CRIDA NEWS

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Dr. Vinod Kumar Singh, Director

From the Director's Desk ...

Research Priorities to Develop Land Degradation Neutrality (LDN) Action Plans for Rainfed Agro-Climatic Zones

India is endowed with vast natural resources specifically land which is a vital resource for growing food, fibre and firewood to meet the ever-increasing population needs. Out of 329 m ha geographical area of country, land degradation is occurring on 147 m ha including 94 m ha from water erosion, 16 m ha from acidification, 14 m ha from flooding, 9 m ha from wind erosion, 6 m ha from salinity and 7 m ha from a combination of factors. Lack of adequate information on soil resources coupled with improper land use planning have resulted in many of these land degradation processes. There is a need to rehabilitate degraded lands to support sustainable food production. Sustainable Development Goal (SDG) target 15.3 of UN states: "By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought, floods and strive to achieve a land degradation-neutral world." Land degradation neutrality (LDN) is a condition where further land degradation (loss of productivity caused by environmental or human factors) is prevented and already degraded land can be restored. Land Degradation Neutrality has been defined by the Parties to the Convention as "*A state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems*". LDN is a unique approach that counter balances the expected loss of productive land with the recovery of degraded areas. It strategically places the measures to conserve, sustainably manage and restore land in the context of land use planning. UNCCD and the UN Environment Programme (UN Environment) came together to mark the United Nations General Assembly adoption of the "2030 Agenda for Sustainable Development". To date, over 120 countries including India have engaged with the LDN Target Setting Programme and considerable progress has been made since the 2030 Agenda was adopted in 2015. During the Delhi Declaration at 14th Conference of Parties to UNCCD in 2019, the Government of India has set a target to restore over 26 m ha of degraded land and create a carbon sink of 2.5-3 billion tonnes by 2030 to achieve land degradation neutrality. Out of 141 m ha net sown area, about 73 m ha (52%) is under rainfed agriculture. Rainfed areas are more vulnerable to land degradation as these areas remain bare without surface vegetative cover during most parts of the year due to lack of sufficient soil moisture. Actions to achieve LDN in rainfed areas include sustainable land or soil management approaches that avoid or reduce degradation coupled with efforts to reverse degradation through restoration of lands that has lost productivity. ICAR-CRIDA has developed several sustainable land management (SLM) practices such as agro-forestry, conservation agriculture, *in-situ* soil moisture conservation practices, *ex-situ* rainwater harvesting technologies/ structures, surface and sub surface drainage techniques, bio-drainage, location specific bioengineering measures, shelter belts and

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From the Directors Desk

Dr. Mohammed Osman, Director (Acting) (from 01.01.2021 to 01.02.2021)

wind barriers etc suitable for different rainfed zones varying in rainfall, degree of slope and soil type. Key research priorities in support of land-based responses to land degradation and adaptations to climate change should include; (i) Characterization of landscape and analysis of time series database for assessing the land degradation (LD) vulnerability of different rainfed agro-climatic zones using modern geospatial tools (ii) Understanding the differences between land degradation processes which are human induced from those that are climate change led and interrelationship between them (iii) Identifying SLM practices and success stories to prevent and halt degradation and restore or rehabilitate degraded lands in specific rainfed agro-climatic zones, socio-economic and cultural conditions including climate change (iv) Developing action plans for LDN using RS and GIS in arid, semi-arid and dry sub-humid regions (v) Developing science-based models supporting the implementation of action plans in a participatory approach that involves affected communities and relevant decision and policy-makers (vi) Formulating conducive policies to establish an enabling environment that permits better matching of land degradation problems with SLM solutions etc. Government of India (GoI) has established a "Centre of Excellence (CoE)" under Ministry of Environment, Forests and Climate Change (MoEFCC) to promote a scientific approach towards land degradation. Schemes such as the *Pradhan Mantri Fasal Bima Yojana*, Soil Health Card Scheme, Soil Health Management Scheme and *Pradhan Mantri Krishi Sinchayee Yojana* are seen as prongs to tackle this land degradation. ICAR-CRIDA, Hyderabad as a scientific partner of CoE has been striving hard to achieve LDN in rainfed areas in collaboration with above stated GoI schemes.

New Research Initiatives

Evaluation of different nano-fertilizers for nutrient use efficiency (NUE), productivity and economics of rainfed crops

The nitrogen use efficiency in different crops/ cropping system currently is very less i.e. 30-40%. Recently, nano-urea was recognized to be a revolutionary product strategy to improve nutrient use efficiency (NUE) in different irrigated crops. Therefore, a project entitled "Effect of different nano-fertilizers for NUE, productivity and economics of rainfed crops" has been initiated at ICAR-CRIDA, Hyderabad and three AICRPDA centres.

Evaluation of polyhalite for yield and quality of rainfed crops, GHGs emissions and soil properties

Polyhalite contains four essential nutrients (K, S, Mg and Ca) required for growth and development of plants. Besides conventional fertilizers, multi-nutrient compositions like polyhalite (K_2SO_4. $MgSO_4$. $2CaSO_4$. $2H_2O$) could be potential sources for nutrient management in field crops and for restoring soil fertility. Two experiments were initiated at ICAR-CRIDA to study the effect of polyhalite application on growth, productivity, quality of rainfed groundnut and maize, GHGs emissions and soil fertility.

Use of Ca-bentonite as a drought mitigation technology

Drought is one of the most critical factors affecting agricultural production in semi-arid rainfed regions under changing climate. Therefore, a new research project entitled "Effect of Ca-bentonite on soil moisture dynamics and availability of nutrients in semi-arid rainfed Alfisols" has been initiated. Ca-bentonite is a hydrous silicate of aluminium with varying amounts of magnesium, calcium and iron. This study would help in understanding the soil moisture dynamics and nutrient interactions in rainfed Alfisols under drought condition.

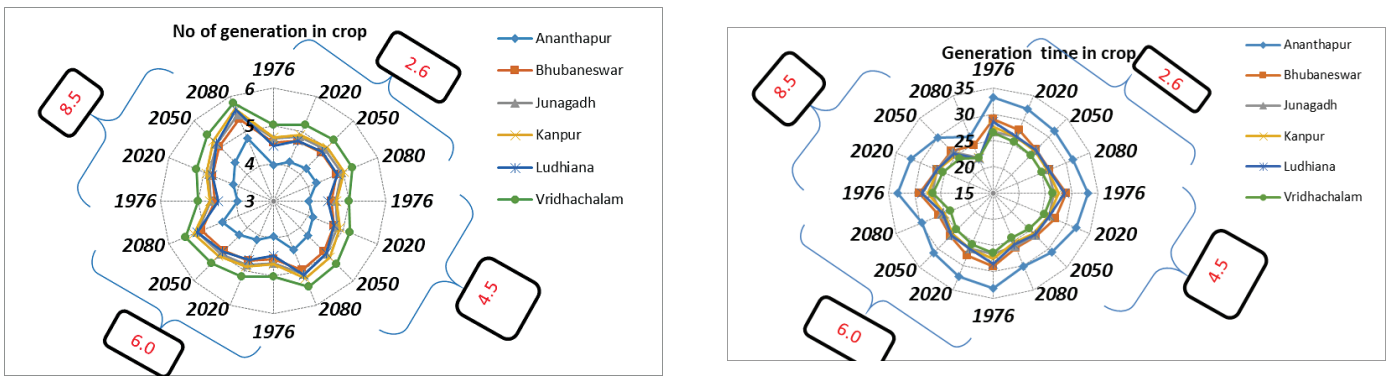
Evaluation of Bamboo species suitable for Southern Telangana region

Bamboo in India is an exceptionally diverse plant group consisting of nearly 76 genera and 136 species. Bamboos have the potential to be incorporated into agroforestry systems in the semi-arid tropics in place of conventional tree species. Therefore, a research project entitled "Evaluation of bamboo species suitable for Southern Telangana region" was initiated to evaluate the growth performance of the bamboo species for its suitability under dryland Alfisols of Southern Telangana conditions.

