



Yearly Status Report - 2018-2019

Part A

Data of the Institution

1. Name of the Institution		Indian Agricultural Research Institute
Name of the head of the Institution		DR ASHOK KUMAR SINGH
Designation		Director
Does the Institution function from own campus		Yes
Phone no/Alternate Phone no.		01125842367
Mobile no.		9899045037
Registered Email		director@iari.res.in
Alternate Email		aks_gene@yahoo.com
Address		IARI, PUSA
City/Town		NEW DELHI
State/UT		Delhi
Pincode		110012
2. Institutional Status		

University	Deemed
Type of Institution	Co-education
Location	Urban
Financial Status	central
Name of the IQAC co-ordinator/Director	DR PRAMOD KUMAR
Phone no/Alternate Phone no.	01125842367
Mobile no.	9910633210
Registered Email	incharge_pme@iari.res.in
Alternate Email	pramod_iari@yahoo.co.in

3. Website Address

Web-link of the AQAR: (Previous Academic Year)	https://iari.res.in/files/Latest-News/AQAR_REPORT_2017-18.pdf
4. Whether Academic Calendar prepared during the year	Yes
if yes,whether it is uploaded in the institutional website: Weblink :	https://iari.res.in/index.php?option=com_content&view=article&id=633&Itemid=196

5. Accreditation Details

Cycle	Grade	CGPA	Year of Accreditation	Validity	
				Period From	Period To
1	A+	3.51	2016	16-Sep-2016	15-Sep-2021

6. Date of Establishment of IQAC

11-May-2017

7. Internal Quality Assurance System

Quality initiatives by IQAC during the year for promoting quality culture		
Item /Title of the quality initiative by IQAC	Date & Duration	Number of participants/ beneficiaries
Research Advisory Committee Meeting	17-Dec-2018 2	42

Academic Council Meeting	08-Feb-2018 1	41
Academic Council Meeting	07-Jul-2018 1	44
Academic Council Meeting	14-Dec-2018 1	32
Extension Council Meeting	12-Sep-2018 1	37
IQAC meeting	24-Jul-2018 1	8
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8. Provide the list of Special Status conferred by Central/ State Government-UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.

Institution/Department/Faculty	Scheme	Funding Agency	Year of award with duration	Amount
Division of Agricultural Economics	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	852720
Division of Plant Pathology	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	1084597
Division of Agricultural Extension	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	862450
Division of Plant Pathology	National Certification System for Tissue Culture Raised Plants (NCS-TCP)	DBT	2016 1460	1558808
Division of Biochemistry	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	1330382
ZTM &BPD Unit, IARI	IP SPECTRA (Intellectual Property Facilitation Center)	Ministry of MSME	2018 1460	972685
ZTM &BPD Unit, IARI	Pusa Krishi Incubator as Knowledge partner in RKVY -RAFTAR scheme	Ministry of Agriculture & Farmers Welfare, GoI	2018 1460	15975000
ZTM &BPD Unit, IARI	ABIC	ICAR	2018 1460	3500000

ZTM &BPD Unit, IARI	ZTMC	ICAR	2018 1460	1500000
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9. Whether composition of IQAC as per latest NAAC guidelines:	Yes
Upload latest notification of formation of IQAC	View File
10. Number of IQAC meetings held during the year :	6
The minutes of IQAC meeting and compliances to the decisions have been uploaded on the institutional website	Yes
Upload the minutes of meeting and action taken report	View File
11. Whether IQAC received funding from any of the funding agency to support its activities during the year?	No
12. Significant contributions made by IQAC during the current year(maximum five bullets)	
o The academic rules and regulations for the year are delineated in the academic term calendar and is implemented through PG School, Dean, Professors, Board of Studies (BoS)	
o Significant contributions made by MSc/ PhD students is presented by the Professor of each Division at Annual Convocation week programme	
o To encourage students to do good work and to achieve excellence in education and research the selected MSc/ PhD students from each Division is invited to participate in Gold Medal presentation Award competition.	
o The Research programme for the year prepared by the Divisions in the Divisional Budget and Research Committee (DBRC), it is then implemented by the PIs/ Co-PIs of the projects and is evaluated in the Institute Research Council (IRC I), Institute Research Council (IRC II) and Research Advisory Committee (RAC).	
o The Extension activities of the Institute for the year are planned in the Extension Council Meeting	
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13. Plan of action chalked out by the IQAC in the beginning of the academic year towards Quality Enhancement and outcome achieved by the end of the academic year
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Plan of Action	Achivements/Outcomes
The academic calendar of the year is prepared and uploaded on website	Accomplished the scheduled activities delineated in the academic calendar in time
Research programme is prepared for a period of five years and annually revised by DBRC	Accomplished the research activities as per schedule.
The Extension activities of the Institute is planned in the Extension Council meeting	The trainings, on farm demonstrations, farmers visits, Pusa Krishi Mela, etc have been achieved as per plans.
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14. Whether AQAR was placed before statutory body ?	Yes
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Name of Statutory Body	Meeting Date
DG ICAR	17-Dec-2018

15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?	No
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16. Whether institutional data submitted to AISHE:	Yes
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Year of Submission	2020
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Date of Submission	18-Aug-2020
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17. Does the Institution have Management Information System ?	Yes
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If yes, give a brief descripton and a list of modules currently operational (maximum 500 words)	PG School, IARI Management System exists for online management of academic activities of students. The system is available to students, faculty members, scientists and administrative staff of PG school. The management system includes, course management, student management, faculty management, administrative management, eLearning and student Research management system. The student management system monitors the progress of each student through constitution of advisory committees, Board of Studies, preparation, submission and approval of PPWs and ORWs. The online system facilitates conduction of qualifying examination, thesis submission and
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final viva voce examination. This system also operates for online submission of fees. Besides this, eoffice is in place for management of office files. Management of Information Services Financial Management System exists to take up Financial Management: Solutions for General ledger, Account Payable, Account Receivable, Cash Management, Fixed Assets Management, Budget Management and grants, Project Management: Scope for Project Information, Costing, Project Documents, Contract Management and Collaboration of Project documents, Material Management: Solutions for Purchase and Inventory Management, Human Resource: Employee information, HR policies, Leave Management, Performance and Appraisal System and Payroll System: Salary, GPF, Pension Payment, Retirement Benefit Calculation and Income tax calculation Solutions for all the ICAR employees.

Part B

CRITERION I – CURRICULAR ASPECTS

1.1 – Curriculum Design and Development

1.1.1 – Programmes for which syllabus revision was carried out during the Academic year

Name of Programme	Programme Code	Programme Specialization	Date of Revision
No Data Entered/Not Applicable !!!			
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1.1.2 – Programmes/ courses focussed on employability/ entrepreneurship/ skill development during the Academic year

Programme with Code	Programme Specialization	Date of Introduction	Course with Code	Date of Introduction
Nill	Nill	Nill	AC 505: Agrochemical regulation, quality control and management (3L0P)	09/07/2010
Nill	Nill	Nill	AE 555: Testing and evaluation of agricultural equipment (2L+1P)	09/07/2010
Nill	Nill	Nill	AE 620: GIS and remote sensing for land water	09/07/2010

			resource management (2L+1P)	
Nill	Nill	Nill	AE 657: Computer aided analysis and design of farm machinery (2L+1P)	09/07/2010
Nill	Nill	Nill	AE 656: Machinery systems for precision agriculture (2L+1P)	09/07/2010
Nill	Nill	Nill	AG ECON 530: Agricultural marketing (2L+1P)	09/07/2010
Nill	Nill	Nill	AG ECON 630: Agricultural price analysis (2L+1P)	09/07/2010
Nill	Nill	Nill	AG ECON 641: Institutional and legal environmental for agribusiness (2L+0P)	09/07/2010
Nill	Nill	Nill	AG ECON 532: International trade (3L+0P)	09/07/2010
Nill	Nill	Nill	AG ECON 550: Agricultural development and policy analysis (3L+0P)	09/07/2010

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1.2 – Academic Flexibility

1.2.1 – New programmes/courses introduced during the Academic year

Programme/Course	Programme Specialization	Dates of Introduction
No Data Entered/Not Applicable !!!		
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1.2.2 – Programmes in which Choice Based Credit System (CBCS)/Elective Course System implemented at the University level during the Academic year.

Name of programmes adopting CBCS	Programme Specialization	Date of implementation of CBCS/Elective Course System
MSc(Agriculture)	Nill	22/08/1958
PhD or DPhil	Nill	22/08/1958

1.3 – Curriculum Enrichment

1.3.1 – Value-added courses imparting transferable and life skills offered during the year

Value Added Courses	Date of Introduction	Number of Students Enrolled
Advances in Breeding for Stress Resistance in Vegetable Crops (VSC611)	19/11/2018	11
Advances in Vegetable Breeding for Quality and Special Traits (VSC622)	01/04/2019	11
Algae in Agriculture and Industry (MB605)	01/04/2019	1
Applied Microbiology (MB608)	30/07/2018	5
Basic Horticulture (VS507)	30/07/2018	6
Biotechnology for Vegetable Crop Improvement (VSC 601)	30/07/2018	11
Breeding of Cross Pollinated Vegetable Crops (VSC 513)	19/11/2018	11
Breeding of Self Pollinated Vegetable Crops (VSC522)	01/04/2019	10
Food Microbiology (MB507)	19/11/2018	4
Hi-tech Vegetable Farming (VSC621)	01/04/2019	11
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1.3.2 – Field Projects / Internships under taken during the year

Project/Programme Title	Programme Specialization	No. of students enrolled for Field Projects / Internships
MSc(Agriculture)	Economic analysis of agricultural diversification and its impact on farm income in Bihar (Biswajit Sen, 20634, MSc (Ag Econ))	1
MSc(Agriculture)	Climate change and vegetable production: An analysis of impacts and farmer's adaptation strategies (Philip Kuriachen, 20635, MSc (Ag Econ))	1
MSc(Agriculture)	Economic analysis of the climate variability and its impact on crop production in Marathwada	1

	region of Maharashtra (Sunil Kumar B R, 20637, MSc (Ag Econ))	
MSc(Agriculture)	Analysis of digital divide in agricultural information delivery (Ms Laxmipriya Upadhyaya, 20643, MSc (Ag Extn))	1
MSc(Agriculture)	An analytical study on ICT mediated social learning for risk adjustment in agriculture, (Ms Priti Priyadarshini, 20644, MSc, Ag Extn))	1
MSc(Agriculture)	A study on indigenous technical knowledge (ITKs) in tribal farming system of Himachal Pradesh, (Sahil Swangla, 20645, MSc (Ag Extn))	1
MSc(Agriculture)	An analytical study of yield gaps in major pulses, (Gireesh S., 20646, MSc (Ag Extn))	1
MSc(Agriculture)	Identification and validation of indicators of a model village, Ms Sonita Rani Sethy, 20647, MSc (Ag Extn)	1
PhD or DPhil	Economic assessment of community based tank irrigation systems in rainfed region of Andhra Pradesh, (Kiran Kumar TM, 10379, PhD (Ag Econ))	1
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1.4 – Feedback System

1.4.1 – Whether structured feedback received from all the stakeholders.

Students	Yes
Teachers	No
Employers	No
Alumni	No
Parents	No

1.4.2 – How the feedback obtained is being analyzed and utilized for overall development of the institution?
(maximum 500 words)

Feedback Obtained
The university has well-defined mechanism to obtain structured feedback from all the stakeholders viz. students, teachers etc, which is then scrupulously processed to derive actionable insights for improving the overall output and

impact of the various teaching courses/programmes. To cite an examples at the end of each trimester, the students are provided with the a "Course evaluation proforma" for each course taught in that trimester for their candid and uninhibited feedback about the course. The "Course evaluation proforma" contains objective questions to assess the perception of the students regarding the course design and its implementation. The response of the students is analysed by the Professor of the Division as well as by the competent authorities in the PG School, ICAR-IARI and appropriate actions are taken immediately to fill in the deficiency gaps, if any, highlighted by the students for the further improvement of the course. If there is any shortfall as regard to the method and mode of teaching of any of the course instructors, he/she is personally advised by the Professor of the Discipline to take necessary measures to live up to the expectations of the students. Similarly, the course instructors whose teaching style is appreciated by the students, in the evaluation proformae submitted by them, are acknowledged for their performance at various platforms in order to encourage them to keep up the good work. Every year before the convocation programme, nominations of the consistently top-performing faculty members are invited by the PG School, ICAR-IARI from each Discipline and BEST TEACHER AWARD(S) are decided upon amongst these nominees this award is conferred every year during the convocation programme. Furthermore, Board of Studies in each Discipline is constituted with faculty members from each category, alongwith one students' representative. The meetings of the BOS are regularly convened to deliberate and decide upon various issues concerning teaching programmes. The faculty members and students are encouraged to put forth their genuine concerns and viewpoints for their forwardal to the PG School for further discussion in the four standing committees. The recommendations of the standing committee are discussed and approved, if found suitable, in the Academic Council meetings, which are held at least thrice in a year. The elected representatives of the faculty and students (two each) are also members of Academic Council and can raise their concerns and innovative ideas in the academic council meetings to improve the teaching and learning practices at IARI. The feedback is also obtained from the IARI Alumni during the Alumni dinner organised in the Convocation week celebration. The concerns of common interest are also discussed at Professors' meeting organized at regular intervals by Dean and Joint Director (Edn.) IARI.

