

ICAR

Reporter

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From the DG's Desk

Dear Readers,

The Farmer FIRST (Farm, Innovations, Resources, Science and Technology) initiative has been launched by ICAR to move beyond production and productivity; to privilege the smallholders and complex, diverse and risk prone realities of majority of the farmers through enhancing farmers-scientists interface. It emphasizes on resource management, climate resilient agriculture, production management including storage, marketing, supply chains, value chains, innovation systems, information systems, etc. There are four components under this programme:

Enhancing Farmer-Scientist Interface: Enabling involvement of researchers for continuous interaction with farm conditions, problem orientation, exchange of knowledge between farmers and other stakeholders, prioritization of problems and setting up of research agenda. Regular interactions of farmer-scientist at institute and project site through trainings, visits, workshops, interfaces, extension activities, etc. This component will create a strong farmer-scientist bond for continuous exchange of idea, innovations, resources, feedback for development of appropriate technology and human resource development. Identification of farm innovators and grooming them as technology agents for farmer to farmer technology dissemination, up-scaling and out-scaling, Regular visits of project team and other scientists to project site for orientation of problems and ground realities, Multi stakeholders' participation in building strong farmer-scientist interaction.



Technology Assemblage, Application and Feedback: Integrating components of technology for application in different agro-ecosystems will focus on innovations and feedback. All the projects sanctioned under FFP are having six types of technology modules including Crop based modules; Horticulture based module; Livestock based module; Enterprise based module; NRM based module and Integrated Farming Systems (IFS) module.

Partnership and Institution Building: This component includes Building partnerships involving different stakeholders, development of rural based institutions, agro-ecosystem and stakeholders analysis and impact studies; Creation of models of partnerships; and Institution building for bringing professionalism, leadership, marketing ability, organizing capability among farmers, database creation on perception, attitude and agricultural scenario.

Content Mobilization: This component includes project platform having institutions as partners and will be used to develop specific contents for e-enabled knowledge sharing; Identification and pooling of available transferrable technologies available with different institutions; and Project outcome to be utilized as part of content management platform enabling off and online access.

The Agricultural Extension Division of ICAR, New Delhi has so far funded 51 FFP (Farmer FIRST Programme) centers under ICAR and SAUs spread over 20 states of India. In addition, the project management team comprising of NIAP, IASRI, NAARM, and DKMA are involved in management, capacity building, impact assessment, content development and showcasing of technological interventions of this programme. During 2016-17 an amount of ₹ 1,296 lakh was allocated for 52 FFP Projects. During 2017-18 the allocation for FFP Projects is ₹ 19,88.51 lakh. Under crop module, about 151 number of technologies were demonstrated in which 16,597 of number of farm households were benefited. Likewise, under horticulture, livestock, NRM, enterprise and IFS modules, 113, 105, 45, 28 and 11 number of technologies were demonstrated and 13,017, 11,398, 4,370, 1,852 and 1,057 number of farm households respectively were benefited.

The salient technologies demonstrated through Participatory Technology Development (PTD) mode under crop and horticultural modules are nurseery management, varietal demonstrations, quality seed production, zero tillage, Integrated Pest Management

(IPM) and Integrated Nutrient Management (INM). Under animal science based module, backyard poultry, selection and demonstration of improved breeds, mineral mixture, clean milk production and vaccinations were the major technologies demonstrated. Technologies such as laser levelling, soil testing, improved irrigation structures, agroforestry and water harvesting structures were demonstrated under NRM module.

Under the enterprise module, the landless stakeholders were empowered with technologies related to agro processing such as production of mango based products, milk products, handicraft items, etc. Further each FFP centers designed and demonstrated IFS module suitable to their agro climatic region. Innovative technologies were developed under FFP through PTD mode such as mango harvester, which was improved over the existing metallic one with light weight plastic with replaceable blades, rearing poultry birds in mango orchards to reduce pest population and cultivation of shade loving fodder crops in old mango orchards to generate additional income to the farmers.

This programme has made its mark in implementation areas through creation of SHG, FIG, Society and FPO. For instance, Avadh Mango Grower Society, Lucknow was formed to promote production and marketing of organic Malihabadi Dusseri Mango and they have obtained Geographic Indicator (GI-125) with the help of FFP center at CISH, Lucknow, which helped the farmers to sell their mango at the premium rate of ₹ 60/kg.

This endeavor of placing the farmers first and enabling farmer-centric programs to achieve the goal of food and nutritional security, is no more a dream *per se*.



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Capacity Building

DG lays Foundation Stone of ICAR- NCIPM

New Delhi, 19 February, 2018. Dr T Mohapatra, Secretary, DARE and DG, ICAR laid the foundation stone of Administrative-cum-Laboratory Block of National Research Centre for Integrated Pest Management (NCIPM) at Rajpur Khurd, Mehrauli, New Delhi.



In his inaugural address, Dr Mohapatra pointed that IPM is very effective and economic technology to save the crops from pests and NCIPM has been serving as a platform to

validate and refine IPM practices for major crops for last 30 years. Centre should envisage larger role in making IPM more effective in the country through higher-level integration of multi-disciplinary technologies by means of improved research, education and training for an enhanced crop and ecological

health and sustainable agricultural growth.

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WORKSHOPS, MEETINGS, SEMINARS, CONFERENCES, SYMPOSIA

Union Minister hails 1st Republic Day Tableau at ICAR AGM

New Delhi, 28 February 2018. Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers Welfare and President of the ICAR Society highlighted its recent achievements, particularly regarding development of new technologies, integrated farming models, diversification in agriculture and

development of skilled human resources to boost up productivity and profitability in agriculture. He further emphasized and appreciated ICAR for initiating various programs to honor the commitment for developing the farmer's income by the year 2022.

Addressing the 89th Annual General Meeting of the ICAR Society at NASC, the Agriculture Minister highlighted record production of foodgrains, and horticultural crops achieved this year due to favorable policies and programs. He praised ICAR for rolling out the first tableau of ICAR in Republic Day Parade this year on the theme of mixed farming. He also touched upon new initiatives in

agricultural extension, infrastructural development, agricultural education and use of ICT for quick and efficient dissemination of knowledge.

Shri Gajendra Singh Shekhawat, Union Minister of State for Agriculture and

Farmers Welfare, in his address, said substantial increase in agricultural budget has resulted in improved pluses production.



Smt Krishna Raj, Union Minister of State for Agriculture and Farmers Welfare appreciated the initiative of ICAR for celebrating "Agricultural Women's Day". She also said that ICAR interventions have helped in saving traditional

water resources by using organic and traditional farming.

Shri Parsoshottam Rupala, Union Minister of State for Agriculture and Farmers Welfare and Panchayati Raj also graced the occasion



Dr Trilochan Mohapatra, Secretary (DARE) and Director General (ICAR) made a presentation on recent achievements of ICAR and elaborated the new initiatives and objectives of ICAR for addressing the emerging challenges of agriculture. Few publications of ICAR and its research Institutes were also released on the occasion.

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Indian Council of Agricultural Research rolled out its first tableau in Republic Day Parade this year. The theme of the tableau was mixed farming.

Vice Chancellors and Directors Conference



New Delhi, 8 March 2018. Shri Radha Mohan Singh, Union Minister of Agriculture and Farmer Welfare inaugurated the Annual Conference of Vice Chancellors of Agricultural Universities and Directors of ICAR Institutes at A P Shinde Symposium Hall, NASC Complex, New Delhi. Shri Singh said the Government's policy initiatives in the last three years have led to record foodgrain production this year. The total foodgrain production in the country stood at 275.68 million tonnes in 2017-18, which is about 10.64 million tonnes (or 4%) more than what was produced in 2013-14. In fact, the production of foodgrain this year is 19 million tonnes more than the average production between 2011-12 and 2015-16. Horticulture also witnessed record production at 305 million tonnes in 2016-17, 4.8% more than last year. The production of

fruits has crossed 93 million tonnes and vegetables 178 million tonnes. ICAR has developed 45 Integrated Farming System (IFS) models to help small and marginal farmers to tide over the problems associated with climate change. This model is being replicated and taken forward through KVKs spread across the country. Besides this, ICAR has developed 623 certified District Level contingency schemes and organized skill development programs for 40.9 lakh farmers. ICAR through its KVKs spread across the country have displayed climate friendly techniques in 29 States. ICAR has also developed 42 organic farming techniques, which were tested and are being further improved.