Research Highlights

Prediction of pest scenario of *Spodoptera litura* (Fab.) on groundnut under Representative Concentration Pathways (RCPs) based climate change scenarios

Multi-model ensemble of Maximum (Tmax) and Minimum (Tmin) temperature data of four Representative Concentration Pathways viz., RCP 2.6, RCP 4.5, RCP 6.0 and RCP 8.5 of Coupled Model Inter comparison Project 5 (CMIP5) models were generated for ten major groundnut growing locations of the India to predict the number of generations of *Spodoptera litura* (Fab.) using Growing Degree Days approach during three future climate viz., Near (NF), Distant (DF) and Very Distant (VDF) periods and were compared over 1976-2005 baseline period (BL). The findings suggest that the incidence of *Spodoptera litura* on groundnut could be higher in future.

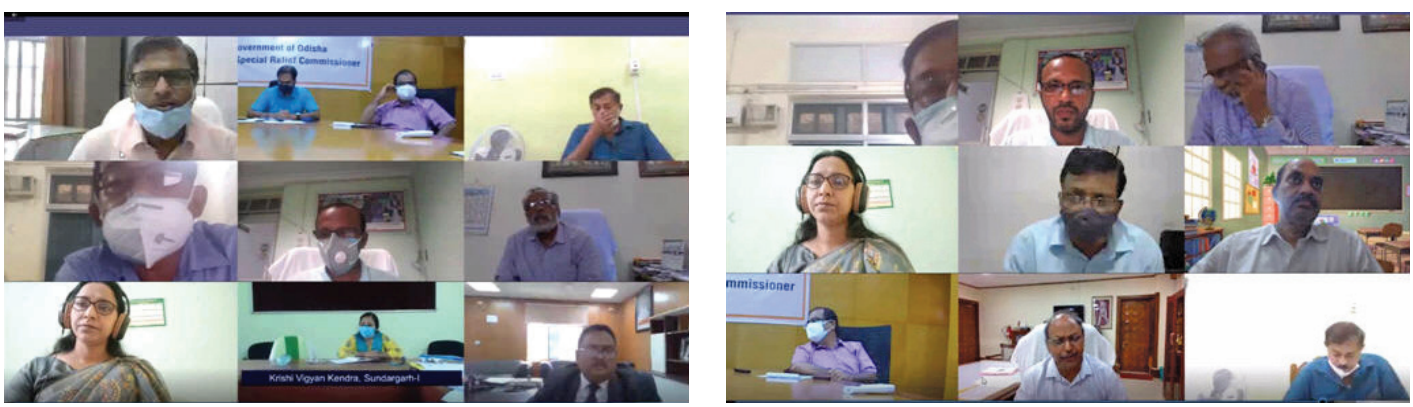


Scenario variation in number of generations and generation time of S. litura during crop season across various climate change periods (NF: Near Future, DF: Distant Future, VDF : Very Distant Future, BL: Base Line)

Contingency Plans

State Level Interface Meeting on Agricultural Contingency Preparedness

A state level virtual interface meeting on enhancing the preparedness for agriculture contingencies during *kharif* 2021 for Maharashtra, Odisha and Telangana was organized on June 8th and 11th, 2021 by ICAR-Central Research Institute for Dryland Agriculture (CRIDA), Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), MoA&FW, Department of Agriculture, Government of Maharashtra, Department of Agriculture, Government of Odisha and Department of Agriculture, Government of Telangana.

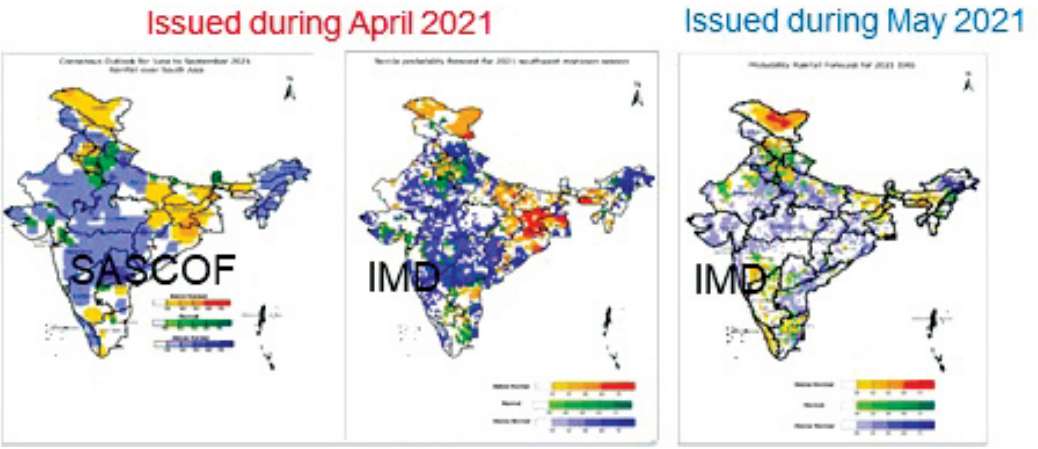


State level virtual interface meeting on enhancing preparedness for agricultural contingency preparedness for Telangana

During the meeting the seasonal forecast of IMD and other international agencies was shared with the department officials and discussed about its implications. The district officials of agriculture also shared the action plans for their districts along with SoPs for initiation of contingency plans.

District Agriculture Contingency Plans - Implementation

During the year 2021, following the forecast of IMD (during April and May) and SASCOF (during April), from above normal rainfall condition to normal condition, interface meetings were organized across seven states (Maharashtra, Karnataka, Telangana, Odisha, Gujarat, Madhya Pradesh and Rajasthan) during the season.



Forecast of IMD (during April and May) and SASCOF (during April)

The meetings were attended by Principal Secretaries of respective states along with officials from districts, representatives of ICAR institutes located in respective states, Vice Chancellors/ Directors of Research of state agricultural universities and Programme Co-ordinators of KVKs etc. In the meetings discussions were held on weather conditions, forecast for next 2 months, progress of crop sowings and other issues related to the agri sectors in India.

AICRPs

AICRPDA Activities

A *Kisan Goshti* was organized on July 18, 2021 at Niluvurayi village of Narpala Mandal, adopted by AICRPDA centre, and in AICRPDA-NICRA village of Ananthapuramu district, Andhra Pradesh to commemorate Azadi Ka Amrit Mahotsav.

One-day pre-season scientists-farmers' interaction meeting was held in NICRA village, Dharmattapatti, Kovilapatti block, Thotukudi District on August 9, 2021.

One-day training programme on 'Improved crop management practices in pigeonpea' was organized in SCSP adopted village, Hipparga (S.N) Village, Kalaburgi district, Karnataka on August 16, 2021 by AICRPDA centre, Vijayapura.

A workshop on "Farm mechanization and Improved Agricultural Implements" was organized by AICRPDA Center, Bengaluru, Karnataka, for the officials of Agriculture department of 8 districts from Southern Karnataka on September 15, 2021 to commemorate Azadi Ka Amrit Mahotsav and Golden Jubilee of AICRPDA.

