana	ICSSR-CRP	Dr. L.Muralikrishnan (CCPI)	Completed
2.	New Extension Methodology Approaches NEMA phase-2	ICAR	Dr. Rabindra Nath Padaria (PI)	Ongoing
3.	Farmer FIRST (Participatory Technology Application and Multi-Stakeholder Convergence for Market led Agripreneurship and Sustainable Rural Livelihood)	ICAR	Dr. Rabindra Nath Padaria (PI)	Ongoing
4.	Unnat Bharat Abhiyaan Subject Expert Group UBA	MoHRD	Dr. Rabindra Nath Padaria (PI)	Ongoing
5.	Characterizing, Reviving, Supporting, Monitoring and Managing Sustainable Food Systems to address malnutrition in indigenous tribal communities of India (CARISMMA)	DBT/Wellcome Trust India Alliance	Dr. Sukanya Barua (PI) Dr. Satyapriya (Co-CCPI)	Ongoing
6.	Build resilience of farmers to climatic risks through innovative adaptation in different irrigated systems	IARI- NICRA project	Dr. L. Muralikrishnan (CCPI)	Ongoing

### 4. Education

#### a) Summary of UG, PG education

- Fifteen (Five Ph.D. and 10 M. Sc.) students have completed their research work under the themes of evaluation of farmers' centric programme, climate resilient agriculture, entrepreneurship, gender empowerment, analysis of multimedia-based model, effectiveness of Tot through ICT, career perception etc.
- Ten students attended professional trainings, workshops & other capacity building programmes and 11 students participated in various national conferences (Nos. 9) & international conferences (Nos. 2).
- The division has contributed in executing the UG programme on B. Sc. Community Science in the year 2023. The curriculum development work was done by the faculty of the division.
- Two multi-disciplinary PG courses (PGS 502 Technical writing Communication skills, PGS 505 Agricultural Research, Research Ethics and Rural Development Programme) are being offered by the Division for students of the institute.

**b) No. of students enrolled in Year 2023**

Name of degree programme	Number of Students
<b>Ph. D.</b>	
I <sup>st</sup> Year	12
II <sup>nd</sup> Year	12
III <sup>rd</sup> Year	12
<b>Total</b>	<b>36</b>
<b>M.Sc.</b>	
I <sup>st</sup> Year	10
II <sup>nd</sup> Year	10
<b>Total</b>	<b>20</b>
<b>U.G. B. Sc. (Community Sciences)</b>	
I <sup>st</sup> Year	28
II <sup>nd</sup> Year	11
<b>Total</b>	<b>39</b>

Number of International students enrolled: 3

**c) Fellowships secured by the students (other than IARI Fellowship)**

S.No.	Name of the student	Name of the Fellowship	Awarding Agency
1.	Rajat Kumar Nath	UGC JRF	UGC
2.	Bikram Barman	UGC JRF	UGC
3.	Subhash Kumar Saurav	UGC JRF	UGC
4.	Bhaskar Ghosh	UGC JRF	UGC
5.	Haripriya Veeram	UGC JRF	UGC
6.	Chimi Yangzom Lepcha	UGC JRF	UGC
7.	Yogesh B M	UGC JRF	UGC
8.	Choudam Vaishnavi	UGC JRF	UGC
9.	Anirban Jana	UGC JRF	UGC
10.	N V Leela Krishna Chaithanya	UGC JRF	UGC
11.	Kyaw Min	BIMSTEC fellowship	BIMSTEC
12.	Elly Kirwa	African scholarship scheme (ASS)	Indian council of cultural relations (ICCR), GOI
13.	Faizan Ulhaq Faizan	Netaji Subhash-ICAR International Fellowship	ICAR

**d) Students awarded with degrees during 2023**

S.No	M.Sc./ Ph.D.	Name of the student	Name of the Chairperson, Advisory Committee	Title of the Thesis
1.	Ph.D.	Sanjay Kumar Gupta	Dr. M. S. Nain Dr. Rashmi Singh Dr. J.R. Mishra Dr. Shakeel A. Khan Dr. D. R. Singh Dr. Anil Kumar	An Exploratory Study of Entrepreneurial Climate and Support System for Agricultural Development

2.	Ph.D.	Laxmipriya Upadhyaya	Dr. R. R. Burman Dr. J. P. Sharma Dr. Sudipta Paul	Analyzing Extension Education needs of Agricultural scientists for innovation promotion
3.	Ph.D.	Gireesh S	Dr. N. V. Kumbhare Dr. R. N. Padaria Dr. R. R. Burman Dr. Shiv Prasad Dr. Pramod Kumar Dr. Arpan Bhowmik	Impact Assessment of Farm Pond on Demand Scheme of Maharashtra
4.	Ph.D.	Bhagya Vijayan	Dr. M. S. Nain Dr. Rashmi Singh Dr. N. V. Kumbhare Dr. Pramod Kumar Dr. Anil Kumar	An Analysis of Access, Status and Impact of Selected Agricultural Development Programmes
5.	Ph.D.	Edet Edet Ekong	Dr. R. R. Burman Dr. R. N. Padaria Dr. G. S. Mahra Dr. Kaustav Aditya Dr. Pramod Kumar	Comparative study of career perception of agricultural graduate students in India and Nigeria
6.	M.Sc.	Rakshith K S	Dr. Sudipta Paul Dr. R R Burman Dr. R N Padaria Dr. S K Shrivastava Dr. Mrinmoy Ray	Farm based livelihood under COVID 19 pandemic: vulnerability assessment and mapping
7.	M.Sc.	Ananda K R	Dr. Satyapriya Dr. V Lenin Dr. Sitaram Bishnoi Dr. Arpan Bhowmick Dr. P. Venkatesh	Brand value of higher education: an exploratory study
8.	M.Sc.	Shaibal Biswas	Dr. V. Sangeetha Dr. Sukanya Barua Dr. Girijesh Mahra Dr. P. Venkatesh Dr. V. Ramasubramanian	A study on indigenous foods consumption and nutritional outcomes of tribal population of Tripura
9.	M.Sc.	Veesam Haripriya	Dr. Vinayak Nikam Dr. V. Sangeetha Dr. Girijesh Mahra Dr. Mrinmoy Ray Dr. Pramod Kumar	An Institutional Analysis of performance of Farmer Producer Organizations in India
10.	M.Sc.	Sayak Saha	Dr. Nishi Sharma Dr. Pankaj Kumar Dr. R. R. Burman Dr. Pratibha Joshi Dr. V. Ramasubramanian	Assessment of IARI's extension Approaches for outscaling of Improved agricultural technologies
11..	M.Sc.	Bhaskar Ghosh	Dr. R. R. Burman Dr. R. N. Padaria Dr. Girijesh Mahra Dr. Pramod Kumar Dr. Arpan Bhowmik	Role of direct benefit transfer (DST) in enhancing livelihood of small and marginal farmers: a special reference to the PM-Kisan scheme of Government of India
12	M.Sc.	Alok Dube	Dr. Sukanya Barua Dr. R. R. Burman Dr. L. Muralikrishnan Dr. Anindita Datta	Socio-economic assessment of crop residue burning in Northern India

			Dr. Rajkumar Dhakar	
13.	M.Sc.	Ankit Pal	Dr. V. Lenin Dr. Satyapriya Dr. Monika Wason Dr. V. Ramasubramanian Dr. Shruti Sethi	An Analytical Study of Nutrition Education of Rural School Children of Bihar
14.	M.Sc.	T. Nagaraju	Dr. V.Lenin Dr. Pankaj Kumar Sinha Dr. A. Nagaraja Dr. V. Ramasubramanian Dr. Sitaram Bishnoi	An analytical study of the factors determining the adoption behaviour of hi-tech cultivation of rose in eastern dry zone of Karnataka
15.	M.Sc.	Rajath Kumar Nath	Dr. Nishi Sharma Dr. V. K. Yadav Dr. R. N. Padaria Dr. L. Muralikrishnan Dr. V. Ramasubramanian	Value chain analysis of Cereal and Horticultural Crop Varieties of IARI in North West Plain Zone

#### e) Awards and Recognitions received by the student

Name and roll no. of student	M.Sc./ M.Tech./ Ph.D.	Name of the award	Year for which given	Agency
Bhaskar Ghosh	Ph. D.	Best Post Graduation Thesis Award	2023	MANAGE, Ministry of Agriculture and Family Welfare, Government of India
Krishna Chaithanya NVL	Ph. D.	Best paper oral presentation award for paper presentation on “An Analytical study on drudgery prone paddy cultivation practices in coastal region of Andhra Pradesh.”	2023	National Conference on Frontiers in Agricultural Research Challenges & opportunities for food and nutritional security S V Agricultural College, Tirupati.

