

**National Agricultural Higher Education
Project (NAHEP)**
[ICAR - WB Project]

*Report on
achievements and
learnings under
NAHEP*














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Achievements of key milestones

Key achievements under ICAR-NAHEP till December 2019		
	Students sent abroad for training/undergoing training in cutting edge technologies	257
	Establishment of virtual/smart classrooms/lecture halls/innovative labs	155
	New pilot courses added / upgraded on communication skills, entrepreneurial skills, information processing, creative and innovative thinking, leadership skills etc.	65
	Faculties sent abroad for training in emerging areas of science & technologies	63
	Establishment of new facilitative units to enable academic / research infrastructure	44
	Industry seminars and professional workshops from experts to better prepare students for final placements	24
	Collaborations / MoUs signed with industry for knowledge exchange programs/ internships / short term training programs etc.	21
	Centres of Excellence created around thematic areas of: Conservation Agriculture / IFS /Sustainable Agriculture, Climate Smart Agriculture, Livestock / Saline Aquaculture, Genomics / Precision farming	14
	Implementation of AMS across participating AUs	8
	Technologies transferred to industry / national / international organizations	7
	Development of mobile applications in various sectors of agriculture	6

Introduction

NAHEP is designed to strengthen the national agricultural education system in India with overall objective to provide more relevant and high-quality education to agricultural university students. This programme has been promoting efficiency and competitiveness through changes in working mechanism of agricultural universities, raising the teaching and research standards through improved research and teaching infrastructure and enhanced faculty competency and commitments, and making agricultural education more attractive to talented students. There are four key components under NAHEP, namely; **Institutional Development Plan (IDP), Centres for Advanced Agricultural Sciences and Technology (CAAST), ICAR to support excellence in agricultural universities (AUs), and ICAR Innovation Grants to AUs.** It is envisaged that improved AU performance through quality enhancement, better employment and entrepreneurship opportunities created for agriculture graduates, non-accredited AUs attaining ICAR accreditation, and institutional reforms implemented in education division of ICAR and AUs under these components together shall contribute to the achievement of the overall program objective.

The beneficiaries of NAHEP include **75 institutions** that form the ICAR-AU System, which encompasses **64 State-level AUs, 4 Deemed Universities, 4 Central Universities with Agricultural Faculty and 3 Central Agricultural Universities.** **Direct project beneficiaries of the project are those students and faculties, who directly derive benefits under IDPs, CAASTs, IGs and activities under Comp 2.**

Till December 2019, out of 75 participating AUs, 46 AUs were awarded under IDP, CAAST and IG component. Component 2 (Investment in ICAR Leadership in Agricultural Higher Education) was sanctioned in March'2019, which involves 3 institutions – ICAR IASRI, NIAP and ICAR – NAARM.

IDP financed activities majorly focus on **teaching and research infrastructure development, faculty development and training, networking and industry collaboration, vocational training, students job placement, own revenue generation and support to twinning plan.** In addition to these priorities, emphasis is also being placed on **effective industry linkages to enhance employability of agriculture graduate as well as to help AUs to generate their own resources.**

CAAST aims to support interdisciplinary advanced centres for innovative approaches to teaching, research, extension and capacity building in the specialized area for holistic development. It encompasses a number of thematic areas such as Conservation Agriculture, Precision farming / Farm Mechanization, Secondary Agriculture, Specialty agriculture, Renewable Energy Sources, Integrated Farming System (IFS), Agriculture Market Intelligence, Good Agricultural Practices, Hitech/Protected Cultivation, Climate Resilient Agriculture, Food Safety, Big Data Analysis and Genomics-assisted Breeding. In this direction, the key activities undertaken are **Faculty upgradation through international and national training with mentor universities, Distinguished Lecture Series/ Special lectures to bring about much needed vibrancy in the academic atmosphere and inspire students and faculty to perform better, National and international trainings for students, faculty and research scholars, Collaboration with private sector related to the specialized areas to develop market-oriented programs etc.**

IG projects have been awarded to select participating AUs to attain accreditation. The key activities included under this component were **national trainings for faculty upgradation, master and Ph.D.**

sandwich programs, alumni linkages, industry seminars and professional workshops, e-enabled learning activities etc.

Component 2 aims to support ICAR to carry out institutional reforms within ICAR and enhance effectiveness in coordinating, guiding and managing agricultural higher education in the country. During FY 18-19, activities undertaken **are e – enabled learning activities in AUs through demonstrations of virtual classrooms, Initiation of Software Designing for Customization of Academic Management System, Technical committee meeting to catalyze the participation of state government representatives in raising the quality and relevance of agricultural higher education etc.**

This report documents the key learnings and highlights the significant achievements made under different components of NAHEP till Dec'19. These learnings and achievements have been captured under following categories:

• Success stories
• Media coverage of project activities and achievements
• Digital initiatives undertaken
• Establishment of facilitative Centres to strengthen academic and research infrastructure
• Innovations / Out of box initiatives undertaken
• Scientific Educational Material generated in Field / laboratory / classroom
• Collaborations / MoUs with Industry / Higher Educational Institutions

Component wise and category wise details of achievements have been presented herewith.

NAHEP achievements and learnings

Component 1a: Institutional Development Project

Success stories

Documentation has proved to be the most useful to **support learning and information acquisition and absorption**. Documentation of success stories are useful for disseminating the focus of the innovative projects, outcomes and impact on the beneficiaries. Through this dissemination methodology, the stakeholders of the project have been encouraged to share their experiences of implementation process that led to better or satisfactory results.

Name of the institute: Acharya N. G. Ranga Agricultural University, Lam, Guntur (Andhra Pradesh)

Success story

ANGRAU, Guntur received ICAR’s AIEEA-PG award for highest qualified students in the entrance test: Trainings conducted through NAHEP helped in qualification

ANGRAU, Guntur received the NAHEP project in 2018 and there have been multiple activities conducted by IDP-ANGRAU team so far. The activities such as skill development programs, international trainings, workshops and advance methods of teachings encouraged students to make significant achievements in the ICAR-AIEEA entrance exam conducted for Masters’ program, JRF, SRF and NET in the agricultural education field. Following are the success figures which helped ANGRAU, Guntur to get recognition from ICAR AIEEA.

Number of students got admission in master’s program	Number of students qualified ICAR-JRF	Number of students qualified ICAR-SRF	Number of students qualified NET in the disciplines of agriculture and allied sciences
147	28	8	60

University has received ICAR’s AIEEA-PG-2018 award on 31st January 2019. This award is the result of students’ efforts who successfully reaped the benefits of the facilities created and trainings imparted under ICAR-NAHEP.



Name of the institute: [Junagadh Agriculture University, Junagadh \(Gujarat\)](#)

Success story

3 Students of JAU, Junagadh got placed in Amnex Infotech Pvt. Ltd: Trainings conducted under NAHEP – IDP helped students to achieve this milestone

Padariya Jay, Himanshu Dadhaniya and Deep Kalola, students of final year B. Tech. Agricultural Engineering had undergone training on “**Data Analytics in Agriculture**” jointly organized by DAIICT-Gandhinagar and Amnex Infotech Pvt. Ltd. under NAHEP –IDP. The training was on agriculture analytics which covered various fields like Statistics, Crop, Weather, soil, Python Programming, Machine learning etc. It has wide scope in private sectors especially in ICT and Remote sensing applications in Agriculture. Jay Padariya, also secured second rank in the evaluation conducted by the company and awarded Rs. 10,000 cash prize.

Testimonial by students:

“Through this training, we got placement in Amnex Infotech Pvt. Ltd. as an Associate Agriculture Consultant in Remote and sensing and GIS department based on performance. We have joined the company and doing well in the new IT setup. This training under NAHEP-IDP has opened new scope for the agricultural graduates to work in IT companies. We are thankful to Junagadh Agricultural University and our College of Agricultural Engineering and Technology for giving this opportunity under NAHEP-IDP programme that helped to start our career with such good company. We would be happier if we can serve our juniors and our institute through any means”.

Two students of JAU, Junagadh university established their own start-up during final year of under-graduation

Madhav Organic Honey is a start-up established by two VIII semester students; Mr. Solanki Brijesh A. and Mr. Domadiya Harshil in March, 2019. It all got started when the students were given a two-day training programme on: ‘**Export-Import of Agricultural Commodities**’ under NAHEP-IDP wherein they were exposed to “**how a farm can function as a fully equipped systematic business unit**”.



The exposure given to students through several training programmes and internships under NAHEP-IDP of JAU has motivated quite many to become budding entrepreneurs. Through this motivation and student’s interest in pursuing agriculture as career have encouraged them to start an enterprise mainly in the agriculture export-import.

Testimonial by student:

“Through our regular course works, we have gained domain knowledge on apiculture but the art of running a business came us only through various training programmes conducted

at the University through IDP-NAHEP”- Mr. Brijesh Solanki.

Success story

Vora Parth, a student from JAU, Junagadh established Nav Sarvada Organics Pvt. Ltd during ongoing studies

Vora Parth a final year student of JAU, Junagadh university encouraged through different entrepreneurial skill development programs organised by university after the implementation of NAHEP project. Along with the workshops and skill development programs, university has also organised various industry exposure visits to agriculture processing units. This exposure also helped Vora to start his own business.

During the ongoing study, Vora Parth J. established a company **M/s. Nav Sarvada Organics Pvt. Ltd.** The company is involved in organic farm produce. He expanded his network nationally viz., Tea Plantation in Assam and he is also conducting trials on grape cultivation in Nashik, Maharashtra. The company's **organic products are certified by Tocklai Tea Research Institute, Tea Research Associate, Jorhat (Assam).** The company has its retail and wholesale outlet in Gondal and Jasdan Talukas of Gujarat. Till date, this start up has **provided direct and indirect employment to at least 15 to 20 people.** In addition, many farmers have been motivated to adopt organic farming.



Name of the institute: Assam Agricultural University, Jorhat (Assam)

Success story

Two students of AAU, Jorhat made a profit of INR 12,00 from breeding Magur fish in the university laboratory

Two 3rd year students viz. Bijit Bania & Jakir Hussain under the guidance of Dr. S. Borthakur, Nodal officer, Ms. Dharitri Baruah (JRF, NAHEP) & Mr. Mustahid Hussain have attempted **to breed magur fish in the laboratory in a farmer's friendly way.** The attempt was **under taken by different skill development and industry orientation programs conducted under IDP-NAHEP project** in June 2019. The programs were organised at the university under NAHEP activities, have encouraged students to try breeding trail of magur fish in the laboratory of university. This successful story has also encouraged other students of the university to implement the ideas disseminated during the workshops and training being imparted under NAHEP.

Success story



It came up as successful model to **earn while learn** for the students. This breeding activity was encouraged by the faculty of the university and their timely guidance to make it successful. It was also found to be successful where the magur seed was produced and marketed by student themselves to one of the farmers of Nagaland. Through this activity, students have earned about INR 12,000.

Media coverage of project activities and achievements

Media plays a critical role in disseminating the focus of the innovative projects, outcomes and impact on the beneficiaries. In order to create the ripple effect and improve the visibility of project, media coverages and advertisements are important tools. The media coverages of NAHEP are quite evident and act as testimony of the successful activities and achievements carried out in awarded AUs under NAHEP.