Shri Gajendra Singh Shekhawat, Union Minister of State for Agriculture and Farmers Welfare, said the country has made quantitative progress in the field of agriculture, but now there is a need to make qualitative progress in this field. He urged that in agricultural education, skill based courses should be introduced to develop entrepreneurial skills amongst youth. He appealed that mushrooming of private colleges should be stopped.

Professor Dr Ramesh Chand, Member, NITI Aayog appreciated ICAR for developing state specific road map for doubling farmer's income. He said increase in productivity and reduction in cost of production will help to

achieve this goal. Dr Chand added that there is a need to improve food and nutritional security, food safety and sustainability. Zero budget farming needs scientific scrutiny and if it is feasible, should be encouraged. Though high yield is achieved in pulses, sustainability needs to maintain. To achieve self-sufficiency in oil seed, new technologies should be pushed.

On this occasion Agriculture Minister launched, *Ekikrit Krishi Shiksha* portal, IVRI - *Shukar Palan* (Pig Farming) App and IVRI *Pashu Prajanan* (Animal Reproduction) App. He also presented 15 awards under various categories namely PG Scholarship Based Award, Best Annual Report Award Large and Small Institute and Swachhata Pakhwara. The dignitaries also released ELISA Kit, Salem Black Goat -Ek Monograph and publications viz. State Specific Strategy Document on Doubling Farming Income by 2022, *Prasanskaran Pragati* and Impact Assessment of Indian Agriculture Information System.



Dr Trilochan Mohapatra, Secretary (DARE) and Director General (ICAR), in his welcome address, informed ways to double farmers' income by 2022 and attract youth towards entrepreneurship.

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Organic Waste Management for Food and Environmental Security

Bhopal, 8 February 2018. Shri Vishwas Sarang, Minister of Co-operation, Bhopal Gas Tragedy Relief and Rehabilitation (Independent Charges), Panchayat and Rural Development, Government of Madhya Pradesh and Chief Guest inaugurated a three-day National conference on "Organic Waste Management for Food and Environmental Security". The conference was jointly organized by Indian Institute of Soil Science, Nabibagh, Bhopal and Bhopal Chapter of IISS.



Shri Sarang said that there is an emerging need to recycle organic residues to sustain soil resources for sustainable agricultural production and make the soil more resilient to prevent degradation. He also pointed that the deliberations by galaxy of soil scientists, researchers students, farmers, industrialists and NGO's will certainly bring out the improved knowledge and the state-of-the-art technologies in recycling of crop residues and solve mounting problem of municipal solid wastes management in the country.

Earlier, Dr S S Khanna, Former VC, NDUAT, Faizabad and Advisor of erstwhile Planning Commission told that the disposal of untreated municipal wastes may contaminate the soil and water, while the burning of crop residues may lead to emission of greenhouse gases (GHGs), global warming, lower biological activities of the soil, accelerating soil erosion and ultimately reducing the productivity of the soil.

About 679 million tonnes of crop residues are produced in India but owing to lack of management, a large part of it (90-140 million tonne) is burnt out to clear the field.

Dr A K Singh, Former VC, RVSKVV, Gwalior said that the residues emanating from agriculture crops are huge and important resource for improvement of soil carbon, nutrients provided they are managed properly and reused scientifically. Dr SK Chaudhari, ADG (S and WM), ICAR, New Delhi said that the scientific treatment and decomposition of these organic wastes may convert these resources worth useful for enhancing the productivity of soil resources. Dr AK

Patra, Chairman, Organising Committee and Director, IISS, Bhopal also pointed out that concerted efforts are required for organic waste management for overall improvement of soil health and environmental quality. In 6 technical sessions, 26 lead and invited papers related to the themes of the Conference were presented.

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Big Data Analytics in Agriculture

Hyderabad, 8 February 2018. A two-days' policy workshop on "Big Data Analytics in Agriculture" was organized at National Academy of Agricultural Research Management. The programme was intended to brainstorm about innovative applications of Big Data Analytics in Agriculture. Big data analytics is futuristic and offers tremendous potential in agriculture.

Huge quantum of agricultural data in the form of soil health records, geospatial maps, weather information, production and yield records, market data, experimental data, survey data, etc. being generated continuously. The data thus generated is gradually increasing to unmanageable proportion challenging the capacity and computing abilities of the present system. In big data analytics, the data is processed in cluster mode and advanced big data computing techniques can be employed for providing customized services to different stakeholders in agriculture. Case discussions, lectures and demonstrations of portals in various domains were organized during the programme. A panel discussion on various applications of big data in agriculture was also organized. Experts in the field of agriculture, veterinary, fisheries, social scientists, statisticians and computer science participated in the panel discussion. Panelists were of the view that though plenty of data is generated, there is hardly any big data platform developed in agriculture. Developing such a platform would enable policy makers to make better decisions, which will benefit the farming community.

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Frontiers of Rice Research for Improving Productivity

Odisha, 6 February 2018. The 3rd ARRW International Symposium on "Frontiers of Rice Research for Improving Productivity, Profitability and Climate Resilience" was inaugurated by Padma Bhushan Professor V L Chopra, Former Secretary, DARE and DG, ICAR at National Rice Research Institute, Cuttack, Odisha. The four-day long symposium was organized by NRRI, Cuttack and Association of Rice Research Workers (ARRW) in association with other national and international organizations like, ICAR, New Delhi;



NAAS, New Delhi; IRRI, Philippines and IIRR, Hyderabad. Chief Guest, Professor Chopra mentioned that the global demand of milled rice will cross 550 million ton by 2030.

Guest of Honour Dr Trilochan Mohapatra, Secretary, DARE and DG, ICAR said, 'This is the occasion to celebrate rice for serving humanity, alleviating hunger, malnutrition and poverty from the world'. He advocated working more in fields rather than in labs. Later, he delivered the plenary lecture on "Indian Agriculture: A Perspective".



Dr Himanshu Pathak, Director, briefed about the objectives and expected outputs of Symposium and highlighted the significant achievements and crop management techniques of the institute particularly the recently released nutrient rich high protein rice varieties (CR Dhan-310 and CR Dhan 311 with over 10.2% grain protein content, which are 1st of its kind in the world), climate resilient and climate smart varieties etc.

The programme was attended by over 400 delegates from India and abroad including China, Philippines, Australia and Vietnam etc.

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Climate Resilient Fisheries in Wetlands

West Bengal, 2 February 2018. Farmers Sensitization Workshop on "Climate Resilient Fisheries in Wetlands" and demonstration of Climate Resilient Pen Systems

(CRPS) for fish raising were organized at Mathura Beel, Kachrapara, North 24 Parganas, West Bengal on the occasion of World Wetland Day. Dr Bipul Kumar Das, Dean, CoF, WBUAFS was the Chief Guest and more than 200 fishers of Kanchrapara Refugee Fishermen's Co-operative Society, Ltd (KRFCs), officials of Department of Fisheries, scientists and other staff members of NICRA project, CIFRI attended.

Dr BK Das, Director, CIFRI emphasized on conservation and restoration of high value small indigenous species of wetlands. He said that the climate change is exacerbating the problems posed to the wetland fisheries by anthropogenic stressors. He also inaugurated the CRPS in Mathura Beel and released fish seed of IMCs, Bata, Mola, Puthi and Khoira in the pens.

CIFRI also signed an MoU with KRFCs Limited. for demonstration of climate resilient adaptation strategies in Mathura beel.

