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From the DG's Desk

Dear Readers,

The Indian agriculture and its allied sector's contribution to GDP is nearly 15% with about 50% of the population depending on agriculture for their livelihood. Agriculture production, however, depends on monsoon as nearly 60% of area sown is dependent on rainfall. Furthermore, most of the small and marginal farmers mainly cultivate low value subsistence crops. Due to this, they face various issues like low productivity, low price, low purchasing power, low income, low investment and capital formation, high production costs, infrastructure deficits, etc. To overcome these difficulties, agricultural diversification is often suggested as a means of improved farm productivity and income. The concept of agricultural diversification basically involves shift of resources from low value crop mix to relatively high value crops and farm products.

After the arrival of Golden Revolution (1991-2003), diversification of agriculture has started to flourish rapidly. The changes in cropping patterns or the farmers opting for other non-farming options like bee-keeping, sericulture, poultry farming, animal husbandry, fisheries, etc., allows farmers to expand the production, which help generate a higher level of income. Agricultural diversification can be accomplished by two ways: Horizontal and vertical diversification. Horizontal diversification encompasses multiple cropping or mix of crops instead of cultivation a single crop. It is particularly useful for small farmers who hold a small piece of land. This allows them to earn more by escalating cropping intensity. Vertical diversification is to add value-addition by incorporating industrialisation along with multiple cropping for a final produce. In this diversification, farmers take further steps and invest in activities like horticulture, agroforestry, livestock rearing, culture of aromatic plants, etc.

The need for high-value crops (HVCs) is increasing in India, and this paved the way for farmers to try several crop combinations. Apart from that, some other reasons make diversification an excellent choice for small and marginal farmers of India. Diversification reasonably controls the damage change. This process safeguards the farmers from the loss of crops in such a situation. Diversification created new job opportunities for rural population other than traditional farming. Adopting diversification undoubtedly increased the income and the farmers can lead a comfortable life. Diversification, especially of non-

farming products, makes a sizable export provision for its unique characteristics. India is now on the frontline in exporting several agricultural products to many countries. This has contributed to the overall growth of the economy.

Almost half of the employment of India revolves around the agriculture sector. The scope for employment in non-farm sectors in India is immense. In Horticulture, India is a significant exporter of different fruits like banana, mango, sugarcane, etc. across the globe. This sector employs almost 19% of the country's workforce. Livestock breeding, rearing and nurturing the pastoral animals for food or new material like milk, wool, skin, meat, etc. that can be used for commercial purpose. It provides livelihood to over 70 million farmers. Livestock is also used for draught purpose i.e. for transport and ploughing fields. Fisheries involves catching, sorting and

distributing fishes, prawns, oysters, crabs and others marine and fresh-water fishes. The coastal states like Odisha, Andhra Pradesh, Maharashtra, Tamil Nadu and Kerala are the major regions to supply fishes across the country and export to other countries. This sector contributes to 1.9% of the Indian GDP. In dairy industry, animals like cow, buffalo, goat and sheep are reared for milk. The process consisted of collecting, preserving and distributing the milk and its by-products like butter, raw milk powder, ghee, etc. Therefore, it may not be wrong to say that agricultural diversification may lead to fulfilling the dream of doubling farmers' income.



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WORK SHOP, MEETING, SEMINAR, CONFERENCE

State-level Planning workshop for Nutrition-sensitive horticulture interventions organised by ICAR-Central Tuber Crops Research Institute

Thiruvananthapuram, 10 January 2022. The ICAR-Central Tuber Crops Research Institute, Thiruvananthapuram in collaboration with the MTTC & VTC, College of Fisheries, Lembucherra organised a Planning Workshop on “*Scaling-up of Nutrition-Sensitive Horticultural Interventions to combat Hidden Hunger*” under ICAR-CTCRI NEH programme. The micronutrient deficiencies



pose a serious health problem in Tripura. Over 20% of the 1-9 years age children suffer from Vitamin A deficiency while similar proportion of 10-19 years old adolescents has Vitamin D and Zinc deficiencies. The purpose of the workshop was designed to develop a comprehensive road map for addressing micronutrient deficiencies through nutrition-sensitive horticultural interventions especially nutrition gardens (including biofortified tuber crops) under the Rainbow diet campaign project of ICAR-CTCRI, Kerala.

Workshop was inaugurated by Dr Sidharth Shiv Jaiswal, IAS, Mission Director, National Health Mission, Tripura in the presence of Prof. Ratan Kumar Saha, Dean, College of Fisheries, Central Agricultural University (I), Tripura and Dr TK Maity, Principal, College of Agriculture, Tripura. During the inaugural address, Dr Jaiswal indicated that the chronic malnutrition or stunting among children below 5 years is increasing in Tripura despite large scale implementation of government programmes to combat malnutrition. Dr Jaiswal advocated a multi-stakeholder approach for implementation of nutrition-sensitive agricultural interventions to combat micronutrient deficiencies and assured the support from government of Tripura for scaling up biofortified varieties of tuber crops. Prof. Ratan Kumar Saha, Dean, College of Fisheries

stressed the need to developing a sound approach for customising nutrition-sensitive agricultural innovations to address household level nutritional needs. During the inauguration, Dr P Sethuraman Sivakumar, Principal Investigator of Rainbow Diet Campaign project of ICAR-CTCRI has elaborated biofortified sweet potato scaling up interventions implemented by ICAR-CTCRI in states like Arunachal Pradesh, Meghalaya, Mizoram and Tripura. Dr Mahesh B. Tengli, Asst. Professor and Co-PI of Rainbow Diet Campaign project at Tripura has explained the multi-stakeholder-oriented projects implemented by the MTTC & VTC, College of Fisheries, CAU (I), Tripura.

During the workshop, representatives from UNICEF (Tripura), state departments, colleges, Farmers Producers Organisations, Krishi Vigyan Kendras, NGOs elaborated their experiences on nutrition-sensitive agriculture interventions and suggested various strategies to design collaborative intervention to address micronutrient deficiencies in Tripura.

Interface Meeting on “*Encouraging Fish Culture Technologies in Large Water bodies with Special Emphasis on Enclosure Culture in Andhra Pradesh*” organised at ICAR-CIFRI

Barrackpore, Kolkata, 8 January 2022. Dr Poonam Malakondaiah, IAS, Special Chief Secretary, Agriculture and Cooperation, AHDD & Fisheries, Govt. of Andhra Pradesh along with Shri K Kanna Babu, IAS, Commissioner of Fisheries, Govt. of Andhra Pradesh visited ICAR-CIFRI. They inspected institute facilities, laboratories and interacted with Director and all staff members.



An Interface meeting on “*Encouraging fish culture technologies in large water bodies with special emphasis on enclosure culture in Andhra Pradesh*” held at the institute and Dr BK Das, Director welcomed Chief Guest Dr Poonam Malakondaiah, IAS, Special Chief Secretary, and guest of honour Shri K Kanna Babu, IAS, Commissioner of Fisheries,

Govt. of Andhra Pradesh and briefed them about the activities and achievement of ICAR-CIFRI. He also urged the need for converting the unscientific to scientific method of fish production and to develop entrepreneurship-based model for aquaculture.

Special Chief Secretary, Dr Poonam Malakondaiah, IAS summarized the state activities and ventures fisheries sector such as Farmer field schools in collaboration with state universities and the establishment of a Fisheries University at West Godavari District. She pointed out two major areas of concern for fisheries in Andhra Pradesh, viz., training of farmers on sustainable practices and focusing on the quality of produce rather than quantity.

Shri K Kanna Babu, IAS, Commissioner stressed on the possibility of partnership with CIFRI in future for promoting cage culture in reservoirs of Andhra Pradesh. He sought assistance in ornamental fish culture and ways to reduce mortality in live fish transport. He expressed his concern regarding low domestic consumption of fishes in Andhra Pradesh even though the state leads in aquaculture production.

Dr BK Das gave presentation on inland fisheries resources of India and the research activities conducted by CIFRI in various water bodies of India. He focused on the importance of cage culture and production enhancement programmes as well as their potential in Indian reservoirs. He stressed that Andhra Pradesh has an estimated production potential of 7449 t and 4411 t in large and medium reservoir respectively with the adoption of culture-based fisheries management. He explained the guidelines for cage culture and their installation in reservoirs and also discussed the CIFRI GI cage, CIFRI Cage grow feed and CIFRI Pen HDPE.

Dr Poonam Malakondaiah stressed on long and sustainable partnership with ICAR-CIFRI for the development of Inland fisheries sector in Andhra Pradesh. The meeting ended with the vote of thanks by Dr UK Sarkar, HOD, RWF Division.

Interface Meet on AnGR of Telangana state: A Mission towards Zero Non-descript AnGR of India



Karnataka, 10 January 2022. Under the theme “Mission towards zero non-descript AnGR of India”, ICAR-NBAGR organized Interface Meet with Telangana. It was the 7th State specific meet in a row after initiation of the mission by Hon’ble Secretary, DARE & DG, ICAR on 11 August 2021.

Dr BP Mishra, Director, ICAR-NBAGR, Karnal presented the Bureau’s activities and strategies for documenting non-descript populations under the mission. Dr R N Chatterjee, Director, ICAR-DPR talked about the role of native and backyard poultry resources in nutritional security of the rural peoples. Dr Shilpi Sharma of State Biodiversity Board, reiterated the need for conservation of indigenous breeds.

Dr Venugopal, Assistant Director, Animal Husbandry, Govt. of Telangana informed about the development programs and policies for the AnGR of the state. Dr B Ekambaram, Director Research, PV Narasimha Rao Telangana Veterinary University, during presenting status of native AnGR, informed the potential breeds in Telangana. Dr RK Pundir, ICAR-NBAGR briefed about the survey strategy for documentation of native AnGR.

Experts’ panel of ICAR, University, Livestock Board, NGOs stressed upon identifying biodiversity hotspots, the coordination of various agencies for documentation of AnGR of the state.

Interface Meet on AnGR of Punjab state: A Mission towards Zero Non-descript AnGR of India organised by ICAR-NBAGR

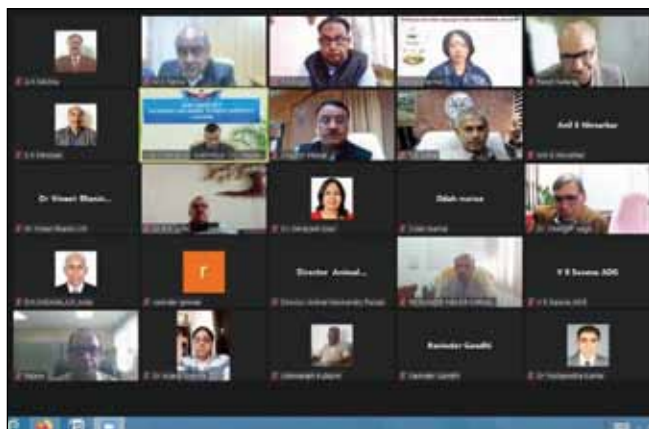
Ludhiana, 8 February 2022. Under the Mission towards Zero Non-descript Animal Genetic Resources, ICAR-NBAGR organized 8th State Interface Meet for Punjab virtually on “Characterization and Documentation of Animal Genetic Resources of Punjab” was attended from ICAR Institutes; Guru Angad Dev Veterinary & Animal Science University; Ludhiana, Animal Husbandry Department, Govt. of Punjab; NGOs, etc.

Dr Inderjeet Singh, Vice Chancellor, GADVASU, appreciated the efforts of ICAR for initiating Mission towards Zero Non-Descript AnGR in the country and suggested to register the germplasm, which have been adapted and improved within the country. Dr VK Saxena, ADG (AP&B), ICAR highlighted the need for using molecular tools for developing breed signatures. Dr HS Kahlon, Director AHD, Punjab emphasized on specific populations in Punjab for studying in detail. Dr TK Datta, Director ICAR-CIRB underlined the need to develop well defined standards of some of the native breeds like *Nili-Ravi* buffalo.

In welcome address, Dr BP Mishra, Director, ICAR-NBAGR briefed the Bureau’s activities and described the strategies for achieving the Mission.

Dr MS Tania, ICAR-NBAGR, Dr Simarjeet, GADVASU and Dr Sahil AHD, Punjab also presented various aspects of AnGR management of the Punjab state. A panel of experts provided important inputs for documentation of non-descript AnGR and conservation of native breeds of the stateduring the meet.

ICAR-Directorate of Onion and Garlic Research organized Kisan Sangosthi on commercial cultivation of onion in Mirzapur, Uttar Pradesh



Mirzapur, 16 December 2021. ICAR-Directorate of Onion and Garlic Research in collaboration with Gautam Kalloo Research and Development Foundation and Agrimitra Farmer Producer Company organized a Kisan Sangosthi on commercial cultivation of onion at Dhanwantri Devi Inter College, Jalalpur Mafi, Narayanpur Block, Mirzapur. Progressive farmers including women from different parts of Mirzapur, Varanasi, Sonbhadra, Ballia and Vindhyachal participated in the program. The program was presided over by Shri Mahendra Singh, Ex-Gram Pradhan, Jalalpur Mafi.

Dr Gautam Kalloo, Ex-Deputy Director General (Horticulture), ICAR, and Ex-Vice-Chancellor, JNKVV, Jabalpur gave a message to the farmers to promote natural farming. Dr PS Naik, the chief guest, Ex-Director ICAR-IIVR, praised the farmers of Mirzapur for their pioneering role in adopting new agricultural technologies and keeping food security in mind. Dr Naik appreciated the efforts of ICAR-DOGR in the development of onion and garlic technologies and their transfer to the farmer's field. He said that more attention and efforts are needed to increase the storage capacity of the crop. Stabilizing onion prices and doubling the income of farmers, commercial cultivation of *kharif* onion need to be promoted to meet the farmers' requirements. The special guest of the program Dr Major Singh, said that there is a huge potential for the production of *kharif* onion in Mirzapur, so the farmers of the region need to adopt advanced technologies developed by ICAR-DOGR, Pune, for which the institute will help to disseminate the applications of the technologies developed for the cultivation of onion in Mirzapur and other suitable areas. Dr Singh also mentioned that Eastern Uttar

Pradesh especially Mirzapur is proving to be a suitable area for *kharif* onion production, which can make it a hub for *kharif* onion production in the coming years, increasing the production of *kharif* onion as well as stabilizing the prices of onion in the country. Dr Nagendra Rai emphasized and motivated the farmers to mobilize into Farmer Producer Companies to achieve a stable income for themselves. Dr Vijay Mahajan appreciated the farmers and emphasized on the great potential of *kharif* onion production in Mirzapur and its role in filling the gap of onion supply, advised the farmers to adopt the improved technologies for onion cultivation to increase the productivity in the country and stabilize its market prices. Shri Pawan Kumar Prajapati briefed the farmers about natural farming and its role in combating and preventing global warming and other changes in the atmosphere.

Dr Amar Jeet Gupta presented the current status of onion cultivation and explained how farmers of Mirzapur can secure their livelihood through the commercial cultivation of *kharif* onion. Dr Gupta appreciated the farmers for their active participation and cultivation of onion in Chunar Tehsil of Mirzapur. The production and productivity of onion in Mirzapur have increased significantly by 93% and 32%, respectively after adopting the technologies developed by ICAR-DOGR along with the support from Agrimitra and GKRDF. Social worker Dr Govind Narayan Singh was honored for his effective involvement in this program. On the occasion, Dr Amar Jeet Gupta, Principal Scientist (Horticulture) was also honored with the 'Outstanding Scientist Award-2021' by Gautam Kalloo Research and Development Foundation, Varanasi for his outstanding contribution in the promotion of improved varieties and production technologies of onion.

Based on the performance of field demonstrations conducted by ICAR-DOGR in Mirzapur in the last four years, it has been found that the area of Mirzapur is highly suitable for *kharif* onion production. *Kharif* onion has also proved to be more beneficial for commercial cultivation as compared to *rabi* onion along with other traditional vegetables grown in Mirzapur areas.



Kisan Sangosthi on commercial cultivation of onion in Mirzapur

State level workshop cum exhibition of Treebean (*Parkiatimoriana*) held in ICAR-Research Complex for North-Eastern Hills Region, Manipur

Imphal, 15-16 March 2022. ICAR Manipur Centre in collaboration with Manipur University, CAU, IBSD, CSIR-NEIST, MOMA, NABARD and AIMS organised workshop cum exhibition to document the variability of tree bean (*Parkiatimoriana*) locally called *yongchak* available in the state to identify the real issues of tree bean decline and to design strategic research and development programme for mass plantations and production to save the plant. Dr VK Mishra, Director, ICAR Research Complex for NEH Region, Umiam, Meghalaya as the Chief Guest stated that tree bean is a very important plant which is associated with the tradition and culture of Manipur and NEH states. He mentioned that there is widespread decline of tree bean and is threat on the traditional culture. He emphasized that there is an urgent need of research interventions in tree bean in the form of characterization of exact etiology of decline, development of high-through put management practices, tree canopy management, breeding and biotechnological interventions to shorten the gestation period, development of bioactive functional food items, development of scientific tree bean orchard/ plot, production of potential seedlings and to undertake large scale demonstration of tree bean. He highlighted on the scientific and social approaches for promotion and protection of tree bean in which women can play a pivotal role.

Dr H Birkumar Singh, Head of CSIR-NEIST, stated that treebean is an important component head of CSIR-NEIST, of local cuisine attracting high initial seasonal cost upto ₹ 100 per tree bean pod.

Dr S Basanta Singh, Director of Instruction, CAU, emphasized that tree bean holds big business opportunities in Manipur. It is rich in micronutrients, antioxidants, phenolic compound and possess anti cancerous properties and play an important role in conservation of soil nutrients and environment being a leguminous crop.

Prof. Pulok Kumar Mukherjee, Director, IBSD, brief on the phyto-pharmaceutical properties of treebean and the various products that can be produced from treebean plant. Treebean being an underutilized plant has a huge potential for development of ethno-entrepreneurs by developing linkage from lab to farmer in a synergistic approach.

Dr Braja kumar, Jt. Director, Dept. of Environment & Climate Change, highlighted the need and importance for conservation of treebean in the state and the various initiatives taken up for its plantation. He stressed on the formation of a scientific and community approach to ascertained the science behind the declining of tree bean production.

Prof. Amar Yumnam, Formal Vice Chancellor, Manipur University, highlighted the need to make strong linkages between the scientific and farming communities for designing a long term strategic research for conservation of treebean in the state.

As part of the programme, treebean (*Yongchak*) competition was held. Treebean growers and entrepreneurs from valley and hill districts of the state participated in the exhibition and showcased the diversity of tree bean (*Yongchak*) available in the state. Technical session covering various aspects of treebean was conducted during the workshop. Scientist, academicians, researchers and officials from various organization including CAU, MOMA, Department of Agriculture, NABARD, KVKs, NGOs and farmers participated in the event.

The main recommendation of the workshop was to jointly work for a detail holistic research for identifying the real cause of tree bean decline and frame a long term strategic research for its conservation by involvement of all stakeholders, there is a need to develop demonstration plots for stocking and production of disease free good quality planting material at institutional level, include tree bean in the state crop plan, development of state level action plan on conservation of tree bean and aggregation of tree bean producers as FPOs for channelizing the marketing and its supply.

Zonal Breeders and Plant Protection Scientists Meet of AICRP on Sugarcane organised at ICAR-IISR

Lucknow, 24 January 2022. The Breeders and Plant Protection Scientists Meet of All India Coordinated Research Project on Sugarcane was organised at the ICAR-Indian Institute of Sugarcane Research, Lucknow. More than 125 scientists including Breeders, Plant Pathologists and Entomologists working on sugarcane deliberated on various issues to finalise the technical programme of varietal development programme. The promising clones in the Initial Varietal Trial were shortlisted for their further evaluation in Advanced Varietal Trials of different sugarcane producing zones of the country.

In the inaugural address, the Chief Guest, Dr T R Sharma, DDG (Crop Sciences), ICAR, New Delhi emphasized on varietal profile for different traits to meet the future challenges. Dr R K Singh, ADG (Commercial Crops), ICAR, New Delhi chaired the technical session, while Dr G Hemaprabha, Principal Investigator and Director, ICAR-SBI, Coimbatore was the Co-chairperson. Dr A D Pathak, Director and Project Coordinator (Sugarcane), ICAR- Indian Institute of Sugarcane, Lucknow welcomed the dignitaries and highlighted salient outcome of the Project and impact on increasing the sugarcane yield and recovery in India. The performance of sugarcane clones under Initial varietal trials were presented by centers and

after critical discussion of the breeders, pathologists and entomologists, the Technical Programme for 2022-23 of North-West Zone, East-coast zone, North-Central Zone and North-East zone was finalised. The meeting ended with a vote of thanks to the Chair by Dr S N Sushil, Principal Investigator (Entomology), ICAR-IISR, Lucknow.



Himalaya Conclave Organized by ICAR-IISWC and Sparsh Himalaya

Dehradun, 29 January 2022. Dr M Madhu, Director, IISWC welcoming the participants and the dignitaries to discuss the success stories of different research Institutes and Organizations functioning in Uttarakhand Himalayas. He highlighted the significance of Himalayas, Himalayan ecosystems, people and the Himalaya Conclave being organized at the Institute. He emphasized that IISWC is having long-standing experience on soil-water technologies, watershed management and sustenance of Himalayan ecosystems and resources.

Padma Bhushan awardee, Dr Anil Joshi, Director HESCO, Dehradun spoke on the vulnerability of Himalayas and called for integrated management of Himalayas and Himalayan resources so as to maintain an ecological balance, and biodiversity besides countering the ongoing climate change impacts.

Shri Ashok Kumar, DGP, Uttarakhand Police informed the participants that rural development should become part of the development of upper Himalayas including education, healthcare, sanitation besides horticulture and ecotourism based interventions. All these would help retain the people in the natural settings and help protect Himalayas.

Padmasri, Smt Basanti Devi, Jagar Artist emphasized for the protection of local culture and skills, preferably linking with employment and livelihoods. Traditional crops including cereals and medicinal plants need promotion by the scientists and state machineries. She explained the culture of Uttarakhand Himalayas through folk songs.

Padamshri Shri Kalyan Singh Rawat, Maiti, Social Worker called for the systematic protection of

grassland (Bugyal) ecosystems of the Upper Himalayas above 3000 m AMSL, which he termed as biodiversity hotspots of the Himalayas that help maintain the purity of the Ganga and other rivers of the region.

Dr Kalachand Sain, Director, WIHG, Dehradun emphasized on the needs of integrated approaches involving multi-disciplinary experts, multi-parametric analysis and domain knowledge to tackle the natural calamities experienced in Himalayas frequently.

Dr J P Pachuri, Professor, Himalaya University emphasized on the understanding of the social issues confronting the Himalayan sustainability, may be through awareness and scientific studies.