AICRPDA centres organized Farmers-Scientists interaction meetings, field days, trainings etc. to commemorate Azadi Ka Amrit Mahotsav and Golden Jubilee of AICRPDA

Pre-season scientist-farmer interaction meeting in NICRA village, Dharmathupatti on 09.08.2021 by AICRPDA centre Kovilpatti

Kisan Goshti was organized in NICRA village Chikkaputtayanapalya, Bengaluru Rural district on 30.08.2021 by AICRPDA Centre, Bengaluru

Kisan Goshti was organized in NICRA village, Vannedoddi, Ananthapuramu district on 31.08.2021 by Ananthapuramu centre

Scientists-Farmer Interaction meet was organized on 23.09.2021 by AICRPDA at Arjia Centre

Training on rabi season crop planning and farmers rally was organized on 22.10.2021 in OFR village, Adgaon, Parbhani district by AICRPDA centre, Parbhani

Stakeholder consultation workshop organized on 24.12.2021 in Kanbas village, Solapur district by AICRPDA centre, Solapur

Field day and Scientists-Farmer interaction meeting organized on 25.12.2021 in AICRPDA-NICRA villages by AICRPDA centre, Vijayapura

National Innovations in Climate Resilient Agriculture (NICRA)

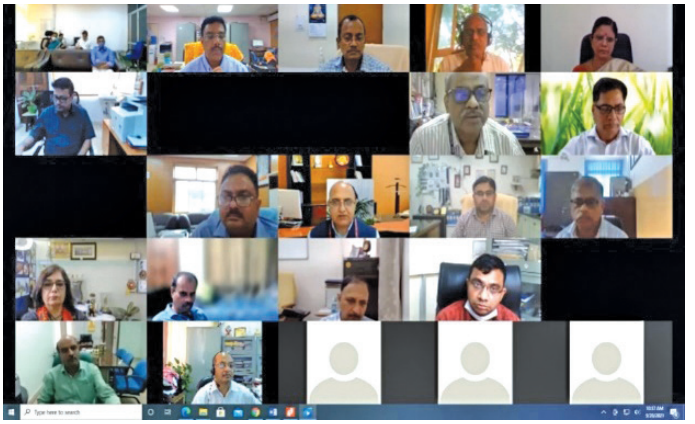
TDC-NICRA Review Workshop

The annual review and concluding workshop of TDC-NICRA for ATARIs-Bengaluru, Ludhiana, Hyderabad, Jabalpur, Kanpur, Guwahati, Barapani, Jodhpur and Pune was conducted from May to June, 2021 through virtual mode.

Officials attending TDC-NICRA review workshop

NICRA-Technical Program Finalization Workshop of Strategic Research Partner Institutes

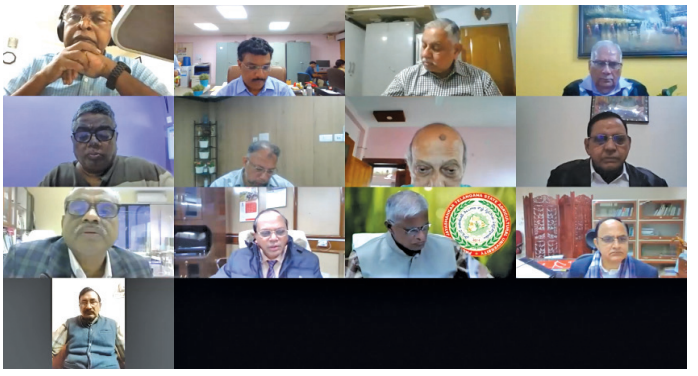
The technical program finalization workshop of strategic research partner institutes under crop sciences and social sciences were held on March 19 and 26, 2021 respectively.



Officials attending NICRA technical program finalization workshop

XVI Expert Committee Meeting of NICRA

The XVI expert committee meeting of NICRA was held during January 15-17, 2021. The meeting was chaired by Dr. S.K. Chaudhari, DDG (NRM). Meeting was attended by NICRA expert committee members; Dr. M. Osman, Director (Act.); Dr. M. Prabhakar, PI (NICRA) and other officials. The PIs made the detailed presentations of the proposals. A total of 17 projects were recommended for funding out of 37 reviewed.



Officials attending XIV expert committee meeting of NICRA

Technical Review Meeting of ongoing NICRA CGC Projects

The technical review meeting of Fisheries Sciences, Crop sciences, NRM & Agril. Engineering was held on March 10, 11 and 22, 2021 respectively.

Brain Storming Session on Rainwater Harvesting Models

A virtual Brain storming session on Rainwater Harvesting Models held on December 21, 2021. Dr. S.K. Chaudhari, DDG (NRM), ICAR was the chief guest and Dr. A.K. Sikka, Country Representative, IWMI & Former DDG (NRM) was guest of honour for the inaugural session. Dr. V.K. Singh, Director, ICAR-CRIDA briefed about the purpose of meeting. Dr. S.K. Chaudhari, DDG (NRM) emphasized to sensitize states for rainwater harvesting suitability along with field crops and horticultural crops suitability and the ecological benefits from soil and water conservation at regional scale. Dr. Sikka suggested to prepare location specific manuals considering both surface and groundwater harvesting and utilization. A large group of scientists from CRIDA, AICRPDA, AICRPAM, SAUs, representative of various ministries and department and NGOs attended the brainstorming session.

Visits to Monitor the ongoing NICRA Project Activities

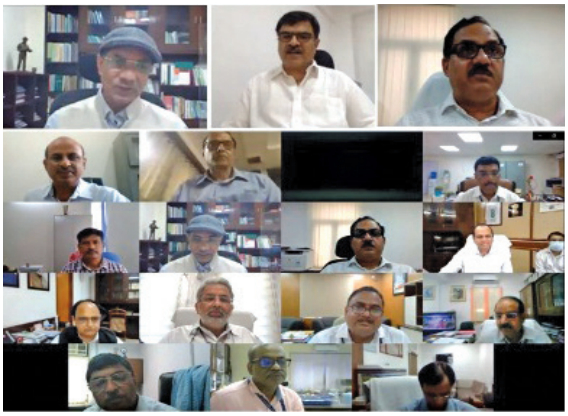
Dr. K. Sammi Reddy, Head, DRM, CRIDA, visited the on-going NICRA experiments at ICAR-CAZRI, Jodhpur and ICAR-IISS, Bhopal. Dr. A.K. Indoria, Co-PI, NICRA-TDC, ATARI Zone-II, visited the KVK's of Barmer, Jodhpur, Jhunjhunu and Bharatpur. Dr. S. Kundu, Co-PI, NICRA-TDC, Zone-V, visited NICRA KVKs of Odisha (Kendrapara, Kalahandi and Ganjam-I). They monitored the ongoing activities at various centres.

High Level Monitoring Committee Meeting of NICRA Project

The 13th High Level Monitoring Committee (HLMC) meeting of NICRA project was held through virtual mode on September 3, 2021. Hon'ble Director General, ICAR and Secretary, DARE, Dr. T. Mohapatra, chaired the meeting. Dr. S.K. Chaudhari, DDG (NRM & AE) welcomed the participants. Other DDGs, ADGs, Dr.

Visits to monitor ongoing NICRA projects

V.K. Singh, Director, ICAR-CRIDA, Financial Officers of the ICAR, Scientist from DST, IMD, CRIDA and representatives from various ministries and departments participated and provided inputs. Dr. V. K. Singh presented a brief overview of NICRA. Hon'ble DG, ICAR appreciated the progress of the project and the recognition for NICRA project at both national and global level. He stressed on documentation of state-specific climate resilient technologies for their inclusion in NMSA and state action plans. DDGs and ADGs of ICAR and officials from various ministries/departments provided key inputs for further strengthening of NICRA program.



