

Growth and Development of Agricultural Universities Education, Research and Libraries in India: a case study

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Abstract

Development of agricultural education and research in India for the Year 1949 to 2004 and also landmarks of agricultural education is 1952 to 2009. The first state agricultural university was established in 1960. World ranking agricultural universities in India as on based 2017 the first rank is Indian Agricultural Research Institute was Indian rank is 43 and world rank is 2277 and also RVS horticulture college was Indian rank 3900 and world rank 26108. In India 83 state wise agricultural universities was established.

Keyword: Agricultural Education, World Ranking and State Wise Universities

Introduction

Traces the growth and development of agricultural universities education in India and also gives an overview of the past and reviews the present structure of education in agriculture and allied subjects at various levels in India.

Agriculture is the main source of livelihood for over 80% of the rural poor in India. Although, it employs about 52% of the labour force, it contributes to only 14.4% of GDP and 10.23% of all exports. Any effort of poverty reduction and economic development must address the problems being faced by the agricultural sector and turn the challenges into economic opportunities for the poor.

India achieved spectacular agricultural growth since 1966. The increase in food grain production from a meagre 51 million tonnes in 1950 to about 245 million tonnes in 2011-12 is a remarkable achievement unparalleled in the history of world agriculture. Similar enhancement in production of milk, fish, oilseeds and fruit & vegetables has also been observed. Green, blue, yellow and white revolutions have been responsible for bringing in prosperity to the farming community. The cradle of the success, besides government policies and high receptivity of the farming community, has been the establishment of institutions of higher agricultural education. These institutions developed new breed of skilled human resource that were instrumental in not only generating new technologies but also in their assessment, refinement and dissemination to the farming community.

Human Resource development is critical for sustaining, diversifying and realizing the potentials of agriculture. Agricultural human resource development is a continuous process being undertaken through partnership and efforts of the components of the Indian Council of Agricultural Research (ICAR) - Agricultural Universities (AUs) System comprising 53 State Agricultural Universities (SAUs), five Deemed to be universities (DUs), one Central Agricultural University

(CAU) and four Central Universities (CUs) with Agriculture Faculty. The Agricultural Universities in India set up on the 'land grant' pattern of USA have contributed immensely to human resource development as well as enhancement of agricultural productivity and production in the country over the years. The system of education in Agricultural Universities was basically taken from USA pattern that greatly enabled incorporation of a number of diverse subjects in the courses as also provision of hands-on practical experience to the students.

The ICAR provides support for policy, quality assurance through accreditation, common academic regulations, updated and contemporary course curricula and delivery systems, improvement of faculty competence, promoting excellence through scholarships/fellowships, Niche areas of excellence, experiential learning, National Professors, National Fellows, Emeritus Scientists, admissions of students through All India competitions, modernization of farms, IT support and up-gradation of infrastructure and facilities including libraries. It is however, recognized that the major support comes from the respective state governments.

With a view to provide legal base for establishment and functioning of agricultural universities, the Government of India appointed an Agricultural University Committee headed by Dr. Ralph W. Cummings in 1960. This Committee submitted its report in 1962 in the form of a Model Act. The ICAR further developed this recommendation and brought out its first Model Act for State Agricultural Universities in 1966. The intent was to help to bring about uniformity in the Acts of SAUs and its governance structure and organization. The Model Act was revised in 1984, 1994 and again in 2009.

The State Agricultural Universities are established through the Legislative Act of the respective State and with major financial support from them leading to administrative and policy controls. ICAR is vested with

the authority to promote and ensure quality assurance in agricultural education, as per the decision of the cabinet in 1973. In discharge of this function the ICAR has taken a number of initiatives for agricultural education. During Agricultural Human Resource Development Project (1995-2000), many reforms were put in place which inter-alia include establishment of the Accreditation Board for quality assurance, measures for reducing inbreeding, new curriculum and delivery, faculty competence enhancement, infrastructure development, access to information, modernization of libraries, emphasis on education technology etc.

