

ANNUAL REPORT (DARE) 2022-23



ANNUAL REPORT

(DARE)

2022-23



Department of Agricultural Research and Education
Ministry of Agriculture and Farmers Welfare
Government of India

FOREWORD

GOVERNMENT is putting greater emphasis on Research and Development (R&D) for not only sustainable but also enhanced agricultural production in the country. Department of Agricultural Research and Education (DARE)/Indian Council of Agricultural Research (ICAR) through their research, education and extension programmes, are committed for transforming Indian agriculture from food self-sufficiency to enhancing profitability.

ICAR with 113 institutions spread across the country, is the largest National Agricultural Research Systems in the world. Nation celebrated 2022 as 75th year of its independence through Azadi Ka Amrit Mahotsav. In this context, DARE/ICAR undertook various activities including awareness campaigns and lectures by eminent persons on the thematic areas for reaching out to maximum stakeholders particularly farmers on various new developments in different sectors of agriculture.

Central Agricultural University (CAU), Imphal was established in 1993 under the Central Agricultural University Act, 1992. It is a residential university having 13 constituent colleges covering 7 north-east hill states under its jurisdiction except Assam. The University was ranked at 13th position in the ranking status of Agricultural Universities for the year 2020 by ICAR. On the recommendations of the ICAR Peer Review Team, the National Agricultural Education Accreditation Board, ICAR, New Delhi granted accreditation for various academic programmes (UG/PG/PhD) to this University and its constituent colleges from 28 March, 2021 to 27 March, 2026. Under Institutional Development Plan (IDP)-National Agricultural Higher Education Project (NAHEP), 10 faculties and 46 students of the University completed 3 months overseas training at various international institutes.

Dr Rajendra Prasad Central Agricultural University (DRPCAUI), Pusa, established on 7 October 2016, owes legacy of Rajendra Agricultural University, Pusa (1970) and Agricultural Research Institute and College, Pusa (1905). The University awarded degrees to 738 students including gold medals to 40 students in its 2nd convocation held on 7 November, 2021 in gracious presence of Hon'ble Vice-President of India Shri M. Venkaiah Naidu. Ministry of Communication, Government of India, released First Day Cover and stamp on Sukhet Model developed by the University on 24 February 2022. India Today MDRA survey placed the University under top 10 of the Government Universities for 3rd consecutive year. The University hosts 1821 students with multicultural backgrounds from 27 states of India and also accepts students with varied experiences, such as from the industry and foreign countries.

DRPCAUI has made outstanding achievement in term of implementation of New Education Policy, as the University has opened its door for school drop outs to PhD students in some of its academic programmes and also introduced measures for internationalization of education and improving students performance in various competitive examinations.

On research front, the University has released two crop varieties, viz. Rajendra Arhar 2 and Rajendra Ganna 2 through Central Variety Release Committee (CVRC)/State Variety Release Committee (SVRS), received grant of two patents and strengthened its technologies for monetization of agro-waste. The University has organized ISAE 55th Annual Convention and International Symposium from 23–25 November, 2021 at Gyan Bhawan, Patna and Kisan Mela 2022 “Regional Agriculture Fair for Eastern Region” on the theme “Entrepreneurship Development through Monetization of Agricultural Waste” during 12-14 March, 2022.

The Rani Lakshmi Bai Central Agricultural University (RLBCAU), Jhansi was sanctioned six research cum development projects to promote beekeeping, low-cost mushroom production and protected cultivation of high-value cut-flowers in addition to establishment of plant-health clinic and hi-tech nurseries for quality planting material under Rashtriya Krishi Vikas Yojana (RKVY) - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (Raftaar) component by UP State Level Sanctioning Committee (SLSC) with an outlay of ₹ 854.90 lakhs.

Farm development work at Jhansi and Datia campus research farms ensured 100 per cent rainwater harvesting by constructing check dams and ponds at lowermost points of the farm. One dozen farm ponds and check dams covering 8 ha area were developed at the University Research Farm at Jhansi and two ponds at its Datia Campus in an area of 1 ha. These water bodies have been brought under fisheries production and recreational purposes, besides ensuring round the year water availability for irrigation.

Agricultural Scientists Recruitment Board (ASRB) plays a key role in recruitment of best quality scientists and other management personnel for ICAR and its research institutes across the country. In addition, the Board aids and advises the Council in evolving and implementing policies related to induction of human resource and its development including the Career Advancement Schemes for ARS Scientists. ASRB has consistently been endeavouring to reform and refine talent-search strategies to meet existing as well as emerging needs of the National Agricultural Research and Education System (NARES).