Officials attending HLMC meeting of NICRA project

Scheduled Caste Sub Plan (SCSP) & Tribal Sub-Plan (TSP) Activities

Extension Activities and Technology Transfer

AICRPDA-SCSP programme is being implemented by 8 centres viz., Ballowal Saunkhri, Hisar, Kovilpatti, Varanasi, Chianki, Faizabad, Rakh Dhiansar and Adilabad covering 25 villages in 6 districts of Punjab, Haryana, Tamil Nadu, Uttar Pradesh, Jammu and Kashmir, Jharkhand and Telangana to benefit directly to either individuals or communities of scheduled caste farmers through demonstration of improved natural resource management, crop livelihood based interventions for higher productivity, income and employment generation, creation of physical assets and capacity building. Two backyard chicks rearing centers were established in Mallampet village for two SC farmers as a livelihood option under this programme. Tarpaulins, Nutri-millet Kits and Vegetable Seed Kits were distributed to the farmers at Mallampet village of Kotapally Mandal, Mancherial district, Telangana on January 28, 2021 to increase awareness among farmers. As a part of the programme improved short duration variety of redgram-PRG-176 (2000 kg) were also distributed to 600 farmers in the Kotapally mandal during June 7-9, 2021.

Farmers exposure visit to Chianki centre

Training Programmes Organized

A series of training programme was organized on "Sustainable Rice Production Technology" during February 23-25, March 8-10 and March 16-18, 2021 at IIRR, Hyderabad. A training programme on battery operated sprayers and *Kheti Rakshak* was organized in Kotapally mandal, Mancherial district, Telangana State under SC Sub Plan from August 31- September 2, 2021.

Installation of Kheti Rakshak in villages

National Level Campaign on Food and Nutrition for Farmers

ICAR-CRIDA organized *Kisan Goshtis* as part of Azadi Ka Amrit Mahotsav in Adilabad district of Telangana State on August 24, 2021 on the theme 'Agriculture and nutrition - the way of tribal agriculture' under Tribal Sub-Plan. About 100 farmers participated in the *Kisan Goshtis*.

Scientist-farmer interaction at Pedda Malkapur

Field Days Organized

ICAR-CRIDA organized a field day at Bhogalingadahalli village, Chincholi Taluaka, Kalaburgi district, Karnataka on October 18, 2021 under SCSP as a part of Azadi Ka Amrit Mahotsav. Foot sprayers and yellow sticky traps were distributed to farmers on December 17, 2021 in Kotapally mandal, Mancherial district, Telangana State under SC Sub Plan.

Dr. V.K. Singh, Director addressing the farmers on field day

Field Day at Mallampet village, Kotapally mandal

Distribution of foot sprayers and yellow sticky traps to SC farmers

Important Events

National Science Day Celebration

An online programme was organized on the eve of National Science Day by ICAR-CRIDA, Hyderabad on February 27, 2021 under the Chairmanship of Dr. V.K. Singh, Director, ICAR-CRIDA. The theme for National Science Day was "Future of STI: Impacts on Education, Skills and Work". Dr. Ashok Dalwai, IAS, CEO, NRAA was the Chief Guest of the programme.

Dr. Ashok Dalwai, IAS, CEO NRAA delivering his lecture

Dr. V.K. Singh, Director, ICAR-CRIDA addressing the audience

International Women's Day Celebration

ICAR-CRIDA celebrated International Women's Day on the theme "Women leadership in agriculture: entrepreneurship, equity and empowerment" on March 8, 2021. Dr. V.K. Singh, Director, ICAR-CRIDA in his address highlighted the increasing participation of women farmers in agriculture and allied sectors. A lecture on topic "Recommendations of Dietary Allowance (RDA) for women" was also delivered by Dr. Sreedevi Shankar, Principal Scientist (Food and Nutrition) covering the importance of major and minor nutrients such as carbohydrates, protein, minerals, vitamins, dietary fibre to improve the health and nutrition status of women.

Celebration of international women's day at CRIDA Campus

The international women's day was also organized by KVK-CRIDA and under Farmer FIRST project at adopted village, Gangupally, Vikarabad District

Celebration of international women's day at KVK-CRIDA and at Gangupally Village

Foundation Day Celebration

ICAR-CRIDA celebrated its 37th foundation day on April 12, 2021. The chief guest of the programme, Dr. S.K. Choudhary, DDG (NRM) in his address appreciated the performance of CRIDA on various front. He highlighted that Contingency Plans of CRIDA has been the proud contribution for NRM division and ICAR. He lauded CRIDA team for its work on climate change, soil and water management, conservation agriculture etc. Dr. S. Bhaskar, ADG (AAF&CC), ICAR applauded the Institute's remarkable works and efforts in bringing out location specific doable technologies considering the soil and rainfall condition of the region. Dr. V.K. Singh, Director, CRIDA stated that CRIDA has been a knowledge partner to various national and international organizations. During the programme, Ex directors of CRIDA, Dr. J.C. Katyal, Dr. Y.S. Ramakrishna, Dr. B. Venkateswarlu and Dr. Ch. Srinivasa Rao also expressed their views.

Glimpses of the foundation day celebration

MoU

An MoU was signed between Director, ICAR-CRIDA and Commissioner of Rural Development, Govt of Telangana for enhancing the water resources through renovation of percolation tanks, desilting and construction of surplus weirs and introduction of farm ponds in Kotapally mandal on March 27, 2021.

Rejuvenation of water harvesting earthen dams by desilting

Programmes organized under Azadi Ka Amrit Mahotsav

Farmers Awareness Campaign

ICAR-CRIDA conducted farmers awareness campaign (Virtual mode) on "Balanced Use of Fertilizers" in association with KVK - Ranga Reddy as a part of Azadi Ka Amrit Mahotsav on June 18, 2021 under the chairmanship of Director, ICAR-CRIDA, Dr. V.K Singh. About 71 farmers including 17 women farmers participated in the program.

National Webinar on Food and Nutritional Security: Challenges and Opportunities in Rainfed areas

Commemorating the Azadi Ka Amrit Mahotsav and Golden jubilee celebration of All India Coordinated Research Project for Dryland Agriculture celebrations, ICAR-CRIDA in collaboration with Indian Society of Dryland Agriculture (ISDA) organized one-day National Webinar on 'Food and Nutritional Security: Challenges and Opportunities in Rainfed areas' on August 16, 2021.

Dr. Ashok Dalwai, IAS., CEO, NRAA addressing the delegates

Dr. Ashok Dalwai, IAS., CEO, National Rainfed Area Authority, Dr. S.K. Chaudhari, DDG (NRM); Dr. V. Praveen Rao, VC, PJTSAU; Dr. S. Bhaskar, ADG (AAF&CC); Dr. V.K. Singh, Director, CRIDA participated in the webinar. The Webinar dealt up on the key technological and policy options for enhanced food and nutritional security in rainfed areas.

Horticulture Block Plantation

Horticulture block plantation programme was conducted as part of Azadi Ka Amrit Mahotsav at Gunegal Research Farm on July 27, 2021 and at Hayathnagar Research Farm on September 1, 2021. Improved varieties of commercially grown fruit crops viz., Mango (Mallika, Kesar, Dasheri, Baneshan), Guava (Allahabad Safeda, Lucknow-49), Dragon Fruit (Pink Fleshed), Lemon (Balaji), Custard Apple (Balanagar), Sapota (Kalipatti, Pala), Pomegranate (Bhaguava) and Jackfruit (Varikka) were planted.

Tree plantation at HRF, ICAR-CRIDA

Webinar on Agricultural Extension Policies in India

Dr. Suresh Babu, Head, Capacity Strengthening, IFPRI, Washington DC, USA delivered a lecture on 'Evolution of Agricultural Extension Policies in India: Implications for Future' organized as part of Azadi Ka Amrit Mahotsav by ICAR- CRIDA, Hyderabad on September 15, 2021 through virtual mode. Dr. V.K. Singh, Director, ICAR-CRIDA, Hyderabad chaired the meeting.