S. No	Name of the AU	Subject	Event photograph
1.	Odisha University of Agriculture and Technology, Bhubaneswar (Odisha)	Signed with Indira Gandhi Agriculture University (IGKV), Raipur	<p>IGKV signs MoU with Odisha's Agriculture Varsity</p> <p>Vice-Chancellor Dr. S. K. Patil and OUAT's Vice-Chancellor Dr. Pawan Kumar Agrawal.</p> <p>Meanwhile, as a move to promote e-governance, OUAT has signed an agreement for opting Management Information System (MIS) developed by IGKV.</p> <p>According to information received, the MoU is going to benefit researchers of MSc and PhD of both the universities. Under this, researchers from horticulture, entomology, plant pathology, genetics and plant breeding, crop science, soil science, plant engineering, biochemistry, statistics, economics, computer science, information technology and other departments will be benefited.</p> <p>on Wednesday signed a Memorandum of Understanding (MoU) with Odisha University of Agriculture and Technology. With this MoU, the researchers of both the universities will be able to go to each other and undertake research works by availing the infrastructures and resources available there. Besides, the both the universities will undertake sharing of information. The MoU was signed by IGKV's</p> <p>Staff Reporter RAIPUR, Oct 9</p> <p>AIMING to enhance the quality of education, research work and innovation, Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur</p>

S. No	Name of the AU	Subject	Event photograph
5.	G.B. Pantnagar University of Agriculture and Technology, Pantnagar (Uttarakhand)	Organization of workshop on Robotics use in agriculture	<p>खेती के लिए उपयोगी बन सकता है रोबोट: कुलपति</p> <p>पंतनगर। हमारे संकायदाता</p> <p>प्रशिक्षण</p> <p>गोविंद बल्लभ पंत कृषि एवं प्रौद्योगिकी विश्वविद्यालय पंतनगर में पहली बार कृषि में रोबोटिक्स विषय पर चार दिवसीय प्रशिक्षण कार्यक्रम का आयोजन किया जा रहा है। प्रशिक्षण का उद्देश्य कृषि खासकर के कीचल को विकसित करना है। इससे कृषि में उत्पाद विभिन्न समस्याओं के सही समाधान खोज सकेंगे।</p> <p>मुख्य अतिथि विश्वविद्यालय के कुलपति डॉ. तेज प्रताप को रोबोट में बुकें देकर स्वागत किया। कुलपति ने कहा कि यह तकनीकी युग है। उन्होंने कहा कि बाकिंग में रोबोट कृषि खेती में उपयोगी मैकेट बन सकता है। छात्रों को इन तकनीकों के महत्व को सीखना चाहिए। एजी. इनफार्मेटिक्स युव के समन्वयक</p> <p>डॉ. अजीत नैन ने बताया की एजी इनफार्मेटिक्स युव मुख्य रूप से आर्टिफिशियल इंटेलिजेंस, बिग डेटा एनालिसिस, क्लाउड स्मार्ट एप्लीकेशन आदि पर क्लब फोकस करते हुए इनका कोशल पर प्रशिक्षण की व्यवस्था करेगा। इस अवसर पर मुख्य अध्येक्षक डॉ. एमके कश्यप, डॉ. आरएस राजपु, डॉ. केशु शर्मा, डॉ. एके शर्मा, डॉ. पारस, डॉ. नवनील शर्मा, डॉ. यशु शर्मा, प्रीति चौधे और अजीत एम काचड़ा शामिल रहे।</p>  <p>पंतनगर जियि में रविश्वर को कुलपति डॉ. तेज प्रताप को बुके देता रोबोट। • हेमदुल्ला</p>
6.	G.B. Pantnagar University of Agriculture and Technology, Pantnagar (Uttarakhand)	40 ideas of the students selected by University's innovation & incubation cell	<p>पंत विश्वविद्यालय में इनोवेशन एंड इंक्यूबेशन सेंटर में 60 छात्रों ने दिए थे आइडिया</p> <p>40 विचारों से बदलेगी देश की कृषि व्यवस्था</p> <p>अदिति कुमार शिल - रुद्रपुर</p> <p>जिस संस्था को लेकर पंत विवि की स्थापना की गई थी, देश पर एक भार फिर खरा उतरने जा रहा है। बदलते माहौल में देश के कृषि में सुधार लाने के लिए विवि के 40 आइडिया चयनित हुए हैं। जिससे अल्पवयस्क देश को अर्थव्यवस्था में और मजबूती प्रदान किया जा सके। यह कार्य विवि में स्थापित इनोवेशन एंड इंक्यूबेशन सेंटर करने जा रहा है।</p> <p>कृषि उद्योग को बढ़ावा देने के लिए देश के जाने माने कृषि से जुड़े उद्योगी सेंटर में 30 नवंबर को जुटेगी। देश के किसानों की समस्याओं से खेती में सुधार कर योग्य प्रौद्योगिकी तैयार करने की मंशा से पंत विवि को वर्ष 1960 में स्थापना की गई थी। हालांकि विवि ने</p> <p>उद्योग पर खरा उतरा और 60 के दशक में हरिद्वार जूट और देल ग्राहम में आरम्भिक चरण हुआ। कृषि को संशोधित फसलों को कई प्रजातियों विकसित की। देश में कृषि को व्यावसायिक खेती के साथ आधुनिक को बढ़ावा देने के लिए विवि के भी सहायक कर रहा है। देश में नेशनल एग्रीकल्चरल एंड हायर</p> <p>एजुकेशन प्रोजेक्ट चलाया जा रहा है। योजना में पंत विवि को 30 करोड़ रुपये मिले हैं। इनमें 25 करोड़ विवि के पास पांच करोड़ राज्य सरकार देनी। भारतीय अर्थव्यवस्था को एक नया आयाम दिया जा सके। वहीं वहीं, कृषि को आगे बढ़ा उन्नत बनाया जा सके। पंत विवि में इनोवेशन एंड इंक्यूबेशन सेंटर के लिए</p> <p>पांच करोड़ मिले हैं और सेंटर भी तैयार है। कृषि में जगह किस तरह का नेहरू सुधार किया जा सकता, इसके लिए स्थापक के 60 विचारों में अपने आइडिया दिए। इनमें 40 आइडिया चयनित कर लिया गया है। 30 नवंबर को देश के विभिन्न कृषि से उद्योगी भी जुड़ेंगे।</p> 

S. No	Name of the AU	Subject	Event photograph
7.	Junagadh Agricultural university, Junagadh, Gujarat	International training by JAU students	
8.	Junagadh Agricultural university, Junagadh, Gujarat	Inauguration of Artificial Intelligence Laboratory by Hon. Agriculture Minister Shree R C Faldu	

S. No	Name of the AU	Subject	Event photograph
9.	Junagadh Agricultural university, Junagadh, Gujarat	Agricultural and Food Processing Machinery Meet	<p>કૃષિ યુનિ.માં કુડ પ્રોસેસીંગ મશીનરી મેન્યુફેક્ચરસ મીટનું આયોજન</p> <p>રાજ્યના 50 જેટલા ઉત્પાદકો માહિતી આપશે</p>  <p>જૂનાગઢ કૃષિ યુનિ. ખાતે સૌ પ્રથમ વખત એગ્રીકલ્ચર અને કુડ પ્રોસેસીંગ મેન્યુફેક્ચરસ સાથેની મીટનું આયોજન આગામી તા. 27 ના રોજ સવારે 9 કલાકે કૃષિ ઇંજનેરી અને ટેકનોલોજી સેમીનાર હોલમાં કરાયું છે. આ એક દિવસીય મીટમાં સમગ્ર ગુજરાતમાંથી 50 જેટલા એગ્રીકલ્ચર અને કુડ પ્રોસેસીંગ મશીનરીના ઉત્પાદકો ભાગ લઈને તેમના દ્વારા ઉત્પાદિત મશીનરીની સવિસ્તાર માહિતી આપશે. કાર્યક્રમમાં સેન્ટ્રલ ઇન્સ્ટીટ્યુટ ઓફ પોષ્ટ હાર્વેસ્ટ ટેકનોલોજીના વૈજ્ઞાનિક ડો. પંકજ, ડો. નયકિંત આલ્હિસના આસીસ્ટન્ટ બેંક મેનેજર પંકજ સિન્ધા, જેડીઆન ઇંજનેર પી. એન. વસરા તથા ઓગેનાઈઝીંગ સેક્રેટરી ડો. એમ. એન. ડાબી માટેના ઉદ્દેશ્યને અનુરૂપ વ્યાખ્યાન આપશે. કાર્યક્રમને સફળ બનાવવા કૃષિ યુનિ. પી. યોવટીયા, ડો. એન. ડે. ઝોટીયા, ડો. પી. એમ. ચોહાણ, ડો. વી. કે. તિવારી, ડો. એચ. ડી. રાંકે, ડો. કે. કે. જીન, ડો. એમ. એન. હાણે તથા વિવિધ કમીટીઓના કન્વીનરો, સભ્યો હાજર મેટાઈ રહ્યા છે.</p> <p>દિવ્યા ભાસ્કર તા. 26-11-19</p>
10.	Junagadh Agricultural university, Junagadh, Gujarat	Entrepreneurship development certificate course on: 'Export-Import of Agricultural Commodities', Vocational training programme: 'Processing and Value Addition of High Value Crops	<p>JAU to select 20 students for agrpreneurship</p>  <p>રાજકોટ (ગુજરાત) ૨ મંગળવાર, 27 ને જૂ.કૃ.યુનિ. ખાતે બીએસસી એગ્રીના છાત્રો માટે તાલીમ કાર્યક્રમ યોજાયો</p> <p>જૂનાગઢ કૃષિ યુનિવર્સિટી ખાતે કૃષિ અર્થશાસ્ત્ર વિભાગ દ્વારા આઈસીએઆર નવી દિલ્હીની સંસ્થાકીય વિકાસ યોજનાના આધારે ઉચ્ચ સાંસ્કૃતિક વિકાસ કાર્યક્રમ અંતર્ગત બીએસસી એગ્રીના અભ્યાસ કરતા વિદ્યાર્થીઓ માટે કૃષિપતિ ડો. એ. આર. પાઠકના માર્ગદર્શન હેઠળ યાકનું ઉચ્ચ મુલ્ય પ્રતિષ્ઠા અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો. તાલીમ-પ્રશિક્ષણ અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો. તાલીમ-પ્રશિક્ષણ અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો. તાલીમ-પ્રશિક્ષણ અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો.</p>
11.	Junagadh Agricultural university, Junagadh, Gujarat	Training programme on "Autopilot drone development, Vocational Training on Latest Advancement in upstream Reproductive Physiological Techniques	<p>કૃષિ યુનિવર્સિટીમાં આટોપાઇલટ ડ્રોન ડેવલોપમેન્ટ વિષય પર 5 દિવસીય તાલીમ ડ્રોનની ઉપયોગીતા, ડ્રોન રીવોલ્યુશન દ્વારા યાકની ઉત્પાદકતા વધારવી</p>  <p>રાજકોટ (ગુજરાત) ૨ મંગળવાર, 27 ને જૂ.કૃ.યુનિ. ખાતે બીએસસી એગ્રીના છાત્રો માટે તાલીમ કાર્યક્રમ યોજાયો</p> <p>જૂનાગઢ કૃષિ યુનિવર્સિટી ખાતે કૃષિ અર્થશાસ્ત્ર વિભાગ દ્વારા આઈસીએઆર નવી દિલ્હીની સંસ્થાકીય વિકાસ યોજનાના આધારે ઉચ્ચ સાંસ્કૃતિક વિકાસ કાર્યક્રમ અંતર્ગત બીએસસી એગ્રીના અભ્યાસ કરતા વિદ્યાર્થીઓ માટે કૃષિપતિ ડો. એ. આર. પાઠકના માર્ગદર્શન હેઠળ યાકનું ઉચ્ચ મુલ્ય પ્રતિષ્ઠા અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો. તાલીમ-પ્રશિક્ષણ અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો. તાલીમ-પ્રશિક્ષણ અને મુલ્યવર્ધન વિષય પર બે દિવસીય તાલીમ કાર્યક્રમ યોજાયો હતો.</p>



S. No	Name of the AU	Subject	Event photograph
12.	Junagadh Agricultural university, Junagadh, Gujarat	Vocational Training on Automation and Advances in Chromatography, Vocational Training on New Approaches and OMICS Tools for Identification and Control of Ticks and Tick-Borne Disease	
13.	Junagadh Agricultural university, Junagadh, Gujarat	Presentation of JAU-College of Agriculture students on their international training at World Vegetable Center, Taiwan, Vocational Training on Application of One Health Concept for Control of Emerging Zoonoses and Health Threats	
14.	Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana (Punjab)	Launch of IDP project at university by Dr. R. C. Agrawal (National Director, NAHEP)	

S. No	Name of the AU	Subject	Event photograph
15.	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior	IDP project launch at university	
16.	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior	MoU signed with industries for better employability	

Digital initiatives undertaken

Under IDP-NAHEP component, awarded AUs have taken several digital initiatives such as digitization of classroom and improved teaching methods using digital aids, e-module courses. The aim of these initiatives is to widen the horizon of the teaching scope and provide global level learnings to the students. This improves the quality of education and helps students to develop their skill sets to meet the new age industries.

Name of the institute: G.B. Pantnagar University of Agriculture and Technology, Pantnagar (Uttarakhand)


S. No	Initiative	Brief	Event Photograph
1	Interactive and user-friendly e-content designing under IDP Pantnagar: promoting 3600 learning environments	<ul style="list-style-type: none"> The first step in development of e-content in text and video formats of 49 Under Graduate courses has been executed with identification and training of 84 dedicated faculty members. This initiative of IDP-NAHEP provides an excellent opportunity to raise the standard of the university education system. With this objective a two-day workshop on “An introduction to e- content development” was organized for faculty as well as for students on October 12, 2019 in University. A total of 150 participants attended the workshop. 	
2	Activity-based higher order learning platforms by IDP Pantnagar : sensitising the young brains	<ul style="list-style-type: none"> The series of trainings organised under IDP, Pantnagar were distinctly designed with simulation exercises, games and activities to involve and inspire students for new learning. A 12-hours training was organized for the UG students of the university on 15 December 2019 under the Project. The aim of this one-day training activity was to help the students with the strategic planning, decision making and goal setting in their day-to-day living 	

Establishment of facilitative Centres to strengthen academic and research infrastructure

Under ICAR-NAHEP, awarded AUs have established fully equipped facilitative centers to strengthen the research and teaching effectiveness of faculties and students’ learning outcomes. The facilitative centers such as **Artificial intelligence lab, 3D printing module lab** etc. are being


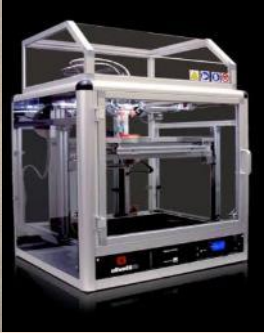
used by students and faculties for gaining advanced practical knowledge. The key outcomes envisaged through establishment of these facilitative Centres are increased student placement rates, increased on time graduation rates, improved research effectiveness of faculty etc.