In its endeavour to recruit best talented human resources as per need of time, ASRB has taken several reforms in recruitment process. Selection criteria (scorecard) for selection of RMP and non-RMP positions have been revised from time to time to make it more objective and transparent. Latest IT tools have been employed to facilitate the applicants for online submission of applications and fees. NET certificates have been distributed and uploaded on digi locker to access the certificates online and many more. During the year, recruitment process for 11 RMP positions was completed. The Board conducted a combined examination of NET/ARS (Prelim)/Senior Technical Officer (STO) - 2021 in online mode for recruiting 222 Scientists and 65 Senior Technical Officers. Tier-I level of examination was conducted for filling up 44 vacancies of Administrative Officer (AO) and 21 vacancies of Finance and Accounts Officer (F & O) under ICAR.

Above activities show that agricultural research and development activities are slowly but steadily back to its pre Covid-19 pandemic period after a gap of two years. This Annual Report shows government's dedicated efforts for augmenting the production and productivity in agriculture for the benefit of citizens including farmers of the country. I hope this report will be useful for all concerned with agricultural research and education.

(Narendra Singh Tomar)

Minister of Agriculture and Farmers Welfare
Krishi Bhawan, New Delhi 110 001

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01

OVERVIEW

Department of Agricultural Research and Education (DARE)

The Department of Agricultural Research and Education (DARE) was established in the Ministry of Agriculture in December 1973. DARE coordinates and promotes agricultural research and education in the country. It has the following four autonomous bodies under its administrative control:

- Indian Council of Agricultural Research (ICAR)
- Central Agricultural University (CAU), Imphal
- Dr Rajendra Prasad Central Agricultural University, Pusa, Bihar
- Rani Laxmi Bai Central Agricultural University, Jhansi, Uttar Pradesh

DARE provides the necessary government linkages for the Indian Council of Agricultural Research (ICAR), the premier research organization, for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country.

Besides this, it has Agricultural Scientists Recruitment Board (ASRB) as attached office and Agrinnovate India Limited (AgIn), a Government of India enterprise under its control.

India has one of the largest National Agricultural Research System in the world, comprising 102 ICAR institutes, 11 Agricultural Technology Application Research Institutes, 82 All India Coordinated Projects/Networks, 4 Deemed to be Universities, 3 Central Agricultural Universities and 63 State Agricultural/Veterinary/Horticultural/Fishery Universities in different states.

Activities covered in this Annual Report are for the period from 1 October 2021 to 30 September 2022.

Indian Council of Agricultural Research

The Indian Council of Agricultural Research is an autonomous organization under the Department of Agricultural Research and Education, Ministry of Agriculture and Farmers Welfare, Government of India. Formerly known as the Imperial Council of Agricultural Research, it was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860 on the recommendations of the Royal Commission of Agriculture. It was reorganized in 1965 and again in 1973, with its

Headquarters located in Krishi Bhawan, New Delhi, with support facilities in Krishi Anusandhan Bhawan 1 and 2 and NASC Complex, Pusa, New Delhi. The Union Minister of Agriculture and Farmers Welfare is the President of ICAR. The Principal Executive Officer of the ICAR is the Director General, who also functions as Secretary, Department of Agriculture Research and Education, Government of India. The General Body of the ICAR Society, headed by the Union Minister of Agriculture and Farmers Welfare is the supreme authority of the ICAR. Its members include; Ministers for Agriculture, Animal Husbandry and Fisheries, and the senior officers of the various state governments, Members of Parliaments and the representatives from industry, research institutes, scientific organizations and farming community. The Governing Body headed by the community Director General, who is also the Secretary, DARE is the chief executive and decision making authority of the ICAR. The Governing Body consists of eminent agricultural scientists, educationists, public representatives and representatives of the farmers. It is assisted by the Accreditation Board, Regional Committees, Policy and Planning Committee, several Scientific Panels and Publications Committee. In scientific matters, the Director General is assisted by 8 Deputy Directors General, one each in (i) Crop Science, (ii) Horticulture Science, (iii) Natural Resource Management, (iv) Animal Science, (v) Agricultural Engineering, (vi) Fisheries Science, (vii) Agricultural Education, and (viii) Agricultural Extension, who are also assisted by Assistant Directors General, and are the Heads of their Subject Matter Division (SMDs) for the entire country. SMDs are responsible for extending all technical and financial guidance and support to the Research Institutes, National Research Centres and the Project Directorates within their respective Divisions. In addition, Assistant Directors General of National Agricultural Science Fund (NASF), Coordination, Plan Implementation and Monitoring, Intellectual Relations and Human Resource Management also assist the Director General in their respective job roles.