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International Congress on Cotton

Meghalaya, 20 February 2018. Governor of Meghalaya Shri Ganga Prasad inaugurated a four-day International Congress on Cotton and other Fibre Crops at ICAR Research Complex for NEH Region, Umiam, Meghalaya, that was organized by ICAR Research complex for NEH region in collaboration with the Cotton Research and Development Association (CRDA) Hisar and Indian Association of Hill Farming (IAHF), Umiam.

The Governor said that cotton is the most widely used fibre in the world and the agricultural sector needs to make the most out of it. The aim of Prime Minister of India to double the farmers' income can be achieved if the intellectuals design an agricultural pattern in which cotton cultivation can be incorporated. The North Eastern Region needs the much needed insight into cotton cultivation. He further appreciated the efforts of ICAR in organizing such an innovative programme for the benefits of the



farmers of the region. The agro climatic uniqueness of the region can be used as the boon for the region and he hoped that the technical sessions come up with the model agricultural designs for the region.

Dr N Prakash, Director of ICAR Research Complex for NEH region spoke about the importance of the Congress and its relevance to the North East Region. He informed that India has placed itself as number one country in cotton production.

Shri Ram Muivah Secretary, NEC appreciated the efforts of ICAR NEH in bridging the gap between the farmers and scientist.

Dr SS Siwach Vice President, CRDA, Hisar, said that agriculture and development go hand in hand and the region needs pioneering technologies for agricultural development.

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Annual DUS in Lucknow

Lucknow, 17 January 2018. The Central Institute of Subtropical Horticulture (CISH) organized the Annual DUS Review Meeting from 15-17 January 2018 at Indian Institute of Sugarcane Research (IISR),



Lucknow. Dr S Rajan, Director underlined the need to standardize on-site test methodology of DUS testing of fruit tree crops for completing the testing in two years which usually takes more time due to long juvenile period. Progress on on-site certification of mango, *kagji* lime and walnut varieties were reviewed and it was observed that the Institute should provide technical assistance to facilitate the farmers' variety registration.

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Horti-entrepreneurship seminar

Lucknow, 19 January 2018. The ICAR-Central Institute for Subtropical Horticulture, Lucknow in collaboration with Center for Agriculture and Rural Development (CARD) organized a one-day Horti-entrepreneurship seminar which was inaugurated by Shri Sudhir Garg, Principal Secretary (Horticulture), Lucknow.



During the seminar, technical sessions on entrepreneurship development in the field of tissue culture, green house cultivation, high tech nursery and value addition were organized and attended by experts and entrepreneurship aspirants and bankers. Financial assistance available for different areas of horti-entrepreneurship was discussed among state department officers, bankers and delegates. On this occasion, legal issues, registration and government clearances related with financial requirement of different technologies were explained by the resource persons.

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CIAE organizes Academia-Industry-Interaction at Raipur

Raipur, 25 January 2018. Central Institute of Agricultural Engineering, Bhopal in collaboration with Agricultural Engineering wing of the Department of Agriculture and Biotechnology, Government of Chhattisgarh and the Indira Gandhi Agricultural University organized an Academia-Industry-Interaction Meet at Raipur. Shri Brijmohan Agrawal, Minister for Agriculture, Water Resources, Animal Husbandry and Fisheries, Government of Chhattisgarh, was the Chief Guest. The main aim of the meet was to prepare strategies and road map to provide boost to agricultural mechanization in Chhattisgarh through deliberation among stakeholders including state Government officials, scientists and faculty of ICAR and the State Agricultural University and the manufacturers of agricultural machinery.



Shri Brij Mohan Agrawal, Minister for Agriculture in his inaugural address, stated that the Chhattisgarh needs suitable yet affordable machineries for small and marginal farmers and expected that CIAE would provide necessary leadership in this endeavour.

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International symposium of SAFARI-2 at CMFRI

Kochi, 15 January 2018. Dr Trilochan Mohapatra, Secretary, DARE and DG, ICAR, inaugurated the second international symposium of the Societal Applications in Fisheries and Aquaculture using Remote Sensing Imagery (SAFARI-2) at the Central Marine Fisheries Research Institute (CMFRI), Kochi.



Dr Mohapatra said, "Remote sensing techniques could effectively be used to develop proper technologies to maintain accuracy in a slew of activities such as weather warning, real-time advisories on nature of the sea, forecasting various ocean phenomena, etc." He further added that scientists should be ready to improve the algorithms and models being used for forecasting purposes in frequent intervals. Besides developing proper technologies, they should get updated constantly.

Referring to significance of the remote sensing techniques in the fisheries, the ICAR Chief said that ecological sustainability could be achieved by tapping the fortunes of the satellite remote sensing technology.

"We are in a process of increasing the fish production sustainably, both in capture and culture, to usher in the Blue Revolution utilising our vast resources. Responsible fishing should be encouraged. For this, the satellite remote sensing techniques will be of great advantage to understand the ecosystem in deeper level which will help in implementing proper guidelines for ensuring sustainability in fisheries", he said adding that the resources should be exploited only judiciously and sustainably. The SAFARI is a global research project of the Group on Earth Observations (GEO) and is now embedded in GEO's "Ocean and Society: Blue Planet" initiative.



The three-day symposium titled 'Remote Sensing for Ecosystem Analysis and Fisheries' is part of CMFRI's move to tap the fortunes of India's satellite technology in favour of the marine fisheries sector.

An Agri-Aqua-Food fest and exhibition was also held for the public on the sidelines of the three-day symposium. Farmed live fishes, pokkali rice, frozen shrimp, oyster products, organic vegetables, spices, canned tuna, tuna oil, neera, coconut chips, among others were available at various stalls in the fest. Spices Board, Indian Institute of Spices Research, Vegetables and Fruit Promotion Council, Society for Assistance to Fisherwomen under the Fisheries Department, Krishi Vigyan Kendra, National Institute of Fisheries Post Harvest Technology and Training, Coconut Development Board, Central Plantation Crops Research Institute and self-help groups set up stalls to sell their products.

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IX Asian Buffalo Congress 2018 at CIRB

Hisar, 1 February 2018. The Central Institute for Research on Buffaloes, Hisar (Haryana), India, in association with the Asian Buffalo Association (ABA) organized the 9th Asian Buffalo Congress (ABC) at Hisar. The theme of the Congress was 'Climate resilient buffalo production for sustainable livelihood'.



The four-day programme was inaugurated by Dr Harsh Kumar Bhanwala, Chairman, National Bank for Agriculture and Rural Development (NABARD). Dr

Bhanwala stressed upon the fact that climate change is a difficult challenge to the growth of the livestock sector in India. The climate change is bound to have long term irreversible effect. The Chairman acknowledged the contribution of buffaloes to India's food security and revenues. Dr S Honappagol, Animal Husbandry Commissioner, Government of India and Dr JK Jena, DDG (AS and F), ICAR in their address stressed upon the need for addressing climate change concerns for sustainable development and happier farming communities.

The 4th day of the conference coincided with a grand Buffalo Mela and Farmer - Scientist - Industry meet to support Government of India's effort in addressing agrarian issues through development of livestock based enterprises. It was inaugurated by Shri Om Prakash Dhankar, Minister for Agriculture, Development and Panchayats, Irrigation, on Animal Husbandry and Dairying, Fisheries, Government of



Haryana. The Minister took pride in the fact that the best buffalo germplasm is in the state and lauded contribution by CIRB. The Congress was attended by delegates from across the globe.

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Engineering Interventions for Production and Processing of Different Crops

Bhopal, 26 February 2018. A two days 'Brainstorming Session cum Interaction Meet on Engineering Interventions for Production and Processing of Different Crops' concluded at Central Institute of



Agricultural Engineering, Bhopal. Dr KK Singh, Director-CIAE reflected upon the objective to identify crop specific problems that need engineering interventions and also explored the possibility of collaborative mode research between crop institutes and CIAE to provide the engineering solutions for mechanization/ processing/ energy problems for enhancing the input use efficiency, productivity and value addition aiming at doubling the farmers' income.