The ICAR continues to provide professional and partial financial support to them for enhancing the quality, relevance and access of higher agricultural education. Currently, the support is for policy, quality assurance through accreditation, common academic regulations, course curricula and delivery systems, improvement of faculty competence, promoting excellence through scholarships/fellowships, Niche areas of excellence, experiential learning units, National Professors, National Fellows, Emeritus Scientists, admissions of students through All India competitions, modernization of farms, IT support and up-gradation of infrastructure and facilities including libraries. Recent initiatives include new UG and PG curriculum based on IV Deans' Committee and National Core Group recommendations, introduction of experiential learning and Niche Areas of Excellence, availability of 1700 Journals on line through Consortium for e-Resources in Agriculture (CeRA), fellowships (SRF and International Fellowships) and National Testing Service (NTS), strengthening Centres of Advanced Studies, introduction of the Adjunct Professor Scheme and modernization of AU farms etc. In addition, good support has been provided under X and XI Plan for improving and modernizing infrastructure for teaching-learning.

Agricultural education system in India distinctly evolved during pre independence era on the British system of education and post-independence era on the US Land Grant Colleges pattern. The available records show that the earliest agriculture college was established at Saidapet (near to present day Chennai city) in 1877. It was followed by setting up of the first Veterinary College in the undivided India at Lahore (now in Pakistan) in 1882. A three-year Veterinary Science course was started in 1884 at Parel, Bombay. It was in 1889, when real beginning of research started with the launch of an Imperial Bacteriological College at Poona. Besides those mentioned above, some more Veterinary Colleges were founded at Calcutta (1893) and Madras (1903).

Also as a sequel to the 1876-78 famine, Lord Curzon - the then Viceroy of India (1898-1905),

realized that the government must pay priority and urgent attention to the development of agriculture. Thus, in the beginning of the 20th century, an Agricultural Research Institute each at Pusa in Darbhanga district (now Samastipur) of Bihar (subsequently named Imperial and now Indian Agricultural Research Institute) and Coimbatore in the present-day Tamil Nadu were established in 1905. Agricultural Colleges were also established at Kanpur, Lyalpur (now in Pakistan) and Nagpur in 1906, Poona in 1907 and Sabour in 1908. Following the initiation of the graduate level programmes by the Agricultural Research Institute beginning 1905, a two-year postgraduate diploma, also known as "IARI Associate ship", was initiated at the then Imperial Agricultural Research Institute, Pusa in 1923.

On the recommendations of the Royal Commission on Agriculture (1928), Imperial (now Indian) Council of Agricultural Research was created in 1929 to provide further impetus and support to the already existing Agricultural Research Institutes. In the early 1930s, postgraduate programmes leading to M.Sc. and Ph.D. degrees in agriculture were started. The Madras Veterinary College with affiliation from the University of Madras in 1936 launched a 4-year B.V.Sc. course. Further thrust to veterinary education was given with the establishment of five more veterinary colleges between 1946 and 1948 at Mathura (1946), Rajendra Nagar (1946), Jabalpur (1948), Jorhat (1948) and Hisar (1948). Before the start of these veterinary colleges, a degree courses in agricultural engineering began in the early 1940s at the Allahabad Agricultural Institute (now a deemed to be university). By 1947 - the year of India's independence, there were 17 agricultural colleges affiliated to general universities.

After independence, Govt. of India appointed University Education Commission under the Chairmanship of Dr. S. Radhakrishnan to review higher education and suggest measures for meeting the future requirement of the country. The Commission recommended that Agricultural Education be recognized as a major national priority so that the country is able to feed itself. The Commission recommended establishment of autonomous rural universities and accord them same facilities as were available to other universities including substantial grant-in-aid from the centre for development. Based on Dr. S. Radhakrishnan Commission on University Education and subsequent two Joint Indo-American Study Teams (1955, 1959) recommendations, first agricultural University was set up in Pantnagar in 1960, which paved the way for establishment of agricultural universities in other states.