CRITERION II – TEACHING- LEARNING AND EVALUATION

2.1 – Student Enrolment and Profile

2.1.1 – Demand Ratio during the year

Name of the Programme	Programme Specialization	Number of seats available	Number of Application received	Students Enrolled
MSc(Agriculture)	Nill	155	Nill	143
PhD or DPhil	Nill	185	2547	183
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2.2 – Catering to Student Diversity

2.2.1 – Student - Full time teacher ratio (current year data)

Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of fulltime teachers available in the institution teaching only UG courses	Number of fulltime teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses

2018	Nil	326	Nil	490	490
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2.3 – Teaching - Learning Process

2.3.1 – Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

Number of Teachers on Roll	Number of teachers using ICT (LMS, e-Resources)	ICT Tools and resources available	Number of ICT enabled Classrooms	Number of smart classrooms	E-resources and techniques used
490	490	10	32	6	12
View File of ICT Tools and resources					
View File of E-resources and techniques used					

2.3.2 – Students mentoring system available in the institution? Give details. (maximum 500 words)

The Institute has developed a robust and vibrant student mentoring system over the years, which has contributed a great deal towards the skill- and knowledge-enrichment of the students, their employability leading to significant enhancement in the overall output and impact of the institute at national and international arena. The mentoring of the students starts with orientation programme organized at the Institute level, attended by all the stakeholders viz. Director, Joint Directors, Associate Dean, MOHR, Librarian, medical Officer, HODs, Professors and faculty members etc. All the higher officials address the newly admitted students in this programme to encourage them and to make them aware about the facilities available in the institute, past achievements of the institute, various academic rules and regulations, expectations of the institute from the students and rich legacy and culture of the institute etc. To enable the students to quickly adopt to the new environment similar programmes are organized at the Divisional level also. The IARI has a unique system of appointment of one Professor in each Discipline, who looks after all the academic affairs of the division. During initial one month of students' admission, he and HOD guides the students for various academic activities. The allotment of the Research Guides to the students is done within the first trimester of their admission. After this, the Research guides take over the role of mentorship of the students allotted to them. He/she helps them in the selection of courses and in the constitution of their advisory committee, which has members from the major, minor and supporting divisions. The advisory Committee of the students help them to prepare their Plan of Post Graduate Work (PPW) and the Outline of Research Work (ORW). The advisory committee of the students meets regularly not only to provide counselling and assistance to the students but also to identify his/her strengths and weaknesses, taking appropriate measures to bridge the recognized gaps and further building on their strengths. Students are also counselled by Master of Halls of Residence (MOHR) and wardens of their respective hostels. The institute has a placement cell which provides the much-needed career guidance to the students along with HOD, Professor, and their respective Research Guides. Besides, an honorary "Lady Students' Adviser" is nominated by the Dean to look after the welfare and needs of lady students. In addition, an honorary "Foreign Students' Adviser" is nominated by the Dean to not only to look after the academic needs and problems of the foreign students but also to make them aware about social and cultural fabric of India. A Hospitality Committee functions under the Chairmanship of the Foreign Students' Adviser to look after the comfort of foreign students. A qualified Medical Officer takes care of health for better efficiency and output. The medical service is provided free to students at the dispensary. The PG School, IARI, New Delhi has Standing Committee on Students Problems Discipline, Welfare, Board and Residences which considers Complaints/Grievance of students, if any.

Number of students enrolled in the institution	Number of fulltime teachers	Mentor : Mentee Ratio
1141	490	1 : 2

2.4 – Teacher Profile and Quality

2.4.1 – Number of full time teachers appointed during the year

No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph.D
572	490	82	8	425

2.4.2 – Honours and recognition received by teachers (received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year)

Year of Award	Name of full time teachers receiving awards from state level, national level, international level	Designation	Name of the award, fellowship, received from Government or recognized bodies
2018	Dr. A.K. Singh	Professor	INSA Fellow
2018	Dr. K.V. Prabhu and Wheat Team	Professor	Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural and Allied Sciences
2018	Dr. Gyan Prakash Mishra	Professor	Dr Harbhajan Singh Memorial Award
2018	Dr.Vignesh Muthusamy	Associate Professor	2018 Maize-Asia Youth Innovators Award
2018	Dr. Rajkumar U. Zunjare	Associate Professor	Jawaharlal Nehru Award for Outstanding Doctoral Thesis Research in Crop Sciences
2018	Dr. Firoz Hossain	Professor	Fellow of Indian Society of Genetics and Plant Breeding, New Delhi
2018	Dr. D.K. Yadava	Professor	Rafi Ahmad Kidwai Award 2017
2018	Dr. D.K. Yadava	Professor	NAAS Recognition Award for the Biennium 2017-18
2018	Dr. S.K. Jain	Professor	Chairman, Standing Committee on Scholarship, Financial Assistance and Academic progress, PG School, IARI
2018	Drs. Sanjay Kumar and R.N. Yadav	Professor	Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural Allied Sciences
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2.5 – Evaluation Process and Reforms

2.5.1 – Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year-end examination	Date of declaration of results of semester-end/ year- end examination
MSc(Agriculture)	Nill	Trimester-II	31/03/2018	07/04/2018
MSc(Agriculture)	Nill	Trimester-III	21/07/2018	28/07/2018
MSc(Agriculture)	Nill	Trimester-I	01/12/2018	08/12/2018
PhD or DPhil	Nill	Trimester-II	31/03/2018	07/04/2018
PhD or DPhil	Nill	Trimester-III	21/07/2018	28/07/2018
PhD or DPhil	Nill	Trimester-I	01/12/2018	08/12/2018
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2.5.2 – Average percentage of Student complaints/grievances about evaluation against total number appeared in the examinations during the year

Number of complaints or grievances about evaluation	Total number of students appeared in the examination	Percentage
0	239	0

2.6 – Student Performance and Learning Outcomes

2.6.1 – Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

http://pgs.iasri.res.in/pgs_main.asp

2.6.2 – Pass percentage of students

Programme Code	Programme Name	Programme Specialization	Number of students appeared in the final year examination	Number of students passed in final year examination	Pass Percentage
Nill	MSc(Agriculture)	Nill	145	145	100
Nill	PhD or DPhil	Nill	94	94	100
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2.7 – Student Satisfaction Survey

2.7.1 – Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

https://iari.res.in/files/Latest-News/Result%20based%20on%20response_2018.pdf

CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.1 – Promotion of Research and Facilities

3.1.1 – Teachers awarded National/International fellowship for advanced studies/ research during the year

Type	Name of the teacher awarded the fellowship	Name of the award	Date of award	Awarding agency
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National	Drs. Sanjay Kumar and R.N. Yadav	Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural Allied Sciences	Nill	ICAR, New Delhi
National	Dr. S.K. Yadav	ISST Scientist of Eminence -2018	Nill	ISST
National	Dr S. Chander	Res. Adv. Committee (RAC) member, ICAR-Directorate of 1. Cashew Research, Puttur	Nill	ICAR, New Delhi
National	Dr. A.K. Singh	INSA Fellow	Nill	Indian National Science Academy
National	Dr. K.V. Prabhu and Wheat Team	Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural and Allied Sciences	Nill	ICAR, New Delhi
National	Dr. Gyan Prakash Mishra	Dr Harbhajan Singh Memorial Award	Nill	ICAR, New Delhi
National	Dr. Rajkumar U. Zunjare	Jawaharlal Nehru Award for Outstanding Doctoral Thesis Research in Crop Sciences	Nill	ICAR, New Delhi
National	Dr. Firoz Hossain	Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	Nill	Indian Society of Genetics and Plant Breeding, New Delhi
National	Dr. D.K. Yadava	Rafi Ahmad Kidwai Award 2017	Nill	ICAR, New Delhi
National	Dr. D.K. Yadava	NAAS Recognition Award for the Biennium 2017-18	Nill	National Academy of Agricultural Science, New Delhi

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3.1.2 – Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other fellows in the Institution enrolled during the year

Name of Research fellowship	Duration of the fellowship	Funding Agency
IARI student fellowship (JRF)	1095	IARI
IARI student fellowship (SRF)	1095	IARI
ICAR fellowship (SRF)	1095	ICAR
Senior Research Fellowship	1825	DBT
Senior Research Fellowship	1825	DST
Senior Research Fellowship	1825	UGC-CSIR
National Fellowship (Scheduled Tribe)	1825	UGC
National Fellowship (Other Backward Caste)	1825	UGC
Maulana Azad National Fellowship	1825	Ministry of Minority Affairs
NET-JRF	Nil	UGC
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3.2 – Resource Mobilization for Research

3.2.1 – Research funds sanctioned and received from various agencies, industry and other organisations

Nature of the Project	Duration	Name of the funding agency	Total grant sanctioned	Amount received during the year
Major Projects	730	ICAR, PPVFRA, MIDH, DAC, IMD, DBT, AIREA, DST, RKVY, BARC, DST, SAC, NHB, MHRD, CSIR, BRNS, DRDO, NCPAH	33724	Nil
Minor Projects	730	ICAR, IMD, ATARI, NMSA, MoHRD, NABARD, MIDH, DACFW, DST, DBT	288	Nil
Industry sponsored Projects	730	Ajay Bio tech (India) Ltd. Construction Design Services, UP Jal Nigam, Agra All India Women's Conference Individual	49	Nil

		consultancy IRRI, Mynmar		
Projects sponsored by the University	2555	IARI	Nil	1049
International Projects	730	ICARDA, GCFSI, UNDP, Bill Milinda Gates Foundation, DWFI, IRRI, Harvest Plus, IFPRI	2304	Nil
Total	Nil	Nil	Nil	5141
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3.3 – Innovation Ecosystem

3.3.1 – Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

Title of workshop/seminar	Name of the Dept.	Date
Hands on training on patent drafting	ZTM BPD Unit	18/07/2018
Agri-business Incubation Programme for Skill India and Agri-startups	ZTM BPD Unit	10/01/2018
Spirulina cultivation and processing for advancement of skills amongst entrepreneurs	ZTM BPD Unit	26/11/2018
UPJA - Call for application	ZTM BPD Unit	24/12/2018
UPJA - Incubation Programme	ZTM BPD Unit	25/02/2019
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3.3.2 – Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of Awardee	Awarding Agency	Date of award	Category
Hydrology sensor and IoT	NEER AGRIVENTURES	DAIICT	Nil	Best Business model award at IEEE
Hydrology sensor and IoT	NEER AGRIVENTURES	Vibrant Gujarat Startup Summit	Nil	Best Idea award
Hydrology sensor and IoT	NEER AGRIVENTURES	ISRO	Nil	Best Paper award at ISG
Agricultural Machinery	Sickle Innovations Private	ICFA(Indian Council of Food and Agriculture)	Nil	Best Farm-tech Startup of The Year

Agricultural Machinery	Sickle Innovations Private	FICCI(Federation of Indian Chambers of Commerce and Industry)	Nil	FICCI Business Excellence Award'
Agricultural Machinery	Sickle Innovations Private	CII (Confederation of Indian Industry)	Nil	'Top three innovations in Indian Agriculture' during Advanced Technologies Reshaping Indian Agriculture 2.0'
Dairy herd Management	INHOF TECHNOLOGIES Private Limited	Villgro and IIT Kanpur	Nil	I Pitch winner
Dairy herd Management	INHOF TECHNOLOGIES Private Limited	XIMB Bhubaneswar	Nil	A Idea-Naarm, Startup Samvad winner
Dairy herd Management	INHOF TECHNOLOGIES Private Limited	BITS Hyderabad	Nil	Social Impact 2018 Award
Sensor based animal repellent	Abhay Sharma(Co-Founder KYARI)	NRDC	Nil	NRDC National Budding Innovation
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3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Center	Name	Sponsored By	Name of the Start-up	Nature of Start-up	Date of Commencement
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	SSR Agrotech	Business Deck for Biomass Briquette Plant	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Innosapien Agro Technologies Pvt. Ltd.	Wearable Computing and Augmented Reality Technology in Agriculture	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Aginnovate Farm Pvt Ltd	Partnering with Farmers to create collective well-being growth, Enabling Food processing	Nil

				at source by creating a network of rural entrepreneurs	
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Himalayan-Maharani Promoters Consultant	Diversification in agriculture through processing farming	Nil
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3.4 – Research Publications and Awards

