



Yearly Status Report - 2019-2020

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 Campus
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://www.iari.res.in/
4. Whether Academic Calendar prepared during the year	Yes
if yes,whether it is uploaded in the institutional website: Weblink :	https://www.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	12-Dec-2019 2	40
Academic Council Meeting	07-Feb-2019	45

	1	
Academic Council Meeting	25-Jul-2019 1	37
Academic Council Meeting	14-Nov-2019 1	41
Executive Committee Meeting	26-Sep-2019 1	39
ISO Certification	28-Feb-2020 1	31
IQAC	30-Sep-2019 1	9
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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	Center of Advanced Faculty Training (CAFT)	ICAR	1995 9855	851126
Division of Plant Pathology	National Referral Lab for Virus Diagnosis	ICAR	2004 6570	2450000
Division of Plant Pathology	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	674215
Division of Biochemistry	Niche Area of Excellence	ICAR	2019 730	19344000
Division of Soil Science and Agricultural Chemistry	Niche Area of Excellence(Risk Assessment of metals and metalloids in water, soil plant continuum under basmati rice growing areas of Northern India)	ICAR	2019 730	17761000
Division of Agricultural Chemicals	Niche Area of Excellence on Formulation and Analysis Centre (NAEFAC)	ICAR	2019 730	685000
Division of Agricultural Extension	Centre of Advanced Faculty Training (CAFT)	ICAR	1995 9855	922113

ZTM &BPD Unit, IARI	IP SPECTRA (Intellectual Property Facilitation Center)	Ministry of MSME	2019 730	1050727
ZTM &BPD Unit, IARI	Pusa Krishi Incubator as Knowledge partner in RKVY -RAFTAR scheme	Ministry of Agriculture & Farmers Welfare, GoI	2019 730	4500000
ZTM &BPD Unit, IARI	ABIC	ICAR	2019 730	3300000
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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

Plan of Action	Achivements/Outcomes
The academic calendar of the year has been 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

Name of Statutory Body	Meeting Date
DG ICAR	12-Dec-2019

15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?

No

16. Whether institutional data submitted to AISHE:

Yes

Year of Submission

2020

Date of Submission

18-Aug-2020

17. Does the Institution have Management Information System ?

Yes

If yes, give a brief description 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 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 resource management (2L+1P)	09/07/2010
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
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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)	Nil	22/08/1958
PhD or DPhil	Nil	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)	18/11/2019	7
Advances in Vegetable Breeding for Quality and Special Traits (VSC622)	30/03/2020	7
Algae in Agriculture and Industry (MB605)	30/03/2020	4
Applications of Microorganisms in Agriculture (MB606)	18/11/2019	3
Basic Horticulture (VS507)	29/07/2019	5
Biotechnology for Vegetable Crop Improvement (VSC 601)	29/07/2019	7
Breeding of Cross Pollinated Vegetable Crops (VSC 513)	18/11/2019	16
Breeding of Self Pollinated Vegetable Crops (VSC522)	30/03/2020	9
Hi-tech Vegetable Farming (VSC621)	30/03/2020	7
Food Microbiology (MB507)	18/11/2019	5

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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)	Impact of climate resilient technologies on crop	1
MSc(Agriculture)	Economic of contract farming: A case of potato in Gujarat ; Neelkantappa	1

	P (20916), MSc (Ag Econ)	
MSc(Agriculture)	Assessing business performance of farmer producer organizations: A case study of Kolhapur; Vishalkumar Suresh Hosamani (20917), MSc (Ag Econ)	1
MSc(Agriculture)	Impact assessment of biofortified varieties of IARI; Ms Geetha ML (20918), MSc (Ag Econ)	1
MSc(Agriculture)	Making agriculture income-centric: A multi stakeholder analysis; Ms Chiatra Ganesha Ternamakki (20928), MSc (Ag Extn)	1
MSc(Agriculture)	Socio-economic assessment of custom hiring centres in Punjab and Western Uttar Pradesh: A multidimensional study; Ms Juhee Agrawal (20929), MSc (Ag Extn)	1
MSc(Agriculture)	Health and nutritional status of rural women in Kurnool district of Andhra Pradesh: A multidimensional study; Prashant (20930), MSc (Ag Extn)	1
MSc(Agriculture)	Analysis of best practices and impact of selected ARICs; Pradeep Tippannanavar (20931), MSc (Ag Extn)	1
MSc(Agriculture)	Contingency planning for climate change adaptation: An analysis of technological feasibility, institutional arrangements and adoption; Chandan Gowda H (20932), MSc (Ag Extn)	1
MSc(Agriculture)	Status, prospectus and challenges of millets as nutri-health food for enhancing nutritional security in India: Stakeholders' analysis; Bhagirath Das (20933), MSc (Ag Extn)	1

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)	Nil	192	Nil	191
PhD or DPhil	Nil	246	2531	246
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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
2019	Nil	1369	Nil	491	Nil

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
491	491	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
1369	491	1:3

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	491	81	9	421

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
2019	Dr. Neera Singh	Professor	Best Teacher Award in Agricultural Higher Education, ICAR-IARI, New Delhi
2019	Dr. Aditi Kundu	Assistant Professor	Outstanding women scientist award, Society of Pesticide Science, India
2019	Dr Indu Chopra	Associate Professor	Best Poster Award, Society of Pesticide Science, India/ IARI
2019	Dr Indu Chopra	Associate Professor	4th Prize in Hindi power point presentation, IARI
2019	Dr Indu Chopra	Associate Professor	3rd prize in Hindi Anuvad Pratiyogita, IARI
2019	Dr. Neethu Narayanan	Assistant Professor	Best oral presentation award, Symposium
2019	Dr. Parshant Kaushik	Assistant Professor	Best Poster Award, Symposium
2019	Dr. Priya Saini	Assistant Professor	Best oral presentation award, Agricultural Environmental Technology Development

			Society, U.S. Nagar
2019	Dr. Abhishek Mandal	Associate Professor	Young Scientist Award, Society of Pesticide Science, India
2019	Dr. Girish K Jha	Professor	Attended the Launch of the UN Global Campaign on Sustainable Nitrogen Management and the UK Research and Innovation Global Challenges Research Fund (GCRF), South Asian Nitrogen Hub Work-Package Meetings in Colombo, Sri Lanka during October 23-26, 20
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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	23/03/2019	30/03/2019
MSc(Agriculture)	Nill	Trimester-III	13/07/2019	20/07/2019
MSc(Agriculture)	Nill	Trimester-I	16/11/2019	23/11/2019
PhD or DPhil	Nill	Trimester-II	23/03/2019	30/03/2019
PhD or DPhil	Nill	Trimester-III	13/07/2019	20/07/2019
PhD or DPhil	Nill	Trimester-I	16/11/2019	23/11/2019
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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
Nill	242	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
Nil	MSc(Agriculture)	Nil	153	153	100
Nil	PhD or DPhil	Nil	89	89	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://www.iari.res.in/files/Latest-News/Result%20based%20on%20response 2019.pdf](https://www.iari.res.in/files/Latest-News/Result%20based%20on%20response%202019.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
National	Team Brassica (Drs. D.K. Yadava, Sujata Vasudev, Naveen Singh, K.V. Prabhu, S.K. Yadav, M.S. Yadav, Rajkumar, B. Dass, S.C. Giri and Rajendra Singh)	ISGPB appreciation certificate' for landmark variety 'Pusa Mustard 30'	Nil	ISGPB
National	Dr. D.K. Yadava, Head, Division of Seed Science and Technology	'NAAS Recognition Award' for Genetic improvement of rapeseed mustard	Nil	NAAS
National	Team -Drs. M. Sivasamy, Sanjay Kumar, Vikas, V.K., P. Jayaprakash, T.R. Das	Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural and Allied Sciences 2019	Nil	ICAR
National	Dr. K. Annapurna	Excellence Award in PGPR	Nil	Asian PGPR Society