Dr D R Purhohit, HNB Garhwal University, called for checking the migration of farming communities and technological interventions to retain the youths and farmers in the Himalayan villages. Local breeds of cows and farm animals should be studied for potential and promoted for farming and local economy.

Dr Lakshmi Kant, Director Vivekananda Parvatiya Krishi Anusandhan Sansthan (ICAR-VPKAS), Almora recorded that the institute is working on the improvement of quality and quantity of crop production through hybrids and improving genetic productivity of crops.

Dr P R Ojasvi Head, H&E Division, IISWC presented a stock of technologies that are being generated at IISWC for the soil-water conservation, water resource development, and climate-resilient production.

Dr Ashok Kr. Mohanty, Jr. Director, IVRI, Regional Station, Mukteshwar, Dr RP Singh, Director, Directorate of Foot and Mouth Disease (ICAR-DFMD), Mukteshwar, Dr Mamta Arya, Officer-in-Charge, ICAR-NBPGR, Research Centre, Bhowali, Dr Arun Kishor, Officer-in-Charge, ICAR-CITH Regional Centre, Mukteshwar spoke on various technology and other knowledge products being developed for the benefit of farming communities, farm animals and sustenance of Himalayas.

Smt Poonam Chand, Additional Director, Tourism Department detailed the promotional programs and schemes that are functioning at her Department, including ecotourism, nature-based tourism, revival of traditional tracks of Char-dhmas and home-stay provisions.

Shri Ajay Ramola from Hindustan Times and Smt Savita Mohan, Sparsh Himalaya emphasized the need for proper documentation of traditions, culture and indigenous knowledge and should be linked to local tourism and food production systems. Himalaya being the storehouse of water, air and minerals responsible exploitations including tourisms should be emphasized that reduce carbon footprints.



ICAR-CIPHET organised National Webinar on 'Micro encapsulation of Nutraceuticals'

Ludhiana, 3 February 2022. The webinar on 'Microencapsulation of Nutraceuticals' was the 6th webinar in year-long 'National Webinar Series on CIPHET Post-Harvest Technologies', being organised by the Institute to celebrate 'Azadi ka Amrut Mahotsav'.

Dr K Narsaiah, Head Agricultural Structures & Environment Control Division delivered the talk and elaborated the use of microencapsulation for preserving potency of heat sensitive nutraceutical compounds found in spices and different food material. He said that curcumin found in turmeric, garlic oil, fish oil, etc., can be encapsulated using the futuristic technique developed by the Institute. This technology will help in reducing the cost, handling issues, and increase the efficacy of delivery system for high value food based nutraceutical compounds. Microencapsules are useful for preparation of fortified processed foods such as bakery products and dairy based desserts. Dr K Narsaiah has obtained two patents related to Microencapsulation technology. The patented 'Microencapsulator' technology has been adopted by 03 industries for manufacturing and supply of the equipment.

Dr Nachiket Kotwaliwale, Director of the Institute briefed the participants about rationale of the Technology Webinar Series and prominent technologies of the institute. He said that when the technologies reaches appropriate stakeholders, the chances of their adoption and successful implementation increases by many fold. He elaborated that the 'Technology Webinar Series' has been successful in reaching masses all over the country within small time since its inception'.

The webinar was attended by 120 registered participants that include scientists and professors from ICAR institutes and State Agriculture Universities, students, entrepreneurs, farmers and unemployed youth from different parts of the country. The webinar was coordinated by Dr Sandeep P Dawange, and Dr K Bembem, scientists of Transfer of Technology Division of the Institute.



Virtual State Level Workplan (2022) Workshop for KVKs of Haryana and Delhi, organised by ICAR-ATARI

Jodhpur, 4 February 2022. Hon'ble Vice Chancellor, Dr BR Kamboj, CCSHAU, Hisar, Chief Guest of Inaugural Session, highlighted initiatives on "Mera Pani Meri Virasat" to address issues related to soil, water, environment, climate changes and its effects on the farming community, and the need for judicious use of various resources. He also briefed upon green, white, yellow and blue revolutions for harnessing self-sufficiency in food, milk, mustard and fishery sectors in sustainable manner. Capacity building of Rural Youth must be undertaken on regular basis to empower towards farming for sustainable income generation.



Dr S K Singh, Director, ICAR-ATARI, Jodhpur briefed about scenario of crop, livestock, fishery, mushroom, etc., and its contribution of Haryana. He also mentioned the importance of workshop and informed the participants about the priorities fixed by Government of India which addressed to the KVKs and the KVKs should act dynamically as per priority. Further he mentioned that a time has come to move from Food Security to Income Security of farmers. Bio fortified varieties should be introduced by the KVKs and science led demand driven innovations should be taken up through evolutionary approaches with smart village concept considering the prevailing system. He

highlighted the importance of post-harvest technology, value addition, precision farming, drone and artificial intelligence, natural resource management, organic and natural farming, crop residue management, etc., for achieving the doubling farmers' income by transforming agriculture to business models.

(Source : ICAR-ATARI, Zone-II, Jodhpur)

Workshop on “Fodder resource development plan for Tamil Nadu state” organized virtually by ICAR-IGFRI

Jhansi, 09 February 2022. ICAR - Indian Grassland and Fodder Research Institute, Jhansi in collaboration with Tamil Nadu Agricultural University, Coimbatore organised to discuss prepared draft fodder resource development plan with all the officials of Tamil Nadu line department. This is the 23rd workshop in such series under National Initiative on Accelerating Fodder Technology Adoption (NIAFTA) program. Participants were from State Departments of Animal Husbandry, Agriculture, Horticulture, Forestry, Milk Federation (Aavin), private commercial unit HATSUN, TNAU, Coimbatore and TANUVAS, Chennai. Prof. AS Krishnamoorthy, Vice-Chancellor, TNAU in his inaugural address emphatically said that food for human being, feed for animals and bio manure for the soils are three important mantras to sustain life on planet. Dr KN Selvakumar Vice-Chancellor of TANUVAS, Chennai delivered the special guest address. He highlighted the fact that the growth of livestock population over years in Tamil Nadu increased drastically and this has increased the demand of fodder throughout the state. Presently the state is facing the shortage of green fodder to the tune of 36 % and 11 % shortage in dry fodder. He appreciated IGFRI for its efforts to organise the workshop so that more inclusive and practical fodder development plan for Tamil Nadu could be brought out. Dr Amaresh Chandra, Director, ICAR-IGFRI, Jhansi apprised the participants about the fodder technologies and emphasized that it is now the time to move from food Security to fodder security in the country. The importance of ensuring the supply of feed and fodder to the livestock of the state is very crucial for achieving the vision of doubling the farmers' income by transforming livestock rearing to rural livelihood were underlined by Dr Chandra. Five

lectures covering different aspects from production to utilisation of fodder were given by the experts involved in the development of fodder plan of the state. Many important points emerged during the discussion on draft fodder plan which would be duly included in final plan of fodder resource development for Tamil Nadu State.

(Source: ICAR-Indian Grassland and Fodder Research Institute, Jhansi)

Virtual Zonal Review Meeting of Farmer FIRST Programme organized by ATARI-II, Jodhpur



Jodhpur, 14 February 2022. Virtual zonal review meeting of was organized on “Integrating technologies and enriching knowledge” under the Chairmanship of Dr VP Chahal, Assistant Director General (Agil. Extn.), ICAR New Delhi. Principal Investigators from six different ICAR Institutes viz. CAZRI, Jodhpur; CSWRI, Avikanagar; CIRB, Hisar; CSSRI, Karnal; NDRI, Karnal; and IARI, New Delhi; and two State Agricultural Universities viz. AU Jodhpur and CCSHAU Hisar presented their progress for review period online. Consortium leaders from four ICAR Institutes viz. IASRI, DKMA, and NIAP New Delhi and NAARM Hyderabad also presented their progress. The major objective of meeting was to review the progress of the On-going programme mainly on various approaches, processes, methodology and indicators, physical and financial progress, and also to discuss the operationalization mechanism of the implementation under Farmer FIRST Programme to achieve the goal and objectives of the project.

Dr VP Chahal emphasised upon the involvement of Research Institutes of ICAR and SAUs selected under Farmer FIRST programme as part of KVK Scheme. He stressed that we have to change the mind set of farm families selected under this programme and they must be involved as active partners in research mode i.e technologies selection, assessment and application for improving the livelihood security by implementing of participants/ approaches in a sustainable way. Dr SK Singh, Director, ATARI briefed on the objectives and concepts of the FFP and emphasized how it has been implemented in holistic manner wherein participatory and convergence reaches every corner in the country. Government of India's initiative of doubling the farmers' income by 2022 has also to be realized by the partners implementing FFP. He urged for implementation of demand driven, local specific situation and need based technological modules in participatory mode. He briefed on diversified interventions and promotion of resource



conservation technologies for efficient resource use to enhance income for sustainable livelihood security of farm families through establishment of need based Integrated Farming System in prevailing situations. Dr PP Rohilla, Principal Scientist (LPM) briefed about the major achievements during 2021 under FFP. He explained how FFP is a unique programme, holistic in nature, consisting of several activities based on Integrated Farming System which covers interventions related to crop, livestock, natural resources and capacity building etc., in participatory mode with the farm families.

(Source: ICAR-ATARI-II, Jodhpur)

Brainstorming Session on “Rice and Water Conducted in Hybrid” mode by ICAR-IIRR, Hyderabad

Hyderabad, 11 February 2022. ICAR- Indian Institute of Rice Research (ICAR-IIRR) in association with Society for Advancement of Rice Research (SARR), Hyderabad organised a Brainstorming Session on “Rice and Water” in Hybrid mode. Rice researchers, R & D personnel and progressive farmers participated in the session.

Dr R Mahender Kumar, Principal Scientist & Head, Agronomy, ICAR-IIRR and Secretary, SARR welcomed the dignitaries. Dr Mrutyunjaya, social worker and an organic farmer explained the need for deliberations on the important topic to the participants. Dr VK Singh, Director, ICAR-CRIDA, Hyderabad; Dr Padmini Swain, Director, ICAR-NRRI; Dr RM Sundaram, Director, ICAR-IIRR, Dr Himanshu Pathak, Director, NIASM gave their inputs on various facets of Rice and Water. Dr V Praveen Rao, Vice Chancellor, PJTSAU, Hyderabad also fondly known as “Water Man” of India gave the lead talk in the topic “Sustainable Agri- food systems: water challenges and transformation technologies for the benefit of technology adaptation, farm profitability and wellbeing”. He stressed the Brainstorming session as significant since quantity of water applied by farmers for growing rice has direct affect on the productivity of rice and it is estimated that this can be as high as 3000-5000 liters of water per kg of rice produced. Since dietary habits of Indians has been changing, rice consumption pattern is rapidly increasing with better nutritional quality. He also emphasized on the limits to be imposed on the virtual water trade and adopt technologies that improve water use efficiency. The lead talk was followed by a panel discussion from six experts from various discipline viz., Dr AK Naik, ICAR-National Rice Research Institute; Dr Rithesh Sharma, Basmati Export Development Foundation (BEDF); Dr MS Bhullar, Punjab Agricultural University (PAU); Dr Sheelabhadra Mohanty, ICAR-Indian Institute of Water Management; Dr Kaluvai Yella Reddy, Acharya N G Ranka Agricultural University; and Shri Vijay Kumar, Premier Irrigation Adritech. Besides the experts, two progressive farmers, Shri Meka Jaganmohan

(AP) and Shri Nagaratnam Naidu (TS) also shared their practical experience in the adoption of water saving technologies for achieving higher rice grain yield. The progressive farmers were felicitated by Director, ICAR-IIRR. The meeting was moderated by Dr LV Subba Rao, Principal Scientist and Head, Plant Breeding and Crop Improvement, ICAR-IIRR and the panellists were Dr Ch Padmavathi, Principal Scientist, Entomology, ICAR-IIRR; Dr V Praveen Rao; and Dr B Nirmala. The proceedings were recorded by Dr AP Padmakumari, Sri B Nirmala and Shri MangaldeepTuti.



National Symposium on “Recent trends in Phytopathology to address emerging challenges for achieving food security”, Organized at ICAR-VPKAS, Almora

Almora, 21-22 February 2022. ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora organized the National Symposium through virtual mode in association with the Mid-Eastern Zone chapter of Indian Phytopathological Society (IPS), New Delhi. Dr TR Sharma, Deputy Director General (DDG), Crop Science, Indian Council of Agricultural Research, New Delhi was the Chief Guest of the Inaugural function. He spoke about the importance of the symposium and Indian Phytopathological Society. He emphasized on the need of domestic quarantine for distribution of seed materials, accurate identification and diagnosis of plant pathogens, yield loss estimation and deploying host resistance for management of plant diseases. He mentioned about the fruitful collaboration between Dr Lakshmi Kant and team of ICAR- VPKAS Almora and Prof. Harbans Bariana and team from University of Sydney Australia which lead identification of Yr66 & Yr 67 new yellow rust resistant genes variety VL Gehun 892. During the inaugural session, publications on Souvenir, flyers namely Mushroom farming: A boon to hill farmers, Integrated pest management of black cut worm (*Agrotis segetum*) in the Indian Himalayas, Integrated pest management of fall armyworm (*Spodoptera frugiperda* (J. E. Smith) and one leaflet on Rat Management in Hindi were released by the chief guest. Dr Pratibha Sharma, President, Indian Phytopathological Society, New Delhi highlighted the achievements of the society and congratulated ICAR-VPKAS, Almora for organizing the symposium. Dr Robin

Gogoi, Secretary, Indian Phytopathological Society, New Delhi gave his valuable remarks about the society and informed the house about the symposium organized by other zones of IPS. Dr Lakshmi Kant, Director, ICAR-VPKAS, Almora briefed about status, challenges and new avenues in hill agriculture to improve livelihood and ensure food security. He also emphasized historical background of Almora and institute.

During the Plenary session of the symposium, Dr PK Chakrabarty, Member, ASRB, New Delhi was the Chief Guest. He highlighted the importance of pests and diseases, economic losses caused by them and need of accurate estimation caused by various pests. He emphasized on the adoption of conventional as well as advance management strategies.

There were three lectures delivered by eminent speakers from International organizations namely, Dr Harbans Bariana, University of Sydney, Australia; Dr Pawan Kumar Singh, CIMMYT, Mexico and Dr Santosh Kumar, Konkuk University, Seoul, South Korea.

The four scientific sessions of the symposium were held. Each scientific session had one invited lecture, 2-3 lead lectures followed by oral and poster presentations.



ICAR-RCER, Patna Organized Coordination Committee Meeting to Address Researchable Issues of Agricultural Sector in Bihar

Patna, 23 February 2022. As a follow-up action of recommendations of the 25th Regional Committee Meeting, 2nd State Level Coordination Committee Meeting was organized at ICAR Research Complex for Eastern Region, Patna. Shri Amrendra Pratap Singh, Hon'ble Minister of Agriculture, Govt. of Bihar graced the occasion as Chief Guest. In the meeting, besides various issues on agricultural development, focused discussion on climate resilient agriculture and crop residue management was held.



In his address, he urged all the institutions to work together with the State government officials for overall agricultural development of the State. He also desired to launch a campaign on zero residue burning and asked all the institutions to take part to the campaign. He stressed on the need of adoption of climate resilient agricultural practices in the state and expressed his concern about the integrated nutrient and pest management for improving human as well as environmental health.

Dr Ujjwal Kumar, Director ICAR-RCER, Patna apprised about the scope and importance of the meeting for better coordination between different government departments, agricultural & animal sciences universities and research institutes for science based approach to agricultural development in Bihar. He also apprised the dignitaries about the ATR of the last meeting. It was followed by release of book on natural farming and leaflets published by ICAR-Research Complex of Eastern Region.



Shri N Saravana Kumar, Secretary, Agriculture, Govt. of Bihar, asked the research institutions to promote natural and organic farming in the State. Vice Chancellors of Bihar Animal Sciences University and Bihar Agricultural University expressed their views and achievements.

Various ICAR institutes and regional centres situated in Bihar like ICAR-RCER, Patna including its Research Centre on Makhana at Darbhanga; ICAR-NRC on Litchi; ATARI, Patna; ICAR-CPRS, Patna; ICAR-IARI Regional Station, Pusa; ICAR-MGFRI, Motihari participated in the meeting. BISA, National Seed Corporation, Coconut Board, National Horticulture Board were also present in the meeting. The senior officials from Bihar Animal Sciences University, Bihar Agriculture University, Dr Rajendra Prasad Central Agricultural University and State government participated in the meeting. Each institute and university presented their research activities and pointed the researchable issues in Bihar which needs to be done jointly with coordination of State Departments.

IGFRI-AAU collaborative Online workshop on “Fodder Resources Development Plan for Gujrat”

Jhansi, 24 February 2022. The workshop was part of National Initiative on Accelerating Fodder Technology Adoption (NIAFTA) program. Dr Amaresh Chandra, Director, Indian Grassland and Fodder Research Institute, Jhansi in his introductory remarks briefly outlined the purpose of the workshop highlighting the important research activities carried out by the Institute with particular reference to agroclimate of Gujrat. The workshop was chaired by Dr KB Kathiria, Hon'ble VC, AAU, Anand. In his address, he urged for more adoption of improved and high yielding fodder crop varieties and ensuring availability of seed of these varieties. He also called for better utilization of under-utilized fodder crops and alternate fodder resources. He expressed concern over the decreasing biodiversity especially in “Banni Grasslands”.

The officers from Directorate and of Animal Husbandry and Agriculture briefed about fodder situation in the state. Dr Sunil Kumar presented “Gujrat State Fodder Resources Development Plan” comprising all aspects of livestock and fodder scenario along with brief action plan. Presentations on improved fodder varieties and fodder crops technologies by Dr DP Gohil, AAU, Anand was made. Other important aspects discussed were fodder conservation and fodder based economic ration, and fodder densification, storage and fodder bank. It was followed by in-depth discussion and suggestions for improvement of fodder plan.

The workshop was attended by Officers of the State Department of Animal Husbandry and Veterinary Services, Department of Agriculture, Heads of Krishi Vigyan Kendras, Scientist from ICAR Institutes located in Gujrat, NDDB, AMUL, public and private fodder seed producers and progressive farmers.



NRCC drives Camel to Southern India

Coimbatore, 21 February 2022. ICAR-National Research Centre on Camel, Bikaner has extended utility of Camel, particularly its milk as a therapeutic adjuvant in the treatment against ‘Diabetes’ and ‘Autism’ to Southern India by organizing a National Seminar in collaboration with Ankusham Pvt Ltd. Experts from Human Medicine from SP Medical College, Bikaner and Dr DY Patil Medical College, Pune, Social Organizations

Lokhit Pashu Palan Sansthan (LPPS), Sadri, Rajasthan and Sahjeevan from Bhuj, Gujarat and other local medical and other professionals, people suffering from diabetes, parents of wards suffering from autism related disorders, officials from livestock husbandry of Tamil Nadu and representatives from local Press and Media accounting delegates attended the event in hybrid mode.

During the program, Dr Artabandhu Sahoo, Director, NRCC expressed that in view of the medicinal properties of camel milk, the Centre has been taking continuous initiatives across the country for nearly two decades to increase awareness among the general public to maximize use of camel milk for human health benefit so that its trade could help achieve a better market price and support the socio-economic livelihood of the farmers. Efforts of the centre has inspired and helped to promote camel as a milch animal and ‘Camel Dairies’ are coming up at different parts of India.

On the occasion, Shri Manikandan Managing Director of Ankusham Engineering Group, who actually hosted the event at Coimbatore is quite optimistic that Camel milk will be helpful for the Diabetic and Autistic patients and also expand ecotourism in the Southern India. It will certainly attract the rural/peri-urban youth to venture in to ‘Camel Eco-tourism’ and help to pave a new way in expanding utility of camel species in southern India. The experts from Medical Institutions and Social Organizations expressed concern on the rise in incidence of diabetes and immunodeficiency disorders in neonates. The social bonding with the camel and importance of pastoralism in relation to the medicinal properties of milk was also emphasized. Dr R K Sawal highlighted the use of male camel in eco-tourism activities as riding, fur cutting, dancing etc so that it also gets associated with the social fabric and support the livelihood of livestock farmers.

In this occasion, NRCC and Ankusham Engineering Pvt Ltd signed a MoU for collaboration to expand ‘Camel-based Entrepreneurship’ in Southern India.



National e-workshop & e-showcasing on “Horticulture Start-up opportunity in Eastern India: Connecting youth to Agri-Start-up ecosystem”

Patna, 24-26 February 2022. The ICAR Research

Complex for Eastern Region, Patna organized a National e-workshop & e-showcasing on “*Horticulture Start-up opportunity in Eastern India: Connecting youth to Agri-Start-up ecosystem*” at zoom platform under the Agri Business Incubation (ABI) project. The main objective of the program was development of linkage among various stakeholders and providing a platform for knowledge sharing among them including future entrepreneurs and experts of research institutes who are working in horticultural sector.



Dr AK Singh, DDG (Agril. Extension), ICAR, New Delhi, Chief Guest, emphasized on improvement of skills of rural youth for starting their own agri-enterprise and promotion of start-ups in agriculture /horticultural sectors with the help of already established Agri business incubation centre in different parts of the country. He also stressed on need of linking prospective entrepreneurs to banks for credit for starting an enterprise. He also mentioned that there is lot of scope of start-up in agricultural residue management and custom hiring services. In his words “*agriculture has to be natural, modern, cooperative and profitable and we can see future agriculture as Start-up Agriculture*”.

Dr Ujjwal Kumar, Director, ICAR RCER, Patna, briefed about the importance of Horticultural start-up for employment generation in the country. He highlighted the efforts of ICAR-RCER, Patna and its centres in developing entrepreneurs through training and capacity building especially under ABI project.



During the workshop, eminent researchers such as Dr TK Behera, Director, ICAR-IIVR, Varanasi, Dr Balraj Singh, PC, ICAR-AICRP H&P, New Delhi, Dr Sidhartha Palai, I/C AICRP Floriculture, OUAT, Bhubaneswar, Dr Govindo Acharaya, CHES, ICAR-IIHR Bhubaneswar, Dr N Reddy, Sr. Scientist, ICAR-DMAPR, Anand, Dr. P Suresh Kumar, Principal Scientist, NRCB, Trichy and Dr Arvind Jaiswal, Scientist, ICAR-CPRS, Jalandhar, acted

as resource persons and covered different aspects of starting agri entrepreneurship in different fields like floriculture nursery raising, banana processing, potato processing, moringa cultivation and marketing, floriculture etc. All the lectures were followed by discussion with resource persons and queries were answered by experts of relevant field.



Dr Bikas Das, Principal Scientist showcased varieties and technologies developed by ICAR RCER, Patna and its centres among participants.