The research set up of the ICAR includes 113 institutions, viz. 72 research Institutes, 6 National Bureaux, 23 Project Directorates and Agricultural Technology Application Research Institutes, and 12 National Research Centres. It also has 82 All-India

Coordinated Research Projects + Network Research Projects. The ICAR-Directorate of Knowledge Management in Agriculture (DKMA) functions as communication arm of the ICAR responsible for delivery of information/knowledge generated by the network of the ICAR and its institutions; and addresses mandate of ICAR through Publications, Information, ICT, and Public Relations Unit. The ICAR promotes research, education and frontline extension activities in 74 Agricultural Universities, which include 63 State Agricultural Universities, 4 Deemed Universities, 3 Central Agricultural Universities, and 4 Central Universities with agricultural faculty by giving financial assistance in different forms.

Central Agricultural University, Imphal

Central Agricultural University, Imphal established in 1993 offers 9 Undergraduate, 45 Masters and 25 PhD Degree Programmes in different subjects/disciplines through its 13 constituent colleges. CAU, Imphal was ranked at 13th position in the ranking status of Agricultural Universities for the year 2020 by ICAR. The students of the University performed well at national level competitive examinations. The University has an exemplary record of placement in a number of private and public sector organizations, government undertakings, etc. A total of 103 students of the University were placed in various capacities in different organizations during 2021-22. Ten faculty members and 46 students of the University completed 3 months overseas training at various international institutes under Institutional Development Plan (IDP)-National Agricultural Higher Education Project (NAHEP).

During the year, University carried out 56 Intramural Research Projects (IRPs) and 146 Externally Funded Research Projects. A database of 303 north east fish species was also prepared. The University also organized 3 on-campus and 13 off-campus awareness programme which benefitted 459 participants and 529 participants, respectively. A total of 465 trainings, workshops, conferences, seminars, summer schools, etc were organized at different constituent colleges of the University. Among faculty members, 45 were deputed for participation in international conference and

seminar, 89 national conferences and seminars, 60 workshops and 27 long term training courses and 98 for short term training programmes. A total of 27 faculties of the University were also recognized for their excellence in research and developmental works. A Total of 10 MoUs were signed with reputed institutes during the period for cooperative relationship through mutual assistance in the areas of education, research and extension activities.

Dr Rajendra Prasad Central Agricultural University (DRPCA), Pusa, Bihar

DRPCA, is marching ahead with its vision of advancing professional competency for pursuing excellence in education, research and entrepreneurship in relation to agriculture and allied sectors with ethical values to meet the regional, national and global needs and offering specialized services to the farmers for decent livelihood. A total of 687 students from 27 states of India took admission registering significant increase over the last year admissions signifying pan India presence of the University.

To sharpen the communication and soft skills of students, three foreign language courses have been introduced and soft skills trainings have been organized. The University has also introduced Certificate and PG Diploma Courses to generate a pool of skilled human resource as per industry and societal needs. Development of varieties for different agro-climatic conditions and its release through Central Variety Release Committee (CVRC)/State Variety Release Committee (SVRC) development and validation of technology for different socio-economic groups and challenged ecology, value addition of the agricultural produce and advancement of scientific knowledge through 32 AICRPs, 3 International Projects, 4 Government of India funded projects, 4 Government of Bihar funded projects and more than 100 University funded projects, establishment of 7 Centre for advanced research/excellence; 1 Startup facilitation centre and up-gradation of Banana Research Centre at Goraul (Vaishali) are ongoing activities to gain excellence in research. To augment the farmers, income and showcase the farmer friendly technologies, products and services developed by

the University and transfer them to farmers, the university has organized a number of farmer fairs, frontline demonstrations (FLDs), on-farm trails (OFTs), training programmes, etc. whereby more than 10,500 farmers got benefitted with enriched knowledge of modern farming technology.

Rani Lakshmi Bai Central Agricultural University (RLBCAU), Jhansi

RLBCAU, Jhansi was established as an institution of national importance by an Act of Parliament on 5 March, 2014. In RLBCAU, the on-going three undergraduate programmes for the degree of B.Sc. (Hons) Agriculture, BSc (Hons) Horticulture and BSc (Hons) Forestry have been continued, besides PG programme in eight subjects (Genetics and Plant Breeding, Agronomy and Plant Pathology Soil Science, Entomology, Vegetable Science, Fruit Science and Silviculture and Agroforestry). ICAR-revised PG course curricula have been implemented.

