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From the DG's Desk

Dear Readers,

Of the 141 million ha of net sown area in the country, 78 million ha is rainfed that contributes 40% of foodgrain production and supports two-thirds of the livestock population. Despite considerable progress made in irrigation development over the successive five year plans, 85% of coarse cereals, 83% pulses, 42% rice, 70% oilseeds and 65% cotton are still cultivated as rainfed. In rainfed regions, the annual precipitation is lower than the evapo-transpiration rates particularly in arid and dry semi-arid zones. However, rainfed agriculture is considered as a high risk venture being dependent on monsoon. Moreover, soils in these regions are deficient in nutrition. Evidently, rainfed agricultural scenario is influenced by both bio-physical and socio-economic factors as well as their interaction.

Major challenges of rainfed agriculture include managing climate/weather risks, particularly droughts and floods, bridging yield gaps, unabated land degradation, soil-health and productivity, balancing soil carbon, managing water resources for higher water productivity and stable yields, increasing employment opportunities and income, small-farm mechanization in view of rising labour scarcity for agricultural operations and as a whole, enhancing the livelihoods of the small- and marginal-farmers. The challenge, therefore, lies in balancing land use and cropping pattern as per the resource endowment and the shifts in the crop choice due to market scenarios.

Currently, productivity of rainfed crops is around 1.1 tonne/ha, and in a few cases beyond 2 tonne/ha as in pearl millet and finger millet. However, the yield gap is still wide which needs to be bridged by addressing regional imbalances in natural resources and technology, intake capacity of farmers, up-scaling doable technologies and in convergence with ongoing national/regional programmes. For yield maximization, selecting genotypes and ensuring their availability at village/farmer level with wide adaptability and resilience to climate variability remain a challenge. Together with enhanced production, biofortification of rainfed crops, particularly millets would be an opportunity as most of the

tribal people and farm labourers of dryland areas are suffering from protein and micronutrient malnutrition.

Frequent occurrence of mid-season and terminal droughts of 1 to 3 weeks consecutive duration during the main cropping season happens to be the dominant reason for crop failures and low yields in the rainfed areas where managing rainwater both *in situ* and *ex situ* (through farm ponds) is the key strategy for achieving higher water productivity at farm level. The available runoff can be harvested and utilized broadly for two purposes, i.e. to provide supplemental irrigation to the standing summer (*kharif*) crop to offset mid-season dry spells/terminal drought (flowering- grain filling stage) or facilitate sowing of the next winter (*rabi*) crop. Provision of critical irrigation during this period has the potential to improve the yields by 29 to 114% for different crops. Further, to mitigate in-season droughts *in situ* moisture conservation practices can be implemented with low cost and energy efficient implements.

Preparedness and implementation of crop contingency plans on real time basis is to be emphasized first to achieve desired crop acreage and second to enhance productivity during weather aberrations. District level agricultural contingency plans developed by the CRIDA in collaboration with other ICAR institutes, State Agricultural Universities and line departments need to be implemented at field level on a real time basis.

Preparedness and implementation of crop contingency plans on real time basis is to be emphasized first to achieve desired crop acreage and second to enhance productivity during weather aberrations. District level agricultural contingency plans developed by the CRIDA in collaboration with other ICAR institutes, State Agricultural Universities and line departments need to be implemented at field level on a real time basis. Development of protocols for weather-based crop advisories at block level is also necessary, given the diversity in land use and crop diversity. Enhancing insurance coverage for rainfed crops using weather based indices is also being contemplated with farmer-centric viewpoint. On-farm generation of employment is the overall goal with enabling policies and convergence national programmes such as MGNREGA, NMSA etc.

Soil-health card (SHC) based nutrient application improves nutrient use efficiency, input cost and higher net returns in rainfed agriculture. At the same time, conservation agriculture, though currently at research level in rainfed areas, is an upcoming strategy to deal with soil carbon and resource management on a long-term basis. In particular, integrated farming systems (IFS) for higher resource use efficiency, enhanced productivity, diversified and staggered income, greater employment generation through diversification and high-value crops, for horticulture- and livestock-based enterprises is critical in rainfed agriculture as the farm holdings are generally small. Integrating agroforestry into IFS models has great potential in stabilizing farm income and supporting livelihoods through simultaneous production of food, fodder and firewood. Livestock-based systems are critical in arid regions and developing fodder systems is essential to livelihood security in less developed and tribal regions. In high rainfall sub-humid to perhumid rainfed regions, IFS approach can be through farm-pond based farming systems with higher crop intensification, pisciculture, horticulture etc.

Technology transfer is one of the weakest links in rainfed agriculture. The public sector extension system is unable to meet the demands of the rainfed agriculture, which is quite diverse and challenging. Although integrated watershed development programmes are already in implementation with soil and conservation measures put on a landscape, the utility of these programmes for improvement of productivity of rainfed crops is not at the desired level. The only way is to enhance the productivity, and efficiency of the IWD program is to enable the capacities of the community based organizations and farmers groups so that the knowledge acquiring and transfer processes can go hand-in-hand. From kiosk-based information dissemination, we need to move towards mobile-based personal communication. With the provisions of high speed mobile technologies, detailed text and pictures can be transmitted through mobile phones. In this regard, research programmes on use of ICTs for monitoring and developing early warning systems for hazards such as drought, floods and other extreme weather events being taken up by the Council. Sensitization and capacity building of primary and secondary stakeholders about doable rainfed technologies leading to skill development and widening the knowledge base form a critical area as far as managing resources in rainfed agriculture is concerned.

A National Rainfed Agricultural Policy linking state dryland farming missions is necessary to drought proof the rainfed areas at microlevel. At the same time, the current nutrient-based fertilizer policy should be farmer-friendly. Promotion of small millets through public distribution system which not only will have focused policy in enhancing their productivity but also contribute to food security of the people in rainfed areas. There is a need for redesigning support system and incentives for upscaling successful experiences. The policies should focus on both seed and natural resource management technology centered agriculture that will contribute towards achieving safety-nets in agriculture as well as the nation's aspiration of achieving a second green revolution from the rainfed areas of the country.

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WORKSHOPS, MEETINGS, SEMINARS, CONFERENCES, BRAINSTORMING SESSIONS

Vice-Chancellors of Agricultural Universities and ICAR Directors Meet

New Delhi, 30 July 2014. The meeting of the Vice-Chancellors of Agricultural Universities and Directors of ICAR Institutes was held on 29-30 July 2014, which was inaugurated by Union Minister of Agriculture, Shri Radha Mohan Singh. The meeting continued under the Chairmanship of Dr S. Ayyappan (Secretary DARE & DG, ICAR) at NASC Complex, New Delhi on 30th July 2014. The salient features of the Meeting are as follows:

- Foreign deputation proposals should be submitted to DARE through SMD for further processing at least 15 days in advance.
- Resources generation is important and should come from sale of farm produce, publications, vaccines, breeder seeds, consultancy, fees subscriptions, royalty, license fees, etc. Revised targets would be worked out.
- With regard to Institutional Project, the overlapping research projects be removed and the number of institutional research projects may be rationalized. It was also decided to develop performance indicators.

- Guidelines for publicity/press release of technology/ achievements etc. in print/electronic media shall be prepared.

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Field workshops on Livestock management during adverse weather conditions

Bengaluru, 23 July 2014. The 2-day interactive workshop on 'Livestock management during adverse weather conditions', organized by NIANP, was started on 22 July 2014 at Bengaluru. The experts of NIANP, NIVEDI, IVRI and KVK shared their experience with the dairy farmers, sheep and goat farmers and KMF staff. Detailed discussions were held on balanced feeding in livestock, fodder production and conservation, better utilization of dry roughages, health care, reproductive care and management of livestock, contingency plans for feed and fodder scarcity etc., with special emphasis on contingency measures to cope with the deficit rainfall in the two districts were held. Mineral mixture packets for dairy animals and small ruminants, seeds of fodder tress, ready reckoners for balanced feeding were distributed to the livestock farmers. The CDs of feed assist software were given to the officials of KMF for wider popularization of balanced least cost feeding among dairy farmers.

Recommendations

1. Utilization of locally available feed resources (areca sheath and tree fodders like *Sesbania* and *Melia*) for feeding during lean period.
2. Adoption of better management practices.
3. Vaccination schedule to be followed by the farmers to avoid outbreak of diseases.
4. To overcome acute shortage of green fodder, the farmers can take up low-cost hydroponic green fodder production with maize, Azolla cultivation and maize silage using in plastic drums and bags.