(Source: ICAR-Research Complex for Eastern Region, Patna)

Interface meeting with farmers-planners and researchers of West Bengal at ICAR-CIFRI

Barrackpore, 26 February 2022. ICAR-Central Inland Fisheries Research Institute (CIFRI) in collaboration with Sundarban Dreams, hosted an Interface Meet for 24 Farmers Producers Organizations from 8 districts (Nadia, Malda, Murshidabad, Birbhum, Burdwan, North 24 Parganas, South 24 Parganas, Darjeeling), 20 hill Fishers from Darjeeling of West Bengal and 30 farmers from Bihar. The key discussions were made for their livelihoods, governance pattern and net economic returns from the agricultural practices including fisheries. Senior officers from Panchayat Raj Department, Sunder Tiger reserves and Deputy General Manager were the key officers participated physically to build up a technological, social and economical network benefitting these FPOs and Farming community. Besides Dr MV Rao, Additional Chief Secretary, Govt. of West Bengal addressed the gathering through online mode (virtually).

The occasion was graced by Shri Santhosha Gubbi, IFS, Additional Secretary, Panchayat & Rural Development Department, Shri S Jones Justin, Deputy Field Director, Sundarban Tiger Reserve, Shri S. Niyogi, DGM, West Bengal State Corporative Bank Limited, Shri Radhakrishna Mondal, Asst. Director, Department of Consumer Affairs, Government of West Bengal. Dr BK Das, Director, ICAR-CIFRI, highlighted the importance of sustainable development to achieve self-reliance by the farmers and informed the contribution of ICAR-CIFRI in ensuring the development of the people of Sunderban. Shri Niyogi, focused on the benefits of entrepreneurship among small farmers in achieving sustainable growth and also highlighted about the key

role played by the Banks and other formal money lending organizations like SHGs and cooperatives in building the necessary infrastructure and ways to overcome the initial hurdles like security deposits etc. while sanctioning a loan. Shri J. Jones explained the benefits of synergistic interaction between the Government and the farmers in achieving desired development. Guest of Honor, Shri Gubbi highlighted the importance of group formation and distribution of defined roles among the members for simplification of the work and by sharing of work load, division of the required capital through organizations like Farmers Producers' companies and also shared the success stories from such companies who have achieved great success due to their collective effort. On this occasion eleven farmers from various parts of the West Bengal were felicitated with Mementos, Certificates and Sashes by Director (ICAR-CIFRI) and Honorable Guests for their outstanding contribution in agriculture and allied sectors.

Chief Guest of the programme Dr MV Rao, highlighted on the positive impact of collective efforts by the small farmers through FPOs and appreciated the effort by ICAR-CIFRI and Sunderban Dreams in forming FPOs in Sunderban area and also emphasized on the cooperation and cohesiveness for the success of FPOs.

Director and scientists of ICAR-CIFRI interacted with Farmers in the interaction session provide solution to the queries of the farmers.



Workshop organized on Entrepreneurship Development through Value Addition and Market Linkage organized by ICAR-CIWA

Sankilo, Cuttack, 28 February 2022. A one day Training-cum-Workshop on ***“Entrepreneurship Development through Value Addition and Market Linkage”*** under ICAR-NASF project was organized by ICAR-CIWA, Bhubaneswar. The Workshop-cum-Training programme was attended by scientists of ICAR-CIWA, farm women, farmers, Personnel from Line Department and Media Personnel.

At the outset, Dr Lipi Das Principal Scientist (Agril. Extension) and PI of the project described the importance of value addition and market linkage for Entrepreneurship development and stressed upon scientific method of preparation of different value

added products from fruits, vegetables and milk to get maximum financial benefits by using the available resources and linking those products to market.

Dr Biswanath Sahoo, Principal Scientist, Animal Nutrition explained about Women Entrepreneurship through value addition of dairy products and marketing for higher income. He highlighted about scientific method of preparation of different value added products from milk and their market linkage through FPO to get maximum financial benefits.

The workshop also highlighted about the importance of Nutri-Smart Village programme launched by ICAR-CIWA, Bhubaneswar for nutritional enhancement of farm women with various aspects of value addition and market linkage and scientific method of preparation and importance of different value added products from fruits and vegetables.

The workshop was followed by distribution of HYV of vegetable seeds among farm women and three progressive farm women of the project viz., Smt. Manorama Nayak, Smt. Rukmani Nayak and Smt. Nirmala Nayak were felicitated by ICAR-CIWA, Bhubaneswar for their significant contribution in agriculture for women empowerment.



ICAR-Industry collaborative technology showcased in webinar on ‘Microwave Disinfestation of Food Grains’ organized by ICAR-CIPHET

Ludhiana, 23 February 2022. ICAR-CIPHET, Ludhiana organized a technological solution based webinar on ***‘Microwave Disinfestation of Food Grains’***. The webinar was based on the successful technology developed in ICAR-Industry collaborative efforts of ICAR-Central Institute of Post-Harvest Engineering and Technology (CIPHET), Ludhiana (Punjab) and Industrial Microwave Research Centre (IMRC) of Pradeep Metals Ltd., Navi Mumbai.

To ensure food security, a proper pest management is required for storing grains for a long time. There are several measures used to prevent insect infestation in food grains. Microwave process is one of such novel

eco-friendly technology where microwaves selectively interact with insects and kill or alter their normal growth. It indirectly reduces their population build-up. In this process, food grains are exposed for a few seconds in order to kill all the stages insects while retaining food quality. Industrial Microwave Research Center (IMRC), of M/s. Pradeep Metals Ltd., in association with ICAR-CIPHET has established a semi-commercial continuous microwave system for disinfestation of the food grains. ICAR-CIPHET, Ludhiana has standardized the process protocol for treatment of the food grains like rice (basmati and non-basmati) and wheat. The joint study indicated that microwaves can be used as an instant and environment friendly pre-treatment process for disinfestation of the food grains before packaging, storage and transportation. The study indicated that microwave treated grains can be stored without infestation for at least 12 months, if cross infestation is avoided. The technology was developed with the efforts of project team led by Dr DN Yadav, Principal Scien, associated by Dr Guru P N, Dr Swati Sethi, Dr RK Singh of ICAR-CIPHET, Ludhiana and Dr. Shivan and Borkar and his technical team from IMRC-PML, Navi Mumbai. Currently the pilot scale prototype of the Microwave treatment system is available at IMRC-PML, Navi Mumbai.



Continuous microwave disinfestation system for food grains



Dr Nachiket Kotwaliwale, Director of the Institute and convener of the webinar briefed the participants about ICAR-CIPHET, Ludhiana and its role in post-harvest management and rationale of the Technology. Mr Pradeep Goyal, Founder and CMD of Pradeep Metals Ltd., Navi Mumbai briefed the role of industry in technology development, application of continuous microwave system and its economical feasibility. He also said that he is making efforts with the Government of India for implementation of the disinfestation system to establish at different stakeholder level. Shri Tarsem Saini, President -The Federation of All India Rice Millers Asso. Appreciated the efforts of the ICAR-Industry in development of such need based technology. He also wished to witness a live demonstration of the technology. He was with the view that such disinfestation system may be immediately applicable to basmati rice exporters. Further, it may be extended to other high valued commodities as well. The webinar was also graced with the presence of Dr C L Ram., Executive Director, Food Corporation of India.

ICAR-Sugarcane Breeding Institute, Coimbatore organizes Stakeholder workshop on 'Digital Inclusion of Rural Youth'

Coimbatore, 10 March 2022. Dr Sibnath Deb, Director, Rajiv Gandhi National Institute of Youth Development, Sriperumpudur, said that the digital divide between rural and urban areas is still large which could be bridged only by improving the rural connectivity infrastructure. Lack of ICT access and lack of digital competency may lead to digital exclusion of sugarcane farmers, he added.

Dr G Hemaprabha, Director of ICAR-Sugarcane Breeding Institute in her Presidential address listed out the efforts of ICAR-Sugarcane Breeding Institute in the field of agricultural communication since its establishment in 1912.

Mentioning that the workshop is being organized as part of the Rajiv Gandhi National Institute of Youth Development-funded research project on "Digital Inclusion of Rural Youth - a comparative assessment", Dr D Puthira Prathap, Principal Scientist and Principal Investigator of the project, in his address, said that the project was implemented in Sivaganga and Villupuram, which have been identified as non-backward districts of Tamil Nadu. Recalling that some of the earliest ICT projects like the Warana Wired village project, of 1998, had targeted the sugarcane growers of Maharashtra, he said that organizing similar workshops would assist the e-Inclusion initiatives targeting the rural youth,

who live in remote, rural and economically backward locations of the country.

Shri G N Renganathan, Head (Extension), Rajshree Sugars & Chemicals Ltd., Shri S Jayaram, DGM (R&D) Rajshree Sugars & Chemicals Ltd., and J Uthandi, GM, Sakthi Sugars Ltd. also spoke on the occasion.

Young sugarcane farmers of Rajshree Sugars & Chemicals Ltd., Villupuram district participated the workshop physically, while those belonging to Sakthi Sugars Ltd, Sivaganga district had participated online. Workshop participants shared their experiences in using digital tools while the experts made the youth aware of the recent sources of digital information.

The technical session of the workshop had a “*farmer-development personnel-scientist*” interactive session and was handled by experts from the Union Ministry of Agriculture and Farmers’ Welfare, State Department of Agriculture, ICAR-Sugarcane Breeding Institute, Rajshree Sugars & Chemicals, M S Swaminathan Research Foundation, Reliance Foundation and Mitra Foundation. All the workshop participants were given the seed material of the recently released Co 11015 cane variety.

73rd IMC meeting of ICAR-NINFET



Kolkata, 11 March 2022. The 73rd meeting of the Institute Management Committee (IMC) of ICAR-NINFET was held in hybrid mode here today. Eleven members representing from ICAR Head Quarters, R&D Organizations of ICAR, State Government Departments of West Bengal & Bihar have participated in this meeting which was Chaired by Dr D B Shakyawar, Director. Shri Navin Kumar Jha, SAO and Member Secretary has welcomed the participants and briefed them about the initiatives taken at institute level for better management of resources.

Chairman Dr D B Shakyawar, Director briefed the members on the salient achievements of the institute made in Research, Extension and Administrative areas. Dr S B Roy, Pr. Scientist, Transfer of Technology Division has delivered a lucid lecture on the institute’s progress over the year. The members have expressed their satisfaction over the action taken by the Institute on recommendations of the 72nd IMC meeting and also the settlement of the audit paras. The Committee also showed satisfaction on expenditure in current financial year.

The meeting ended with hearty vote of thanks to Chairman & Members by Shri Navin Kumar Jha, Member Secretary.

(Source: ICAR-National Institute of Natural Fibre Engineering & Technology, Kolkata)

ICAR- CMFRI Organises Webinar as part of National Campaign on Diversification in Aquaculture

Kochi, 10 March 2022. To mark India’s 75th Independence Anniversary “Azadi Ka Amrit Mahotsav”, webinar as part of the National Campaign on ‘Diversification in Aquaculture’ was jointly organised by ICAR-Central Marine Fisheries Research Institute (CMFRI) and seven ICAR Fisheries Research Institutes (CIFE, CIFRI, CIFT, CIFA, CIBA, NBFGR and DCFR).

The webinar drew 687 participants, in addition to approximately 1000 viewers via YouTube, including scientists, researchers and scholars from several ICAR fisheries institutes and universities, as well as fish farmers and entrepreneurs.

Dr J K Jena, Deputy Director General (Fisheries Science, ICAR, New Delhi) chief guest, underlined the importance of aquaculture diversification in order to achieve the expectations of the country in terms of production and productivity.

Dr Krishna R Salin, Chair, Aquaculture and Aquatic Resources Management (AARM) Program, Asian Institute of Technology (AIT), Thailand, delivered the first lecture on the topic ‘*Aquaculture System Diversification: Successful Examples from Asia*’. He offered a quick overview of the diversity in Asia’s aquaculture system, highlighting prominent examples and concerns, as well as restrictions and the level of industrialisation in aquaculture. Prof. Rene H Wijffels, Professor, Department of Agrotechnology and Food Sciences, Wageningen University, Netherlands in his talk on ‘*Towards industrial microalgae production for food and feed application*’, highlighted the relevance of microalgae, its industrial production, the development of stand-alone technologies, bioprospecting in three different temperature zones, circular technology and microalgae biotechnology. Dr Jorge Dias, Co-founder and CEO, Sparos LDA, Portugal, delivered the webinar’s concluding presentation, titled ‘*Unlocking the Potential of Microalgae in Aquafeeds*’. Spoke about the use of a variety of microalgae in aquafeeds, such as Nannochloropsis, Schizochytrium, and Phaeodactylum, as a novel n-3 HUFA source, the replacement of fish meals and fish oils, the importance of traditional feeds during sensitive periods of the production cycle, and microbiome modulation.

Dr A Gopalakrishnan, Chief Organizer and Director, CMFRI, presented an overview of the status of global and Indian fisheries production, as well as a brief

outline of aquaculture diversification through species and systems, and also gave insights into future prospects in this line.

Dr Rekha J Nair, Principal Scientist, CMFRI compered the event. The webinar concluded with a formal vote of thanks from the co-ordinator, Dr K Madhu.

Regional Agriculture Fair for Eastern Region Organized by Dr Rajendra Prasad Central Agricultural University, Pusa, Bihar

Pusa, 12-14 March 2022. Dr Rajendra Prasad Central Agricultural University, Pusa, Bihar organized 3 days Regional Agriculture Fair for Eastern Region in collaboration with the Ministry of Agriculture and Farmers' Welfare, Govt. of India. The several ICAR Institutes and State Agriculture Universities from Sikkim, West Bengal, Odisha, Jharkhand, Uttar Pradesh and Bihar along with different Private Organizations participated and displayed their technologies to educate the farmers. One hundred seventy eight stalls were created by the organizer to accommodate all these Institutions. Around fifteen thousand farmers from Uttar Pradesh, Jharkhand and Bihar participated in this three days Regional Agriculture Fair.

The Mela was inaugurated by Dr Sujay Rakshit, Director, ICAR-Indian Institute of Maize Research, Ludhiana in the presence of the Hon'ble Vice-Chancellor, Dr R C Srivastava accompanied by the Deans and Directors of the University. In his inaugural address, Dr Sujay Rakshit, Director, IIMR highlighted the importance of Regional Agriculture Fair for the benefit of the farmers. He also explained about the maize cultivation in Bihar and he motivated the farmers for maize seed production which will earn more income for the farmers.



Dr R C Srivastava, Hon'ble Vice-Chancellor while addressing the farmers explained the different technologies developed by of the University on which the theme of Agriculture Fair has been given ***“Entrepreneurship Development through Monetization of Agricultural Waste.”*** In his address,

Hon'ble Vice-Chancellor explained the Sukhet model which is ideal technology related to the theme of this mela. The Sukhet model helped the farmers to monetize the Waste into Wealth. He opined that if the agricultural wastes are used technically could generate 4.00 lakh employment.

Dr P P Srivastava, Registrar and Dr K M Singh, Dean, PGCA also explained their view about the importance of the agricultural fair for the benefit of the farmers.

Dr M S Kundu, Director of Extension Education, narrated the achievement of the Directorate for the last one year. The Directorate also initiates for production of quality planning materials of Mango, Litchi, Guava, Lemon, etc., totaling to sixteen thousand planting materials. Besides, one lakh fifty thousand vegetable seedlings were produced and distributed amongst the farmers.



On 2nd day farmers-scientists interaction was held where in farmers raised their problems to the scientist and it was explained by the scientists. Unique initiation was taken during the interaction and farmers were asked different questions related to their farming practices.

In the 3rd day, Dr A K Singh, DDG (Extension) was the Chief Guest in the Valedictory Session. After his arrival, he was taken to the thematic stall by the Hon'ble Vice-Chancellor to see the different materials displayed in the stall which were prepared from the agricultural waste. After seeing the Stalls in the mela he profusely appreciated initiative of the University for making these waste materials into wealth. He also visited different stalls in the Agriculture fair including the stall of the KVK and see the IFS model, vertical gardening, water harvesting structure etc. He shown his satisfaction by seeing these model and advised to create these model in the farmers field. After visiting the stall, he was taken to the main Pandal wherein the organizer welcome the Guests in the tradition Indian way followed by lighting of the lamp.



Dr Arun Kumar, Hon'ble Vice-Chancellor, Bihar Agricultural University, Sabour (Bhagalpur), Dr. Anjani Kumar, Director ATARI, Patna of Zone IV and Dr Ram Prasad Sahani, Joint Director department of Agriculture Govt. of Bihar were the Guest of Honour. They also address the farmers and advised them to follow the new technologies for increasing the income from farming.

Hon'ble Vice-Chancellor, Dr R C Srivastava, explained the importance of the Regional Agriculture Fair and how it is transforming the Agricultural activities in the villages with the help of Universities and ICAR Institutes.

Dr A K Singh, in his address profusely thanks the University for selecting the appropriate theme of Agriculture Fair. He also narrated different farmers' friendly technologies being used in different parts of the country to empower the farmers for their decent livelihood. He expressed his concern that the state of Bihar and Uttar Pradesh are blessed with abundance of natural resources like water and soil but could not able to harvest the benefit out of it. While the farmers of Rajasthan and Maharastra are doing better farming with little water and good soil. He requested the farmers to diversify the farming by adopting poultry, mushroom production beekeeping etc to increase the income. He requested to form the FPO for marketing the produce to maximize the income.

(Source: Media Cell ICAR-CMFRI)

Inauguration of AARDO-CIAE Collaborative E-training on “Agricultural Engineering Technologies for Enhancing Productivity and Profitability in Agriculture Sector”

Bhopal, 10-21 January 2022. ICAR-CIAE, Bhopal organized African-Asian Rural Development Organization (AARDO) sponsored E-training on

“Agricultural Engineering Technologies for Enhancing Productivity and Profitability in Agriculture Sector”. The broad objective of this training programme was to share innovative agricultural engineering technologies developed by CIAE and other organizations for upskilling and sensitization of the participants in the fields of pre and post-harvest mechanization.



Dr CR Mehta, Director ICAR-CIAE, briefed about the activities of CIAE and elaborated the aim and content of the training programme during his introductory remarks.

Dr Kanchan Kumar Singh, ADG (Farm Engineering), ICAR in his inaugural address highlighted the importance of mechanization in production and post-production agriculture to ensure timely operation, precise input applications and loss reduction. Farmers of developing countries can supplement traditional farming with mechanization and renewable energy based technologies so as to make agriculture more profitable and environment friendly.

His Excellency Dr Manoj Nardeosingh, Secretary General, AARDO briefed about activities of AARDO in his address. He opined that mechanization technologies are highly relevant to developing countries and stressed that such technologies developed by CIAE, Bhopal and other organizations must reach AARDO member countries for sustainable and profitable agriculture.

During the course of training, the participants got an opportunity to learn innovative agricultural machinery suitable for AARDO Countries; Selection, operation and testing of farm equipment/machineries; Equipment and technologies for processing, value-addition and storage of agro-produces; Renewable energy technologies; Ergonomics, safety and gender issues in agricultural machinery; and Government strategies for enhancing the agricultural mechanization through support and schemes.

(Source: PME Cell ICAR-CIAE Bhopal)

Secretary level meeting at ICAR Head quarters

New Delhi, 17 February 2022. Keeping in view the fact that Technology is pivotal and a key driver for social and economic development and achieving SDGs and \$ 5 Trillion economy by 2025, a secretary level meeting was held. Besides, Dr T Mohapatra, Secretary, DARE & DG, ICAR Dr Shekhar Mande, Secretary & DG, CSIR; Dr Rajesh K Gokhale, Secretary, DBT; Dr Vaidya Rajesh Kotecha, Secretary, Ministry of Ayush and Dr M Ravichandran, Secretary, Ministry of Earth Science participated in the meeting. Given an extensive network of institutions and diverse but closely linked domain areas of research & development, there is adequate opportunity to build mega networks for convergence in several important areas. It was resolved to work unitedly towards realizing the full potential of technologies and bring new and emerging technologies in health, agriculture, education, energy, clean water, climate change, automobiles, transport, nutrition, etc.

Scope for developing Mega Networks with DARE/ICAR as a key partner was discussed in the meeting.



Inauguration of 33rd Annual Workshop of All India Network Project on Jute and Allied Fibres at ICAR-CRIJAF

Barrackpore, 22-24 February 2022. ICAR-Central Research Institute for Jute and Allied Fibres, Barrackpore organized the 33rd Annual Workshop of All India Network Project on Jute and Allied Fibres.

Dr T R Sharma DDG (CS), ICAR graced the occasion as the Dr R K Singh, ADG (CC), ICAR and Dr D B

Shakyawar, Director, ICAR-NINFET were the Guest of Honour during the inaugural programme.

Dr T R Sharma, DDG (CS) Chief Guest addressed the gathering about importance of jute and allied fibres in future to replace plastics and synthetics. He appealed the scientists to prioritize on product, patent and publication to improve the overall institutional output. He emphasized to improve the peer recognition of the scientists by developing MoUs with Universities and involving the students in research activities of the Institute. Dr Sharma specifically mentioned to concentrate in development of varieties which can surpass the present varieties in terms of yield and quality significantly.

Dr R K Singh, Assistant Director General (Commercial Crops) Guest of Honour in his address informed that AINPJAF programme has developed location specific varieties production and protection technologies which have enhanced the productivity and quality of jute fibre. He specifically highlighted the role of CRIJAF SONA and free flow slow moving water model for retting in obtaining good quality jute fibre.

Dr D B Shakyawar, Director, ICAR-NINFET, Guest of Honour told that ICAR-NINFET is very closely involved with the AINPJAF project particularly in quality evaluation of germplasm and other elite lines of jute and allied fibre crops.

Earlier Dr Gouranga Kar, Director, ICAR-CRIJAF highlighted the important achievements of AINPJAF during the last one year. He also told about the ecological, economic and other importance of JAF crops. He informed that pre-breeding programme has been intensified to incorporate diverse traits in development of new varieties in specific time frame. He informed that the popularity of JAF crops is increasing because of the renewed demand for biodegradable natural fibre crops.

New jute mills and plans to expand jute cultivation are being implemented outside West Bengal.

The Inaugural session of the workshop was physically attended by all the incharges of the AINPJAF centers, HODs and scientists of ICAR-CRIJAF while all other scientists of AINPJAF centers attended the meeting in online mode.



International Linkages

FAO & ICAR-CIFRI organised workshop on “Inland Fisheries in India and the creation of capacity in the collection and analysis of Inland Fisheries Statistics”

8 February 2022. The Food and Agriculture Organization of the United Nations (FAO) has entrusted ICAR-Central Inland Fisheries Research Institute (ICAR-CIFRI) with the responsibility to undertake the task to produce a comprehensive document on inland fisheries resources of India as a referral point for international minds.