During the technical sessions, lead presentations on available engineering technologies for crop production and processing were made by Dr PS Tiwari and Dr Nachiket Kotwaliwale. Other presentations were on specific requirements for different crops/ commodities viz. wheat, barley, maize, millets, tobacco, pulses, fodder crops, sugarcane, soybean, oilseeds, fiber crops, cotton etc. Various gaps in mechanization of production and post-harvest activities were put forth. Mechanization issues raised by the speakers were addressed by identifying issues where: (i) technologies are already commercially available; (ii) technologies are available but need adaptation or minor modifications; (iii) collaborative research is required for new technologies; and (iv) collaborative evaluation of need is to be established. The researchable issues were prioritised based on quantum of need, area of crop and scope of adoption. Some of the priority areas identified for collaborative activities are: residue management in rice-wheat cropping; production and post-harvest mechanization in maize, tobacco, oilseed, pulses and millets; and production mechanization in fibre crops, fodder crops, sugarcane and cotton. The outcome of the event will be beneficial to policy planners and researchers for new R and D initiatives at the national level for profitable agriculture.

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*Plant trees,
Conserve water,
Protect environment.*



4th ASEAN-India Ministerial Meeting on Agriculture and Forestry

New Delhi, 11 January 2018. The 4th ASEAN-INDIA Ministerial Meeting on Agriculture and Forestry held at NASC Complex, New Delhi, aims to facilitate promotion of joint research for development of technologies for increasing production and productivity of crops, livestock and fisheries, and natural resources management, among others, in the region as well as in development of joint ventures, exchange of technologies, expertise and material. A joint press statement released during the meeting:

1. We, the ASEAN Ministers of Agriculture and Forestry and the Union Minister of Agriculture and Farmers' Welfare, Government of India, held our Fourth ASEAN-India Ministerial Meeting on Agriculture and Forestry (AIMMAF) on 12 January 2018 in New Delhi, India. The Meeting was co-chaired by Mr Grisada Boonrach, Minister of Agriculture and Cooperatives, Thailand and Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers' Welfare, Government of India.
2. We were satisfied with the progress made in the implementation of the ASEAN - India Plan of Action (POA) 2011-2015 to implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity. We task our senior officials for the full implementation of the POA, which would help further deepen and enhance the ASEAN-India cooperation in food, agriculture including animal husbandry and fisheries, and forestry as well as contribute towards the achievement of the post 2015 Sustainable Development Goals, and the related goals of the UN Zero Hunger Challenge
3. In particular, under the Action Programme on "Promote Capacity Building, Technology Transfer, and R and D as Mutually Agreed for Global Competence in Agriculture", four capacity building activities were implemented during the 2013-2015, on (i) IT Application for Agricultural Extension (e-Extension), (ii) National seed quality control system, (iii) Organic certification for fruits and vegetables, and (iv) Conventional and molecular techniques for diagnosis of trans-boundary animal diseases. We also noted that training on buffalo production using reproductive biotechnology was conducted. We look forward to the implementation of more capacity building programmes in 2018 on the empowerment of ASEAN and Indian women through cooperatives, and managing food security and price volatility.
4. We supported the prioritization of joint collaborative projects in the areas of (i) Agroforestry interventions for livelihood opportunities, (ii) Demonstration and exchange of farm implement and machinery, and (iii) Genetic improvement of parental lines and development of heterotic rice hybrids.
5. We noted the endorsement of the Medium Term Plan of Action for ASEAN-India Cooperation in Agriculture and Forestry for 2016-2020 by the SOM AMAF and India. In this connection, we underscore the importance of addressing Climate Change as it negatively impacts food security, and look forward to cooperation on exchanging expertise as to promote enhanced resilience of natural systems and improve the adaptive capacities of people to cope up with environmental hazards.
6. We look forward to the implementation of the 3rd exchange visit for Farmers between ASEAN and India in order to provide opportunities for ASEAN and Indian farmers and fishers, including young and women farmers, to learn and develop more efficient farming practices and management skills through information sharing.
7. We agreed to meet again at the 5th ASEAN-India Ministerial Meeting on Agriculture and Forestry to be held in Brunei Darussalam in 2019.
8. We express our sincere appreciation to the Government and people of India for the warm hospitality and excellent arrangements made for the meeting.

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Empowerment of Women Dairy Farmers



Jaipur has a total population of 38,87,900. Women constitute 43.9% of agricultural labourers. Though agriculture is main occupation for majority of the people in the district, because of rainfed farming and limited irrigation facilities, agriculture alone could not meet their requirements, which forced them to go in for a subsidiary occupation like milk production. With milk chilling and storage facility available all over the district, dairy is proving as a profitable enterprise in Jaipur.

Initially two mandals i.e. Sandersar and Ginoi were identified for the implementation of scientific dairy farming; 120 villages were covered. In these villages, group discussions were held to acquaint the livestock farmers with the details of the plan of programme implementation. The survey carried out in the villages indicated dairy to be a profitable enterprise and it was felt that group activities and income generating activities like dairying are highly useful and are viable propositions.

KVK Jaipur-I trained the village women in preparing feed concentrate at home using locally available ingredients like wheat bran, oilseed cakes etc., in proper proportion depending on the requirement of animals. Every year KVK, with support of the other organizations, arrange vaccination camps where diagnosis of repeat breeding cases and treatment of

various ailments were taken up.

Earlier, women spent 30% of their time as agriculture labour. After the implementation of the programme, 50% of their time was devoted to dairying. The income raised through dairy was higher as compared to agriculture based activities.

Before the intervention of the dairy activity, the partner women utilized most of the money for the agriculture and household activities. After this programme merely 35% of the money spent was on dairy activities, 35% on agriculture activities, 10% for labour activities and remaining for household activities.

The economic empowerment of rural women through dairy sector based on group approach has been emphasised with concerted efforts of KVK Jaipur-I and active involvement of farm women. The major impact of these activities is increased milk yield (1.15 litre/animal/day) with the help of azolla (2.0 kg/day) and chelated mineral mixture (60 g/day) given to the animals. They got additional 200 litres milk in 300 milking days per animal. In this way, they increased their income by ₹ 6,000/lactation/animal and changed their social and economic conditions.

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Zero Crop Residue Burning

Looking to the stressors of such salt affected community lands, Central Soil Salinity Research Institute (CSSRI), Karnal together with village Panchayat, Begampur, Karnal came forward to have participatory diagnosis of salt affected community lands. The 100 acres of community lands was sampled with GPS details and transect walk across the landscape. The abiotic stressors in terms of pH, and deficiency of soil nutrients and carbon were diagnosed. The soil pH of community lands varied between 9.24 and 9.8 in the soil depth of 0-15 cm, while up to 10.5 in depth 15-30 cm. To enhance the

adaptive capacity of such agroecosystem, two rounds of farmers' *Goshthis* were organized during October and November 2017 to understand the agronomic practices of farmers where about 60 male and female farmers together with village Sarpanch and members, and other stakeholders namely State Agriculture Department, Private Input Suppliers and State Revenue Department officials actively participated. Based on the soil diagnosis data, the scientists from CSSRI, shared the knowledge with other stakeholders that other than high deficiency of soil nutrients, the soil carbon in community lands is low (0.2) because

the farmers adopt practice of burning of full residue of rice crop and about 30.0% residue of wheat crop.

In order to manage these stressors, the village Sarpanch in consultation with Dr P C Sharma, Director CSSRI, and Coordinator Dr Ranjay K Singh proposed to have consultancy services from CSSRI to Village Panchayat (Begampur, Karnal) for detailed diagnosis of soil stressors, nutrient status and reclamative approaches to provide ecological and climate resilience agro-practices.

As follow-up of this idea, the Village Sarpanch Srimati Rajbala along with concept coordinator Dr Ranjay K Singh organized a third round of farmers' *Goshthi* on 17 February 2018, to formally pass the resolution on Zero burning of crop residue, and making other farmers aware about the role of crop residues in reclaiming soil pH, improving soil health and regulating other ecosystem services. In this *Goshthi*, about 225 farmers including 75 women and other stakeholders actively participated. In the *Goshthi*, the Village Sarpanch, members of Panchayat together with progressive farmers passed a formal resolution "not to burn crop residues on community lands". Panchayat also assured that a condition of not to burn crop residues on community land will be incorporated while auctioning lands to individual farmers for rice-wheat cropping.