Action points for implementation

1. As monsoon showers have started in parts of Chitradurga and Davanagere, the livestock farmers were advised to take up the sowing of multi-cut *sorghum* (variety: COFS-29), maize (variety: African tall) and fodder trees (*Sesbania* and *Melia*) at the earliest.
2. The farmers were advised to ensure maximum coverage of livestock under Government sponsored vaccination programme on Foot-and-Mouth Disease.
3. Supplementing with Area Specific Mineral Mixture (through KMF, Nandi Agrovet etc.) to both dairy animals and small ruminants.

4. Ration balancing with locally available feed ingredients at least cost with the help of 'Feed Assist' as well as easy to use 'Ready reckoner' developed by NIANP.

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XXII Group Meeting of AICRP on Medicinal and Aromatic Plants and Betelvine organized

Bengaluru, 20 September, 2014. The XXII annual group meeting of All India Cordinated Research Project on Medicinal and Aromatic Plants & Betelvine (AICRP-MAP&B) was held at ICAR-Indian Institute Horticultural Research (ICAR-IIHR), Bengaluru from 17 to 20 September 2014.

Dr S.K. Malhotra highlighted the importance of medicinal and aromatic plants for horticulture diversification and primary health care. He appreciated the achievements of the project and suggested the need of midterm review of the project activities for the achievement of targeted activities.

Padmashree Dr Darshan Shanker (Chairman, Institute of Ayurved and Integrative Medicine) emphasised the relevance of combination of traditional knowledge with modern science for making global impact of the medicinal plants. He opined the need for collaboration of ICAR research institutes with the organizations maintaining the traditional knowledge of the medicinal plants.

During the workshop, research achievements and future technical programme were thoroughly reviewed under technical sessions on: Plant Genetic Resource Management, Crop Improvement, Crop production, Crop protection and Phytochemistry.

The plenary session of the workshop was chaired by Dr N. Krishna Kumar (Deputy Director General Horticultural Science) who emphasised the need for prioritization of research on medicinal and aromatic crops in accordance with the emerging issues in this sector.

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Field workshop on livestock feeding, health and management during adverse weather condition

Gulbarga, 27 August 2014. A multi-disciplinary team comprising scientists from National Institute of Animal Nutrition and Physiology, Adugodi; National Institute of Veterinary Epidemiology and Disease Informatics; and Indian Veterinary Research Institute (South Campus), Bengaluru along with the officials of Krishi Vigyan Kendra, Gulbarga successfully organized Interactive field workshop for providing contingency measures with regard to livestock feeding and management, control measures for livestock diseases and importance of vaccination under adverse weather conditions.

In the technical session deliberations were on the need for better feeding for maintaining the production and reproductive efficiency of cattle and buffaloes with balanced and strategic feeds, disease prevention/management, vaccination and de-worming of cattle and buffalo calves during adverse weather conditions, deficit rainfall in the area etc. The area specific mineral mixture, Feed Assist and Feed chart developed by NIANP were distributed to the farmers. Various technologies developed by all the three participating institutes were appraised and feedback was obtained from the farmers.

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CIRB initiative to combat drought situation for livestock management

Hisar, 21 July 2014. To combat the possible adverse effects of low monsoon, Central Institute for Research on Buffaloes, organized a series of workshops with State Animal Husbandry Department on Management of Animals during prevailing drought like situation. Two workshops one at Fatehabad and one at Sirsa were organized on 18 and 21 July 2014, respectively. A group of scientists led by Director, Dr Inderjeet Singh discussed the strategies on livestock management with field Veterinary Surgeons in case of drought like situation in the some districts of Rajasthan and Haryana. Director, CIRB briefed the veterinarians about steps that can be taken up to minimize the production loss and maintenance of livestock health as preparedness for drought. Scientists discussed with veterinarians on nutrition especially enhancing nutritive value of poor quality feed and fodder under stress conditions, and use of tree leaves or other plants as fodders.They also discussed to avoid feeding of stunted sorghum during drought which causes cyanide poisoning in livestock

due to cyanogenic glycosides (amygdalin). Reproduction and health management strategies were also suggested by the scientists to the field veterinarian of these two districts. Veterinary surgeons also requested Director, CIRB for organizing a training on use of ultrasound tools for management of reproductive disorders in bovines. The CIRB is organized 12 weekly 'Drought Advisory Camps' scheduled from July to September 2014.

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National Consultation on Oil Palm

Hyderabad, 26 July 2014. Directorate of Oil Palm Research, Pedavegi organized National Consultation on Oil Palm. About 125 participants including scientists from ICAR and State Agricultural Universities, policy managers, processors, department officers and farmers from Andhra Pradesh, Karnataka,

Kerala, Tamil Nadu, Maharashtra, Goa, Odisha, Gujarat, West Bengal, Arunachal Pradesh and Mizoram participated in the meeting. Dr N. K. Krishna Kumar (DDG, Horticultural Science) chaired the programme. Important recommendations for strengthening oil palm research and development in India (including policy issues) emerged from the meeting.

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Annual Review Meeting of AICRP on Gastrointestinal Parasitism

Avikanagar, 2 August 2014. The XII Annual Review Meeting of All India Network Programme on

Gastrointestinal Parasitism was inaugurated by Prof. K.M.L. Pathak (DDG Animal Science) at Central Sheep and Wool Research Institute. Dr Pathak remarked that the outcome of the network project needs to be documented for field application. For this purpose the data of the cooperating centres must be processed to develop deliverables for effective management of gastrointestinal parasites in livestock.Prof. Pathak also addressed the faculty and staff of the institute and released the Institute publications, viz. *Hindi Patrika Avipunj*, a pamphlet titled *Sheep Grazing and Pasture Management in Dry Areas* and *Research Paper Data Base-2004-2014*'.

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Economic Impact of FMD and its control in India

Bengaluru, 31 July 2014. One-day Review Workshop on 'Economic Impact of FMD and its control in India' was organized at NIVEDI.

Dr R. Venkataramanan (Joint Director, IVRI, Bengaluru) opined that the quantitative documentation of FMD losses will help the policy makers to device appropriate control strategy.

Dr H. Rahman (Director, NIVEDI) reiterated that FMD is one of the most economically important diseases in the country and economic impact study at state and national level is vital for undertaking appropriate mitigation programmes. He also highlighted that the methodologies adopted for studying the economic impact of FMD would help in assessing the impact of other important livestock diseases also.

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Insects related to Veterinary and Fisheries Sciences

Bengaluru, 2 August 2014. One-day brainstorming session on 'Insects related to Veterinary and Fisheries Sciences' was inaugurated by Dr S. Ayyappan (Secretary DARE and DG ICAR) at the National Bureau

of Agriculturally Important Insects. He stressed that the following points should be considered during deliberations of the meeting.

1. One veterinary institute preferably IVRI, Izatnagar to be a nodal institute to collaborate with NBAII in taxonomy and characterization of insects related to veterinary science.
2. One fisheries institute, preferably CMFRI, Cochin may act as nodal institute to collaborate with NBAII for taxonomy and characterization of insects related to fisheries science.
3. Identification of molecules for safe control of problematic pests and aquatic weeds related to animal sciences.
4. Identification guide of arthropods in relation to animals and fish.

Dr Abraham Verghese (Director, NBAII) highlighted the importance of identification and characterization of insects related to animal sciences as very limited work has been done in this area of research.

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Insect and quarantine—Biosecurity issues

Bengaluru, 26 August 2014. A Brainstorming meet on Biosecurity issues in relation to insect and quarantine was held at National Bureau of Agriculturally Important Insects. Dr K. Satya Gopal (Director General, National Institute of Plant Health Management, Hyderabad) highlighted the importance of biosecurity and touched upon the regulatory policies imposed by the government, the Biodiversity Act, the biosecurity analysis, management risks and Plant Quarantine Order number 3 (relating to plant biosecurity). "Quarantine for biosecurity must be addressed primarily and post-entry quarantine needs to be built up at the level of villages and panchayats and awareness must be created", he said.