3.4.1 – Ph. Ds awarded during the year

Name of the Department	Number of PhD's Awarded
Agricultural Chemicals	3
Agricultural Economics	4
Agricultural Engineering	3
Agricultural Extension	5
Agricultural Physics	1
Agricultural Statistics	3
Agronomy	6
Biochemistry	5
Bioinformatics	1
Entomology	6
Environmental Sciences	2
Genetics and Plant Breeding	5
Horticulture	19
Microbiology	5
Molecular Biology and Biotechnology	5
Nematology	2
Plant Pathology	4
Plant Physiology	1
Post Harvest Technology	5
Seed Science and Technology	3
Soil Science and Agricultural Chemicals	6
WTC	1

3.4.2 – Research Publications in the Journals notified on UGC website during the year

Type	Department	Number of Publication	Average Impact Factor (if any)
National	Agricultural Chemicals	13	Nil

National	Agricultural Economics	12	Nil
National	Agricultural Engineering	21	Nil
National	Agricultural Extension	5	Nil
National	Agricultural Physics	11	Nil
National	Agronomy	13	Nil
National	Entomology	7	Nil
National	Environmental Sciences	1	Nil
National	Genetics and Plant Breeding	46	Nil
National	Floriculture and Landscaping	13	Nil
View File			

3.4.3 – Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	Number of Publication
Agricultural Chemicals	11
Agricultural Economics	2
Agricultural Engineering	8
Agricultural Extension	24
Agricultural Physics	2
Agronomy	51
Entomology	20
Environmental Sciences	15
Genetics and Plant Breeding	43
Floriculture and Landscaping	35
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3.4.4 – Patents published/awarded/applied during the year

Patent Details	Patent status	Patent Number	Date of Award
Amphiphilic polymers based slow release nano formulations of β -carotene and method of preparation thereof	Published	300102	20/08/2018
fusion gene construct for generation of cocktail antiserum for detection of	Published	299749	06/08/2018

potyvirus and cucumovirus			
process for preparation of formulation of nano copper to combat bacterial blight pomegranate, rice and bean	Published	294416	16/03/2018
Powered Animal Feed Mixer	Published	302775	31/10/2018
Animal Feed Crusher	Published	299908	13/08/2018
Composition for early, profuse sporulation under solid state of the improvised isolate of Trichoderma harzianum and a process thereof	Published	296712	11/05/2018
Beneficiation of Phosphate Rock for the segregation of phosphorus containing heavy metal free minerals	Published	301187	19/09/2018
No file uploaded.			

3.4.5 – Bibliometrics of the publications during the last academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

Title of the Paper	Name of Author	Title of journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citation
Epigenetics of Modified DNA Bases: 5-Methylcytosine and Beyond	Kumar, S., Chinnu samy, V., Mohapatra, T.	Frontiers in Genetics	2018	Nil	ICAR-IARI	80
Mechanistic understanding and holistic approach of phytoremediation: A review on application and future prospects	Kumar Yadav, K., Gupta, N., Kumar, A., Reece, L.M., Singh, N., Rezaia, S., Ahmad Khan, S.	Ecological Engineering	2018	Nil	ICAR-IARI	155

Effect of chitosan and alginate based coatings enriched with pomegranate peel extract to extend the postharvest quality of guava (<i>Psidium guajava</i> L.)	Nair, M.S., Saxena, A., Kaur, C.	Food Chemistry	2018	Nil	ICAR-IARI	141
Microalgae as multi-functional options in modern agriculture: current trends, prospects and challenges	Renuka, N., Guldhe, A., Prasanna, R., Singh, P., Bux, F.	Biotechnology Advances	2018	Nil	ICAR-IARI	118
A review of emerging adsorbents and current demand for defluoridation of water: Bright future in water sustainability	Yadav, K.K., Gupta, N., Kumar, V., Khan, S.A., Kumar, A.	Environment International	2018	Nil	ICAR-IARI	116
Taxonomy of the family Arenaviridae and the order Bunyavirales: update	Maes, P., Alkhovsky, S.V., Bào, Y., Beer, M., Birkhead, M., Briese, T., Buchmeier, M.J.,	Archives of Virology	2018	Nil	ICAR-IARI	104

	Calisher, C.H., Charrel, R.N., Choi, I.R., Clegg, C.S., de la Torre, J.C., Delwart, E., DeRisi, J.L., Di Bello, P.L., Di Serio, F., Digiario, M., Dolja, V.V., Dro					
Phosphorus nutrition: Plant growth in response to deficiency and excess	Malhotra, H., Vandana, Sharma, S., Pandey, R.	Plant Nutrients and Abiotic Stress Tolerance	2018	Nil	ICAR-IARI	97
Assessing soil properties and nutrient availability under conservation agriculture practices in a reclaimed sodic soil in cereal-based systems of North-West India	Jat, H.S., Datta, A., Sharma, P.C., Kumar, V., Yadav, A.K., Choudhary, M., Choudhary, V., Gathala, M.K., Sharma, D.K., Jat, M.L., Yadu vanshi, N.P.S., Singh, G., McDonald, A.	Archives of Agronomy and Soil Science	2018	Nil	ICAR-IARI	90
Downstream processing of microalgae for	Khanra, S., Mondal, M., Halder, G.,	Food and Bioproducts Processing	2018	Nil	ICAR-IARI	84

pigments, protein and carbohydrate in industrial application: A review	Tiwari, O.N., Gayen, K., Bhowmick, T.K.					
Long-term fertilization effects on soil organic carbon sequestration in an Inceptisol	Ghosh, A., Bhattacharya, R., Meena, M.C., Dwivedi, B.S., Singh, G., Agnihotri, R., Sharma, C.	Soil and Tillage Research	2018	Nil	ICAR-IARI	82
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3.4.6 – h-Index of the Institutional Publications during the year. (based on Scopus/ Web of science)

Title of the Paper	Name of Author	Title of journal	Year of publication	h-index	Number of citations excluding self citation	Institutional affiliation as mentioned in the publication
Mechanistic understanding and holistic approach of phytoremediation: A review on application and future prospects	Kumar Yadav, K., Gupta, N., Kumar, A., Reece, L.M., Singh, N., Rezaia, S., Ahmad Khan, S.	Ecological Engineering	2018	36	155	ICAR-IARI
Effect of chitosan and alginate based coatings enriched with pomegranate peel extract to extend the postharvest quality of guava (Psidium	Nair, M.S., Saxena, A., Kaur, C.	Food Chemistry	2018	36	141	ICAR-IARI

guajava L.)						
Microalgae as multi-functional options in modern agriculture: current trends, prospects and challenges	Renuka, N., Guldhe, A., Prasanna, R., Singh, P., Bux, F.	Biotechnology Advances	2018	36	118	ICAR-IARI
A review of emerging adsorbents and current demand for defluoridation of water: Bright future in water sustainability	Yadav, K.K., Gupta, N., Kumar, V., Khan, S.A., Kumar, A.	Environment International	2018	36	116	ICAR-IARI
Taxonomy of the family Arenaviridae and the order Bunyavirales: update	Maes, P., Alkhovsky, S.V., Bào, Y., Beer, M., Birkhead, M., Briese, T., Buchmeier, M.J., Calisher, C.H., Charrel, R.N., Choi, I.R., Clegg, C.S., de la Torre, J.C., Delwart, E., DeRisi, J.L., Di Bello, P.L., Di Serio, F.,	Archives of Virology	2018	36	104	ICAR-IARI

	Digiaro, M., Dolja, V.V., Dro					
Phosphorus nutrition: Plant growth in response to deficiency and excess	Malhotra, H., Vandana, Sharma, S., Pandey, R.	Plant Nutrients and Abiotic Stress Tolerance	2018	36	97	ICAR-IARI
Assessing soil properties and nutrient availability under conservation agriculture practices in a reclaimed sodic soil in cereal-based systems of North-West India	Jat, H.S., Datta, A., Sharma, P.C., Kumar, V., Yadav, A.K., Choudhary, M., Choudhary, V., Gathala, M.K., Sharma, D.K., Jat, M.L., Yaduvanshi, N.P.S., Singh, G., McDonald, A.	Archives of Agronomy and Soil Science	2018	36	90	ICAR-IARI
Downstream processing of microalgae for pigments, protein and carbohydrate in industrial application: A review	Khanra, S., Mondal, M., Halder, G., Tiwari, O.N., Gayen, K., Bhowmick, T.K.	Food and Bioprocesses Processing	Nil	36	84	ICAR-IARI
Long-term fertilization effects on soil organic carbon sequestration	Ghosh, A., Bhattacharya, R., Meena, M.C., Dwivedi, B.S., Singh, G.,	Soil and Tillage Research	Nil	36	82	ICAR-IARI

in an Inceptisol	Agnihotri, R., Sharma, C.					
Epigenetics of Modified DNA Bases: 5-Methylcytosine and Beyond	Kumar, S., Chinnsamy, V., Mohapatra, T.	Frontiers in Genetics	Nil	36	80	ICAR-IARI
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3.4.7 – Faculty participation in Seminars/Conferences and Symposia during the year

Number of Faculty	International	National	State	Local
Attended/Seminars/Workshops	90	370	6	32
Presented papers	67	243	1	12
Resource persons	32	139	22	48
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3.5 – Consultancy

3.5.1 – Revenue generated from Consultancy during the year

Name of the Consultant(s) department	Name of consultancy project	Consulting/Sponsoring Agency	Revenue generated (amount in rupees)
Dr. Ravinder Kaur, Principal Scientist, WTC, IARI	Designing an IARI Technology Based Wastewater Treatment Facility for Residential Boarding School Jawahar Navodayas Vidyalays, Kansiram Nagar, U.P.	Construction Design Services, UP Jal Nigam, Agra	103840
Dr. Ravinder Kaur, Principal Scientist, WTC, IARI	Designing an IARI Technology Based Wastewater Treatment Facility for All India Women's Conference, New Delhi	All India Women's Conference	112100
Dr. Arun Kumar M.B., Principal Scientist, Division of SST	IRRI-consultant at Myanmar for improvement of seed system	IRRI	469653
Mr. Santosh -Watpade-PI, Scientist, IARI Regional Station, Shimla	"Bio-efficacy study of APNDFZ 200 SC, Bravo Top 550 SC Penconazole 10 EC in Applie"	Syngenta India Ltd	1487366
Dr. V.K. Singh,	"Evaluation of	Sirius Minerals	6550000

Head, Division of Agronomy-PI	POLY-4 (Polyhalite) in maize and wheat for enhanced yield, K and S use efficiency"	Plc 3rd Floor Greener House, 68th Hymarket, London Foreign funded	
Dr. Ram Asrey, Principal Scientist, Division of FSPHT-PI Dr. V.R. Sagar-Co-PI	"Bio-efficacy Evaluation of Anti-sprouting agent chlorpropham 50 HN stored potato under controlled condition"	United Phosphorus Limited	500000
Dr. Inder Mani, Head, Ag.Engg-PI	"Customization of Engineering and Microbiological Technologies and Development of Business Model for Eco-Friendly and Economical Management of Crop Residue at Farmers Field"	CNH Industrial (India) Pvt. Ltd	6860000
Dr. Lavleen Shukla, Principal Scientist, Division of Microbiology-	"Enrichment of beneficial microbes to develop phosphorus rich organic manure"	M/s Aquagreen Engineering Management Private Ltd	1214092
Dr. Dinesh Kumar, PI, Division of Agronomy	"Evaluation of Potassium Thio-sulphate on Potato Crop for its impact on yield and its attributes"	Grasim Industries Ltd Unit-Indo Gulf Fertilisers, Noida	908025
Dr. Neelam Patel, I/c CPCT-PI	Testing, Validation and field Demonstration for performance of specifically formulated plastic films used for mulching and polyhouses	Ampacet Speciality Products Private Ltd	2939192

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3.5.2 – Revenue generated from Corporate Training by the institution during the year