During the *Goshthi*, a review of works on soil health cards and gypsum requirements for community lands, and results of salt tolerant wheat variety KRL-210 (number of tillers, plant height, leaf shape and size, effective ear-head bearing tillers, etc.) provided to farm women (free of cost) and farmers practicing rice-wheat on community lands (on cost basis), deficiency of soil N, P, K and boron (these were observed largely deficient in community and individual lands also), other micro-nutrients was done. In order to effectively use the rice and wheat residues in the sodic community lands, the knowledge on required machinery (improved mulcher and moderated seed drill for wheat) to be purchased by Village Panchayat and provided to the farmers of community lands and individuals on custom hiring basis, and integration of agro-practices including

knowledge on gypsum application, laser leveling, green manuring and direct seeded rice with salt tolerant rice Basmati variety CSR-30 to adapt impact of stresses caused by sodic agroecosystem and climate variability (intense rains during January and February affect wheat yield in sodic soils up to 20-30 %) were discussed where interventions of CSSRI was felt most necessary.

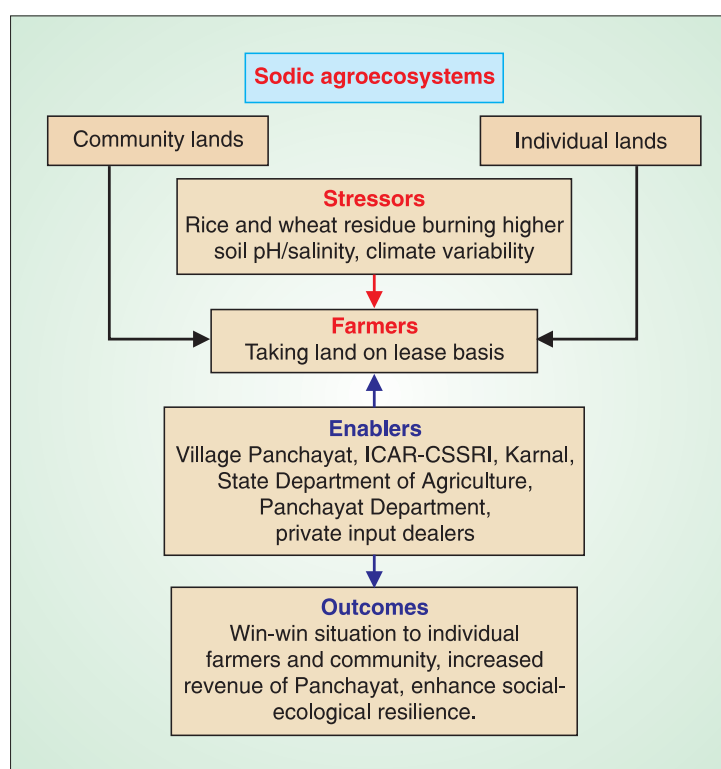
Complete technical know-how is being provided by CSSRI to village Panchayat and farmers for sustainable yields on salt affected lands. Farmers are being encouraged to form self-help groups to adopt salt tolerant wheat and rice varieties for the purpose of seed promotion for which appropriate training will also be provided. A total of 25 soil health cards to male and female farmers along with required agro advisory were provided in *Goshthi* of 17 February 2018.

This could perhaps be the first example where the expenses incurred in developing soil health cards of community lands at CSSRI, were paid by the village Panchayat, Begampur. Further, it was assessed during farmers' *Goshthis* that the accurate amount of gypsum if applied into the community lands having high soil pH and integration of above stated agro-practices

may increase rice and wheat yields up to 20-30%. As a result, the rate of auctioning of such community lands will be higher as compared to present rate of ₹ 90,000/ha for example in Begampur Village Panchayat. This way, the revenue of community lands can be increased, and simultaneously the individual income of farmers who practice rice-wheat on community lands can also be increased.

The Village Panchayat members and CSSRI, together opined that the experiment started on community lands of Begampur village (Karnal) with multi-stakeholders including farmers, village Panchayat, scientific institution (CSSRI), private input dealers and State Department of Agriculture can provide a robust policy to the State Government (Department of Panchayat) about sustainable management of sodic lands wherein individual farmers and community together can be in a win-win situation.

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Success of Scientific intervention

Management of nematodes in tuberose with bio-pesticides

Application of bio-pesticides, viz. *Trichoderma viride*, *Pseudomonas fluorescens* and *Pochonia chlamydosporia* (2 kg each) enriched in one ton of Farm Yard manure or neem cake (0.5 t/ha) has successfully controlled plant parasitic nematodes especially *Meloidogyne incognita*, a major nematode pest that hinders tuberose cultivation. Shri Siddharthan, a successful tuberose farmer from Varagoor village, Dharmapuri district, Tamil Nadu earns around ₹ 2 lakh/ month/acre by growing IIHR -Arka Prajwal



variety of tuberose and following IIHR- biopesticide technologies. The cost of plant protection using chemicals has drastically reduced by 75%, nematode population reduced up to 90.3% and yield increased by 23.6% with a cost benefit ratio of 1: 2.8. The success story of the technology was popularized through Doordarshan- Podhigai and Makkal TV channels.

Onion synthetic variety, Arka Bheem grown in Karnataka

Shri Chandrappa, Jagalur Taluk, Jammapura, Davangere, Karnataka has taken up cultivation of IIHR onion variety Arka Bheem. He has sown the crop during May 2017 in an area of 2 acres. He observed complete germination and could maintain good plant population. He expressed that the crop was very vigorous and farmers of the village used to visit his field to appreciate the crop. He harvested 410 bags (60 kg each) of good quality bulbs. He auctioned the



same in APMC at Bangalore and fetched a price of ₹ 34-40/kg. The traders appreciated the colour, shape and skin texture of the variety. The farmer expressed happiness that he has made a good profit with double the income from this variety compared to all varieties which he has grown previously. According to him, this is the only variety which can withstand continuous rainfall. He has also taken up multiplication of the seeds of this variety for popularizing in his area.

Tomato F₁ hybrids -Arka Rakshak and Arka Samrat

Arka Rakshak Karnataka: Mr M L Ramachandra, Uddanur, HanurHobli, Kollegala Taluk, Chamarajanagara District cultivated Arka Rakshak on 30 acres and he could harvest 800 tons and could make a net profit of ₹ 3.00 lakh/acre. A field day was also organized on 21 Nov 2017 and 600 farmers participated in the field day.

Arka Rakshak in Kerala: Mr C G Pereira, Twinkle, Murukumpuzha, Trivandrum planted Arka Rakshak on 400 m² under rain shelter during August 2017 and completed crop during December 2017. Average yield was 10 kg/plant and could harvest 5 tons (50 t/acre). Fruit weight ranged from 60-80 g. Prevailing market price was ₹ 50-60/kg. His total expenditure was ₹ 75,000/ and he realized a net profit of ₹ 1.5 lakh from his 400 sq.m plot (Estimated net profit: ₹ 15 lakh/acre).

Arka Samrat in Maharashtra: Mr Sunil Shinde of Nandade planted Arka Samrat on 1 acre (5,500 plants) during August 2017. So far he has harvested 12.5 tons and realized net profit of ₹ 3 lakh and expressed that he would further harvest about 17.5 tons. He expressed that he would get a net profit of ₹ 5 lakh. During initial harvest he could get ₹ 50/kg and it came down to ₹ 14/kg during December 2017. Shri Sunil Shinde prepared his own nursery under 40 mesh nylon net in plastic seedling trays and raised Arka Samrat as second crop on black polythene mulch previously used for raising first crop.