Some important recommendations are as follows:

Recommendations

- The curriculum for entomology at Postgraduate level must include information, understanding, visibility and concern over the quarantine and bio-security issues.
- Designated insect repositories are to be of international standards.
- The taxonomists are to be effectively used in India, and it was suggested that there must be a national database for the biocontrol agents as in CABI.
- Forecasting and forewarning of invasive threats is lacking in the country and needs to be addressed. Reports on invasive threat must be authenticated with taxonomic confirmation and this is a must for the strict internal quarantine.
- Adequate quarantine facilities at ports of entry with taxonomist must be created for effective handling of introductions. There is a need for domestic quarantine and the management package for the already introduced pests should be emphasized.
- Awareness must be created for the invasive and proper domestic quarantine established and all the nine ports be strengthened and people need to be sensitized about the issues related to bio-security.
- The discussions supported the need for free exchange of germplasm of dead and live insects for research without the intervention of biodiversity act.

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ICAR Partners

- Active collaboration with international agricultural research institutions including CG centres, CABI, FAO, NACA, APAARI, UN-CAPSA, APCAEM, ISTA, ISHS etc.
- MoU/Work Plans with over 30 countries for bilateral cooperation in agricultural research, training and study visits.
- ICAR offers quality and cost-effective agricultural education to international students at under-graduate and post-graduate levels. And need-based short-term training programmes in specialized areas are also offered. Special concessions for SAARC students.

Zero tillage cultivation: a viable option for production of rapeseed-mustard in rice fallow

Imphal. The Directorate of Extension Education, Central Agricultural University, Imphal in collaboration with Directorate of Rapeseed-Mustard Research, Bharatpur implemented an extension project entitled, 'Augmenting Rapeseed-Mustard Production of Tribal Farmers of North-Eastern States for sustainable livelihood security' under the Tribal Sub-Plan (TSP) during *rabi*, 2011. Yield performance of rapeseed varieties were evaluated under Zero tillage cultivation and compared with crops grown under conventional tillage. Besides, no tillage (zero tillage) practice, use of 4 (four) bee colonies/ha during crop bloom for pollination, spray of botanical pesticides without affecting pollinators population, and production of organic honey, were also demonstrated. Since there was no rain throughout the crop period, the growth and yield parameters in all the rapeseed-mustard varieties were better in zero tillage than conventional tillage due to residual soil moisture after rice harvest. Among the rapeseed varieties, yellow *sarson*, Ragini gave the maximum average yield of 10.0 q/ha (range: 8.0 to 14.0 q/ha), whereas, NRCHB-101 among mustard varieties gave maximum average yield of 10.2 q/ha (range:8.0 to 11.0 q/ha) both in zero tillage cultivation.

The 172 farmers across 9 villages of Imphal East district, involved in the project, improved their income by getting average net profit of ₹ 27,388/ha including cost of honey within three- and half-months with a low investment of ₹ 13,412/ha. By observing the standing crop in the field altogether 1,419 farmers across 50 villages in 10 districts of Manipur, Mizoram and Arunachal Pradesh adopted this technology and the area coverage under Zero tillage cultivation of rapeseed-mustard increased to 1,010 ha during *rabi*, 2012 and 2013.Under the water stress situation where there was no rainfall during the crop period of *rabi*, 2012, M-27 rapeseed, YSH-401 yellow *sarson* and NRCHB-101 mustard gave maximum average yield of 6.0, 10.0 and 11.9 q/ha, respectively, under zero tillage cultivation.Similarly during *rabi*, 2013 under the water stress situation, TS-38 rapeseed, YSH-401 yellow *sarson* and NRCHB-101 mustard gave average yield of 7.9, 9.5 and 11.8 q/ha, respectively, under zero tillage cultivation. The present success story in the farmers' field indicated that rapeseed-mustard is a climate resilient crop which can be grown without water in the residual soil moisture. By adopting zero tillage, the farmers could increase the productivity, reduced cost of cultivation thereby increasing the cropping intensity and earning an additional income for themselves with less effort. Zero tillage also helps in timely sowing (October-November), conserving soil moisture and requires less water, saves tillage cost and time, and the soil is also protected from erosion due to the retention of surface residues thus reducing organic matter depletion. The improved version of this zero tillage cultivation with bee pollination and no chemical method of plant protection may be recommended to the resource poor farmers of the North-Eastern Region in the context of climate change.

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Effects of CIFABROOD™ on early and repeat breeding of Java punti

Kuliagarh. Mr Tapan Patra fed the broodstock with his own formulated feed in his 15 years of fish breeding business. However, early breeding was never an easy job and being in business he knows about the stiff competition among the hatchery owners. Commercialization of CIFABROOD™ brought the awareness among fish breeder community and Mr Patra fed fish brooders in a pond of 2.5 *bigha* @2% body weight starting from 7 February 2014. Initially the pond was stocked with the three IMC species. He noticed that both male and females of Java punti were mature and ready for breeding. First breeding programme with Java punti (*Puntius gonionotus*) was started on 21 March 2014, which went on for next 3 months and could produce about 12 billion *Puntius* spawn from March to May 2014. Mr Tapan Patra bred the fishes by pituitary extract only which he collects and prepares himself. The demand for Java punti seed was more prominent in Naihati area due to nearby fish seed market in the locality also, and the rate in the season was ₹ 400 for each

cup (125 ml containing ~1.2 lakh of spawn). Subsequently he removed all the IMC broods to another pond keeping only Java punti in it and continued feeding with CIFABROOD™. Tapan Patra found that the spent fishes were maturing again and again with a time gap of about 7 to 10 days and described it as his maiden experience in his life. While in control pond Java punti matured later (20 days) with poor ovarian development and spent fishes were very weak as compared to experimental pond. Although Mr Patra's observation of rematuration of Java punti requires scientific analysis and confirmation, this has not only built his confidence in puntius breeding but also showed an alternative source of income in fish breeding business. His success has been noticed and promoted by the scientists.

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Capacity Building

Organic crop production techniques

Tadong, 30 August 2014. The ICAR Research Complex for NEH Region, Sikkim Centre, successfully concluded five-day Training-cum-Awareness Programme for Steering Committee Members of Sikkim Organic Mission. Shri P.D. Rai (a Member of Parliament, Lok Sabha from Sikkim),Chief Guest, emphasized the need of good soil-health in organic production system. Shri P.D. Rai appealed to the Steering Committee Members to select at least 25 progressive farmers from all districts for next batch who can be equipped with organic crop production techniques.

Dr R.K. Avasthe (Joint Director, ICAR Sikkim Centre) highlighted the relevance of this programme to the Chief Guest. Dr R.K. Avasthe stressed upon the need of maximizing land use efficiency to get maximum benefit per unit area. He assured the Chief Guest and Steering Committee Members that ICAR will provide all possible help for organic crop production in Sikkim. During the technical sessions in five-day training programme several topics were discussed. Some of them are: 'physico-chemical and microbiological properties of soil, soil sample collection techniques and organic nutrient management', 'Organic pest management in major crops of Sikkim', 'organic production technology of Sikkim mandarin, kiwifruit and major vegetables crops of Sikkim', 'organic farming production standards and organic agronomic practices of major field crops.' etc.

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Plantation crops based-technologies commercialized

Kasaragod, 17 August 2014. Arecanut tissue culture technology was commercialized through signing a Memorandum of Agreement (MoA) between Central Plantation Crops Research Institute, Kasaragod and M/s Sunglow Biotech, Coimbatore.

Arecanut tissue culture protocol using inflorescence explant, standardized at CPCRI, has commercial value for rapid multiplication of elite genotypes such as yellow leaf disease (YLD) resistant arecanut palms and arecanut dwarf hybrids. A Memorandum of Agreement was signed with M/s DJ Farm, Bengaluru for commercialization of coconut embryo culture protocol. Embryo culture protocol of coconut was standardized at CPCRI between 1992 and 1996 and has been successfully used for collection of exotic germplasm since 1997. The protocol has received international acclaim and is being used in different coconut growing countries. A total of 45 accessions have been collected using this protocol from 8 countries.

A promising technology for collection of fresh and hygienic neera and production of natural coconut sugar was handed over to Mr Sunny George (Chairman, Thejaswini Coconut Farmers Producer Company Ltd., Cherupuzha, Kannur). As part of BPD Unit of Central Plantation Crops Research Institute, Agribusiness Incubation Centre was inaugurated by Dr N.K. Krishna Kumar (Deputy Director General, Horticultural Science) during the occasion.