Six research-cum-development projects under Rashtriya Krishi Vikas Yojana (RKVY)-Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (Raftaar) component by UP State Level Sanctioning Committee (SLSC) with an outlay of ₹854.90 lakhs has been sanctioned. These projects are mandated to promote beekeeping, low-cost mushroom production and protected cultivation of high-value cut-flowers in addition to establishment of plant-health clinics and hi-tech nurseries for quality planting material.

Agro-techniques were standardized for efficient use of irrigation and rain-water and crop diversification for climate resilient agriculture in Bundelkhand. Seeds of 100 varieties and germplasm accessions of cowpea obtained from different sources were screened for post-emergence herbicide tolerance of Imazethapyr in *kharif* 2020. Research work under various ICAR-AICRPs, viz. on Chickpea, and Rapeseed-Mustard, besides voluntary trials in the purview of AICRP-Maize, Barley, Pearl millet, MULLaRP and Sesame and Niger were also undertaken towards enhancing productivity and production of these crops through development of high-yielding, multiple disease-resistant varieties for central India.

Front Line Demonstrations (721) were organized at farmers' field on mustard (100), pea and lentil

(10), chickpea (15), wheat (3), groundnut (30), maize (100), urd (120), mung bean (5), aerobic rice (15), sesame (45), millets (100), medicinal plant (48), marigold (10), fruits (20), agro-forestry (100) at Jhansi, Lalitpur districts of Uttar Pradesh and Datia, Tikamgarh and Niwari districts of Madhya Pradesh.

Agricultural Scientists Recruitment Board (ASRB)

ASRB advertised 90 posts of Research Management Positions (RMP) vide Advt. No.1/2021 dated 5 November, 2021. The Board completed the recruitment process of 11 posts of senior RMPs positions comprising Deputy Director Generals - 3, Directors of National Institutes - 2, Directors of other than National Institutes - 4, Assistant Director Generals - 2 till August 2022. During the year, scorecard for selection of RMP and Non-RMP positions was revamped to make it more objective and transparent. A web-based software (OASIS) (URL-<https://asrbapplication.in>) for online submission and scrutiny of application for RMP and non-RMP posts has been developed to facilitate the applicants. This software has been made applicable from Advt. No.1/2021.

A combined examination of NET/ARS (Prelim)/Senior Technical Officer (STO)-2021 was conducted in online mode during the year. As per result, 11,058 candidates qualified in National Eligibility Test (NET) in 60 disciplines. Based on defined criteria 304 candidates were called for interview for 65 posts and 63 candidates were recommended for appointment as Senior Technical Officer under Indian Council of Agricultural Research (ICAR). Tier-I level of examination was conducted in online mode for filling up 44 vacancies of Administrative Officer (AO) and 21 vacancies of Finance and Accounts Officer (F&AO) under ICAR.

Agrinnovate India Ltd

Agrinnovate India Ltd. (AgIn), a Government of India enterprise, was incorporated under the Companies Act, 1956 (No. 1 of 1956) on 19 October, 2011 and owned by Department of Agricultural Research and Education (DARE), Ministry of Agriculture, Government of India. The Company has successfully been able to turn a new leaf in the recent past by initiating effective partnerships with ICAR institutes and private companies.

During the year 2021-22, AgIn handled several ICAR institutions and helped transfer a total of around 114 technologies earning a gross revenue of ₹5.33 crores. These technologies emerged from crop science (35%), dairy and veterinary sciences (14%), horticulture (45%) and fisheries (6%).

A total of 51 ICAR research institutions and 4 state agricultural universities commercialized their technologies through Agrinnovate during 2021-22. Significant technology transfers include, the grant of a non-exclusive Global License to ICAR-CSSRI, Karnal and ICAR-CISH, Lucknow developed ICAR-FUSICONT technology for control of Panama wilt of Banana Race T4 to Ms. Innotherra Pvt Ltd by Agrinnovate in September, 2021.

Other Activities

India is a donor member country to Consultative Group on International Agricultural Research (CGIAR) since decades and also a voting member in CGIAR System Council, representing South Asia Constituency of the Consortium along with two alternate partner countries, viz. Bangladesh and Sri Lanka. India has assumed important role in CGIAR System as a permanent voting member.

Now, the CGIAR is going through a transition/change process and research will now be grouped in different Initiatives under the One-CGIAR (effective from January 2022, after the termination of the CGIAR Research Programmes by 31 December, 2021). The new initiatives will focus on identified areas, bringing together relevant CG Centers and the global demand, innovation and scaling partners.