Development of Agricultural Education and Research in India

Table 1: Landmarks of Agricultural Education

Sl. No.	Milestone	Year
1.	First University Education Commission (Dr. Radhakrishnan)	1949
2.	First Indo-American Team on Agricultural Education (Damale Committee)	1955
3.	Second Indo-American Team on Agricultural Education (Randhawa Committee)	1959
4.	First Agricultural University, Pantnagar	1960
5.	Ralph W. Cummings Committee	1960
6.	University Education Commission (Dr. D.S. Kothari)	1966
7.	Dr. Gajendragadkar Committee	1972
8.	High Power ICAR Review Committee	1987
9.	Model Act for SAUs	1994
10.	Dr. R.A.Mashelkar Committee	2004
11.	Task Group on Revamping and Refocusing of NARS (National Agricultural Research System)	2004

Table 2

Sl. No.	Landmarks	Year
1	Indian Council of Agricultural Education (ICAE) set up (worked up to 1964 under ICAR).	1952
2	First 'Deemed University' status bestowed on IARI.	1958
3	Chief of Agricultural Education and ex-officio Secretary to ICAE appointed.	1959
4	Emergence of SAUs, starting with Pantnagar, based on the recommendations of Joint Indo-American Teams.	1960
5	Standing Committee on Agricultural Education replaced the Education Panel.	1965
6	ICAR reorganization with four Divisions including Agricultural Education.	1965
7	ICAR developed Model Act for Agricultural Universities in India.	1966
8	Second reorganization of ICAR with the establishment of Department of Agricultural Research and Education (DARE) to provide greater autonomy to ICAR, and Regional Committees to take care of regional needs, and creation of Agricultural Research Services (ARS) and Agricultural Scientists Recruitment Board (ASRB).	1973
9	Norms and Accreditation Committee (NAC) replaced Standing Committee on Agricultural Education.	1974
10	G.V.K. Rao Committee recommendations to revamp the functioning of ICAR including its role in Agricultural Education.	1988
11	Agricultural Human Resource Development (AHRD) project, with World Bank Support, launched (ended in 2001).	1995
12	Accreditation Board established replacing NAC.	1996
13	IV Deans Committee revised UG course curricula and syllabi, and norms, standards and academic regulation.	2007
14	National Core Group revised PG (Master's and PhD) course curricula and syllabi and the common academic regulations.	2009

Agricultural Education - Present Setup

Establishment of Post Graduate School at IARI in 1958 was a landmark step that heralded establishment of agricultural universities in India. Today, we have a net work of 53 State Agricultural Universities (SAUs, including 16 specialized Veterinary and Animal Sciences and Horticulture and Forestry Sciences Universities), one Central Agricultural University (CAU), five Institutes having Deemed-to-be-Universities (DUs) status (four of them are ICAR Institutes: IARI, New Delhi; IVRI, Izatnagar; NDRI,

Karnal and CIFE, Mumbai and, the fifth Allahabad Agricultural Institute, Allahabad) and four Central Universities (CUs) with Agriculture faculty (BHU, Varanasi; AMU, Aligarh; Vishwa Bharti, Shantiniketan and Nagaland University, Medziphema). The universities are modelled on US land grant university pattern with integration of education, research and extension education and, have contributed a great deal in propelling agricultural growth in the country. With about 265 constituent colleges having about 35,000 student intake capacity, the AUs impart education in 11

major disciplines at undergraduate and about 95 subjects at post-graduate level. In higher agricultural education, about 55% students are from rural background and, on an average, 36% are the girl students. Besides, the IIT, Kharagpur imparts education in the field of Agricultural Engineering, and about 100 privately owned colleges, majority of them affiliated to general universities while some, particularly in the States of Maharashtra and Chhattisgarh, affiliated to SAUs, impart higher agricultural education to over 10000 students annually.

India, predominantly an agricultural country, has significantly improved the well-being of its people in recent decades. However, poverty remains India's most compelling challenge. With over half a century of development, agricultural education and research have been instrumental in ushering in a Green Revolution in the country. The United States land-grant colleges' model of teaching, research, and extension began in India in 1962 with the establishment of the first university specializing in agriculture. During the past 60 years, agricultural education has expanded rapidly in India to meet the nation's demand for human resources and agricultural technology. Currently, India has a total of 41 agricultural universities with a mandate for teaching, research, and extension in each of the states or regions. The Indian Council of Agricultural Research (ICAR), an apex body established by the government of India, oversees the working and accreditation aspects of the State Agricultural Universities.