Name of the Consultan(s) department	Title of the programme	Agency seeking / training	Revenue generated (amount in rupees)	Number of trainees
Department of Seed Science and Technology	Seed production, processing, testing and storage in field	NSC, New Delhi	223000	25

	and vegetable crops May 21-25, 2018			
Department of Floriculture Landscaping	Training on Ornamental Horticulture and Landscape Gardening organised by Division of Floriculture and Landscaping, IARI, New Delhi.	for Section Officers (Horticulture), Delhi Development Authority (1-7 February, 2019)	224400	40
CATAT, IARI, New Delhi	Improved Horticultural Technologies of Sub-Tropical Fruits, 24-28 April 2018	Una District, Himachal Pradesh	9500	30
Division of Soil Science and Agricultural Chemistry	15th Advanced Level Training on Soil Testing, Plant Analysis and Water Quality Assessment, 07-27 August 2018 (3 weeks)	Self-sponsored	467500	11
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3.6 – Extension Activities

3.6.1 – Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

Title of the activities	Organising unit/agency/ collaborating agency	Number of teachers participated in such activities	Number of students participated in such activities
No Data Entered/Not Applicable !!!			
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3.6.2 – Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the activity	Award/Recognition	Awarding Bodies	Number of students Benefited
General Extension	Best Community Mobilizer Award to Dr. Nafees Ahmad	Society for Community Mobilization and Sustainable Development, IARI, New Delhi	Nil
Paper Presentation	Best Oral Paper Presentation to Dr. Nafees Ahmad	Society for Community Mobilization and	Nil

		Sustainable Development, IARI, New Delhi	
General Extension	Young Women Scientist Award to Dr. Pratibha Joshi	Society for Community Mobilization and Sustainable Development, IARI, New Delhi	Nil
Paper Presentation	Best Oral Paper Presentation to Dr. Pratibha Joshi	Society for Community Mobilization and Sustainable Development, IARI, New Delhi	Nil
Paper Presentation	Best Oral Paper Presentation to Dr. Subhashree Sahu	Society for Community Mobilization and Sustainable Development, IARI, New Delhi	Nil
General Extension	Women Scientist Award to Dr. Pratibha Joshi	GRISAAS, SKRAU, Bikaner, Rajasthan	Nil
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3.6.3 – Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/Agency/collaborating agency	Name of the activity	Number of teachers participated in such activities	Number of students participated in such activities
Swachh Bharat Abhiyan	MOHR	Swachata Abhiyan	9	1146
Mera Gaon Mera Gaurav	Different Divisions of IARI	Awareness creation about schemes of government of India, latest technologies developed by IARI, etc	490	100
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3.7 – Collaborations

3.7.1 – Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of activity	Participant	Source of financial support	Duration
Using finite element analysis to improve the design of cool rooms for the storage of perishables on smallholder farms.,	Dr Sangeeta Chopra	United States-India Educational Foundation, Fulbright Commission in India	300

Michigan State University, MI, USA			
Endeavour Post-doctoral Research Fellowship, Australia	Dr. Vijay Pooniya	Department of Education and Training, Govt. of Australia	120
Training on Eddy covariance GHG flux tower-instrumentation and data processing, USA	Dr. Arti Bhatia	ICAR	9
Deputation CSIRO, Adelaide, Australia	Dr K Annapurna	Endeavour Fellowship	90
International Rice Congress, Singapore	Dr Arun Kumar MB	IRRI	3
Seed Sector Development in Myanmar, Myanmar	Dr Arun Kumar MB	IRRI	9
Indo-Australia - AISRF project workshop	Dr. S. Subramanian	Project funds from DST- GOI	7
Invited to attend and present POD talk during 11th International Congress of plant pathology held at BOSTON from 29th july - 3rd Aug 2018 organised by ISPP and APS., Boston, USA	Dr Rashmi Aggarwal	IRRI, Philippines , project	5
Under Indo-U.S. Genome Engineering/Editing Technology Initiative (GETin), Washington State University, Pullman, WA, USA	Dr. Anirbon Roy	Overseas Fellowship programme	175
Fulbright Fellowship, Washington State University Pullman USA	Dr Parimal Sinha	Fulbright-Nehru Fellowship (United States- India Education Foundation)	149
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3.7.2 – Linkages with institutions/industries for internship, on-the- job training, project work, sharing of research facilities etc. during the year

Nature of linkage	Title of the	Name of the	Duration From	Duration To	Participant
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	linkage	partnering institution/ industry /research lab with contact details			
Teaching Research	PG outreach programme	Indian Institute of Horticultural Research, Hesaraghatta, Lakepost, Bangalore 560089	23/12/2010	31/12/2020	Nil
Teaching Research	PG outreach programme	CIPHET, Ludhiana, Punjab-141004	04/12/2010	31/12/2020	Dr Deepak Raj Rai Dr Shyam Narayan Jha
Teaching Research	PG outreach programme	CIAE, Nabi Bagh, Bhopal, Madhya Pradesh, India-462038	10/12/2010	31/12/2020	13
Teaching Research	PG outreach programme	DWR, Karnal, Haryana 132001	12/11/2011	31/12/2020	Dr RS Chhokar Dr Subhash Chander
Teaching Research	PG outreach programme	DSR, Hyderabad	08/10/2014	31/12/2020	Dr Hari Prasanna Dr I V Patil Dr Sujay Rakshit
Teaching Research	PG outreach programme	M/s Jain Irrigation Systems Pvt Ltd, Jalgaon, Maharashtra	25/04/2014	31/12/2020	Nil
Teaching Research	PG outreach programme	Indian Institute of Vegetable Research, JAKHINI, SHA HANSHAPUR, Varanasi-221305	20/08/2018	31/12/2020	Dr Nagendra Rai Dr Rakesh Kumar Dubey
Teaching Research	PG outreach programme	National Institute of Abiotic Stress Management, Malegaon, Baramati, Pune 413115	22/09/2018	31/12/2020	Nil

Teaching Research	PG outreach programme	National Institute of Biotic Stress Management, Baronda, Raipur, Chaatisgarh	22/09/2018	31/12/2020	Nil
Teaching Research	PG outreach programme	Rani Lakshmi Bai Central Agricultural University, Jhansi-28400 3	20/09/2018	Nil	Nil

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3.7.3 – MoUs signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose/Activities	Number of students/teachers participated under MoUs
Asian Seed Karnal, Haryana	07/05/2018	PB 1718	9
Bharat Seeds, Sirsa,	07/05/2018	PB 1718 PB 1728	16
Brar Seeds Farm, Faridkot, Punjab	07/05/2018	PB 1718	9
Vishwas Agritech, Madluda, Haryana	07/05/2018	PB 1718	9
Janak Seeds Karnal, Haryana	07/05/2018	PB 1718	9
Supreme Breeders Pvt. Ltd. Fatehabad Haryana	07/05/2018	PB 1718	9
Guru Kirpa Seed Farm, Bhutal Kalan, Punjab	07/05/2018	PB 1718	9
Gurindra Seeds Farm Village Punjab	07/05/2018	PB 1718	9
Ikonkar Seed Farm, Kauni, Punjab	07/05/2018	PB 1718	9
Genetic seed Rattia, Haryana	07/05/2018	PB 1718	9

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CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

4.1 – Physical Facilities

4.1.1 – Budget allocation, excluding salary for infrastructure augmentation during the year

Budget allocated for infrastructure augmentation	Budget utilized for infrastructure development
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3389	3389
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4.1.2 – Details of augmentation in infrastructure facilities during the year

Facilities	Existing or Newly Added
Campus Area	Existing
Class rooms	Existing
Laboratories	Newly Added
Seminar Halls	Newly Added
Classrooms with LCD facilities	Newly Added
Seminar halls with ICT facilities	Existing
Value of the equipment purchased during the year (rs. in lakhs)	Newly Added
Number of important equipments purchased (Greater than 1-0 lakh) during the current year	Newly Added
Classrooms with Wi-Fi OR LAN	Existing
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4.2 – Library as a Learning Resource

4.2.1 – Library is automated {Integrated Library Management System (ILMS)}

Name of the ILMS software	Nature of automation (fully or partially)	Version	Year of automation
KOHA	Fully	18X	2012

4.2.2 – Library Services

Library Service Type	Existing		Newly Added		Total	
Text Books	135489	Nill	1375	6915841	136864	6915841
Reference Books	3671	Nill	142	1388165	3813	1388165
e-Books	358	Nill	Nill	Nill	358	Nill
Journals	129715	Nill	182	16925519	129897	16925519
e-Journals	Nill	Nill	8	Nill	8	Nill
CD & Video	16773	Nill	350	Nill	17123	Nill
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4.2.3 – E-content developed by teachers such as: e-PG- Pathshala, CEC (under e-PG- Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives & institutional (Learning Management System (LMS) etc

Name of the Teacher	Name of the Module	Platform on which module is developed	Date of launching e-content
No Data Entered/Not Applicable !!!			
No file uploaded.			

4.3 – IT Infrastructure

4.3.1 – Technology Upgradation (overall)

Type	Total Computers	Computer Lab	Internet	Browsing centers	Computer Centers	Office	Departments	Available Bandwidth (MBPS/GBPS)	Others
Existing	3350	140	3350	0	120	1350	1740	1	0
Added	150	20	150	0	0	40	90	0	0
Total	3500	160	3500	0	120	1390	1830	1	0

4.3.2 – Bandwidth available of internet connection in the Institution (Leased line)

1 MBPS/ GBPS

4.3.3 – Facility for e-content

Name of the e-content development facility	Provide the link of the videos and media centre and recording facility
No Data Entered/Not Applicable !!!	

4.4 – Maintenance of Campus Infrastructure

4.4.1 – Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

Assigned Budget on academic facilities	Expenditure incurred on maintenance of academic facilities	Assigned budget on physical facilities	Expenditure incurred on maintenance of physical facilities
438	438	1830	1830

4.4.2 – Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. (maximum 500 words) (information to be available in institutional Website, provide link)

The institute has a well-oiled system in place for the maintenance of the physical, academic and support facilities built in the campus over the years. Adequate budgetary provisions are made during allocation of the annual budget for undertaking this all-important work. The cleanliness in each division of the institute is maintained on daily basis by the permanent skilled supporting staff members along with the contractual staff, specifically hired for the aforementioned purpose, under the guidance and supervision of a designated building in-charge in each division. The construction repair and electrical maintenance work in the institute is undertaken by CPWD. Besides, there is a separate unit viz. Farm, Horticulture and Landscape Operation Service Unit (FHLOSU) in the institute, which not only looks after the day-to-day repair and maintenance of the imported and indigenous machines but also supervises all the landscaping work, maintenance of gardens/lawns of the Institute and its residential areas. Every department maintains a stock register for the available equipments. Proper audit of the stock takes place at the end of every year and reports submitted for future records and references. The maintenance of equipments/instruments housed in different divisions is undertaken by the concerned HOD as per the laid down General Financial Rules (GFR). The annual Maintenance Contract (AMC) of all costly and sensitive instruments/equipments in these divisions is obtained for their uninterrupted and hassle-free use by the beneficiaries. The log book for the use of all the instruments is properly maintained. The IT equipment for providing Internet services throughout the campus is also kept under AMC. The servers and data centre equipments are

managed by System Administrator. The LAN maintenance is under the Network Administrator. The website and online application activities are managed by Website administrator. A senior faculty member has been appointed as an In-charge of the central library, who along with the Librarian, technical officers and other supporting staff manages its day-to-day affairs. At end of the Academic year stock verification is done and librarian prepares the report.. Procurement of books as per the requirement is done through a committee by inviting the requirement of books from various departments which is then processed following the standard procurement procedure. Needless to mention that during the execution of all the purchases, the Government of India (GOI) rules, regulations and guidelines are followed mutatis mutandis.

<https://www.iari.res.in/>

CRITERION V – STUDENT SUPPORT AND PROGRESSION

5.1 – Student Support

5.1.1 – Scholarships and Financial Support

	Name/Title of the scheme	Number of students	Amount in Rupees
Financial Support from institution	IARI Fellowship (JRF SRF)	217	24828300
Financial Support from Other Sources			
a) National	SRF-ICAR, DBT, DST, CSIR, National Fellowship (ST), National Fellowship (OBC), Moulana Azad National Fellowship, NET-JRF	98	28707000
b) International	ICCR Fellowship, India-Afghanistan Fellowship Programme III, Netaji Subhash-ICAR International Fellowship, SFS scheme of BARC-NATP Phase III, DBT-TWAS Fellowship Programme, India Africa Fellowship Programme	11	1532160

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5.1.2 – Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

Name of the capability enhancement scheme	Date of implemetation	Number of students enrolled	Agencies involved
Agronomy of Rainy Season Crops (AGR 001)	09/07/2010	10	Department of Agronomy
Agronomy of Winter season Crops (AGR 002)	09/07/2010	9	Department of Agronomy

Agronomy of summer season crops (AGR 003)	09/07/2010	8	Department of Agronomy
Soil and Environment (AGR 004)	09/07/2010	10	Department of SSAC
Major Pests of Crops and their Management (AGR 005)	09/07/2010	10	Department of Entomology
Crop morphology and physiology (AGR 006)	09/07/2010	10	Department of Plant Physiology
Principles of Horticultural Crops (AGR 007)	09/07/2010	10	Department of Horticulture
On-farm Education and Visits to different Institutions (AGR 008)	09/07/2010	9	Department of Agricultural Extension
Principles of Post Harvest Technology (AGR 009)	09/07/2010	9	Department of Post Harvest Technology
Elements of Genetics and Plant Breeding (AGR 010)	09/07/2010	9	Department of Genetics

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5.1.3 – Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

Year	Name of the scheme	Number of benefited students for competitive examination	Number of benefited students by career counseling activities	Number of students who have passed in the comp. exam	Number of students placed
2018	ARS	1141	1141	11	11
2018	Other state services	1141	1141	44	44

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5.1.4 – Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

Total grievances received	Number of grievances redressed	Avg. number of days for grievance redressal
4	4	53

5.2 – Student Progression

5.2.1 – Details of campus placement during the year

On campus			Off campus		
Name of organizations visited	Number of students participated	Number of students placed	Name of organizations visited	Number of students participated	Number of students placed
No Data Entered/Not Applicable !!!					
No file uploaded.					