The Business Planning and Development (BPD) unit could attract over 85 walk-ins interested in coconut-based technologies of which 24 registered as incubatees. Facilities are created under the centre to enable practical experience for the incubatees on processing, packaging, selling, marketing and revenue generation of selected coconut value-added products virgin coconut oil, coconut chips, desiccated coconut etc.

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CIAE licenses two machines to M/s TAFE

Bhopal, 31 July 2914. M/s Tractors and Farm Equipment Ltd. (TAFE), Chennai signed a license agreement with Central Institute of Agricultural Engineering (CIAE), Bhopal with for manufacturing and marketing of two CIAE-developed machines,

namely Precision pneumatic planter and Roto seed drill-cum-bed shaper. Dr Pitam Chandra (Director, CIAE) expressed happiness over this agreement and hoped that TAFE would soon ensure availability of these two new machines to farmers and other end users. Mr T R Kesavan (Chief Operating Officer-Product Strategy and Corporate Relation, TAFE) while appreciating the technologies, indicated that these agreements will strengthen the collaborations with CIAE and such an approach would benefit all the stakeholders specially the farmers in getting quality machinery at affordable cost.

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NICRA awareness programme

Meghalaya, 2 August 2014. Keeping in view drought situation the ICAR Research Complex for NEH Region organized one-day Awareness Programme under NICRA to sensitize various stakeholders regarding adaptation and mitigation strategies to face drought like situation.

Mr Daniel Ingty (Director (Horticulture), Government of Meghalaya) lauded the efforts of ICAR Research Complex, to awaken and train the farming community about climate resilient technologies and contingency plan for mitigating the prevailing drought like situation in Meghalaya.

On this occasion the scientists of ICAR RC NEH Region discussed about the contingency measures in agriculture, horticulture, animal husbandry and fisheries during the Farmers'-Scientists' interaction. Dr S. V. Ngachan (Director, ICAR. RC), suggested farmers for adoption of Climate Smart Agriculture by following the recommended mitigation strategies. Dr Ngachan added that the intense drought like situation in Meghalaya has adversely affected *kharif* crops that may lead to large-scale yield loss in *kharif* paddy. He informed that a suitable contingency plan has been disseminated to stakeholders through SMS on KIRAN portal (www.kiran.nic.in).

During the programme some critical inputs like water lifting pump along with low cost plastic pipes, seeds, planting materials, and vitamins and minerals mixtures for livestock were distributed among the farmers as an input support system.

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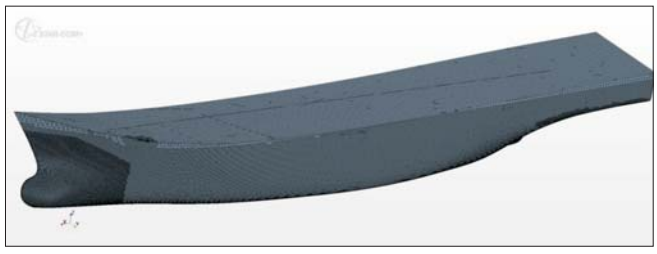
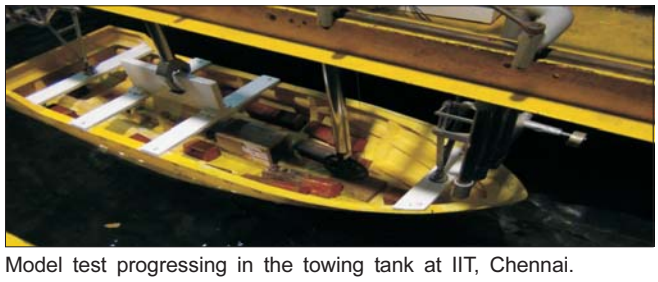
Design of a commercial combination fishing vessel standardized

Cochin. The design of a 19.75 m vessel was developed to conduct multi-purpose fishing commercially in all the maritime sates of India. The design was developed and standardized under the project 'Green Fishing Systems for Tropical Seas', funded by the National Fund for Basic Strategic Frontier Application Research in Agriculture, ICAR for developing the design, model testing and constructing the prototype at Goa Shipyard Limited. A national survey was conducted in all the maritime states of India and designs of commercial vessels were collected. The



The model testing of 19.75 m multipurpose fishing vessel developed at CIFT is conducted for resistance at IIT Madras, Chennai to confirm the above resistance values.

Model of the 19.75 m multi purpose fishing vessel used for testing at IIT, Chennai.



Model test progressing in the towing tank at IIT, Chennai.

most popular 35 short-listed designs were analysed for fuel economy, performance and stability and the design of a 19.75 m L_{OA} with 6.5 m breadth and 2.8 m depth was developed from this data. This vessel is equipped for trawling, long lining and gill netting with on-board hydraulic fishing equipment. Indigenously developed Refrigerated Sea water tank is another specialty of this design.

The model testing of 19.75 m multipurpose fishing vessel was conducted for resistance at IIT (Chennai) to confirm the resistance values.

After establishing the preliminary stability, the General Arrangement drawing was prepared with subsequent stability verification. This vessel is designed and constructed under the IRS classification. The approval of the initial drawings has already been done by IRS and the prototype construction was started at Goa Shipyard Limited, Goa.

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Seafood safety

Cochin, 14 July 2014. Dr K.Poulose Jacob (Pro-Vice Chancellor, Cochin University of Science & Technology) inaugurated a brainstroming programme on 'Practical aspects of Seafood Safety'. He stressed on the need for addressing the food safety issues as these are directly related to the health of the consumer. Dr Poulose Jacob also praised the efforts taken by establishing safety and quality of fish and fishery products for both export and domestic market. Dr T.K.Srinivasa Gopal, Director, focused on the food safety issues in the context of domestic market and the support given by the institute to regularity agencies like FSSAI.

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Plant-Protection Varieties and Farmers' Right Act, 2001

Jaipur, 2 September 2014. An awareness-cum-training programme on 'Plant Protection Varieties and Farmers' Right Act' was organized by Zonal Project Directorate, Zone-VI, Jodhpur in collaboration with PPV&FR Authority, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India at Rajasthan Agricultural Research Institute, Durgapura, Jaipur.Dr N.S. Rathore (Vice Chancellor, SKN Agricultural University, Jobner, Rajasthan) appealed to all PC of KVKs to be prepared for capacity building of rural youth, farmers, rural women, industry people and other stake-holders in the emerging areas like precision agriculture, secondary agriculture, value addition etc. There is also need for ICT enabled SMART agriculture. Consultancy for technology, inputs, mechanisation etc. are emerging field for income generation at KVK level to avoid any fund crisis. Dr Rathore emphasized for effective implementation of these issues which need purposeful planning and positive attitude and stressed to prepare the farmers' databank at district level for effective implementation of the various scheme. Dr Ravi Prakash (Registrar, PPV&FR Authority) informed that Authority is committed to protect farmers' rights in the event of germplasm collection and development of crop varieties. He emphasized on implementing the PPV&FR Act across the zone to help farmers involved in development of plant varieties. In another session there was an interaction about Post Office Linkage Extension Model, its progress and future work plan was presented by the selected KVKs under Zone-VI.

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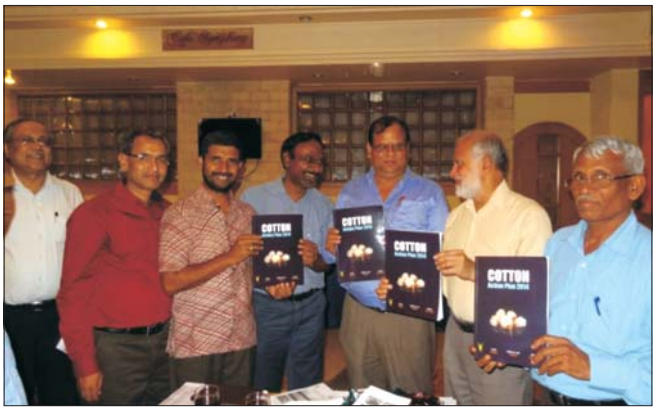
Cotton Action Plan 2014

Nagpur, 19 July 2014. Dr S. Ayyappan (Secretary, DARE and DG, ICAR) released contingency plan advisories for cotton titled 'Cotton Action Plan 2014', which was jointly prepared by the Central Institute for Cotton Research, the National Bureau of Soil Survey & Land Use Planning, Nagpur and the Central Research Institute for Dryland Agriculture, Hyderabad. The 'Cotton Action Plan 2014' bulletin contains advisories for 70 main districts of five major cotton growing states with focus on action plans to ensure healthy crop growth for high yields despite the unforeseen delay in the onset of monsoon across the country. The strategies were designed based on key factors including the actual weekly rainfall pattern received in each of the 70 districts till the time of compilation, the predicted dry spells for the season



and soil thematic maps on surface texture and depth of these districts. The conditional probabilities of dry spells were calculated by Dr Y.G. Prasad (Principal Scientist, CRIDA) based on 40-year long-term seasonal rainfall and weather patterns using Markov Chain probability.