#### f) Events organized by student club of the Division

##### Fresher’s Day

The Fresher’s welcome programme for interaction of faculty members and the new students of M. Sc. and Ph. D. was organized by the PG student club.

##### Training on Operation and management of Smart Class Room

Training programme on “Operation and management of Smart Class Room” was organized by the Division on 23rd June 2023. All the staff members and students of the Division participated in the training programme. The training highlighted the operation of equipments such as whiteboard, visualizer, use of software Panopto for recording and uploading educational videos etc.

##### Pedagogy Development Programme

The division facilitated the organization of the module on “Experiential Learning with live classroom practical sessions” under the Pedagogy Development Programme of NAAS, New Delhi. The aim of the module was enhancing pedagogical competencies using new teaching methods, hands on exercises and interaction etc.

### Participation of Staff and students in Pusa *Krishi Vigyan Mela*, 2023

The Staff and Students of the Division have participated in various committees like Reception, Demonstration, Help Desk, Stage Management committees constituted for execution of Pusa *Krishi Vigyan Mela* 2023.



Participation of students under reception committee at Pusa *Krishi Vigyan Mela*, 2023

## 5. Awards and Recognitions received by the Scientists

### a) ICAR/ National /Institutional Awards

S. No.	Name of the Scientist	Name of the Award	Awarding agency	Achievement for which the award was given
1.	Dr. Misha Madhavan M	First prize for Best Book in Agricultural Extension Category, 2023	MANAGE, Hyderabad	First prize as co-author for the book
2.	Dr. Misha Madhavan M	Best Institutional Film, 2023 in the MANAGE Agri. Film Festival 2023	MANAGE, Hyderabad	As contributor in documentary film
3.	Dr. Om Prakash	2 <sup>nd</sup> Prize in PPT presentation	ICAR-IARI, New Delhi	Institute Hindi competition
4.	Dr. Om Prakash	1 <sup>st</sup> Prize in Speech competition & 3 <sup>rd</sup> in GK competition (Hindi)	Division of Agril. Economics, IARI, New Delhi	Hindi competition
5.	Dr. Girijesh Singh Mahra	Rajbhasha Award (Hindi week Program)	ICAR- IARI	Third Prize at Institute level 'Story writing based on image' Competition (Hindi week celebration)
6.	Mrs. Leena Vohra, Personal Secretary	Employee of the year award' in administrative category at Institute level	ICAR- IARI	Excellence in Administration work
7.	Dr. V. Sangeetha	Third prize in athletics	ICAR Central Zonal Sports tournament	Sports
8.	Dr. Subhashree Sahu	Gold in Badminton Doubles and Silver	ICAR Central Zonal Sports	Sports

		in Singles	tournament	
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**b) Fellowship/Associateship of National academies**

S. No.	Name of the Scientist	Fellowship/ Associateship	Name of the Academy
1	Dr. R. R. Burman	NASC Fellow	NASC

**c) Fellowship/Awards of Professional societies of the relevant Discipline**

S. No.	Name of the Scientist	Fellowship/ Associateship	Name of the Society
1	Dr. Sitaram Bishnoi	Young Scientist Award	Society of Extension Education, Agra

**d) Best Paper/Poster awards**

S. No.	Name of the scientist/student	Presented in	First/ second/ third
1.	Monika Wason and Subhash Kumar Saurav	National Conference on Sustainable Development and Socio-economic Upliftment of Agrarian Society held during 26th to 27th October 2023, organised by Department of Sociology, College of Basic Sciences & Humanities, CCSHAU, Hisar, Haryana	Best Oral Presentation Award
2.	Dr. Girijesh Mahra	International Extension Education Conference on 'Innovative Applications in Agricultural Extension for Sustainable Food & Environmental Security' organized at Department of Extension Education, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi from January 27-30, 2023	Best paper Award

**6. Budget Estimates**

**a) Head-wise budget received and expenditure under EFC**

Head-wise	Allotted (in Lakh)	Expenditure (in Lakh)
Research	5.00	5.25
Operational	3 .00	2.70
Repair & Maintenance	8.00	11.30
Others	24.00	23.16
HRD	0.40	0.53
Miscellaneous	0.50	0.52
Publication	8.00	5.57
Capital	4.00	4.00



<b>Total</b>	<b>Rs. 52.90</b>	<b>Rs. 53.03</b>
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**b) Budget received from external grant**

<b>S. No</b>	<b>Name of External funded project</b>	<b>PI</b>	<b>Funding Agency</b>	<b>Budget sanctioned (in lakhs)</b>	<b>Duration</b>
1.	New Extension Methodology Approaches (NEMA phase-2)	Dr. Rabindra Nath Padaria	ICAR	15	July, 2021 - June 2025
2.	Unnat Bharat Abhiyaan Subject Expert Group (UBA)	Dr. Rabindra Nath Padaria	MoHRD	30	April 2018- March 2026
3.	Farmer FIRST (Participatory Technology Application and Multi-Stakeholder Convergence for Market led Agripreneurship and Sustainable Rural Livelihood)	Dr. Rabindra Nath Padaria	ICAR	179	2016- till date
4.	Characterizing, Reviving, Supporting, Monitoring and Managing Sustainable Food Systems to address malnutrition in indigenous tribal communities of India (CARISMMA)	Dr. Sukanya Barua	DBT/ Wellcome Trust India Alliance	59.56	Apr 2023- Mar 2028
5.	Impact Evaluation of Watershed Development and Micro-irrigation- Components of PM Krishi Sinchai Yojana in select areas of Punjab and Haryana	Dr. L. Muralikrishnan (CCPI)	ICSSR-CRP	14	October 2023- March 2024
6.	Build resilience of farmers to climatic risks through innovative adaptation in different irrigated systems	Dr L Muralikrishnan (Co-PI)	IARI- NICRA	20	2021-26

