Inspiration
Dr. Ashok Kumar Singh

Concept
Dr. Anupama Singh

Guidance
Dr. Anupama Singh
Dr. Viswanathan Chinnusamy
Dr. Rabindra N. Padaria

Design
Dr. K. K. Vinod

Editors
Dr. K. K. Vinod
Dr. Gyan P. Mishra
Dr. Akriti Sharma
Dr. Anupama Singh

ICAR-Indian Agricultural Research Institute
Pusa
New Delhi 110012
INDIA

www.iari.res.in

ISBN: 978-93-83168-79-8

Indian Agricultural Research Institute

Cradling Sustainable Agricultural Innovations

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IARI's commitment echoes in its dedication to scientific practices, ensuring agriculture's sustainability and global development goals of food, nutrition, and livelihood security

Certificado · Sertifika · प्रमाण पत्र · Zertifikat · شهادة

CERTIFICATE OF REGISTRATION

EQUALITAS

ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE

New Delhi- 110012, India

This certificate verifies that the above Organisation has been audited on the above address for scope as under and found to be in accordance with the requirements of Management system.

ISO 9001:2015

Quality Management System

Providing Education, Research and Training in the field of Agriculture

Certificate No. : Q-18031001

Date of initial registration	10-03-2018
Date of this certificate/ Issue No.	07-03-2022/06
Certificate Expiry	08-03-2023*
Recertification Due	08-03-2024

*After successful completion of Annual Surveillance Audit, New Certificate will be issued.

This Certificate is valid as per Rules and Regulations of ECL & also the surveillance audits conducted atleast once a year.
To check the certification validity please visit our website- www.theecl.com or contact at- info@theecl.com

EQUALITAS

IAS ACCREDITED ISCS-189 Management Systems Certification Body

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Director

Equalitas Certifications Limited

Accreditation by International Accreditation Service, 3060 Saturn Street Suite 100 Brea, California 92821-1732, USA

Government of India
Ministry of Human Resource Development

nirf

Certificate

NATIONAL INSTITUTIONAL RANKING FRAMEWORK

INDIA RANKINGS 2023

Indian Agricultural Research Institute New Delhi

Ranked 1 in Agriculture and Allied Sector Category

CHAIRMAN, NBA

MEMBER SECRETARY, NBA

CWUR

World ranking 1183

One of the top 5.8% Universities of the World

ACCREDITED WITH GRADE A

NAAC

From the Director's Desk

"At IARI, we cultivate commitment to agriculture by blending tradition with technology, nurturing education, innovation and entrepreneurship"