		Research		
National	Dr. K. Annapurna	INSA Visiting Scientist-2018, Germany.	Nill	INSA
National	Dr. Aditi Kundu	Outstanding women scientist award	Nill	Society of Pesticide Science, India
National	Dr. Neera Singh	Best Teacher Award in Agricultural Higher Education	Nill	ICAR-IARI, New Delhi
National	Team Brassica (Drs. D.K. Yadava, Sujata, K.V. Prabhu, T. Mohapatra, B. Dass, S.C Giri, S.K. Yadav, A.K. Yadav, Raj Kumar, Raj Kumar, Karnal)	ISGPB appreciation certificate' for landmark variety 'Pusa Mustard 25'	Nill	ISGPB
National	Dr. Radha Prasanna	Fellowship of the Academy of Microbiological Sciences (FAMSc).	Nill	Academy of Microbiological Sciences
National	Dr. (Mrs.) Anuja Gupta,	Fellow of Indian Phytopathological Society (FPSI)	Nill	Indian Phytopathological Society
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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
SRF	1825	DBT
SRF	1825	UGC-CSIR
IARI JUNIOR FELLOWSHIP	730	IARI
IARI Senior Research Fellowship	1095	IARI
ICAR PG SCHOLARSHIP	730	ICAR
ICAR JRF SRF FELLOWSHIP	1095	ICAR
National Fellowship (Scheduled Tribe)	1825	Ministry of Tribal Affairs
National Fellowship (Schedule Cast)	1825	UGC
Maulana Azad National Fellowship	1825	Ministry of Minority Affairs
NET-JRF	1825	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	1095	ICAR, AIREA, BARC, DAE, CSIR, DAC, DBT, DRDO, DST, IMD, MoHRD, MSME, NCPAH, NHB, PPVFRA, RKY, SAC, NFSM	33800	Nil
Minor Projects	1095	ICAR, CSIR, DACFW, DBT, DST, MoHRD, NABARD, NFSM, PPVFRA	468	Nil
Industry sponsored Projects	1095	Ajay Bio tech (India) Ltd. Individual consultancy IRRI, Myanmar RK Overseas, M/s Tirupati Cement Products, Mahalanobis National Crop Forecast Centre, Near Krishi Vistar Sadan (MNCFC) Construction Design Services UP Jal Nigam, Noida	64	Nil
Projects sponsored by the University	2555	IARI	500	500
International Projects	1095	ICARDA, GCFSI, UNDP, Bill Milinda Gates Foundation, DWFI, IRRI, Harvest Plus, IFPRI	2241	Nil
Total	Nil	Nil	Nil	7906

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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
Samarth - Workshop 1	ZTM BPD Unit	11/02/2019
Samarth - Workshop 2	ZTM BPD Unit	07/05/2019
Samarth - Workshop 3	ZTM BPD Unit	12/09/2019
Samarth - Workshop 4	ZTM BPD Unit	18/11/2019
Pusa Startup Momentum - A flagship program under Samarth	ZTM BPD Unit	12/07/2019
Start-upto Corporate 1	ZTM BPD Unit	14/03/2019
ARISE	ZTM BPD Unit	13/05/2019
Start-up-Farmer Dialogue	ZTM BPD Unit	29/05/2019
Start-upto Corporate 2	ZTM BPD Unit	30/05/2019
Technology innovation Day	ZTM BPD Unit	30/08/2019
Intellectual Property Rights Business for SMEs and Startups	ZTM BPD Unit	04/09/2019
Valorization of Horticultural and Arable Crops	ZTM BPD Unit	02/12/2019
ADP on Integrated Approach for Diagnostics and #Management of Insect Pest, Vectors and Natural Enemy	ZTM BPD Unit	20/01/2020
Maitri: Indo-Brazil Agri tech Cross Border Incubation program 2019.	ZTM BPD Unit	Nil

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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	IITKharagpur	Nil	Most Innovative product award at Empressario
Hydrology sensor and IoT	NEER AGRIVENTURES	Brigham Young University (Utah, USA)2019	Nil	Global Finalist at International business model competition
A STUDY ON MARKET INTEGRATION AND PRICE FORECASTING OF MAJOR VEGETABLES IN	Nandini Saha (11380)	ICAR-IARI	14/02/2020	IARI merit award for MSc 58th convocation of IARI HELD DURING Feb 10-14, 2020

INDIA				
MODELLING EVAPOTRANSPIRATION AND WATER PRODUCTIVITY OF WHEAT UNDER TILLAGE, RESIDUE AND NITROGEN MANAGEMENT	Koushik Bag, 20936	ICAR-IARI	14/02/2020	IARI Merit Medal
DEVELOPMENT OF INDIGENOUS SENSOR NETWORK BASED IRRIGATION SYSTEM FOR IMPROVING AGRICULTURAL WATER PRODUCTIVITY	Jitender Kumar PhD	ICAR	Nill	Jawaharlal Nehru Award for Outstanding Doctoral Thesis
STUDIES ON DESIGN PARAMETERS OF UREA AMMONIUM NITRATE (UAN) APPLICATOR SYSTEM	Prem Kumar Sundaram, PhD	Indian Society of Agricultural Engineering	Nill	ISAE TAFE Gold medal
Grading up of Bengal Goats by conserving semen for artificial insemination	Aegipan Animal Biocare Pvt. Ltd.	Indian Chamber of Commerce	Nill	ICC StartUp Pad Agriculture Award
Precision in irrigation management	AgSmartic Technologies Pvt Ltd.	Nill	Nill	Top3 startups in Himalayan Innovation Challenge
Precision in irrigation management	AgSmartic Technologies Pvt. Ltd.	IIM Ahmedabad	Nill	One of the12startups to be part of Innovation Playground
Post-Harvest, Food Technology Value addition	Leaf Era Agro Foods Private Limited	Ministry of MSME	Nill	Awarded by Ministry of MSME for Excellence in Products
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3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Center	Name	Sponsered By	Name of the Start-up	Nature of Start-up	Date of Commencement
PUSA KRISHI (ZTM	PUSA KRISHI (ZTM	ICAR, RKVY-RAFTAAR and	Imago-AI	A.I.enable dagri-food	Nill

BPD UNIT)	BPD UNIT)	DST		quality decision system	
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	FASAL	AI-powered SaaS platform to provide farm level, crop specific and crop-stage specific intelligence	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Doodhbhandar	Dairy Management	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Bonfarmo Captech (CT) Pvt Ltd	A device for precise sugarcane bud cutting	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Avocare Biotech Centre	Tissue culture of Cordyceps Militarisis (Yarsagumba) and its post harvest products	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Aegipan Animal Biocare Pvt. Ltd.	Grading up of Bengal Goats by conserving semen for artificial insemination	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	BBC Agro Seeds Agro Industries	BBC Straw Seed erisatractor mounted conservation sowing equipment to eliminate the problem of rice straw burning.	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Delmos Research Pvt. Ltd.	Milk testing kit	Nil
PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY-RAFTAAR and DST	Dissolved Oxygen Plus	Farm Mechanization-Sprinkler aerator	Nil

PUSA KRISHI (ZTM BPD UNIT)	PUSA KRISHI (ZTM BPD UNIT)	ICAR, RKVY- RAFTAAR and DST	Elicius Energy	Portable device to determine the quality and ripeness of fruits and vegetables.	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	1
Agricultural Economics	3
Agricultural Engineering	4
Agricultural Extension	5
Agricultural Physics	1
Agricultural Statistics	5
Agronomy	2
Bioinformatics	1
Computer application	3
Entomology	5
Environmental Sciences	1
Genetics and Plant Breeding	6
Horticulture	16

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	22	Nil
National	Agricultural Economics	5	Nil
National	Agricultural Engineering	19	Nil
National	Agricultural Extension	13	Nil
National	Agricultural Physics	12	Nil
National	Agronomy	23	Nil
National	Entomology	5	Nil
National	Genetics and Plant Breeding	55	Nil
National	Floriculture and landscaping	17	Nil

National	Fruits and Horticulture Technology	12	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	14
Agricultural Economics	5
Agricultural Engineering	11
Agricultural Extension	24
Agronomy	60
Biochemistry	3
Entomology	19
Environmental Sciences	25
Genetics and Plant Breeding	23
Fruits and Horticultural Technology	3
View File	