5.2.2 – Student progression to higher education in percentage during the year

Year	Number of students enrolling into higher education	Programme graduated from	Department graduated from	Name of institution joined	Name of programme admitted to
2018	100	MSc (Ag)	Bioinformatics	IARI	PhD
2018	50	MSc (Ag)	Computer Application	IARI	PhD
2018	100	MSc (Hort)	Floriculture & Land Scaping	IARI	PhD
2018	75	MSc (Agri)	Genetics & Plant Breeding	IARI	PhD
2018	100	MSc (Ag)	Agricultural Chemicals	IARI	PhD
2018	25	MSc (Ag)	Agricultural Economics	IARI	PhD
2018	83	MSc (Ag)	Agricultural Engineering	IARI	PhD
2018	75	MSc (Ag)	Agricultural Extension	IARI	PhD
2018	86	MSc (Ag)	Agricultural Statistics	IARI	PhD
2018	78	MSc (Ag)	Agronomy	IARI	PhD
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5.2.3 – Students qualifying in state/ national/ international level examinations during the year (eg:NET/SET/SLET/GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services)

Items	Number of students selected/ qualifying
NET	33
Any Other	55
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5.2.4 – Sports and cultural activities / competitions organised at the institution level during the year

Activity	Level	Number of Participants
----------	-------	------------------------

Organised Swacch Bharat Abhiyan On 25, 2016 at Hostel and also performed Nukkadnatak	University level	1141
Annual Sports Meet of "Tarang2016-17" Organised by PGSSU during March 10-12, 2017.	University level	90
Annual cultural meet	University level	80
Quiz, Declamation, Debate extempore, essay writing, etc	University level	500
Organised essay and debate competition on the occasion of National Agricultural Education Day	University level	35
ICAR 17th All India Agril. Youth Festival	Organised in RAJUVAS, Bikaner Rajasthan	40
22nd All India Inter University Youth Festival "Reverie 2017"	Organised by NDRI Karnal	35
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5.3 – Student Participation and Activities

5.3.1 – Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)

Year	Name of the award/medal	National/ International	Number of awards for Sports	Number of awards for Cultural	Student ID number	Name of the student
2018	First prize, Pot Painting in cultural event 'Saptrangi'	National	Nil	1	11438	Tanima Das
Nil	First Runner-up, Cricket Tournament I Diwali Sports Meet for IASRI students	National	1	Nil	10974	Md. Yeasin and Team
Nil	Second Prize, Skit in IARI Fresh er-2018	National	Nil	1	Nil	Anushka and Team
Nil	First	National	Nil	1	21090	Appaji

	Prize, Mime in IARI Fresher Vihaan-2018					and Team
Nil	Second Prize, Ad Zap in IARI Fresher Vihaan-2018	National	Nil	1	Nil	Anushka and Team
Nil	Second Prize, Group Song in IARI Fresher Vihaan-2018	National	Nil	1	Nil	Anushka and Team
Nil	First Prize, Group Dance in IARI Fresher Vihaan-2018	National	Nil	1	Nil	Anil and Team
2019	Best Non-verbal Communication Award (English Section), Open National Inter-University Debate Competition, Pantnagar January 2019	National	Nil	1	21123	Aftab Khairdi
Nil	1st Prize, 110 mtr Hurdle Race	Nil	1	Nil	21160	Mr. Chethan Kumar K.B.
Nil	3rd prize, Skit	Nil	Nil	1	11593 11588 11597	Vivek Saurabh, Ajit Kumar Singh, Sumit Bhausheeb Urhe

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5.3.2 – Activity of Student Council & representation of students on academic & administrative bodies/committees of the institution (maximum 500 words)

The IARI has an active Students' Union known as Post Graduate School Students'

Union (PGSSU), who puts forth major concerns of the students and issues related to them at different fora for their resolution and implementation. The Executive Committee of PGSSU comprises of following elected members: (i) President (ii) Vice President (Girl) (iii) General Secretary (iv) Games and Sports Secretary (v) Finance Secretary (vi) Social Cultural Secretary (vii) The students representative to the Academic Council (viii) Five class representatives (ix) Literary secretary (Girl) (x) Alumni secretary (xi) Career Council and Placement Secretary. The Board of Studies (BOS) in each Discipline also has a students' representative, who actively takes part in the decision making in the matters pertaining to the various academic activities of that particular Discipline. Two student representatives are also appointed as member of the Academic Council in the following manner: 1. The President, PGSSU is an ex-officio student representative in the Academic Council. 2. The second student representative is elected every year by secret ballot by the members of the PGSSU through the same election process adopted for electing the Executive of the Post Graduate School Students' Union. 3. The tenure of the student representative is one year. Furthermore, the President PGSSU elected students' representative are also members of following three Standing Committees: • Standing Committee on Scholarships, Financial Assistance and Academic Progress • Standing Committee on Students Problems and Discipline, Welfare Board and Residences • Standing Committee on Courses, Curricula and academic affairs Students Welfare Fund is maintained in the PG School, IARI. The student welfare fund is granted advance loans to the needy students for special purposes. This fund is administered by a committee known as Students Welfare Committee. The President, PGSSU and Finance Secretary, PGSSU are members in this committee. Furthermore, the students are also kept members in the committees constituted for prevention of sexual harassment and ragging at work place and for promotion of gender sensitization. The students are also members in the various committees constituted for successful organization of various annual events at the institute such as convocation week programme, various award lectures, teachers day celebration, international women's day celebration, Girl child day celebration, Krishi Vigyan Mela, etc.

5.4 – Alumni Engagement

5.4.1 – Whether the institution has registered Alumni Association?

Yes

IARI has a registered Alumni Association, which has been created with a primary aim of networking its alumni and developing a sense of community amongst them. Alumni are one of the main stakeholders of the University as they contribute immensely to the functioning and development of the university in multiple dimensions. The institute is utilising the services of Alumni in various committees like Institute Research Council, Research Advisory Council, Quinquennial Review Team, etc. The Alumni are also being encouraged to join as Adjunct Faculty to strengthen teaching and research activities. The Alumni are also welcome to serve IARI as National Professor, Eminent Scientist, Eminent Professor, etc. The Alumni also form pool of resources for evaluation of thesis, external examiners of students' theses and for conducting Qualifying Examination. The Alumni serving in various ICAR institutes, SAUs and Private Firms are welcome to take up collaborative or joint research projects. Besides, they are providing mentoring services to the current students of the institute. Through their rich experience they are helping the students to understand the requirements of various industries and educating them to plan and shape their career in right direction. Students also get opportunity to work in the labs of some of the alumni to gain research experience in cutting edge technologies. They are also imparting them first-hand knowledge about the various steps and procedures needed for setting up their own start-ups. During the convocation week celebration of the institute, alumni are invited for the convocation week

celebration and they share their memories and experiences during convocation dinner. This helps them to rekindle their old relationships. Alumni Directory is regularly updated to keep the contact alive with all the IARIans..

5.4.2 – No. of registered Alumni:

10005

5.4.3 – Alumni contribution during the year (in Rupees) :

No Data Entered/Not Applicable !!!

5.4.4 – Meetings/activities organized by Alumni Association :

Alumni meet was organized on the day of convocation (8th Feb 2019) and the alumni are invited to participate and give their feedback.

CRITERION VI – GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 – Institutional Vision and Leadership

6.1.1 – Mention two practices of decentralization and participative management during the last year (maximum 500 words)

The institute follows a professional approach in managing the various academic and administrative activities by way of decentralization and participative management. The Director of the institute gives adequate budgetary allocation of funds to the Joint Directors and Heads of Divisions (HODs) along with the generous freedom and flexibility for their utilization to ensure full, independent and effective discharge of their responsibilities and functions. The HODs are empowered to sanction indents amounting to Rs 1 lakh. Monthly meetings of the HODs are conducted by the Director to review the progress made and to chart out the future course of action. Similarly, at the divisional level a Divisional Budget and Research Committee (DBRC) is constituted by including members from different categories of scientists as well as an Administrative Officer. The Chairman of DBRC is head of the Division. The major issues pertaining to equitable and judicious use of allocated funds as well as strategies for enhancing the impact of the ongoing research activities in the division, new programmes to be undertaken and ways to secure additional funds from external sources are thoroughly discussed in the regular meetings of the DBRC and recommendations sent to the Director, IARI for further approval. For an effective efficient implementation of the academic vision of the institute and for seamless discharge of the Institute's mandate in this regard, Board of Studies (BOS) is constituted in each division with members from different strata of scientists. The chairperson of BOS is the Professor of the division and it also includes one Students' Representative. All the major decisions for maintaining, nourishing and improving the teaching standards in the division are taken by the BOS under the guidance of Director and Dean of the institute. The Professor of the division is given full freedom to effectively utilize funds allocated for strengthening PG activities in the division as per the GFR. The four standing Committees, IQAC under the guidance of competent authorities are involved in defining policies procedures, framing guidelines and rules regulations pertaining to admission, examination, discipline, grievance, support services, finance etc.

6.1.2 – Does the institution have a Management Information System (MIS)?

Yes

6.2 – Strategy Development and Deployment

6.2.1 – Quality improvement strategies adopted by the institution for each of the following (with in 100 words each):

Strategy Type	Details
---------------	---------

Curriculum Development	<ul style="list-style-type: none"> • Institute follows the course curriculum as recommended by the ICAR-BSMA (Broad Subject Matter Area) committees, which is being implemented in the teaching programme of 26 disciplines. • The curriculum is in line with international standards and covers frontier areas of science.
Teaching and Learning	<ul style="list-style-type: none"> • Periodic monitoring of the academic progress is done by Dean Joint Director (Edn.) during his/her meetings with the Professors of each teaching discipline. <p>Strict compliance of the academic regulations and calendar time lines are followed right from the admission to convocation ceremony. The PG School has developed PGS online management system for paperless work for academic activities in all the 26 Disciplines. Online submission of all the proposals of students viz., student credentials, attendance, trimester grades, progress report, PPWs, ORWs, qualifying exam and thesis submission proposals, e-thesis etc is done. Frequent visits of Dean and Joint Director (Education) is made in the Divisions and interactions are done with students and faculty. Compulsory meeting of student Advisory Committee at least once during each trimester is done. <ul style="list-style-type: none"> • External examiners are invited for the Qualifying examination of PhD students • Board of Studies meeting in each discipline are held atleast one in each quarter </p>
Examination and Evaluation	<p>For Qualifying exam and Thesis viva voce, expert is called from outside IARI and analytical questions are asked. During each trimester, students performance is evaluated based on quizzes, Mind term and Final examination is done. Practical exams are conducted separately.</p>
Research and Development	<ul style="list-style-type: none"> • Identification of research topics is done by the faculty and submitted to BOS of Disciplines, six months in advance to admission of students. HoD, Professors and all the faculty members are involved in deciding the advisory committee of students and research topics • Allotment of Chairperson is based on students merit and their preference for thesis research topics. <p>Strict monitoring of students research progress by advisory Committee, presentation before faculty and BOS members is done meeting. Modification/</p>

corrective measures if any in the approved research work with the permission of the PG school are taken. External evaluation of thesis is done. PhD thesis is evaluated by two external experts not below the rank of Professor M.Sc/ M.Tech thesis is evaluated by one external examine. Incorporation of all the suggestions/ comments as suggested by the external examiners in the final version of the thesis is done. For PhD students, publication of two research papers (one published another communicated) in journal with NAAS score >5.0 is compulsory

Library, ICT and Physical Infrastructure / Instrumentation

- Online journals and books are subscribed, which are accessible to all the students
- Internet and intranet and Wi-Fi connectivity has been provided at all the divisions and hostels
- The Institute established a National Phytotron Facility in 1997, to study the live responses of plants under controlled conditions.
- There is a well-equipped Pesticide Referral Laboratory to analyze referred samples for pesticides.
- Scanning Electron Microscope Facility (SEMF) at Division of Entomology
- This Farm Machinery Testing Centre, Division of Agricultural Engineering,
- ASRB Online Examination Centre has being established at IARI.
- Through CeRA (Consortium for eResources in Agriculture), the institute provides online access of approx. 2380 e-Journals on LAN to scientific community.
- Prof. M S Swaminathan Library has created Online Public Access Catalogue (OPAC) of resources of 36 libraries with "Online Computer Library Center" (OCLC) partnership.
- The e-Language lab has been established with seating capacity of about 50 participants to facilitate language classes for foreign students.
- There is a Central Laboratory for Soil and Plant Analysis at IARI.