**7. Publications**

**a) Research and review publications (in peer reviewed NAAS rated journals only)**

Number of research articles with more than 6 NAAS rating = 10

Number of research articles with less than 6 NAAS rating = 16

S.No	Publication	IF	NAAS Score
	<b>Research articles with more than 6 NAAS rating</b>		
1.	Barua, S., Satyapriya, Kumar R, Sangeetha, V., Muralikrishan, L and Wason M. 2023. Knowledge ability about organic food consumption and the factors behind it. <i>Frontiers in Nutrition</i> . 10:1125323. doi: 10.3389/fnut.2023.1125323	4.0	12.59
2.	Sunil Kumar, Purushottam Sharma, Satyapriya, Prabhu Govindasamy, Maharaj Singh, Sant Kumar, Hanamant M Halli, Bishwa Bhaskar Choudhary, Muthukumar Bagavathiannan. 2022. Economic impression of on-farm research for sustainable crop production, milk yield, and livelihood options in semi-arid regions of central India. <i>Agronomy Journal</i> : 1769-1781. doi: 10.1002/agj2.21062.	2	8.65
3.	K.N. Singh, Mrinmoy Ray, Satyapriya, Jaya Pandey, Rajeev Ranjan Kumar. 2023. Genetic Algorithms-based Fuzzy Analytical Hierarchical Process (GA-FAHP) for evaluating Biofortified Crop Promotion Strategies. <i>Current Science</i> , 125, 3 (10): 317-320. doi: 10.18520/cs/v125/i3/317-320.	1.1	7.17
4.	Vijayan, B., Nain, M. S., Singh, R., & Kumbhare, N. V. 2023. Socio-economic transformation through National Food Security Mission in Uttar Pradesh and Karnataka, India. <i>Current Science</i> , 124(8): 976.	1.1	7.17
5.	Subhashree Sahu, J P Sharma, R R Burman, Reshma Gills and S K Sinha. 2023. Assessment of the constraints in PHM and determinants of losses in grapes ( <i>Vitis vinifera</i> ): An ordered logistic regression analysis. <i>Indian Journal of Agricultural Sciences</i> , 92 (9): 1129-33. Doi: <a href="https://doi.org/10.56093/ijas.v92i8.118975">https://doi.org/10.56093/ijas.v92i8.118975</a> .	0.37	6.37
6.	Arun Kumar G.S., Nain M.S. and Singh Rashmi. 2023. Financial inclusion of farmers in aspirational districts: A case of Karnataka, India, <i>Indian Journal of Agricultural Sciences</i> . 93 (2): 241-244. doi: <a href="https://doi.org/10.56093/ijas.v93i2.122838">https://doi.org/10.56093/ijas.v93i2.122838</a> .	0.37	6.37
7.	Saini, S., Burman, R.R., Padaria, R.N., Mahra, G.S., Bishnoi, S., Aditya, K., Nithyashree, M.L., Mallick, S., Mukherjee, S. and Padhan, S.R. 2023. Mapping the research trends of migration behavior in agricultural households: a bibliometric analysis. <i>Frontiers in Sustainable Food Systems</i> . 7:1241716. doi: 10.3389/fsufs.2023.1241716	5.04	11.04
8.	Aiswarya, S., Padaria, R.N., Burman, R.R., Sarkar, S., Kumar, P and Lama, A. 2023. Climate change adaptation strategies for the native communities of Agasthyamalai Biosphere Reserve, South India. <i>Current science</i> . 125(22): 1354-1359.	1.17	7.17
9.	Priyanka, P. S., Sangeetha, V., Venkatesh, P., Lenin, V., Muralikrishnan, L., & Jha, G. K. 2023. Assessing farmers knowledge towards Agri-Nutrition (A2N) in Uttar Pradesh and Telangana: 2023. <i>A psychometric test development and impact analysis. AMA-Agricultural Mechanization in Asia Africa and Latin America</i> . 54(10):15927-15939.	0.29	6.29
10.	Ankhila R H, Alka Singh, Pramod Kumar, Suresh Kumar, M C Meena, Rashmi Singh, Sunil Kr Sunani, P.P. Adhikary, Dinesh Kumar, S. Pradhan and Sunil M B 2023. Socio-Economic Impact of Soil Health Card Scheme in the State of Andhra Pradesh. <i>Indian Journal of Agricultural Sciences</i> . 93 (6):683-686.	0.37	6.37
	<b>Research articles with less than 6 NAAS rating</b>		
11.	Burman, R.R., Padaria, R.N., Mahra, G.S., Mallick, S., Mukherjee, S., Jha, S.K., Parvender Sheoran, P. and Roy, S.K. 2023. Perception, Attitude and Knowledge of Farmers towards Agridrones: Case Study on Influence of Mann Ki Baat Program. <i>Journal of Community Mobilization and Sustainable Development</i> . 18(1): 79-88.	--	5.67
12.	Padaria, RN, RR Burman, Priti Priyadarshni, L Muralikrishnan, Misha Madavan	--	5.03

	and Subhashree Sahu. 2023. Community based extension approaches for sustainable production of rice. <i>Oryza</i> . Vol. 60 Special Issue: 91-96. doi: <a href="https://doi.org/10.35709/ory.2023.60.0.8">https://doi.org/10.35709/ory.2023.60.0.8</a> .		
13.	Vijayan B., Nain M.S., Singh Rashmi, Kumbhare N.V., &Kademani S.B. 2023. Knowledge test for extension personnel on <i>Rashtriya Krishi Vikas Yojana</i> . <i>Indian Journal of Extension Education</i> . 59 (1): 131-134. doi: <a href="http://doi.org/10.48165/IJEE.2023.59127">http://doi.org/10.48165/IJEE.2023.59127</a> .	--	5.95
14.	Yeligar S., Kumar S., Venkatesh P., Kingsly I., Nain M.S., Paul R.K., & Madhurima U. 2023.Prevaling status of agricultural trade between India and European union. <i>Indian Journal of Extension Education</i> . 59 (1):13-18.doi: <a href="http://doi.org/10.48165/IJEE.2023.59103">http://doi.org/10.48165/IJEE.2023.59103</a> .	--	5.95
15.	Ghosh, B., Burman,R.R., Padaria, R.N., Mahra, G.S., Kumar,P., Bhowmik, A. and Paul, s. 2023.Effectiveness of Cash Transfer Under the PM-Kisan Scheme of Government of India in Benefitting the Small and Marginal Farmers by Providing Income Support. <i>Journal of Community Mobilization and Sustainable Development</i> . 18(1): 12-18.	--	5.67
16.	Gupta S. K. Nain M.S., Singh Rashmi, Mishra J R., Lata A. 2023. Exploring the entrepreneurial climate and attributes of agripreneurs and its determinants. <i>Indian Journal of Extension Education</i> . 59 (2):93-97.doi: <a href="http://doi.org/10.48165/IJEE.2023.59220">http://doi.org/10.48165/IJEE.2023.59220</a> .	--	5.95
17.	Niranjan S., Singh D.R., Kumar N.R., Jha G.K., Venkatesh P., Nain M.S, &Krishna kumare B. 2023. Do information networks enhance adoption of sustainable agricultural practices? Evidence from northern dry zone of Karnataka, India, <i>Indian Journal of Extension Education</i> . 59 (1): 86-91 doi: <a href="http://doi.org/10.48165/IJEE.2023.59118">http://doi.org/10.48165/IJEE.2023.59118</a> .	--	5.95
18.	Sayak Saha, Nishi Sharma, Rajarshi Roy Burman, Pankaj Kumar Sinha, Pratibha Joshi and Ramasubramanian V. 2023. Analysing Attitude of the Farmers Towards IARI Pusa Extension Approaches. <i>Indian Research Journal of Extension Education</i> . Vol. 23 (1): 23-29.	--	5.95
19.	Sayak Saha, Nishi Sharma, Pankaj Kumar Sinha, Rajarshi Roy Burman, Pratibha Joshi and Ramasubramanian V. Assessing Perceived Constraints in Implementation of IARI's Extension Approaches for Outscaling of Improved Agricultural Technologies. 2023. <i>Journal of Community Mobilization and Sustainable Development</i> . Vol. 17(4): 1136-1142.	--	5.67
20.	Tiwari Saurabh, Kadian K.S., Meena H.R., Nain M.S., Mukherjee S., Ranjan A. 2023. Farmers' awareness of agricultural schemes under saansadadarsh gram yojana in Varanasi (UP). <i>Indian Journal of Extension Education</i> .59 (2): 84-87. <a href="http://doi.org/10.48165/IJEE.2023.59218">http://doi.org/10.48165/IJEE.2023.59218</a>	--	5.95
21.	Singh Ashish, Singh R., Nain M.S., Mishra J.R., Kumar P., Sharma D.K. & Paul R.K. (2023). Linkage Network Structures of Farmers: Analysing FPOs of M.P. and Bihar in India. <i>Indian Journal of Extension Education</i> . 59 (3): 14-20. doi: <a href="http://doi.org/10.48165/IJEE.2023.59303">http://doi.org/10.48165/IJEE.2023.59303</a> .	--	5.95
22.	Sudip Kumar Gorai, Monika Wason, R.N. Padaria, D.U.M. Rao, Sudipta Paul, Ranjit Kumar Paul. 2023. Leveraging Group Dynamics for Enhancing the Performance of Farmer Producer Organizations in West Bengal. <i>Indian Res. J. Ext. Edu</i> . 23 (3): 1-7. doi: <a href="http://doi.org/10.48165/IJEE.2022.58218">0.48165/IJEE.2022.58218</a>	--	5.95
23.	Sweety Mukherjee, S.K. Jha, Sanjit Maiti, Amandeep Ranjan , Saurabh Tiwari , K.S. Kadi. 2023. Analysis of Perceived Constraints of Farmers in Utilizing Information and Communication Technology (ICT) Tools. <i>Indian Res. J. Ext. Edu</i> . 23 (3):110-115.doi: <a href="https://doi.org/10.54986/irjee/2023/jul_sep/110-115">10.54986/irjee/2023/jul_sep/110-115</a>	--	5.95
24.	Kumar P., Kumbhare, N. V., Nain M.S., Bishnoi S., Biswas A., Kumar P., & Prasad R. 2023. Factors for value realization of Tomato, Onion, and Potato (TOP) under operation greens using DEMATEL method. <i>Indian Journal of Extension Education</i> , 59(4), 72–76. Doi: <a href="https://doi.org/10.48165/IJEE/2023.59415">https://doi.org/10.48165/IJEE/2023.59415</a>	--	5.95
25.	Sondarva, Y. M., Nain M.S. Singh R., Mishra J.R., Singh D.R., & Parsad R. 2023. E-readiness assessment of national agricultural research system. <i>Indian</i>	--	5.95