Agriculture in India, since ancient times, is the most crucial sector for ensuring food and nutritional security, sustainable development and for the alleviation of poverty. It is the key sector in India for generating employment opportunities for the vast majority of the population particularly in rural areas. The chapter aims to explore the many facets related to agricultural education, research, training, and libraries in India in order to provide a historical account on these aspects. The chapter discusses in detail the various committees and commissions and their salient recommendations leading to the expansive growth and development of agricultural education, research, and libraries in India. Further, highlights the critical role of the Indian Council of Agricultural Research in the growth and development of agricultural education, research, extension, and libraries.

Agriculture has evolved in India over thousands of years, and early agricultural practices are well documented in Upanishads and Vedas. However, there was no formal system for agricultural education until 1877.

The first State Agricultural University (SAU) was established in 1960 at Pantnagar, as UP was the only

State which developed a blue-print to establish an SAU on 16000 acre Government farm (the Tarai State Farm). Government agreed to the setting up of the Agricultural University at Pantnagar only as an experimental measure. Soon, new SAUs were established at Bhubaneswar (1962) and Ludhiana (1962), Hyderabad (1964), Jabalpur (1964), Bangalore (1965), and others. Today there are 100 universities/institutions imparting agricultural education in the country.

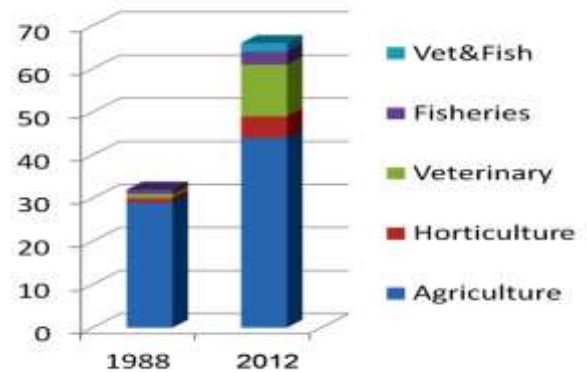


Fig. 1

The salient features of the SAUs are: (a) integration of teaching, research and extension functions at all levels, (b) course-credit pattern of education with continuous internal evaluation, (c) teaching through constituent colleges with no provision for affiliated colleges, (d) organizational and operational autonomy, and other features related to overall improvement in social and economic conditions of rural areas. Later the Education Commission (1964-66) recommended establishment of at least one Agricultural University in each State. The Indian Council of Agricultural Research developed a Model in 1966 which could be adopted with such changes as were deemed necessary by the newly developed Agricultural University.

In 2014, Tamil Nadu Agricultural University (TNAU) was judged as the best SAU at 74 position followed by IARI at 138 position and Haryana Agriculture University (HAU) at 254 position amongst the Indian Universities in the Web Ranking, whereas Nanyang Technological University, Singapore (NTU) Ranking of world Universities, among the top 300 universities only IARI was represented at 210 position based on quality of publications and their citations. ICAR has instituted a prestigious award to encourage one SAU/DU every year, to encourage agricultural education.