The IC-CG (now merged with IC-IV) Section processes all work relating to CG Centres including processing of MoU, Work Plan and foreign visits of scientists/officials of ICAR/DARE, payment of annual contribution to CGIAR and collaborative projects between ICAR and CGIAR Centres. Major activities carried out during the reporting period are as follows:

Work Plan

- Work Plan was signed on 2 December, 2021 for the period 2021-25 between Indian Council of Agricultural Research (ICAR) and Bioversity and CIAT Alliance under the existing Memorandum of Agreement. Scientific and Technical Cooperation in Research and Training to deliver research-based solutions that

harness agricultural biodiversity sustainably and transform food systems to improve people's lives in climate crisis.

- Work Plan signed on 2 September, 2022 for the period 2022-27 between Indian Council of Agricultural Research (ICAR) and International Wheat and Maize Improvement Centre (CIMMYT) developed in accordance with the MoU signed between ICAR and CIMMYT.

Projects

- Extension of time to the approved project entitled "Biofortification of rice" for next 3 years funding under Harvest Plus Programme of CGIAR coordinated by Centre for Tropical Agriculture (CIAT) and International Food Policy Research Institute (IFPRI).
- Collaborative Research project entitled "International Mungbean Improvement Network Phase-2 (IMIN-2)" for the period of five year, funded by ACIAR, Australia in collaboration with ICAR-IIPR, Kanpur, and AVRDC, Taiwan and to authorize Director, ICAR-IIPR, Kanpur to sign the Research Collaborative Agreement (RCA) on behalf of ICAR.
- Establishment of nitrogen-efficient Wheat Production Systems in Indo-Gangetic Plains by the deployment of BNIN-technology in collaboration with the Indian Council of Agricultural Research (ICAR), Borlaug Institute for South Asia (BISA) and Japan International Cooperation Agency (JICA) for a period of five years.
- Collaborative research project entitled, "Tree Outside Forests in India (TOFI)" in collaboration with ICAR-National Institute of Agricultural Economics and Policy Research (NIAP), New Delhi; ICAR-Central Agroforestry Research Institute (CAFRI), Jhansi and International Centre for Research in Agroforestry (ICRAF) funded by United States Agency for International Development (USAID), USA for the period of five years.
- Collaborative research project entitled "Consumption of Resilient Orphan Crops and Products for Healthier Diets (CROPSPHD) and authorization to ICAR-NBPGR to sign sub-agreement for the period of three years.

MoUs / MoAs

- Project Agreement between the GIZ and the World Agroforestry (ICRAF) for initiating pilot project entitled, “Sustainable Biochar Production and Use through Agroforestry Systems in Madhya Pradesh, Maharashtra and Odisha: A Climate-Resilient Soil Management Approach”, Short title: “Sustainable Biochar Production through Agroforestry System”.
- Tripartite MoU between the World Agro-forestry (ICRAF), Kenya, Department of Agriculture, Marketing and Cooperation, Government of Andhra Pradesh and Indian Council of Agricultural Research (ICAR) to develop and implement a joint research programme.
- Cooperative agreement between Progressive Environmental and Agricultural Technologies (PEAT), Hannover, Germany and ICRISAT and Professor Jayashankar Telangana State

Agricultural University, Rajendranagar, Hyderabad.

The above details show that India has made a commendable progress in genetic enhancement of different crops and the productivity levels have increased to more than three times (2373 kg/ha during 2020-21 from 710 kg/ha during 1960-61). Among other efforts, this has been made possible through release of more than 6,100 varieties of field and horticultural crops by DARE/ ICAR, since 1969.

(Himanshu Pathak)

Secretary, Department of Agricultural Research
& Education and Director General,
Indian Council of Agricultural Research



02

**BODIES UNDER
DARE AND THEIR
ACTIVITIES**

CENTRAL AGRICULTURAL UNIVERSITY, IMPHAL

Central Agricultural University (CAU), Imphal was established in 1993 under the Central Agricultural University Act, 1992 of the Parliament (Act No. 40 of 1992). It is a fully residential university having 13 constituent colleges covering 7 north-east hill states under its jurisdiction except Assam.