Organic Farming Awareness Campaign

An awareness campaign was organized on organic cultivation of crops, fruits and vegetables to the farmers on August 24, 2021. As part of this campaign, a group of 30 farmers from the villages of FFP Pudur Mandal were taken to organic cultivation fields. Another organic farming awareness campaign was organized on September 25, 2021 at Hayathnagar research farm of ICAR-CRIDA where about 25 farmers from Madugula mandal of Ranga Reddy district and Yadadri Bhuvanagiri district attended. A regional campaign on organic farming was organized on December 18, 2021

at Gaddamallaighguda village of Yacharam Mandal, Ranga Reddy district as a part of Azadi Ka Amrit Mahotsav. The campaign was held in the organic farm of Mr. Srinivasa Rao, progressive farmer and about 40 farmers attended the campaign.

Mahila Kisan Diwas

As a part of Azadi Ka Amrit Mahotsav, Mahila Kisan Diwas was celebrated at Farmer FIRST adopted village Gangupally, Vikarabad District on October 14, 2021. Dr. Sarah Kamala, Ex Professor and Principal Scientist, PJTSAU, and Head AICRP on Home Science was the chief guest of the programme. She talked about the equality and equity of women in agriculture and emphasized on the financial independence and decision-making power in the life of the women farmers. About 80 women farmers participated in the event.

KVK-Ranga Reddy District, ICAR-CRIDA organized Mahila Kisan Diwas at KVK Ranga Redddy, Annaboina Palle village, Madgula Mandal of Ranga Reddy district on October 15, 2021 with the theme "Equality and Empowerment". Dr. V.K. Singh, Director, ICAR-CRIDA explained about the empowerment of women through establishing agri-enterprises, enhancing production of crops through conservation of natural resources and organic farming. About 82 women farmers participated in the programme.

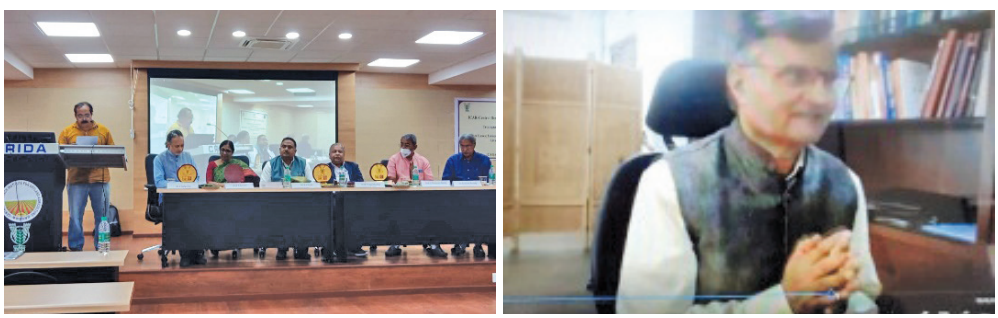
Mahila Kisan Diwas Celebration

World Food Day

A virtual program was organized by the ICAR-CRIDA and KVK-Ranga Reddy on the occasion of the World Food Day on October 16, 2021 as a part of Azadi Ka Amrit Mahotsav under the chairmanship of the Director, ICAR-CRIDA, Dr. V.K. Singh.

One-day Seminar on New Farm laws

One-Day seminar on New Farm Laws: Issues and Concerns for Agriculture Development, Livelihood and Food Security in Telangana State was organized by ICAR-CRIDA in collaboration with Telangana Economic Association (TEA) on October 22, 2021. Dr. V.K. Singh, Director, ICAR-CRIDA mentioned that the three farm laws are beneficial to the farmers in enhancing farmers' income through creating new markets in addition to the existing APMC markets. Prof. Ramesh Chand, Member, NITI Aayog, Government of India, explained that the laws are beneficial to the farmers by attracting new investments and also help in reducing market fees across all commodities and states.



One-day seminar on New-Farm laws

Observance of Vigilance Awareness Week

Vigilance Awareness Week is observed every year during the week in which the birthday of Sardar Vallabhbhai Patel (31st October) falls. Vigilance Awareness Week-2021 was observed in ICAR-CRIDA from October 26- November 1, 2021.

Vigilance awareness week celebration

National Agricultural Education Day

ICAR-CRIDA celebrated National Agricultural Education Day on December 3, 2021 to mark birth anniversary of first President of Independent India and Union Minister of Agriculture, Bharat Ratna (Late) Dr. Rajendra Prasad. On this occasion, school students were exposed to CRIDA laboratories and dryland gallery.

National Agriculture Education Day celebration

Dr. V.K. Singh, Director, ICAR-CRIDA explained about the significance of agricultural education day. Later, presentation on "Scope and employment opportunities in agriculture and allied sector" were given by Dr. M. Osman, Head (PME cell). The chief guest, Dr. G. Venkateshwarlu, Joint Director NAARM gave his presentation on National education policy-2020 with special emphasis on agricultural education. The programme was coordinated by Dr. G. Nirmala, Dr. K. Ravi Shankar, Dr. R. Nagarjuna Kumar, Dr. Jagriti Rohit and Dr. Anshida Beevi CN.

World Soil Day Organized

ICAR-CRIDA organized World Soil Day on December 5, 2021 at SCSP village, Chincholi, Kalaburgi district Karnataka in association with Department of Agriculture, Karnataka. About 75 farmers attended the programme. World Soil Day was also organized under Farmer FIRST project at Gangupally Village, Pudur Mandal, Vikarabad District where 100 soil health cards were distributed to the farmers. CRIDA-KVK in association with IFFCO celebrated World Soil day in Nymatapur Village, Kadthal Mandal of Ranga Reddy District on December 5, 2021. Around 122 farmers and women farmers attended the program.

World Soil Day celebration at Gangupally Village

World soil day celebration by CRIDA-KVK

Swachhta Pakhwada

As a part of Swachh Bharat Mission, Swachhta Pakhwada was organized at ICAR-CRIDA during December 16-31, 2021. The programme started with the administration of oath by Dr. V.K. Singh, Director, ICAR-CRIDA to all the employees of CRIDA. In order to sensitize the farming community about the importance of cleanliness, the staff of ICAR-CRIDA organized cleanliness drive, awareness programme, rallies, debate and painting competition in the adopted MGMG villages. Around 50 farmers attended the programme organized in each village. Based on the range and scale of the activities undertaken by the institute, CRIDA has received an appreciation by the ICAR for the commendable work executed during this period.

Activities carried out during Swachhta Pakhwada

Participation in Seminars and Symposia

Participation in International events/ Important Meetings

Scientist	Programme	Duration	Venue
K. Sammi Reddy	Nutri-Cereals Multi-stakeholders' Mega Convention 3.0 organized by the ICAR-IIMR, Hyderabad	September 17, 2021	Novatel, Hyderabad
M. Prabhakar	United Nations Framework Convention on Climate Change (UNFCCC) world climate change conference (COP-26/CMP16/CMA3)	October 28- November 12, 2021	Glasgow, United Kingdom
K. Sammi Reddy	National Workshop on "Nutrient management in dryland/rainfed cropping systems" delivered invited lecture on "Nutrient Management in Dominant Cropping Systems under different Agro-climatic Zones of India"	November 11, 2021	ICAR-IISS, Bhopal
CRIDA Scientists	Fifth International Agronomy Congress on "Agri-innovations to combat food and nutrition challenges"	November 23-27, 2021	PJTSAU, Hyderabad
R. Nagarjuna Kumar	Hybrid mode International conference on Promoting Environmental Technologies for Waste Management and Sustainable Development (WMSD-2021)	December 12-13, 2021	Kalinga Institute of Industrial Technology, Bhubaneswar

Awards / Recognition

Dr. V.K. Singh, Director, ICAR-CRIDA, Hyderabad received prestigious "Rafi Ahmed Kidwai Award" for Outstanding Research in Agricultural Sciences (2020) in the field of Natural Resource Management by ICAR on July 16, 2021. The award carries a cash prize of 5.00 lakh in addition to a citation and certificate. Dr. V.K. Singh has made valuable contributions in the area of soil fertility appraisal and soil health restoration through site-specific nutrient management (SSNM) and inclusion of legumes in intensive cropping systems.