Name of the institute: Junagadh Agriculture University, Junagadh (Gujarat)

S. No	Type of facilitative centre	Brief	Event photograph
1	Artificial intelligence (AI) lab / Centre	<ul style="list-style-type: none"> The objective behind development of laboratories is to get students acquainted with advanced technologies such as artificial intelligence, robotics, drones, agricultural sensors, CAD designing & simulation and precision agriculture. This laboratory is useful to gain practical knowledge and practical demonstration through various sensors. Different farming activities can be done through mobile, computer and sensors through internet such as smart farming, primary processing and produce agricultural information such as soil moisture content, weather information, crop diseases and its remedies. Taking these needs in consideration of various advanced equipment such as high end servers, work station, spraying drone, surveying drone, welding robot, color sorting machine, self-learning robot kit, robotic arm trainer, 3D printer, IoT boards, DDS function generator and Digital storage oscilloscope (DSO) etc. were purchased to equip laboratories with these cutting edge equipment so that students can gain practical knowledge in these area. 	

S. No	Type of facilitative centre	Brief	Event photograph


Name of the institute: [Tamil Nadu Veterinary and Animal Sciences University, Chennai \(Tamil Nadu\)](#)

S. No	Type of facilitative centre	Brief	Event photograph
1	Establishment of 3D printing lab	This 3D printing lab will be helpful for preparing 3D modules of different organs of the animal. This will give students more exposure to the real anatomy of the creatures.	 

Scientific Educational Material installed or generated in Field/Laboratory/Classroom

Necessary education materials for field operations, laboratories and classrooms are were made available to provide practical understanding to the students.

Name of the institute: Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan)

S.No	Type of material	Photograph
1	Laboratory Auto Clave (Vertical)- Steam Sterilizer	

Name of the institute: Junagadh Agriculture University, Junagadh (Gujarat)

S.No	Type of material	Event photograph
1	Latest lab facilities established for Artificial Intelligence (AI), Machine Learning, Robotics and Drone Technologies	

Collaborations / MOUs with Industry /Higher Educational Institutions

Collaborations with international organizations, industry and other nationally recognised institutes of repute help in orienting students on industry needs and cutting-edge areas of science and technologies, strengthening academic and research facilities etc.

Name of the institute: Odisha University of Agriculture and Technology, Bhubaneswar (Odisha)

S. No	MoU signed with	Purpose of MoU	Benefits
1	Indira Gandhi Agriculture University (IGKV), Raipur	To enhance quality of education, research work and innovation	This MoU is going to benefit the students, researchers of the universities and research underlines in agriculture, entomology, plant pathology etc. subjects

Name of the institute: Junagadh Agriculture University, Junagadh (Gujarat)

S. No	MoU signed with	
1	JAU, Junagadh university has signed an MoU with Hariom Aquaculture Pvt. Ltd., Navsari	
2	JAU, Junagadh university has signed an MoU with Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar	
3	JAU, Junagadh university has signed an MoU with Lime Institute of Export-Import Training, Rajkot	

Component 1b: Centres for Advanced Agricultural Sciences and Technology

Media coverage of project activities and achievements:

Media plays a critical role in disseminating the focus of the innovative projects, outcomes and impact on the beneficiaries. In order to create the ripple effect and improve the visibility of project, media coverages and advertisements are important tools. The media coverages of NAHEP act as testimony of the successful activities and achievements carried out in awarded AUs under NAHEP. Following are the media coverages under CAAST component of NAHEP:

S.No	Name of the AU	Subject	Event photograph
1.	ICAR-Indian Veterinary Research Institute, Izatnagar (Uttar Pradesh)	<p>Development of e learning/ICT tools Educational Video</p> <ul style="list-style-type: none"> Six videos developed and placed on You Tube IVRI Deemed University Educational Channel 	
2.	Mahatma Phule Krishi Vidyapeeth, (Maharashtra)	Organised workshop on Water Management at AU	<h2 style="text-align: center;">काटेकोर पाणी व्यवस्थापनाविषयी प्रशिक्षणाचे आयोजन</h2> <p>राहुरी : जागतिक बँक अर्थसहाय्यीत, राष्ट्रीय कृषी उच्च शिक्षण प्रकल्प व भारतीय कृषी अनुसंधान परिषद, नवी दिल्ली पुरस्कृत हवामान अद्ययावत शेती आणि जल व्यवस्थापनकरिता आधुनिक कृषी विज्ञान व तंत्रज्ञान केंद्र, महात्मा फुले कृषी विद्यापीठ, राहुरी अंतर्गत दि. ३०, ३१ जुलै रोजी काटेकोर पाणी व्यवस्थापन याविषयी दोन दिवसीय प्रशिक्षणाचे आयोजन मुद व जलसंधारण विभागातील सभागृहात करण्यात आले होते. या प्रशिक्षणाचे उद्घाटन जैन इरिगेशन प्रा. लि. जळगावचे दिलीप येवलेकर यांच्या हस्ते झाले.</p> <p>याप्रसंगी महात्मा फुले कृषी विद्यापीठातील सिंचन व निचरा अभियांत्रिकी विभागाचे सहयोगी प्रा. डॉ. एन. एन. फिरके, सहा. प्रा. डॉ. पी. जी. पोपळे, संशोधन सहयोगी मंगल पाटील, डॉ. अरुण भगत उपस्थित होते. डॉ. अरुण भगत यांनी प्रास्ताविक करून काटेकोर पाणी व्यवस्थापन प्रशिक्षणाची पार्श्वभूमी विषद केली. यावेळी दिलीप येवलेकर यांनी आधुनिक कृषी सिंचन, विविध सिंचन पद्धतीने मिळणाऱ्या उत्पादनातील फरक, सिंचन पद्धतीविषयी शेतकऱ्यांच्या यशोगाथा याविषयी माहिती दिली. तुषार करांडे, नेटाफिम सिंचन इंडिया, पुणे यांनी डिजिटल शेती, सिंचन, फर्टिगेशन व स्वयंचलित पद्धती, डॉ. अरुण देशमुख यांनी टिबक सिंचन पद्धती, डॉ. रजनी साळुंके, निखील दुग्गड व दत्ता पवार यांनी काटेकोर पाणी व्यवस्थापनासाठी तयार केलेली फुले जल व फुले सिंचन शेंड्युलर आदी माहिती प्रात्यक्षिकाच्या माध्यमातून दिली. या प्रशिक्षणात पदव्युत्तर व आचार्य पदवीचे असे एकूण ७० प्रशिक्षणार्थी सहभागी झाले होते. सूत्रसंचालन डॉ. अरुण भगत यांनी केले. आभार मंगल पाटील यांनी मानले.</p>


S.No	Name of the AU	Subject	Event photograph
5.	Mahatma Phule Krishi Vidyapeeth, (Maharashtra)	Organised workshop on Smart Agriculture	<p>शेतकऱ्यांसाठी सोप्या तंत्रज्ञानाची गरज -डॉ. तोमर</p>  <p>महात्मा फुले कृषी विद्यापीठ येथे कार्यशाळेस उपस्थित असलेले शास्त्रज्ञ, विद्यार्थी आणि अधिकारी.</p> <p>राहुरी विद्यापीठ (वार्ताहर) - शास्त्रज्ञांनी शेतकऱ्याला वापरण्यास सोपे असे तंत्रज्ञान तयार करायला हवे, असे प्रतिपादन जवाहरलाल नेहरू कृषी विश्व विद्यालय, जबलपूर येथील माजी कुलगुरू डॉ. व्ही. एस. तोमर यांनी केले.</p> <p>जागतिक बँक अर्थसहाय्यीत, राष्ट्रीय कृषी उच्चशिक्षण प्रकल्प व भारतीय कृषी अनुसंधान परिषद, नवी दिल्ली पुरस्कृत हवामान अद्ययावत शेती आणि जलव्यवस्थापन करिता आधुनिक कृषी विज्ञान व तंत्रज्ञान केंद्र, महात्मा फुले कृषी विद्यापीठ, राहुरी अंतर्गत हवामान अद्ययावत शेती करिता जमिनीचे आरोग्य आणि जमीन वापराचे नियोजन या विषयावरील दोन दिवसीय कार्यशाळेचे आयोजन महात्मा फुले कृषी विद्यापीठात करण्यात आले होते. या कार्यशाळेच्या उद्घाटनप्रसंगी ते बोलत होते. अध्यक्षस्थानी महात्मा फुले कृषी विद्यापीठाचे कुलगुरू डॉ. के.पी. विश्वनाथा होते. व्यासपीठावर डॉ. एस.के. चौधरी, डॉ. शरद गडाख, डॉ. अशोक फर्दे, डॉ. प्रकाश तुरबतमठ, डॉ. श्रीमंत रणपिसे, विलास नलगे, भाऊसाहेब बऱ्हाटे, डॉ. ए.जी. वाणी, रणजीत जाधव, डॉ. सुनील गोरंटीवार उपस्थित होते.</p> <p>डॉ. चौधरी म्हणाले, मातीचे विज्ञान हा फार महत्त्वाचा विषय आहे. मातीची जैविकता, सुपिकता ही निसर्गाशी जोडलेली असून मातीच्या संरचनेचा अभ्यास जास्तीत जास्त सखोलपणे झाला पाहिजे.</p> <p>डॉ. विश्वनाथा म्हणाले, विद्यापीठामध्ये गोळा होणाऱ्या जैविक कचऱ्याचा उपयोग कंपोस्ट खताच्या निर्मितीसाठी केला जातो. प्लास्टिक कचरा न जाळता त्यापासून डिझेल निर्मितीसाठी नियोजन केलेले आहे. जोपर्यंत जमिनीतील कबाचे प्रमाण वाढत नाही, तोपर्यंत जमिनीच्या आरोग्यात सुधारणा होणार नाही. तरुणांनी शहरातील जैविक कचऱ्याचे नियोजन करून त्याचा वापर ग्रामिण भागातील जमिनीच्या आरोग्य वाढीसाठी करण्याचे आवाहन त्यांनी केले.</p> <p>स्वागत डॉ. बापूसाहेब भाकरे यांनी केले. प्रास्ताविक डॉ. सुनील गोरंटीवार यांनी केले तर सूत्रसंचालन डॉ. सुनील थोरत व डॉ. मंगल पाटील यांनी केले. आभार डॉ. एम.जी. शिंदे यांनी मानले.</p>
6.	Mahatma Phule Krishi Vidyapeeth, (Maharashtra)	Workshop organised on Irrigation management	<p> अयोवन</p> <p>कृषी उद्योजक मार्गदर्शन केंद्र सुरु करणार : डॉ. विश्वनाथा</p> <p>पुणे (प्रतिनिधी) : कृषी तंत्रज्ञानापेक्षा कृषी अर्थकारण ही देशापुढील प्रमुख समस्या आहे. कृषी पदवीधरांमधून कृषी उद्योजक पुढे येणे गरजेचे आहे. त्यामुळे कृषी पदवीधारांसाठी लवकरच कृषी उद्योजक मार्गदर्शक केंद्र सुरु करण्यात येईल, असे प्रतिपादन महात्मा फुले कृषी विद्यापीठाचे कुलगुरू डॉ. के. पी. विश्वनाथा यांनी केले.</p> <p>जागतिक बँक आणि राहुरी येथील महात्मा फुले कृषी विद्यापीठाच्यावतीने काटेकोर सिंचन पाणी व्यवस्थापन या विषयावर पुणे कृषी महाविद्यालयात दोनदिवसीय प्रशिक्षण आयोजित करण्यात आले होते. त्या वेळी डॉ. विश्वनाथा बोलत होते. या वेळी कृषी उद्योजक ऑकार वायकर, डॉ. अमोल शिंदे, डॉ. विकास ढाकणे, पुणे कृषी महाविद्यालयाचे सहयोगी अधिष्ठाता डॉ. प्रमोद रसाळ, आधुनिक कृषी विज्ञान व तंत्रज्ञान केंद्राच्या सहप्रकल्प समन्वयक डॉ. जयश्री पाचपुते आदी उपस्थित होते.</p> <p>Pune, Main 28/08/2019 Page No. 6</p>