Dr B K Das, Director, ICAR-CIFRI welcomed all the dignitaries and participants and gave in brief the details about the workshop. He gave a brief draft report and discussed about the six chapters of the draft report encompassing, inland fisheries resources the methodologies of data collections, Socio-economy, management, institution and governance.

Dr V V Sugunan, Senior Expert, FAO-CIFRI project gave a brief account of the project and the need of documentation on inland fisheries resources, their productivity and utilization in India. He highlighted that a major attempt have been made to put a comprehensive document on inland fisheries in India.

Dr John Valbo-Jorgensen, Fisheries Resource officer (inland fisheries), FAO, remarked that a lot of detailed information has been gathered by CIFRI for this documentation. He said that in India, inland fisheries are under pressure due to access use of the resources. The management of inland fisheries is difficult in comparison to aquaculture and culture based management.

Dr Ferge-Smith Simon, FAO, in his remark said that the document shall include the details of whole river statistics and not sector wise. He said that the socio economic and institutional part needs more emphasis.

Dr M V Gupta, World food Laurette, addressed that was a much needed document. There is an urgent need of separating data of catch for aquaculture and fisheries in inland sector by state fisheries department.

Representative of NFDB, Fisheries departments of Andhra Pradesh, Tripura, Assam, Chhattisgarh, Madhya Pradesh, Mizoram also interacted on this occasion.

Representatives from the FAO, Department of Fisheries, Government of India and Fisheries Departments of States and UTs, Experts, Technocrats, Scientists, and the Academia participated in this workshop and provide critical input and expert opinion on the draft report.



ICAR-IGFRI, Jhansi-UAS, Dharwad collaborative online workshop on “Karnataka Fodder Resources Development Plan”

Jhansi 16 February 2022. As a part of National Initiative on Accelerating Fodder Technology Adoption (NIAFTA) program, ICAR-IGFRI, Jhansi-UAS, Dharwad collaborative online workshop on “Karnataka Fodder Resources Development Plan”.

Dr Amaresh Chandra, Director, Indian Grassland and Fodder Research Institute, Jhansi in his introductory remarks briefly outlined the purpose of the workshop highlighting the important research activities carried out by the Institute. Dr Rajendra Prasad, Vice Chancellor of University of Agriculture Sciences, Bengaluru, highlighted the importance of establishment of alternative niches for augmenting fodder production, growing of fodder crops on field bunds, fodder cowpea in rice fallows etc. He appreciated distribution of mini-kits comprising recently released fodder crops by Govt. of Karnataka.

Dr H D Narayanaswamy, Vice Chancellor, Karnataka Veterinary Animal and Fisheries Sciences University, Bidar, highlighted sustenance of livestock farmers by growing of fodder crops, utilization of non-agricultural lands and growing of fodder trees. Dr B K Desai, Director of Research, University of Agriculture Sciences, Raichur and Dr H P Maheswarappa, Director of Research, University of Horticultural Sciences, Bagalkot, emphasized the need of growing fodder crops in horti-pasture and silvi-pasture systems and popularization of hydroponics. Dr Abdul Aziz, Director of Research, Karnataka Rural Development

and Panchayat Raj University, Gadag, highlighted establishment of fodder research and demonstration plots at different canter of the University and fodder banks. Dr M S Palegar, Director of Animal Husbandry and Veterinary Services, Govt. of Karnataka emphasized nutrient fortification of crop residues, identification of fodder crops suitable for small ruminants and identification suitable fodder shrubs as alternative for mulberry.

Dr M B Chetti, Vice Chancellor of University of Agricultural Sciences, Dharwad in Chairman's remarks stressed alternative land use systems for fodder production, ensuring availability of quality fodder seeds and planting material and other inputs, importance of fodder conservation aspects to tide over fodder scarcity during lean periods, improving the quality of roughages, etc. Dr B G Shivakumar presented “Karnataka State Fodder Resources Development Plan” comprising all aspects of livestock and fodder scenario along with brief action plan. Presentations on improved fodder varieties and newer niches for introduction of fodder crops; fodder conservation and fodder based economic ration, and fodder densification, storage and fodder bank by Dr K Sridhar, Dr Sultan Singh and Dr P K Pathak. It was followed by in-depth discussion and suggestions for improvement of fodder plan.

The workshop was attended by 156 Officers of the State Department of Animal Husbandry and Veterinary Services, Department of Agriculture, Heads of Krishi Vigyan Kendras, Scientist from ICAR Institutes located in Karnataka, public and private fodder seed producers and progressive farmers. The workshop ended with summarization by Dr Purushottam Sharma, NO, NIAFTA and vote of thank by Dr N S Kulkarni.

MoU

ICAR-CIFT inks MoU with Kerala Agricultural University for transfer of technology on conversion of fish waste to wealth

Cochin, 8 January 2020. A technology demonstration programme was organized in collaboration with KVK, Kumrakom, Kottayam under KAU under the SCSP component of ICAR-CIFT, which was graced by the Hon'ble Agriculture Minister, Govt. of Kerala Shri P. Prasad; Hon'ble Vice Chancellor, Kerala Agriculture University Dr R Chandra Babu; Director, ICAR-CIFT, Cochin Dr Ravishankar C N and Director of Extension, KAU Dr Jayasree Krishnankutty along with a galaxy of scientists from ICAR-CIFT and KAU. As an initiative under the Govt. of India flagship programme on Swachhata Action Plan (SAP); ICAR-CIFT established a fish manure unit at Krishi Vigyan Kendra, Kottayam

and provided technical knowhow and hands on training for production of high-quality fish manure from fish processing discards.

Inaugurating the programme, the Chief Guest Shri P. Prasad, Honourable Minister for Agriculture, Govt. of Kerala lauded the effort of ICAR-CIFT for developing a promising and apt technology for converting fish waste into feed and manure and accentuated that the technology will may help in effective management of huge volume of unhygienic fish waste dumping in the fish markets, processing/peeling industries throughout the state. He also pointed out that Kumarakom is a region encompassing the vast Vembanad lake that sustains the livelihood of many fishermen through commercial fish farming is the right place for intervention of the technology, which may give an impetus for boosting the entrepreneurship in fish waste management.



Dr R Chandra Babu, Vice Chancellor, KAU applauded the initiatives taken by ICAR-CIFT to lead the State to move forward to attain the goal of organic farming through production of organic manure or fish feed from fish waste that can also be taken up as a better livelihood option for income generation.

Highlighting the importance of fish waste management; Dr Ravishankar C N, Director, ICAR-CIFT, Cochin said that the technology will help in best utilization of nutrients found in fish waste for preparation of feed or manure. The feed enriched with essential nutrients can be stored in pellet form up to six months to ensure the regular availability of fish feed for the growth of fishes. The machineries can also be used to produce organic manure '*jaivavalam*' which will benefit the horticultural crops. In his address, he suggested that the Kumarakom Panchayat should explore ways and means to devise effective management of fish waste by using this technology.

The programme was followed by a training-cum demonstration on '*Fish waste management*' coordinated by scientists from ICAR-CIFT namely Dr Zynudhhen A A, Dr A K Mohanty, Dr V Geethalakshmi and the Dr Jeyalakshmi, Head, KVK, Kottayam.

ICAR-IISWC, Research Centre, Kota Inks MoU with Career Point University, Kota for facilitating students training and research

Kota, 17 January 2022. Dr Ashok Kumar, Head, ICAR-IISWC Research centre Kota signed the MoU document on behalf of the Research centre and Dr S K Trivedi, Dean, College of Agriculture sciences, Career Point University, Kota in presence of Prof T R Sharma Vice-chancellor, Career point University Kota. Dr Shakir Ali, Principal Scientist and Dr Kuldeep Kumar, Scientist, ICAR-IISWC and Dr V K Boyal and Dr Deepak Nagar from Career Point University signed as witnesses of the MOU. 76



Dr Ashok Kumar informed that the MoU is aimed to stimulate and facilitate collaboration in student's training and research besides promoting mutually-interested common programs that help students, farmers and researchers' intellectual life and agricultural development.

Strengthening Collaboration between ICAR-IISWC and Eco-Task Force

Dehradun, 20 January 2020. The formal collaboration between ICAR-IISWC and Eco-Task Force (127 Infantry Battalion (TA) Ecological, Garhwal Rifles Garhi Cantt, Dehradun) was initiated in 2016 and again it was reshaped during 2019 for the period of two years which ended in December 2021. A meeting of the Director of the Institute, Dr M Madhu, with Commanding Officer, Col. Rohit Srivastav, ETF in order to extend the MoU between these two parties. It was agreed to extend the MoU for the next five years with additional objective of developing a model village jointly in Jounsar Bhabar area of Uttarakhand. Dr D V Singh, Principal Scientist and Acting Head, HRD and SS division of the Institute explained about the earlier MoU, signed between ICAR-IISWC and Eco-Task Force, which was aimed at planting suitable species of trees, shrubs, grasses for afforestation on different locations and sites selected by the ETF; demonstrating cost effective and site specific soil and water conservation measures in selected areas; capacity building of ETF on different aspects of soil and water conservation and afforestation, and impact assessment of earlier afforestation works of ETF in terms of carbon stock, diversity and other eco-system services and up-scaling of validated interventions by ETF. These objectives will continue as agreed by both the parties with increased interactions through conducting frequent meetings in order to review the monthly action taken and set the action in succeeding month. The meeting was also attended by other divisional heads, Dr N K Sharma, Head, SSA; Dr Charan Singh, Head, Plant



Science and Dr M Muruganandam, OIC (PME) and followed by visit to the Institute's museum. Meeting was ended with thanking everyone present there by Dr D V Singh, Nodal Officer from the Institute for the collaboration.

ICAR-NRCSS and YONO SBI Collaborate to Provide an Online Marketplace for improved seed spices varieties

Ajmer, 19 January 2022. Dr Anand Kumar Singh, Deputy Director General (Horticulture Sciences), launched the integration of ICAR-NRCSS Seed Portal with the YONO Krishi Web Application of State Bank of India at NRCSS, Ajmer which has 4 Cr customers across the commodity with 10 different languages, was held virtual on 19 January 2022, Foundation day of the institute.

Dr A K Singh appreciated the center's efforts in production and distribution of quality seeds of improved seed spices varieties and urged to intensify the research of developing trait specific varieties of seed spices and exploiting their medicinal potential. He viewed the integration of SBI YONO Krishi Digital Platform with the ICAR-NRCSS Seed Portal as effort in the designated direction as it would help the farmers in getting the quality seeds directly at their residence itself at cheaper rate.

The Guest of Honor, Dr Vikramaditya Pandey, ADG (HS) emphasized the usefulness of the digital integration which will make possible the area expansion of seed spices in non-traditional growing areas of the Country.

The Guest of Honor, Shri Sandeep Ubale, Chief General Manager (Digital transformation and E-Commerce), SBI, stressed that digitization has a major role to play in doubling the farmer's income. He emphasized the contribution of the SBI YONO Krishi's for supporting the farmers through the various SBI Financial Schemes. Shri Rajesh Kumar Mishra, Chief General Manager (Jaipur circle) outlined the SBI YONO Krishi's features along with its functionality and benefits.

In his welcome address, Dr S N Saxena, Director, ICAR-NRCSS, Ajmer briefed about the salient achievements of the institute on 22nd Foundation day. Dr Saxena apprised the dignitaries about the production of the quality seeds of high yielding and disease-free varieties of seed spice crops developed by the Institute with a production outlay of 30 tones seeds per year.

Dr B K Mishra, Principal Scientist, ICAR-NRCSS proposed the vote of thanks. Other senior officials of State Bank of India along with Directors and senior officials of ICAR Institutes, State Agricultural Universities, State department of Agriculture, horticulture entrepreneurs and farmers also virtually participated in the programme.

ICAR-CIBA signed a Memorandum of Understanding with M/s Aqgromalin Farmtech Services Pvt Ltd, Chennai for a startup programme

Chennai, 7 February 2022. M/s Aqgromalin Farmtech Service Pvt Ltd, a farm diversification corporate business enterprise based in Chennai signed a MoU with ICAR-CIBA, for developing a startup program on mud crab seed production and scaling up of mud crab farming with a supply chain. The MoU was signed by Dr K P Jithendran, Director, ICAR-CIBA and Mr Prasanna Manoharan, CEO, M/s. Aqgromalin.

Dr Jithendran expressed that mud crab farming is an economically viable production system and a potential species for diversification. However, stockable size crab seed production is the critical gap, therefore, there is an urgent need for the transfer of mud crab nursery seed production technology to farmers.

Dr C P Balasubramanian, Principal Scientist and team leader expressed his happiness for collaboration with Aqgromalin and briefed the significance of MoU and outlined the road map of this technical collaboration. He emphasized that hatchery seed production alone does not meet the requirement for the development of mud crab aquaculture, and stressed the need for the production of stockable 'seed crab'.





ICAR-CIARI commercialises Dweep-Carp Grower Feed Technology and Incubation Facility of Pilot Scale Fish Feed Mill to M/s Meyor Nature

Port Blair, 18 February 2022. ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Port Blair, Andaman & Nicobar Islands signed the Memorandum of Understanding with M/s Meyor Nature, Garacharma, South Andaman, for the commercialisation of Dweep-Carp Grower Feed technology and incubation facility of pilot scale fish feed mill.

Dr Eaknath B Chakurkar, Director, ICAR-CIARI and Smti. Jaya Lakshmi, authorized representative from M/s Meyor Nature signed the MoU on behalf of their respective organizations.

'Dweep-Carp Grower Feed' formulated by ICAR-CIARI can be fed to the Indian Major Carps from fingerlings to marketable size. A pilot scale fish feed mill was established by ICAR-CIARI with a production capacity of 80 to 100 kg per hour which is extended as an incubation facility in order to promote startups in fish feed production for Island aquaculture.

The technology and incubation facility were developed under the overall guidance of Dr Eaknath B Chakurkar, Director, ICAR-CIARI by the scientific team comprising of Dr K Saravanan, Dr T Sivaramakrishnan, Dr R Kiruba Sankar, Dr J Praveenraj and Dr Sreepriya Prakashan, Scientists of ICAR-CIARI, Port Blair.



a-Idea of ICAR-NAARM Signs MoA with Incubation Units

Hyderabad, 24 February 2022. The a-IDEA, Agri-Business Incubator of ICAR-NAARM signed Memorandum of Agreement with ICAR-Indian Institute of Rice Research (IIRR), Hyderabad; Crescent Innovation and Incubation Council, Chennai; RR Animal Health Care,

Hyderabad; Atal Innovation Center, NITTE Incubation Center, Karnataka; Atal Innovation Center-Mahamana Foundation for Innovation; and Entrepreneurship-IM-BHU, Varanasi with the aim to support startups by organizing joint events, extending lab facilities, co-networking, etc. Dr Ch Srinivasa Rao, Director, ICAR-NAARM; Dr R M Sundaram, Director, ICAR-IIRR; Dr M Parvez Alam, CEO & Director, CIIC; Dr Debashis Dutta, Director, RR Animal Health Care Limited; Shri Paritosh Tripathi, CEO, AIC-IM-BHU; and Shri Puneet Rai, Incubation Manager, AIC NITTE Karnataka; signed the MoA on behalf of the respective organizations.

Dr Ch Srinivasa Rao, Director, ICAR-NAARM highlighted the a-IDEA activities and its support to more than 100 startups in agriculture and allied sectors.



Dr G Venkateshwarlu, Joint Director, ICAR-NAARM has highlighted that the MoA provides overarching framework for collaboration in various project activities such as capacity building, workshops, providing lab facilities and technical support for incubates on mutual interest.

On the occasion, all the organizations expressed their readiness to extend the existing facilities and technologies available with them in agriculture and allied sector for promoting the startup eco-system.

Source: ICAR-National Academy of Agricultural Research Management

ICAR-National Research Centre on Pig Signs MoU with IIT-Guwahati



Guwahati, 10 March 2022. ICAR-NRC on Pig, Guwahati signed MoU with IIT, Guwahati for accelerating research and development in the field of piggery sector specially in solid waste management. MoU was signed by Dr V K Gupta, Director, ICAR-NRC on Pig and Dr TG Seetharam, Director, IIT Guwahati. The areas of cooperation may include, subject to mutual consent, any desirable and feasible activity that would further the goals of each institutions through cooperation in joint research, academic and educational activities.

ICAR-CIARI commercialized “Dweeptickure” a herbal based formulation for control of ticks in livestock

Port Blair, 11 March 2020. ICAR-Central Island Agricultural Research Institute, signed Memorandum of Understanding on March 11, 2022 for licensing of Dweeptickure, a herbal based formulation for control of ticks in livestock. Dr E B Chakurkar, Director, ICAR-CIARI signed the MoU with Shri Vijay Vishwasrao Patil, C/o Natural Agro Products Pvt Ltd, Port Blair, South Andaman.



The team comprising Dr Jai Sunder, Dr T Sujatha, Dr D Bhattacharya, Dr E B Chakurkar and Dr A K De have developed oil based herbal topical formulation as acaricides for control of tick infestation in livestock. This herbal based formulation kills all stages of ticks in cattle and goat and safe to be used all stages of livestock including pregnant and lactating animals.

ICAR-CCARI, Goa inks MoA with KVASU, Kerala for Establishment of FPO/SHGs for Tribal Farmers

Goa, 21 March 2020. A Memorandum of Agreement (MoA) was signed between ICAR-Central Coastal Agricultural Research Institute (ICAR-CCARI), Ella, Old Goa, Goa and Kerala Veterinary and Animal Sciences University (KVASU), Pookode, Wayanad, Kerala for Collaboration between ICAR-CCARI, Goa, and KVASU, Kerala for establishment of Farmer Producer Organization (FPO)/Self Help Groups (SHGs)/Community Organizations (COs) of Tribal farmers of Coastal Districts of Kerala.

As a part of the collaboration, a Small Scale Dairy Processing Unit with the budgetary allocation of ₹ 9.91 lakhs have been established at Vaniyampara Village of Coastal District of Thrissur under financial support from ICAR-Schedule Tribe Component under Chairmanship of Dr Parveen Kumar, Director, ICAR-CCARI, Goa.

The MoA was signed in the presence of Prof. M R Saseendranath, Hon'ble Vice-Chancellor, KVASU; Prof. Sudheer Babu, Registrar; Dr N Ashok, Director of Academics & Research; Dr M K Narayanan, Director of Entrepreneurship, Dr R Senthil Kumar, Associate Professor and Head (AHE); and Dr Vidya P, Assistant Professor (Entrepreneurship). Dr R Solomon Rajkumar, Senior Scientist and Liaison Officer represented ICAR-CCARI, Goa for signing the MoA on behalf of the Director, ICAR-CCARI, Goa.

Capacity Building

Virtual Women Farmers Melawa Organised by KVK, Osmanabad, Maharashtra

Osmanabad, 03 January 2022. Dr Lakhan Singh, Director, ICAR-ATARI, Pune, Maharashtra focussed on empowering the farm women to make them self-depend. He cited examples of successful women entrepreneurs. His more concern was to develop entrepreneurial abilities of the farm women. Women actively involved in crop husbandry, animal husbandry, preserving indigenous knowledge, managing time and money in effective. He said that women entrepreneurs should be vigilant, good planner, calculated risk taker, concern for excel, organising themselves, identifying appropriate enterprises and linking with market. Role of women is more in overall enhancing net income of the family.



In his address Dr D B Deosarkar, Director (Extension Education) Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra urged the women farmers Melawa on Occasion of 191th Birth anniversary of Smt Savitribai Phule. He emphasised on the importance of agricultural based enterprises and marketing of value added products. Also he mentioned that the women farmers should focus on production of bio-fortified varieties in cropping pattern.

Smt Pranjal Shinde, Project Director (District Rural Development Technology, Osmanabad) advocated the farm women to improve girls' education in different fields. The progressive farm woman Smt Shailaja Narwade from Masala village shared the information on desi seed kit developed by her self-help group. The successful entrepreneur Smt Vanita Tambake, Director of Priyadarshni Mahila Self-help Group, Akkalkot district Solapur expressed, how she developed her value added products business from small scale to big entrepreneurship and capture the market of big cities of Maharashtra.

Dr Lala Saheb Deshmukh, KVK, Osmanabad coordinated the programme. In total, 450 farm women participated virtually in Women Farmers' Melawa.

Source: ICAR-Agricultural Technology Application Research Institute, Pune



ICAR- IIMR FPOs receive Equity Grant from Hon'ble Prime Minister



A group of Farmers from Millets FPO watching Live telecast program of Prime Minister

Hyderabad, 1 January 2020. ICAR-IIMR, as a Cluster Based Business Organization (CBBO) is promoting and incubating of 25 millets based FPOs across Karnataka (19), Andhra Pradesh (02) and Telangana (04) states of

India. In total, ICAR-IIMR has formed and handholding 31 FPOs and supporting by providing millets seeds, technologies of processing and value addition, assisting in getting Management Cost, equity grants. About 3825 farmers from 10 Millets FPOs promoted by ICAR-IIMR received equity grant of ₹ 4,225,000 on 1 January 2022 by Ministry of Agriculture Farmers Welfare. The Hon'ble Prime Minister released the grant by clicking a button during virtual program.

As a Resource Institute of Small Farmers Agri Business Consortium (SFAC), ICAR-IIMR, Hyderabad implemented six FPOs in Karnataka, Andhra Pradesh, Telangana and Madhya Pradesh under Nutri- cereals submission of NFSM. ICAR-IIMR is building capacities of CEOs and BoDs of millet based FPOs from Odisha, Karnataka, Maharashtra, Telangana and other states to make viable and sustainable FPOs. Thus, millets FPOs are working towards promotion of millets cultivation, processing and value addition thereby, consumption of millets among the people is also increasing due to its nutritional and nutraceutical properties in managing the lifestyle diseases like diabetes, blood pressure etc. Millets have got potential for doubling farmers income.

Dr. Vilas A. Tonapi, Director, ICAR-IIMR, Hyderabad congratulated all the FPOs for their achievement. He also informed that, grant will be utilized for establishing millets processing units at farmgate of 10 FPOs promoted by IIMR.