Dr. V.K Singh awarded with "Rafi Ahmed Kidwai Award" for Outstanding Research in Agricultural Sciences (2020) in the field of Natural Resource Management by ICAR

Dr. G. Ravindra Chary, Project coordinator, AICRPDA receiving Best Scientist Award

Dr. G. Ravindra Chary, Project Coordinator, AICRPDA was awarded with "Best Scientist Award" by Shri Narendra Singh Tomar, Hon'ble Minister of Agriculture & Farmers' Welfare, GoI, during 5th Agrivision 2021 on Krishi Evam Atmanirbhar Bharat on March 6, 2021.

AICRPDA received "ICAR-Chaudhary Devi Lal Outstanding AICRP Award" and AICRPDA centre, Indore received "ICAR-Vasantarao Naik Award for outstanding research applications in dryland farming systems" by ICAR on July 16, 2021.

Dr. R. Nagarjuna Kumar, Scientist, SDA, was awarded with "National Fellow Award" for outstanding contribution in Science and Technology in Computer Applications in Agriculture-2020 in virtual International Conference on "Research Initiatives for Agriculture, Biotechnology and Allied Sciences" held during March 24-25, 2021, organized by New Age Mobilization Society, New Delhi and IIMT University, Meerut.

Dr. R. Nagarjuna Kumar, Scientist, SDA, was admitted as Senior Member in International Association of Computer Science and Information Technology (IACSIT), Singapore.

Dr. M. Srinivasa Rao was honoured with three Fellowships, FRES, "Fellow of Royal Entomological Society", London since July 2021, FLSL, "Fellow of Linnean Society of London" since October, 2021 and received "Outstanding Agriculture Scientist" award from B. Vasanthraj David Foundation, Chennai for the year 2021.

Dr. M. Osman, Principal Scientist & Head, PME receiving Fellow of Indian Society of Agronomy

Dr. K.A. Gopinath, Principal Scientist (Agronomy) and Dr. Mohammed Osman, Principal Scientist (Agronomy) was conferred with "Fellow of Indian Society of Agronomy" in recognition of their outstanding contributions in the field of Agronomy during Fifth International Agronomy Congress held at PJTSAU, Hyderabad held during November 23-27, 2021.

Dr. K.A. Gopinath, Principal Scientist (Agronomy) receiving Fellow of Indian Society of Agronomy

Dr. J.V.N.S Prasad Principal Scientist (Agronomy) and Dr. Pratibha, Principal Scientist (Agronomy) was conferred with ISA Gold Medal Award at 5th International Agronomy Congress at PJTSAU, Hyderabad held during 23-27 November, 2021.

Dr. B.M.K. Raju was awarded "Best Oral Presentation Award" in Global Conference on 'Innovative Approaches for Enhancing Water Productivity in Agriculture including Horticulture' held during September 16-19, 2021 at PJTSAU Rajendranagar, Hyderabad, Telangana, India.

Dr. B.M.K Raju receiving Best oral Presentation award

Dr. S. Kundu, Scientist received "Associate Fellow of Andhra Pradesh Academy of Sciences" (APAS) in 2021.

Dr. S. Kundu, Scientist (Agronomy) and Dr. V. Visha Kumari, Scientist (Agronomy) received "Best Oral Presentation Award" and Dr. M.A. Sarath Chandran, Scientist (Agrometeorology) and Er. Ashish S Dhimate, Scientist (Farm Power and Machinery) received "Best Poster Presentation Award" during Fifth International Agronomy Congress held at PJTSAU, Hyderabad during November 23-27, 2021.

Copyright was awarded to Venkatesh G., Venkateswarlu, B., Gopinath K.A., Srinivasa Rao, Ch., Korwar, G.R. and Sanjeeva Reddy, B on 'Low Cost Portable Kiln for Biochar Production. ICAR-CRIDA', Regn. No. L-100062/2021.

Important Visitors

Visit of Dr. Suresh Kumar Chaudhari, Deputy Director General (Natural Resource Management), ICAR

Dr. Suresh Kumar Chaudhari, Deputy Director General (Natural Resource Management), ICAR visited ICAR-Central Research Institute for Dryland Agriculture during October 29-31, 2021. During his three days' visit to the institute, he inaugurated various facilities, interacted with all the staff of CRIDA and reviewed on-going research work. On October 29, 2021, Hon'ble DDG (NRM), Dr. Suresh Kumar Chaudhari, inaugurated the First-aid Room and visited the various research facilities and laboratories at the main campus. Later, DDG visited Hayatnagar Research Farm (HRF) and Gunegal Research Farm (GRF).

Dr. Suresh Kumar Chaudhari, Deputy Director General (Natural Resource Management), ICAR, visiting ICAR-CRIDA, Hyderabad

Visit of Hon'ble Governor of Maharashtra to AICRP Dryland Agriculture, Parbhani centre

Hon'ble Governor of Maharashtra, Shri Bhagat Singh Koshyari visited experiment cum demonstration plot of bamboo managed by Dryland Research centre along with Dr. A.S. Dhawan, Hon'ble Vice Chancellor and Smt. Aanchal Goyal DM Parbhani on August 7, 2021.

Hon'ble Governor of Maharashtra, Shri Bhagat Singh Koshyari visited a bamboo demonstration plot

Visits Abroad

Dr. M. Prabhakar, PI, NICRA participated in COP-26/CMP16/CMA3 as part of Indian Delegation to the United Nations Framework Convention on Climate Change (UNFCCC) during October 28 - November 12, 2021 at Glasgow, United Kingdom.

Dr. M. Prabhakar along with UNFCCC team at Glasgow, UK

Personnel Information

Appointments/Transfers

S. No.	Name	From the post of	To the post of	w.e.f.
1	Dr. V. K. Singh	Joint Director (Extn.) (Acting) & Head (Acting), Division of Agronomy, ICAR-IARI, New Delhi	Director, ICAR-CRIDA, Hyderabad	01.02.2021
2	Shri G. Nagesh Kanth Rao	ACTO, ICAR-CTRI, Rajahmundry	ACTO, ICAR-CRIDA, Hyderabad	23.06.2021
3	Shri Amit Srivastava	Assistant Chief Technical Officer, ICAR-CIARI, Port Blair	Assistant Chief Technical Officer, ICAR-CRIDA, Hyderabad	01.09.2021
4	Shri N.V.R.N. Murthy	Senior Finance & Accounts Officer, ICAR-CIFRI, Barrackpore	Chief Finance & Accounts Officer, ICAR-CRIDA, Hyderabad	28.09.2021
5	Shri Saurabh Meena	Administrative Officer, ICAR-CRIDA, Hyderabad	Senior Administrative Officer, ICAR-IISR, Indore	14.10.2021
6	Shri A. Narasimha Murthy	Senior Finance & Accounts Officer, ICAR-CRIDA, Hyderabad	Senior Finance & Accounts Officer, ICAR-IIMR, Hyderabad	18.10.2021
7	Dr. Suvana Sukumaran	Scientist, ICAR-CIBA, Chennai	Scientist, ICAR-CRIDA, Hyderabad	15.11.2021
8	Shri G. Jagan Mohan Rao	Assistant Finance & Accounts Officer, ICAR-CRIDA, Hyderabad	Finance & Accounts Officer, ICAR-NRCM, Hyderabad	30.11.2021
9	Shri Sudarshan Rampe	Assistant Finance & Accounts Officer, ICAR-DPR, Hyderabad	Assistant Finance & Accounts Officer, ICAR-CRIDA, Hyderabad	06.12.2021