3.4.4 – Patents published/awarded/applied during the year

Patent Details	Patent status	Patent Number	Date of Award
The 3 polymorphic primers for species-specific detection of begomo virus	Filed	201911051754	13/12/2019
Natural carrier based anthocyanin formulation for targeted release in git and process thereof	Filed	201911014982	15/04/2019
Pigeon pea Pod Stripper	Published	313550	31/05/2019
Heat Stable Anthocyanin Rich Composition and process of its preparation	Published	321722	27/09/2019
Nanofabrication of phosphorus on kaolin mineral receptacles	Published	316692	24/07/2019
Digital Soil Test Fertilizer Recommendation (STFR) Meter	Published	330282	27/01/2020
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
Antibiotics bioremediation: Perspectives on its ecotoxicity and resistance	Kumar, M., Jaiswal, S., Sodhi, K.K., Shree, P., Singh, D.K., Agrawal, P.K., Shukla, P.	Environment International	2019	Nil	ICAR-IARI	164
Climate change impact and adaptation for wheat protein	Asseng, S., Martre, P., Maiorano, A., Rötter, R.P., O'Leary, G.J., Fitzgerald, G.J., Girousse, C., Motzo, R., Giunta, F., Babar, M.A., Reynolds, M.P., Kheir, A.M.S., Thorburn, P.J., Waha, K., Ruane, A.C., Aggarwal, P.K., Ahmed, M., Balkovič, J., Bass	Global Change Biology	2019	Nil	ICAR-IARI	152
Trace elements in soil-vegetables interface: Translocation, bioac	Gupta, N., Yadav, K.K., Kumar, V., Kumar, S., Chadd, R.P.,	Science of the Total Environment	Nil	Nil	ICAR-IARI	135

cumulation , toxicity and amelioration - A review	Kumar, A.					
Exploitation of microbial antagonists for the control of postharvest diseases of fruits: a review	Dukare, A.S., Paul, S., Nambi, V.E., Gupta, R.K., Singh, R., Sharma, K., Vishwakarma, R.K.	Critical Reviews in Food Science and Nutrition	Nil	Nil	ICAR-IARI	122
Role of silicon in mitigation of heavy metal stresses in crop plants	Bhat, J.A., Shivaraj, S.M., Singh, P., Navadagi, D.B., Tripathi, D.K., Dash, P.K., Solanke, A.U., Sonah, H., Deshmukh, R.	Plants	Nil	Nil	ICAR-IARI	119
Hazardous heavy metals contamination of vegetables and food chain: Role of sustainable remediation approaches - A review	Kumar, S., Prasad, S., Yadav, K.K., Shrivastava, M., Gupta, N., Nagar, S., Bach, Q.-V., Kamyab, H., Khan, S.A., Yadav, S., Malav, L.C.	Environmental Research	Nil	Nil	ICAR-IARI	114
A review on biochar modulated soil condition improvements and	Purakayastha, T.J., Bera, T., Bhaduri, D., Sarkar,	Chemosphere	Nil	Nil	ICAR-IARI	109

<p>nutrient dynamics concerning crop yields: Pathways to climate change mitigation and global food security</p>	<p>B., Mandal, S., Wade, P., Kumari, S., Biswas, S., Menon, M., Pathak, H., Tsang, D.C.W.</p>					
<p>Fluoride contamination, health problems and remediation methods in Asian groundwater: A comprehensive review</p>	<p>Yadav, K.K., Kumar, S., Pham, Q.B., Gupta, N., Rezanian, S., Kamyab, H., Yadav, S., Vymazal, J., Kumar, V., Tri, D.Q., Talaiekhozani, A., Prasad, S., Reece, L.M., Singh, N., Maurya, P.K., Cho, J.</p>	<p>Ecotoxicology and Environmental Safety</p>	<p>Nil</p>	<p>Nil</p>	<p>ICAR-IARI</p>	<p>100</p>
<p>Resequencing of 429 chickpea accessions from 45 countries provides insights into genome diversity, domestication and agronomic traits</p>	<p>Varshney, R.K., Thudi, M., Roorkiwal, M., He, W., Upadhyaya, H.D., Yang, W., Bajaj, P., Cubry, P., Rathore, A., Jian, J., Doddamani, D., Khan, A.W., Garg, V., Chitkineni, A., Xu,</p>	<p>Nature Genetics</p>	<p>Nil</p>	<p>Nil</p>	<p>ICAR-IARI</p>	<p>97</p>

	D., Gaur, P.M., Singh, N.P., Chat urvedi, S.K., Nadigatla, G.V.P.R., Kr					
Soil organic carbon dynamics: Impact of land use changes and management practices: A review	Ramesh, T., Bolan, N.S., Kirkham, M.B., Wije sekara, H., Kanchi kerimath, M., Srinivasa Rao, C., Sandeep, S., Rinklebe, J., Ok, Y.S., Choudhury, B.U., Wang, H., Tang, C., Wang, X., Song, Z., Freeman II, O.W.	Advances in Agronomy	Null	Null	ICAR- IARI	89

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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
Antibiotics bioremediation: Perspectives on its ecotoxicity and resistance	Kumar, M., Jaiswal, S., Sodhi, K.K., Shree, P., Singh, D.K., Agrawal, P.K., Shukla, P.	Environment International	2019	33	164	ICAR-IARI
Climate change impact and adaptation for wheat	Asseng, S., Martre, P., Maiorano,	Global Change Biology	2019	33	152	ICAR-IARI

protein	A., Rötter, R.P., O'Leary, G.J., Fitz gerald, G.J., Girousse, C., Motzo, R., Giunta, F., Babar, M.A., Reynolds, M.P., Kheir, A.M.S., Thorburn, P.J., Waha, K., Ruane, A.C., Aggarwal, P.K., Ahmed, M., Balkovi?, J., Bass					
Trace elements in soil-ve getables interface: Translocat ion, bioac cumulation , toxicity and amelio ration - A review	Gupta, N., Yadav, K.K., Kumar, V., Kumar, S., Chadd, R.P., Kumar, A.	Science of the Total Envi ronment	2019	33	135	ICAR- IARI
Exploita tion of microbial antagonist s for the control of postharves t diseases of fruits: a review	Dukare, A.S., Paul, S., Nambi, V.E., Gupta, R.K., Singh, R., Sharma, K., Vishwa karma, R.K.	Critical Reviews in Food Science and Nutrition	2019	33	122	ICAR- IARI
Role of silicon in mitigation of heavy metal stresses	Bhat, J.A., Shivaraj, S.M., Singh, P., Navadagi,	Plants	2019	33	119	ICAR- IARI

in crop plants	D.B., Tripathi, D.K., Dash, P.K., Solanke, A.U., Sonah, H., Deshmukh, R.					
Hazardous heavy metals contamination of vegetables and food chain: Role of sustainable remediation approaches - A review	Kumar, S., Prasad, S., Yadav, K.K., Shrivastava, M., Gupta, N., Nagar, S., Bach, Q.-V., Kamyab, H., Khan, S.A., Yadav, S., Malav, L.C.	Environmental Research	2019	33	114	ICAR-IARI
A review on biochar modulated soil condition improvements and nutrient dynamics concerning crop yields: Pathways to climate change mitigation and global food security	Purakayastha, T.J., Bera, T., Bhaduri, D., Sarkar, B., Mandal, S., Wade, P., Kumari, S., Biswas, S., Menon, M., Pathak, H., Tsang, D.C.W.	Chemosphere	2019	33	109	ICAR-IARI
Fluoride contamination, health problems and remediation methods in Asian groundwater: A comprehensive review	Yadav, K.K., Kumar, S., Pham, Q.B., Gupta, N., Rezania, S., Kamyab, H., Yadav, S., Vymazal,	Ecotoxicology and Environmental Safety	2019	33	100	ICAR-IARI

	J., Kumar, V., Tri, D.Q., Talaiekhozani, A., Prasad, S., Reece, L.M., Singh, N., Maurya, P.K., Cho, J.					
Resequencing of 429 chickpea accessions from 45 countries provides insights into genome diversity, domestication and agronomic traits	Varshney, R.K., Thudi, M., Roorkiwal, M., He, W., Upadhyaya, H.D., Yang, W., Bajaj, P., Cubry, P., Rathore, A., Jian, J., Doddamani, D., Khan, A.W., Garg, V., Chitikineni, A., Xu, D., Gaur, P.M., Singh, N.P., Chaturvedi, S.K., Nadigatla, G.V.P.R., Kr	Nature Genetics	2019	33	97	ICAR-IARI
Soil organic carbon dynamics: Impact of land use changes and management practices: A review	Ramesh, T., Bolan, N.S., Kirkham, M.B., Wijesekera, H., Kanchikerimath, M., Srinivasa Rao, C., Sandeep, S., Rinklebe, J., Ok,	Advances in Agronomy	2019	33	89	ICAR-IARI

Y.S.,
Choudhury,
B.U.,
Wang, H.,
Tang, C.,
Wang, X.,
Song, Z.,
Freeman
II, O.W.