World Ranking Agricultural Universities in India 2017

Table 3

Sl. No.	Institute/University	Indian Rank	World Rank
1	Indian Agricultural Research Institute	43	2277
2	Tamil Nadu Agricultural University	68	2699
3	National Dairy Research Institute	120	3289
4	Govind Ballabh Pant University of Agriculture & Technology	130	3443
5	Punjab Agricultural University Ludhiana	137	3511
6	University of Agricultural Sciences Bangalore	153	3752
7	Anand Agricultural University	166	3974
8	Guru Angad Dev Veterinary & Animal Science University	173	4084
9	Indian Veterinary Research Institute	177	4154
10	Maharana Pratap University of Agriculture and Technology	213	4678
11	Tamil Nadu Veterinary and Animal Sciences University	234	5081
12	Assam Agricultural University	260	5624
13	Kerala Agricultural University	263	5672
14	Sam Higginbottom Institute of Agriculture, Technology & Sciences (Allahabad Agricultural Institute)	270	5790
15	Junagadh Agricultural University	279	5976
16	Bidhan Chandra Krishi Viswavidyalaya	284	6078
17	Lala Lajpat Rai University of Veterinary and Animal Sciences	289	6146
18	Navsari Agricultural University	296	6256
19	University of Agricultural Sciences Dharwad	307	6561
20	Kerala Veterinary and Animal Sciences University	315	6769
21	Dr Y S Parmar University of Horticulture and Forestry	343	7362
22	Sher-E-Kashmir University of Agricultural Sciences & Technology of Kashmir	351	7521
23	MIT College of Food Technology	366	7910
24	Acharya N G Ranga Agricultural University	385	8271
25	Dr Y S R Horticultural University Andhra Pradesh	435	9089
26	West Bengal University of Animal and Fishery Sciences	453	9439
27	Karnataka Veterinary Animal and Fisheries Sciences University	472	9743
28	Indian Council of Forestry Research and Education	516	10314
29	Orissa University of Agriculture & Technology	555	10833
30	Kerala University of Fisheries and Ocean Studies	603	11455
31	Sher-e- Kashmir University of Agricultural Sciences & Technology of Jammu	616	11631
32	Jawaharlal Nehru Krishi Vishwa Vidyalaya	624	11733
33	Central Institute of Fisheries Technology	720	12644
34	Maharashtra Animal & Fishery Sciences University	735	12832
35	Uttarbanga Krishi Vishwa Vidyalaya / North Bengal Agricultural University	739	12844
36	Indira Gandhi Krishi Vishwavidyalaya	774	13175
37	Rajasthan Agricultural University	781	13234
38	Birsa Agricultural University	807	13509
39	University of Horticultural Sciences Bagalkot	809	13523
40	Dr Balasaheb Sawant Konkan Krishi Vidyapeeth	836	13754
41	Mahatma Phule Agricultural University / Mahatma Phule Krishi Vidyapeeth	884	14162
42	Chandra Shekhar Azad University of Agriculture & Technology Kanpur	923	14563
43	Rajendra Agricultural University	967	14863
44	Sardar Vallabh Bhai Patel University of Agriculture and Technology	1009	15153
45	Central Institute of Agricultural Engineering	1089	15725

46	Central Agricultural University	1094	15751
47	Rajasthan University of Veterinary and Animal Sciences	1114	15881
48	Bihar Agriculture University	1145	16088
49	Forest Research Institute	1160	16245
50	National Institute of Agricultural Marketing	1200	16504
51	Vasant Rao Naik Marathwada Krishi Vidyapeeth Parbhani	1338	17283
52	College of Technology and Engineering Maharana Pratap University of Agriculture and Technology	1361	17426
53	Narendra Deva University of Agriculture and Technology	1395	17638
54	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya double-dagger	1427	17797
55	Sri Venkateswara Veterinary University	1430	17805
56	Tamil Nadu Fisheries University	1507	18133
57	Sam Higginbottom Institute of Agriculture, Technology & Sciences (Allahabad Agricultural Institute)	1568	18417
58	University of Agricultural Sciences Raichur	1659	18918
59	College of Dairy and Food Science Technology Maharana Pratap University of Agriculture & Technology	1768	19435
60	Sardarkrushinagar Dantiwada Agricultural University	1784	19524
61	Kerala Agricultural University	2076	20867
62	College of Fisheries CAU Lembucherra Tripura	2102	20954
63	Pandit Jawaharlal Nehru College of Agriculture & Research Institute	2104	20958
64	College of Agricultural Engineering and Post Harvest Technology	2282	21666
65	University of Agricultural and Horticultural Sciences Shimoga	2308	21760
66	College of Agribusiness Management Pantnagar	2383	21987
67	College of Veterinary Sciences and Animal Husbandry Selesih	2791	23440
68	Rani Lakshmi Bai Central Agricultural University	2849	23595
69	College of Agricultural Engineering Bapatla	2973	23972
70	Thanthai Roever Institute of Agriculture and Rural Development	3052	24166
71	Agricultural College Bapatla	3204	24561
72	Kelappaji College of Agricultural Engineering and Technology	3358	24956
73	D Y Patil College of Agricultural Business Management	3400	25061
74	RVS Horticulture College	3900	26108

Following is the list of agricultural universities in India, by state or territory. Although a number of Indian universities offer agricultural education, the Indian Council of Agricultural Research - the main regulator of agricultural education - recognizes 65 universities as Agricultural Universities (AUs).