	<i>Journal of Extension Education</i> , 59 (4): 82- 85. <a href="https://doi.org/10.48165/IJEE.2023.59417">https://doi.org/10.48165/IJEE.2023.59417</a> .		
26.	Kumar Sunil, Nain M. S., Sangeetha V. & Satyapriya. 2023. Determinants and Constraints for Adoption of Zero Budget Natural Farming (ZBNF) Practices in Farmer Field School, <i>Indian Journal of Extension Education</i> , 59(4): 135-140. <a href="https://doi.org/10.48165/IJEE.2023.59427">https://doi.org/10.48165/IJEE.2023.59427</a>	--	5.95

**b) List of Research papers published in Conference, Symposia and Other (Only Lead Papers)**

- Rashmi Singh. Entrepreneurial Behavioural and Farmer led innovations for maximising farm profits. (Lead paper) In Compendium of ISEE National Seminar on Evolving Extension Science Towards Secondary Agriculture for Sustainable Development held at UAS Bangalore from 22-23 June 2023.Pp: 178-184.
- Manjeet Singh Nain, Rashmi Singh, J.R. Mishra. 2023. Nexus of Farmer led innovations and Agripreneurship for sustainable development and higher farm profitability. (Lead paper) In Compendium of ISEE National Seminar on Evolving Extension Science Towards Secondary Agriculture for Sustainable Development held at UAS Bangalore from 22-23 June 2023.Pp: 143-155.
- R. Roy Burman, Girijesh Singh Mahra, Sushmita Saini and Sweety Mukherjee. 2023. Secondary Agriculture – Historical Footprints to modern practices and innovations. (Lead paper) In Compendium of ISEE National Seminar on Evolving Extension Science Towards Secondary Agriculture for Sustainable Development held at UAS Bangalore from 22-23 June 2023.Pp: 24- 37.
- R. N. Padaria, Preeti Yadav, Sudip Gorai, K. Sharvani Reddi and Bhakar Ghosh. 2023. Methodologies in Extension Sciences: Opportunities and challenges. (Lead paper) In Compendium of ISEE National Seminar on Evolving Extension Science Towards Secondary Agriculture for Sustainable Development held at UAS Bangalore from 22-23 June 2023.Pp:89- 95.

**c) List of Books :**

- 1.Satyapriya, Bishnoi, S., Mahra, G.S., Barua, S., Sahu, S., Singh, R., Satyaprakash, Padaria, R.N. and Burman, R.R. (2023). *Agri-Nutri Information: A Ready Reference*. Division of Agricultural Extension, ICAR-Indian Agricultural Research Institute, New Delhi-110012. ISBN: 978-93-83168-73-6
- 2.सत्यप्रिय, बिशनोई, एस., महारा, जी.एस., बरुआ, एस., साहू, एस., सिंह, आर., जोशी, पी., सत्यप्रकाश, पडारिया, आर.एन. और बर्मन, आर.आर. (2023). *कृषि पोषण: सारगर्भित संदर्भ*. कृषि प्रसार संभाग, भा.कृ.अनु.प.-भारतीय कृषि अनुसंधान संस्थान, नई दिल्ली-110012. ISBN: 978-93-83168-74-3.
3. L. Muralikrishnan, V. Sangeetha, R. N. Padaria, M.S. Nain and Satyapriya. 2023. Recent Trends in Agricultural Extension. Biotech book publications, New Delhi. ISBN: 978-81-7622-594-6.
- 4.Ashok Kumar Singh, R. N. Padaria, J.P.S. Dabas, Nafeesh Ahmad, S. Chakravorty, Pratibha Joshi, M.K. Verma, Y.V. Singh, Nishi Sharma, Nirmal Chandra, Shruti Sethi, Alka Joshi, Gograj Singh Jat, Girijesh Singh Mehara, M.S. Nain, L.Muralikrishnan, Y.P. Singh, A. V. Dubey and I.V. Sachdeva, Fellow and Innovative farmer 2023- An Introduction. ICAR-IARI, New Delhi, ISBN: 978-93-83168-72-9

**d) Book Chapters:**

1. Sukanya Barua, Rajeev Kumar, V. Sangeetha, Satyapriya and L. Muralikrishnan. 2023. Various national and international initiatives on climate change adaptation and mitigation. Technological Advancement and Use of Artificial Intelligence in Climate Smart Agriculture. International Books & Periodical Supply Service, New Delhi-110034. Pp: 149-163.
2. V. Sangeetha and P. Venkatesh. 2023. Application of Behavioural Change Communication Tools to enhance nutritional security through millets: Experiences from Agri-Nutri Smart Villages. Agripreneurship Development course on Value addition technologies for millets. Pp: 37.
3. Mahra, G.S., Kamboj, A. and Vikas Mangal (2023). Reorienting lifestyle and persona of students: Insights from Swami Vivekananda incidences of life. *Imagining, Identifying and Innovating the Roadmap to become the Vishvaguru: Harnessing Potential of Indian Youth*. Vivekanand Swadhyay Mandal GBPUAT Pantnagar.
4. Mahra, G.S. and Burman, R.R. (2023). Communication Skills and Multimedia Usage for Effective Presentation pp. 48-57. In Edited Book: Sheoran, P., Bhadauria, P., Bhadauria, S.S., Shah, R.A. (2023). *Multidisciplinary Portrait of Agriculture: Concept & Practices*. Dilpreet Publishing House. New Delhi. ISBN: 978-93-91995-10-2.
5. Prakash, O., Verma, A., Sultana, M., Patil, C. and Khoisnam, N. (2023). Emerging trends in agricultural extension education. Book Published by S. P. Publishing House, Bhubaneswar, Odisha. ISBN 978-93-5915-683-5. p. 557.
6. A Mukherjee, P Singh, Satyapriya, S Ananda and K Shoba. 2023. The Nature of Agriculture and the Group Dynamics of Smallholder Farmers in Rural India. Published in Book “A critical Appraisal of India’s Self Reliance in Agriculture. Nova Science Publisher, New York. <https://doi.org/10.52305/FTUU7256>. Page 335 -348.
7. Pagadala S P, Sangeetha V, Venkatesh P. and Girish Kumar Jha. 2023. An Overview of Structural Equation Modeling and its Application in Social Sciences Research. *Social Research Methodology and Publishing Results: A Guide to Non-Native English Speakers*. 145-162. DOI: 10.4018/978-1-6684-6859-3.ch010.
8. Adupa Shanmuka, N.V. Kumbhare, L. Muralikrishnan, V. Sangeetha, R. N. Padaria. (2023). Role of Agri-Startups in strengthening supply chain management in Agriculture in the Journey of Entrepreneurship. By Asian Society for entrepreneurship education and development.
9. Aswathy Chandrakumar and Misha Madhavan M. 2023. Capacity Building, Communication Media and Branding as Ways to Leverage the Scope of Agri Startups. In V. David Chella Baskar, K.S. Kumaravel, Sandeep Jain, Anil Kumar (Eds.), *Agri Startup A Sustainopreneurship Approach*. (pp. 143-148). Satish Serial Publishing House (ISBN: 9789394023512).