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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	124	296	6	34
Presented papers	104	197	2	11
Resource persons	63	126	16	37
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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. Arun Kumar M.B., Principal Scientist, Division of SST	IRRI consultant at Myanmar for improvement of seed system.	Individual consultancy IRRI, Philippines	351624
Dr. Pramod Kumar, Principal Scientist, Division of Agril. Economics	Evaluation of Forecasting Agricultural Output using Space, Agrometeorology and Land Based Observation (FASAL) project-	Mahalanobis National Crop Forecast Centre, Near Krishi Vistar Sadan (MNCFC)	498000
Dr. Ravinder Kaur Principal Scientist WTC	Designing an IARI Technology based Wastewater Treatment Facility for Residential Boarding School Jawahar Navodaya Vidyalaya at Rasulpur, Palwal, Haryana	Project Manager, Unit-12, Construction Design Services, UP Jal Nigam, Noida	283000
Dr. Mandira Barman, Scientist, Division of SSAC	Assessing Impact of Cerium and lanthanum Compounds and Mining Limited on Soil Health and Plant	Rangad Minerals and Mining Limited, Karnataka, India.	4142688

Dr. Bhupinder Singh, RSO and Principal Scientist, CESCRA	"Assessment and utilization of yellow gypsum in agriculture under variable environment".	TATA Steel Limited	24745682
Dr. D.S. Gurjar, Sr. Scientist, WTC	"Study on the impact on vegetation with 10 km radius of plant due to fly ash generated and Primary and Secondary Pollutants on Crop around NTPC-Kudgi".	NTPC-Kudgi	4137943
Dr. Ashwani Kumar, Sr. Scientist, IARI Regional Station, Karnal-PI Dr. Anuja Gupta-CoPI Dr. R.N. Yadav-Co-PI Dr. V.K. Pandita-Co-PI	Efficacy of 'Azomax' and 'Ecomax G' for Enhancement of Yield in Wheat" (Two seasons trials)	JU Agri Sciences Pvt. Ltd.	552174
Dr. Ravinder Kaur Principal Scientist WTC	Designing and IARI Technology based Eco-friendly Wastewater Treatment facility for RK Overseas site in Ghilot Industrial Area, Rajasthan	RK Overseas, 6/9 Kirti Nagar Industrial Area, new Delhi	590000
Dr. Ravinder Kaur Principal Scientist WTC	Designing an IARI Technology based Eco-friendly STP for Construction of polishing unit for the work of Creation of New Water Body at Sector 25, Rohini STP under EE(NW)-II of Delhi Jal Board.	M/s Tirupati Cement Products, C-60, Community Centre, Janakpuri, New Delhi-110058	998280
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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	NSC, New Delhi	223000	25

	Field and Vegetable crops (Rabi) March 12-16, 2019.			
CATAT, IARI, New Delhi	Improved agricultural practices post-harvest management, 10-16th October, 2019	ATMA, Ajmer	19850	30
CATAT, IARI, New Delhi	Improved Agricultural Technologies for Higher Income for farmers of North Tripura, 17-21st November, 2019	ATMA ,North Tripura	16310	25
Division of Floriculture and Landscaping, IARI	MTC Training "Advances in Floriculture and Landscaping" funded by Directorate of Extension, Ministry of Agriculture and Farmers' Welfare, Govt of India 20-27 February 2020	Hort./Agri. State officials of various states	331300	20
Division of Soil Science and Agricultural Chemistry	16th Advanced Level Training on Soil Testing, Plant Analysis and Water Quality Assessment, 25 July - 14August 2019(3 weeks)	Self-sponsored	340000	8
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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
For writing book namely "KrishiAvshesho se jaivIndhankeliye" Renu Singh, Ranvir Singh, O. P. Singh, Satish Serial Publishing house (ISBN 978-93-86200-85-3)	Rajbhasha Gaurav Puraskar By Union Home Minister	Ministry of Home Affairs Govt. of India at Vigyan Bhawan, New Delhi	Nil
Outstanding Rajbhasha (Hindi) work	Hindi Shield for the Division of Agricultural Extension	IARI, New Delhi	Nil
For training and quality seed distribution	Extension worker award	Dept of Agriculture, Govt of UP	Nil
Outstanding work in Tribal Farming Systems, 2019	Fakhruddin Ali Ahmed Award	ICAR, New Delhi	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	Swachhata Abhiyan	10	1369
Mera Gaon Mera Gaurav	Different Divisions of IARI	Awareness creation about schemes of government of India, latest technologies developed by IARI, etc	491	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
To attend 14th IUPAC International Congress of Crop Protection Chemistry, Belgium	Najam Akhtar Shakil	IUPAC, USA and Organizing Committee, 14th IUPAC International Congress of Crop Protection Chemistry, Ghent, Belgium	6

Presented Country paper on Challenges of Indian Seed Industry in Global Seed Symposium at Iowa	Dr Alka Singh	CAAST-NAHEP, IARI	2
Participated in World Food Prize events during at Des Moines, Iowa	Dr Alka Singh	CAAST-NAHEP, IARI	3
Methods of Social Research and Impact Assessment Techniques, Myanmar	Dr R.N.Padaria	ICAR-ACARE program	11
Methods of Social Research and Impact Assessment Techniques, Myanmar	Dr Sudipta Paul	ICAR-ACARE program	11
Teaching faculty to Yezin Agricultural University, Nay Pyi Taw to teach Course on Basic Statistics under India Myanmar - Advanced Centre for Agricultural Research and Education (IM-ACARE) Programme, Myanmar	Dr. Seema Jaggi	DARE	10
Teaching faculty to Yezin Agricultural University, Nay Pyi Taw to teach Course on Basic Statistics under India Myanmar - Advanced Centre for Agricultural Research and Education (IM-ACARE) Programme	Dr. Rajender Parsad	DARE	10
e-Governance Leadership Programme for mission leaders leading to e-Governance projects	Dr. Anil Rai	DARE	9
Expert for imparting classroom and field training to the Govt. of Thailand officials for field testing	Dr. Tauqueer Ahmad	FAO-RAP	7

of guidelines on measurement of harvest and post-harvest losses of cereals, pulses, fruits vegetables, Thailand			
Expert for imparting classroom and field training to the Govt. of Nepal officials for field testing of guidelines on measurement of harvest and post-harvest losses of meat, milk, fruits vegetables, Nepal	Dr. Tauqueer Ahmad	FAO-RAP	5
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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 linkage	Name of the partnering institution/ industry /research lab with contact details	Duration From	Duration To	Participant
Teaching and Research	PG outreach programme	Indian Institute of Horticultural Research, Hesaraghatta, Lakepost, Bangalore 560089	23/12/2010	31/12/2021	12
Teaching and Research	PG outreach programme	CIPHET, Ludhiana, Punjab-141004	04/12/2010	31/12/2021	Nil
Teaching and Research	PG outreach programme	CIAE, Nabi Bagh, Bhopal, Madhya Pradesh, India-462038	10/12/2010	31/12/2021	14
Teaching and Research	PG outreach programme	DWR, Karnal, Haryana 132001	12/11/2011	31/12/2021	Dr RS Chhokar Dr Subhash Chander
Teaching and Research	PG outreach programme	DSR, Hyderabad	08/10/2014	31/12/2021	Dr Hari Prasanna Dr IV Patil Dr Sujay