Sl. No.	States	Universities	No's
1	Andhra Pradesh	<ul style="list-style-type: none"> ✓ Acharya NG Ranga Agricultural University, www.angrau.ac.in Guntur, Andhra Pradesh ✓ Dr. Y.S.R. Horticultural University, Venkataramannagudem, Tadepalli Gudem Mandal, West Godavari District ✓ Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh 	3
2	Assam	<ul style="list-style-type: none"> ✓ Assam Agricultural University, Jorhat 	1
3	Bihar	<ul style="list-style-type: none"> ✓ Bihar Agricultural University, Bhagalpur ✓ Dr. Rajendra Prasad Central Agriculture University, Samastipur 	2
4	Chhattisgarh	<ul style="list-style-type: none"> ✓ Indira Gandhi Agricultural University, Raipur 	1
5	Gujarat	<ul style="list-style-type: none"> ✓ Anand Agricultural University, Anand ✓ Junagadh Agricultural University, Junagadh ✓ Navsari Agricultural University, Navsari ✓ Sardarkrushinagar Dantiwada Agricultural University, Banaskantha 	4
6	Haryana	<ul style="list-style-type: none"> ✓ Chaudhary Charan Singh Haryana Agricultural University, Hisar ✓ Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar ✓ National Dairy Research Institute, Karnal 	3
7	Himachal Pradesh	<ul style="list-style-type: none"> ✓ Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishva Vidyalaya, Palampur ✓ Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Solan 	2
8	Jammu and Kashmir	<ul style="list-style-type: none"> ✓ Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, Jammu ✓ Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Srinagar 	2
9	Jharkhand	<ul style="list-style-type: none"> ✓ Birsa Agricultural University, Kanke ✓ Sai Nath University, Ormanjhi ✓ Jharkhand Rai University, Ratu Road ✓ Indian Agricultural Research Institute, Jharkhand 	4
10	Karnataka	<ul style="list-style-type: none"> ✓ University of Agricultural Sciences, Bangalore ✓ University of Agricultural Sciences, Dharwad ✓ University of Agricultural Sciences, Raichur ✓ University of Horticultural Sciences, Bagalkot ✓ Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar ✓ University of Agricultural and Horticultural Sciences, Shivamogga 	6
11	Kerala	<ul style="list-style-type: none"> ✓ Kerala Agricultural University, Vellanikkara, Thrissur ✓ Kerala University of Fisheries and Ocean Studies, Kochi ✓ Kerala Veterinary and Animal Sciences University, Wayanad 	3
12	Madhya Pradesh	<ul style="list-style-type: none"> ✓ Jawaharlal Nehru Agricultural University, Jabalpur ✓ Rajmata Vijayaraje Scindia Krishi Vishva Vidyalaya, Gwalior 	2
13	Maharashtra	<ul style="list-style-type: none"> ✓ Central Institute of Fisheries Education, Mumbai ✓ Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli ✓ Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola ✓ Maharashtra Animal and Fishery Sciences University ✓ Mahatma Phule Krishi Vidyapeeth, Rahuri ✓ National Backward Krishi Vidyapeeth, Solapur ✓ Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani ✓ Greenfield Institute of Agriculture, Aurangabad 	8
14	Manipur	<ul style="list-style-type: none"> ✓ Central Agricultural University, Iroisemba ✓ Rani Lakshmi Bai Central Agricultural University, Jhansi (U.P) 	2
15	Nagaland	<ul style="list-style-type: none"> ✓ Nagaland University 	1
16	New Delhi	<ul style="list-style-type: none"> ✓ Indian Agricultural Research Institute, New Delhi 	1
17	Odisha	<ul style="list-style-type: none"> ✓ Orissa University of Agriculture and Technology, Bhubaneswar 	1
18	Punjab	<ul style="list-style-type: none"> ✓ Desh Bhagat School of Agriculture Sciences, Desh Bhagat University, Mandi Gobindgarh 	3