**e) Chapters in training manual:**

1. Satyapriya and V Sangeetha. 2023. ICT based extension strategies for effective technology. In CAFT training manual on ICT led Extension: Content and Delivery Mechanism. Pp 49-66.
2. Lenin, V., Settipalli Sravani and Praveen Kumar (2023) Role of traditional media in modern era. In Training manual of ICAR Sponsored CAFT Course on ‘ICT led

- extension: content and delivery mechanism’. ICAR-Indian Agricultural Research Institute: New Delhi Pp. 100-112.
3. Mahra, G.S., Lenin. V., Sujit Sarkar and Sangeetha, V. (2023). Video editing in ‘Windows live movie maker’ for effective communication. In Training manual of ICAR Sponsored CAFT Course on ‘ICT led extension: content and delivery mechanism’. ICAR-Indian Agricultural Research Institute: New Delhi Pp. 84-91.
  4. Muralikrishnan, L., Misha Madhavan, M., Sukanya Barua, Lenin, V. and Rashmi Singh. (2023). Artificial intelligence enabled mobile apps for agro-advisory and extension services. In Training manual of ICAR Sponsored CAFT Course on ‘ICT led extension: content and delivery mechanism’. ICAR-Indian Agricultural Research Institute: New Delhi Pp. 153-161.
  5. Sitaram Bishnoi, Subhashree Sahu and V Sangeetha. 2023. Reference management tool for academic & scientific writing for research. In CAFT training manual on ICT led Extension: Content and Delivery Mechanism. Pp 35-39.
  6. G S Mahra, V Lenin, Sujit Sarkar and V Sangeetha. 2023. Video editing in windows live movie maker for effective communication. In CAFT training manual on ICT led Extension: Content and Delivery Mechanism. Pp 84-91.
  7. V Sangeetha, Subhashree Sahu and Sitaram Bishnoi. 2023. Multimedia module preparation. 2023. In CAFT training manual on ICT led Extension: Content and Delivery Mechanism. Pp 92-99.
  8. Sukanya Barua, Rajeev Kumar, V Sangeetha, Subhashree Sahu, Misha Madhavan and L Muralikrishnan. 2023. Importance and uses of mobile applications in various sectors of agriculture. In CAFT training manual on ICT led Extension: Content and Delivery Mechanism. Pp 146-152.
  9. Subhashree Sahu, Sitaram Bishnoi, V. Sangeetha, Sukanya Barua and L. Muralikrishnan. Content analysis of social science research. *In* CAFT training manual on ICT led Extension: Content and Delivery Mechanism. *Pp*: 40-48.
  10. Rajeev Kumar and Sukanya Barua. 2023. IoT led agriculture: Applications and scope. *In* CAFT training manual on ICT led Extension: Content and Delivery Mechanism. *Pp*: 214-220.
  11. V. Sangeetha and P. Vankatesh. 2023. *Shree aann ke madhyam se poshan surakha ke liye wyavhaar perivertan sanchar upkarano ka anuprayog poshak smart gavon se anubhav krishi*, page no. 21. *Krishi udyamita vikas pathaykrim bajra ke liye mulayvershan prodyogikiyaan*: 24-20. March. 2023. ZTM& BPD unit and Post harvest Technology, ICAR- IARI.

#### **f) List of Popular articles:**

1. Sahu Subhashree, Satyapriya, Mahra GS, Sitaram Bishnoi, Ram Swaroop Bana, Barua Sukanya, Satyaprakash, Rahul Singh, Misha Madhvan M and Sangeetha V. 2023. *Gehu mein mulya shrinkhla prabandhan modern kheti*. December: 32-40.
2. Mahra G S and Joshi Pratibha and Jethi Renu. 2023. *Atamnirbhar bharat hetu krishkon mein koushal vikas: Chaunotiyam avum avser*: Him Jayoti. 93-99.
3. Mahra G S and Joshi Pratibha. 2023. *Bharat mein satat krishi vikas hetu navachar*. Kurukshtra, July, 2023:15-21. ISSN No. : 0673-2343
4. Subhashree Sahu, Satyapriya, Girijesh Singh Mahra, Sitaram Bishnoi, Ram Swaroop Bana, Sukanya Barua, Rahul Singh, Misha Madhavan M and Sangeetha Vellaichamy. 2023. Analyzing the complex Interconnections of India’s Wheat Value Chain. *Krishi Jagran*. ISSN – 2455-8184. Published on date: 13-11-2023.

5. Sahu S, Sangeetha V, Barua, Gills R, Sharma N, Bishnoi S, Joshi P, Mishra J R. 2023. Secondary Agriculture and Value Addition for Profitable Agriculture. *Ecofarming*. Vol-II (III), 133-139 pp
6. Singh, A.K., Burman, R.R. and Mahra, G.S. 2023. Agri Startups: Resolving Challenges, Achieving New Milestones. *Agricultural Engineering Today*. 47 (2): 26-27. (Print ISSN: 0970-2962, Online ISSN: 2230-7265)
7. Burman R.R., Mahra G.S., Saini S., Jha, S.K. and Gautam U.S. 2023. Digitalization in Indian agriculture: Reorienting Indian farming towards smart agriculture. *Indian Farming*. 73 (06): 38-42. ICAR. ISSN (Print): 0019-6479; ISSN (online): 0974-9365.
8. Saini, S., Burman R.R., MahraG.S., SinghR. and Mallick, S. 2023. Feminization of Agriculture in India: Challenges and Way Ahead. *Kriti Kalp* 10(3):1-6 ISSN:2349-5030
9. Burman R.R., Saini, S., MahraG.S., SinghR. and Mallick, S. 2023. IOT, AI and block chain technology led Smart Agriculture in India: Challenges and Prospects. *Kriti Kalp*. 10(3):7-14. ISSN:2349-5030.

**a) Training/ Teaching Manuals**

- Singh R., Burman, R.R., Sangeetha V., Mahra G.S., Bishnoi, S., Sahu, S. and Satyaprakash. 2023). Training Manual-CAFT training programme on 'ICT Led Extension: Content and Delivery Mechanism', January 12-Feb. 01, 2023. Division of Agricultural Extension, ICAR-IARI, New Delhi 110012.
- Sangeetha, V., Nain, M.S., Sahu, S., Mahra, G.S. (2023). Manual on Fundamentals of Communication. Division of Agricultural Extension. ICAR-IARI New Delhi.
- L. Muralikrishnan, Rashmi Singh and Nafees Ahmed. (2023). Course Manual on Rural Sociology and Educational Psychology. ICAR-IARI, New Delhi.

**b) Divisional Profile**

- Satyapriya, Mahra, G.S., Sahu, S., Madhvan, M., Singh, R. and Satya Prakash (2023). Division of Agricultural Extension: A brief Profile. Agril.Ext/2023/DP-101

**8.Trainings/ workshop/ seminar organized**

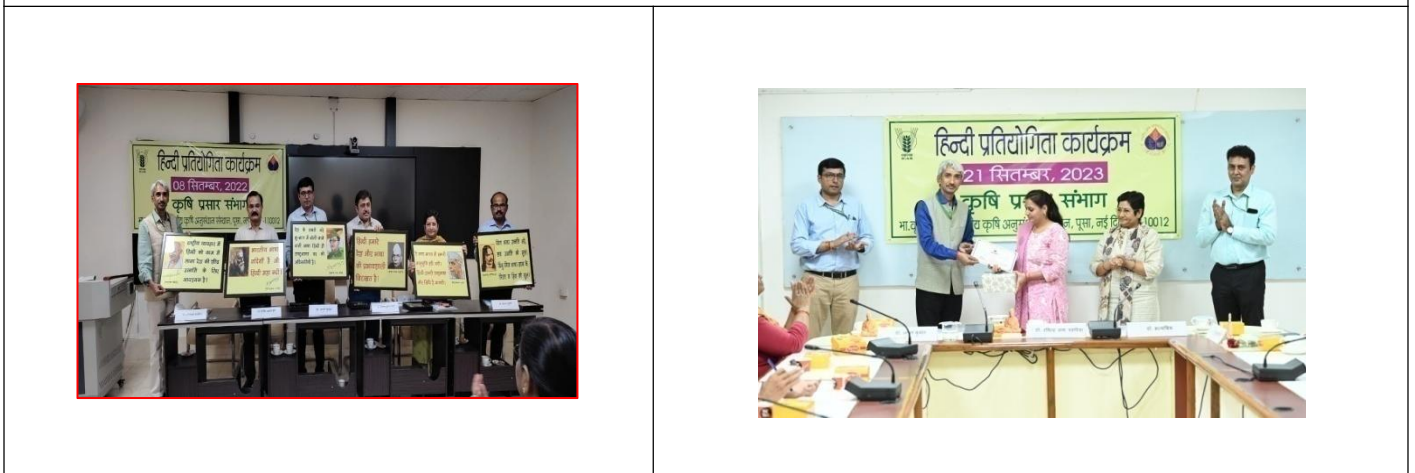
Sr. No	Name of programme	Training/ workshop/ seminar	Duration	Nature of trainees	Number of trainee (s)		
					Male	Female	Total
1.	ICT Led Extension: Content Development and Delivery Mechanism	CAFT Training	January 12-Feb 1, 2023	Scientists, teachers	18	12	30
2.	Entrepreneurship Development opportunities for youth organised	Online Collaborative Training programme with MANAGE	Mar14-17, 2023	Students and young farmers	20	80	100
3.	The Hindi Diwas programme during <i>Hindi chetna Maah</i>	Divisional Programme	21 September, 2023	All staff and students	25	20	45