					Rakshit
Teaching and Research	PG outreach programme	M/s Jain Irrigation Systems Pvt Ltd, Jalgaon, Maharashtra	25/04/2013	31/12/2021	Nil
Teaching and Research	PG outreach programme	Indian Institute of Vegetable Research, JAKHINI, SHA HANSHAPUR, Varanasi-2213 05	20/08/2018	31/12/2021	Dr Nagendra Rai Dr Rakesh Kumar Dubey
Collaborative research work	Development of a plant protection product based on natural extracts and oils derived from karanjin, capsaicin, sesamin and garlic	M/s Seipasa, Valencia, Spain fespina@seipasa.com 34 962 541 163 ICAR-IARI, New Delhi	01/06/2017	30/06/2020	From M/s Seipasa, Spain Dr. Maria De Puig Mora Project Manager Mr. Francisco Espinosa Chief Research Officer From IARI, New Delhi Dr. V.S. Rana (PI) Dr. N.A. Shakil (CO-PI)
Collaborative research work	Chemical, structural and functional characterization of identified anti-tick lead phytochemicals and optimization of delivery matrix for effective application of natural formulation for the control of acaricide resistant ticks	ICAR-IVARI, Izatnagar CSIR-NBRI, Lucknow ICAR-IARI, New Delhi ICAR-DMAPR, Anand CoVAS, Pookode	01/01/2017	31/12/2020	IVRI, Izatnagar Dr. Srikanta Ghosh, Dr. B.C. Saravanan, Dr. Ravi Kumar, Dr. S. Dey, NBRI, Lucknow Dr. AKS Rawat, Dr. Sharad Srivastav, Dr. M. M. Pandey IARI, New Delhi Dr. Rajesh Kumar, Dr. Suman Gupta DMAPR, Anand Dr. Satyanshu

					Kumar CVAS, Pook
Indo-US Bilateral Workshop on "Transnational Research Needs and Applications of Plant Microbiomes",	For collaboration on Plant Microbiome	College of Agriculture Natural Resources, University of Delaware, US	25/02/2020	27/02/2020	Dr K Annapurna Dr Archana Suman Dr B Ramakrishnan Dr V Govindasamy
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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
M/s. Shri Krishna Beej UtpadakSahkari Samiti	08/08/2019	Maize PJHM-1	Nil
M/s. Patanjali Bio Research Institute Pvt. Ltd.	07/08/2019	PUSA Mustard -31	8
M/s. Alliance Agri Tech	30/08/2019	HD-3226	34
M/s. Astha Beej Co. Pvt. Ltd.	30/08/2019	HD-3226	34
M/s. Brar Seeds Farm	30/08/2019	HD-3226	34
M/s. Gee Seeds Company	30/08/2019	HD-3226	34
M/s. Gobind Seeds	30/08/2019	HD-3226	34
M/s. Golden Seeds Chemicals	30/08/2019	HD-3226	34
M/s. Harbir Agrotech Pvt. Ltd.	30/08/2019	HD-3226	34
M/s. Kalra Seed Farm	30/12/2019	HD-3226	34
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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
2008	2008

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
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 patially)	Version	Year of automation
KOHA	Fully	18x	2012

4.2.2 – Library Services

Library Service Type	Existing		Newly Added		Total	
Text Books	135489	Nill	1641	8797706	137130	8797706
Reference Books	3671	Nill	111	994857	3782	994857
e-Books	358	Nill	1358	Nill	1716	Nill
Journals	129715	Nill	115	9221360	129830	9221360
e-Journals	Nill	Nill	7	1670396	7	1670396
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 !!!			
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4.3 – IT Infrastructure

4.3.1 – Technology Upgradation (overall)

Type	Total Co mputers	Computer Lab	Internet	Browsing centers	Computer Centers	Office	Departme nts	Available Bandwid h (MBPS/	Others
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								GBPS)	
Existing	3500	160	3500	0	120	1390	1830	1	0
Added	100	15	100	0	0	35	50	0	0
Total	3600	175	3600	0	120	1425	1880	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
360	360	1636	1636

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 Scholarship	347	71839200
Financial Support from Other Sources			
a) National	SRF-ICAR, DBT, DST, CSIR, National Fellowship (ST), National Fellowship (sc), Moulana Azad National Fellowship, NET-JRF	90	33048000
b) International	ICCR General Scholarship Scheme, India-Afghanistan Fellowship Programme III, India Afghan Scholarship Scheme of MEA, Netaji Subhash-ICAR International Fellowship, SAARC Agriculture PhD scholarship programme, India Africa Fellowship Programme III	14	3520320

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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	10	Department of Agronomy
Agronomy of summer season crops (AGR 003)	09/07/2010	11	Department of Agronomy

Soil and Environment (AGR 004)	09/07/2010	11	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	10	Department of Agricultural Extension
Principles of Post Harvest Technology (AGR 009)	09/07/2010	10	Department of Post Harvest Technology
Elements of Genetics and Plant Breeding (AGR 010)	09/07/2010	10	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
2019	ARS service	1369	1369	11	11
2019	other exams	1369	1369	58	58
No file uploaded.					

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
2	2	510

5.2 – Student Progression

5.2.1 – Details of campus placement during the year

On campus			Off campus		
Name of organizations	Number of students	Number of students placed	Name of organizations	Number of students	Number of students placed

visited	participated		visited	participated	
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	Depratment graduated from	Name of institution joined	Name of programme admitted to
2019	44	MSc (Agri)	Agricultural Extension	IARI	PhD
2019	100	MSc (Agri)	Agricultural Physics	IARI	PhD
2019	86	MSc (Agri)	Agricultural Statistics	IARI	PhD
2019	100	MSc (Agri)	Agronomy	IARI	PhD
2019	75	MSc (Hort)	Floriculture & Land Scaping	IARI	PhD
2019	0	MSc (Hort)	Fruit Science	IARI	PhD
2019	67	MSc (Agri)	Entomology	IARI	PhD
2019	100	MSc (Agri)	Agricultural Chemicals	IARI	PhD
2019	67	MSc (Agri)	Agricultural Economics	IARI	PhD
2019	100	MTech	Agricultural Engineering	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	41
Any Other	69

No file uploaded.

5.2.4 – Sports and cultural activities / competitions organised at the institution level during the year

Activity	Level	Number of Participants
VIHAAN 2018, PGSSU freshers welcome, Sept 13-14, 2018 organized in BP Pal Auditorium	University level	1369

Annual Sports Meet	University level	70
Annual cultural meet	University level	75
Quiz, Declamation, Debate extempore, essay writing, etc	University level	40
No file uploaded.		

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
2019	First Prize, National Essay Writing	National	Nil	1	21207	Ashish Verma
2019	First Prize, Skit	National	Nil	1	21220 21212 11192 11389	Shivam Chaubey, Anand Shiv ashimpar, Aatish Sagar, Dha rmendar, Ajay, Siddharth and Amit
2019	First Prize, Solo Dance	National	Nil	1	21218	Nagawade Omkar Satish
2019	Third Prize, Adzap	National	Nil	1	Nil	Dharmend ar, Ajay, Siddharth
2019	First Prize, Painting and Sketching	National	Nil	1	11438	Tanima Das
2019	Special Prize, Painting and Sketching	National	Nil	1	11211	Sayantani Karmarkar
2019	Third Prize, Sketching	National	Nil	1	21236	Satyam Verma
2019	Silver Medal, Quiz	National	Nil	1	Nil	Team
2019	First Prize,	National	1	Nil	10940	Jamaldheen

	Football					A
2019	Third Prize, Quiz	National	Nil	1	11380 11382 11385	Nandini Saha, Mousumi Priyadarshini and Omprakash
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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 IARIians.