		<ul style="list-style-type: none"> ✓ Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana ✓ Punjab Agricultural University, Ludhiana 	
19	Rajasthan	<ul style="list-style-type: none"> ✓ Agriculture University, Jodhpur ✓ Agriculture University, Kota ✓ Maharana Pratap University of Agriculture and Technology, Udaipur ✓ Shri Karan Narendra Agriculture University, Jobner ✓ Swami Keshwanand Rajasthan Agricultural University, Bikaner ✓ Suresh Gyan Vihar University, Jaipur ✓ Rajasthan University of Veterinary and Animal Sciences, Bikaner ✓ Career Point University, Kota 	8
20	Tamil Nadu	<ul style="list-style-type: none"> ✓ Annamalai University, Chidambaram ✓ Tamil Nadu Agricultural University, Coimbatore ✓ Tamil Nadu Fisheries University, Nagapattinam ✓ Tamil Nadu Veterinary and Animal Sciences University, Madhavaram, Chennai 	4
21	Telangana	<ul style="list-style-type: none"> ✓ Professor Jayashankar Telangana State Agricultural University, Hyderabad ✓ Sri Konda Laxman Telangana State Horticultural University, Hyderabad 	2
22	Uttar Pradesh	<ul style="list-style-type: none"> ✓ India Plantation, Lucknow ✓ Aligarh Muslim University, Aligarh ✓ Banaras Hindu University, Varanasi ✓ Banda University of Agriculture and Technology, Banda ✓ Chandra Shekhar Azad University of Agriculture and Technology, Kanpur ✓ Chaudhary Charan Singh University, Meerut ✓ Indian Veterinary Research Institute, Bareilly ✓ Integral Institute of Agricultural Science and Technology (IIAST), Integral University, Lucknow ✓ Narendra Dev University of Agriculture and Technology, Faizabad ✓ Sardar Vallabhbhai Patel University of Agriculture and Technology, Meeruth ✓ Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, www.shiats.edu.in ✓ Rani Lakshmi Bai Central Agriculture University, Near Pahuj Dam, Near IGFRI, Gwalior Road, Jhansi, Uttar Pradesh 284003 www.rlbcau.ac.in ✓ Mohammad Ali Jauhar University, Jauharnagar, Ranpur, Uttar Pradesh 	13
23	Uttarakhand	<ul style="list-style-type: none"> ✓ G. B. Pant University of Agriculture and Technology, Pantnagar http://www.gbpuat.ac.in/ ✓ Hemwati Nandan Bahuguna Garhwal University, Shrinagar (Garhwal), Uttrakhand http://www.hnbgua.ac.in/ ✓ Uttarakhand University of Horticulture and Forestry, Bharsar, Pauri garhwal http://www.uuhf.ac.in/ 	3
24	West Bengal	<ul style="list-style-type: none"> ✓ Bidhan Chandra Krishi Viswavidyalaya, Mohanpur ✓ Uttar Banga Krishi Viswavidyalaya, Cooch Behar ✓ Visva-Bharati University, Santiniketan ✓ West Bengal University of Animal and Fishery Sciences, Kolkata 	4
Total			83

Conclusion

The agricultural research information system of the council showcases and markets the developed technologies to various stakeholders. Disseminated information through flagship products such as research

and popular periodicals, handbooks, monographs, technical and textbooks, popular books etc., About 200 publications brought out every year on topical issues related to agriculture. Scrolling news-another hallmark-launched at ICAR website. More than 1.5 lakh hits per month recorded for www.icar.org.in. Accelerating ICT

management in agricultural research through inter and intra-net connectivity to narrow down the gap between technology developers and its users. Participated in technological exhibitions and book fairs of national level / international level to create awareness about agricultural research and education.

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