The DG, ICAR lauded the contribution of the three ICAR institutions in their efforts to combat the climatic aberrations resulting from delayed monsoon. The cotton contingency action plan contains details of the package of practices to be followed and precautions to be taken especially in fields where cotton sowings were delayed. The contingency advisories are available on the institute website www.cicr.org.in.

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Regional Training and Awareness Program on J-Gate@CeRA

New Delhi, 29 September, 2014.The Directorate of Knowledge Management in Agriculture of ICAR and Informatics organized a one-day training and awareness programme for Library Incharges and Nodal Officers, CeRA of ICAR Institutes/SAUs/KVKs of northern region of India. Dr R.C. Agrawal (Registrar General of Protection of Plant Varieties and Farmer's Rights Authority, India) applauded the role of CeRA in facilitating online access of research journals across stakeholders. He urged researchers to utilize this platform to its full potential.

Dr Rameshwar Singh (Project Director, DKMA) highlighted the contribution of CeRA. He emphasized the strengthening of CeRA through enhancing coordination between stakeholders and other consortia. CeRA was established in November 2007 under NAIP Project. It facilitates the online access of selected journals to researchers, administrators and extension specialists in National Agricultural Research and Educational System through IP authentication. The activities of CeRA are now entrusted to ICAR-DKMA from 1st July 2014 after successful completion of NAIP Project.

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Celebrations

Maize Day

Tadong, 1 July 2014. The ICAR Research Complex for NEH Region, Sikkim Centre, Tadong organized Maize Day under NICRA to create awareness among farmers for climate resilient agriculture. Shri Somnath Poudyal, Minister (FS&ADD and HCCDD, Government of Sikkim), inaugurated the function as Chief Guest and appreciated the efforts being made by the farming community and the state officials for making state fully organic by 2015. Shri Somnath Poudyal advised all department officials, ICAR and farmers to be fully equipped with new technologies related to organic agriculture and implement them in farmers' field. Shri Poudyal also asked the officers to educate farmers practically in the field and make them self sufficient in agricultural produce.

Dr R. K. Avasthe (Joint Director, ICAR Sikkim Centre) highlighted the issue of climate change and its impact on agriculture. He also mentioned some major issues to be faced in changing climatic conditions in the state and the efforts being made by ICAR to address those issues. Dr Avasthe showed the serious concern about changing winter rainfall pattern which has lowered the production of large cardamom and mandarin in the state and needed immediate attention of the policy maker to address this issue.

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Farmers' Fair, Farm Innovation Day

Jodhpur, 24 September 2014. A Farmers' Fair and Farm Innovation Day was organized by Central Arid Zone Research Institute (CAZRI).

This event was inaugurated by Shri BS Rathore [Member of Legislative Assembly (Shergadh), Rajasthan]. While appreciating the significant research work done by CAZRI for this region, Shri Rathore appealed the farmers to maintain continuous liaison with this institute for reaping benefits through adoption of improved technologies. Guest of Honour, Professor O.P. Gill (Vice-Chancellor, MPUAT, Udaipur) urged farmers to diversify the existing traditional agriculture and derive sustainable higher income per unit of area. Dr M.M. Roy, Director CAZRI, Jodhpur in his presidential highlighted the need for faster dissemination of improved technologies and practices on a wider scale in this region.

Over 1,900 farmers, including a large number of women, from arid regions of the country; especially Western Rajasthan participated in this event.

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86th ICAR Foundation Day

Hon'ble Prime Minister of India, Shri Narendra Modi, reiterated that focus of research should be on yellow revolution (for enhancing production and quality of pulses and oil seeds), blue revolution (for fisheries production, culture of pearls), and on cultivation of medicinal plants including sea weeds. He also emphasised on the enhancement of livestock productivity and advised dissemination of new technologies to farmers by strengthening lab-to-land programmes. He suggested development of a talent pool of progressive farmers in each university and involving agriculture students for ensuring quick availability of technologies at village level.

and ICAR Awards 2014

ICAR AWARDEES 2014

Sardar Patel Outstanding ICAR Institution Award, 2013

i. National Dairy Research Institute, Karnal
ii. Sugarcane Breeding Institute, Coimbatore
iii. Directorate of Poultry Research, Hyderabad

Chaudhary Devi Lal Outstanding All India Coordinated Research Project (AICRP) Award, 2013

AICRP on Agrometeorology, CRIDA, Hyderabad

Rafi Ahmed Kidwai Award for Outstanding Research in Agricultural Sciences, 2013

i. Dr Ashok Kumar Singh, Professor and Project Leader (Rice), Div. of Genetics, IARI, Pusa Campus, New Delhi
ii. Prof. Rintu Banerjee, Chair Professor and Prof. in-charge, P.K. Sinha Centre for Bioenergy Agricultural & Food Engineering Deptt., IIT, Kharagpur

Lal Bahadur Shastri Outstanding Young Scientist Award-2013

i. Dr Pradeep Sharma ,Sr. Scientist, DWR, Karnal
ii. Dr Supradip Saha, Sr. Scientist, Div. of Agril. Chemicals, IARI, New Delhi-12
iii. Dr B.M. Naveena, Sr. Scientist, NRC on Meat, Hyderabad
iv. Dr Ranjay K. Singh, Sr. Scientist (Agril. Extension), Div. of Technology Evaluation & Transfer, CSSRI, Karnal

Panjabrao Deshmukh Outstanding Woman Scientist Award, 2013

i. Dr Indu Sharma, Project Director, DWR, Karnal
ii. Dr P.D. Kamala Jayanthi, ICAR National Fellow, Division of Entomology and Nematology, IIHR, Bengaluru

Bharat Ratna Dr. C. Subramaniam Award for Outstanding Teachers, 2013

i. Dr Ashok Kumar Singh, Professor and Project Leader (Rice), Division of Genetics, IARI, Pusa Campus, New Delhi
ii. Dr R.K. Pannu, Dean, College of Agriculture, CCSHAU, Hisar, Haryana
iii. Dr Venkateshwarlu Gudipati, Principal Scientist and Dean, CIFE, Mumbai
iv. Dr Seema Jaggi, Principal Scientist, Division of Design of Experiments, IASRI, New Delhi

ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural and Allied Sciences, 2011-12

i. Dr G. Padmaja, Principal Scientist and Head, Division of Crop Utilization, CTCRI, Thiruvananthapuram, Kerala
ii. Dr R.S. Kurothe, Principal Scientist (Agril. Engineering) amd Head Research Centre, CS&WCR&TI, Gujrat
iii. Dr Ashis Samanta, Principal Scientist, Feed Additives and Nutraceuticals Laboratory, Animal Nutrition Division, NIANP, Adugodi, Bengaluru, Karnataka
iv. Dr B. Shanthi, Sr. Scientist, Social Science Division, CUBA, Chennai, Tamil Nadu

Fakhruddin Ali Ahmed Award for Outstanding Research in Tribal Farming Systems, 2013

i. Dr Bikash Das, Sr. Scientist, Regional Research Centre, ICAR Research Complex for Eastern Region, Ranchi, Jharkhand
ii. Dr M. Sankaran, Sr. Scientist, Division of Horticulture & Forestry, CIARI, Port Blair, A&N Islands