5.4.2 – No. of registered Alumni:

10257

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 is organized on the day of convocation (14 Feb 2020) 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. 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. 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
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

• 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. Strict monitoring of students research progress by advisory Committee, presentation before faculty and BOS members is done meeting. Modification/ 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. The 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. IARI has Scanning Electron Microscope Facility (SEMF) at Division of Entomology and Farm Machinery Testing Centre, Division of Agricultural Engineering. The 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 Division of Soil Science and Agricultural Chemistry which provides services to the scientists, students and farmers.

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 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.

Industry Interaction / Collaboration

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

Admission of Students

- 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).

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 (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
Administration	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
Finance and Accounts	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.
Student Admission and Support	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
Examination	"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 Management System"

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
2019	Dr. D. Vijay	XIV Agricultural science congress	NAAS	8000
2019	Dr. Sangita Yadav	XIV Agricultural science congress	NAAS	8000
2019	Dr. Shiv k. Yadav	XIV Agricultural science congress	NAAS	8000
2019	Awtar Singh	XIV Agricultural science congress	NAAS	8000
2019	Madhubala Thakre	XIV Agricultural science congress	NAAS	8000
2019	Dr Ananta Vashisth	"International Symposium on "ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS" INAGMET 2019 during 11-13	Association of Agrometeorol ogists	5000

		February, 2019 at JNU, New Delhi		
2019	Dr Ananta Vashisth	ISPRS-GEOGLAM- ISRS International Workshop on " Earth Observations for Agricultural Monitoring" during 18-20 February, 2019 at IARI, New Delhi.	Indian Society of Remote Sensing	3000
2019	Dr Ananta Vashisth	XIV Agricultural science congress	NAAS	8000
2019	Dr K.K. Bandyopadhyay	"ISPRS- GEOGLAM-ISRS International Workshop on " Earth Observations for Agricultural Monitoring" during 18-20 February, 2019 at IARI, New Delhi.	Indian Society of Remote Sensing	3000
2019	Aditi Kundu	1st National Agrochemicals Congress: Country's Status on Various Fronts of Agrochemicals. November, 2019	Society of Pesticide Science (SPS), India	6000
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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)
2019	Winter School on "Harnessin	Nil	26/12/2019	15/01/2020	14	Nil

	g new generation green technologies from plants, microbial and waste sources for sustainable crop, environmental and human health", ICAR					
2019	Analytical Approaches on Doubling Farmers' Income (CAFT), ICAR	Nil	01/10/2019	21/10/2019	15	Nil
2019	Training on "Appropriate Small Farm Mechanization for Enhancing Farm productivity and Income" for African nationals.	Nil	17/08/2019	26/08/2019	11	Nil
2020	Online Training on "Life Skills and Personality Development" NAHEP-CAAST	Nil	21/09/2020	25/09/2020	40	Nil
2019	One-week training course on "Preparation and Dissemination of Agromet Advisories at Block	Nil	29/07/2019	03/08/2019	18	Nil

	level" under GKMS for establishing District Agromet Units (DAMU) at KVK, a joint initiative of IMD and ICAR IMD					
2019	Distance learning programme on "Remote Sensing and GIS application in watershed management " under IIRS, Dehradun outreach program, ISRO	Nil	08/04/2019	12/04/2019	17	Nil
2019	Distance learning programme on "Basics of Remote Sensing Geographical Information System and Global Navigation Satellite System" under IIRS, Dehradun outreach program, ISRO	Nil	19/08/2019	22/11/2019	27	Nil
2019	Data Analysis and Interpretation (for ISS Probationers, Ministry of	Nil	13/05/2019	24/05/2019	28	Nil

	Statistics Programme Implementation (MoSPI)					
2019	Statistical Advances in Designing Agricultural Experiments and Data Analysis (CAFT) Education Division ICAR	Nil	19/07/2019	08/08/2019	25	Nil
2019	Advances in Statistical Analysis of Breeding Data (CAFT) Education Division, ICAR	Nil	27/08/2019	16/09/2019	22	Nil

[View File](#)

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
CAFT Training: Next generation sequencing and its application to crop science from	1	03/09/2019	23/09/2019	21
Training programme on 'Laboratory Quality Management System and Internal Audit as per IS/ISO/IEC 17025:2017, at NITS, Noida	1	23/07/2019	26/07/2019	4

conducted by NITS-BIS				
International Workshop on "Management of Persistent Organic Pollutants (POPs) in India: Need and Gap Analysis" organised by CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur.	1	17/07/2019	18/07/2019	2
National Workshop on "Functional Foods, Bioactive Compounds and Phytochemicals for Better Nutrition" will be organized in virtual mode by the Department of Biochemistry, Uttar Banga Krishi Vishwavidyalaya in collaboration with the Society for Plant B	1	09/12/2019	11/12/2019	3
Attended training on "Integrated Assessment: Importing countries and Domestic Regulations requirements" Organized by NABL, Gurugram	1	25/07/2019	26/07/2019	2
Laboratory Quality Management and Internal Audit as per	1	17/12/2020	20/12/2020	4

IS/ISO/IEC 17025:2017				
ICAR-HRD training on "Statistical design and experimental data analysis" ICAR-IASRI, New Delhi.	1	18/02/2020	02/03/2020	12
DST sponsored Training programme on "E ntrepreneurship Development and Management for Women Scientists and Technologists with the Government Sector" 10-21 February, 2020, at Entrepreneur ship Development Institute of India, Ahmedabad., Dr Sangeeta Paul	1	10/02/2020	21/02/2020	12
CAFT training programme on "Next generation sequencing and its application to crop science" at that ICAR- National Institute for Plant Biotechnology, (Formally NRCPB), Pusa Campus, New Delhi, Dr Pranita Jaiswal	1	03/09/2019	23/09/2019	21
NIAS - DST Training Programme for Women Scientists on "Science and Sustainability in India	1	23/09/2019	27/09/2019	5

(Organized by National Institute for Advanced Studies (NIAS), Bangalore), Dr Radha Prasanna

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

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
9	9	3	3

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 Research Advisory Council (RAC) Are mechanism to monitor the research and teaching activities of the institute and recommendations are compiled with	Yes	Board of Studies and Divisional Budget and Research Committee (IRC 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)

- Parents are invited during Convocation and they are encouraged to give their feedback during the farewell programme organized in each Divisions for outgoing students. The students are felicitated for their academic and other achievements. Parents help in the mentoring and counselling of their wards as and when need arises

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	No

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
2019	Research Advisory Committee Meeting	12/12/2019	18/12/2018	12/12/2019	40
2019	Academic Council Meeting	07/02/2019	14/12/2018	07/02/2019	45
2019	Academic Council Meeting	25/07/2019	07/02/2019	25/07/2019	37
2019	Academic Council Meeting	14/11/2019	25/07/2019	14/11/2019	41
2019	Extension Council Meeting	26/09/2019	12/09/2018	26/09/2019	39
2020	ISO Certification	28/02/2020	Nil	28/02/2020	31

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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

Establishment of Nutri-farm	05/04/2019	05/04/2019	18	0
Minimization of nutrient loss in processing	11/04/2019	11/04/2019	20	0
Minimization of nutrient loss in processing	14/05/2019	14/05/2019	16	0
Location specific drudgery reduction technologies	26/06/2019	26/06/2019	14	0
Dress-designing and tailoring	01/05/2019	14/06/2019	22	Nil
Promotion of bio fertilizers for organic farming	23/07/2019	24/07/2019	25	7
Improved Agricultural Technologies for Higher Income for farmers of North Tripura	17/11/2019	21/11/2019	17	8
Improved Agricultural Technologies for Higher Income for farmers of North Tripura	19/01/2020	23/01/2020	9	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

- 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 with a capacity of 50 kg per hour to manage hazardous laboratory waste. The facility was created with the IARI plan fund of Rs 18 lakh in year 2014-15.
- The institute has got IBSC to scrutinize and approve applications related to research on GMOs includes genome editing as directed by DBT and Ministry of Science and Technology