Academic Activities

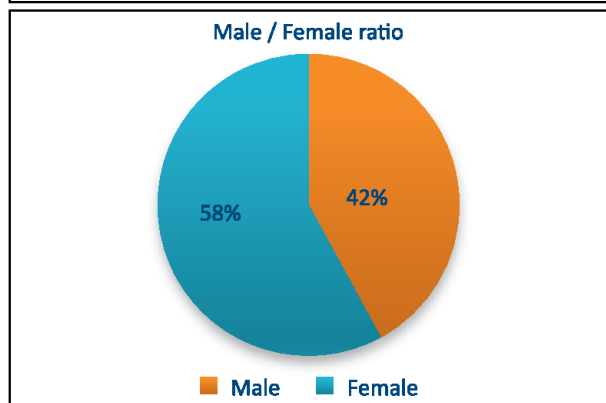
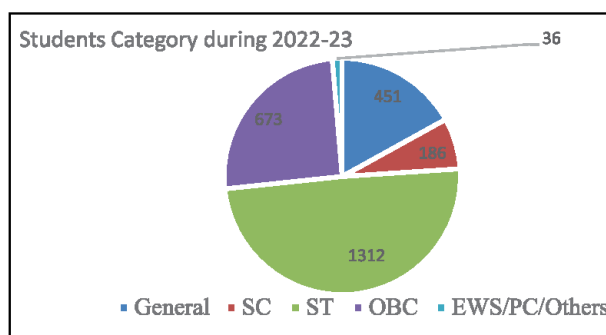
The Central Agricultural University offers 9 Undergraduate, 47 Masters and 25 PhD Degree Programmes in different subjects/disciplines through its 13 constituent colleges. The University was ranked at 13th position in the ranking status of Agricultural Universities for the year 2020 by ICAR. On the recommendations of the ICAR Peer Review Team, the National Agricultural Education Accreditation Board, ICAR, New Delhi granted accreditation for various academic programmes (UG/PG/PhD's) to the Central Agricultural University, Imphal (Manipur) and its constituent colleges from 28 March, 2021 to 27 March, 2026.

Due to the pandemic, the new academic session started from 1 October, 2021 for UG and 10 November, 2021 for Master's courses. The PhD Programmes for all the colleges started from 23 December, 2021. A total of 570,239 and 52 students were admitted in various Undergraduate, Masters and PhD programmes, respectively during the year. A total of 408 UG and 133 PG students completed their degrees and 15 students were also awarded PhDs during this period. Out of the total students' strength of 2,658 in the University; 451 students belong to the general category; 186 scheduled castes; 1,312 scheduled tribes; 673 other backward class; and 36 EWS/Physically handicapped/others. Out of them, 1,118 students were male and 1,540

were female amounting to Male: Female ratio as 1:1.38.

The students of the University performed well at national level competitive examinations. During the period under report, 19 students were selected in Junior Research Fellowship (JRF) examination, 2 students in ICAR SRF examination and 4 in GATE examination. The University has an exemplary record of placement in a number of private and public sector organizations and government undertakings. A total of 103 students of this University were placed in various capacities in different organizations during 2021-22.

Under IDP NAHEP, students of the University completed 3 months overseas training at various international institutes.



Name of College	Degree Programme	No. of Students	Host Institute
College of Agriculture, Imphal	BSc (Hons) Agriculture	11	International Rice Research Institute (IRRI), Philippines
College of Horticulture and Forestry, Pasighat	BSc (Hons) Horticulture	7	The Botanical Garden Organization, Chiang Mai, Thailand
	BSc (Hons) Forestry	5	College of Forestry and Environmental Sciences, Central Mindanao University (CMU), Philippines
College of Agricultural Engineering and Post Harvest Technology, Ranipool, Sikkim	BTech (Agril. Engineering)	3	Asian Institute of Technology, Bangkok, Thailand
	BTech (Food Technology)	1	Food Technology Division, School of Industrial Technology, Universiti Sains, Malaysia

Name of College	Degree Programme	No. of Students	Host Institute
College of Community Science, Tura, Meghalaya	BSc (Hons) Community Science	4	Thailand Textile Institute, Bangkok, Thailand
College of Veterinary Sciences and Animal Husbandry, Selesih, Aizawl	BVSc	10	International Training Centre on Pig Husbandry, Phillipines
Colleges of Fisheries, Lembucherra, Tripura	BSc (Fisheries)	5	Asian Institute of Technology, Bangkok, Thailand

Faculty members of the University who completed 3 months overseas training

Name of faculties/ Directors/ Deans/ Associate Coordinators	Designation	Host Institute
Dr Sheikh Mohammad Feroze	Assistant Professor	School of Environment, Resources and Development, AIT, Thailand
Dr M. Norjit Singh	Assistant Professor	Chulalongkorn University, Pathum Wan District, Bangkok, Thailand
Dr Shravan M Haldhar	Associate Professor	Prince of Sonkla University, Hat Yai, Songkhla, Thailand
Dr Amit Kumar Singh	Assistant Professor	Agricultural Research Organization, The Volcanic Institute, Rishon, Lizion, Israel
Dr Nangsol Dolma Bhutia	Assistant Professor	Agricultural Research Organization, The Volcani Centre, Israel
Dr Himadri Saha	Assistant Professor	Kyushu University, Japan
Dr Soibam Khogen Singh	Assistant Professor	James Cook University, Singapore
Dr Dibyendu Kamilya	Assistant Professor	Asian Institute of Technology (AIT), Bangkok, Thailand
Dr Sagar Chandra Mandal	Associate Professor and Head	Asian Institute of Technology (AIT), Bangkok, Thailand
Dr BN Hazarika	Dean, College of Horticulture and Forestry, Pasighat	Galilee International Management Institute P.O. Box 208, Nahalal 106000, Israel