4.	Facilitation of the experiential learning module under the NAAS Pedagogy Development Programme	Training	One Week Training Programme	Scientists	80	60	140
5.	Professional attachment training under FOCARS	Training	3 months	Scientist	1	0	1

### Glimpses of Events organized in the Division



**CAFT training program on “ICT –led Extension: Content Development and Delivery Mechanism (12<sup>th</sup> January to 1<sup>st</sup> February, 2023)**



**Hindi Diwas programme**





**Taking the pledge on Rashtriya Ekta Diwas 2023**



**Integrity pledge by staff on 30.10.2023**



**Swachata pakhwara organized with Biomass unit IARI on 20.12.2023**

### **Coordination of Visits to Institute**

During year 2023, the Division of Agril Extension has coordinated the visit from State Agricultural Universities/ Schools/ and other organizations visited to IARI (No of students and faculty: 9170; SAUSs/ School: 128). Most of the students were from State Agriculture Universities besides; students from Schools (NCR region) from class VI to XII also visited IARI. The visitors were taken to various Research Facilities, Fields and Labs as per their requests. Students from SAU's preferred visiting research farms and fields and Protected polyhouses like UVRD, IFS Model, CPCT etc, whereas students from schools preferred visiting labs such as Genomics Labs at Discovery Centre, Phytotron, Plant Pathology Labs etc.



**Coordination of Visits to Institute**

**9.Participation by scientists in scientific meetings, etc.**

Sr. No.	Details	Name of the scientist
<b>Seminars/ Symposia/ Workshops</b>		
1.	Nation Seminar organized by Indian Society of Extension Education on “Evolving Extension Science Towards Secondary Agriculture for Sustainable Development” during 22-24 June, 2023 at UAS, Bangalore	Dr. R N Padaria, Dr. Manjeet Singh Nain, Dr. Satyapriya, Dr. Rashmi Singh, Dr. V. Sangeetha, Dr. Om Prakash
2.	1 <sup>st</sup> International Extension Congress 2023 organised by Society of Extension Education at RARI (SKNAU, Jobner, Jaipur Rajasthan	Dr. Satypriya, Dr. Sitaram Bishnoi
3.	Global Millets Conference on 18-19 <sup>th</sup> March, 2023	All scientists of Division
4.	3 <sup>rd</sup> International Extension Education Conference at BHU, Varanasi during January 27-30, 2023 on Innovative applications in Agricultural Extension for Sustainable food and environmental security	Dr. O. P. Singh, Dr. Girijesh Mahra
5.	International Conference on “From Research to Impact: Towards just and resilient Agri food-food Systems” from 9-12 October, 2023, organized by CGIAR and ICAR at NASC Complex, New Delhi	Dr. Satyapriya, Dr. Subhashree Sahu
<b>Training Programmes</b>		
1.	Training programme on “Natural Farming’ from DYSPUHF, Nauni, Solan, Himachal Pradesh under ICAR, NAHEP from 29 <sup>th</sup> August- 11 <sup>th</sup> September, 2023	Dr. J. R. Mishra
2.	Training programme on Pedagogy Development Programme at NASC Complex, New Delhi 25-30 <sup>th</sup> September, 2023	Dr. L. Muralirkishnan and Dr Sukanya Barua
3.	National Training program on Educational Opportunities in Agri business, 11-15, December 2023, GKVK –UAS, Bangalore.	Dr. L. Muralirkishnan
4.	Training programme on Pedagogy Development Programme at NASC Complex, New Delhi 5 <sup>th</sup> -	Dr. Subhashree Sahu

	10 <sup>th</sup> August, 2023	
5.	Training programme on Pedagogy Development Programme at NASC Complex, New Delhi	Dr. J R Mishra
<b>Workshop</b>		
5.	Workshop on Qualitative data analysis using N VIVO Division of Agril Economics 13-Oct-23	Dr. Sukanya, Dr. Sitaram Bishnoi, Dr. Subhashree Sahu
6.	NEP-VO workshop organized by CATAT E-workshop for IARI- IARI-SAUs, ICAR Instt and VOs joint Workshop on Kharif - 21 June, 2023. E-workshop for IARI-SAUs, ICAR Instt and VOs joint Workshop on Rabi -25 October, 2023.	Dr. Dr. Sitaram Bishnoi, Dr L Muralikrishnan
<b>Scientific Meetings</b>		
7.	72 <sup>nd</sup> Extension Council Meeting 2023 (October 23, 2023)	Dr. Satyapriya, Dr. V. Lenin, Dr. Girijesh Mahra, Dr. Sitaram Bishnoi, Dr. Subhashree Sahu
8.	NAAC Peer team Visit (26.06.2023)	All scientists and staff
9.	QRT visit- Interactive meet (29.09.2023)	All scientists and staff
10.	RAC meeting (22.12.2023)	Dr. Satyapriya (Head), Dr. M. S. Nain, Dr. Sitaram Bishnoi
11.	IRC II meeting (3.11.2023)	All scientists

## 10. Extension activities

### I. Demonstrations of technologies organised among farmers

Demonstrations on crop variety	Number of demonstrations	Location
Paddy (PB 1718), Wheat (HD 3086, HD3226), Mustard (PM 30, PM 31) and vegetable kits	37	Baghpat district of Uttar Pradesh under MGMG Programme
Mustard (Pusa Mustard 30) and Pusa Vegetable seed	65	Sukhtaal, Shamli, Bijnore, Meerut, Baghpat, Hapur, Bulendshair, Goutam Boudh Nagar, Noida Uttar Pradesh
Wheat (HD 3086), mustard (PM- 30) and vegetable crops	20	Lahchoda, Bassi, Ratol and Baghpat district of Uttar Pradesh. under MGMG
Wheat (HD 3086, HD 3226)	17	Lahchoda, Bassi, Ratol district of U.P. under in-house project.
Wheat (HD 3086 & HD3226) & nutri-kitchen garden kits	42	Mirpur, Gogulpur and Jant villages of Riwari district of Haryana.
Wheat (HD 3086, HD3226)	90	Sangel village of Nuh district of Haryana and Mumtajpur village of Gurugram district of Haryana under the ICAR-NICRA project.

Breeder Seeds of Wheat for seed production purpose	70	ICAR- NICRA project among women farmers in Vrindavan cluster villages of Mathura of Uttar Pradesh.
<b>Total number of Demonstrations</b>	<b>341</b>	

## II. Farmers’ Training Programmes

### 1. Millets Awareness cum Training Program on Nutritional Security

On the occasion of the celebration of International Year of Millets 2023, Division of Agricultural Extension, ICAR-IARI, organized a Millets awareness cum training program on “Nutritional Security for Rural Women” in collaboration with Ayurvet Research Foundation under the project entitled “Enhancing Nutritional Security and Gender Empowerment” at Chidana village, Sonipat district, Haryana on 16<sup>th</sup> March 2023. Under the programme, various millets-based value added nutri-rich products were displayed; trainers explained the importance of nutri-rich millets food consumption for nutritional security and economic importance of value addition process. Thirty rural women attended the programme.



**Rural women Interaction with the scientists on value added millet products for Nutritional Security**

### 2. Tribal Farmers’ Training programme on ICAR- IARI Technologies for Tribal Empowerment in Bharatpur district, Rajasthan

The Division of Agricultural Extension, ICAR-IARI New Delhi organized Tribal Farmers’ Training programme in Milakpur village of district of Rajasthan on 8<sup>th</sup> May 2023 under the Tribal Sub Plan (TSP) programme. The training was attended by 100 farmers. The importance of the training programme was to create awareness on ICAR-IARI technologies for enhancing the tribal farmers’ income in the tribal dominated regions of Rajasthan. In training programme highlighted the ICAR-IARI farming technologies for enhanced profit and entrepreneurship development process in the context of tribal farming systems of

Rajasthan; the training team (Dr. J. R. Mishra, Dr Nawab Singh, Dr. G. S. Mahara) also emphasised the importance of ICAR- IARI Pusa Samachar you tube channel for ICAR-IARI technologies and other farming related information and extension services, Self Help Group importance for the enhancement of women centric livelihoods, Importance of ICAR-IARI Toll free service, ICAR-IARI seed availability etc. There were 108 tribal farmers and farm women were attended the training programme. The progressive tribal farmers of the village supported well for the farmers’ mobilization and the KVK, Bharatpur also collaborated in the programme with highlighting the importance of KVK’s role in agricultural development. Finally, the ICAR-IARI’s Kitchen garden vegetable seed kits were distributed to the tribal farmers as an outreach activity and the village proposed vote of thanks.