7.1.3 – Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Physical facilities	Yes	33
Provision for lift	Yes	33
Ramp/Rails	Yes	33
Rest Rooms	Yes	33
Scribes for examination	Yes	33

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
2019	1727	600	Nil	365	Mera Gaon Mera Gaurav	Enhancing farmers knowledge about latest technology Dissemination of latest technology to farmers field	Nil
2019	12	10	Nil	365	IARI Post office linkage model	Enhanced outreach of frontline extension system, Coverage of remotely located farmers through IARI improved technologies	Nil
2019	32	4	Nil	365	ARYA scheme	Entrepreneurship development in rural youth and women	Nil

						<p>under ARYA project: Under this project KVK Shikohpur has given training to 32 youth and women in 2 areas viz, protected cultivation, and mushroom production, out of which 15 participant adopted</p>	
2019	504	4	Nil	365	<p>Frontline Demonstration programme</p>	<p>CFLD on mustard under NMOOP with 282 demonstrations with 200 ha area for improved varieties and latest recommended package of practices were demonstrated. CFLD on pulses under NFSM were demonstrated 100 ha area with 176 demonstrations were organized</p>	Nil

2019	546	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	Nil
2019	397	17	Nil	365	Strengthening Extension Education Programme of Developing Innovative Models and Techniques for Higher Productivity and Profitability in Agriculture	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.	Nil
2019	122	2	Nil	365	IARI-VOs Partnership Programme	• Multiplication of quality seed of improved varieties • Out scaling of the technology in speedy manner. • Spread of the technology in large part of	Nil

the Northern India. Quality seed production of both paddy and wheat were taken up at YFA

[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	01/02/2011	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 Council of Agricultural Research, New Delhi.	28/09/2016	The guidelines are being followed and practiced in true spirit for commercialization and IP management
ICAR, 2014. ICAR Rules and guidelines for Professional Service Functions (Training, Consultancy, Contract Research and Contract Service, Indian Council of Agricultural Research, New Delhi	21/09/2014	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	03/09/2020	Three per cent of the total number of seats in each scheme of admission

differently abled persons, Published in IARI Annual Report, 2016, Page 180.

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 2019-20, 12 physically challenged students (4 M.Sc./M.Tech and 8 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	28/10/2019	02/11/2020	1914
Agricultural research, research ethics, rural development programme (PGS 505)-	01/01/2019	31/12/2019	126
Adoption of Anti-Plagiarism Policy: To maintain academic integrity, 1434 documents in the form of thesis and manuscripts prior to submission were subjected to web based software and similarity reports were generated.	01/01/2019	31/12/2019	Nil
Anti-Ragging/ Grievance redressal mechanism:: PG School, IARI, New Delhi has Standing Committee on Students Problems Discipline, Welfare, Board and Residences which considers Complaints/Grievance of students, if any.	01/01/2019	31/12/2019	1914

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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

IARI BEST PRACTICE A. TITLE OF PRACTICE: PUSA DECOMPOSER TECHNOLOGY FOR AGRICULTURAL WASTE MANAGEMENT OF ICAR-IARI A1. Objectives India generates about 62 million tons of bio-waste every year. Not only the waste has increased in quantity, but the characteristics of waste have also changed tremendously over a period. The present practice is usually to burn these residues or to leave them to decompose in open. There is an urgent need for rapid degradation of all types of crop residues generated like paddy straw, maize stalks, sugar cane trash, flower waste, garden waste and kitchen waste as an alternate to burning. Some microbial formulations have been developed to overcome this problem but these are not easy to use under field conditions. At IARI, New Delhi, Pusa decomposer, a consortium of seven fungi, has been developed on the basis of their lingo cellulolytic enzyme production potential. In-situ and ex-situ bio-degradation of crop residue and farm waste helps in improvement of soil health by increasing the organic carbon in soil and reduces air pollution by preventing farmers from burning of crop residue. A 2. The Context Burning of crop residue causes damage to other micro-organisms present in the upper layer of the soil as well as its organic quality. Due to the loss of friendly pests, the wrath of enemy pests has increased and as a result, crops are more prone to disease. The solubility capacities of the upper layers of soil have also been reduced. According to a report, one tonne stubble burning leads to a loss of 5.5 kilogram nitrogen, 2.3 kg phosphorus, 25 kg potassium and more than 1 kg of sulfur – all soil nutrients, besides organic carbon. Therefore, development of fast degrading, easy to pusa decomposer technology is giving a permanent solution to the farmer community. Farmers and entrepreneurs is relieved of disposal of paddy residue within 25 days time without burning and polluting the environment and also enhanced decomposition of paddy waste into a value added product i.e, compost would help as source of income. A3.The Practice Pusa Decomposer: Division of Microbiology, ICAR-IARI, New Delhi, has developed an effective microbial solution Pusa Decomposer (both in liquid and capsule form) for accelerated decomposition of paddy straw. Four capsules of this product can be scaled up to 25L liquid formulation which can be applied in- situ to 1.0 ha of rice field having 5- 6 tonnes of paddy straw. Pusa Decomposer plays an important role in in-situ and ex-situ decomposition of paddy straw. For In-situ management, harvesting paddy with combine followed by chopper plus mulcher and spraying Pusa Decomposer followed by rotavator and light irrigation to keep the field moist has shown accelerated decomposition of the paddy straw and enabled the farmer to do timely wheat sowing. This was widely demonstrated in Punjab, Haryana, UP and NCR Delhi. Use of Pusa Decomposer does not provide any machine substitution. It accelerates process of paddy straw decomposition and makes the field ready for wheat sowing in 25 days. Use of Pusa Decomposer enhances chemical, biological and nutritional profile of soil. A4.Evidence of Success Last two years in 2020 and 2021 Delhi Govt. had the Pusa Decomposer solution

sprayed on farmlands (1,935 acres) in the capital and found it decayed the crop stubble in around 20-25 days in time for the farmers to make the fields ready for next crop sowing. 90 of the farmers said the stubble and straw decomposed within 15-20 days when earlier it took 50-60 days. The farmers were happy that the wheat crop benefitted, as the yield increase was found to be 8-10. In 2021, ICAR-IARI in collaboration with a company is preparing to bring about >6000 acres under the Pusa Decomposer spray in Punjab alone for which 25,000 farmers have been selected to participate. UP Govt. is planning for 5000 ha to be brought under Pusa Decomposer. The technology has been licensed to 10 companies and each of them is keen to help the farmer to curtail the straw burning by mass production of the Pusa Decomposer product and making it readily available.

Its use enriches the soil with organic carbon (OC), nutrients and soil biological and physical properties also improve. In contrast, burning of paddy straw kills beneficial microorganisms and in addition causes air pollution. Therefore, Pusa Decomposer is a long term sustainable solution for management of paddy straw in conjunction with machinery. A 5. Problems Encountered The very first problem is due to different farms sizes mainly small < 5 acres to large > 100 acres, the exact following of SOP for Pusa decomposer is not being maintained by all the farmers. Secondly, availability and accessibility of machinery for proper dissemination of technology at farmers field is utmost important. Custom hiring of spray machines like boom sprayer should be provided at village level. Thirdly, results may vary due to difference in soil texture of different areas.

B. TITLE OF PRACTICE: OFF-GRID, BATTERYLESS PUSA FARM SUNFRIDGE TECHNOLOGY B1. Objectives This is an innovative initiative to provide refrigerated storage of perishables for small holder farmers, even in areas lacking electricity supply. The requirement among farmers in India for community-level or on-farm cool structures for storage of perishables is immense, however their availability is limited. PUSA Farm SunFridge(FSF) is a specially designed off-grid batteryless green energy solar-refrigerated-evaporative cold storage structure that is effective and inexpensive and can enhance storability and help the grower control marketing of his high-value perishables. The FSF offers farmers an inexpensive access to "one's own" on-farm cold store that requires no utility-based electricity, and can improve control over marketing crops to fetch better prices and enhance their income.