Promotions

Scientific category

S. No.	Name and Designation	From	To	w.e.f
1	Shri N. Showri Raju, Scientist (Computer Applications)	RGP Rs. 8000/- (Level 12 of 7th CPC)	RGP Rs. 9000/- (Level 13A of 7th CPC)	08.12.2017
2	Dr. Prabhat Kumar Pankaj, Principal Scientist (LPM)	RGP Rs. 9000/- (Level 13A of 7th CPC)	RGP Rs. 10000/- (Level 14 of 7th CPC)	08.05.2018
3	Dr. Josily Samuel, Scientist (Agril. Economics)	RGP Rs. 7000/-(Level 11 of 7th CPC)	RGP Rs. 8000/- (Level 12 of 7th CPC)	15.12.2018
4	Dr. G. Venkatesh, Principal Scientist (Agroforestry)	RGP Rs. 9000/-(Level 13A of 7th CPC)	RGP Rs. 10000/-(Level 14 of 7th CPC)	15.07.2020
5	Dr. A.V.M.Subba Rao, Principal Scientist (Agrometereology)	RGP Rs. 9000/-(Level 13A of 7th CPC)	RGP Rs. 10000/-(Level 14 of 7th CPC)	08.12.2020

Technical/Administrative category

S. No.	Name and Designation	From	To	w.e.f
1	Smt. G.M. Shashi Rekha, Personal Assistant	Level 4 of 7th CPC (GP: Rs. 2400/-)	Level 5 of 7th CPC (GP: Rs. 2800/-)	23.07.2019
2	Shri D. Sridhar, Upper Division Clerk	Level 2 of 7th CPC (GP: Rs. 1900/-)	Level 3 of 7th CPC (GP: Rs. 2000/-)	28.04.2020
3	Shri G. Udaya Bhaskar, Lower Division Clerk	Level 2 of 7th CPC (GP: Rs. 1900/-)	Level 3 of 7th CPC (GP: Rs. 2000/-)	05.07.2021

Skilled Support Staff (SSS) category

S. No.	Name and Designation	From	To	w.e.f
1	Shri G. Anjaiah, Skilled Support Staff	Level 1 of 7th CPC (RGP: Rs.1800/-)	Level 2 of 7th CPC (GP: Rs. 1900/-)	19.10.2021
2	Shri S. Shankar Reddy, Skilled Support Staff	Level 1 of 7th CPC (RGP: Rs.1800/-)	Level 2 of 7th CPC (GP: Rs. 1900/-)	19.10.2021

Probation Clearance

S. No.	Name of the Official and Designation	Date of appointment	Date of completion of Probation Period	w.e.f
1	Mr. Bandi Srikanth Goud, Technical Assistant	26.12.2018	25.12.2020	26.12.2020
2	Mr. Avinash Brahamwanshi, Technician	28.12.2018	27.12.2020	28.12.2020
3	Mr. Ch. Singa Raju, Technician	21.01.2019	20.01.2021	21.01.2021
4	Mr. Bollampalli Prashanth, Lower Division Clerk	21.01.2019	20.01.2021	21.01.2021
5	Mr. P. Venkateshwarlu, Technical Assistant	02.02.2019	01.02.2021	02.02.2021
6	Mr. J. Ramana Reddy, Technician	02.02.2019	01.02.2021	02.02.2021

Retirement: -

S. No.	Name and Designation	Date
1	Dr. K.L. Sharma, Principal Scientist	31.01.2021
2	Dr. Suseelendra Desai, Principal Scientist	31.05.2021
3	Shri G. Kistaiah, Skilled Support Staff	31.05.2021
4	Shri Ch. Balaiah, Skilled Support Staff	30.06.2021
5	Smt. A. Vidyadhari, Chief Technical Officer	30.09.2021

Our best wishes for happy and peaceful retired life to all of above staff

Cultural, Welfare and Sports Activities

Republic Day Celebration

The 72nd Republic day was celebrated on January 26, 2021 in ICAR-CRIDA. Dr. M. Osman, Director (Acting) hoisted the flag and addressed the staff of CRIDA on this occasion.

Republic day celebration at ICAR-CRIDA

International Yoga Day Celebration

The staff of ICAR-CRIDA along with their family members celebrated International Yoga Day by practicing the Common Yoga Protocol on June 21, 2021 at 7 am at their respective residences. About 100 staff members including their family members practiced yoga and have resolved themselves to make yoga as a part of life for their well-being.

CRIDA Scientists practicing yoga

Independence Day Celebration

The 74th Independence Day was celebrated on August 15, 2021 with pride and patriotic zeal. Dr. V.K. Singh, Director ICAR-CRIDA hoisted the flag and addressed the staff of CRIDA. On this occasion, Director distributed cash awards (CCS & CCRC) to the X class toppers of CRIDA staff children and motivated the staff with his message to work with dedication and boost institute's growth.

Independence Day celebration at ICAR-CRIDA

Forthcoming Events

Title of the Event	Dates
Republic Day	January 26,2022
National Science Day	February 28, 2022
International Women Day	March 8, 2022
ICAR-CRIDA Foundation Day	April 12, 2022
World Environment Day	June 5, 2022
International Yoga Day	June 21, 2022

निदेशक की कलम से ...

वर्षा आधारित कृषि-जलवायुवीय क्षेत्रों के लिए भूमि निम्नीकरण(क्षरण) तटस्थता (एलडीएन) कार्य योजनाओं को विकसित करने के लिए अनुसंधान प्राथमिकताएं

हमारा देश विशाल प्राकृतिक संसाधनों से सुसंपन्न है। इसमें हमारी भूमि का विशेष योगदान है क्योंकि बढ़ती हुई जनसंख्या की जरूरतों को पूरा करने के लिए खाद्यान्न, चारा एवं इंधन लकड़ी उगाने के लिए यह एक महत्वपूर्ण संसाधन है। भारत के 329 मिलियन हेक्टेयर भौगोलिक क्षेत्र में से 147 मिलियन हेक्टेयर भू-क्षरण की समस्या से ग्रसित है, जिसमें से 94 मिलियन हेक्टेयर जल अपरदन से, 16 मिलियन हेक्टेयर अम्लीकरण से, 14 मिलियन हेक्टेयर बाढ़ से, 9 मिलियन हेक्टेयर हवा के कटाव से, 6 मिलियन हेक्टेयर लवणता से और 7 मिलियन हेक्टेयर अन्य कारकों की वजह से ग्रसित है।