Human Resource Management

- HRD cell of IARI get the training plan for all staff from each discipline. Training programmes are organized at Institute and staff is sent for participation at National and International level.
- Scientists and students are encouraged to participate in training both at national and international level through

	<p>• fellowships. • Grant is providing to faculty and students for attending various workshops/symposia/conferences etc. to broaden their horizon, skills and to foster new linkages. • In APAR the reporting officer identify the training needs of the scientists and faculty is sent for training accordingly.</p>
Industry Interaction / Collaboration	<p>IARI students are encouraged to apply for PM fellowship in which the industry sponsors certain percent of Fellowship and student research is decided based on the need of the industry. Consultancy/ Contract research projects are being taken up by the scientists. BIRAC/DST.DBT projects involving industry is taken up by scientists. Students are encouraged to go for internship/ short course in Industry. IARI technology is commercialized to private firms through ZTM BPD Unit</p>
Admission of Students	<p>• The Board of Studies (BoS) in each Discipline prepares the requirement of number of M.Sc. and PhD seats and submit to PG School. Hereafter, approval of Academic Council is obtained. The total seat requirement is communicated to the Education Division of ICAR. The Institute admits students to the Post Graduate School under five separate streams as indicated below: (A) Open competition (B) Faculty Upgradation Scheme (FUS) (C) Departmental stream (Scientific and Technical) (D) ICAR in-service nominees (E) International students. M.Sc. and M.Tech. degree courses: Entrance examination for admission to M.Sc. and M.Tech. degree courses is undertaken by the Education Division of ICAR and on the basis of merit, the ICAR finalizes the admission for 23 M.Sc. and one M.Tech. degree courses at IARI. Ph.D. degree courses: Admission to the Ph.D. courses in 22 disciplines is based on performance of candidates in the written entrance examination (70 weightage) academic score (20 weightage) interview (10 weightage).</p>

6.2.2 – Implementation of e-governance in areas of operations:

E-governance area	Details
Planning and Development	IARI is using the ERP solution developed by IASRI for ICAR namely "Management Information Services (MIS) including Financial Management System

	<p>(FMS)" (MIS FMS). The system has provisions for: Project management: Scope for Project information, costing, project documents, contract management and grants Material management: Solutions for Purchase and inventory management</p>
Administration	<p>e-office is being implemented for the purpose management of office files comprising of file movement and administrative approval e-Tender is followed for purchase of scientific equipments with amount beyond Rs 1 crores</p>
Finance and Accounts	<p>IARI is using the ERP solution developed by IASRI for ICAR namely "Management Information Services (MIS) including Financial Management System (FMS)" (MIS FMS). The system has provisions for: Financial Management: Solutions for general ledger, account payable, account receivable, cash management, fixed assets management, budget management and grants Payroll system: Salary, GPF, Pension payment, retirement benefit calculation and income tax calculation, etc.</p>
Student Admission and Support	<p>PG School, IARI Management System for online management of academic activity of students. The system is available to students, faculty members, scientists and administrative staff of PG School, IARI. It has following sub modules (a) Course management (b) Student management (c) Faculty management (d) Administrative management (e) e-Learning (f) Student research management</p>
Examination	<p>"PG School, IARI Management System" for online management of academic activity of students. The system is available to students, faculty members, scientists and administrative staff of PG School, IARI. The students course grades are uploaded online into the PG School, IARI Management System by the Course leader which is approved by Professor and Dean The proforma for taking up qualifying examination submission of thesis is submitted online in which the Chairman, professor and HoD provide the names of external examiners which is finally selected by the Dean The results of qualifying examination and the thesis is submitted online into the "PG School, IARI</p>

6.3 – Faculty Empowerment Strategies

6.3.1 – Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

Year	Name of Teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support
2018	Balasubramanian M	78th Annual Conference of Indian Society of Agricultural Economics (ISAE) held during November 01-03,2018 in New Delhi	Indian Society of Agricultural Economics	4000
2018	Das, T. K.	Conservation agriculture in cereal-based systems: lessons learnt and ways forward. In: Lead Papers, XXI Biennial National Symposium on doubling farmers' income through agronomic interventions under changing scenario. Yadav, R.L. et. al. (eds).135p	Organized by ISA, ICAR, New Delhi and MPUAT, Udaipur, Rajasthan, 24-26 October. Presented as Lead Talk	6000
2018	Awtar Singh	National Conference on Arid Horticulture for Enhancing Productivity and Economic Empowerment, ", held at ICAR- CIAH, Bikaner from 27-29th October, 2018	Indian Society for Arid Horticulture	2000
2018	Dr Ananta Vashisth	8th International Conference on Agriculture, Horticulture and Food	The Society of Tropical Agriculture	12500

		science (ICAHFS-2018) during 29-30th December, 2018 at New Delhi.		
2018	Venkatesh P	78th Annual Conference of Indian Society of Agricultural Economics (ISAE) held during November 01-03,2018 in New Delhi	Indian Society of Agricultural Economics	4000
2018	Venkatesh P	Ecosystem Services Partnership (ESP) Asia Conference: 'Communicating and Engaging Ecosystem Services in Policy and Practice in Asia' 9th to 12th October, 2018, Wildlife Institute of India, Dehradun	Ecosystem Services Partnership	16298
2018	Anbukhani P	78th Annual Conference of Indian Society of Agricultural Economics (ISAE) held during November 01-03,2018 in New Delhi	Indian Society of Agricultural Economics	4000
2018	Aditya K S	78th Annual Conference of Indian Society of Agricultural Economics (ISAE) held during November 01-03,2018 in New Delhi	Indian Society of Agricultural Economics	4000
2019	Dr. Praveen K.Singh	Attended XIV Agricultural Science Congress - Innovation for Agricultural Transformation, Feb 20-23, 2019	ICAR, New Delhi	5000

at NASC
complex, New
Delhi

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6.3.2 – Number of professional development / administrative training programmes organized by the University for teaching and non teaching staff during the year

Year	Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	From date	To Date	Number of participants (Teaching staff)	Number of participants (non-teaching staff)
Nil	Emerging Issues in Markets, Institutions and Resource use planning for Sustainable Agriculture	Nil	12/07/2018	01/08/2018	15	Nil
Nil	Training Course on Hydroponics	Nil	15/11/2018	17/11/2018	11	Nil
Nil	CAFT course on "Extension Les Nutritional Security"	Nil	04/09/2018	24/09/2018	21	Nil
Nil	Nil	ICAR sponsored HRD training programme on "Enhancing Personal Effectiveness at Workplace" for Technical Staff of ICAR Institutes	08/10/2018	13/10/2018	Nil	21
2019	ICAR Winter School on "Extension Approaches	Nil	04/01/2019	24/01/2019	21	Nil

	for Integrating Technological Options and Institutional Arrangements for Doubling Farmers' Income"					
Nill	Handling of Large Scale Data analysis using R for ISS Officers, MoSPI	Nill	08/10/2018	13/10/2018	13	Nill
Nill	Advanced Sampling Techniques with practical examples from NSSO and health surveys for ISS Officers, MoSPI	Nill	29/10/2018	03/11/2018	9	Nill
Nill	Advances in Designing and Analysis of Agricultural Experiments under Centre of Advanced Faculty Training (CAFT), Education Division, ICAR	Nill	06/12/2018	26/12/2018	24	Nill
Nill	Winter School on Advances in Statistical Techniques for Agricultural	Nill	10/01/2019	30/01/2019	25	Nill

	Data Analysis, Education Division, ICAR					
Nil	Modern Statistical Techniques in Genetics under CAFT	Nil	01/02/2019	21/02/2019	21	Nil
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6.3.3 – No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

Title of the professional development programme	Number of teachers who attended	From Date	To date	Duration
Attended and successfully passed the NABL Assessors Training as per ISO/IEC 17025:2017 at Gurugram	1	13/03/2019	17/03/2019	5
Winter School Training Programme on Recent advances in statistical techniques for data analysis in agriculture under the aegis of Education Division, ICAR, New Delhi	2	10/01/2019	30/01/2019	2
Short Course on "Proteomics and its Applications in Agriculture"	1	05/09/2018	14/09/2018	9
Genomics Assisted Breeding for crop improvement, Dr. D. Vijay	1	01/03/2018	21/03/2018	21
Recent Advances of Bioinformatics in Agricultural Research: A	1	12/12/2019	21/12/2019	19

Practical Perspective, Dr. D. Vijay				
ISTA workshop on Seed Health Testing At Indo American Hybrid Seeds Company, Bengaluru, Dr Atul Kumar	1	20/11/2018	23/11/2018	4
Received training on Leadership Organization Development for Women Scientists/Technologists, at Centre for Organization Development, Hyderabad, Dr Archana Suman	1	08/10/2018	12/10/2018	5
Phenomix, the Next Generation Phenotyping (NGP), for Trait Dissection and Crop Improvement"	3	22/10/2018	31/10/2018	10
"Innovative approaches for improvement of perennial horticultural crops" organized by Division of Fruits and Horticultural Technology, ICAR-IARI, New Delhi	2	16/11/2018	06/12/2018	21
Genomics-Assisted Breeding for Crop Improvement under ICAR-HRM Training programme for scientific staff at Division of Genetics, IARI,	2	01/03/2018	21/03/2018	21

New Delhi

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6.3.4 – Faculty and Staff recruitment (no. for permanent recruitment):

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
8	8	94	94

6.3.5 – Welfare schemes for

Teaching	Non-teaching	Students
CGHS provided to all faculty members, Dispensary with dedicated medical officer, Group Life Insurance Scheme is available to all employees	Institute Joint Staff Council (IJSC) Nehru Experimental Centre, Gymnasium	PG School Student Union Gym Sports Ground Dispensary PG School Welfare Fund

6.4 – Financial Management and Resource Mobilization

6.4.1 – Institution conducts internal and external financial audits regularly (with in 100 words each)

The Institution has an established mechanism for conducting internal and external audits on the financial transactions every year to ensure financial compliance. Internal audit is conducted half yearly by the internal financial committee of the institution. The committee thoroughly verifies the income and expenditure details and the compliance report of internal audit is submitted to the management of the institution. External audit is conducted once every year by an external agency. • External Audit is conducted by the C A. G. Office as per its Audit calendar. • Internal Audit of the institute is conducted by the ICAR headquarter on yearly basis. • Besides, the physical verification of the stores and divisional libraries is conducted in each division by an in-house committee constituted by HOD for the aforesaid purpose.

6.4.2 – Funds / Grants received from management, non-government bodies, individuals, philanthropies during the year(not covered in Criterion III)

Name of the non government funding agencies /individuals	Funds/ Grnats received in Rs.	Purpose
No Data Entered/Not Applicable !!!		
No file uploaded.		

6.4.3 – Total corpus fund generated

No Data Entered/Not Applicable !!!

6.5 – Internal Quality Assurance System

6.5.1 – Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	QRT Institute Research Council (IRC II) Institute Research Council I	Yes	Board of Studies and Divisional Budget and Research Committee (IRC

		Research Advisory Council (RAC) Are mechanism to monitor the research and teaching activities of the institute and recommendations are compiled with		I, IRC II RAC) monitors and guides day to day research and teaching activities of the Divisions, respectively
Administrative	Yes	Audit Working in Hindi is audited by the Hindi Committee	Yes	Annual stores verification by committee constituted for the purpose Audit department audits the financial activities Working in Hindi is audited by the committee constituted for the purpose

6.5.2 – What efforts are made by the University to promote autonomy in the affiliated/constituent colleges? (if applicable)

• Funds have been provided to IASRI, NBPGR and NIPB, New Delhi and necessary infrastructure support is extended to IIHR, Bengaluru and CIAE, Bhopal for successful implementation of teaching programmes at these centres. The students admitted at these centres have full access to the PGS online management system for various teaching related activities. The students from these institutes can visit IARI and are provided access to different laboratories for undertaking any experiment committed in their thesis work.