Photo Credit: Ashok Kumar Singh

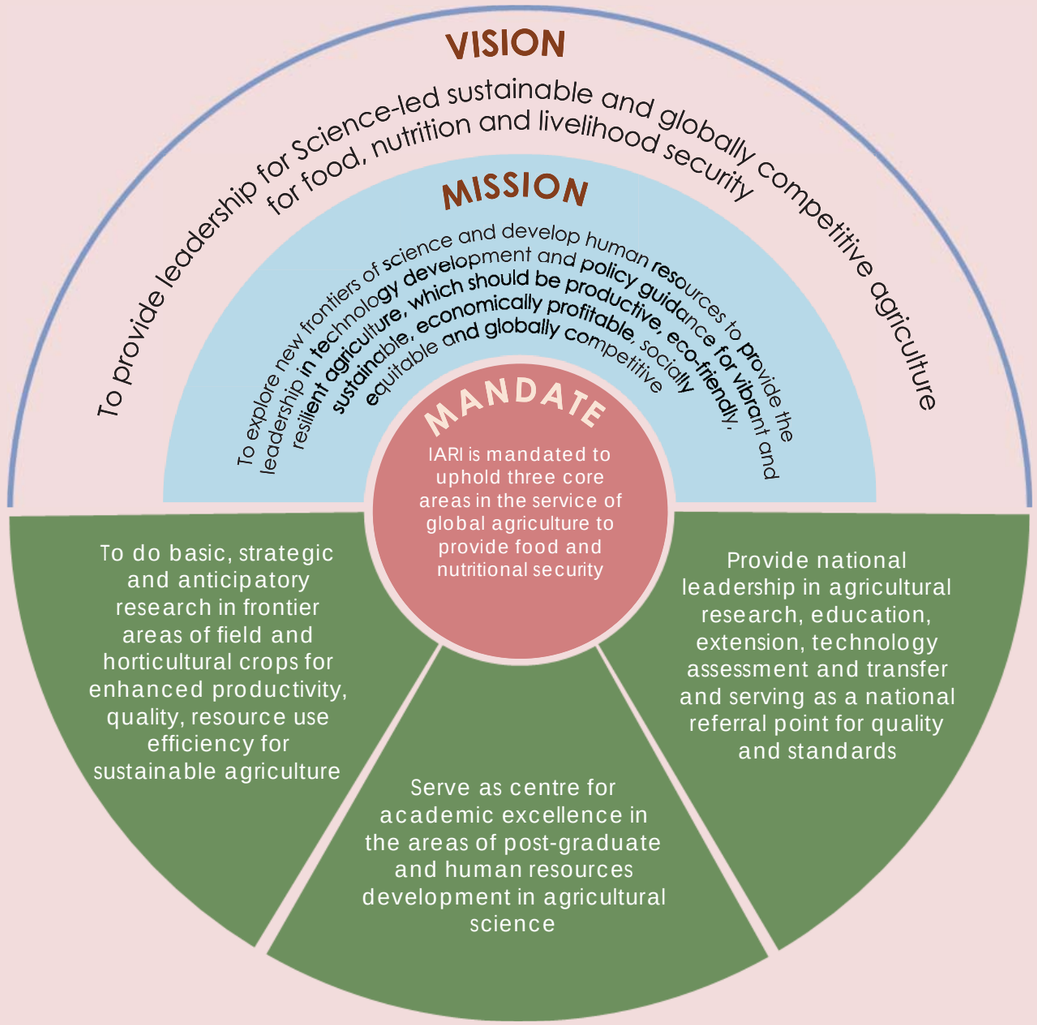
Over the years, our institute has been at the forefront of pioneering research, driving technological advancements, and empowering farmers. We stand witness to the remarkable journey of Indian farmers, their resilience, and their unwavering commitment to feeding the Nation. At IARI, we have embraced the spirit of innovation and adaptation, ensuring that our farmers benefit from cutting-edge technologies and sustainable practices.

Moreover, we take immense pride in nurturing young minds and fostering a culture of entrepreneurship. As we equip our students with knowledge, empathy, and practical skills, we are sowing the seeds of change that will lead to a brighter future for agriculture.

Looking ahead, we envision an even more positive and prosperous future. With advancements in technology, data-driven precision agriculture, and collaborative research, we will continue to address challenges and maximize productivity sustainably.

Together, let us embrace the spirit of camaraderie, compassion, and dedication to build an agricultural ecosystem that uplifts our farmers, empowers our Nation, and contributes to a food-secure world.

(Ashok Kumar Singh)
Director, IARI



- Holistic compliance to sustainable development goals and green ecosystem
- Enhance production and processing of safe and nutritious food
- Create and map significant impact on socio economic upliftment
- Ensure sustainable use of land, water, and environment
- Reduce greenhouse gas emissions, with particular emphasis on environmental protection
- Help transitioning to circular economy
- Improving well-being of stakeholders
- Develop sustainable partnerships for making an innovation driven economy

Founding Objectives

IARI is India's premier institution for agricultural research, education, and extension

- Conserve and use global genetic resources, including agriculturally important plant, microbial and insect resources, to enhance efficiency, productivity, and stability.
- Generate knowledge on production and productivity processes of agricultural crops, to develop research philosophies, concepts, methodologies, materials, and technologies.
- Employ methods to reduce environmental and human health risks within holistic ecological and socio-economic context.
- Address agricultural challenges under unfavorable conditions and focus on orphan commodities.
- Promote excellence through the integration of basic and social sciences, fostering synergy between traditional knowledge and modern science.
- Utilize management sciences and communication systems to enhance overall efficiency.
- Enhance capabilities in post-harvest technology, agro-processing, product development, value addition, and utilization research on commodities, by-products, agricultural wastes, and renewable energy resources.
- Establish interdisciplinary centers of excellence in fronter areas of science with modern instrumentation and foster systems research.