Research Activities

The University research aims to develop need based research projects through sustainable and eco-friendly scientific and technical approaches for developing agricultural technologies/practices/ agricultural machines and equipments which can bring about a far reaching impact on productivity and profitability of crops, animals and fishes and develop new products for value-addition, enhance income generation and in turn the socio-economic upliftment of the people of north eastern hill region. During the year under report, the University carried out 76 Intramural Research Projects (IRPs) where 18 IRPs were newly sanctioned, 56 are ongoing and 2 were completed under University Funded Research Programmes. Out of the 145 Externally Funded Research Projects, 37 were newly sanctioned, 86 are ongoing and 22 were completed. A number of recommendations have been made that helped in the development of agro-based crop improvement, plant protection, and economically sustainable

technologies, specific for different agro-climatic conditions of the region. A database of 303 north east fish species was prepared. The drinking sweat and tears *Lisotrigona* bees of the first kind were reported by the Department of Entomology from Thenzawl area of Mizoram. Overall, 32, collections of citrus accessions were made during the trip from various parts of Sikkim, viz. Khamdong, Yangyang, Mamging, Ravangla, Radhukhandu, Dentam, Dzongu, Bermiok and Lum. IC numbers for 26 accessions out of 32 collections were received from NBPGR, New Delhi. Out of total number of 7 local collections of cassava from Manipur 1 germplasm got accession number from NBPGR, New Delhi. The University has successfully studied a preservation technique for local delicacy, i.e. bamboo shoot in brine and frozen form. In addition, five products are developed from local raw material such as ginger candy, tamarind candy, aonla candy, papaya tutti-frutti, Hatkora (*Citrus macroptera*). Squash which were branded as a 'Zo Foods' under FSSAI registration.

Extension Education Activities

The Directorate of Extension Education provides extension services to the farmers of seven north-eastern states through various programmes and activities. The programmes implemented during the year include trainings, demonstration, field days, kisan melas, farmer congress, exhibitions, radio talks, TV telecast, film shows, workshop, etc. Transfer of technology activities were planned and coordinated in different districts of the seven states through its 13 constituent colleges, six Krishi Vigyan Kendras and six Multi Technology Testing and Vocational Training Centres.

The Directorate organized 3 on-campus awareness programme which benefitted 459 participants. Two training programmes for extension functionaries were also organized which benefitted 67 participants. Also, 13 off-campus awareness cum training programme were also held which benefitted 529 participants. During whole programme Covid-19 protocol and SOP were maintained as per GoI and GoM. In addition, the directorate organized a number of webinars and workshops for the farmers, unemployed youths and extension functionaries.

Financed by the MeitY, GoI, and implemented by DIC, New Delhi and CAU, Imphal, “Mobile Based Agro-Advisory” for farmers of College of Fisheries, Tripura; College of Veterinary Sciences and Animal Husbandry, Mizoram; College of Horticulture and Forestry, Arunachal Pradesh; College of Agriculture, Manipur; College of Post Graduate Studies in Agricultural Science, Meghalaya were developed for the welfare of the farmers. All the KVKs under the extension department along with constituent colleges of the University located in different states of the north-eastern region also conducted a number of awareness camps, trainings, FLDs and method/result demonstrations for the farmers, unemployed youths and extension functionaries. Moreover, under the externally funded programmes sanctioned to the directorate, like RKVY-RAFTAAR and Agri-Business Incubator (R-ABI) sponsored by MoA and FW; ICAR-IGFRI, Jhansi, UP sponsored Project/Programme; Farmers FIRST Programme; ICAR NIBSM NEH programme, etc., a number of webinars, trainings, awareness camps, FLDs, method/result demonstrations, input distribution, Scientist-Farmers interaction programme, etc. were held by following Covid-19 protocol and

SOPs of respective State and Central Governments. COF R-ABI incubated pre-seed stage funded startup “GITA CHANDRA GROUP” received the “Statehood Day Award-Best Startup Entrepreneur Award (Fishery) 2022” on 21 January, 2022 from Government of Tripura, during the celebration of 50 years of Tripura’s Statehood Day.