Banana fibre processing - wealth from waste technology transferred to UP based entrepreneur

Kushinagar, 29 January 2022 ICAR - NRCB has licensed and transferred an eco-friendly technology for banana fibre processing to Smt. Anita Roy, women entrepreneur and District Trainer, PMFME scheme of Kushinagar, Uttar Pradesh. According to Dr S Uma, Director, ICAR-NRCB after harvesting the fruit bunch, huge plant bio-waste is generated, out of which pseudostem (30-34%), flower & bracts (5%) and rhizome (12-14%) together contribute 50% of the banana plant biomass. Disposing off this huge waste, roughly 60 tonnes per hectare is the biggest problem for farmers. Dr P Suresh Kumar, Principal Scientist and inventor of the technology briefed that with and increasing demand on eco-friendly materials, banana fibers are now used to make garments, ropes, mats, carpets, cushions, cushion covers, bags, baskets, table cloths, etc., rugs made from banana silk yarn fibers are also very popular world over. More than 10000 crores worth of business could be generated with the banana fibre and allied products. Banana fibres could also be used as a raw material for the extraction of cellulose, synthesis of composite materials etc. Anita Roy, Entrepreneur said that the gained knowledge and technology could be used to create a sustainable comprehensive business ecosystem and will upliftment the livelihood of banana

growers through value addition to banana byproducts. The director assured the entrepreneur for technical support and transferred the license and gave the certificates during the meeting. ITMU officials and technical staffs of the institute were also present during the event.



Fishers Field School for ecosystem-based integrated wetland management: An initiative from ICAR-CIFRI

Nadia, 18 February 2022. ICAR-CIFRI adopted the *Khalsi beel* under a DBT Societal Sector Project and Scheduled Caste Subplan for upscaling the socio-economic status of the fishermen community. Components like Pen culture, Culture Based Fisheries, Ornamental Fish Culture, Backyard poultry farming, Kitchen gardening and Mushroom cultivation have been introduced as cost effective technologies for economic empowerment of the fishermen community. Dr B K Das, Director CIFRI has built a multidisciplinary team of scientists to establish Fisher Field School at Khalsi beel area to encourage self-confidence and self-reliance among the community members which will ultimately lead to livelihood improvement of the beel dependent community. The team includes Dr Aparna Roy Dr Arun Pandit, Dr A K Bera and Dr Dibakar Bhakta from ICAR-CIFRI and Dr Pintoo Bandopadhyay and Dr Sanchita Mandal from Bidhan Chandra Krishi Viswavidyalaya, Nadia, West Bengal.

Along with the initiation programme of Fisher Field School an off campus training also conducted on Empowering women of wetland dependent community through cost effective technologies. A total of 77 women and 35 fishermen participated in the training programme.



ICAR- CCARI, North Goa organized three scientific beekeeping programs for Goan farmers

Goa, 28 February 2020. Three capacity building programs on Scientific Beekeeping under National Beekeeping and Honey Mission and Azadi Ka Amrit Mahotsav were organized by ICAR - Krishi Vigyan Kendra, North Goa of ICAR-CCARI, for three batches with concurrent sessions. Dr Parveen Kumar, Director, ICAR - CCARI, Goa in his inaugural remarks briefly spoke on the role of honey bees in pollination and increasing productivity in cross pollinated crops apart from getting honey. Dr H R C Prabhu, Senior Scientist and Head I/C, ICAR - KVK, North Goa, in his welcome address explained detailed program and importance of the course. During the technical session, Shree Shishira, Shree Melwyn D'Souza, Mr Shaliyo P. and Mr. Savio were the resource persons and covered different topics like Introduction to beekeeping, bees and beekeeping, beekeeping to beginners, seasonal management, Pest and Disease management, Honey and other beekeeping products, Bee species, Meliponiculture, Bees as pollinators & Bee flora. As a part of the program an exposure visit was also organized to "Ras Raj Farms", Mollem, Dharbandora. The program was attended by 75 participants and all were supplied with honey bee box and other related equipment's. Shree Rahul Kulkarni, Assistant Chief Technical Officer (Soil Science) proposed vote of thanks during valedictory session. Shree Vishwajeet, Technical Officer (Computer) documented all the activities of the program.



a-IDEA, ICAR-NAARM Organizes Cohort Networking Capacity Building Programme for Agri Startups

Hyderabad, 10-11 March 2022. The Technology Business Incubation Centre of ICAR-NAARM organized "Cohort Networking and Capacity Building Program" for incubatees of a-IDEA under Krishiboot with the objective to develop networking among startups, and train them on financial management, effective pitch making and pitching process, concept of digital marketing and branding etc.

During the Inaugural address Dr G Venkateshwarlu, Joint Director, ICAR-NAARM highlighted the role of different programmes undertaken by a-IDEA in order to create vibrant atmosphere to strengthen startup ecosystem and also expressed his views on funding support through various sources for different stages of startups.

The speakers, Shri Tapan Kumar Sahoo, AGM, NABARD; Shri Subrata Sarkar, Consultant CFO; Shri Praveen Dorna, Co-Founder Sociohub, Startup Byte; Shri Gaurav Patel, Founder, Pipe Bagger; and Smt. Sukriti, Founder, Avid Invent, delivered the sessions.



In the valedictory session Dr Ch. Srinivasa Rao, Director, ICAR-NAARM highlighted the existing technical, financial and mentoring support for incubatees under Krishiboot and underlined the importance of Agri-Startups and their role in the entrepreneurial ecosystem.

(Source: ICAR-National Academy of Agricultural Research Management, Hyderabad)

Celebration

ICAR-NINFET, Kolkata celebrate 84th Foundation Day

Kolkata, 3 January 2022. Dr S K Chaudhari, Deputy Director General (Natural Resource Management & Agricultural Engineering), ICAR and Chief Guest of the programme applauded the Institute for its achievements in the area of natural fibres. He paid his sacred tributes to the founding fathers for their great contribution in the field of natural fibres and entrusted the present generation for the amalgamation of contemporary knowledge in fibre science with automation technology, sensor-based technology and nanotechnology.

In his foundation day lecture, Dr S N Jha, Assistant Director General (PE), congratulated the staff members on its 84th Foundation Day and hailed for the consistent achievements of the institute over the years. Dr D.B. Shakyawar, Director briefed about the journey of the institute and its footprint impact of the livelihood of innumerable number of farmers and the stakeholders.

Dr Gouranga Kar, Director, ICAR-CRIJAF, congratulated all the staff members of ICAR-NINFET and emphasized upon the collaborative research to yield the best results through a practical synergy.

Dr A Sahoo, Director, ICAR-National Research Centre on Camel, Bikaner, enunciated the application of scientific knowledge harvested by the institute over last eight decades for betterment of the farming community and stressed for the application of natural fibers in the area of biomedical science, cosmetics fields.

Dr B K Behera, Professor, IIT Delhi paid, his tribute to the legendary Scientist, Administrator and founder Director of the Institute Shree C R Nodder, through his memorial lecture on “3D Woven Textile Structural Composites and Their Applications with Special Reference to Natural Fibre”.

Dr L K Nayak, Principal Scientist, presented the institutional progress and accomplishments over the previous year in a very lucid manner.

The programme encompassed with release of new books, technical bulletins and training calendar for the year 2022. The office staff, farmers and the artisans were awarded for their best performances. Meritorious students and sports winners were also awarded on the occasion. A Farmers’ Scientists interaction programme an exhibition was organized on the occasion and activities and achievements of different divisions and sections of the institute were showcased.



Address by Dr D B Shakyawar



Participants of the event

The ex-employees, number of jute farmers, small scale entrepreneurs, jute mill personnel's, other central and state organization participants from different jute and textile organizations and institutes, stakeholders and students from Banaras Hindu University were participated in the programme following the Covid protocol.

Dr B Saha, Head, Quality Evaluation & Improvement Division and Chairman of the Organizing committee conveyed his sincere gratitude to all the participants for the successful completion of this grand event.

(Source: ICAR- National Institute of Natural Fibre Engineering and Technology, Kolkata)

Diamond Jubilee Celebration and Farmer Fair at CSWRI



Avikanagar, 24 January 2020. Honorable Union Minister of State for Agriculture and Farmers Welfare Shri Kailash Choudhary inaugurated 'Institute Diamond Jubilee Year Celebration and Farmer Fair'. Progressive Farmers, women, artisans, sheep rearers, agriculture and veterinary students from different parts of the state participated enthusiastically in the event. On this occasion, Hon'ble chief guest Shri Kailash Choudhary stressed upon the PM's dream of doubling the farmers' income by 2022 and emphasized for adopting new and innovative technologies developed by CSWRI and other ICAR Institute/Universities. Further, he appreciated the contribution of ICAR in making country self-sufficient in food and animal production, especially, institute like CSWRI that engaged in helping poor and downward class of the society who has limited resources and land.

Hon'ble DDG (AS) Dr B N Tripathi, appreciated the research carried out by CSWRI for enhancing the production of sheep, goat and rabbit. Dr Arun Kumar, Director, highlighted the significant achievements of the institute in recent years especially, development of miracle sheep breed "Avishan", Sheep Meat and Milk products, Wool and woolen value added products, Milk replacer, Avikhad etc. On this occasion, Member of Parliament Shri S S Jaunapuria; Smt. Jaskaur Meena, MLA; Shri Kanyha Lal Choudhary, Pradhan; Shri Sakhran Chopra, Vice chancellor; Dr J S Sandhu, Directors of ICAR Institutes; Dr O P Yadav; Dr A Sahoo; Dr Abijeet Mitra; Dr P K Rai; Dr. Amresh Chandra; Dr S K Singh; Dr B D Sharma; and Dr S N Saxena were the special guest and they appreciated the remarkable

efforts of the institute in transferring improved technologies in the field area in harsh environment of semi-arid regions. During the Programme, 48 exhibitions (stalls) were displayed by different ICAR institutes, Agricultural Universities, KVKs, NGOs and agripreneurs. Nine farmers were recognized and appreciated for their significant contribution in adoption and up-scaling of improved technologies in sheep, goat and rabbit rearing and integrated farming system. Programme was coordinated by Dr S C Sharma, Pr. Scientist and Dr L R Gurjar, Scientist.

(Source: ICAR-CSWRI Avikanagar)

ICAR NEH celebrate 48th Foundation day



Umiam, 10 January 2022. On the 48th ICAR institute foundation Dr V K Mishra, Director; ICAR Research Complex for NEH Region, said that the existence of the research institute and with its six regional centres has made a deep impact in the field of agriculture of the region, but there is immense scope of improvisation in the agricultural sector in the coming years with the implementation of modern technologies. The foundation Day lecture was given by Dr K M Bujarbaruah, former VC, AAU, Jorhat; and former DDG, animal Sciences, ICAR and former Director, ICAR Research Complex for NEH Region, he emphasised on the fact that it is only institute in the entire region which focus on all the disciplines. He further added that pandemic has proven the fact that there is no alternative to agriculture as rightly said by Pandit Nehru that "Everything else can wait, but not agriculture". The institute needs to focus on the sustainable developmental goals and aim for a hunger free world.

The 48th ICAR-NEH institute foundation day was celebrated by the inauguration of poultry seed grower cum layer house under the ICAR poultry seed project at the cost of ₹ 1.47 crore with the capacity of 5000 grower and layer birds. This facility would enable us to upscale our quality poultry seed production in the NE Region. A pig shed was also inaugurated which was built from the institute budget at the cost of ₹ 86. Lakhs. The pig shed has farrowing facility with a capacity of 16 numbers of sows with their piglets. These facilities were virtually inaugurated by Dr Trilochan Mohapatra, Secretary, DARE and DG, ICAR, New Delhi in the presence of the other dignitaries.

Addressing the gathering virtually he urged the scientific community to further develop agriculture in the north eastern region and address rural poverty.

Felicitations of the staffs of the institute for their commendable contribution towards the institute was given. Innovative farmers were awarded for their contribution in the field of agriculture from the region which Sri. Vanlalghaka Pachau from Mizoram, Smti Dilli Maya Bhattarai from Sikkim and Smti. Plenty Makri of Meghalaya was awarded the best farmers award.

The programme ended with a pledge to take modern agricultural technologies to the doorsteps of farming community.

ICAR-NINFET, Kolkata Celebrated National Girl Child's Day

Kolkata, 24 January 2022. In her speech, Dr Sujata Sahoo, Senior Scientist, ICAR-CIFE Kolkata Centre, and Chief Guest of the programme stressed the role of parents in Gender Neutral upbringing of Girl Child, giving them moral support for pursuing dreams and giving them an equal opportunity as boys in training, skill development and exposure. She emphasized to not only depend on the Government schemes and initiatives but also to contribute towards the empowerment of Girl Child at the family and society level.

In his address, Dr D B Shakyawar, Director ICAR-NINFET shared that Girl Children need to be encouraged, respectfully treated and given equal opportunity in every household then future of the Nation will be bright. He stated that any unequal behaviour towards Girl Child is never acceptable. He heartily congratulated the Girl children from different districts like Malda, Murshidabad, Hoogly, Burdwan, Nadia, of West Bengal and Kendrapada district of Odisha who were chosen to be felicitated with a cash prize on this occasion with Direct Beneficiary Transfer mode basis

Shri Naveen Kumar Jha, SAO ICAR-NINFET, shared the glorious saga of Women leadership from ancient times till the present in every sector like Medicine, Science, Finance, Banking, Administration, Sports, etc., and enlightened the audiences about the remarkable potential every Girl Child holds then properly groomed in the right direction.

Photographs of ICAR_NINFET staff with their daughters were shown in the programme. The programme ended with the announcement of eleven winners from six different districts of West Bengal and Orissa, listening about their area of excellence, plans for the future and wishing them the best for the fulfilment of their dreams and contributing to the Nation.

(Source: ICAR-National Institute of Natural Fibre Engineering and Technology, Kolkata)



Selfie of farm women with girl child

ICAR-CRIJAF, Barrackpore celebrate National Girl Child Day

Barrackpore, 24 January 2022. Dr Gouranga Kar, Director, ICAR-CRIJAF, Barrackpore highlighted that the birth of a girl child should be greeted with joy and groomed to develop her full potential of every aspect of her personality. By celebrating, protecting and educating the girl child, we empower her. By empowering our daughters, we empower the nation. He also emphasized that promoting gender equality is crucial to accelerating sustainable development.

The Chief Guest, Smt. Jayeeta Dasgupta, State Coordinator, Jan Sahas having experience in Human Resource Development, Health, Nutrition, Education & Livelihood, Gender and Rights & Social inclusion, interacted with the participants for raising awareness on a number of topics like rights of a girl child, importance of education, proper nutrition and health. Dr Debarati Datta, Scientist, ICAR-CRIJAF highlighted the different central and state government schemes for girl child under different ministries which aims to empower girl child and ensure that she lives a life of dignity and opportunity. Selfies of farm women with their girl child were taken to celebrate girl child day under #Deshkibeti. Girl child of the institute's staff, Su Shree Shrestha Barua and Sushree Diksha Sarkar were conferred with Academic Excellence Award Certificate for outstanding performance in Class X and XII board exam. The programme was organized by women scientists Dr Debarati Datta, Dr Sonali Paul Mazumdar, Dr Shamna A, Dr Laxmi Sharma and Dr Lavanya A K.

ICAR-CMFRI turns 75; launches year-long anniversary celebration campaign

Kochi, 3 February 2022. On the occasion, the institute kick-started one-year-long campaign that includes various activities to mark the platinum jubilee celebrations.

During the foundation day celebration, Dr J K Jena, Deputy Director General of the ICAR was the chief guest. He urged the CMFRI scientists to prioritise their focus of research in accordance with the urgent need of the society and the nation. "The Central Government is focusing on strengthening mariculture based alternative livelihood options like seaweed farming, marine ornamental fish culture etc. This would offer better livelihood option to the coastal communities and thereby supporting the country's economy", he said.

Dr A Gopalakrishnan, Director of ICAR-CMFRI said that the institute broadened its objectives by diversifying towards potentially rewarding arenas such as mariculture, genetic and biotechnological applications. Keeping tab of the changes in the sector,

research on climate change and bioprospecting will also be strengthened, he said.

Elaborating on the future plan of the institute, Dr Gopalakrishnan further said: "Given that mariculture is going to be a game changer in ensuring future fish production and also in providing income and employment security for coastal fishers, the ICAR-CMFRI will focus on precision mariculture with the aid of smart tools and automation with Artificial Intelligence (AI)". Apart from this, a number of emerging areas of importance include marine environment management, marine biodiversity research, marine spatial planning, species identification and description, marine pollution research, fish disease diagnosis and control, resource monitoring and assessment, socioeconomics and so on, he added.

The logo for the year-long celebration was unveiled on the occasion. A theme song also was released.

(Source: Media Cell CMFRI)



ICAR-CRIJAF, Barrackpore celebrated 69th Foundation Day

Barrackpore, 09 February 2022. Dr T R Sharma, DDG (Crop Science), ICAR, New Delhi was the chief guest. Prof. Swapan Kumar Datta, Guest Speaker and Vice Chancellor of Biswa Bangla University and former Deputy Director General (Crop Science), ICAR, New Delhi delivered the Foundation Day lecture on latest application of cutting edge science in crop improvement programme.

Shri M C Chakraborty, Jute Commissioner, Gol; Shri A K Jolly, Managing Director, Jute Corporation of India; Dr B K Das, Director, ICAR-CIFRI, Barrackpore; and Dr D B Shakywar, Director, ICAR-NINFET, Kolkata were the Guests of Honor.

Dr T R Sharma, DDG (Crop Science) opined that institute has transformed in the last two years.



He congratulated the Director and staff of ICAR-CRIJAF for up scaling the institute's technologies for upliftment of livelihood of jute farmers. He also appreciated the new initiative taken for awarding and acknowledging the farmers and master trainers. He also acknowledged ICAR-CRIJAF technologies such as CRIJAF SONA for upscaling fibre quality & enhancing farm income.

Dr Swapan Kumar Datta, congratulated the Director and all staff of the institute for the commendation achievements and continuous efforts for the service of the jute farmers. He reiterated that new initiatives in research and promotional front will certainly enhance the visibility of the institute among the stakeholders and fulfil the aspiration of the framers for better income and profitability.

Shri M C Chakraborty, Jute Commissioner, Gol appreciated the role of the institute in making the jute sector more vibrant and hoped that in future the CRIJAF technologies can fulfill the requirement of export promotion and expressed to work with ICAR-CRIJAF for improvement of jute sector.

Shri A K Jolly, Managing Director, Jute Corporation of India (JCI) was confident that in coming years also the joint effort of JCI and ICAR-CRIJAF will continue to promote CRIJAF technologies through Jute-ICARE programme among farmers. Dr B K Das, Director, ICAR-CIFRI, Barrackpore appreciated the strong linkage of the institute with farmers. Dr D B Shakywar, Director, NINFET emphasized on complimentary role of ICAR-CRIJAF and ICAR-NINFET for betterment of jute sector.

Dr GourangaKar, Director, ICAR-CRIJAF gave a brief historical account of the institute and specifically mentioned about major achievements, varieties and technologies developed by the institute to resolve the bottlenecks and problems faced by the farmers in the cultivation of jute and allied fibre crops.

During this occasion, the institute personnel of each category, farmers, entrepreneurs, masters' trainers were recognized and acknowledged for their novel contribution to the institute and overall, to the jute sector. The progressive farmers, masters trainers and entrepreneurs playing pivotal role in adopting

and popularizing CRIJAF technologies shared their experience.

Dr Kar highlighted that during the COVID lock down period also the institute promoted the technologies through wider use of ICT tools particularly agro-advisory and various apps to assist the farmers throughout the growing season.

More than 200 participants from the institute, guests including entrepreneurs, masters trainers, progressive farmers attended the foundation day programme in physical and virtual mode.

ICAR-Central Research Institute for Jute & Allied Fibres, Barrackpore Report on Celebration of World Pulses Day

Barrackpore, 10 February 2022. ICAR-Central Research Institute for Jute and Allied Fibres celebrated "World Pulses Day" virtually in the backdrop of 75 years of Indian Independence - Azadi Ka Amirt Mahotsav. Chairing the program, Dr Gouranga Kar, Director, ICAR-CRIJAF, Barrackpore highlighted the need for increased access to pulse crops among underprivileged sections of the global population. He emphasized that pulses are crucial in terms of food security, nutritional value and environmental benefits. He also quoted that pulse removes malnutrition and maintains the earth. Inclusion of pulses as an intercrop in jute was also highlighted by him for sustainability. The Chief Guest, Dr Kalyan Jana, Assistant Professor, Department of Agronomy, Bidhan Chandra Krishi Viswavidyalaya, briefed that pulses being important source of fibre, minerals must be included in everyday diet for sustenance. Intensive cereal based cropping system has led to specific nutrient deficiencies and deterioration of soil properties. Hence, inclusion of pulses into the cropping system would not only improve the soil quality, but also reduce the nitrogen requirement for the next crop. This was followed by farmer-scientists interactions where the farmer showed interest for pulse cultivation and requested the experts for further help. The heads and in-charges of divisions and sections also addressed the farmers. The role of pulses as a climate resilient crop due to its hardy nature was pointed out in order to

encourage farmers to grow pulses. The program was organized by Coordinator- Dr Amit Ranjan Saha and Dr Debarati Datta and Co-Coordinator- Dr Sabyasachi Mitra, Dr Sitangshu Sarkar, Dr Sonali Paul Mazumdar, Dr N M Alam and Dr Sourav Ghosh.



Address by Honourable Director, ICAR-CRIJAF, Dr Gouranga Kar



Expert lecture By Dr Kalyan Jana, Assistant Professor, BCKV

ICAR-NRRI celebrated 4th World Pulses Day 2022

Cuttack, 10 February 2022. Smt Kalpana Mohapatra graced the occasion as Chief Guest and articulated that pulses are a great source of low-fat protein, which are particularly important for vegetarian and poor people who cannot afford to get protein by eating meat, fish, egg or dairy products. She appreciated the efforts of the institute in organizing such an effective awareness programme for the benefit of farmers and farm women. Later, she distributed critical inputs to the participating farmers like pulse seeds, various bio-agents for seed treatment, bio-fertilizers and certificates.

Dr Padmini Swain, Director of the institute stated in her presidential address that pulses are very significant crops in terms of food security, nutritional value and environmental benefits. She enlightened the audience about its usefulness in controlling health issues such as obesity, high blood sugar and cholesterol. She suggested the farmers and farm women to cultivate pulses scientifically for personal consumption, surplus sale and as an enterprise, which can help them maintain economic stability and food security.

Among others, Dr B C Patra, Head of Crop Improvement Division spoke about interventions under Scheduled Caste Sub Plan (SCSP) programme and Dr. GAK Kumar, Head of Social Science Division also addressed the gathering. Three awareness lectures on pulses were delivered, namely '*Pulse varieties and production technologies*' by Dr B S Satapathy; '*Protection technologies against insect-pests in pulses*' by Dr S D Mohapatra, and '*Post-harvest technologies and value addition for pulses*' by Dr M Siva Shankari. A display of exhibits on various pulse seeds, food products and bio-fertilizers was also arranged to benefit the participants. Apart from staff and students, over eighty beneficiary farmers and farm women under Scheduled Caste Sub Plan (SCSP) and Farmer FIRST Programme from Cuttack, Jagatsighpur and Kendrapara districts of Odisha participated in the programme. At the outset, Convener Dr S K Mishra welcome the guests and coordinated the event, while at the end, Dr Biswajit Mondal, Nodal Officer of SCSP Programme offered formal vote of thanks.