6.5.3 – Activities and support from the Parent – Teacher Association (at least three)

• Orientation is given to the fresh students • Parents can freely meet Dean, HoD, all faculty • Parents are invited during Convocation and they give their feedback during outgoing students programme organized in Divisions

6.5.4 – Development programmes for support staff (at least three)

• Training programme for skill development are organized for supporting staff.
• Supporting staffs along with other staffs participate regularly in inter institutional sports activities organised by an institute under the administrative control of ICAR. • New Pusa Recreation Centre (NPRC) has excellent facilities for indoor and outdoor games for support staff. The Centre helps the staff in personality development and maintaining physical fitness. • Support staff can avail the facilities available in the IARI Dispensary. • Support staff has representatives in IJSC who help in implementation of institute welfare schemes.

6.5.5 – Post Accreditation initiative(s) (mention at least three)

- The courses have been revised following the 5th Deans Committee Report BSMA (Broad Subject Matter Area) guidelines
- The outreach programme has been strengthened by recognising more institutes as partners in academic activities
- New courses have been added to broaden the knowledge of students with a view to inculcate soft skills
- The students thesis research is aligned with the research programme of Divisions so as to compliment each others' efforts

6.5.6 – Internal Quality Assurance System Details

a) Submission of Data for AISHE portal	Yes
b) Participation in NIRF	Yes
c) ISO certification	Yes
d) NBA or any other quality audit	Yes

6.5.7 – Number of Quality Initiatives undertaken during the year

Year	Name of quality initiative by IQAC	Date of conducting IQAC	Duration From	Duration To	Number of participants
2018	Research Advisory Committee Meeting	17/12/2018	22/12/2017	17/12/2018	40
2018	Academic Council Meeting	08/02/2018	16/12/2017	08/02/2018	41
2018	Academic Council Meeting	07/07/2018	08/02/2018	07/07/2018	44
2018	Academic Council Meeting	14/12/2018	07/07/2018	14/12/2018	32
2018	Extension Council Meeting	12/09/2018	17/06/2017	12/09/2018	37
2018	IQAC meeting	24/07/2018	Nil	Nil	8
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CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES

7.1 – Institutional Values and Social Responsibilities

7.1.1 – Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

Title of the programme	Period from	Period To	Number of Participants	
			Female	Male
Income generation activities for empowerment of rural women	10/04/2018	10/04/2018	36	0
Minimization of nutrient	17/05/2018	17/05/2018	22	0

loss in processing				
Value addition (including Preservation of seasonal fruits and vegetables)	13/06/2018	13/06/2018	12	0
Location specific drudgery reduction technologies	11/07/2018	11/07/2018	13	0
Location specific drudgery reduction technologies	21/08/2018	21/08/2018	12	0
Location specific drudgery reduction technologies	18/09/2018	18/09/2018	18	0
Income generation activities for empowerment of rural women	27/10/2018	27/10/2018	12	0
Household food security by nutrition gardening	17/10/2018	22/10/2018	22	0
Minimization of nutrient loss in processing	11/01/2019	11/01/2019	18	0
Value addition (including Preservation of seasonal fruits and vegetables)	12/03/2019	12/03/2019	13	0
Dress-designing and tailoring	28/05/2018	27/07/2018	30	0
Dress-designing and tailoring	12/10/2018	11/12/2018	20	0
Food processing, preservation and value addition under	23/01/2019	12/02/2019	40	0

ARYA project				
Exposure visit of general public particularly farmers to Floriculture farm	01/01/2018	31/03/2018	800	750
Improved Horticultural Technologies of Sub-Tropical Fruits	24/04/2018	28/04/2018	24	6

7.1.2 – Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:

Percentage of power requirement of the University met by the renewable energy sources
<ul style="list-style-type: none"> • Solar panels have been installed on roof tops of Divisions, mela ground, NRL building, etc which generated 2 MW (25) of electricity • The Institute has well-knit protocols/ procedures for the collection and disposal of different kinds of wastes (chemical, biological, radioactive, universal and recyclable) from the laboratories, hostels and research farms. • Radiological safety office is operating in the Institute which takes care of the procurement of radioisotopes and biomolecules for research, collection of wastes on regular basis and its disposal in the designated Gamma garden. • Institute has installed bio-incinerator to manage hazardous laboratory waste. The facility with a capacity of 50 Kg/hour was created with IARI plan fund of Rs 18 lakh in the year 2014-15. • The institute has got IBSC (Institute Bio-safety Committee to scrutinise and approve applications related to research on GMOs including genome editing as directed by DBT Ministry of Science and Technology.

7.1.3 – Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Physical facilities	Yes	24
Provision for lift	Yes	24
Ramp/Rails	Yes	24
Rest Rooms	Yes	24
Scribes for examination	Yes	24

7.1.4 – Inclusion and Situatedness

Year	Number of initiatives to address locational advantages and disadvantages	Number of initiatives taken to engage with and contribute to local community	Date	Duration	Name of initiative	Issues addressed	Number of participating students and staff
2018	2107	120	Nil	365	Mera Gaon Mera Gaurav (MGMG) programme	Enhancing farmers knowledge about latest technology	480

						Dissemination of latest technology to farmers field	
2018	32	39	Nil	365	IARI post office linkage model	Enhanced outreach of frontline extension system, Coverage of remotely located farmers through IARI improved technologies	4
2018	84	4	Nil	365	ARYA scheme	Entrepreneurship development in rural youth and women under ARYA project: Under this project KVK Shikohpur has given training to 82 youth and women in 3 areas viz., value addition, protected cultivation, and mushroom production, out of which 66 parti	5
2018	320	4	Nil	365		CFLD on	4

					Frontline Demonstration programme	mustard under NMOOP with 65 demonstrations with 30 ha area for improved varieties and latest recommended package of practices were demonstrated. CFLD on pulses under NFSM were demonstrated 120 ha area with 248 demonstrations were organized in	
Nil	482	4	Nil	365	Out scaling Agricultural Innovations for enhancing farm income and employment	Transfer of improved agricultural technologies. Enhancement in crop productivity and income of the farmers	14
Nil	257	17	Nil	365	Strengthening Extension Education Programme of Developing Innovative Models and Techniques for	Assessment and promotion of IARI technologies, both improved varieties of different crops and	14

					Higher Productivity and Profitability in Agriculture	NRM technology. Improved productivity of the crops in the farmers fields and higher income.	
Nil	827	29	Nil	365	IARI-VOs Partnership Programme	Assessment and promotion of IARI technologies, both improved varieties of different crops and NRM technology. Improved productivity of the crops in the farmers fields and higher income.	14
Nil	90	2	Nil	365	Creation of Seed Production hub under the IARI VOs partnership programme.	<ul style="list-style-type: none"> • Multiplication of quality seed of improved varieties. • Outsourcing of the technology in speedy manner. • Spread of the technology in large part of the Northern India. • Quality 	6

						seed production of both paddy and wheat were taken up at YFAP Rakhra an	
Nill	1	3	Nill	365	ATIC is effectively providing products, services, technologies and information services to different stakeholders through a single window delivery system	Farmers are given advisory through Pusa helpline (011-25841670, 25846233, 25841039 and 25803600) Pusa Agricom (1800-11-8989). A second line of call centre (1800-180-1551) has been established to solve the problems/queries of farmers of Delhi Rajas	6
View File							

7.1.5 – Human Values and Professional Ethics Code of conduct (handbooks) for various stakeholders

Title	Date of publication	Follow up(max 100 words)
Post Graduate School Calendar	Nill	The guidelines are being followed and practiced in true spirit for the academic activities of Institute
ICAR. 2006. ICAR Guidelines for Intellectual Property Management and Technology Transfer/ Commercialization. Indian	Nill	The guidelines are being followed and practiced in true spirit for commercialization and IP management

Council of Agricultural Research, New Delhi.		
ICAR, 2014. ICAR Rules and guidelines for Professional Service Functions (Training, Consultancy, Contract Research and Contract Service, Indian Council of Agricultural Research, New Delhi	Nil	The guidelines are being followed and practiced in true spirit for training, consultancy and contract research
Vision Document 2025	Nil	The guidelines are being followed and practiced in true spirit
Vision Document 2050	Nil	The guidelines are being followed and practiced in true spirit
Soil testing services	Nil	The guidelines are being followed and practiced in true spirit for offering the services of the Institute laboratory for testing soil and water quality
Policy decisions and activities undertaken for the benefit of differently abled persons, Published in IARI Annual Report, 2018, Page 195.	Nil	Three per cent of the total number of seats in each scheme of admission open to Indian nationals are reserved for differently abled candidates subject to their being otherwise suitable as per the norms of ICAR/Govt. of India. During the year 2018-19, 10 physically challenged students (5 M.Sc./M.Tech and 5 Ph.D.) were admitted against the reserved seats for differently abled candidates.

7.1.6 – Activities conducted for promotion of universal Values and Ethics

Activity	Duration From	Duration To	Number of participants
Vigilance Awareness Week	29/10/2018	03/11/2018	1951
Agricultural research, research ethics, rural development programme (PGS 505)	01/01/2018	31/12/2018	203
Adoption of Anti-Plagiarism Policy:	01/01/2018	31/12/2018	239

<p>To maintain academic integrity, thesis and manuscripts are were subjected to web based software and similarity reports were generated prior to submission.</p>			
<p>Anti-Ragging/ Grievance redressal mechanism:: PG School, IARI, New Delhi has Standing Committee on Students Problems Discipline, Welfare, Board and Residences which considers Complaint s/Grievance of students, if any.</p>	<p>01/01/2018</p>	<p>31/12/2018</p>	<p>1931</p>
<p>No file uploaded.</p>			

7.1.7 – Initiatives taken by the institution to make the campus eco-friendly (at least five)

- Biomass waste is collected and converted into compost under waste to wealth programme at Biomass Utilization Unit
- Institute has developed Pusa decomposer technology for in-situ residue management which is used on the campus and extensively used in Uttar Pradesh, Punjab and Haryana states help minimize paddy straw burning.
- Institute has installed solar panels and generates 2 MW of electricity
- Water harvesting ponds and recharge wells created for water harvesting and recycling of waste water
- Waste water treatment plant to treat waste water and used for irrigation
- Waste paper recycling plant installed to reuse waste papers

7.2 – Best Practices

7.2.1 – Describe at least two institutional best practices

The two best practices are A. Breeding high yielding and widely adapted varieties of Pigeonpea 1a. Objectives Pigeonpea is the second important pulse crop of the country after chickpea. It is a major and cheap source of protein compared to animal protein. Pigeonpea occupies 4.8 million ha area in India with a production of 4.32 million tons and productivity of 900 kg/ha. 2a. The Context It is important to develop high yielding short duration varieties with improved plant architecture (dwarf and semi-dwarf) suitable for high density planting and mechanised cultivation in order to increase yield per unit area, per unit time and also to stabilise the production. These varieties would enable growing of the following rabi crops, like potato/mustard/chickpea/wheat, thereby increasing the cropping intensity and ultimately the income of the farmers. 3a. The Practice New high yielding Pigeonpea varieties with improved plant type developed by ICAR-IARI, New Delhi ICAR-IARI, New Delhi has developed 4 new Pigeonpea varieties with improved plant type viz., Pusa Arhar 16, Pusa Arhar 2017-1, Pusa Arhar 2018-2 and Pusa Arhar 2018-4. Out of these four varieties, Pusa Arhar 16 and Pusa Arhar 2017-1 are of extra early maturity and after their harvest mustard/chickpea/potato/wheat can be grown in following Rabi season. Pusa Arhar 16 was released in 2018 while other three varieties

were notified in 2021. Pusa Arhar 16 is suitable for mechanized cultivation. Pusa Arhar 2018-2 and Pusa Arhar 2018-4 are of early maturity and after their harvest wheat can be grown in the rabi season. Pusa Arhar 2018-4 was notified for NWPZ in 2021 by CVRC. Uniqueness of varieties • Pusa Arhar 16 : Extra early maturity (120 days), determinate, semi-erect compact, semi-dwarf plant type suitable for mechanized cultivation. Due to its semi-dwarf stature spraying of insecticide is easy and more efficient. Its extra early maturity (120 days) allows growing of mustard/potato/chickpea/wheat after its harvest. Thus, cropping intensity can be increased. • Pusa Arhar 2017-1: Extra early maturity (120-125days), indeterminate type, compact semi-erect plant type. • Pusa Arhar 2018-2: Early maturing (131 days), indeterminate, semi-erect compact plant type, bold seeded (8.2 g/100 seeds). • Pusa Arhar 2018-4: Released for NWPZ (Punjab, Delhi, Haryana, Western Uttar Pradesh). This variety is suitable for "Pigeonpea - wheat rotation" in NWPZ. This variety matures in 140-145 days and has got yield potential up to the tune of 23.06 q/ha. This variety has bolder seed size (mean 100 seed weight of 8.73 g) as compared to other released varieties for NWPZ. 4a Evidence of Success The breeder seed indent of Pusa Arhar 16 variety was 2.06 q, 5.65q and 2.6 q in 2019-20, 2020-21 and 2021-22, respectively. 5a Problems Encountered These varieties are released for NWPZ and Delhi NCT and states have a little tendency to promote their own released varieties. The FLDs and KVK support to popularize these varieties is required.