Arka Samrat in Karnataka: Arka Samrat was raised on 1 acre by Mr Chikkanaganna, Durgadahalli village, Tumukur District, Karnataka during Rabi 2017 (September-December 2017). Arka Samrat had good market preference due its large and firm fruits with attractive deep red colour. It fetched the grower ₹ 100 high per price per crate (25 kg) compared to commercial hybrids like Lakshmi.

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PM Inaugurates *Krishi Unnati Mela* at IARI



New Delhi, 17 March 2018. The Prime Minister of India, Shri Narendra Modi, inaugurated *Krishi Unnati Mela* at the IARI Mela Ground. He visited theme pavilion and the *Jaivik Mela Kumbh*. He laid the Foundation Stone for 25 *Krishi Vigyan Kendras* and also launched an e-marketing portal for organic products. The PM gave away the *Krishi Karman Awards* and the *Pandit Deen Dayal Upadhyaya Krishi Protsahan Puraskar* to the outstanding workers. Addressing the gathering, the Prime Minister said that *Krishi Unnati Mela* plays a key role in paving the path for New India. He added that, there is opportunity to simultaneously speak to two sentinels of New India – farmers and scientists who have to work together to transform agriculture. He specially mentioned Meghalaya, which received an award for its achievements in agriculture, in the period under review.

Shri Modi said that more than 11 crore soil-health cards have been distributed so far. The 100% Neem coating of Urea has resulted in lowering expenditure on fertilizer, apart from raising productivity. Through *Pradhan Mantri Fasal Bima Yojana*, premium was lowered, capping on insurance removed, and claims amounts disbursed to farmers have gone up. The *Pradhan Mantri Krishi Sinchai Yojana* envisioned water for every farm. Pending irrigation projects are being completed by spending ` 80,000 crore.

The *Kisan Sampada Yojana* is helping strengthen the supply chain from the farm to the market, and creating modern agriculture infrastructure. Operation Greens was announced in the recent budget that would be beneficial for farmers growing fruits and vegetables, especially tomato, onion and potato. Several Agricultural Model Acts related to farmers' welfare were prepared, and states have been urged to implement them.

The PM said that the Government is working to ensure that farmers get modern seeds, adequate power supply, and easy market access. The Government of India has decided that for all notified crops, MSP will

be at least one and a half times the cost. For this purpose the cost will include elements such as labour, rent for machinery, cost of seeds and fertilizers, revenue being given to state governments, interest on working capital, and rent of leased land.

The PM said comprehensive steps are being taken for Agriculture Marketing Reforms. It is important to connect Rural Retail Markets with wholesale and global markets. In the recent Union Budget, Grameen Retail Agriculture Markets were envisaged. 22,000 rural *haats* will be upgraded with necessary infrastructure, and integrated with APMC and e-NAM platform.



Shri Modi also emphasized the importance of Farmer Producer Organizations and said that farmer producer organizations would be given relief on income tax. The PM said a new chapter in Agriculture Marketing Reform is being added, with the e-marketing portal for organic products. Along with the Green Revolution and White Revolution, we must stress on Organic Revolution, Water Revolution and Blue Revolution.. He added KVK that will play a key role in this regard.

Shri Modi explained how honey-bees could be an important source of additional income for farmers. and also spoke of the benefits of solar farming. The PM said that about 2.75 lakh solar pumps have reached farmers in the last three years. The PM also spoke of the *Gobar Dhan Yojana* for creating compost, biogas etc. from bio-waste.

The PM said that crop residue burning has harmful effects, instead if it is returned to the soil through machines, it will have beneficial effects. Shri Modi assured that the Government is working to ensure that adequate Agriculture Credit is available. The Prime Minister said that such events should also be held in far-flung areas. He also called for impact analysis of such events.

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Web telecast at IISWC, Dehradun

Dehradun, 17 March 2018. ICAR-IISWC, Dehradun organised Kisan Gosthi and live telecast of the Krishi Unnati Mela, IARI, New Delhi at Village Udpalta, Dehradun. Large gathering of native tribal farmers of Udpalta and nearby villages of Chakrata region listened to the Prime Ministerial address. The Chief Guest Shri Munna Singh Chauhan said that the initiatives taken by the IISWC can be taken as a model of development in the state of Uttarakhand.

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Web telecast at CRIDA, Hyderabad

Hyderabad, 17 March, 2018. A Farmers - Scientists interface meeting was held at CRIDA, Hyderabad at 10.00 AM. About 1000 farmers, scientists, technical officers and other officials participated in the meeting. All participants watched the live telecast of Krishi Unnati Mela. Farmer Scientist Interface was held under Chairmanship of Dr K Sammi Reddy, Director, CRIDA. Shri Satyanarayana, Petroleum Conservation Research Association (PCRA)

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Web telecast at CIAE, Bhopal

Bhopal, 17 March, 2018. The Central Institute of Agricultural Engineering, Bhopal arranged the webcast programme of PM for farmers. The programme was graced by presence of Shri Vishvas Sarang, Honourable Minister, Government of M P as Chief Guest and Dr Sasikala Pushpa, (Rajya Sabha) as the Guest of Honour. Shri Harjinder Singh, IAS and CEO, Jila Panchayat, Bhopal also participated.

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56th convocation of IARI

Launch starting ventures in Agriculture

New Delhi, 9 February 2018. Hon'ble President of India, Shri Ram Nath Kovind, graced and addressed the 56th convocation of the Indian Agricultural Research Institute (IARI).

Speaking on the occasion, Hon'ble President said that IARI played a critical role in the Green Revolution that changed the course of food production in the country. He was happy to note that students from 14 countries are being educated in this institution. And that IARI is helping in the development of agricultural capacities and research in neighbouring countries.



Shri Kovind said that Mahatma Gandhi had observed that agriculture is the backbone of the Indian economy. This is relevant even today. Enhancement of income of farmers and overall development in rural areas is the priority of the entire country. In this endeavour, students of IARI could contribute through innovations. He stated that there is a relative shortage of land and water resources, in proportion to our country's population. Therefore, there is a need to continuously innovate to increase productivity.



The Hon'ble President said that IARI should start 'Innovation Centres' or 'Incubation Centres' to help students to launch start-up ventures in the agricultural sector. There are several schemes of the Central and State Governments that offer special incentives to enterprises engaged in the agriculture sector. There are also many venture capital funds that can come forward to invest in agriculture-based enterprises. Students should use these opportunities, set up their ventures and become job creators.

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Regional Agricultural Fair at CIARI, Port Blair

Port Blair, 15 February 2018. The Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh, while inaugurating Regional Agricultural Fair (Southern Region) on the theme 'Sustainable Agriculture through Integrated Farming System', made a clarion call that benefits of the scientific advancements and researches taking place in agriculture and allied sectors should reach farmers.

He called upon scientists to ensure that the outcome of research works reaches from 'Lab to Land', which in turn will help in achieving the target set by the Government in doubling the farmers' income by 2022. The Minister said, "With an aim to ensure better soil management, Soil Health Cards are being issued to farmers to gauge the health of the soil and accordingly, they can utilize the required quantity of fertilizers and other nutrients to retain the fertility of the soil".

He also mentioned that the Government has sanctioned a fund of ₹ 1 crore for converting Neil Island as Model Organic Farm and expressed hope that the Island will soon be declared as 'Organic Island'. He also urged Agriculture Department to organize camps in Nicobar and apprise the farmers about the schemes available for organic farming, so as to encourage them to continue the same. Mentioning that Sikkim was the first state to be declared as Organic State, the Minister said that Meghalaya is also poised to become a fully organic state and expressed hope that in the years to come, the Andaman and Nicobar Islands should also be in a position to be declared fully organic.

The Minister stressed on the need for strengthening of Virgin Coconut Oil (VCO) unit at Chouldari and directed for setting up of another VCO unit at Rangat to facilitate farmers there. He said that to ensure the availability of green fodder, hydroponic cultivation should be encouraged among farmers. He also mentioned that under *National Gokul Mission* the National Breeding Centre have been established in Andhra Pradesh and Madhya Pradesh. Besides this, 14 *Gokul Grams* have been established in various parts of the country.