Jawaharlal Nehru Award for Outstanding Doctoral Thesis research in Agricultural and Allied Sciences, 2013

i. Dr Vignesh Muthusamy, Scientist, Division of Genetics, IARI, Pusa, New Delhi 110012
ii. Dr Somanath Agasimani, No. 70, Shree Somanath Krupa, Near KUD Cross, Shreenagar, Dharwad, Karnataka
iii. Dr Santhosh Kumar Gupta, 404, Udaigiri Tower, Kaushmabi, Ghaziabad, Uttar Pradesh
iv. Dr Dhruba Jyoti Sarkar, Scientist, Division of Agricultural Chemicals, IARI, New Delhi
v. Dr Rakesh Kumar Ghosh, Division of Chemicals and Biochemical Processing, NIRJAF&T, Kolkata, West Bengal
vi. Dr Mahajan Gopal Ramdas, Scientist (Soil Science), ICAR Res. Complex for Goa, Goa
vii. Dr Zahoor Ahmed Bhat, S/o Mohd. Ahsan Bhat, J&K
viii. Dr Sukadev Mangaraj, CIAE Nabibagh, Bhopal, MP
ix. Dr Gnanavel Venkatesan, Division of Virology, IVRI, Mukteswar Campus
x. Dr B.M. Chandra Naik, Scientist-2, IAH & VB, Hebbal Bengaluru, Karnataka
xi. Dr (Mrs) CIJI Alexander, Directorate of Coldwater Fisheries Research, Bhimtal, Uttarakhand
xii. Dr Ram Datt, Asstt. Prof., Deptt. of Extension Education, BAU, Sabour, Bihar
xiii. Dr Saritha Hegde, Chief Tech. Officer, CPCRI, Kasaragod, Kerala

Jagjivan Ram Abhinav Kisan Puruskar/Jagjivan Ram Innovative Farmer Award (National/Zonal), 2013

i. Shri Mohammed Idris Ahmed Quadri, Bagdal Village , Distt. Bidar, Karnataka
ii. Shri Parma Ram Choudhary, Village Chhattar, HP
iii. Shri Laxman Das, Village-Kalipur, North and Middle Andaman
iv. Shri Dipen Boruah, Village-Khonamukh, Charingia Gaon, Jorhat, Asom
v. Shri Rajpal Singh, Village Jaigehta Gurjar, UP
vi. Shri Katta Ramakrishna, Naguluppalapadu, Andhra Pradesh
vii. Shri Nandlal Dhakar, Village Jaishingpura, Chittorgarh, Rajasthan
viii Shri Purna Chandra Mohanty, Bhubaneshwar, Odisha
ix. Shri Malanna S. Nagaral, Distt. Bagalkot, Karnataka

N.G. Ranga Farmer Award for Diversified Agriculture, 2013

Smt. Krishna Yadav, Village-Bajgheda, Gurgaon

***Krishi and vigyan sambandhit takneeki Pustako ke lekhan hetu Dr. Rajendra Prasad puruskar*, 2013**

i. Dr D.R. Bhardwaj, Principal Scientist, Indian Vegetable Research Institute, Varanasi
ii. Dr Anil Kumar Singh, Principal Scientist, IISR, Lucknow
iii. Dr Avadh Bihari Pandey, IVRI, Muketeswar
iv. Dr V.K. Bharti, Chief Production Officer, DKMA, ICAR, New Delhi

Vasantrao Naik Award for Outstanding Research and Application in Dryland Farming Systems, 2013

Dr M. Madhu, Head & Principal Scientist, CSWCRTI Research Centre, Odisha

Swami Sahajanand Saraswati Outstanding Extension Scientist Award, 2013

i. Dr. Ashok Kumar Singh, Zonal Project Directorate, Kanpur, Uttar Pradesh
ii. Dr K. Suman Kalyana, Principal Scientist (Home Science), CTRI, Rajamundry, Andhra Pradesh

Chaudhary Charan Singh Award for Excellence in Journalism in Agricultural Research and Development, 2013

i. Shri Pallava Bagla, Science Editor, New Delhi Television and Correspondent – Science, New Delhi
ii. Shri Bhagwan Das, Journalist, Patiala, Punjab

NASI-ICAR Award for innovation and research on Farm Implements, 2013

Dr. Krishna Pratap Singh, Sr. Scientist, CIAE, Bhopal

86th ICAR Foundation Day at its Institutes

CIFRI

Barrakpore, 16 July 2914. The Central Inland Fisheries Research Institute (CIFRI) celebrated 86th Foundation Day of ICAR along with National Fish Farmers Day. Sri Chandranath Sinha (Minister in Charge, Department of Fisheries, Aquaculture, Aquatic resources and fishery Harbor, Government of West Bengal) emphasized on more productivity from inland openwaters and also encouraged the scientists of

CIFRI to take action on the recommendations of 'Consultative meeting for improvement of fisheries in West Bengal' in collaboration with the state departments to gear up fish production and productivity in West Bengal. An interaction meeting on 'Mitigation of rainfall deficit in Eastern States' was organized. A meaningful interface was held with the fishers, fish farmers and scientists. Farmers from Bihar and Jharkhand shared their views and experiences regarding shortfall of rain. The scientists rendered technical advice to the farmers to cope up with the prevailing problem of lack of sufficient availability of water in ponds, *beels* and reservoirs. Fishers from Sagar, Island, Sunderban shared their experience on ingress of saline water in inland water bodies like pond, canals, and creeks during high tides which has become a notable problem for them.

Dr Pradeep Majumder [Advisor (Agriculture) to Chief Minister West Bengal] said that farmers are integral part of ICAR and the initiative of CIFRI for celebrating

the ICAR foundation day along with National Fish Farmers Day is a testimony of concern for the cause of farmers. Prof. C.S Chakrobarty and Swami Aghor Atma Nanda also expressed their views on ICAR's role to make a visible impact on the national food and nutritional security.

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CAZRI

Jodhpur, 16 July 2014. The 86th Foundation Day of ICAR was celebrated at Central Arid Zone Research Institute (CAZRI). Dr Pritam B. Yashwant, the Chief Guest, appreciated the role of CAZRI and underlined the necessity of greater adoption and extension of CAZRI's technologies to the last man in the farming community to benefit entire chain for bringing prosperity in this region.

Dr M.M. Roy (Director, CAZRI) highlighted the history of ICAR since 1886 and the role of National Agricultural Research System (NARS) in enhancing, productivity of all commodities of crops, fruits, spices, livestock and marine resources. The contribution of the CAZRI for the farmers' in west Rajasthan was also explained.

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CSSRI

Karnal, 16 July 2014. With the aim to arouse awareness among the students and public for the agriculture, and to outline its importance for Indian economy and society Dr D.K. Sharma (Director, CSSRI) chaired a seminar, organized by his Institute on the occasion of ICAR Foundation Day. Dr Sharma informed about the importance of July 16, being the Foundation Day of ICAR, and explained about agricultural research and development activities of the ICAR. Touching the technical aspects, Dr Sharma explained how country has achieved 265 million tonne of foodgrain production in 2013-14, and how resource conservation and integrated practices can reduce the water consumption from 3,000 litres, for 1 kg rice production, to lesser amounts. He outlined strategies like sprinkler irrigation and direct seeding to achieve this target. To meet the deficit water conditions, arisen due to shortfall in rainfall this season, suitable techniques were discussed and advised to farmers.

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CRRI

Cuttack, 16 July 2014. The 86th ICAR Foundation Day was celebrated at Central Rice Research Institute. Dr P. K. Mohapatra (Guest of Honour) spoke on 'Agricultural Education under ICAR' and emphasized the necessity of revising the course curricula to fill the vacuum created due to lesser focus on practical aspects that has resulted in skill deficiency among the agricultural graduates. Dr Mohapatra suggested greater interaction/collaborative mode of operation to harness the academic strength of SAUs and research strength of ICAR Institutes synergistically. Dr Debaraj Panda (Chief Guest) spoke on 'Agricultural research focus of ICAR to address the farm problems' and highlighted the importance of both genetic and management factors in realizing the potential yield and its stabilization as well. Dr Panda also called for a concerted approach to tackle the issue of degradation of natural resources and climatic variability.

In an open session, farmers as well as other participants pointed out the issues related to vagaries of weather in farm production, necessity of proper linkages among the organizations engaged in research and development of farm sector, etc.

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NRC on Meat

Hyderabad, 16 July 2014. As a part of 86thICAR Foundation Day, National Research Centre on Meat, Hyderabad organized a 'Consumer Awareness on Importance of Meat and its Health Benefits'. Dr. V.V. Kulkarni (Director, NRC on Meat) briefed about the importance of ICAR foundation day, ICAR Institutes and their activities and in general about Indian meat sector, meat production, consumption and health aspects. Later brief presentations were given on:

Value addition and entrepreneurship development in meat sector; Meat consumption and health; and Meat handling and safety. There was also discussion on the importance of meat and meat products in sustainable animal production, various schemes related to meat sector activities, slaughter regulations, meat consumption and health, opportunities for value addition in meat sector, role of FSSAI in ensuring safety etc.