**Tribal Farmers’ Training programme in Bharatpur district, Rajasthan**

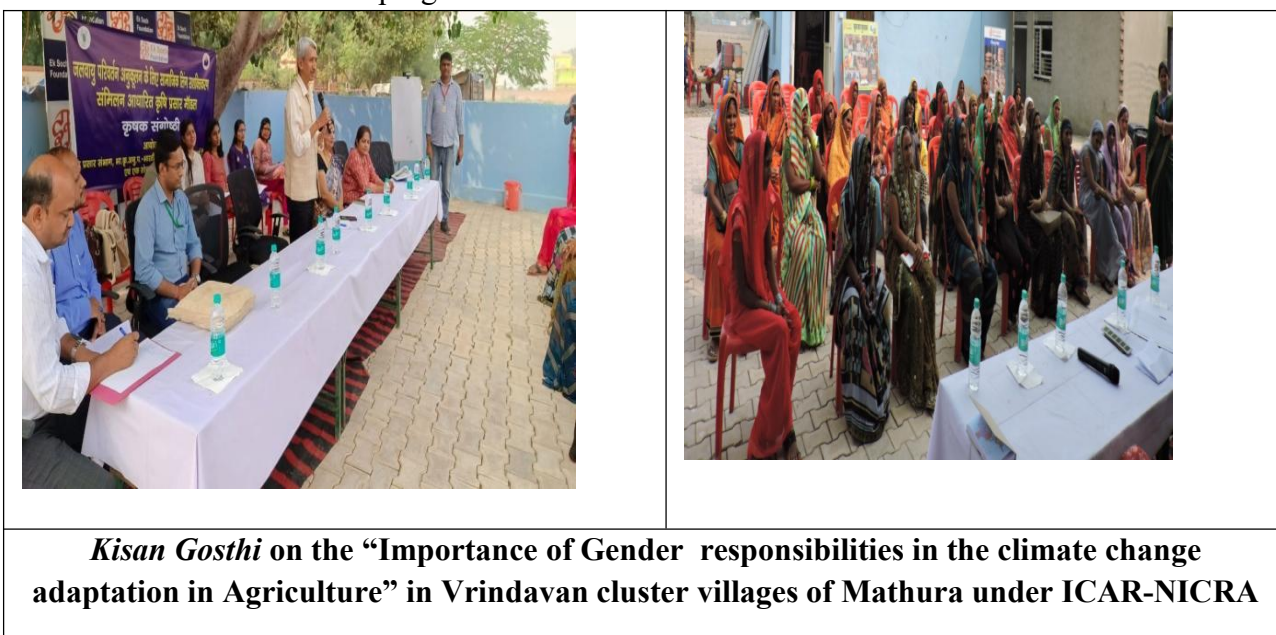
### **3. Farmers’ Training and Extension demonstration programme of ICAR- IARI’s Improved Pusa Basmati rice varieties in Nuh and Palwal districts of Haryana**

The Division of Agricultural Extension, ICAR-IARI New Delhi organized a Farmers’ Training and Extension demonstration programme of ICAR- IARI’s improved Pusa Basmati rice varieties in Nuh and Palwal districts of Haryana on 14<sup>th</sup> June 2023 under the Scheduled Caste Sub Plan (SCSP) programme. The importance of the training programme was to create awareness on ICAR-IARI technologies and climate resilient technologies for climate smart agriculture; more than 40 farmers attended the programme. In training programme highlighted the ICAR-IARI Pusa Basmati rice varieties of Pusa 1692, Pusa 1637, Pusa 1718 for enhanced yield and profit in the context of scheduled caste farmers’ livelihood systems. Finally, the ICAR-IARI’s scientist team were distributed the seed kits of Pusa 1692, Pusa 1637, Pusa 1718 to the scheduled caste farmers in connection with climate smart agricultural practices and an outreach activities.

### **4. Women farmer centric “Kisan Gosthi” cum Training programme and Extension Interventions**

The Division of Agricultural Extension, ICAR-IARI in collaboration with ICAR- NICRA project, was organized a “Women farmer centric *Kisan Gosthi*” about “The importance of Gender responsibilities in the climate change adaptation in Agriculture” in Sangel village of Nuh district of Haryana and Vrindavan cluster villages of Mathura of Uttar Pradesh in the period of 1<sup>st</sup> and 3<sup>rd</sup> November, 2023. The multidisciplinary experts of Dr. R. N. Padaria, JDE (Extension), Dr.Sethi, S, Dr. Renu Singh, Dr. Krishna Kumar, Dr. L. Muralikrishnan,

Technical officers and students gave capacity building talks about climate smart agricultural practices such as usage of leaf color chart for optimum fertilizer application, Bio- fertilizer usage for seed treatment, Gender specific processing and value addition for higher income and the SHG based community mobilization for sustainable development. The breeder seeds of wheat distributed to farmers for seed production purpose and there were 110 women farmers benefited under the programme.



### **5. The “*Kisan Gosthis*” on Nutri-kitchen garden for enhanced nutrition security and Extension interventions under MGMG activities**

**On 26<sup>th</sup> October to 16<sup>th</sup> November, 2023 period;** The Division of Agricultural Extension, ICAR-IARI organized “*Kisan Gosthis*” under MGMG extension interventions about “Nutri-kitchen garden for enhanced nutrition security in Mirpur, Gogulpur and Jant villages of Riwari district of Haryana and Villages of Baghpat district Uttar Pradesh. Nutri-kitchen garden kits distributed to farmers for demonstration purpose. Further, for promoting farmers through the activities of “Seed production for enhanced income” in the “*Rabi*” season of this year, The wheat seeds (HD 3086 & HD3226) and Mustard (PM 30& PM 31) seeds were given for seed production and demonstration purposes. Dr. L. Muralikrishnan Scientist (SS) and team members involved in the program and there were 43 farmers benefited under the programs.



**“Kisan Gosthis” on Nutri-kitchen garden for enhanced nutrition security and seed distribution under MGMG activities**

### Farmers’ Scientist Interactions

Sr. No.	Detail of Farmers’ group discussion / Field visit	Beneficiaries (No.)
1	A Farmer Group Discussion in Pakharpur village of Chata Block, Mathura (UP) on 17/08/2023 on “Scope for Entrepreneurship Development”	20
2	Field visit by the scientists to village Dadri, Goutam Bouth Nagar for selection of village under inhouse project “Agricultural Extension for Nutrition and Health (AE4NH)-Strategies and Models’	30
3.	Farmer discussion, field visit and data collection was organised at Sohna Block of Gurugram Haryana on 9 <sup>th</sup> November 2023	20
4.	On 23 <sup>rd</sup> December 2023, the ICAR-IARI organized a National Farmer's Day ( <i>Kisan Diwas</i> ). More than 300 farmers and 40 scientists and technical officers attended the program.	340
5.	Field Day on "Improved Techniques for the Cultivation of Summer Moong Crop" at Dadhota Village, Palwal, Haryana, on the April, 12, 2023	35
<b>Total</b>		<b>445</b>

### *Kisan Diwas*

On 23<sup>rd</sup> December 2023, the ICAR-IARI organized a National Farmer's Day (*Kisan Diwas*) to recognize farmer’s valuable services of the country and to respect the memories of former Prime Minister Chaudhary Charan Singh in his birth anniversary day. The director of the institute headed the program followed by the expert talks about various farmer related services of ICAR-IARI, NABARD Programs and Educational programs. More than 300 farmers and 40 scientists and technical officers attended the programme.