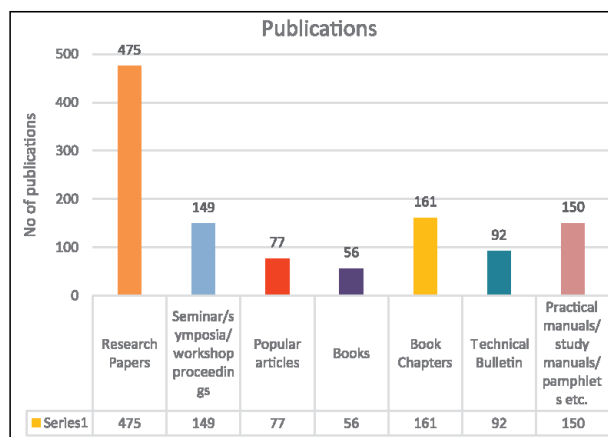
Human Resource Development Activities

The University has total staff strength of 1,086 including 21 administrative, 312 teaching and 753 non-teaching positions. At the headquarters, there were 10 executive officers in the administrative positions supported by 35 technical and 107 non-technical staff. In the constituent colleges of the University, there were 11 administrative staff, 312 teaching and 611 non-teaching staff. A total of 465 trainings, workshops, conferences, seminars, summer schools, etc were organized at different constituent colleges of the University. Among faculty members, 45 were deputed for participation in international conference and seminar, 89 national conferences and seminars, 60 workshops and 27 long term training courses and 98 for short term training programmes. The 378 lectures, keynote address and invited talks were delivered by the faculties at various trainings, workshops and other programmes. Forty five faculty members served as external examiners at various institutes. Thirty four guest lectures were delivered by reputed scientists from other institutes at different constituent colleges of the University. Thirty eight faculty members served as external member and 18 served as expert committee member at various institutes. A total of 27 faculties of the University were also recognized for their excellence in research and developmental works and 10 MoU’s were signed with reputed institutes during the period for cooperative relationship through mutual assistance in the areas of education, research and extension activities.

As sanctioned by ICAR under IDP-NAHEP, 7 Photovoltaic On Grid Solar Power Plant KWP were installed and commissioned successfully in 7 campuses of the University including the headquarters. One Wastepaper Recycling Plant was also commissioned successfully in College of Agriculture, Iroishemba, Imphal as part of the environment sustainability plan. Workshop on Business management skills (3 nos. with 593 participants), 19 communication skills and personality development (816 participants), 19

trainings on entrepreneurship development (2,675 participants), 7 faculty development programme (256 faculty members), 1 innovation and leadership development programmes (220 participants) and 11 trainings on environment sustainability plan (776 participants) were conducted. Forty six students from different constituent college were going for 3 months foreign training at various foreign institutes.

University Publications



Major Activities

- Visit of Ms Shobha Karandlaje, Hon'ble Minister of State for Agriculture and Farmers' Welfare, GoI and Farmers Start-up FPOs Interaction Program held in her presence on 28 October, 2021 at College of Fisheries, Lembucherra, Tripura.



- Visit of Shri Narendra Singh Tomar, Hon'ble Union Minister of Agriculture and Farmers Welfare on 17 November, 2021 and showcasing of technology products-cum-interface meeting was held in his presence at College of Fisheries, Lembucherra, Tripura.



- Celebration of 30th Foundation Day Celebration of the University.



- Study visit of Parliamentary Standing Committee on Education, Women, Children, Youth and Sports on 27 April, 2022.



- National Level Meeting for developing syllabus and curricula on Natural Farming for Under Graduate and Post Graduate Level as per ICAR and NEP-2020 guidelines was held from 24 to 25 June, 2022 at College of Agriculture, CAU, Imphal.



- Visit of Padmashree Dr S Ayyappan, Chancellor of the University. The 21st Senior Officers Meeting of the University was held in his presence on 12-13 July, 2022.



- Visit by Hon'ble Union Minister Shri Parshottam Khodabhai Rupala, Minister of Fisheries, Animal Husbandry And Dairying on 12 June, 2022 at College of Veterinary Sciences and Animal Husbandry, Aizawl, Mizoram.



- Celebration of Azadi Ka Amrit Mahotsav by students and staffs of different constituent colleges of the University.



Prabhat Pheri



Har Ghar Tiranga Campaign

- Visit of Ms Shobha Karandlaje, Hon'ble Minister of State for Agriculture and Farmers' Welfare, GoI at College of Agricultural Engineering and Post Harvest Technology, CAU, Ranipool on 9 May, 2022.