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ICAR Research Complex for Goa

Old Goa, 16 July 2014. The ICAR Research Complex for Goa, Old Goa, celebrated the ICAR Foundation Day on 16 July 2014, at KVK, Old Goa. On this occasion Small- and Marginal-Farmers Meet was

organized on 'Integrated Farming System'. The Minister for Cooperation, Government of Goa, Shri Deepak Dhavalikar urged the farmers to take up agriculture as an enterprise for the development of the state. Shri Pandurang Madkaikar (MLA, Kumbharjua) requested the farmers/youth to take-up agriculture in the state which has the highest subsidy component as compared to whole country. Shri Madkaikar complimented Director (ICAR Research Complex for Goa) for implementing Tribal Sub-Plan Programme for the benefit of the farming community.

Dr Narendra Pratap Singh (Director, ICAR Research Complex for Goa) presented the highlights of ICAR system in India and the role played by the organization in securing food security. Dr Singh advised the farmers to take up the advantage of the ICAR Institute and KVK to boost agriculture for Goa.

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39th Foundation Day of NAARM

Hyderabad, 1 September 2014. The National Academy of Agricultural Research Management (NAARM) celebrated its 39th Foundation Day. Prof Shantha Sinha (Educationist-cum-child rights activist), Chief Guest focused on the challenges faced by adolescent girls in the 15 to 18 years age group particularly, by the first-generation learners. Quoting from statistics of various government schemes she explained how these schemes had enabled the girls to overcome barriers such as patriarchy, gender discrimination and lack of support in the family, schools and society at large and to continue with education. Referring to 'The Right to Education Act' she emphasized the need to improve the education of children. Preliminary results of a current research by her indicate that teachers in schools played an important role in encouraging continuous education of their students. Dr D. Rama Rao (Director,NAARM) emphasized the need to integrate social issues into technology development in agricultural research.The Academy also awarded 'Annual Best Worker Awards' to various categories of its staff, and released two books as part of the Foundation Day celebrations.

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51st Foundation Day of CTCRI

Thiruvananthapuram, 31 July 2014. The Central Tuber Crops Research Institute celebrated its 51st Foundation Day. The Foundation Day celebration-cum-inauguration of the Techno-Incubation Centre and Tuber Crop Development Programme, Kerala was inaugurated by Chief Minister, Government of Kerala, Sri Oommen Chandy, who said that Kerala Government had demarcated funds for promoting small- and medium-scale young entrepreneurs. This fund (₹25 million) could be utilized by the ICAR research Institutes and other departments. Training should be offered through the techno-incubation centre at CTCRI to farmers. The tuber crop development programme could pave way for increasing the production and productivity. Sri Chandy stressed the need for up-scaling the technologies developed by the Institute. Sri K. P. Mohanan (Minister of Agriculture, Kerala) was confident that the Techno-incubation centre will fully benefit the farmers and small entrepreneurs. A scientists – farmers interface was also organized.

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65th Foundation Day of CPRI

Shimla,22 August 2014. Dr Gurbachan Singh (Chairman, ASRB) delivered the Foundation Day lecture and highlighted the achievements of this institute and future challenges at the 65th Foundation Day of the Central Potato Research Institute (CPRI). Sh Virender Kashyap talked on Lab-to-Land programme and emphasized on necessity of reaching of varieties and technologies to farmers. The On-line Examination Hall under ASRB was inaugurated by Dr Gurbachan Singh. This hall has a capacity of 50 students and it will be mainly used for ARS Examination of ICAR.

Prestigious Dr Ramanujam Award of CPRI was conferred upon Dr S. K. Chakrabarti for his outstanding achievements in the field of potato research and development.

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Fish Farmers Day at CIFE

Mumbai, 10July 2014. Fish farmers day was organized at Central Institute of Fisheries Education (CIFE). About 50 ornamental fish farmers, breeders, domestic traders, exporters and aquarium accessories traders participated in the function. Deliberations included expert interventions by Mr Mehmood Syed (Ornamental fish breeder and exporter), Dr K. Palanisamy, Deputy General Manager, NABARD, Mumbai and Mr Anil Kumar (Deputy Director, MPEDA). Dr W.S.Lakra (Director, CIFE) inaugurated the meet. He said that there is a need for development of an

association of ornamental fish farmers and trade to take care of the interests of this sub-sector. A concerted effort was felt necessary to identify rare domestic breeds that command a high price in the domestic market and breed them for gaining economic stability and conservation of biodiversity. It is necessary to recognize ornamental fisheries as an agricultural sector activity across all states of India. Lack of proper guidelines for ornamental fish culture, especially with respect to live feed,quality enhancement, transportation, price stabilization and standardization were some major issues that have to be dealt. The stakeholders were advised to develop a strong association to project the demands of the sector effectively.

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Field-day on summer sorghum

Kovilpatti, 17 July 2014. With the help of All India Coordinated Sorghum Improvement Project (AICSIP), a field-day on summer sorghum was organized at Grampanchayat, Nainaragaram village, Tirunelveli, Tamil Nadu by Directorate of Sorghum Research, Hyderabad. Since, sorghum cultivation is a new endeavor in the area, the main objective of the programme was to evaluate and demonstrated high-yielding sorghum cultivars, and build-up confidence to adopt them for increasing profitability and socio-economic upliftment of the sorghum growers including tribal farmers.

Dr S. Pandian highlighted potential of sorghum production technologies and scope of value-addition. The experts explained importance, need and economic sustainability of sorghum cultivation in their area to the farmers. Farmers were made aware

on sorghum cultivation with latest improved production technologies, plant-protection measures and diversified value-added food products. Dr R. Shankarpandian also narrated about availability of suitable sorghum technologies and its scope for further development in that area. Farmers were satisfied with the cultivation of CSH 14 sorghum and were demanding seeds of latest cultivars. Few sorghum panicles were displayed through small exhibition.

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Hindi Sangoshthi at DKMA, ICAR

New Delhi, 26 September 2014. The Directorate of Knowledge Management in Agriculture and *Raj Bhasha Vibhag* of ICAR, jointly organized one-day Hindi Symposium at NASC Complex. Dr S. Ayyappan (Secretary, DARE and DG, ICAR) conveyed in his message that there is need to communicate the research conducted by our scientists in farmers' community that is Hindi or regional languages.

Shri Arvind Kaushal (Secretary, ICAR and Chairman, Official Languages Implementation Committee) said in his message that communication of knowledge in simple language to farmers will be in the interest of farmers and science both.

Dr M. P. Yadav (Secretary, National Agricultural Science Academy) highlighted the need of research journals in Hindi and enhancement in quality of contents. Shri L.S. Vajpayee (DDG, Aakashvani) stressed the need of capacity building in SCT communication in Hindi. Dr Rameshwar Singh (Project Director, DKMA) focused on importance of agricultural literature in Hindi and its impact. There were two technical sessions – Role of Hindi in dissemination of science and technology, and Scientific technical writing in Hindi and Use of Raj Bhasha in ICAR. Scientists and Technical Officers from ICAR Headquarters and its Institutes including officers from ICMR, Vigyan Prasar, IIMC, All India Radio participated in the event.

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Swachh Bharat Abhiyan

IIVR

Varanasi, 25 September 2014. In compliance with message of Hon'ble Prime Minister on *Swachh Bharat* a special cleanliness drive was started under the leadership of Dr B. Singh (Director, Indian Institute of Vegetable Research), wherein all the staff members of the institute participated in cleanliness programme covering institute premisesand surrounding areas. The employees were also motivated to dedicate 100 hours every year towards *Swachh Bharat Abhiyan*.

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NRC Camel

Bikaner, 25 September 2014. In compliance of the call of Hon'ble Prime Minister for *Swachh Bharat Abhiyan*, the NRC on Camel, Bikaner launched a

programme on intensive sanitation and cleanliness in and around of premises of NRCC, Bikaner during 25 September to 2 October, 2014 under *Swachhta Saptah* (cleanliness week). All the Scientists, Officers and Staff under the leadership of Dr N.V.Patil (Director, NRC on Camel) participated and contributed *Shramdan* for this programme.

In an specially organized function, the Director emphasized on the importance of the Sanitation and Cleanliness and directed all the Staff to ensure intensive cleaning in and around NRCC during the Week. Special task teams were constituted and assigned the work of sanitation and cleanliness in the campus.