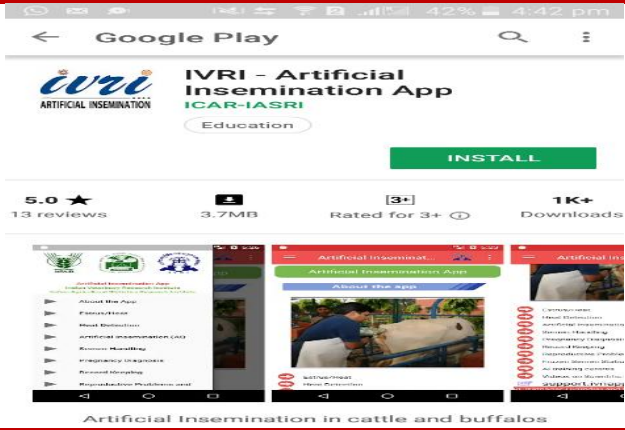

S.No	Name of the AU	Subject	Event photograph
9.	Mahatma Phule Krishi Vidyapeeth, (Maharashtra)	Workshop organised on need of IoT intervention in agriculture	 <p>‘आयवोटी’ तंत्रज्ञानाने शेती उत्पादकतेत वाढ शक्य : डॉ. सिंग</p> <p>राष्ट्रीय प्रतिनिधी : मंडळीत तंत्रज्ञानाच्या मदतीने पिकांच्या वाढीचा कालावधी कमी करणे शक्य झाले आहे. त्याचबरोबर ड्रोन, यंत्रमानव व आयओटी तंत्रज्ञानाच्या शेतकऱ्यांमध्ये जास्तीत जास्त वापर करून शेती उत्पादकतेत वाढ करता येईल असे प्रतिपादन भारतीय कृषी अनुसंधान परिषदेचे माजी उपसंचालक (अभियंत्रण) डॉ. गजेंद्र सिंग बोलत होते.</p> <p>आधुनिक कृषी विज्ञान व तंत्रज्ञान केंद्र, महात्मा फुले कृषी विद्यापीठ अंतर्गत अद्ययावत शेतीकरीता यंत्रमानव, ड्रोन व इंटरनेट ऑफ थिंग्स मधील नवकल्पना व शैक्षणिक रणमिती या शीर्षकाखाली तीन दिवसीय आंतरराष्ट्रीय परिसंवादाने आयोजन करण्यात आले होते. यावेळी डॉ. सिंग बोलत होते. हा परिसंवाद दोन दिवस पुणे व एक दिवस महाराष्ट्र या शीर्षकाखाली तीन दिवसीय आंतरराष्ट्रीय परिसंवादाने आयोजन करण्यात आले होते. यावेळी डॉ. कुल्लार डॉ.के.पी. विश्वनाथा, डॉ.पी.के. घोष, डॉ.आर. सी.आर.वाल, डॉ. प्रभात कुमार, रमेशी, संशोधन संचालक तथा विस्तार शिक्षण संचालक डॉ.शरद गडाब, अधिष्ठाता डॉ. अशोक परादि आदी उपस्थित होते.</p> <p>यावेळी बोलतांना डॉ.आर. सी. आर.वाल म्हणाले की, मानवी कारभारीचे बळकटीकरण कृत्रिम बुद्धिचा वापर करून उत्कृष्ट केंद्राच्या माध्यमातून करता येईल. विद्यार्थ्यांमध्ये जास्तीत जास्त संशोधनात्मक रुची वाढवणे याकरीता जागतिक कृषी संपत्तीची समन्वय साधने गरजेचे आहे. अग्रकक्ष्यानामन बोलतांना डॉ. के.पी. विश्वनाथा म्हणाले की, शेतकऱ्यांचे उत्पादन वाढवण्यासाठी महात्मा फुले कृषी विद्यापीठ नेहमीच प्रयत्नाशील आहे. हवामान अद्ययावत शेती व जलव्यवस्थापन पद्धतींतर्गत महात्मा फुले कृषी विद्यापीठाने शेतकरीता पाण्याच्या कटेकरा व्यवस्थापनाकरीता फुले सिंचन शोडपुल्लर तंत्रज्ञान विकसित केले आहे. आंतरराष्ट्रीय परिसंवादाने डॉ. एस.एम. नलावडे यानी केले. प्रस्ताविक डॉ. एस.डी. गोरीविरार यानी तर आभार डॉ. प्रभात कुमार यानी मानले.</p>

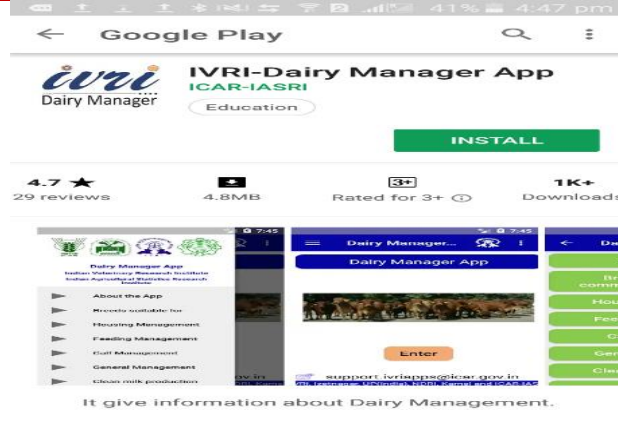


Digital initiatives undertaken

Following are the digital initiatives undertaken in CAAST component:

Name of the institute: ICAR-Indian Veterinary Research Institute, Izatnagar (Uttar Pradesh)

Sl. No	Innovation	Date	Photograph
1	IVRI-Shukar Palan (Pig Farming) App https://play.google.com/store/apps/details?id=com.icar.ivri.pig_app&hl=en_IN	22 nd January 2018	

Sl. No	Innovation	Date	Photograph
2	<p>IVRI –Artificial Insemination App https://play.google.com/store/apps/details?id=com.ivri.iasri.aiapp</p>	06 th March 2018	
3	<p>IVRI-Vaccination Guide app https://play.google.com/store/apps/details?id=com.icar.ivri.iasri.vcguideapp</p>	22 nd November 2018	

Sl. No	Innovation	Date	Photograph
4	IVRI Dairy Manager https://play.google.com/store/apps/details?id=com.ivri.iasri.dmapp	31 st May 2018	
5	IVRI Pig ration https://play.google.com/store/apps/details?id=icar.iasri.ivri.pigration	27 th September 2018	
6	IVRI-Landlly pig https://play.google.com/store/apps/details?id=com.ivri.iasri.landlypig	10 th April 2018	



Innovations/Out of box initiatives

Following are the innovations / out of box initiatives undertaken within CAAST component till date:

Name of the institute: Mahatma Phule Krishi Vidyapeeth, Rahuri (Maharashtra)

S.No	Initiative	Brief	Photograph
1	Internet of Things (IoT) for Agriculture	<p>Auto Phule Irrigation Scheduler (Auto PIS):</p> <ul style="list-style-type: none"> In order to determine the exact water requirement of the specified crop, the "Phule Irrigation Scheduler (PIS)" mobile application was developed to estimate the water requirement of the specified crop grown on a specified soil by simulating crop growth parameters such as crop coefficient that takes into consideration the crop characteristics influencing the crop water requirement. Further by integrating other information soil, location of farm, irrigation system, the precise irrigation water requirement and time of application for which the pump is to be operated is estimated. After adoption of Auto PIS technology farmers can apply precise amount of water on the field which saves the electricity, water and labor cost and ultimately increases the crop productivity and contribute to better soil health 	
2	Phule Soil Moisture Sensor	<ul style="list-style-type: none"> The developed soil moisture sensors are calibrated for different soils against the gravimetric method and the developed system display the status of soil moistures instantly varying with time, soil type and crop type. 	

Name of the institute: ICAR - Central Institute of Fisheries Education, Mumbai (Maharashtra)

S.No.	Innovation	Date	Photograph
1.	<p>A Mobile Application 'mJhinga', on Inland Saline Shrimp Aquaculture launched on ICAR-CIFES' Annual Day programme. Available on Google Play Store @ http://bit.ly/cifeapp</p>	6 June, 2019	
2.	<p>Innovative value-added products using Inland saline reared shrimps and fish have been prepared at Post harvest laboratory of ICAR-CIFE</p> <ul style="list-style-type: none"> • Prawn Pickle • Fish Pickle • Fish Chakli • Fish Papad • Fish Sev • Fish Wafers 	June 6, 2019	

S.No.	Innovation	Date	Photograph
3.	A Teaching aid on “Cell Culture and its Applications” and a Technical Bulletin in Marathi on “Ornamental fish diseases and their control measures” were released.	27 April, 2019	

Name of the institute: [Navsari Agricultural University, Navsari \(Gujarat\)](#)

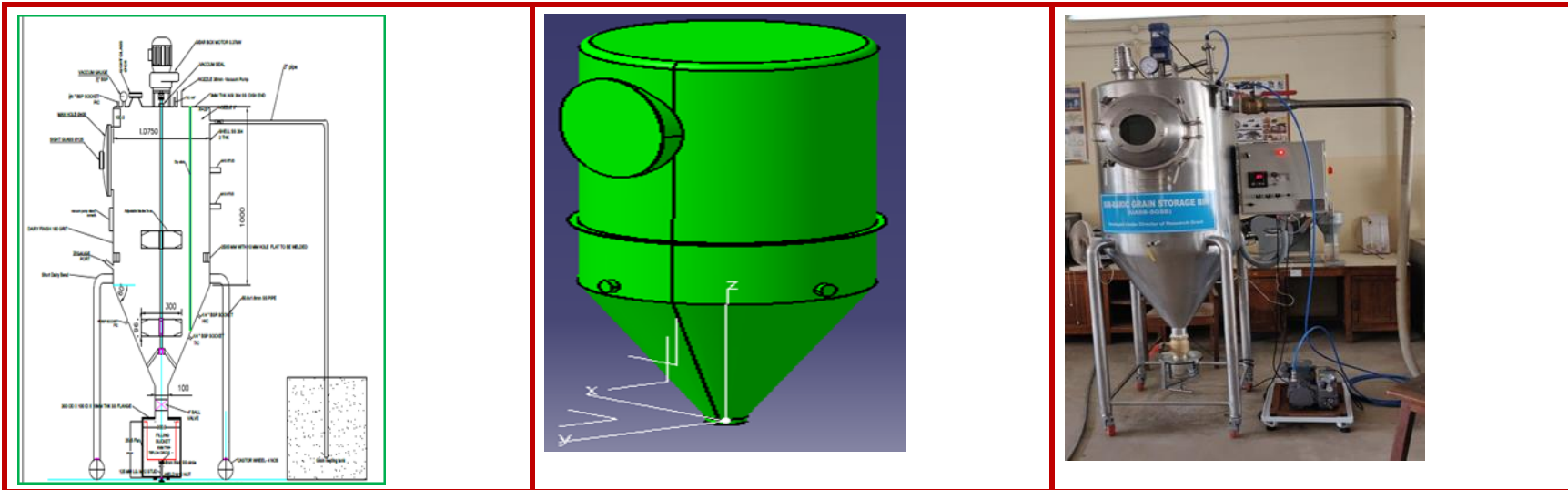
S.No.	Innovation Product	Date/Period	Photograph
1	Sapota Fruit base Ice-cream	February, 2019	

S.No.	Innovation Product	Date/Period	Photograph
2	Watermelon Burfi from cow milk	September 2018	<p>Flow chart for preparation of Watermelon burfi</p> <p>Watermelon rind ↓ Mincing ↓ Watermelon rind paste</p> <p>Milk taken in Karahi ↓ Partial Concentration</p> <p>↓ Addition of Watermelon rind Paste</p> <p>↓ Stirring and Scraping</p> <p>↓ Addition of Sugar</p> <p>↓ Concentration until non sticky dough consistency</p> <p>↓ Setting in tray</p> <p>↓ Cutting</p> <p>↓ Packaging</p> <p>Product Evaluation by Scientist Panel for "Watermelon Burfi from cow milk" NHEP</p>
3	Fancy Wooden Decorates	February, 2018 -July 2019	<p>Bamboo cum plywood tree Garden tree sculpture Bamboo board Wall hangings</p> <p>Pot fancy decorate Bamboo waterfall Artificial pot seedling Wooden stump decorate</p> <p>NHEP</p>

Name of the institute: [University of Agricultural Sciences, Bangalore \(Karnataka\)](#)

Sub-Baric Food Grain Storage Bin

Sub-baric storage method involves (manually or automatically) placing food grains in a storage structure, removing air from inside and sealing. The intent of vacuum storage is usually to remove oxygen from the container to extend the shelf-life of food grains. Vacuum storage reduces atmospheric oxygen, limiting the growth of aerobic bacteria or fungi, and preventing the evaporation of volatile components. The sub-baric storage bin can be used for storage of cereals, pulses and oil seeds for extension of shelf-life of food grains.



Name of the institute: [Indian Agricultural Research Institute, New Delhi](http://www.icar.gov.in)

Introgression of *Alternaria* blight resistance in to mustard from *B. rapa* x *D. eruroides*:

Introgression lines of mustard (*Brassica juncea*) were developed from a cross between mustard and *B. rapa* x *D. eruroides*. Real-time RT-PCR expression study showed that defense related genes (PR3 & 5) are highly induced in the resistant introgression lines mustard upon *Alternaria* inoculation. These ILs will be useful in breeding for mustard cultivars resistant to *Alternaria* blight.