B. DEVELOPMENT OF BIOFORTIFIED MAIZE HYBRIDS FOR FOOD- AND NUTRITIONAL-SECURITY 1b. Objectives Maize is one of important cereal crops of the country. It is the rich source of carbohydrate in the diet. However, maize is deficient in lysine (1.5-2.0), tryptophan (0.3-0.4) and provitamin-A (1.0-2.0 ppm) that causes health problems such as protein energy malnutrition (PEM) and vitamin A deficiency (VAD). The objective of the research work is to develop biofortified maize hybrids rich in protein quality (lysine tryptophan) and provitamin-A (proA) through breeding. The landmark discovery of opaque2 (o2) gene for increasing lysine tryptophan β -carotene hydroxylase (crtRB1) and lycopene epsilon cyclase (lcyE) for increasing proA has promised for maize biofortification. The strategy of marker-assisted selection (MAS) for selection/ introgression of these major genes was employed to develop biofortified maize varieties in accelerated manner. 2b. The context Maize or corn is one of the important cereal crop that provides significant amount of calories in the daily diet. However, it is deficient in essential amino acids, micronutrients and vitamins. It is, therefore, very essential to increase the amount of nutrients in maize endosperm to alleviate malnutrition especially among the population dependent on maize as staple crop. Biofortification is the process of developing nutrient-rich crops through breeding approaches, which provides sustainable and cost-effective solution compared to 'food-fortification', 'dietary diversification' and 'medical-supplementation' to address malnutrition. Considering this, the development of biofortified maize hybrids with high grain yield potential and enriched amount of vitamins and protein quality is one of the the most important objectives of maize improvement. 3b. The practice In India, Shakti, Rattan and Protina, the o2-based soft endosperm maize composites were released during 1971 by All India Coordinated Research Project (AICRP) on Maize, and these are perhaps the first set of biofortified varieties developed through targeted breeding approaches across crops in the country. Later, a series of QPM hybrids were developed using conventional breeding. The cloning and characterization of the O2 gene, followed by detection of gene specific three SSRs viz., phi057, phi112 and umc1066, offers advantages in marker-assisted selection for rapid development of QPM hybrids. In India, a MAS-derived QPM hybrid, 'Vivek QPM 9', was released during 2008 by the ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan (VPKAS), Almora. Research efforts at ICAR-Indian Agricultural Research Institute (IARI), New Delhi have led the development of three QPM hybrids viz., Pusa HM-4 Improved, Pusa HM-8 Improved, and Pusa HM-9 Improved released for

commercial cultivation during 2017 by Central Variety Release Committee (CVRC). Subsequently, IARI has developed series of QPM hybrids enriched with provitamin A, thus multinutrient maize hybrids. To develop proA rich hybrids, large scale validation of the effects of molecular marker polymorphisms in lcyE and crtRb1 was carried out at CIMMYT, employing MAS. At IARI, breeders have introgressed the favourable allele of crtRb1 gene from CIMMYT-HarvestPlus genotypes to Indian adapted genotypes and developed proA rich normal as well as QPM hybrids. These biofortified hybrids are adapted to diverse ecological regions of India. The proA version of Vivek QPM9 named as 'Pusa Vivek QPM9 improved' has been released for commercial cultivation in India by Central Variety Release Committee during year 2017. 'Pusa Vivek QPM 9 Improved' is the world's first multinutrient-rich maize genotype, combining high quality protein with provitamin-A. This is unique hybrid successfully developed by IARI, New Delhi in the country.

4b. Evidence of success IARI has successfully developed nine biofortified hybrids comprising of 3 QPM hybrids, 1 proA rich hybrid and 5 QPM proA hybrids. Eight hybrids are the improved versions of original hybrids, and hence called as 'Essentially derived varieties (EDVs)' while one hybrid is independently developed by IARI. These 9 are released notified for commercial cultivation across the different zones of country. All the QPM hybrids possessed high lysine (>2.5) and tryptophan (>0.7) compared to lysine (1.5-2.0) and tryptophan (0.3-0.4) in normal maize hybrids. Similarly, proA rich hybrids possessed proA (>5.0 ppm) compared to proA (1.0-2.0 ppm) in normal maize hybrids. The details of biofortified hybrids developed by IARI are (a) Quality protein maize: Pusa HM-4 Improved (AQH-4), Pusa HM-8 Improved (AQH-8), Pusa HM-9 Improved (AQH-9) (b) Biofortified maize rich in Provitamin A: Pusa Vivek Hybrid-27 Improved (APH27) (c) Provitamin A and Quality protein maize: Pusa Vivek QPM-9 Improved (APQH-9) and (d) Biofortified maize rich in Provitamin A and quality protein: Pusa HQPM-5 Improved (APQH5), Pusa HQPM-7 Improved (APQH7), Pusa HQPM-1 Improved, Pusa Biofortified Maize Hybrid-1. These biofortified hybrids have been released for commercial cultivation after its successful testing under AICRP centres. The grain yield performance of EDVs was at par with original/check hybrid, while the performance of independent hybrid, Pusa Biofortified Maize Hybrid-1 was superior over the checks during AICRP testing for the three years. These IARI developed varieties can potentially provide sustainable solution to alleviate micronutrient deficiency such as protein energy malnutrition and vitamin A deficiency.

6b. Problems encountered The recent advances in plant biotechnology including discovery of molecular markers have accelerated introgression of the target gene(s), in high yielding varieties/lines. Conventional breeding approach to develop QPM genotypes is tedious and time consuming. Consequently, introgression of o2 through conventional backcrossing becomes demanding due to several reasons viz., (i) inability to identify o2 recessive allele in each backcross generations, (ii) requirement of about six generations of backcrossing to recover satisfactory levels of recurrent parent genome, and (iii) cumbersome biochemical tests of lysine and tryptophan levels in the selected materials in each generation. These steps require enormous labour, time, and material resources. Biofortified crops possess great potential to provide food and nutritional security. However, the area under biofortified crops is too small to amount compared to traditional varieties. There are several challenges for adoption and popularization of biofortified maize. There is need to widen the genetic base of biofortified maize germplasm for the development of more diverse hybrids adaptable to various agro-ecologies. The biofortified germplasm should also possess adequate tolerance to major biotic and abiotic stresses to sustain high grain yield. Extensive demonstration of improved biofortified maize technologies in the farmers' field need to be undertaken by conducting large scale on-farm demonstration. Quality seed production is the major issue for meeting the seed demand of biofortified maize.

Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

https://iari.res.in/index.php?option=com_content&view=article&id=828&Itemid=9

7.3 – Institutional Distinctiveness

7.3.1 – Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust in not more than 500 words

IARI faculties have brought large number of externally funded project worth Rupees 184.78 crores, and IARI had collaboration with 4 or more Institute in each of 78 externally funded projects. About Rupees 603 lakhs worth new equipments were added to the laboratories. IARI was awarded with Centre for Advanced Agricultural Technology (CAAST) project under National Agricultural Higher Education program with a budget of Rs 1999.68 lakhs for enhancing faculty and student research skills and research outcomes. Under Accessible India Campaign, ramps for wheel chair movement, brail tiled path, toilets and lift facilities were established in different disciplines. Faculty and students have published 655 publications in peer reviewed journals with JCI impact factor, 540 papers in symposia/conferences, 51 books and 285 book chapters. In 2018-19, In food crops, three wheat varieties (HD3226, HD3237 and HI1620), one fine grain quality rice variety (Pusa Samba 1850) and two maize hybrids (Pusa Super Sweet Corn 1 and Pusa Jawahar Hybrid Maize 1) and Eleven varieties/hybrids of different vegetable crops were released for commercial cultivation. GreenSeeker and Nutrient Expert® (NE) as decision support systems for precision nitrogen application was developed which saves up to 26 kg nitrogen/ha and thus reducing the cost of cultivation and adverse environmental impact. During 2018-19, three new rice varieties (PB 1718, PB 1728 and PB 1637), 5 vegetable varieties, Pusa STFR and Compost Inoculant Biofertilizer Technology were licensed to 40 industry partners. The Institute was granted with 6 patents and 6 copy rights. The annual economic surplus generated from PB1121 are estimated at Rs. 14707crores during triennium ending 2018-2019 which is 12-fold more than the budget of ICAR-IARI and twofold more than the entire ICAR budget during TE2018-19. About 48 of mustard grown area in the Country is cultivated with ICAR-IARI varieties. The average economic surplus generated by IARI mustard variety Pusa Mustard 25 for TE ending 2018-19 was estimated at Rs. 2919 crore and was allocated Rs.1499 crore to the farmers and Rs. 1420 crores to the consumers. To promote agri-entrepreneurship and startups through Agribusiness Incubation programmes, SAMARTH 2019, UPJA 2019 and ARISE 2019 programs were launched, Under UPJA 2019, 618 applications were received of which 30 applicants were selected and incubated, and 78 on-to-one and group mentoring sessions were conducted. The 57th Convocation of the Post Graduate School of the IARI was held on February 8, 2019. Hon'ble Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh awarded degrees to 239 candidates (123 M.Sc., 22 M.Tech. and 94 Ph.D.) 08 international students. IARI helped complete the establishment of Advanced Centre for Agricultural Research and Education (ACARE) at Yezin Agricultural University, Myanmar, and on 12 December 2018 by Hon'ble President of India, Shri Ram Nath Kovind dedicated ACARE to the people of Myanmar. The Institute was awarded with "Agricultural Leadership Award 2019" by a national agriculture magazine, "Agriculture Today" for helping the country attain and maintain self-sufficiency in food grains and for improving the economic conditions of Indian farmers.

Provide the weblink of the institution

https://iari.res.in/files/Publication/annual_report/IARIANNUALREPORT2018_19_30072019.pdf

8.Future Plans of Actions for Next Academic Year

1. To enhance the research outcome of faculty and students: Selected faculties and students will be trained in the cutting-edge area of genomics through National Agricultural Higher Education program. Faculties will be encouraged to bring external funded projects, and to conduct basic and strategic research leading to high quality research publication, patents, copy rights and technologies.

2. To promote agri-entrepreneurship and startups, and mentoring of RKVY-RAFTAAR Agri Business Incubators across the Country.

3. To conduct training programs for upskilling faculty and students of National Agricultural Research System (NARES), and farmers.

4. School-wise plan:

a) School of crop improvement: To develop crop varieties with enhanced yield, resource use efficiency and nutritional quality using genomics assisted breeding. To map genes and QTLs for yield traits, biotic and abiotic stress tolerance and nutritional quality.

b) School of Horticulture: Development of varieties and hybrids of vegetables, fruits and flowers suitable for different seasons and agroclimatic conditions for enhancing nutrition security of consumers and livelihood security of farmers.

c) School of Basic Sciences: To identify and decipher the functions of genes in abiotic stress tolerance and nutrient use efficiency of crops by using multi-omics, genetic engineering and genome editing approaches. Develop methods for promoting nutraceuticals and healthy food.

d) School of Crop Protection: Development of innovative diagnostic tools and management strategy for an early identification and management of important diseases, insect-pest and weeds. Pathogenomics for plant disease management. Reorientation of crop protection research strategies to manage pest and pathogen dynamics as influenced by climate change.

e) School of Natural Resource Management: Development of resource management technologies for more crop per drop", Pusa decomposer for in situ decomposition of paddy residues, active molecules for crop protection, formulations for smart delivery of crop protection inputs. Development of a reliable crop yield forecast system is an imperative for stabilized food security. Multi stage wheat yield estimation using weather-based models and Climate change projections for Indian Agriculture.

f) School of Social Sciences: Towards enhancing farmers' income and nutritional security, School of Social Sciences, is focusing on recent and sensitive issues which has direct influence on farmers' income such as assessing improved IARI Technologies, impact of Cluster Frontline Demonstration, impact of credit in enhancing household income, performance of different marketing institutions in raising farmer's income, agricultural growth models, ecosystem services and its key determinants, impact and constraints of e-NAM.