The Minister also handed over the legal ownership certificate to the Karen Community for the preservation of indigenous rice variety which was facilitated by the team of scientists from CIARI.

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National Science Day Celebrated

NAARM, Hyderabad

Hyderabad, 28 February 2018. On the occasion of National Science Day Celebrations at NAARM, around 150 students of Sri Chaitanya Techno Schools visited the Academy. The importance of NAARM, its role in the development of the agricultural research management in the country were apprised to the students besides orientation towards the agriculture-related career options. Essay writing and elocution competitions were organized for the students.

During the valedictory ceremony, Dr Ch Srinivasa Rao, Director, NAARM appreciated the students for their keenness and enthusiasm for the visit, and also



motivated them towards agriculture as a career. Dr Soam, Joint Director, NAARM drew the attention of students towards scientific temperament, and fundamental duties as responsible citizens of India.

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CIFT, Kochi

Kochi, 28 February 2018. In line with the theme of 2018, "Science and Technology for a Sustainable Future", CIFT, Kochi and the Veraval research centre of CIFT celebrated 'The National Science Day'.

The Science Day coincided with the valedictory function of the three months International Training in Fishing Technology under Dr CV Raman International Fellowship for African Researchers. Dr VPN Nampoori, Emeritus Professor, International School of Photonics, CUSAT, Kochi delivered a lecture on Sir CV Raman and his inspiring life and work. He stressed the need for original research and sustainable science in the country as shown by Bharat Ratna, CV Raman. Sir CV Raman's nature of work, personal and professional life and major achievements were highlighted during the talk.



He also talked on the topic 'We are what we eat' and stressed upon the nutritional significance of different types of food and the necessity to choose food for sustainable well-being. Dr D Divu, SIC, Veraval Research Centre of CMFRI gave a presentation on 'Environmental benefits of composting'.

Dr KK Prajith, Scientist, CIFT talked on environmental paradigms and conservation of biodiversity with the major focus on protecting the marine resources and the Asiatic lion in the Gir Forest. Shri Rajan Kumar, Scientist, CMFRI addressed major issues in the academic curriculum of fishery science in India.

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Directorate of Poultry Research, Hyderabad

Hyderabad, 28 February 2018. Dr Subeer S Majumdar, Director, National Institute of Animal Biotechnology, Hyderabad, graced the Science Day celebration as chief guest at ICAR-Directorate of Poultry Research, Hyderabad, on 28 February 2018. He emphasized strengthening of Biotechnology research especially in the area of genome editing and transgenesis to cope with emerging and future challenges of food security, vaccine and therapeutic development.



Dr R N Chatterjee, Director-DPR presided over the Science Day programme and briefed about the salient achievements of the Institute including future flagship research programmes. On the eve of National Science Day celebration, an exhibition was organized by the Institute to showcase new technologies and chicken varieties developed at the Institute where about 200 school children from different Schools of Hyderabad visited the Exhibition stall, Laboratories and Poultry farms. The students were educated about the benefits of poultry eggs and meat for mitigating our body requirement of animal proteins.

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NIANP celebrates Farmers' Conclave

Bengaluru, 16 February 2018. The National Institute of Animal Nutrition and Physiology in collaboration with all the ICAR institutes located in Bengaluru organized the "Farmers' Conclave".

Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh, Union Minister of Statistics and Programme Implementation, Shri DV Sadananda Gowda, Union Minister of Skill Development and Entrepreneurship, Shri Anant Kumar Hegde, Union Minister for Parliamentary Affairs and Chemicals and Fertilizers, Shri Ananth Kumar, Secretary, DARE and DG, ICAR, Dr Trilochan Mohapatra and DDG (Agricultural Extension), ICAR, Dr AK Singh attended the inaugural function of the event. Dr Mohapatra highlighted the contributions of various ICAR institutes in Karnataka.

Shri Radha Mohan Singh in his address urged that encouraging the young generation towards agricultural activities and increasing the farmers'



income from small holdings are the major challenges of the Indian agricultural sector at present. He also mentioned that although the task is herculean, but it is not impossible if everyone works together dedicatedly towards the goal.

Shri Anant Kumar Hegde mentioned that water is a scarce resource in Karnataka and therefore, appropriate policies are required to be implemented at the earliest to introduce and popularise profitable dry land agricultural practices in the State.

Harit Dhara, an anti-methanogenic feed supplement and a special bull mineral mixture developed by NIANP, Bengaluru was released during the occasion.

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Kisan Mela at IINRG

Ranchi, 16 February 2018. Indian Institute of Natural Resins and Gums (IINRG), Ranchi organized Annual *Kisan Mela*-cum-Agricultural Machinery Exhibition. Mela was inaugurated by Chief Minister of Jharkhand, Shri Raghubar Das. In his address Shri Das emphasized on the importance of lac in the economic upliftment of the farming community including forest dwellers, lac growers and small scale entrepreneurs. He assured that State Government will promote the lac based products through its brand name.



Smt Rajbala Verma, Chief Secretary, Government of Jharkhand said that lac production is an important source of livelihood security for the lac growers. She asserted that scientific cultivation of lac using *semialata* need to be popularized among the progressive farmers of this state. She assured that government will procure all the the produce from the tribal farmers at remunerative price.

Dr KK Sharma, Director, IINRG, Ranchi threw light on research achievements, training and developmental activities of the Institute for the welfare of lac farmers.

An agricultural machinery Exhibition was inaugurated by the Chief Minister and he felicitated 11 farmers/ lac entrepreneurs/ executives from Chhattisgarh, Jharkhand and Madhya Pradesh for production and promotion of lac. An MoU was also exchanged between IINRG and MLKUVB for promotion and development of lac in the Jharkhand.

A *Kisan Ghosthi* was also organized wherein experts of the various organizations interacted with farmers and provided solutions to problems faced by farmers in lac cultivation and other agricultural crops.

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CMFRI invites Public on Foundation Day

Kochi, 3 February 2018. The Central Marine Fisheries Research Institute (CMFRI) opened its doors to students and public on the occasion of its 71st Foundation Day celebrations at its Headquarters in Kochi and at 11 Regional Research Centres.

Nearly 5,000 people visited the Headquarters of the institute located in Kochi, to watch in awe, the splendours of aquatic organisms in the sea and to interact with the scientists. As part of the programme, the National Marine Biodiversity Museum, various state-of-the-art laboratories, marine research aquarium, Agricultural Technology Information Centre (ATIC) and hatcheries were opened to the public. The museum, which is designated as the National



Repository by the Union Government, was the main attraction to the visitors. It accommodates over 2,200 specimens of marine flora and fauna.

The Open House also highlighted the impact of climate change on marine fisheries sector. The research output of the study on climate change carried out under the National Innovations on Climate Resilient Agriculture (NICRA) was displayed to the public on the occasion. The scientists associated with the NICRA project explained the findings of the study to the public. The study indicated that there had been changes in scores of areas such as sea surface temperature (SST), chlorophyll, wind and rainfall, ocean current, spawning season, maturity, distribution and catch of various marine fishes owing to climate change.

The Foundation Day celebrations were held in all the Regional Research Centres located in Veraval, Mumbai, Karwar, Mangalore, Calicut, Vizhinjam, Chennai, Tuticorin, Mandapam, Visakhapatnam and Digba, and the Field Centre in Puri and the KVK of CMFRI in Ernakulum by conducting similar Open House programmes, attracting the public to view and understand the research activities of the institute.

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Foundation Day of CIAE

Bhopal, 15 February, 2018. Central Institute of Agricultural Engineering, Bhopal organized a two day programme to celebrate its 43rd Foundation Day and farmers fair.

Dr Ramakrishna Kusmaria, Member, ICAR Governing Body and former Minister of Farmer Welfare and Agriculture Department, Government of Madhya Pradesh was the chief guest. Dr KK Singh, Director, CIAE, Bhopal highlighted about various technologies developed during 2017-18 like high clearance vehicle, vegetable transplanter, inter and intra row weeder, image based herbicide applicator, sub-surface drip lateral laying machine and enhancing shelf life of various millet products, etc. A poster competition on the themes 'Agricultural engineering technologies for doubling farmers income' and 'Agricultural engineering scenario by 2050' was organized for scientists and doctoral students, respectively.