<i>B. juncea</i> susceptible parent	<i>D. eruroides</i> resistant parent	Introgression Line Susceptible	Introgression Line Resistant
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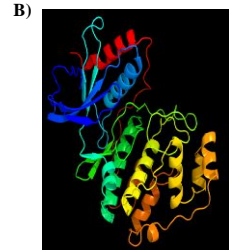
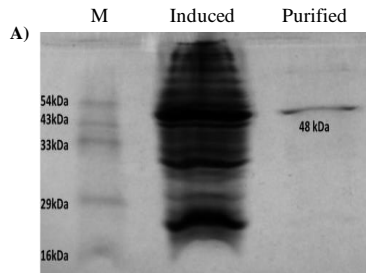
***B. juncea* introgression lines resistant to *Alternaria* were identified**

Microbial Genomics:

Whole genome sequencing of *B. paralicheniformis* strain KMS 80 was accomplished. The total size of the assembly was 4.5MB and assembled in to 83 scaffolds. Genome annotation led to the identification of about 4557 genes. Twenty one genes involved in nitrogen metabolism pathway were identified. Two transcription factors from the whole genome of *B. paralicheniformis* strain KMS 80 identified as CDS_3675 (glnR) in the scaffold-3 and CDS_507 (tnrA) in the scaffold-1, which regulates the expression of N-fixation genes in response to changes in nitrogen availability.

Cloning and characterization of genes involved in stress signalling

Mitogen-activated protein kinase (MAPK) signalling plays key role in tolerance of plants to biotic and abiotic In wheat, 64 transcripts coding for MAPKs were identified using *de novo* transcriptomic approach. Developmental stage specific expression analysis under heat stress showed that higher levels of MAPK expression at mealy-ripe stage as compared to milky-ripe stage. Higher levels of expression were observed maximum in thermo tolerant cvs. HD3059 and Halna as compared with thermo sensitive cv. HD2329 and PBW550 under differential heat stress.



Cloning and Characterization of MAPK from bread wheat. A) Expression and purification of recombinant *TaMAPK* in *E.coli*. B) 3D structure of *TaMAPK*

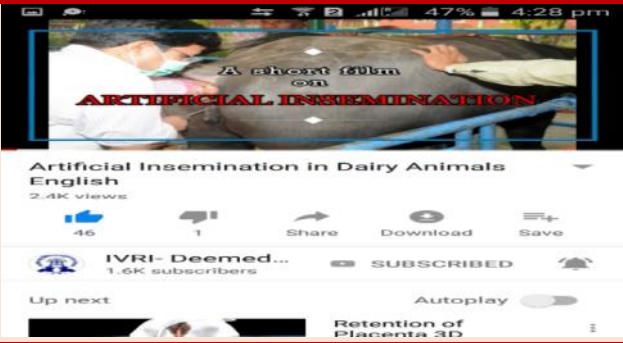
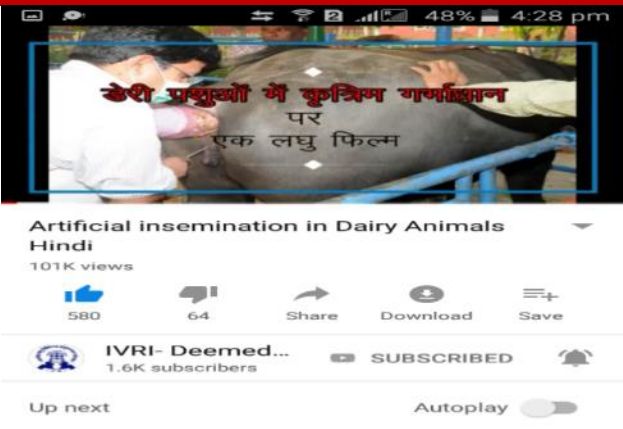
Scientific Educational Material Generated in Field/Laboratory/Classroom


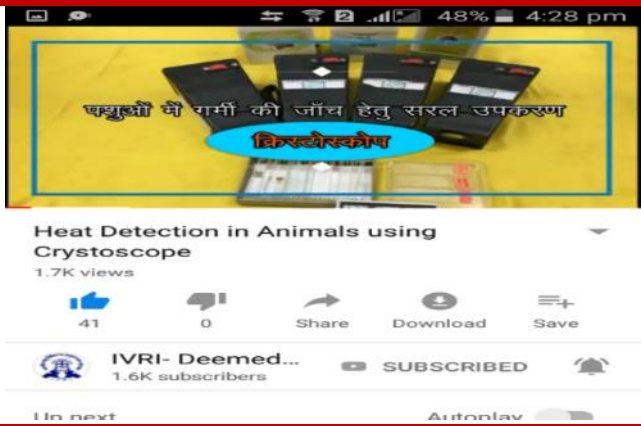

Following are the scientific educational materials generated in field, laboratory or classroom under CAAST component:


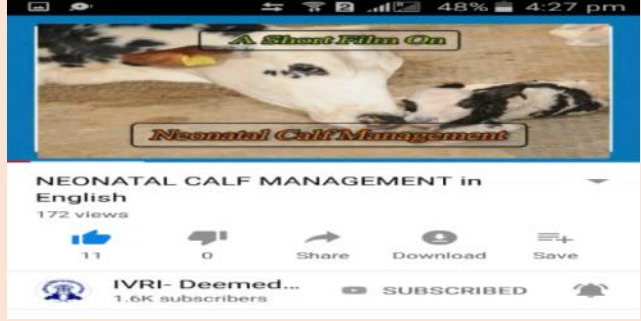
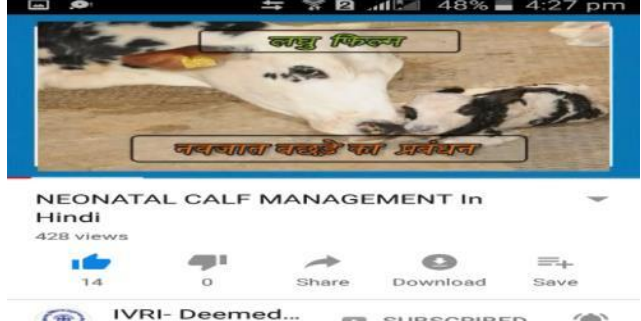
Name of the institute: [ICAR-Indian Veterinary Research Institute, Izatnagar \(Uttar Pradesh\)](#)

S.No	Type of material	Photograph
1	<ul style="list-style-type: none">Thermostable vaccines (FMD and PPR) vaccine VLP generatedThermotolerant PPR vaccine using improved stabilizer formulations.	

S.No	Type of material	Photograph
2	Publication of booklet	
3	Publication of manual	
4	<p>Heat Detection in Dairy Animals (English) Various techniques of Detecting heat in dairy animals (cattle and buffaloes) are shown in this video having https://youtu.be/UDaToi4JjpI</p>	

S.No	Type of material	Photograph
5	<p>Artificial Insemination in Dairy Animals (English) This video shows the various steps involved in performing an accurate and effective Artificial Insemination in dairy animals having 2829 views. https://youtu.be/f2YTB1UYvZ4</p>	
6	<p>Artificial Insemination in Dairy Animals (Hindi) This video shows the various steps involved in performing an accurate and effective Artificial Insemination in dairy animals which is in Hindi language having 127741 views https://youtu.be/f1CHtw1xMDg</p>	



S.No	Type of material	Photograph
7	<p>Heat Detection in animals Using Crystoscope (English) This video gives the information and operation of Crystoscope (developed by IVRI) which can be used for effective heat detection in animals by checking the fern pattern of cervical mucus having 831 views https://youtu.be/iR6WIYEXvYg</p>	
8	<p>Heat Detection in animals Using Crystoscope (Hindi) This video gives the information and operation of Crystoscope (developed by IVRI) in Hindi which can be used for effective heat detection in animals by checking the fern pattern of cervical mucus and tells about operating procedure of the instrument having 1957 views https://youtu.be/9bgsuPrWQ_Y</p>	
9	<p>Clean milk production (English) This video demonstrate steps to be undertaken in clean milk product 1393views https://youtu.be/dl9dag5VUcA</p>	

S.No	Type of material	Photograph
10	<p>Clean milk production (Hindi) This video demonstrates steps to be undertaken in clean milk production in hindi 2101 views https://youtu.be/oKfymBSvUQ4</p>	 <p>Clean Milk Production in Hindi 1.7K views 43 likes, 1 comment, Share, Download, Save IVRI- Deemed... 1.6K subscribers SUBSCRIBED</p>
11	<p>Neonatal calf Management (English) This video shows the scientific recommended practices for neonatal calf management 191views https://youtu.be/wXSHzzz9RpI</p>	 <p>NEONATAL CALF MANAGEMENT in English 172 views 11 likes, 0 comments, Share, Download, Save IVRI- Deemed... 1.6K subscribers SUBSCRIBED</p>
12	<p>Neonatal Calf Management (Hindi) This video shows the scientific recommended practices for neonatal calf management (in Hindi language) 507 views https://youtu.be/OmgnEGyZNg8</p>	 <p>NEONATAL CALF MANAGEMENT In Hindi 428 views 14 likes, 0 comments, Share, Download, Save IVRI- Deemed... 1.6K subscribers SUBSCRIBED</p>



Name of the institute: Chandra Shekhar Azad University of Agriculture and Technology, Kanpur (Uttar Pradesh)

S.No	Type of material	Photograph
1	Modernization of poly houses for strengthening capacity building and research programmes of students & faculty under NAHEP- CAAST	
2	NIR Grain analyzer for strengthening capacity building and research programmes of students & faculty under NAHEP- CAAST	

Name of the institute: Bidhan Chandra Krishi Viswavidyalaya, Haringhata (West Bengal)

Sl.	Initiative undertaken	Activity
1	Established a demonstration unit on CA in the University Farm.	
2	Installed of solar energy driven micro irrigation system and operation of 10 HP pump using solar energy	





Name of the institute: Mahatma Phule Krishi Vidyapeeth, Rahuri (Maharashtra)

S.No	Type of material	Purpose	Event photograph
1	<ol style="list-style-type: none"> 1. Tractor (45-60 hp) with power steering and precise controls as power source 2. LASER leveler for precision land preparation 3. Mould board plough, Rotavator, Power Harrow, Roto seeder 4. Precision planters: Vacuum per planter, Belt type 5. Variable rate applicators 6. CNC LASER cutting machine 7. Software's: CREO, Discrete Element Model (DEM), RS-GIS software etc., ANSYS 	Equipment required for carrying out different research activities during the project period	
2	<ol style="list-style-type: none"> 1. Micro-climate monitoring stations 2. Ground platform-based crop and soil sensing 3. Polycarbonate houses with temperature and CO2 controlled environment 4. CO2 application rig 5. Digital lysimeter 6. Automatic Weather Stations 7. Rain out shelter 	Equipment required for carrying out different research activities during the project period	

Collaborations / MOUs with Industry /Higher Educational Institutions

Collaborations with international organizations, industry and other nationally recognised institutes of repute help in orienting students on industry needs and cutting-edge areas of science and technologies, strengthening academic and research facilities etc.

Name of the institute: ICAR - Central Institute of Fisheries Education, Mumbai (Maharashtra)

Sl. No	Institute	Purpose	Photograph
1	The Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia	International training for capacity building of students and faculties for research and education	 <p>A formal letter of intent document from the Central Institute of Fisheries Education (CIFE) - Indian Council of Agricultural Research (ICAR) to the Commonwealth Scientific and Industrial Research Organization (CSIRO). The letter is dated 15/01/2021 and is for the purpose of international training for capacity building of students and faculties for research and education.</p>
2	The Energy and Resources Institute (TERI), New Delhi	Collaboration in energy efficient systems for inland saline areas being used for aquaculture	 <p>A group of approximately ten people, including men and women in professional attire, standing around a large wooden conference table in a meeting room. Some are holding documents, suggesting a formal meeting or presentation.</p>
3	West-Coast Frozen Foods Pvt. Ltd, Surat, Gujarat	Technology transfer possibilities in the field of Fisheries	 <p>A group of five men standing in an office setting. One man in the center is holding a framed certificate or document, and another man to his left is presenting it to him. They are all dressed in business casual attire.</p>
4	ICAR- Central Soil Salinity Research Institute, Karnal, Haryana	Training and capacity building for students and faculty	 <p>A document with text in Hindi and English, featuring a signature at the bottom right. The text appears to be related to training and capacity building, consistent with the purpose listed in the table.</p>

Sl. No	Institute	Purpose	Photograph
5	Asian Institute of Technology, Bangkok, Thailand	International training for capacity building of students and faculties for research, education and development	-
6	French National Institute for Agricultural Research (INRA), France	International training for capacity building of students and faculties for research and education	-

Name of the institute: Mahatma Phule Krishi Vidyapeeth, Rahuri (Maharashtra)