Chief Guest Smt. Kalpana Mohapatra addressing the audience



A section of the participants

World pulse day & Kela Mela celebration - An Outreach initiative by ICAR-NRCB under SC & SP scheme

Tiruchirappalli, 10 February 2022. ICAR - National Research Centre for Banana, Tiruchirappalli, Tamil Nadu and ICAR-KVK Karur jointly organized a farmers meet to celebrate the World Pulse Day. Three events have been earmarked for the function viz., World Pulse Day, Kela Mela with Exhibition and the Training programme. The programme has been arranged at Kottaimedu village of Kulithalai block of Karur district. Dr S Uma, Director, ICAR-NRCB, Tiruchirappalli delivered a talk on importance of pulses and banana and their role in human health and development. She emphasized the importance of the value-added products in both through improved

value chain. The technical and cultivation aspects of pulses and banana was deliberated by Dr K J Jeyabaskaran; M Loganathan; and Tamilselvi. Dr C Karpagam, Principal Scientist (Agricultural Extension) and the programme coordinator explained about the scope of banana cultivation with the pulses as inter crops in doubling the farmers' income. Dr K Thiravium, Head, KVK briefed the coordination of the research centre, KVK and agriculture department in promotion of pulses for nutritional and health security in the country. The tag line of the commemoration of the programme that *"Pulse to empower youth in achieving sustainable agri-food system"* was popularized among the participants. To create more awareness about the pulses, various dishes made out of pulses were served to the participants.

भारतीय सब्जी अनुसन्धान संस्थान में चौथे विश्व दलहन दिवस पर कार्यक्रम का आयोजन

वाराणसी, 10 फरवरी 2021, भा. कृ. अनु. प.— भारतीय सब्जी अनुसन्धान संस्थान में आज दिनांक 10 फरवरी को चौथे विश्व दलहन दिवस पर कार्यक्रम आयोजित किया गया। यह दिवस दालों के बारे में जन जागरूकता बढ़ाने और बेहतर उत्पादन, बेहतर पोषण, बेहतर पर्यावरण और बेहतर जीवन के लिए दालों की उन्नत खेती में सार्थक भूमिका निभाने का एक अनूठा अवसर प्रस्तुत करता है। इस समारोह के मुख्य अतिथि बनारस हिन्दू यूनिवर्सिटी में कृषि विज्ञान संस्थान के प्रोफेसर एवं ख्यातिलब्ध दलहन प्रजनक डॉ एम् एन सिंह थे। संस्थान के निदेशक डॉ तुषार कान्ति बेहेरा ने मुख्य अतिथि का स्वागत करते हुए भोजन में दालों को सम्मिलित करने और उससे होने वाले लाभ के बारे में बताया। साथ ही उन्होंने बताया की संस्थान में मटर, सब्जी सोयाबीन, बाकला, ग्वार जैसी कई दलहनी सब्जियों पर शोध कार्य किया जा रहा है। मुख्य अतिथि ने अपने संबोधन में बताया भारत विश्व में दालों का सबसे बड़ा उत्पादक, आयातक एवं उपभोक्ता है। शाकाहारी आहार प्रधान इस देश में दालें ही प्रोटीन का प्रचुर स्रोत है तथा इसकी खेती से फसल विविधता के साथ साथ भूमि उर्वरता में भी वृद्धि होती है। अतः उन्होंने शोध द्वारा दालों की उत्पादकता बढ़ाने पर बल दिया। इस अवसर पर संस्थान के सभी विभागाध्यक्ष, वैज्ञानिक, कर्मचारी, छात्र एवं लगभग 100 किसान भाई-बहन उपस्थित रहे।

स्रोत: भा.कृ.अनु.प.— भारतीय सब्जी अनुसंधान संस्थान, वाराणसी

71st Foundation Day of ICAR-IISR celebrated with great fervour

Lucknow, 16 February 2022. The programme started with a video film entitled *"IISR- Marching Ahead"* depicting the glorious journey of the Institute's 70-years work. At the outset, Dr A D Pathak, Director, ICAR- IISR welcomed all the participants and presented the achievements and the activities of the Institute, He informed that in the last seven decades, 263 scientists, 372 technical, 143 administrative and 400 supporting staff have made significant contributions to the R&D of the Institute.

The Chief guest of the function, Dr S Solomon, former VC, CSAUA&T, Kanpur congratulated the scientists of the Institute for the unparalleled success achieved in sugarcane and sugar sector even during Corona pandemic. He urged the Scientists to focus on the development of climate resilient varieties and appropriate varieties for ethanol production, use of nanotechnology, integration of genomics and biotechnology tools, use of ICT based mobile apps for transfer of technology, use of GIS, artificial intelligence and use of drones for surveillance of insect-pests and diseases and spraying of pesticides. The programme was conducted by Dr Anita Sawhani. Dr S N Sushil, Principal Scientist and Organising Secretary thanked all the participants.

On the occasion, the Chief Guest and the Guest of Honour honoured various scientists and officers for their dedicated and sincere services in the Institute building activities and increasing visibility of the Institute and the best staff of different categories for their outstanding work done. Two books, *'Seven Decades of Sugarcane Research at ICAR-IISR, Lucknow'* and *'Aatmnirbhar Bharat: Local for Vocal'*, the Institute's official language magazine *'Ikshu'*, along with the three folders published on the symptoms and management of the major diseases of sugarcane viz., Wilt, YLD and Pokkah Boeng were also released on the occasion. Short plays on *Swachhta* and self-reliant India and various entertaining competitions like *Rangoli*, Tug of war and Musical Chair were also organized for the staff of the Institute.





the Kisan Mela, organized by Krishi Vigyan Kendra, Jaisalmer-I, ICAR- Agricultural Technology Application Research Institute, Zone-II, Jodhpur, at Khema Baba Mandir, Jaisalmer, Rajasthan.

Shri Choudhary emphasized need for organizing such kind of farmer fair for reaching the farmers at their door step as well as at their field with agriculture innovations and techniques. He advised the farmers to work on doubling their income from processed products of Bajra, Cumin, Kair-Sangri, which are considered as identity of Jaisalmer. He laid emphasis on processing of Bajra as biscuits, oats, chocolates, and juice of cumin, processing of sangri for fetching better prices in market.



Releasing extension folder & Distribution of inputs are in progress

Mega Farmer Fair organized to reach the unreachable farming community

Jaisalmer, 20 March 2022. Shri Kailash Choudhary, Hon'ble Union Minister of State, Ministry of Agriculture and Farmers Welfare, Gol, inaugurated

Hon'ble Union Minister gave Registration Certificate to members of Board of Directors of FPO "Shresthtam Swarn Nagri Krishak Producer Company Limited" registered in Jaisalmer district in collaboration with NABARD. The Minister released leaflet 'Entrepreneurship and Income Opportunities for Rural Women in Herbal Gulal Manufacturing' published by Krishi Vigyan Kendra Jaisalmer. In the fair Ram of Marwari breed of sheep for breeding purpose, made available by CSWRI, RRS, Bikaner, were provided to 10 farmers by Hon'ble Minister. 'Nutri-kits' of vegetables by NHRDF, New Delhi, also provided to representative 10 women farmers by Hon'ble Minister.

Dr Subhash Chandra, Director, Directorate of Extension Education, SKRAU, Bikaner highlighted the extension activities extended to farming community by university and KVK's, especially for Jaisalmer



region farmers. Dr P S Shekhawat, Director Research, SKRAU, Bikaner, encouraged farmers to adopt climate resilient improved varieties of crops for increasing yield. Dr Deepak Chaturvedi, Senior Scientist&Head, KVK, Jaisalmer-I welcomed all dignitaries and highlighted objective of organizing fair.

In the fair 20 exhibitions stalls were organized by university, ICAR institutes, line departments and other agencies displaying various latest agro-techniques viz. seed of improved varieties, fertilizers, manure, improved tools and machinery, organic farming techniques, horticulture, animal husbandry, and irrigation method, etc. More than 2000 farmers, farm women, rural youth along with 25 Public representatives, 40 officials from State Agriculture University, ICAR Institutes, KVKs, State Line departments and other agencies participated in the fair.

ICAR-National Research Centre on Meat, Hyderabad celebrated 23rd Foundation Day

Hyderabad, 22 February 2022. The Chief Guest, Shri Suresh Chitturi, Vice Chairman & MD, Srinivasa™ Farms Pvt Ltd, Hyderabad appreciated the efforts of NRC on Meat in the sustainable development of meat sector in the country. He urged the Institute to conduct more training programs for the development of skilled manpower in the meat sector. He also highlighted the need for conducting research on ethnic meat products.

The Guest-of-Honor, Shri Rajesh, K Head-Food Safety & Quality, Delightful Gourmet Pvt Ltd, (Licious), Bangalore applauded the scientific interventions and entrepreneurship development activities of the institute.

In his welcome address, Dr S B Barbuddhe, Director, NRCM highlighted the significant activities and achievements of ICAR-NRC on Meat in the past one year. He narrated the contributions of the institute for the betterment of the stakeholders and to further undertake concerted efforts for the betterment of meat sector in the country.

On this occasion, entrepreneurs who have successfully established their startups with the help of the institute were felicitated. Best performing employees of ICAR-NRC on Meat in various categories were honored by the dignitaries on the occasion.

Several technical documents authored by ICAR-NRC on Meat faculty including the technologies for detection of adulteration of chicken and mutton Haleem balls and Haleem spices were released by the dignitaries.

A brainstorming session on 'Meat Sector @2047 and Establishment of Meat Hub' was organized in hybrid mode. Plantation of saplings was carried out and a cultural program was also been organized.



The program was attended by ICAR-NRC on Meat staff, former Directors, ex-employees of ICAR-NRCM, students and research scholars of the center, faculty from SAUs/SVUs, and various senior officials of ICAR Institutes in Hyderabad, stakeholders, officials from Telangana State Animal Husbandry Department and Sheep Federation and entrepreneurs. The foundation day program was coordinated by Dr. Babji Y., Principal Scientist, Dr. GireeshBabu P., Senior Scientist and Dr. Yogesh Gadekar, Scientist.

14th Foundation Day Celebrated by ICAR-National Institute of Abiotic Stress Management

Baramati, 21 February 2022. Dr Trilochan Mohapatra, Secretary, DARE and Director General, ICAR, Ministry of Agriculture and Farmers Welfare, Government of India was the Chief Guest; Dr S K Chaudhari, DDG (NRM) Guest of Honour and Dr T A More, former Vice Chancellor of MPKV Rahuri was the Special Guest. Dr Himanshu Pathak, Director, NAARM delivered the welcome address and briefed the achievements of the Institute. Dr S K Chaudhary, DDG (NRM) gave insights about the institute journey in last decade in development and research fronts. He congratulated ICAR-NIASM for the achievements in the area of Abiotic stress and wished a long success ahead. Dr Mohapatra virtually inaugurated the Hostel facilities (Konark-Men & Koyana-Women) of ICAR-NIASM, Baramati. He told that under the scenarios of changing climate institute like ICAR-NIASM has to play significant & lead role in Indian agriculture. He highlighted the roadmap to work to address the issues of abiotic stress by screening high yield pulse and oil seed genotypes, initiating research trials on natural farming in fruit orchards, building databases by using data analogue tools to sustaining income in dryland situations, precision agricultural techniques and digital platform to link with farm income, strong networking and convergence and develop farmers friendly practices for dragon-fruit cultivation. Dr T A More delivered the Foundation Day Lecture on "Fruit and Vegetable in Arid zone: Abiotic Stress Management". The function was attended by DDGs & ADGs of Headquarter, Directors of the different ICAR institutions, Scientists through online virtual mode and the NIASM staff, guests, invited farmers and dignitaries physically following the COVID guidelines. Dr Jagdish Rane, Head, School of Water Stress Management proposed the vote of thanks. The



morning session of the foundation day programme concluded with the National Anthem.

The Foundation Day Award Function was organized to felicitate progressive farmers, NIASM staff, contractual (YPs, Skilled labour and Security) staff, NAC associates and sports awardees. The awards were distributed by Special Invitee Smt Smita Kale, CEO of Malegaon Nagar Panchayat, Director and Heads of the NIASM. Progressive farmers were facilitated with awards for their significant achievements in agriculture. Foundation Day 2021 Best Scientist award was given to Dr Wakchaure in Senior Scientist category and Dr Sangram Chavan & Dr Neeraj Kumar in scientist category. Best worker award was bagged by Shri Aniket More (Technical category); Smt Sheikh (Technical category); and Shri Anil Siddharth (Administrative category). Students, Young professions, Contractual Staff (field & administration) were awarded for their significant contributions for the institute development. ICAR-NIASM has completed its first batch of “NIASM Associate Course”. The participants were felicitated and three best NAC trainees i.e., Mr Pravin Mane (First), Sushree Sonali Jadhav (Second) and Sushree Poonam Jagtap (Third) were awarded. A week-long sport tournament (cricket, Athletics, volley ball and badminton) was also organised and winners were awarded.

Smt SmitaKale praised the efforts of institute in the area of research and felicitation of farmers of different areas. Dr Himanshu Pathak highlighted the milestone works of earlier Directors, scientists and staff for making these desert-like place in to green landscape. Dr D D Nangare, Head, SSPS was the Convenor of the function. Formal vote of thanks were extended by Dr N P Kurade, Head, SASM.

Cultural event was organised in the evening by the sport and cultural committee of the institute. The participants were students of local “VP Sharada Sangeet School”, Young professions; and students of ICAR-NIASM and children of the staff members. The programme anchoring was done by Shri Rajkumar, Scientist (entomology). A full-pack grand celebration of the 14th Foundation Day was concluded with a big applause.

Matrubhasha Diwas Celebrated by ICAR-NAARM

Hyderabad, 21 February 2022. ICAR-NAARM celebrated “Matrubhasha Diwas” (International Mother Language Day) in a grand manner with an intent to promote and preserve Mother Languages among students, officers and staff members of the Academy who hail from different states of the country. The celebrations successfully addressed the importance of the Matrubhasha while highlighting the linguistic diversity of our country; encourage usage of not only the respective mother language, but also other Indian languages as well. The programme was organized on the directions of All India Council of Technical Education (AICTE), Government of India.

Dr Ch. Srinivasa Rao, Director, ICAR-NAARM, in his address, elicited the advantage of conversing in Matrubhasha, and shared his experiences while schooling. He advised the students to pick up the language other than Matrubhasha to understand diverse cultures in India. It will help in exposing various forms crafts and arts, scripts and other forms of creative expression, he added.

While speaking on the occasion, Dr G Venkateswarlu, Joint Director expressed his desire to converse in his matrubhasha i.e., Telugu after served in other states for more than 3 decades. He urged students to learn other Indian languages too for their own benefit and reap the advantage.

The Post Graduate Students of Agri Business Management (ABM) students, participated in the event enthusiastically, expressed their experiences with other Indian languages. Many of them spoke on the occasion while narrating the story of other language learning, the dialects variation with in the language, how important and easy it is to express in the mother tongue. Some students showcased their singing talent by singing in other than their mother tongue. Other students creatively expressed their journey of student life away from their own region, and how they picked up the local language. Besides students, faculty members and staff of ICAR-NAARM also participated extempore in the event with much enthusiasm and fervor. Mrs G. Aneeta, ACTO, ICAR-NAARM coordinated the programme.



Source: ICAR-NAARM, Hyderabad

Safflower Field Day and Shivar Pheri Organized to Guide Farmers on New Technology

Washim, 24 February 2022. KVK Washim, Agriculture Department and Mahajyoti Abhiyan jointly organize the event Safflower Crop is boon for rainfed farmers and now a days by adopting new varieties and management technique are under crop increasing in the district. Dr R L Kale Head & Sr. Scientist KVK Washim; Shri Kavyashri Gholap TAO Risod, KVK experts; Shri S K Deshmukh SMS Agril. Extn.; and Shri TS Deshmukh SMS Agronomy - Incharge CFLD oilseed & Manish Borkar DC Mahajyoti Washim were present among the dignitaries and experts. In the inaugural address, KVK Agronomy expert Dr T S Deshmukh Incharge CFLD oilseed welcomed all the dignitaries' experts and farmers.

Chief guest Dr R L Kale Head & Sr Scientist KVK Washim in his address told farmers about various innovative extension program implemented by KVK in IFS module, Wheat, Orange, Pigeon pea and Gram crop for the benefit of farmers. He further added efforts of KVK in promoting oil seed crops and availability of critical inputs at the door step of the farmers.

Shri Kavyashri Gholap TAO Risod in his address, shared in detail agriculture department schemes and insisted to farmers to adopting the promising crop technology through such events and act as farm technology agents. Shri Maha Jyoti, District coordinator, Manish Borkar during his speech express need for understanding profit return from safflower crop in comparison to gram crop and informed that because of technical back-stopping and support of KVK area under safflower has gone upto 720 ha. and farmers themselves are motivated to grow the crops and explore the opportunity in oilseed production and oil processing for health as well as wealth.

Shri Jaykumar Awchar, Territory Manager Agrasia Pvt Ltd, highlighted the importance of growing oilseeds as intercrop for edible oil production that family consumption needs. In the program, the dignitaries experts and farmers visited to the Safflower var. ISF 764 and var. PBNS 12 field of farmer Shri Trambak Awchar. During Safflower CFLD field visit, farmers Shri Purushottam Ambhore, Shri Trambak Awchar, Sudhakar Sarnaik, Shivaji Sarnaik shared safflower cultivation experience. Farmers from Linga Kotwal, Dapuri and Agarwadi attended the program in large number. In the concluding remarks S K Deshmukh Agril. Extension expert asked farmers to grow oil crop for curtailing oil import in the country and delivered vote of thanks for the program.



ICAR-CIFRI Celebrate 76th Foundation day

Barrackpore, 17 March 2020. ICAR-Central Inland Fisheries Research Institute is one of the premier research institutions of the country in inland fisheries sector, established by Government of India on 17th March 1947 and since 1964 under the administrative control of Indian Council of Agricultural Research.

In his welcome address, Dr B K Das, Director CIFRI, Barrackpore stressed that institute has played a pioneering role in ushering fisheries and aquaculture Revolution in India through its research and technology development that has enabled the country to increase the production of fish by 12 times, since 1950-51, thus making a visible impact on the national food and nutritional security. Dr Das congratulated all CIFRIans, Progressive fish farmers, entrepreneurs, fisheries industries, etc., who were part of the momentous 75 years journey of ICAR-CIFRI success story and also for receiving Sardar Patel Best ICAR Institute award among large institutes.

Swami Mahadevan and Maharaj Ji, Assistant Secretary, Bharat SevashramSangh, and Chief Guest of the foundation day addressed the gathering in Bangla and appreciated the work of ICAR-CIFRI during the difficult period of Coronapandemic. Swami ji said that he has personally seen the work of ICAR-CIFRI in fisheries development in Sundarban region since last several year. He emphasised that innovation and invention should reach each and every door of common people by quoting the speech of Swami Vivekananda Ji.

Shri Rajiv Kumar, GM, Metal and Steel Factory, Ministry of Defence and Guest of honour in his address appreciated the work of ICAR-CIFRI in West Bengal and other states. The development made by the institute is not only interesting but amazing. The technology developed by the institute has revolutionised fisheries and aquaculture.

Dr A P Sharma, Former Director, ICAR-CIFRI greeted the ICAR-CIFRI family on the occasion of 76th foundation day and remarked that this institute was started when India was not self-sufficient in food. The institute is serving the nation since independence and provided back bone of aquaculture and inland fisheries revolution in India.

Prof S K Sanyal, Former Vice Chancellor, Bidhan Chandra KrishiViswavidyalaya, Kalyani congratulated ICAR-CIFRI for completing 75 glorious years of service to the nation. He emphasized that the efforts of the staff for bringing laurels to the institute in form of Best institute awards, Rafi Ahmad Kidwai award, patents, technologies, etc. are praiseworthy. He also appreciated the Ganga fishery rejuvenation and conservation activities taken up by the institute under NMCG project.

In his remarks Dr GaurangaKar, Director, ICAR-CRIJAF, Barrackpore congratulated all the staff members on this important occasion. He lauded the developmental activities of the institute during last two years of pandemic. He congratulated CIFRI for its works under Clean Ganga programme.

The medals to the winners of annual sports events were presented to awardees by Chief guests and guests of honors. Medical cards for staff members were distributed by the dignitaries. The

76th foundation day cake was cut by honourable dignitaries.

The vote of thanks was proposed by Dr S K Samanta, Head of Division, REF Division. The program ended with National anthem.



ICAR-CIAE celebrate World Water Day 2022

Bhopal, 22 March 2022. To celebrate the *Azadi ka Amrit Mahotsav* as well as World Water Day 2022, an expert talk on '*Water for Food: Need for a Paradigm Shift in thinking*' was organized by ICAR-Central Institute of Agricultural Engineering, Bhopal on virtual platform. Prof Vinay Nangia, Research Leader, Soil, Water and Agronomy, ICARDA, Jordon delivered the talk. Dr CR Mehta, Director of the institute introduced the Guest and stressed the importance of celebrating World water day. Dr Nangia highlighted amount of water used for producing food grains as well as other commodities in relation to national food security. He also stated that water productivity at different scales can depict agricultural growth of the region. Expansion of irrigated area through efficient water management practices, use of green water and improving water productivity are the some of the issues he spoke about. He emphasized for a technology-enabled approach to farm input management that observes, measures, and analyses the needs of individual fields and crops like sensor based irrigation, climate smart agriculture, use of digital agriculture for early warning and/or prediction for sustainable production. Around 110 participants consisting scientists of ICAR institutes/SAUs, ICRDA staff, technical staff, research scholars and project staff of the institute attended the webinar. The programme was coordinated by Dr K V R Rao, Head, Irrigation and Drainage Engineering, CIAE, Bhopal.



Dr SK Malhotra, Agriculture and Horticulture Commissioner, Department of Agriculture and Farmers Welfare, Government of India, visited ICAR-CCARI, Goa

Goa, 6 January 2022. Dr SK Malhotra, Agriculture and Horticulture Commissioner, Department of Agriculture and Farmers Welfare, Government of India, visited ICAR - Central Coastal Agricultural Research Institute (ICAR-CCARI), Goa on 06 January 2022. He was accompanied by Dr Mahesh PS, Joint Commissioner and Director, Central Poultry Development Organization & Training Institute (CPDO&TI), Bengaluru, Karnataka. Dr Parveen Kumar, Director, ICAR-CCARI, Goa, extended a warm welcome to the dignitaries and presented a brief about the Institute and the research activities being carried out.