### *Pusa Krishi Vigyan Mela 2023*

All the staff members of Division of Agricultural Extension participated during *Pusa Krishi Vigyan Mela* on the theme “Nutritional, Food and Environmental Security through Millets organised” from 2-4 March 2023. 300 stalls of ICAR Institutes/SAUs, KVKs, Govt./PSUs, agri-startups, NGOs, SHGs, FPOs, innovative farmers and other private entrepreneurs. Among the stalls, 40 were of progressive farmers and startups. More than one lakh visitors

from different parts of the country including farmers, farm women, extension workers, entrepreneurs, students and others visited the *Mela*. Also, many stakeholders could take benefit from the live webcasting of the *Mela* in different parts of the country.



#### **Participation of scientists in Pusa *Krishi Vigyan Mela* Committees.**

Dr. Rashmi Singh	Co-Convenor, Reception and Registration Committee
Dr. Monika Wason	Member, registration and Reception Committee
Dr. Om Prakash	Co-Convenor of Accommodation Committee
Dr. M. S. Nain	Co-convenor of publication committee, Co-convenor of Reception and registration committee
Dr. J. R. Mishra	Co-convenor of Accommodation committee and arranged accommodation for stay for 4000.
Dr. V. Lenin	Member, Stall Committee
Dr. V. Sangeetha	Reception & Registration Committee
Dr. Sukanya Barua	Reception and Registration committee
Dr. G. S. Mahra	Member, Mela Publication Committee, Member, IARI-Innovative Famers Selection Committee, Member, Press, Media, Publicity and Virtual Program Committee Member, VIP Speech Committee: Coordinated Inaugural and Valedictory program (stage management)
Dr. L. Muralikrishnan	Member, IARI Innovative Farmers Selection Committee, Member, Farmers' Accommodation Committee
Dr. Sitaram Bishnoi	Member, IARI-Innovative Famers Selection Committee, Member, Press, Media, Publicity and Virtual Program Committee, Member, VIP Speech Committee
Dr. Subhashree Sahu	Member in Mela Publication Committee, Press Media, Publicity & Virtual Programme Committee, IARI Innovative Farmers Mobilization & Documentation Committee
Dr. Misha Madhavan M	Member in Stage Management Committee



## **Extension activities through outreach programmes SCSP, TSP and NEH**

### **Scheduled Caste Sub Plan (SCSP)**

The Division of Agricultural Extension at ICAR-Indian Agricultural Research Institute (IARI) in Pusa, New Delhi, is implementing the Scheduled Caste Sub-Plan (SCSP) to uplift Scheduled Caste farmers through technological interventions. During Kharif 2023, the program reached 36,000 SC farmers across 25 districts in four states. It included field demonstrations of IARI's improved varieties of paddy, mungbean, pigeonpea, and vegetables, along with several farmer-scientist interface sessions. Additionally, five training programs were held for SC farmers, providing essential information about relevant Government of India schemes. These efforts aim to promote inclusive agricultural development and empower Scheduled Caste farmers.

### **Tribal Sub Plan (TSP)**

The Division of Agricultural Extension was involved with several Division of ICAR-Indian Agricultural Research Institute, Pusa, New Delhi for implementing Tribal Sub Programme for upliftment of Tribal farmers through technological interventions. The aim of TSP is socio-economic development of tribal people.

### **Demonstrations and FLD trials under TSP**

<b>Activity</b>	<b>Number of beneficiaries</b>	<b>District &amp; state of implementation of activity</b>
Promotion of vegetable kitchen garden for achieving household nutritional security	2,107 tribal families	Malda & West Bengal
Demonstration of Maize, Soybean & Wheat varieties	90 Demonstrations in a total of 30 ha land	Indore & Dhar districts of Madhya Pradesh
Demonstrations of mini-kit vegetables (Okra, Brinjal, Sponge Gourd, Tomato, Spinach, Bottle Gourd, Bitter Gourd)	60 Demonstrations in a total of 7.2 ha i.e. 0.12 ha per demonstration	Indore & Dhar districts of Madhya Pradesh

### **NEH Programme**

ICAR-IARI is working in eight numbers of states i.e. Arunachal Pradesh, Assam, Manipur, Meghalaya, Sikkim, Mizoram, Nagaland, and Tripura under the NEH programme. There are 30 number of KVKs directly connected with IARI. There are five aspirational districts covered under the program (Churachandpur, Manipur; West Khasi hills, Meghalaya; Wokha, Nagaland; Mon, Nagaland and Dhalai, Tripura). During the 2023, Potato seed (3,40,000 kg, K.Jyoti/ K.Pukhraj/ K.Himalini varieties) was provided to farmers of the NEH region through 23 KVKs and the demonstration was done in an area of around 185 ha land area. More than 6000 thousand farmers benefitted by providing quality potato seed.

### ***Mera Gaon Mera Gaurav (MGMG)***

The MGMG programme is aimed to increase the farmer-scientist interface to reduce the delay in delivery of authentic information to the target group of farmers. The objective of this scheme is to provide farmers with the required information, knowledge and advisory regularly by adopting villages.

#### **Activities organised under MGMG**

S. No.	Name of activity	No. of activities conducted/provided	No. of farmers participated & benefitted
1.	Visit to village by all teams	49	969
2.	Interface meeting/ <i>Goshthies</i>	19	538
3.	Training organized	8	172
4.	Demonstrations conducted	207	415
5.	Mobile based advisories	455	621
6.	Literature support provided	308	771
7.	Awareness programmes	39	2249
	<b>Total</b>	<b>1085</b>	<b>5735</b>

#### **Linkages developed with other agencies under MGMG**

	Name of agency	Farmers Benefitted (No)
1	Gram Panchayat, NHB, NBPGR, CPRI, ACF, NABARD, HIMCOSTE, KVK, IFFCO, YSPUHF, IIWBR, State Agril. Department, Print Medea etc.	1786
<b>Total</b>	<b>88</b>	<b>1786</b>

#### **Facilitation under MGMG**

<b>i) Seeds</b>	<b>Crop</b>	<b>Variety</b>	<b>Seeds provided in quintal/No.</b>	<b>Farmers Benefitted (No)</b>
	Vegetable kit	Kharif vegetable	52 nos	102
	Paddy	Pusa Sugandha-5	4.5 qt	38
	Moong	Pusa Vishal Pusa-1431	15 kg 15 kg	23 23
<b>ii) Seedlings</b>	-	-	-	-
<b>iii) Bio-fertilizer</b>	Sugarcane	100 kg		05
	Kharif crops	6.00 litres		50 (25ha)
<b>iv) Technology (No)</b>	Numbers	Name of technology	Area (ha)	Farmers Benefitted (No)
	02	Cultivation of Wheat, Barley and Apple	-	52
	01	Strawberry cultivation	-	54
	04	Walnut (Pusa Khor) cultivation	-	197



**Kisan Gosthi under MGMP programme**



**Scientist farmer interaction**

## 11. Staff Position

Cadre	Sanctioned Strength	Present Strength (in position)
Head	01	01
Principal Scientist	01	06
Senior Scientist	05	01
Scientist	13	06
Technical	09	07
Administration	05	03
SSS	05	02

## 12. Divisional Committees

### **DBRC:**

Dr. Satyapriya  
 Dr. V. Lenin  
 Dr. Girjesh Mahra  
 Dr. L. Muralikrishnan  
 Dr. Subhashree Sahu

### **BOS :**

Dr M S Nain, Professor, Professor & Chairperson, BOS  
 Dr Satyapriya, Head & Ex-officio Member  
 Dr Rashmi Singh, Principal Scientist and member  
 Dr NV Kumbhare, Principal Scientist and member  
 Dr Sitaram Bishnoi, Scientist, Member Secretary  
 Ms. Manichandana Gudla, (Student Representative Member)

### **Deputation Committee**

Dr. Satyapriya  
 Mr. Yogesh Kumar

**Other committees****Publications screening Committee**

Dr. Satyapriya  
Dr. Monika Wason  
Dr. J. R. Mishra  
Dr. Sukanya Barua

**Parliamentary Questions Committee**

Dr. M. S. Nain  
Dr. V.Sangeetha

**Information Cell**

Dr. G. S. Mahra  
Dr. Sitaram Bishnoi  
Dr. Rahul singh  
Sh. Satyaprakash  
Sh. Narender kumar  
Sh. Chhote lal  
Sh. Avinash Kushwaha

**Hindi Rajbhasha**

Dr. Girijesh Mahra  
Dr. Rahul singh  
Mr. Avinash Kushwaha

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