Sr. No.	Institute	Purpose
1.	Washington State University, Pullman, WA, USA	International training for capacity building of MPKV faculties; research and education
2.	Mississippi State University, Starkville, MS, USA	International training for capacity building of MPKV faculties; research and education
3.	Asian Institute of Technology, Bangkok, Thailand	International training for capacity building of MPKV faculties; research and education
4.	International Water Management Institutes (IWMI), Colombo, Sri Lanka	Collaborative research related to water management techniques in climate smart agriculture, trainings on capacity building
5.	Indian Institute of Technology (IITB), Powai, Mumbai	Collaborative research on Micrometeorology, Data sharing of Eddy Covariance Tower,
6.	BIAF Development Research Foundation, Warje, Pune 411058	Village level contingency crop planning, data-exchange and trainings on capacity building
7.	Indian Institute of Remote Sensing (IIRS), Dehradun	Trainings on capacity building for faculties, collaborative research work on RS- GIS, teaching and learning
8.	National Institute of Abiotic Stress Management (NIASM), Malegaon (Kh), Baramati	Trainings on capacity building for students and collaborative research related to climate smart agriculture, teaching and learning
9.	Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad	District, Block and Village level contingency crop planning, compilation and incorporation, suggestions, modifications and trainings on capacity building, teaching and learning

Sr. No.	Institute	Purpose
10.	National Bureau of Soil Science and Land Use Planning (NBSS and LUP), Nagpur	Trainings on capacity building for students, collaborative research related to Natural Resource Management, Data sharing, teaching and learning
11.	Indian Meteorological Department (IMD), Pune	Weather based agro advisory documentation, Agrometeorological data sharing, Forecasting for preparation of advisory
12.	Maharashtra Remote Sensing Application Centre (MRSAC), Nagpur	Trainings on capacity building for students, collaborative research work on RS- GIS
13.	Water and Land Management Institute, Aurangabad	Capacity building for water management in climate smart agriculture
14.	Watershed Organisation Trust (WOTR), Pune	Collaborative research on climate smart agriculture, documentation of weather based agro advisory for management of major field crop
15.	Grass Roots Action for Social Participation (GRASP), Aurangabad	Trainings on capacity building for students and farmers, Collaborative work on development of climate smart villages
16.	Lupin, Pune	Collaborative work on development of climate smart villages with IoT
17.	National Bank For Agriculture And Rural Development (NABARD), Pune	Capacity building and partnership in need based research
18.	KisanHub, St John's Innovation Centre, Cambridge, United Kingdom.	Digital Assets Mapping of MPKV, Rahuri and course content developments
19.	In-tech Harness Pvt. Ltd. A-6, Rane Classic, Someshwarwadi, PUNE Pune MH 411008 IN	To do collaborative research work in IoTs (e.g. Pump controller)
20.	AECOM, USA based multinational (industry partner)	Trainings on capacity building for students
21.	Climate Change Agriculture and Food Security, CCAFS (CGAIR Organization)	Collaborative research on weather modification and climate change
22.	Sahyadri –Agro, Nashik	Trainings to students and farmers based on Processing of agro products
23.	Netafim Irrigation, Pune	To do collaborative research work in water management, training for students

Sr. No.	Institute	Purpose
24.	Jain Irrigation Systems Limited, Jalgaon	Trainings on capacity building for students and farmers, collaborative research related to micro irrigation.
25.	Innosapien Agro. Technologies Pvt. Ltd.	Trainings on capacity building for students related to IOT application in agriculture, to do collaborative research related to IOT
26.	Quantela, Bangalore	Trainings on capacity building for students

Name of the institute: University of Agricultural Sciences, Bangalore (Karnataka)

Sl No.	MoU with (institute)	Purpose
1	ICRISAT, Patancheru, Hyderabad	Student research and collaboration
2	Monsanto India Ltd. Bengaluru	Student research and internship training
3	Corteva Agriscience, Kallinayakanahalli, Gowribidanur, Karnataka	Student research and internship training
4	AVRDC (WVC), Taiwan	Research collaboration
5	IARI New Delhi	Staff and student training
6	North Caroline State University, North Caroline, USA	Student and faculty exchange; exposure visits; ;, Short and midterm trainings for students and faculty; Collaborative research on the topics of mutual interest
7	Friedrich-Schiller-University Jena, Durenberger Str. 159 07743 Jena, Germany	Student and faculty exchange; exposure visits; ;, Short and midterm trainings for students and faculty; Collaborative research on the topics of mutual interest
8	Chandra Shekar Azad University of Agriculture & Technology, Kanpur	Student and faculty exchange programme
9	Jain Irrigation, Jain Plastic Park, Jalgaon, Maharashtra	Technology transfer and training

Name of the institute: Chandra Shekhar Azad University of Agriculture and Technology, Kanpur (Uttar Pradesh)

S. No.	Institute	Purpose
1.	Kasetsart University Bangkok, Bangkok, Thailand	International training for Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
2.	World Vegetable Centre Shanhua, Tainan, Taiwan	International training for Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
3.	Hebrew University of Jerusalem, Israel	International training for Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
4.	Wageningen University & Research, Wageningen Netherland	International training for Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
5.	National Institute of Food Technology Entrepreneurship and Management, Sonapat, Haryana	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
6.	CSIR-Central Food Technology Research Institute Mysuru	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
7.	University of Agricultural Science, GKVK, Bangalore-Karnataka	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
8.	ICAR-Indian Institute of Seed Science, Mau	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
9.	ICAR-Central Institute of Post Harvest Engineering & Technology, Ludhiana -Panjab	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
10.	Indian Agricultural Research Institute, Pusa Campus, New Delhi	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
11.	ICAR-Indian Institute of Vegetable Research Varanasi	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
12.	ICAR-Indian Institute of Vegetable Research Varanasi	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme

S. No.	Institute	Purpose
13.	ICAR-Indian Institute of Millets Research, Rajendranagar, Hyderabad	Capacity building of CSAUA&T, Kanpur Faculties & M.Sc. Ag. /Ph.D. students, research and innovation and faculty exchange programme
14.	Sun Agro Biotech Research Centre Chennai-Tamil Nadu	R&D activity for faculty and M.Sc. Ag/Ph.D. Students

Name of the institute: Bidhan Chandra Krishi Viswavidyalaya, Haringhata (West Bengal)

S. No.	Institute	Purpose
1.	University of Florida, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
2.	Murdoch University, Australia	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
3.	University of Natural Resources and Life Sciences, Vienna, Austria	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
4.	University of Milan, Italy	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
5.	Texas A&M University, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
6.	University of Kentucky, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
7.	Kansas State University, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
8.	University of Wisconsin, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
9.	The Ohio State University, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
10.	Wageningen University, Netherland	Training of faculty and students through visiting scientist and sandwich Ph.D. programme
11.	UC Davis, Cornell, USA	Training of faculty and students through visiting scientist and sandwich Ph.D. programme

S. No.	Institute	Purpose
12.	ICAR-Central Soil Salinity Research Institute, Karnal, Haryana	Training of faculty and M.Sc./M.Tech. students through short visits.
13.	ICAR-Indian Agricultural Research Institute, Pusa, New Delhi	Training of faculty and M.Sc./M.Tech. students through short visits.
14.	ICAR- Indian Institute of Soil Science, Bhopal, Madhya Pradesh	Training of faculty and M.Sc./M.Tech. students through short visits.
15.	ICAR-Central Research Institute for Dryland Agriculture, Santoshnagar, Hyderabad	Training of faculty and M.Sc./M.Tech. students through short visits.
16.	ICAR Research Complex for NEH Region, Umroi Road, Umiam, Meghalaya	Training of faculty and M.Sc./M.Tech. students through short visits.
17.	ICAR Research Complex for Eastern Region, Patna, Bihar	Training of faculty and M.Sc./M.Tech. students through short visits.
18.	International Rice Research Institute (India Programme), Pusa Campus, New Delhi	Training of faculty and M.Sc./M.Tech. students through short visits.
19.	ICAR-Indian Institute of Maize Research, Pau Campus, Ludhiana, Punjab	Training of faculty and M.Sc./M.Tech. students through short visits.
20.	ICAR-Indian Institute of Farming Systems Research, Modipuram, Uttar Pradesh	Training of faculty and M.Sc./M.Tech. students through short visits.

Name of the institute: ICAR-Indian Veterinary Research Institute, Izatnagar (Uttar Pradesh)

S. No.	Institute	Purpose
1.	MJP Rohilkhand University, Bareilly	Capacity building of Faculties and students
2.	Sri Venkateswara Veterinary University, Tirupati (AP)	Capacity building of Faculties and students
3.	Nanaji Deshmukh Veterinary Science University	Capacity building of Faculties and students
4.	BanarasHinduUniversity	Capacity building of Faculties and students
5.	Guru AngadDev Veterinary and AnimalScienceUniversity, Ludhiana, Punjab	Capacity building of Faculties and students
6.	Karnataka Veterinary, Animal and FisheriesSciencesUniversity, Nandinagar, Bidar	Capacity building of Faculties and students

S. No.	Institute	Purpose
7.	Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu	Capacity building of Faculties and students
8.	Indian Institute of Technology, Roorkee	Capacity building of Faculties and students
9.	CCS NIAH, Bagpat	Capacity building of Faculties and students
10.	FAO through, NAHEP	Capacity building of Faculties and students

Name of the institute: Navsari Agricultural University, Navsari (Gujarat)


S. No.	Institute	Purpose	Photograph
1.	Thermo Fischer Scientific, India	Training and development of Pesticide Analysis	<p>MEMORANDUM OF UNDERSTANDING Between Navsari Agricultural University (NAU), Navsari (Gujarat), India and Thermo Fischer Scientific India Pvt. Ltd (Mumbai, Maharashtra) for developing Training and Application Development for Pesticide Residue Analysis</p> <p>WHEREAS: This Memorandum of Understanding (MoU) is made and entered into and is effective from the 1st of the month of January to the year 2019 at Navsari between 1.1. The Navsari Agricultural University (NAU), Navsari, the University established by Government of Gujarat vide Gujarat Act No. 3 of 2004 (Gujarat Agricultural Universities Act 2004) having its Head Office at Sher-e-Kashmir, Navsari, Gujarat, hereinafter referred to as "NAU-Navsari" or "First Party" which expression shall include its successors and assigns of the First Party. And 1.2. Thermo Fischer Scientific India Pvt. Ltd., a private limited company incorporated under the provisions of the Companies Act, 1956, having its office at 403-404, B Wing DLF-1, Hiranandani Business Park, Phase-1, Mumbai - 400129, hereinafter referred to as "Second Party", or "SP" which expression shall include its successors and assigns of the other part.</p> <p>PREAMBLE: 1.3. WHEREAS the "First Party" is known for its contribution to education, reference to research and outreach in extension education, NAU-Navsari was established with the motto of "Setting precedents for imparting higher and lower education in different disciplines viz., Agriculture, Horticulture, Forestry, Veterinary Science and Animal Husbandry, Agribusiness Management, Agricultural Engineering and Technology and other fields of Agriculture and allied sciences the Field Processing Technology, Biotechnology, Fisheries etc., Advancement of education and location specific research in agriculture and allied sciences for all diverse related problems, Imparting intensive extension education programs for transfer of technology and study other academic and research programs as the University may initiate from time to time based on the location specific need and demands including remote sciences.</p> <p>Page 1/6</p>
2.	SUMUL Surat	Training, research and development	<p>Memorandum of Understanding Between Navsari Agricultural University (NAU), Navsari and Surat District Co-operative Milk Producers' Union Limited (SUMUL), Surat for developing Training/Research/Development in partnership mode</p> <p>The Education Division, Indian Council of Agricultural Research had sanctioned a CAAST project entitled "Establishment of Secondary Agriculture Unit for Skill Development in Students and Farmers at NAU, Navsari" under National Agricultural Higher Education Project to Navsari Agricultural University, Navsari on June 13, 2018. The objectives of this project are to acquire B2 students, faculty members and technical project staff with latest technologies in different spheres of secondary education, capacity building, competence development, personal development and its commercialization. This project shall focus on Processing and Waste Utilization in Horticultural Produce, Scientific Utilization of Non-Timber Forest Products and Microbial and Aerobic Fermentation, Establishment of Semi-Scale Climate Resilient Dairy Unit and Pesticide Residue Analysis.</p> <p>This Memorandum of Understanding (hereinafter referred to as MoU) is made on this, 1st of the month of January in the year 2019 by and between the Navsari Agricultural University, Navsari having its headquarters at Navsari (hereinafter called "NAU-Navsari"/"First Party") on the ONE PART and Surat District Co-operative Milk Producers' Union Limited having its Head Office at Surat, Gujarat (hereinafter called "SUMUL"/"Second Party") on the OTHER PART (to be for the purpose of this MoU as hereinafter collectively referred to as the Parties).</p> <p>WHEREAS the "First Party" was established by Government of Gujarat vide Gujarat Act No. 3 of 2004 (Gujarat Agricultural Universities Act 2004) to attain excellence in education, reference to research and outreach in extension education; NAU-Navsari was established with</p>

S. No.	Institute	Purpose	Photograph
3	Paperdom Surat	Training, research and development	
4	Unifeb India Solution, Nashik	Training, research and development	


Component 1c: Innovation Grants

Media coverage of project activities and achievements:

Media plays a critical role in disseminating the focus of the innovative projects, outcomes and impact on the beneficiaries. In order to create the ripple effect and improve the visibility of project, media coverages and advertisements are important tools. The media coverages of NAHEP act as testimony of the successful activities and achievements carried out in awarded AUs under NAHEP. Following are the media coverages under IG component of NAHEP:

S.No	Name of the AU	Subject	Event photograph
1.	Professor Jayashankar Telangana State Agricultural University, (Telangana) Hyderabad	Launch of IG project at AU	
2.	Professor Jayashankar Telangana State Agricultural University, (Telangana) Hyderabad	Publication of knowledge brochure by University IG team	

S.No	Name of the AU	Subject	Event photograph
3.	Swami Keshwanand Rajasthan Agriculture University, Bikaner (Rajasthan)	AU signed MoU with Veterinary University	 <p>वैटरनरी व कृषि विवि में सहयोग व समन्वय का एमओयू</p> <p>श्रीकानेर @ पत्रिका. वैटरनरी विश्वविद्यालय और स्वामी केशवानंद राजस्थान कृषि विवि ने सोमवार को आपसी सहयोग और समन्वय के लिए एमओयू किया है। वैटरनरी विवि के कुलपति सचिवालय में वैटरनरी विवि के कुलपति प्रो. विष्णु शर्मा और एमकेआरयू के कुलपति प्रो.आरपी सिंह ने करार पर हस्ताक्षर कर दस्तावेज एक-दूसरे को सुपुर्द किए। इस अवसर पर कुलपति ने कहा कि कृषि और पशुपालन एक दूसरे के पूरक हैं। इस करार के हो जाने से दोनों ही विवि के शोधार्थी और शिक्षक पशुपालन और कृषि के क्षेत्र में एक-दूसरे के बड़ा तकनीकी संसाधनों का उपयोग कर गुणवत्तायुक्त उत्पादन की नवीन तकनीक की जानने का अवसर मिलेगा। वैज्ञानिकों को अपने कामों के साझा रूप में करने के सुखद परिणाम किसान और पशुपालक समुदाय के लिए लाभकारी होंगे। इस दौरान वैटरनरी कॉलेज के अधिष्ठाता प्रो. राकेश राव, राजस्थान की पी.एम.ई निदेशक प्रो. अंजु चाहर, विशेषाधिकारी प्रो. आर.के धुड़िया, प्रो.एनके शर्मा, प्रो. विमला डुकवाल भी मौजूद थीं।</p>
4.	Swami Keshwanand Rajasthan Agriculture University, Bikaner (Rajasthan)	Seven days workshop organised at AU on Post harvest management and value addition of fruits	 <p>कृषि विश्वविद्यालय में सात दिवसीय प्रशिक्षण सम्पन्न</p> <p>कामयाब कलम रिपोर्टर</p> <p>श्रीकानेर। राष्ट्रीय कृषि उच्च शिक्षा परिषद द्वारा आयोजित 'पोस्ट हार्वेस्टिंग मैनेजमेंट एंड वैल्यू एडिशन ऑफ फ्रूट्स' विषयक सात दिवसीय प्रशिक्षण शुक्रवार को सम्पन्न हुआ। कृषि महाविद्यालय सभागार में आयोजित सम्पन्न सत्र के मुख्य अतिथि स्वामी केशवानंद राजस्थान कृषि विश्वविद्यालय के संस्थापक सदस्य डॉ. एस.के. पुणेहित थे। उन्होंने कहा कि उत्पादन के पश्चात् फलों का मूल्य संवर्धन और मार्केटिंग आज की आवश्यकता है। युवाओं को इस व्यवसाय प्रबंधन संस्थान के निदेशक प्रो. एन.के. शर्मा ने भारत फल उत्पादन में दुनिया में ऊपरी पायदान पर है, लेकिन हमारे द्वारा सिर्फ दो प्रतिशत फलों का मूल्य संवर्धन किया जाता है। इस दिशा में पर्याप्त संभावनाएँ हैं। कोर्स समन्वयक डॉ. पी.के. यादव ने बताया कि प्रशिक्षण में 50 विद्यार्थियों ने भाग लिया। इस दौरान 21 सत्र हुए तथा प्रायोगिक कार्य कराया गया। कार्यक्रम के दौरान डॉ. पुणेहित का अभिनेदन किया गया। इस दौरान सभी प्रतिभागियों को प्रमाण पत्र दिए गए। संस्थान डॉ. राजीव चौराविया ने किया।</p>
5.	Swami Keshwanand Rajasthan Agriculture University, Bikaner (Rajasthan)	MoU signed with RAJUVAS, Bikaner for better education and research	 <p>दैनिक राजस्थानी चिराग • श्रीकानेर • सोमवार • 30 दिसम्बर 2019 3</p> <p>कृषि शिक्षा, प्रसार और अनुसंधान के होंगे साझा प्रयास</p> <p>राजस्थानी चिराग रिपोर्टर</p> <p>श्रीकानेर। स्वामी केशवानंद राजस्थान कृषि विश्वविद्यालय द्वारा कृषि शिक्षा, प्रसार और अनुसंधान के क्षेत्र में शिक्षण विश्वविद्यालयों एवं आइसीएआर संस्थानों के साथ साझा प्रयास किए जाएंगे। इस संदर्भ में सोमवार को विश्वविद्यालय द्वारा राजस्थान वन्य जिनविलास एवं वन्य विज्ञान विश्वविद्यालय और राष्ट्रीय उद्यान अनुसंधान केंद्र के साथ 'एमओयू' पर हस्ताक्षर किए गए। कुलपति प्रो. आर. पी. सिंह ने बताया कि 'संस्थान विश्वविद्यालयों तथा आइसीएआर संस्थानों के संसाधनों, तकनीकों और मैकेनिक का समुचित उपयोग कृषक और पशुपालकों के हित में है, इसे प्राप्त करने हुए विश्वविद्यालय द्वारा सभी संस्थानों को अपने-अपने दिनों कार्यक्षेत्रों को बढ़ाई कार्यक्षेत्रों के दौरान इन संस्थानों द्वारा कृषक कल्याण के लिए साझा प्रयासों की संभावनाओं पर चर्चा किया गया। इसी काम में पहल करना यहाँ हमें सोमवार को दो संस्थानों के साथ एमओयू किए गए। इनके अनुसार अब यह संस्थाएँ एक-दूसरे के संसाधनों, तकनीकों, मैकेनिक, पुस्तकालयों, धर्मोपचारणों का उपयोग किसानों एवं पशुपालकों के कल्याण कार्यों के लिए कर सकेंगी। उन्होंने कहा कि जब सभी संस्थान एक साथ काम करेंगे, तो किसानों और पशुपालकों को अधिक लाभ होगा। उन्होंने इन संस्थानों के सामाजिक जुड़ाव पर जोर दिया।</p>

S.No	Name of the AU	Subject	Event photograph
6.	Bihar Animal Sciences University, Patna (Bihar)	Faculty training on best proposal preparation at AU	<p style="text-align: center;">बिहार पशु विज्ञान विश्वविद्यालय में वैज्ञानिक संचार एवं उचित शोध प्रस्ताव पर प्रशिक्षण सम्पन्न</p>  <p>पटना (बिहार)। बिहार पशु विज्ञान विश्वविद्यालय में वैज्ञानिक संचार एवं उचित शोध प्रस्ताव पर तीन दिवसीय प्रशिक्षण का आयोजन किया गया। कार्यक्रम का उद्घाटन बिहार पशु विज्ञान विश्वविद्यालय के कुलपति डॉ. रामेश्वर सिंह ने किया। उन्होंने उद्घाटन भाषण में सभी वैज्ञानिकों को संबोधित कर कहा कि पशुपालन के क्षेत्र में शोध की अपार संभावनाएँ हैं तथा पशुपालकों की आया एवं पशुओं में होने वाले रोगों की रोकथाम एवं उपचार के लिए नवीनतम शोध किए जाने आवश्यक है। आइसीएआर, सीएसआइआर तथा डीएसटी जैसी राष्ट्रीय स्तर की शोध संस्थाएँ शोध को बढ़ावा देने के लिए इस प्रकार का प्रशिक्षण कार्यक्रम करवा रही हैं। उन्होंने कहा कि मौजूदा प्रशिक्षण आइसीएआर-नाम के द्वारा प्रायोजित है तथा कार्यक्रम का उद्देश्य पशुपालन के क्षेत्र में शोध किए जाने वाले महत्वपूर्ण क्षेत्रों को चिन्हित करना है। कोर्डिनेटर एवं निदेशक शोध डॉ. रविन्द्र कुमार ने सभी को संबोधित करते हुए कहा कि यह प्रशिक्षण 2 जून तक चलेगा तथा प्रशिक्षण में शोध के नवीनतम आयामों से सभी वैज्ञानिकों को अवगत कराया जाएगा। कार्यक्रम में प्रशिक्षणाधीन के रूप में बिहार पशुविक्रम संस्थान के 25 स्टाफिक प्रधानाध्यक्ष मौजूद थे। कार्यक्रम में निदेशक शोध डॉ. रविन्द्र कुमार के अलावा बिहार पशु विज्ञान विश्वविद्यालय पटना के रजिस्ट्रार डॉ. प्रदीप कपूर, डीन पेटनरी डॉ. जेके प्रसाद, डॉ. हंसराज तथा विशेषज्ञ प्रबन्धक डॉ. पी. कृष्ण एवं अनेक कर्मचारी उपस्थित थे।</p>
7.	Bihar Animal Sciences University, Patna (Bihar)	Workshop organised on opportunities in veterinary sciences	<p style="text-align: center;">पशुपालन के क्षेत्र में शोध की अपार संभावनाएं</p> <p>पटना: बिहार पशु विज्ञान विश्वविद्यालय के कुलपति डॉ. रामेश्वर सिंह ने कहा कि पशुपालन के क्षेत्र में शोध की अपार संभावनाएँ हैं। पशुपालकों की आया और पशुओं में होने वाले रोगों की रोकथाम और उपचार के लिए नवीनतम शोध किये जाने की जरूरत है। डॉ. सिंह शुक्रवार को बिहार पशु विज्ञान विश्वविद्यालय में वैज्ञानिक संचार एवं उचित शोध प्रस्ताव पर तीन दिवसीय प्रशिक्षण कार्यक्रम को संबोधित कर रहे थे, उन्होंने कहा कि आइसीएआर, सीएसआइआर और डीएसटी जैसी राष्ट्रीय स्तर की शोध संस्थाएँ शोध को बढ़ावा देने के लिए प्रशिक्षण कार्यक्रम करवा रही हैं। कोर्डिनेटर और निदेशक डॉ. रवींद्र कुमार ने बताया कि यह प्रशिक्षण 2 जून तक चलेगा और शोध के नवीनतम पर चर्चा की जायेगी। मौके पर डॉ. प्रदीप कपूर, डीन पेटनरी डॉ. जेके प्रसाद, डॉ. हंसराज सहित दर्जनों लोग उपस्थित थे।</p>

S.No	Name of the AU	Subject	Event photograph
8.	Bihar Animal Sciences University, Patna (Bihar)	Workshop organised for Faculty development at AU	 <p>पशु रोगों की रोकथाम के लिए नए शोध जरूरी</p> <p>पटना / हिन्दुस्तान ब्यूरो</p> <p>पशुपालन के क्षेत्र में शोध की अपार संभावनाएं हैं। पशुपालकों की आय में वृद्धि और पशुओं में होने वाले रोगों की रोकथाम, उनके उपचार के लिए नवीनतम शोध की आवश्यक है। बिहार पशु विज्ञान विश्वविद्यालय के कुलपति डॉ. रामेश्वर सिंह ने गुरुवार को ये बातें कही। वे बिहार पशु विज्ञान विश्वविद्यालय में 'वैज्ञानिक संचार एवं उचित शोध प्रस्ताव' पर शुरू हुए तीन दिवसीय प्रशिक्षण समारोह में बोल रहे थे। उन्होंने कहा कि शोध कार्य से ही परंपरागत पशुपालन को आधुनिक देशों की तरह वैज्ञानिक और बहुउपयोगी बनाया जा सकता है। कहा कि राष्ट्रीय स्तर की संस्थाएं शोध कार्य को बढ़ावा देने के लिए कई तरह के प्रशिक्षण कार्यक्रम आयोजित कर रही हैं। कार्यक्रम का उद्देश्य पशुपालन के क्षेत्र में शोध किए जाने वाले महत्वपूर्ण क्षेत्रों को चिह्नित करना भी है। कोऑर्डिनेटर एवं निदेशक शोध डॉ. रवींद्र कुमार ने कहा कि यह प्रशिक्षण दो जून तक चलेगा। प्रशिक्षणार्थी के रूप में बिहार पशुचिकित्सा महाविद्यालय, पटना व संजय गांधी गव्य तकनीकी संस्थान के 25 सहायक प्राध्यापक मौजूद रहे। कार्यक्रम में बिहार पशु विज्ञान विश्वविद्यालय पटना के रजिस्ट्रार डॉ. प्रदीप कपूर, डीन वेटनरी डॉ. जेके प्रसाद, डॉ. हंसराज तथा विशेषज्ञ डॉ. पी. कृष्ण मौजूद रहे।</p>
9.	Professor Jayashankar Telangana State Agricultural University, Hyderabad (Telangana)	Workshop organised on Online knowledge management centre establishment	 <p>పశు వైద్యశాలలకు ఆన్‌లాइन లెక్చర్ల కోసం ప్రణాళిక</p> <p>హైదరాబాద్: జయశంకర్ తెలంగాణ ప్రభుత్వం పశు వైద్యశాలలకు ఆన్‌లాइन లెక్చర్ల కోసం ప్రణాళిక చేపట్టింది. జయశంకర్ తెలంగాణ ప్రభుత్వం పశు వైద్యశాలలకు ఆన్‌లాइन లెక్చర్ల కోసం ప్రణాళిక చేపట్టింది. జయశంకర్ తెలంగాణ ప్రభుత్వం పశు వైద్యశాలలకు ఆన్‌లాइन లెక్చర్ల కోసం ప్రణాళిక చేపట్టింది.</p>

Establishment of facilitative Centres to strengthen academic and research infrastructure

Under ICAR-NAHEP, awarded AUs have established fully equipped facilitative centers to strengthen the research and teaching effectiveness of faculties and students' learning outcomes. The key outcome envisaged through establishment of these facilitative Centres in AUs under IG component is to attain and sustain the accreditation with revised norms and standards.