मृदा संसाधनों के बारे में पर्याप्त जानकारी के अभाव के साथ-साथ अनुचित भूमि उपयोग योजना के परिणामस्वरूप इनमें से बहुत सारा क्षेत्रफल भूमि निम्नीकरण/भू-क्षरण प्रक्रियाओं से ग्रसित हैं। सतत खाद्यान्न उत्पादन के लिए निम्नीकरण भूमियों को पूर्वावस्था में लाने की आवश्यकता है। "वर्ष 2030 तक संयुक्त राष्ट्र के सतत विकास लक्ष्य (एसडीजी) 15.3 को प्राप्त करने के लिए, सूखा और बाढ़ से प्रभावित भूमि सहित मरुस्थलीकरण का सामना करने जैसी समस्याओं से निजात पाने के लिए भूमि निम्नीकरण/क्षरण तटस्थ (एलडीएन) दुनिया में जीने की लालसा में पहुंचने का प्रयास करने की नितांत आवश्यकता है।" भूमि क्षरण तटस्थता (एलडीएन) एक ऐसी स्थिति है, जहां आगे भूमि निम्नीकरण या भू-क्षरण (पर्यावरणीय या मानवीय कारकों के कारण उत्पादकता में कमी) कारकों को रोका जाता है और पहले से ही खराब हो चुकी भूमि को पुन: उपयोगी बनाया जा सकता है। भूमि निम्नीकरण (भू-क्षरण) तटस्थता के सम्मेलन में उपस्थित दलों द्वारा भूमि निम्नीकरण तटस्था को इस प्रकार परिभाषित किया गया है कि "एक ऐसा राज्य जिसके द्वारा निर्दिष्ट सामयिक और स्थानिक मांपों और पारिस्थितिक प्रणालियों में भूमि संसाधनों की मात्रा एवं गुणवत्ता, पारिस्थितिकी प्रणालियों के कार्यों और सेवाओं का समर्थन करने के लिए आवश्यक और खाद्य सुरक्षा बढ़ाने, स्थिर रखने या उत्पादन वृद्धि करने वाला हो।" भूमि निम्नीकरण तटस्थता (एलडीएन) एक अनोखा दृष्टिकोण है, जो निम्नीकृत क्षेत्रों की पुन:स्थापना से उत्पादक भूमि के अपेक्षित नुकसान को संतुलित करता है। यह भूमि उपयोग योजना के संदर्भ में भूमि संरक्षण, संधारणीय (स्थाई) प्रबंधन और पुन:स्थापना के उपायों को रणनीतिक रूप से रखता है। यूएनसीसीडी और संयुक्त राष्ट्र पर्यावरण कार्यक्रम (संयुक्त राष्ट्र पर्यावरण) संयुक्त राष्ट्र महासभा द्वारा "संधारणीय विकास के लिए वर्ष 2030 के मुद्दे" को अपनाने के लिए एक साथ आए हैं। आज तक, भारत सहित 120 से अधिक देश भूमि निम्नीकरण तटस्थता (एलडीएन) लक्ष्य निर्धारण कार्यक्रम के साथ जुड़े हैं और वर्ष 2015 में, वर्ष 2030 के मुद्दे को अपनाए जाने के बाद से काफी प्रगति हुई है। वर्ष 2019 में यूएनसीसीडी के दलों के 14वें सम्मेलन में जारी दिल्ली घोषणा पत्रानुसार भारत सरकार ने भूमि निम्नीकरण तटस्थता को प्राप्त करने के लिए 26 मिलियन हेक्टेयर से अधिक निम्नीकृत भूमि को पुन: उपयोगी बनाने और वर्ष 2030 तक 2.5-3 बिलियन टन का कार्बन सिंक बनाने का लक्ष्य निर्धारित किया है। 141 मिलियन हेक्टेयर के कुल बुवाई क्षेत्र में से लगभग 73 मिलियन हेक्टेयर (52 प्रतिशत) वर्षा आधारित कृषि के अंतर्गत आता है। वर्षा आधारित क्षेत्रों की भूमियां निम्नीकरण (भू-क्षरण) के प्रति अधिक संवेदनशील होती हैं क्योंकि ये क्षेत्र पर्याप्त मृदा नमी की कमी के कारण वर्ष के अधिकांश समय में सतही वनस्पति आच्छादन/वानस्पतिक आवरण रहित रहती हैं। वर्षा आधारित क्षेत्रों में भूमि निम्नीकरण तटस्थता (एलडीएन) प्राप्त करने की कार्रवाइयों में संधारणीय भूमि/मृदा प्रबंधन दृष्टिकोण शामिल है, जो निम्नीकरण के कारण उत्पादकता खो चुकी भूमि की बहाली से उपजाऊ बनाने के प्रयासों के साथ-साथ निम्नीकरण से बचाते हैं या कम करते हैं। भाकृअनुप-क्रीडा ने कई संधारणीय (सतत) भूमि प्रबंधन (एसएलएम) प्रक्रियाओं का विकास किया है, जैसेकि कृषि-वानिकी, संरक्षण कृषि, स्व-स्थाने मृदा नमी संरक्षण प्रक्रियाएं, बहि स्थाने वर्षा जल संचयन प्रौद्योगिकियां / संरचनाएं, सतही और उप सतही जल निकासी तकनीक, जैव-जल निकासी, स्थान विशिष्ट बायोइंजीनियरिंग उपाय, शेल्टर बेल्ट, वर्षा में विभिन्न वर्षा आधारित क्षेत्रों के लिए उपयुक्त पवन अवरोध आदि, ढलान की तीव्रता, मृदा के प्रकार आदि शामिल हैं। भूमि निम्नीकरण और जलवायु परिवर्तन के अनुकूलन हेतु भूमि आधारित प्रतिक्रियाओं के समर्थन में निम्नलिखित प्रमुख अनुसंधान प्राथमिकताओं को शामिल किया जाना चाहिए; (i) आधुनिक भू-स्थानिक उपकरणों का उपयोग करते हुए विभिन्न वर्षा आधारित

कृषि-जलवायु क्षेत्रों की भूमि निम्नीकरण (एलडी) की भेद्यता का मूल्यांकन करने के लिए भू-दृश्य के लक्षण और समय श्रृंखला डेटाबेस का विश्लेषण करना; (ii) मानव व जलवायु द्वारा प्रेरित भूमि निम्नीकरण प्रक्रियाओं के बीच अंतर एवं अंतर संबंधों को समझना; (iii) भूमि निम्नीकरण को रोकने व समाप्त करने के लिए एसएलएम प्रक्रियाओं की पहचान करना, जलवायु परिवर्तन सहित विशिष्ट वर्षा आधारित कृषि जलवायुवीय क्षेत्रों, सामाजिक-आर्थिक एवं कृषि परिस्थितियों में निम्नीकृत भूमियों को पुन:स्थापित या पुनर्वास करने वाली सफलता की कहानियों को उजागर करना; (iv)) शुष्क, अर्ध-शुष्क और शुष्क उप-आर्द्र क्षेत्रों में सुदूर संवेदन (आरएस) और भौगोलिक सूचना प्रणाली (जीआईएस) का उपयोग करते हुए एलडीएन के लिए कार्य योजनाएं विकसित करना; (v) एक भागीदारी दृष्टिकोण में कार्य योजनाओं के कार्यान्वयन का समर्थन करने वाला एक ऐसा विज्ञान-आधारित मॉडल विकसित करना जिसमें प्रभावित समुदाय और प्रासंगिक निर्णय और नीति-निर्माता शामिल हों; (vi) अनुकूल नीतियां तैयार करना जो एक सक्षम वातावरण स्थापित करे एवं जो एसएलएम समाधान आदि से भूमि निम्नीकरण की समस्याओं का समाधान कर सकें। भारत सरकार ने भूमि निम्नीकरण के प्रति वैज्ञानिक दृष्टिकोण को बढ़ावा देने के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) के अंतर्गत एक "उत्कृष्टता केंद्र (सीओई)" की स्थापना की है। प्रधान मंत्री फसल बीमा योजना, मृदा स्वास्थ्य कार्ड योजना, मृदा स्वास्थ्य प्रबंधन योजना और प्रधान मंत्री कृषि सिंचाई योजना जैसी योजनाओं को इस भूमि निम्नीकरण से निपटने के लिए एक महत्वपूर्ण समाधान के रूप में देखा जा रहा है। भाकृअनुप-क्रीडा, हैदराबाद एक वैज्ञानिक शैक्षणिक केंद्र (सीओई) की भागीदार के रूप में भारत सरकार की उपर्युक्त योजनाओं के सहयोग से वर्षा आधारित क्षेत्रों में भूमि निम्नीकरण तटस्थता (एलडीएन) को प्राप्त करने के लिए कड़ी मेहनत या अथम प्रयास कर रहा हैं।

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