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CSWRI

Avikanagar, 25 September 2014. Responding to the Nation's call by the Prime Minister Narendra Modi, CSWRI Avikanagar has taken the lead in launching the '*Swachhata Abhiyan'* in the campus from 25 September to 2 October 2014. The mission is being launched on the concept of Mahatma Gandhi's vision, 'Sanitation is more important than independence'. The Abhiyan was formally initiated by Director of the Institute, Dr S.M.K. Naqvi on 25 September 2014 at

the Goat Unit and said that this *abhiyan* shall continue forever even after we celebrate the week and such activities help to make the environment clean and keep us healthy. Director constituted a committee to conduct and co-ordinate the programme of cleanliness.

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Prof. M.S. Swaminathan inaugurates Agricultural Scientific Tamil Society

New Delhi, 31 July 2014. With the aim to promote understanding and amity between individual groups, associations and institutions involved in the fields of agriculture and scientific Tamil and promoting dissemination or exchange of knowledge through Tamil amongst them and to civil society at large and providing such facilities that would lead to the use of such knowledge for the good of humanity as a whole a society namely 'Agricultural Scientific Tamil Society' was formed. Prof. M. S. Swaminathan, (Chief-Patron of the Society) inaugurated the newly formed society at National Agricultural Science Centre, New Delhi. Dr Swaminathan emphasized to form such societies in other languages too for addressing the farmers need. He also shared his Green-Revolution experiences and pointed out the path ahead to the newly formed scientific society for agricultural

development. Dr M. Muthamil Selvan (Founder & President) briefed the major objectives of the society and thanked Dr S. Ayyappan (Secretary, DARE and Director General), ICAR for having supported the society as Patron.

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Visits

Union Minister of Agriculture visits ICAR institutes

Bhopal. 26 September 2014. Union Agricultural Minister, Shri Radha Mohan Singh addressed the agricultural scientists from Central Institute of Agricultural Engineering, Indian Institute of Soil Science and National High Security Animal Disease Laboratory, Bhopal at Central Institute of Agricultural Engineering, Nabibagh, Bhopal on 26 September 2014. The Union Minister of Agriculture said that working for the development of agriculture and upliftment of farmers and rural people is a divine work but at the same time maintenance of environment and ecological balance should also be given equal importance. He lauded the activities of ICAR Institutes at Bhopal saying that they are in right direction, however, require more impetus.He commented that only efficient leadership can bring the desired changes timely and effectively. The Union Minister of Agriculture further emphasized that ICAR should ensure that the benefits of agricultural research reaches the smallest of the farmers without any time lapse. This would be possible only with dedicated highly qualified and well experienced human resources.

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Kusumahaut farm

Bengusari, 14 September 2014. The Union Minister of Agriculture Shri Radha Mohan Singh, visited the seed production plots of maize and soybean and breeding block at Kusumahaut farm, 20 km away from Begusarai and appreciated the efforts of Regional Maize Research Station and Seed Production centre of Directorate of Maize Research. He emphasized on scaling-up this activity so that fruits of research reach more number of farmers in a timely manner. The Union Minister of Agriculture particularly emphasized on the development of drought tolerant maize for *kharif* and highly productive maize hybrids for *rabi*. The Union Minister of Agriculture interacted with

farmers of regions and advised them to adopt improved cultivars and agro-techniques to raise the crop yields and net profit. Dr O.P. Yadav (Project Director) briefed the Minister on the hybrids and other technologies developed, trainings organized and frontline demonstration conducted by DMR for different ecologies.

e mail: singhbs.1971@rediffmail.com

ICAR Research Complex for Goa

Goa, 3 August 2014. Shri Radha Mohan Singh, Union Minister of Agriculture, Government of India visited ICAR Research Complex for Goa. During the visit, he was appraised about the Institutional activities through exhibition of various technologies developed at the Institute. He visited the laboratories of the Institute and was explained about the ongoing research work.

The Union Minister of Agriculture launched 'Soil Health Management - Goa' website on this occasion. He stressed upon dissemination of technologies as 'Lab-to-Land' for improving livelihood of the farmers and suggested that personal involvement in the day-to-day research is very crucial for the success of various programmes. Two publications — *Annual Report of ICAR Research Complex for Goa, 2013-14* and *Handbook on Freshwater Aquaculture* during the programme were also released by the Union Minister of Agriculture.

On the occasion, Dr. Narendra Pratap Singh (Director, ICAR Research Complex for Goa) gave a brief presentation about the history, research and extension activities of the Institute.

Trainings

- A three-day National Level Training on 'Production and retting technology of jute/mesta/ramie/sun-hemp including other related aspects' sponsored by National Food Security Mission (NFSM), Commercial Crops, Department of Agriculture and Co-operation, Ministry of Agriculture, Government of India, was organized in the Division of Transfer of Technology from 20 to 22 August 2014. Twenty-five trainees from different jute growing districts of West Bengal participated in this programme.
  e mail: cirjf.wp@nic.in

- Training for farmers on Rodent Pest Management was organized by Regional Research Station (RRS) of Central Arid Zone Research Institute (CAZRI) at Chuchot village (Leh) on 27 July 2014.
  e mail: rrs_leh@cazri.res.in

- The ICAR Research Complex for NEH Region, Sikkim Centre, successfully concluded five-day Training-cum-Awareness Programme for Steering Committee Members of Sikkim Organic Mission.
  e mail: jdsikkim.icar@gmail.com

- The Directorate of Cashew Research, Puttur conducted orientation training on 'Establishment of Cashew Orchard under Tribal Sub- Plan' on 5 September 2014 at Puttur.
  e mail: dircajures@rediffmail.com

- The Department of Biotechnology organized a sponsored short-term training course of 21 days on Molecular Tools and Bioinformatics Approaches for Livestock Genome Analysis at Central Institute for Research on Cattle, Meerut from 10 to 30 September 2014.
  e mail: dirpdcm@yahoo.com

Personnel

Appointments

Name	Designation	Appointment
Dr D. Rama Rao	Director, NAARM	1 July 2014
Dr Raghavendra Bhatta	Director, NIANP	14 Aug. 2014
Dr Birham Prakash	Director, PDC Meerut	16 Aug. 2014
Dr Ravishanker C.N.	Director, CIFT	20 Aug. 2014
Dr K.K. Vijayan	Director, CIBA	20 Aug. 2014
Dr B.N. Tripathi	Director, NRC on Equines	20 Aug. 2014
Dr R.K. Malik	Joint Dir. (Res.) NDRI	26 Aug. 2014
Dr C.H. Srinivasa Rao	Director, CRIDA	26 Aug. 2014
Dr Shiv Prasad Kimothi	ADG,Coordination ICAR Hqrs.	29 Aug. 2014
Dr Bijendra Singh	Director, IIVR	1 Sept. 2014
Dr Gudipati Venkateshwarlu	ADG (EQA&R) ICAR Hqrs.	3 Sept. 2014
Dr K.K. Singh	Director, CIAE	4 Sept. 2014
Dr Jitendra Kumar	Director, DMAPR	5 Sept. 2014
Dr T. Chowdappa	Director, CPCRI	6 Sept. 2014
Dr D. Damodar Reddy	Director, CTRI	9 Sept. 2014
Dr Ramesh Chand	Deputy Director General (Edn.)	18 Sept. 2014

Superannuation

Name	Designation	Superannuation
Dr V. Venkatasubramanian	ADG (Agril. Extn.) ICAR Hqrs	10 July 2014 (Relieved)
Dr T.K. Srinivasa Gopal	Director CIFT	31 July 2014
Dr J.B. Mishra	Director, DGR	31 July 2014
Dr Pitam Chandra	Director, CIAE	31 July 2014
Dr H.S. Gupta	Director, IARI New Delhi	7 Aug. 2014
Dr Ramesh Kumar	Director, DFR Pune	21 Aug. 2014 (Relieved)
Dr G.V. Thomas	Director, CPCRI	31 Aug. 2014
Dr R.P. Dua,	ADG (F&FC) ICAR Hqrs	31 Aug. 2014
Dr P.S. Naik	Director, IIVR	31 Aug. 2014
Dr H. Ravishankar	Director, CISH	23 Sept. 2014 (Relieved)
Dr N.V. Nair	Director, SBI	30 Sept. 2014
Dr K. Vijayaraghavan	Joint Dir. (Extn.) IARI	30 Sept. 2014

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