B2 The Context High post-harvest losses especially due to high ambient temperatures in summer season lack of sufficient cold storages and unreliable erratic electricity supply on farmers' fields are some of the challenges faced by small holder farmers in India. The Pusa Farm SunFridge meets these

challenges successfully, because the Sunfridge is cooled by solar energy (green or renewable energy) during the day and cold water in water battery (thermal storage) during nighttime. The 2-tonne Sunfridge can be easily built as on-farm structure and can help farmer store or precool his produce, which will enable reduction in post-harvest losses causing his enhanced income. B3 The Practice

The Farm SunFridge(FSF) is a solar-refrigerated evaporatively-cooled off-grid, batteryless, on-farm cold store for storage of perishables. The evaporative cooling component reduces heat load on the structure, enabling the use of a smaller solar panel array and smaller capacity refrigeration system. The FSF has been tested extensively for storage of amaranth - a model plant to evaluate

imperfect storages. These 2-tonne FSFs can be self-built by farmers in two stages: initially as a evaporatively cooled store at 1st stage and then installing insulation and refrigeration system as add-on in the 2nd stage. The first of its kind concrete/FSF(inner size 3 x 3 x 3 m), built at the Division

of Agricultural Engineering, IARI in 2017, was made of reinforced cement concrete (RCC) roof, supported on 4 concrete columns. The columns were sheathed in autoclaved aerated concrete (AAC) blocks and built on a concrete foundation. The iron frame FSF takes a quarter of that time to be completed and operational

and would cost less in both materials and labor. This has been built in prefabricated and assemble-enabled iron frame at IARI exhibition ground. B4.

Evidence of Success The FSF is operational at three semi-arid villages in states of Rajasthan, Haryana, and Delhi, and the fourth FSF is built as a demo unit at IARI Exhibition ground in Delhi. The latter has been visited by over 500 farmers/ policy makers since March 2021, covered extensively on various print (total circulation approx. 5 million) and social media platforms, and has stimulated intense interest among growers and policy makers. Around 68 of the visitors have expressed a desire to build FSF at their farms. The latest FSF at Cullakpur, Delhi, is in operation since December 27, 2021, and temperature and RH data of FSF can be retrieved from the cloud at

<https://dashboard.hobolink.com/public/Farm20SunFridge20Cullakpur20Delhi>. The data from the Farm Sunfridge at IARI, Pusa is also uploaded to the cloud and can be seen at

<https://dashboard.hobolink.com/public/Farm20SunFridge20IARI20PUSA20Delhi>. B5 Problems Encountered and Resources Required The problems encountered are that the farmers and retailers need more than 2 tonnes capacity structure, so higher capacity FSFs need to be designed and built, for which more research is required too. More Farm SunFridges need to be built as demonstration units in different agro climatic zones in India for the farmers and retailers to have first-hand knowledge and hands on experience of the working of these off-grid batteryless cold stores. We would require 10 such FSFs in India for which the resources needed would be to the tune of 1 crore rupees.

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

https://www.iari.res.in/index.php?option=com_content&view=article&id=829&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 through its research, education and extension envisages addressing SDG 2. In 2019, the Institute released 31 varieties/ hybrids of agri-horticultural crops for diversified needs of the Country. IARI wheat varieties occupy about 60 of wheat grown area and contributing to the prosperity of millions of farmers. In 2019 four bread wheat varieties and two durum wheat varieties were released in 2019. This includes HD 3249 enriched with 42.5 ppm of Fe and 27 ppm of Zn and HI 8802 with high protein (13.0) and carotenoid content (5.7 ppm). To address the Vitamin A deficiency (VAD), a major problem of our population, three bio-fortified maize hybrids viz., 'Pusa HQPM-5 Improved', 'Pusa HQPM-7 Improved' and 'Pusa VH-27 Improved' were released. In vegetable crops, two hybrids and 15 varieties were released this year for commercial cultivation. A wide array of technologies including new farm machinery, resource conservation technologies, beneficial microbes for reducing the input cost and enhancing farmers' income, while minimizing the emission of Greenhouse gases were developed. IARI has made a breakthrough in developing and popularizing "Pusa Decomposer", a fungal consortium, for in situ and ex situ crop residue decomposition which will help mitigate rice residue burning problem and air pollution, and also enhance soil fertility. We played a pivotal role in Mera Gaon Mera Gaurav programme which improved outreach of technologies through on field demonstrations and direct interaction between scientists and farmers addressing specific needs from time to time. Pusa Krishi Vigyan Mela 2019 with the theme of Krishi Vikas: Innovative Technologies was organized from March 5-7, 2019, wherein over one lakh visitors and 170 public and private exhibitors from across the country participated. Under the ICAR-NAHEP CAAST project, 10 students and 2 faculties were trained at international laboratories abroad. IARI has also trained 700 students from more than 100 different institutions across India on the area of genomics. Human resources developed at IARI

continue to contribute to the global food security. It is a matter of great pride for this institute that 2020's World Food Prize was conferred upon Prof. Rattan Lal, an alumnus of IARI. During 58th Convocation of the Post Graduate school on February 14, 2020, 242 candidates (144 M.Sc., 9 M.Tech. and 89 Ph.D.) including 15 (11 M.Sc. and 4 Ph.D.) international students were awarded degrees. A MoU was signed for dual and joint Ph.D. programme of ICAR-IARI students with Western Sydney University, Australia ICAR-IARI continued to assist Afghan National University of Agricultural Sciences and Technology (ANASTU), Kandahar, Afghanistan and Advanced Centre for Agricultural Research and Education (ACARE) at Yezin Agricultural University, Myanmar in higher agricultural education. The faculty have brought external research grant to the tune of 185 crores from NASF (ICAR), NAHEP (ICAR), DBT, DST and other international agencies for sustaining the excellence in research, education and development programs of the Institute. Faculty and students have published 446 papers in international peer reviewed journals. IARI has been recognised "Special Institution" by Empowered Expert Committee of the Institutions of Eminence, UGC.

Provide the weblink of the institution

https://www.iari.res.in/files/Publication/annual_report/IARIAnnualReportRevised2019_20_30092020.pdf

8.Future Plans of Actions for Next Academic Year

1. To Enhance the Research Outcome of faculty and students: Faculties will be encouraged to bring external funded projects, and to conduct basic and strategic research for enhancing the research publication and development of technologies towards attaining Sustainable Developmental Goals (SDGs). 2. To initiate PG programmes at National Institute of Abiotic Stress Management (NIASM)-Baramati, National Institute of Biotic Stress Management (NIBSM)-Raipur and Indian Institute of Agricultural Biotechnology (IIAB)-Ranchi. 3. To establish a central research facility called "Discovery Centre" for strengthening faculty and student research and training in the area of genomics. 4. Promotion of digital solutions: IARI will strengthen E-Granth and Krishikosh for promotion of open access policy, subscription of electronic journals and e-books for library. 5. The Institute plans to provide plagiarism check software to its faculty and students to check plagiarism in their manuscripts before publication. 6. IARI will initiate steps to implement NEP2020 and become a global university. 7. School-wise plan: a. School of crop improvement: To utilise germplasm resources for identification of donors and genes and to employ genomics assisted advanced breeding technologies for development of high yielding, biofortified and climate resilient crop varieties. b. School of Horticulture: Development of varieties and hybrids of vegetables, fruits and flowers for enhancing nutrition security of consumers and livelihood security of farmers. c. School of Basic Sciences: To decipher phenotype-genotype relationship using high throughput phenomics and genome editing. d. School of Crop Protection: To develop diagnostic kits for pathogen detection, advancement in pathogen diversity analysis, diagnostics and development of integrated management technologies for agricultural pests and pathogens of national importance by employing the frontier areas of science. e. School of Natural Resource Management: The Crop and Natural Resource Management research will focus on development of methods for crop and resources management and solutions, precision agricultural technologies, microbiomes, and strategies to minimize global warming potential of crop management technologies and solar energy-based solutions. f. School of Social Sciences: The social sciences and technology transfer research will focus on analysis impact assessment, technology transfer through demonstrations, gender issues.