Name of the institute: Kamdhenu University, Amreli (Gujarat)

S. No	Type of facilitative centre	Brief
1	Establishment of Experiential Learning Unit	<ul style="list-style-type: none">This facility will be explored for Student READY (Rural Entrepreneurship Awareness Development Yojana) Programme, Experiential Learning module recommended in Fifth Dean Committee Report by ICAR.
		

Innovations/Out of box initiatives


Following are the innovations and out of box initiatives undertaken in IG component:

Name of the institute: Bihar Animal Sciences University, Patna (Bihar)


S. No	Initiative	Brief	Photograph
1	Asia's first virtual dissection table at Bihar Animal Sciences University, Patna	<ul style="list-style-type: none">• The virtual dissection table (VDT) is an interactive, touch screen-enabled table simulation tool that allows students, teachers and clinicians to see and manipulate life size CT-Scans and MRI scans of real animal/human bodies.• The VDT allows navigation in three dimensions through detailed anatomical structures. This further allows users to go for 'virtual dissection' i.e., slicing open virtual bodies by subtracting entire layer of tissues one by one. It is an advanced tool enormously complimenting the textbooks in learning anatomy. The table's ability to quickly add and remove different tissues in three-dimensional view at any angle speeds up the learning process and provides more insight even than the actual dissection performed on cadavers.• This table is also highly useful for training clinicians as it speeds up the learning of surgical procedure by many folds. The virtual dissection table allows users to learn orientation/structural relationships of different organs. The table suits to cater the Individual learning needs as it can be tailored to fit once requirement.• It has the potential of being used as valuable starting tool in devising and practicing newer surgical techniques. The use of virtual dissection table in teaching anatomy has greatly transformed the whole teaching-learning experience of the students.	



Scientific Educational Material Generated in Field/Laboratory/Classroom

Name of the institute: Bihar Animal Sciences University, Patna (Bihar)

S. No	Type of establishment	Activity	Photograph
1	Establishment of Alumni-cum-Placement Cell	<ul style="list-style-type: none"> There was 53% increase in campus placement among the students of Bihar Animal Sciences University, Patna. For the first time Bihar Rural Livelihoods Promotion Society – Jeevika and COMFED made campus recruitment of passing out graduates of Bihar Veterinary College, Patna. Alumni cell too has been made functional and executive committee has been reconstituted and annual meet of the Alumni Association has been planned 	


Name of the institute: Kamdhenu University, Amreli (Gujarat)

S.No	Type of establishment	Activity	Photographs
1	ICT enabled Classroom facilities	<ul style="list-style-type: none"> Use of interactive panel has enabled integration of all audio, video teaching material with traditional board work. 	

S.No	Type of establishment	Activity	Photographs
2	Computer Laboratory with Digital Language Lab software	<ul style="list-style-type: none"> Computer lab equipped with Language Lab software and hardware as well as Moodle base E-course facility for dynamic learning and get outcome through this facility 	
3	Digitization of Library Facility with RFID system	<ul style="list-style-type: none"> 24 x 7 hours access of digital library facility to the students and faculties. Digitalization of library facility also result in increased footfall of students and faculty members (30% to 60%). Automation of library with RFID system, students can self-check in /check out and utilize tracking functions too. 	

Collaborations / MOUs with Industry /Higher Educational Institutions

Name of the institute: Kamdhenu University, Amreli (Gujarat)

S.No	MoU with (Institute)	Purpose of MoU	Photograph
1	MoUs signed between Kamdhenu University & Kold College, Denmark	<ul style="list-style-type: none"> This will be an opportunity to materialized collaboration activity of MoU signed between both the institution for mutual benefits of learning new skill, academia and knowledge generation. The advances in Kold College, Denmark can be adopted as per the need in College of Dairy Science, Kamdhenu University, Amreli. To check possibility of joint students and faculties exchange programmes and virtual exchanges and joint online projects 	

Component 2: Investments in ICAR leadership in Agricultural Higher Education

Success stories

Success stories

Agriculture University- Academic Management System (AMS)

Academic Management System (AMS) has been implemented and customized under NAHEP Component 2 project “Investment in ICAR leadership in Agricultural Higher Education” at ICAR-Indian Agricultural Statistics Research Institute (IASRI) for various Agricultural Universities. It is a web enabled system for management of all the various academic activities of the university. The system caters to the needs of different users: Dean, Registrar, Professor, Head, Guide, Faculty, Teacher, Student, Administrators and Officials for performing their assigned tasks. A System has been designed in a modular approach with in-built work flows. System ensures that the individuals responsible for the next task are notified and receive the data they need to execute at their stage of process. At present five modules have been envisaged viz., Student Management, Faculty Management, Course Management, Administration Management and E-Learning.

Modules of Academic Management System

Academic Management System automates various academic processes of the university and will enhance the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- **Courses Management:** Manages the courses offered by all the state agricultural universities, central agricultural universities’ and ICAR institutions imparting higher education in agricultural and allied sciences.
- **Student Management:** Provides an interface for students to register themselves and allows the management to manage the enrollment, their course work, semester wise progress and examination results.
- **Faculty Management:** Manages the work flow of various tasks performed by faculty members in an organized and unambiguous way.
- **Administration Management:** It manages all the administrative work on the click of mouse. It enhances the overall efficiency of the university academic processes and their by reducing the turnaround time for each process output.
- **E-Learning:** E-Learning is a learning system based on formalized teaching with the help of electronic resources. The system manages the lecture schedule of each course and various types of e-learning resources (such as lecture note, assignment, power point, reference material) can be attached to each lecture.
- **Online fee collection:** Online fee collection platform is integrated with multiple payment gateways, banks and digital wallets. It enables university to accept various types of fee and fines online. It saves time and increases transparency.



Academic Management System Assam Agricultural University, Jorhat



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First Semester Registration Process Starts From 1st August 2019.



Login

Register

The embryo of the agricultural research in the state of Assam was formed as early as 1897 with the establishment of the Upper Shillong Experimental Farm (now in Meghalaya) just after about a decade of creation of the agricultural department in 1882. However, the seeds of agricultural research in today's Assam were sown in the dawn of the twentieth century with the establishment of two Rice Experimental Stations, one at Karimganj in Barak valley in 1913 and the other at Dibrugarh in Brahmaputra valley in 1923. Subsequent to these research stations, a number of research stations were established to conduct research on important crops, more specifically, jute, pulses, oilseeds etc. The Assam Agricultural University was established on April 1, 1969 under The Assam Agricultural University Act, 1968 with the mandate of imparting farm education, conduct research in agriculture and allied sciences and to effectively disseminate technologies so generated. Before establishment of the University, there were altogether 17 research schemes/projects in the state under the Department of Agriculture. By July 1973, all the research projects and 10 experimental farms were transferred by the Government of Assam to the AAU which already inherited the College of Agriculture and its farm at Barbhete, Jorhat and College of Veterinary Sciences at Khanapara, Guwahati. . About AMS

New Updates

- NAHEP Component-2 Workshop

Resources

- White Book
- Reference Manual (Faculty)
- Reference Manual (Students)
- Academic Calendar 2019-20



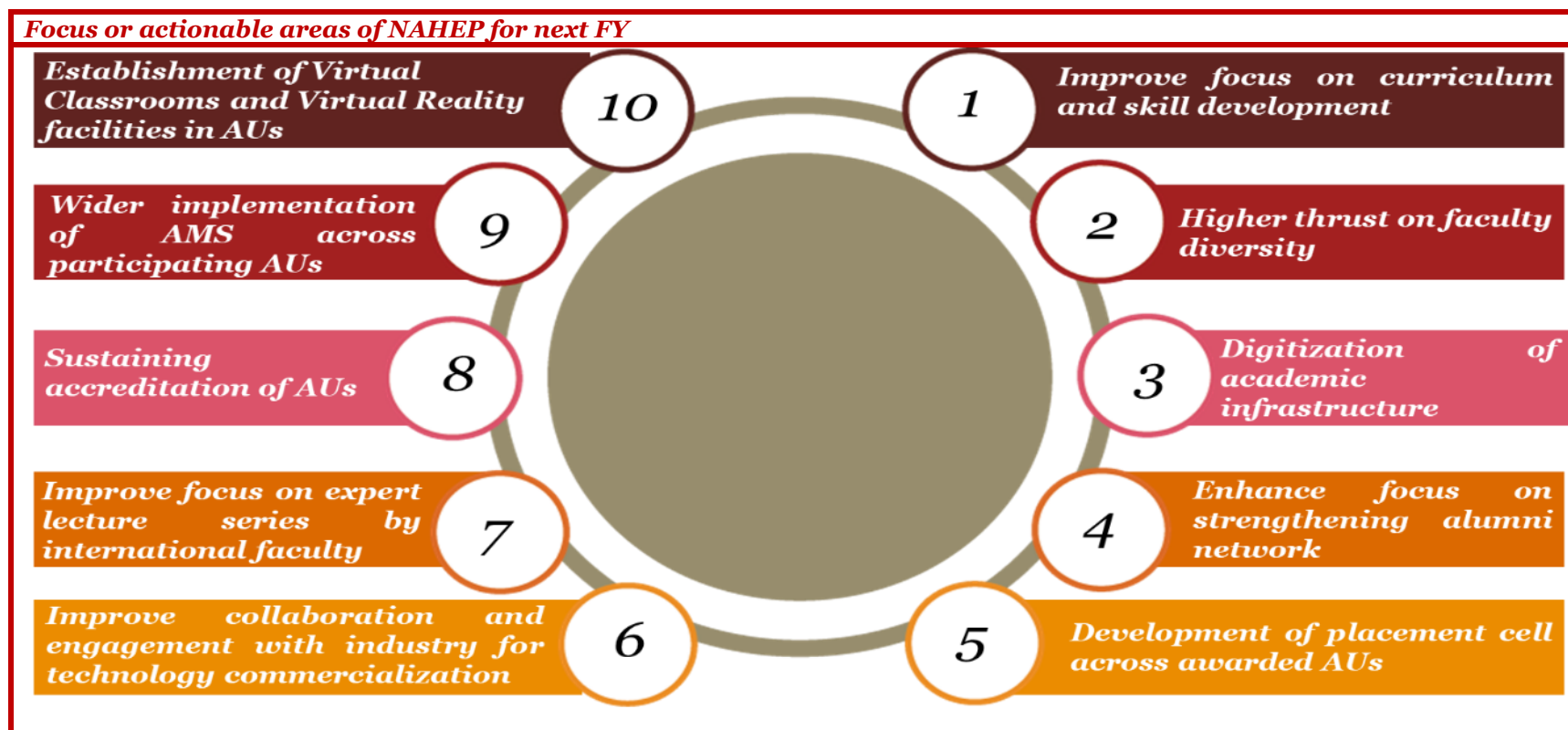
Implemented Under NAHEP Component-II
Division of Computer Applications
ICAR-IASRI, Library Avenue, Pusa, New Delhi - 110 012 (INDIA)



Homepage of the AMS-AAU Jorhat

Way forward

The key focus or actionable areas under different components of NAHEP, planned for the next reporting period will form the basis of documentation and effective dissemination of NAHEP learnings. Following are the major action points identified for next FY:



In addition to learnings and achievements made and documented so far, it is envisaged that the other opportunities for sharing and dissemination would further evolve, once the project progresses. Exposure visits among AUs, Experience sharing workshops, documentation of case studies, documentaries, newsletters, brochures, project website, external reviews and project evaluation will be the major sources of documentation and dissemination methodologies of NAHEP learnings.

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