A Farmers' meet and agricultural machinery exhibition was organized on 16 February 2018 the theme of which was "Role of Mechanisation in



Doubling the Farmers' Income". On this occasion a tripartite agreement was signed between CIAE, Bhopal, Directorate of Agricultural Engineering, Madhya Pradesh and M/s Veda Farms and Implements Pvt. Ltd., Bhopal to manufacture quality agricultural machinery at Sehore district, Madhya Pradesh. Some successful entrepreneurs and progressive farmers who undertook training at CIAE in the areas of management of custom hiring centre, soybean processing and utilization and protected cultivation technology, were also felicitated for their innovative ideas and adoption of new technologies.

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Farmers-Scientists Interface at Directorate of Poultry Research

Hyderabad, 1 March 2018. The 31st Foundation Day was celebrated on 1 March 2018. On the occasion of Farmers-Scientist Interface during 31st Institute Foundation day programme, Dr RS Gandhi, ADG (AP and B) graced the occasion as chief guest and Dr R P Sharma, former Director, PDP and Dr S Vaithyanathan, acting Director, NRC on Meat, Hyderabad were guests of honour. Dr Gandhi appreciated the institute for its contribution in ensuring livelihood security of rural population in the



country. He highlighted that rural poultry can be likened with ATM (any time money), which is much more resilient to natural calamities and thus play vital role in reducing farmers distress. He also emphasized for working on characterization of non-descript chickens within specific time limit, development of designer meat and eggs, disease surveillance, waste management, development of alternate to antibiotic growth promoters, etc.

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A day for Ber lovers

Jodhpur, 23 January 2018. Ber Day and Arid Fruit Show was organized at CAZRI Jodhpur on 23 January 2018 to promote cultivation of ber and other arid fruits in western Rajasthan and generating awareness among farmers. Shri Ghanshyam Ojha, Mayor of the Jodhpur Municipal Corporation was the chief guest of the function. Dr PL Saroj (Director, ICAR-CIAH, Bikaner) and Dr OP Pareek (former Director-CIAH) were present as guests of honour. The Mayor showed keen interest in the institute activities and suggested to use treated sewage water for production of fodder crops. Dr OP Yadav, Director, emphasized the role of arid fruits in enhancing the farmers' income. Dr Saroj in his address, emphasized that farmers should go for selective varieties according to the climatic regions. A total of 115 entries of different varieties of fruits were received from the farmers which were judged by experts and best entries were awarded.

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Trainings

- Bhopal, 4 January 2018. ICAR-CIAE organized a 21 days Centre of Advanced Faculty Training (CAFT) programme on 'Advanced storage and packaging technologies for durable and perishable foods'.
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- Maharashtra, 18 January 2018. Division of Aquaculture, CIFE, Mumbai organized a three-day training programme on "Cage Farming" for the farmers of Nandurbar, Maharashtra under TSP.
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- Maharashtra, 29 January 2018. ICAR-Central Institute on Fisheries Education, Mumbai organized a Training programme on "Basics of ornamental fish keeping" for tribal women of Warungshi, Ahmednagar District, Maharashtra under Tribal Sub Plan (TSP).
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- Kochi, 29 January 2018. Central Marine Fisheries Research Institute (CMFRI) started providing training to fishermen across the country in sea cage farming

to bolster the mariculture activities in capture fishery. The project envisages accelerating the process for ushering in the Blue Revolution by providing effective training to the fishermen. The National Fisheries Development Board (NFDB) under the Ministry of Agriculture and Farmers' Welfare is supporting the project. The three-day long training was attended by fishermen of central region of Kerala. This training programme will be extended in all the maritime states accordingly.

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- Bhopal, 30 January 2018. An international training on "Management of Technology and Extension for Soil Testing based advisory Services to Farmers" under Feed the Future India Triangular Training (FTF Government ITT) of USAID, and MEA, Government of India, was organized at Indian Institute of Soil Science, Bhopal. Executives from seven countries (Afghanistan, Myanmar from Asia and Kenya, Ghana, Malawi, Liberia, and Uganda from Africa) participated in this training. The programme included Triangular Cooperation adapting technological advances and innovative solutions to address Food Security Challenges in Africa and Asia.
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- Hyderabad, 2 February 2018. A field day-cum-training was organized by ICAR-Indian Institute of Oilseeds Research, Hyderabad in Patherched village, Narwa Mandal, Mahabubnagar district.
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- Kochi, 12 February 2018. A six-day short term training programme on "Fish Cell Culture Techniques" was inaugurated at peninsular Marine Fish Genetic Resources Centre, ICAR National Bureau of Fish Genetic Resources, Kochi.
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- Hyderabad, 15 February 2018. A twenty one day International Training Program on "Rainwater Management for Climate Resilient Agriculture in Drylands" was organized at Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad. This program was organized under India-Africa forum Summit-III and sponsored by Ministry of External Affairs. The executives (15) from Nigeria, Ethiopia and Malawi participated.
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- Dehradun, 16 February 2018. A two days training programme on Soil and Water Conservation under *Pradhan Mantri Sinchai Yojana* was organised by ICAR- Indian Institute of Soil and Water Conservation, Dehradun.
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- Dehradun, 6 March, 2018. The fifteen day program was a part of the 15 short term training organized by the Department of Agricultural Research and Education (DARE) - ICAR under the India Africa Forum Summit-III and sponsored by the Ministry of External Affairs, Government of India. Fourteen African delegates from 6 countries viz., Ethiopia, Ghana, Kenya, Malawi, Nigeria and Zambia in Africa participated in the training program.
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- Kochi, 20 March 2018. Central Marine Fisheries Research Institute (CMFRI) extended technical support in cage farming to around 35 tribal families in TV Puram panchayat in Vaikom, Kottayam. The initiative was part of CMFRI's project for popularising the less expensive fish farming method among the tribal colonies across the coastal status under the Tribal Sub Plan (TSP) of the ICAR.
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Personnel

Superannuation

Name, Designation and Address	Date of relieving
Dr Om Prakash Chaturvedi, Director CAFRI, Jhansi	31 January 2018 (Retirement)
Dr Sreenath Dixit, Director ATARI, Bengaluru	31 January 2018 (Relieved to join ICRISAT)

Visits

Dr Prem Kumar visits CIAE, Bhopal



Bhopal, 3 February 2018. Dr Prem Kumar, Minister of Agriculture, Bihar and Shri Ravindra Nath Ray, Special Secretary (Agriculture), Government of Bihar visited CIAE, Bhopal during February 3-5, 2018. Dr KK Singh, Director, CIAE, Bhopal appraised the Minister on various agricultural engineering technologies developed by CIAE and may be relevant for mechanization in Bihar. The Minister also visited various CIAE facilities including Agro-Processing Centre, Prototype Production Centre, Soybean Processing and Utilization Centre, Protected Cultivation facility and the CIAE technology display hall.
email: director.ciae@gmail.com

Camel Dairy – Challenges and Opportunities

Bikaner, 28 January, 2018. Shri Giriraj Singh, Union Minister of State for Micro, Small and Medium Enterprises and Shri Arjun Ram Meghwal, Union Minister of State in Ministry of Water Resources, River Development and Ganga Rejuvenation and Parliamentary Affairs visited National Research Centre on Camel, Bikaner and reviewed the activities of various units. Shri Giriraj expressed satisfaction over the efforts of the scientists of NRCC to establish camel as a milch animal and suggested to develop trade of camel milk based on its separate valuation on its therapeutic value.
Shri Arjun Ram Meghwal, MP, Bikaner, said that he considered camel as a USP for western Rajasthan, and appealed to camel herders and scientists to work together to popularize camel as an animal of human health utility for its milk benefits for diabetic and autistic children. Guests tasted the camel milk and its products and also observed the ecotourism activity of the centre involving camel.
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