Dr SK Malhotra highlighted the importance of horticultural crops in ensuring nutritional security and the scope of floriculture in the coastal region. He also spoke about the newly emerging fields of nanoscience, biostimulants, natural farming, precision farming, use of drones in agriculture. He also interacted with the scientists, subject matter specialists and technical staff of ICAR-CCARI, Goa and ICAR-KVK, North Goa on different issues like biopesticides and floriculture. Dr Mahesh SP highlighted the importance of sharing knowledge among the organizations and collaboration for enhancing the effectiveness of research. He suggested the development of app-based platforms for sharing the success stories of the innovative farmers for effective transfer of the technologies. The dignitaries also visited experimental fields of coconut based Integrated Farming System (IFS), coconut based cropping systems, Lowland IFS, Fodder Museum, dairy cattle unit, poultry unit and interacted with scientists and staff.



(Source: ICAR-Central Coastal Agricultural Research Institute, Goa)

Chief Secretary, UP visited ICAR-IISR and KVK, Lucknow

Lucknow, January 2022. Hon'ble Chief Secretary, Uttar Pradesh, Shri Durga Shankar Mishra, visited ICAR-Indian Institute of Sugarcane Research and its Krishi Vigyan Kendra, Lucknow. He was accompanied by Shri Devesh Chaturvedi, Additional Chief Secretary, Agriculture, Govt. of Uttar Pradesh.

Appreciating the efforts of IISR in research and on and off-campus training imparted to the farmers, Shri Mishra suggested that all the training programmes should be conducted in hybrid mode so that the farmers residing at distant places can also attend the training in virtual mode and accrue the benefits of training by increasing their farm income. He advised the Scientists to disseminate success stories of the progressive farmers through Facebook, WhatsApp and YouTube etc. Shri Mishra advised the Scientists of the Institute to make videos of various technologies and upload the same on YouTube for dissemination among the masses. Shri Mishra visited Farm Machinery Bank, Nursery raising Unit, Vermicompost, Dairy Unit, Vegetables Demonstration Unit, Nutrition Garden, Roof Top Gardening, Bee keeping Unit, mushroom production Unit and exhibition. He also visited the sites of Integrated Farming System Trial and Jaggery Unit of the Institute. He appreciated the work done at the Krishi Vigyan Kendra.

At the outset, Dr A D Pathak, Director, ICAR-Indian Institute of Sugarcane Research, Lucknow welcomed the Guests and narrated about the R & D achievements of the Institute. Dr A K Dubey, Head, KVK, IISR, Lucknow and all the Subject Matter Specialists showed the various technologies at KVK to the visitors. Shri Ashwini Kumar Pandey, Chief Development Officer, Lucknow; Dr. Vivek Singh, Director Agriculture, UP; Dy. Director (Agriculture), Dy. Director (Plant Protection), Dy. Director (Ag. Extension), District Agriculture Officer and other Senior Officers of U P Government and IISR, Lucknow were also present on this occasion.



ICAR-IGFRI, Jhansi participation in Interaction meeting of Hon'ble Minister Shri Narendra Singh Tomar with farmers, livestock keepers, and Women self-help groups

Jhansi, 28 January 2022. Shri Narendra Singh Tomar, Hon'ble Minister Agriculture and Farmer's welfare, Government of India highlighted the

various programmes of central and state government regarding the upliftment of tribals, women self-help group and livestock keepers. He also mentioned about role of fodder and IGFR about various activities in the district. He also highlighted the role of 'Gir breed' of cows reared in the village Goras and asked state officials to prepare a plan involving IGFR, Veterinary officials and others to preserve and improve the particular breed.

The Bajra Napier hybrid cuttings/ planting materials were provided to the farmers by Hon'ble Minister. These materials were provided by IGFR, Jhansi in earlier programmes and multiplied at the Karhal block villages.

Dr Amaresh Chandra, Director felicitated the Hon'ble minister by offering shawl and memento depicting 'Diamond Jubilee Year' of ICAR-IGFR. Dr A K Roy, ProjectCoordinator talked about IGFR activities and role of forages in improving productivity and health of livestock. Farmer's friendly literature were also distributed to the farmers. Dr Chandra, Dr Roy and Dr V K Yadav also interacted with farmers and various queries regarding fodder cultivations were answered.



ICAR RCER, Patna celebrate 21st Foundation Day

Patna, 22 February 2021. The ICAR-Research Complex for Eastern Region, On this occasion, Dr S K Chaudhary, DDG, NRM, ICAR New Delhi, delivered the Foundation Day Lecture in online mode and applauded ICAR-RCER's performance during COVID 19 scenario. He stressed upon increasing and scaling out the impact of Institutes research in the field of rice fallow management and conservation agriculture in collaboration with the state Govt and KVKs. He also emphasised on development of Makhana value chain and business models through formation of FPO and farm entrepreneurs. Best worker awards were given to 10 ICAR-RCER employees in technical, administrative and supporting staff category. One bulletin related to Makhana value chain and Institute's hindi magazine "Akhay Kheti" were also released by the DDG, NRM. In his welcome address, Dr Ujjwal Kumar, Director, ICAR-RCER, Patna highlighted about the achievements of ICAR-RCER, during the last year.

Dr Anjani Kumar, Director, ATARI, Patna emphasised on enhancing farmer's income through adopting new technologies and marketing. He congratulated the ICAR RCER employees on its 21st Foundation day. In this occasion 12 progressive farmers from Bihar and Jharkhand were also awarded for their contribution in agriculture. Nearly 200 farmers from Bihar and neighbouring states were given quality seed of new rice varieties Swarna Shreya, Swarna Shakti and Swarna Samridhi.



Media personnel and retired employees of the Institute were also felicitated during the occasion. The farmers' Scientist interaction and exhibition stalls related to various agricultural and allied sectors technologies, improve farm implements were also displayed during this occasion. More than 500 farmers including scientists and officials participated in the event.

(Source: ICAR-Research Complex for Eastern Region, Patna, Bihar)

Dr CD Mayee, former Chairman, ASRB visited ICAR-CAZRI, Jodhpur

Jodhpur, 21 March 2022. Dr C D Mayee, Former Chairman ASRB, New Delhi and a renowned agricultural scientist and academician visited ICAR-Central Arid Zone Research Institute, Jodhpur. He was accompanied by Shri Bhagirath Choudhary, Board Member APEDA, GOI.

Dr Mayee appreciated the working models of smart agriculture, low cost polyhouses, automatic input delivery system in precision farming block of the institute. He also appreciated the work done on systems of integrated farming, agri-voltaic, round-the-year fodder production through water harvesting, and use of solar energy for agricultural operations. During the discussion with scientists, he was also informed, about the impact of these interventions on farmers' income, livelihood and nutritional security in the drought prone regions. Dr Mayee, gave his practical observations to improve the reach of these technologies by closing the gap between scientific "know-how" and farmers level to "do-how". He also suggested scientists to look for the issues arising due to improper soil and water management and emphasized to closely monitor microbial build up in polyhouses in view of changing climate scenario.



Director, Dr OP Yadav briefed about the evolving challenges in farming of arid zone in view of climate change and in improving farm productivity in the situation of depleting water resources. He also informed about the new initiatives taken by CAZRI to address these emerging challenges and their role in achieving the land degradation neutrality by 2030.

Governor, Jharkhand Shri Ramesh Bais and Shri Snajay Seth, Hon'ble Member of Lok Sabha, Ranchi visited ICAR-IINRG, Ranchi

Ranchi, 26-27 February 2022. Kisan Mela-cum-Agricultural Exhibition was inaugurated by the Chief Guests Hon'ble Governor, Jharkhand Shri Ramesh Bais; Shri Snajay Seth, Hon'ble Member of Lok Sabha, Ranchi was the Guest of Honour on this occasion.

Dr K K Sharma, Director, ICAR-IINRG, while welcoming the dignitaries, informed about the contribution of the institute in research and development of the commodity. He told that during its glorious journey of more than 97 years, the institute has worked for welfare of the poor tribal farmers and lac based industries through development of relevant technologies.

The Chief Guest outlined the usefulness of natural products for protection of health and the environment. He appreciated the achievements and role of the Institute in developing the NRG sector. He assured the farmers that he will advise the state government to take steps for development of the lac board. Six progressive farmers, entrepreneurs and forest officials were felicitated by the Chief Guest for their contribution in promotion of lac.

Shri Sanjay Seth, the Guest of Honour said that lac cultivation plays an important role in climate change mitigation as farmers conserve the trees for income generation.

A Kisan Ghoshti was also organized on both days wherein experts of the various organizations i.e. ICAR-IINRG, Birsa Agricultural University (BAU), ICAR-RCER Farming System Research Centre for Hill and Plateau Region, Central Tassar Research and Training Institute (CTRTI), Institute of Forest Productivity (IFP) and ICAR-Indian Institute of Agricultural Biotechnology (IIAB) interacted with the farmers and provided on the spot solutions to farm based problems raised by them.

1385 farmers participated in the Mela. They were shown around the Institute Research Farm and the Lac Museum of the Institute. Different research organizations, entrepreneurs, NGOs showcased their technologies and products through than 60 stalls.



Dr Subhash Singh, Director, SAMETI, Jharkhand, Guest of Honour said that doubling income is not possible by adopting only traditional methods of farming, unless we combine our struggle and hard work with scientific approach. Dr Nirmal Kumar, Head, Production and Extension Management Division and the Convenor proposed vote of thanks.

ICAR-CIBA Organized National Campaign on "Opportunities for system diversification in brackishwater aquaculture"



Tiruvallur, 10 March 2022. As a part of celebrations under *Bharat Ki Azadi ka Amrut Mahotsav*, ICAR-CIBA organized a National Campaign on "Opportunities for system diversification in brackishwater aquaculture" at Thoniveru village in Tiruvallur district of Tamil Nadu. About 72 participants including aqua farmers and farm women, students and staff from Madras Christian College, Chennai and scientists from CIBA have participated in the event. In her welcome address, Dr B Shanthi, Principal Scientist, SSD and Nodal Officer of *Azadi ka Amrut Mahotsav* events of ICAR-CIBA highlighted the importance of the year long celebrations and major agenda of the campaign.

Dr M Jayanthi, SIC, CCD; Dr M Kailasam, SIC FCD; Dr M Makesh, PS, FCD; Dr T Senthil Murugan, PS, FCD; and Shri Biju Francis, Scientist, CCD had interactive discussions in detail on opportunities for system diversification in shellfish and finfish farming and clarified the farmers and students queries. Dr B Shanthi motivated women farmers by organization of events like rangoli making and sportive entertainment events and prizes were distributed to the winners.

She also demonstrated preparation of delicious dishes and value added food items from fishes. The programme ended with vote of thanks proposal by Dr T Senthil Murugan, PS, FCD.



ICAR-NRCC showcase relevance of camel during International Camel Festival

Bikaner, 6 March 2022. ICAR-National Research Center on Camel facilitated organization of International Camel Festival under the joint aegis of District Administration Bikaner and Tourism Department of Rajasthan to showcase 'Camel in Ecotourism'. The event has principal attraction like 'Camel Race', 'Camel Dance', 'Camel Decoration', 'Camel Fur-cutting & Designing' apart from popular cultural attractions like 'Rural Wrestling', 'Miss Marwan' and 'Mr Bikana' competition that pulled nearly 3500-4000 spectators. A total of 12 camels participated in camel race, 6 in camel dance, 17 in camel decoration, 9 in camel fur cutting.

Honorable Vice Chancellor of SKRAU, Bikaner Prof. R P Singh inaugurated Agriculture and Livestock Technology Exhibition which received participation from 11 institutions viz. ICAR Institutes, SKRAU, RAJUVAS, SSG groups supported by NABARD and AMUL. Prof. Singh reiterated that such farmers'-friendly technology exhibits will certainly increase awareness and encourage them to seek for entrepreneurial skills and livelihood from agri-enterprises. Dr A K Tomar, Director, CSWRI and Dr B D Sharma, Director CIAH also participated in the event.

Speaking on the occasion, Shri Neeraj K Pawan, Divisional Commissioner Bikaner zone, and District Collector, Shri Bhagwati Prasad Kalal said that such traditional events hold breath in the context of development and conservation of camel species; have potential to attract more and more national and international tourists to have a glimpse on art, culture, rural life and heritage of this place. DIG Shri Pushpender Singh Shekhawat from the Border Security Force also graced the occasion.

Excited by the event organized at NRCC, Dr Artabandhu Sahoo, Director, NRCC said that although the declining number of camels across the country is a matter of concern, camel will continue to be part of the rich cultural heritage, art and culture of western zone. Keeping in view natural sand dune landscape of the centre and its tourist centered attraction, Director thanked the district administration and Shri Bhanu Pratap, Deputy Director Tourism, for giving an opportunity to host the event and help in promoting camel based livelihood and economic security as an impetus to check the declining camel population in India.

“Palm biodiversity park” and “Farmers - Scientist Interaction” on Palmyrah (TSP)

Pandirimamidi, 11 March 2022. Dr G R Chintala, Chairman of the National Bank for Agriculture and Rural Development (NABARD), paid a visit to the ICAR- AICRP on Palms at Pandirimamidi, Andhra Pradesh. During his visit, he opened the “Palm Biodiversity Park” at Pandirimamidi center (arecanut, jaggery palm, date palm, wild date, coconut, tilipoti palm, oil palm,) and handed Palm Jaggery producing kits to Palmyrah tappers and Coconut seedling to tribal farmers under Tribal Sub Plan. He also visited Pamugandi and Polavaram Panchayats to promote palmyrah cultivation and product utilization with tribal farmers, and he also launched a 25-tonne capacity organic manure unit (palm waste). Since 1995, elite palmyrah germplasm has been collected at AICRP on Palms centres, Horticultural Research Station, Pandirimamidi (YSRHU). So far, 272 Palmyrah germplasm accessions have been gathered and are being evaluated. Earlier, welcoming the chief Guest, Dr T Janakiram, Vice Chancellor, Dr YSRHU, briefed about the centers 's achievements. Necessary training and method demonstration was imparted for higher productivity and income of the farming community.

(Source: Project coordinator, AICRP on Palms, ICAR- CPCRI Kasaragod-Kerala)



Palm Biodiversity Park

Training

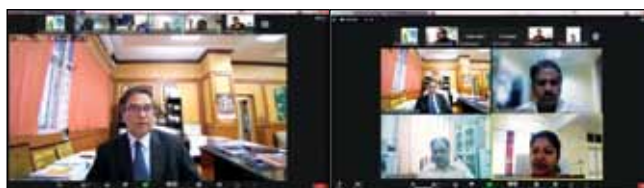
Bhopal, 10-21 January 2020. ICAR-CIAE, Bhopal organized African-Asian Rural Development Organization (AARDO) sponsored E-training on “*Agricultural Engineering Technologies for Enhancing Productivity and Profitability in Agriculture Sector*”. The broad objective of this training programme is to share innovative agricultural engineering technologies developed by CIAE and other organizations for upskilling and sensitization of the participants in the fields of pre and post-harvest mechanization.



Bengaluru, 2-4 December 2021. ICAR- National Institute of Animal Nutrition and Physiology, Bengaluru organized a short-term hands-on training programme, “*Semen evaluation techniques and nutritional management of breeding bulls*”. The training has been organized as a part of “*Azadi Ka Amrit Mahotsav*” in association with Department of Animal Husbandry and veterinary Services, Karnataka for the benefit of veterinarians and technicians working in the frozen semen banks. Fourteen participants from four frozen semen banks located in Karnataka participated in the training.

Cochin, 6-8 January 2022. A National level training program on Cashew “*Recent Advances in Cashew Production Processing & Post Harvest Management*” was jointly organized, by Directorate of Cashewnut & Cocoa Development, Cochin, Kerala in collaboration with ICAR - Central Coastal Agriculture Research Institute at Sal Training Hall, Krishi Vigyan Kendra-North Goa. The training program was attended by the delegates from 13 different states.

Hyderabad, 03-07, January 2022. Online Training Programme on *Impactful ICT Applications and Technologies in Agriculture* was successfully organized by ICAR-NAARM, which spanned over 5 days. All the resources required for the programme were shared in Online mode, which includes ecosystem of digital resources required for hands-on practical session as well. The programme was designed in to 2 sections of 2 & 3 days each which covered (1). Concepts of ICTs, Artificial Intelligence, Machine Learning, Deep Learning & IoT (2). Presentation by various Startups explaining about their digital platforms that are currently implemented for various stakeholders. The participants represented 13 states and belonged to 12 agricultural disciplines.



(Source: ICAR-National Academy of Agricultural Research Management, Hyderabad)

Cuttack, 12-14 January 2022. The first batch of training programme on “*Pension & Retirement Benefits*” has been organized by the ICAR-National Rice Research Institute, Cuttack, Odisha through virtual mode for enriching the knowledge, increasing competency and efficiency among the Finance & Accounts Officer, Administrative Officer and other officers working in ICAR institutes. The sessions covered during the programme were service rule, leave rule, qualifying service, pay fixation, classes of pension and gratuity, family pension, CVP, NP and case studies on pension related issues. The senior level administrative and finance officers of the ICAR HQs. & ICAR institutes and retired senior officers of ICAR & ISTM have delivered the sessions, interacted with the trainees and clarified their doubts on pension & family pension related issues. 58 participants from 38 ICAR institutes representing from 22 States/UTs participated in the training programme.

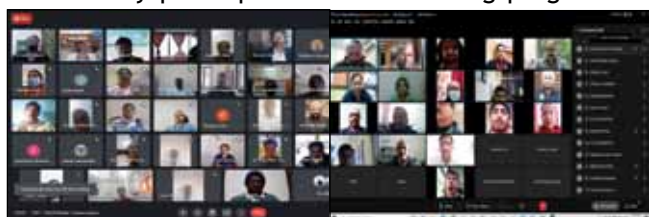


Hyderabad, 03-15 January 2022. As part of the ‘*Azadi Ka Amrit Mahotsav*’, ICAR-IIRR successfully organised the Online Training Programme in association with Society for Advancement of Rice Research, Hyderabad, on “*Advanced Statistical Techniques for Data Analysis using R*”.

The training program was open for Working professionals in agricultural and allied sectors, Students/Research Scholars/Project staffs and for Society for Advancement of Rice Research Members (SARR). Totally 480 participants have registered across the country, 58% are students, 33% are working professionals including Scientists, teaching faculty and private sector; 9% of participants were SARR members.



Jhansi, 17-20 January 2022. ICAR-IGFRI, Jhansi in collaboration with MANAGE, Hyderabad organized a four-day training programme on ***“Agripreneurship Development on Value Added Fodder Products”*** during 17-20 January 2022. The training was conducted virtually with an intent to acquaint the participants with the untapped potential of fodder technologies and capitalizing its veiled business opportunities. Around 50 agripreneurs from across the country participated in the training programme.



Hyderabad, 25 January 2022. ICAR-NAARM, Hyderabad organised a 21-days ICAR-Sponsored Online Winter School on ***“Advances in Social Science Research and Evaluation”*** at on 25-1-2022. The 21-days online course was organized from 25 January to 14 February 2022, with the core objective of imparting advanced knowledge and skills in conducting impact-oriented research and evaluation in social sciences in agriculture. Forty-two participants representing NARS institutions from 15 States and one Union Territory are attending this course.



(Source: ICAR-National Academy of Agricultural Research Management, Hyderabad)

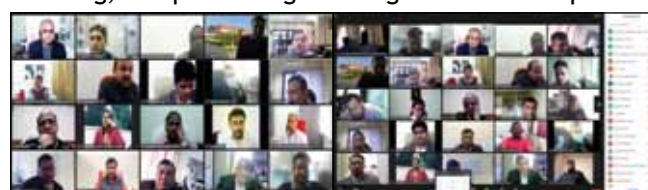
Lucknow, 17-22 January 2022. A 6 days ***“Training Programme on Establishment Matters for LDC and UDC of ICAR”*** has been organized by the ICAR-Indian Institute of Sugarcane Research, Lucknow in collaboration with HRM Unit of ICAR HQ. The programme was organized under the Human Resource Development policy of the council and was successfully completed through Online Mode. The various topics related to Establishment like, Governance in ICAR, Noting & Drafting, Office Procedure, Financial Management, CCS (Conduct) Rules, Leave Rules, TA/TTA Bill Processing, CS (MA) Rules, Scientific & Technical Assessment, Leave Rules,

ACP/MACP Guidelines, Right to Information Act-2005, Time Management, Team Work, Motivation, Official Language Acts & Rules, etc. were covered during these 6 days.

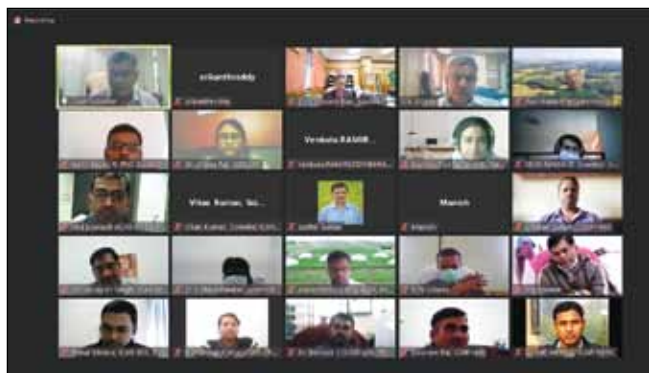
Kochi, 3-23 January, 2022. The ICAR sponsored 21-day online Winter School on ***“Recent development in Taxonomic techniques of marine fishes for conservation and sustainable fisheries management”*** was successfully conducted by ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi. Aimed at empowering young researchers with the modern taxonomic techniques in order to conserve and sustain the Indian fisheries, the Winter School was attended by a total of 25 participants representing the NARS Institutions from 15 States.



Bhopal, 1-21 February 2022. ICAR-Central Institute of Agricultural Engineering, Bhopal organized ICAR-Sponsored 21-days Winter School on ***“Recent Advances in Electronic Devices, Artificial Intelligence and Machine Learning for Precision Agriculture”*** in virtual mode. The broad objective of the winter school was to recognize the importance and need of precise and optimum use of agricultural inputs to reduce cost of cultivation along with conservation of our natural resources. The programme was designed to update the skills and knowledge of the researchers/teachers/extension specialists involved in the field of design, development and extension activities related to electronic devices, artificial intelligence, machine learning, deep learning and algorithm development.

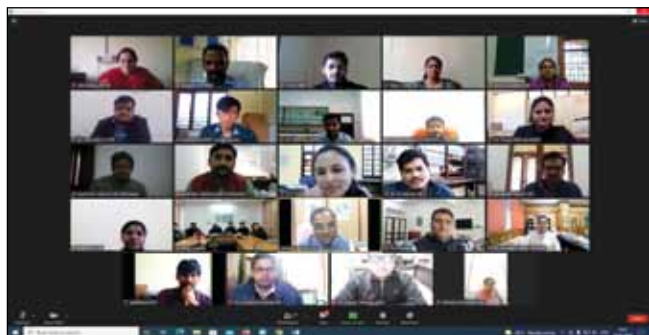


Hyderabad, 22 January 2022. A 6-days online training programme on ***“Analysis of Experimental Data”*** commenced on 17.01.2022 concluded on Jan 22, 2022. There were 131 participants in the programme including 28 female participants from various ICAR institutes, State Agricultural Universities and private institutions. The aim of the programme was to orient the researchers with various statistical techniques for conducting experiments, collecting data from the conducted experiments and analyze them using various statistical techniques and interpret the results properly to give a meaningful validation. Participants were exposed to various advanced analytical techniques and hands-on training for analysis of data using open source, powerful and popular R software.



Source: ICAR-NAARM, Hyderabad

Hyderabad, 07-18 February 2022. ICAR-NAARM conducted a two-week virtual training programme on “*Project Management & Research Methodology*” for the newly recruited/promoted scientists of Indian Council of Forest Research and Education (ICFRE), Dehradun. Total 26 scientists, including 8 female scientists, from 8 different institutions under the ICFRE situated at Dehradun, Jorhat, Jabalpur, Hyderabad, Bangalore, Jodhpur, Coimbatore and Ranchi took part in the training. The training was designed in two modules of each with one-week duration covering topics on ‘Project Management & Science Communication’ and ‘Research Methodology’. The first module covered various aspects of project management and communication skills viz., design thinking, building research concepts, monitoring and evaluation terminologies, etc. The second module dealt with research methodology and various statistical concepts viz., data analytics, multivariate analysis and cluster analysis was covered beside the detailed practical sessions on the design of experiments.



Source: ICAR-NAARM, Hyderabad

Kolkata, 16-18 February 2022. ICAR-National Institute of Natural Fibre Engineering Technology, Kolkata organized three days Awareness Training Programme in collaboration with Indian Rubber Manufacturers Research Association (IRMRA), East Centre on “*Quality Management System as per ISO 9001:2015*”.

26 participants from different ICAR Institutes representing different categories of employees, viz. Scientists, Technical officers, Administrative staffs were participated in the programme through online and offline mode.

(Source: ICAR-National Institute of Natural Fibre Engineering and Technology, Kolkata)



Hyderabad, 7-18 February 2022. ICAR-NAARM organized ten days skill development training programme on “*Eco Friendly Bag making*” under SCSP in collaboration with Krishi Vigyan Kendra (KVK), Yagantipalle for SC women. A total of 20 women from two villages viz., Yanakandla, Yagantipalle of Bethamcherla mandal of Kurnool district, Andhra Pradesh were trained on the aspects of bag stitching using materials such as jute and cloth, as well as a business plan for starting a bag-making enterprise. During the programme, the participants acquired technical training in the stitching and designing of 18 different types and sizes of bags.



Source: ICAR-NAARM, Hyderabad

Puttur, 16-18 February 2022. A virtual training programme on “*Cashew Production and Post Harvest Technologies*” sponsored by MANAGE, Hyderabad was organised by ICAR-Directorate of Cashew Research, Puttur.

The training received a good response from the participants from different parts of the country. A total of 140 participants had attended this training programme of which nearly 70 were students and the rest were faculty from State Agriculture Universities, KVKs, SAMETI, ATMA, NGO and private organisations. Training was imparted on various aspects such as nursery management, cashew varieties, breeding in cashew, canopy management, soil and nutrient management, protection measures and processing of Cashew. The participants expressed that the training was very useful in increasing their awareness and knowledge.

Hyderabad, 15-17 February 2022. As part of the ‘Azadi Ka Amrit Mahotsav’, ICAR-Indian Institute of Rice Research (ICAR-IIRR) has successfully conducted a Virtual users training cum workshop on AICRIP Intranet functionalities. This programme was organised by ICAR-IIRR in association with Society for Advancement of Rice Research, Hyderabad.

The training program was targeted to sensitise AICRIP Co-operators on data uploading, analysing

and generating the reports through AICRIP Intranet with live demonstrations and discipline-wise hands on training sessions were also conducting as part of the training cum workshop. A total of 160 participants took part in the training cum workshop among which, 40% are from crop improvement, 33% are from crop production and 27% are from crop protection.



Goa, 21 February 2022. ICAR-Short Course on “Ecosystem services analysis in diversified coconut and arecanut gardens” started on 21 February 2022 in hybrid mode at ICAR-Central Coastal Agricultural Research Institute, Goa.

A total of 13 physical mode participants and 13 online participants from 5 different states representing ICAR Institutes, State Agricultural/Horticultural Universities, deemed to be University and Krishi Vigyan Kendras are participating in the training program.



Kolkata, 18-19 February. ICAR-Central Institute of Fisheries Education, Kolkata Centre, organized the Skill development training programme on “Aquaculture technologies as livelihood options” during 18-19 February, 2022 under SCSP programme for 100 fish farmers at WBCADC KVK, Sonamukhi block, Bankura, West Bengal.

The Institute distributed quality fish feed, lime, container for harvesting, cast net, pH water testing kits and dissolved oxygen testing kit to 100 SC fish farmers of the district from villages Panchal, Manikbazar, Dihipara, Rangamati, Madanpur, Palashdanga, Kochdih and other Panchayats.



Varanasi, 02-22 February 2022. ICAR-Indian Institute of Vegetable Research Varanasi conducted 21 days winter school training programme on “Underexploited Vegetables: Unexplored treasure trove for Food,

Nutritional and Economic Security”. The main objective of the training programme was to focus on nutritional, medicinal and economical importance of underexploited vegetables. Apart nutritional and medicinal importance, the participants were also exposed on historical and spiritual importance, potential, genetic resources diversity, nutritional, phytochemical compositions, organic protocols, micro greens as smart nutria-rich healthy food, processing and value addition, ITKs, application of ICTs and suitability of these crops in small farming system, modern irrigation techniques, application of biotechnological & bioinformatics tools in systemic study of the underutilized vegetables. A total of 25 faculty/ scientist/SMS and other participants from across the country participated in the training programme.

Srinagar, 17-22 February. ICAR-CITH, Srinagar and its Regional Station Mukteshwar organized five one day training programmes for the promotion of walnut in Uttarakhand in collaboration with UFRMP-JICA Dehradun. The programme focused on the production of quality planting material in walnut and establishment of mother orchards and their management.



Maldevta

West Kameng, 7-8 March 2022. The ICAR-Central Institute of Temperate Horticulture, RS-Dirang, West Kameng, Arunachal Pradesh organized training programmes on basics of temperate fruit production and promotion of organic farming in the District. During the programmes 120 farmers of different villages of West Kameng District of Arunachal Pradesh participated. The participants were acquainted about various aspects of temperate fruit production viz., propagation techniques, nursery development, disease management, and the importance of organic farming for livelihood security. Participants actively participated in discussion and showed great interest in learning the basic aspects of temperate fruit production and organic farming. At the end of the training programme, Vermicompost was distributed among the participants.



Source: ICAR-Central Institute of Temperate Horticulture, Srinagar

कृषि विज्ञान केंद्र द्वारा युवाओं को शूकर पालन उद्योगिता में प्रशिक्षण कार्यक्रम का आयोजन

बरेली, 8-10 मार्च 2022। कृषि विज्ञान केंद्र, बरेली द्वारा मत्स्य, पशु पालन एवं डेयरी मंत्रालय, भारत सरकार की परियोजना शलाभकारी डेयरी फार्मिंग और पशुधन प्रबंधन पर प्रशिक्षण कार्यक्रम के माध्यम से किसानों का क्षमता निर्माण के अंतर्गत शूकर प्रबंधन विषय पर दिनांक 8 से 10 मार्च 2022 तक तीन दिवसीय ऑन कैम्पस प्रशिक्षण कार्यक्रम का आयोजन किया गया। इस तीन दिवसीय कार्यक्रम में मूल्यवर्धन हेतु स्वच्छ एवं उच्च कोटी के मांस उत्पादन करने की जानकारी दी गई। कृषि विज्ञान केंद्र द्वारा प्रशिक्षण पूर्व एवं प्रशिक्षण पश्चात प्रशिक्षणार्थियों का मूल्यांकन किया गया। इस कार्यक्रम में उत्तर प्रदेश एवं दिल्ली राज्य के कुल 40 प्रशिक्षणार्थियों (38 पुरुष और दो महिलाओं) ने भाग लिया।



West Sikkim, 4-5 March 2022. A training programme on “Ornamental Fish Culture - a Source of Income Generation” was organised under North East Hill activity by ICAR-Directorate of Coldwater Fisheries Research, Bhimtal in collaboration with the Department of Fisheries, Government of Sikkim at Mabong village (West Sikkim).

They were lectures on ornamental fish, its culture and importance in livelihood security by the team of scientists and technical staff. Awareness was also created amongst the participants on transport of ornamental fish. The second day was fully dedicated to hands-on training on making aquaria and biofilters. By the end of the day, three aquaria were made with active participation of the trainees. The trainees were provided with all the inputs such as glass, silicon gel, plants, thermostats, filters, powerhead, etc. for preparing an aquarium. A total of 25 farmers including women attended the programme on both the days.



North Goa, 09-11 March 2022. ICAR-Central Coastal Agricultural Research Institute (CCARI) and ICAR - Krishi Vigyan Kendra (KVK), North Goa organized three days Skill Development Training on “Scientific Backyard Poultry” funded by Ministry of Fisheries, Animal Husbandry and Dairying, Government of India under AzadikaAmritMahotsav. During the three days training programme several important aspects of poultry farming were discussed. It was followed by practical sessions and field visits to Institute poultry farm, Government poultry farm, Ela and KVK’s poultry farm. Total 116 poultry farmers from Goa participated the programme.

Ooty, 11 March 2022. DST funded two week national online training program on “Advances in Integrated Watershed Management for Rural Livelihood” organized at ICAR-IISWC, RC, Ooty, was concluded. Forty two Group ‘A’ officers from teaching and other government departments from 13 states participated.

Gangtok, 15 March 2022. To support quality organic honey production with honey bee as a pollinator component in different regions of Sikkim through demonstration, training and participation approach under organic agriculture production, ICAR Sikkim Centre organized hands on training cum input distribution programme under the project “Morphological and biochemical characterization, mitigating climate change impact and quality honey production in buckwheat (*Fagopyrum spp.*) under organic condition: A community participation approach for doubling livelihood empowerment” under the dynamic leadership of Dr. Ramgopal Laha (Joint Director, ICAR-Sikkim Centre). More than 20 tribal farmers of Sajong, Rumtek, East Sikkim district participated in the program. The main aim behind such program was to provide the scientific bee keeping technology for quality organic honey production and to distribute honey bee box to the resource poor farmer. The selection of ideal apiary, proper maintenance of the apiary and the benefits of bee hive products were thoroughly discussed with trainees.



Umiam, 15-16 March 2022. ICAR- National Research Centre on Meat, Hyderabad and ICAR-Research Complex for NEH Region, Umiam, organized a 2-days collaborative training programme on “Hygienic Meat Production, Processing and Value Addition” under NEH component at ICAR-Research Complex for NEH Region, Umiam.

The importance of quality meat, hygienic meat production, value addition and further processing to ensure better returns, importance of zoonotic diseases, need for establishing modern hygienic slaughter houses, the role of entrepreneurs in startups and traditional meat products was highlighted.

Considering the increasing demand for meat and meat products in NEH region and the potential for establishing new business ventures and start up entrepreneurship, the 2-days training program had provided hands-on experience about hygienic slaughtering of poultry, goat and pigs, fabrication of carcass, processing of different value added meat products, packaging, equipment and ingredients selection, funding agencies, regulating agencies, etc. The program was attended by 31 entrepreneurs in including 20 women.



Kolkata, 15 February to 07 March 2022. The ICAR Sponsored Winter School entitled '*Advanced Extension and Communication Strategies for Sustainable Livelihood through Animal Husbandry and Allied Farming System*' was organized (21 days) by the Dept. of Veterinary & A.H. Extension Education, F/O-Veterinary & Animal Sciences, W.B. University of Animal & Fishery Sciences, Kolkata. A total of 34 trainee participants in the rank of Assistant Professor or equivalent and working under Veterinary Science or Agricultural Science Universities, ICAR Institute, National/Central institute or organization, KVKs of ICAR/SAU and other similar central or State level academic or research institute participated for their professional knowledge upliftment as well as career advancement benefit in their concerned institutes of Pan India.

In this winter school, a total of 49 senior level nationally acclaimed resource persons took session on various innovative Extension education concepts. A 21 days long deliberations was very meticulously through interactive deliberation, group discussion, quizzes, group activities, brainstorming session, presentation, assignments and systematic evaluation among the participants for better knowledge retention, capacity building and visible impact of the event.



Participants of the winter School, ICAR/SUA

CARI-Nirbheek: Pride of Backyard Poultry Farming

The “Backyard Poultry Farming” may be one of the effective tools to achieve the goal of doubling Farmer’s income by 2022 through employment and income generation, alleviating malnutrition besides reducing migration from rural to urban areas. Conservation of desi chicken and development of crosses for rural poultry has been one of the mandated activities of ICAR-Central Avian Research Institute (CARI), Izatnagar, Bareilly (UP). CARI-NIRBHEEK has been one such premium Germplasm developed in Indo-German Collaborative Project in 2000 at CARI and evaluated widely for backyard poultry production under different as well as harsh agro-climatic conditions in the country. After its lab testing at Institute, these birds were put to rigorous field evaluation during 2000-2003, on more than 9000 chicks in different states like Bihar, Gujarat, Haryana, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand. In continuation, during 2003-2004, CARI-NIRBHEEK birds were released by the Institute for commercial exploitation under scavenging/backyard system of poultry production.

The CARI-NIRBHEEK is a dual type coloured indigenous chicken for egg and meat production. CARI-NIRBHEEK chicken variety addresses all the problems of backyard poultry production system viz predation, adverse climate, substandard nutrition, poor productivity, etc., due to hardy nature, coloured feather, longer shank, lighter/lean body, higher growth rate and better egg production capabilities. This bird has special attributes like majestic gait, high stamina, pugnacity and dogged fighting qualities which reduce predation problem under backyard conditions. They are well adapted to tropical and subtropical climates of the country. Among dual type of backyard varieties, CARI-NIRBHEEK performs better in FCR, egg and meat production and stress tolerance parameters. Further, due to qualities like adaptation, coloured feather, anti-predation qualities, very low mortality, this bird is in high demand among farmers. Due to its better production potential under backyard small holder production system, CARI-NIRBHEEK has been recognized by FAO as one of the crossbreds for tropical and sub-tropical climate of India.

Phenotypically, CARI-NIRBHEEK looks like AseelPeela. Feather colour of these birds is almost golden-red in male and golden-red to yellow in female. Its skin and shank colour is yellow, whereas, earlobe is red in males and red and white in females. Eye colour is predominantly black. These birds possess ‘pea comb’ of medium to large size, dark-red in males to small, light-red in females. Wattles are found only in males. Fighting instinct in males and broodiness in females

are some unique traits of this variety. Males and females of this variety weigh around 1850 and 1350 g, respectively at 20 weeks of age. After attaining sexual maturity at about 170-180 days, females lay around 170-200 eggs of about 54g. Recorded fertility, hatchability and liveability of these birds are around 88, 81 and 94%, respectively. The higher estimates of humoral and cellular immunity parameters indicate its better disease resistance ability.

After brooding (6-8 weeks) under ad lib feeding and vaccination with Marek’s, New Castle and Fowl Pox Diseases, the chicks of CARI-NIRBHEEK may be sold to poultry farmers for semi intensive rearing system. The chicks may be reared in limited number of 5 to 25 birds depending on the open yard available in the vicinity for scavenging of the birds. Birds are let free for whole day for scavenging in the backyard open field surrounding of the house. Night shelter with good ventilation and hygiene is to be provided for protection from the predators, which can be prepared from the low cost locally available materials. During first 2-3 days, birds should be provided sufficient feed (mixture of grains) and there after it should be gradually reduced to 35-40 g/bird/day. But the quantity may be increased or decreased depending on the availability of natural feed resources in field, which depends on season and the rainfall. Availability of plenty of clean water round the clock is essential. Periodic de-worming at 2-3 months interval is required to be practiced to check parasitic infestation. It is also recommended that males should be sold or used for domestic purposes at the age of 15-20 weeks and new lot should be added in the flock. Benefit-cost ratio of 3:1 has been estimated for part time productivity which may be further increased with adequate feeding and management.

These are the choicest birds among farmers for backyard poultry and hence, adopted by farmers in almost 16 states of the country like Uttar Pradesh, Uttarakhand, Rajasthan, Haryana, Bihar, Jharkhand, Chhattisgarh, Maharashtra, Odisha, Delhi, J&K, Manipur, West Bengal, Tamil Nadu, Andhra Pradesh and Telangana. In last the 20 years, more than 13.35 lakh germplasms have been supplied to various progressive farmers, Government and Non-governmental Organizations of the country. The mango farmers of Eastern Uttar Pradesh have integrated rearing of CARI-NIRBHEEK with mango cultivation to get rid from various pests in orchard and reducing the cost of pesticides with more income generation through sale of mango, chicken egg and meat, and saved cost towards pesticides. As per the reports of ICAR-CISH, Lucknow, farmers had gained Benefit: Cost ratio of 4.64 by integrating rural poultry in mango orchard. In projects like Farmers First Programme TSP, SCSP, etc., of many ICAR Institutes, farmers

have adopted backyard poultry farming using CARI-NIRBHEEK Germplasm with encouraging and satisfying outputs of additional income and nutritional security.

Progressive poultry farmers practicing backyard/scavenging farming willing to get Germplasm of CARI-NIRBHEEK may visit Institute's website (<https://cari.icar.gov.in>) or contact on Telephone Nos. 91-581-2303223; 2300204; 2301220; 2310023 or through email cari_director@rediffmail.com; director.cari@icar.gov.in.



CARI-NIRBHEEK male and female



Eggs of CARI-NIRBHEEK

(Source: ICAR-CISH, Lucknow)

Success story of an upcoming rural woman- Implementing mixed cropping in coconut gardens

Smallholdings and family farming are two predominant modes of agricultural production in the Konkan region of Maharashtra. Twelve years before, Smt Priyanka Nagwekar (34), a resident of Hatis village in Ratnagiri Tahsil of Ratnagiri District ventured into family farming. Both Priyanka and her husband are graduates and her husband was working in a private company in Ratnagiri. She was cultivating subsistence crops like rice, finger millet, vegetables, etc., in the traditional farming system in 22 ha farm. Her farm income was very limited due to a lack of knowledge and skill about improved agricultural technologies especially coconut and spices crops. She was very ambitious to harvest the full productivity and to make maximum income from the crop. One day she came across the leaflet prepared by Regional Coconut Research Station, Bhatye, Ratnagiri, on the role of vermicompost in enhancing crop productivity and mixed cropping of spices in coconut garden '*Lakhibaug*' concept to enhancing farm income. She got interested in the mixed cropping of spices in the coconut garden and vermicompost production technology. She started to cultivate spices such as black pepper, nutmeg and cinnamon as mixed crops in a coconut garden which fetched her additional income. She initiated vermicomposting the biomass of coconut (leaves after removing petiole portion; spathe and bunch waste), banana (leaves and pseudostem after harvest of bunch), nutmeg and cinnamon (pruned biomass fresh) using *Eudrilus* sp. of earthworm and applied to coconut palms and component crops. This initial step increased her confidence and mooted her interest to start a mixed cropping system and vermicomposting as an income-generating activity. After acquiring adequate knowledge and skill, availing capital was the main challenge before her for establishing a mixed cropping system in coconut along with the vermicomposting unit.

Training and motivational support

Priyanka attended a 5 days vocational training on coconut and spice cultivation technology and vermicompost production at Regional Coconut Research Station, Bhatye, Ratnagiri. She also attended 6 days of the vocational training program on coconut tree climbing, FOCT' program organized at RCRS, Bhatye, Ratnagiri in collaboration with CDB, Kochi. Afterward, she became a master trainer of 'FOCT Programme at Regional Coconut Research Station, Bhatye, Ratnagiri, and also in the Konkan region.

Output

On realizing the financial benefits, she decided to start commercial mixed cropping of spices in her old coconut orchard along with a vermicompost production unit. She felt that there was a huge demand for organic coconut and that spice farming

is trending among the farming community. She realized that people prefer organic food especially tender coconut and spices including black pepper, nutmeg, kokum, and banana. Therefore, she decided to expand her small-scale activity into a commercial business venture. The earnings of her husband were insufficient to run the family hence she insisted him join to in her mixed cropping and nursery activity. Thus, eventually they expanded their activity by producing rootstock for spice grafting. They purchased a four-wheeler for farming purposes. During the covid-19 pandemic, this vehicle was used for delivering agricultural produces to market and also for home delivery of produces.

Nursery Management: A Jump toward Next Agriculture based start-up

After establishing herself in mixed cropping of coconut and spices, Smt Priyanka Nagwekar mooted the idea of setting up a spice nursery with black pepper cuttings/seedlings. Vermi compost is the media for growing spice plants and she has it in enough quantity. Another reason for starting spice nursery was the demand for spice plants especially 'Bush pepper' plants in Ratnagiri and as pot plants in urban areas. She also had a sales outlet in Ratnagiri. She attended training in Nursery Management at Regional Coconut Research Station, Bhatye, Ratnagiri. According to her, production of vermicompost and vermiculture is the best option for rural women which can be set up with minimum input cost and time.

Outcome

Table 1: Economic status of Agribusiness starting

Name of Start up	Production capacity	Selling rate (₹)	Turnover / Year (₹)	Production cost. (₹)	Net Profit (₹)
Coconut & Spices	Nuts 6,000 Cinnamon 6 kg	22 500	132,000 3,000	46,000 1,140	86,000 1,860
Vermicompost unit	12.0 tonnes	15/kg Vermiculture @ 800	225,000 8,000	68,000 3,600	156,000 4,400
Nursery Management	Black pepper 5,000	15	75,000	28,000	47,000
	Bush pepper 1,000	60	60,000	18,000	42,000
	Coconut 1,200	70	70,000	19,000	51,000
Grant total (₹)			5,73,000	1,84,740	3,88,260

Impact

Smt Priyanka Nagwekar through her innovative agriculture practices could ensure economic stability to her family. Every year, her financial turnover is around ₹ 5.73 lakh from mixed cropping, vermicompost unit, and spice nursery. She is gaining a net profit of ₹ 3.82 lakh from farming alone. Though, her annual income is limited at present, she is planning to go for virgin coconut oil production to make a better return in the future. She is a beginner in an agribusiness startup. The motivation, inspiration, and contribution that she receives from her husband are also commendable. She has not only made her family self-reliant but is also able to provide assured employment for her family members.

(Source: ICAR - All India Coordinated Research Project on Palms, ICAR- CPCRI- Kasaragod)

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