IARI at a Glance

Students 2687

MASTERS	DOCTORAL	UNDERGRADUATES	FEMALE	MALE
22%	51%	27%	41%	59%

Scientists 600+

FACULTY	GUIDE	ADJUNCT FACULTY	FEMALE	MALE
573	312	13	32%	68%

6 Schools ▸ **56 Programs**

- 26 Master's Programmes
- 26 Doctoral Programmes
- 04 Undergraduate Programmes
- 650+ Courses

Crop Improvement | Horticulture | Plant Protection | Basic Sciences | Natural Resources | Social Sciences

ACCREDITATIONS & RANKINGS

- 1 NIRF Rank
- A NAAC Accredited
- ICAR Accredited
- ISO 9001:2015 Certified

RESEARCH

- 1200+ Publications
- IF 2.4 Average Impact Factor
- 200+ Projects
- 75 Patents
- © 14 Copyrights
- 39 Trademarks
- 700+ Technologies
- 100+ Industry partners

EXTENSION

- 16000+ Demonstrations
- 200000+ Farmers
- 60000+ Farm Holdings
- 2500+ Traini gs

Milestones

1905 Agricultural Research Institute

1911 Imperial Institute for Agricultural Research

1919 Imperial Agricultural Research Institute

1923 Post-graduate Associateship

1936 IARI moves to New Delhi

1958 Status of a Deemed-to-be University

2015 Establishment of IARI Jharkhand

2017 Establishment of IARI Assam

2023 Initiation of Undergraduate Programme

1955-56	Radio Tracer and soil testing Laboratories, Horticulture
1957	First All India Coordinated Project
1958	Admission of global students
1960	Agricultural Extension, and Agricultural Economics
1966	Genetics, Nematology, Plant Physiology, Biochemistry
1967	Green Revolution
1968	Seed Science and Technology
1970	Water Technology Centre
1978	Wheat Project Directorate
1985	National Research Centre on Plant Biotechnology
1986	National Facility for Blue Green Algae
1988	Advanced Centre for Plant Virology
1993	Environmental Sciences
1997	National Phytotron Facility
1998	Centre for protective cultivation technology
1998	Centre for Agricultural Technology Assessment and Transfer (CATAT)
2002	Food and Post-Harvest Technology
2002	Pesticide Referral Laboratory
2003	Agricultural Knowledge Management Unit (AKMU)
2009	Zonal Technology Management and Business Planning and Development
2011	ISO: 9001:2008 certified
2012	Centre for Environment Science and Climate Resilient Agriculture (CESCRA)
2015	Ph.D. Progaramme at IIHR, and CIAE Bhopal
2016	M.Sc. Programme at IARI, Assam and Jharkhand
2017	Nanaji Deshmukh Plant Phenomics Centre

From Pusa to New Delhi, the Imperial Agricultural Research Institute blooms into the Indian Agricultural Research Institute, cultivating excellence since 1905

Photo Credit: IARI Archives

The main building of the Imperial Agricultural Research Institute was called Phipps Laboratory. After the devastating Bihar earthquake in 1934, the Institute was shifted to New Delhi in 1936

Mother of Institutions

Statistics Unit

▼

Indian Agricultural Statistical Research Institute

1970

Division of Plant Introduction

▼

National Bureau of Plant Genetic Resources

1976

All India Coordinated Pulses Improvement Project

▼

Indian Institute of Pulses Research

1984

All India Coordinated Sorghum Improvement Project

▼

Indian Institute of Millets Research

1987

All India Coordinated Wheat Improvement Project

▼

Indian Institute of Wheat and Barley Research


1990

Biotechnology Centre

▼

National Institute of Plant Biotechnology

1993

Coordinated Crop Improvement Project on Maize

▼

Indian Institute of Maize Research

1994

All India Coordinated Research Project on National Seed Project (Crops)

▼

Indian Institute of Seed Science

2004

Harbinger of Green Revolution

Vital impact of Green Revolution

Yield Increase: The adoption and development of high-yielding varieties led to significant increases in crop yields. For example, wheat yields increased from around 800 kg per hectare in the early 1960s to over 2,000 kg per hectare by the 1980s.

Food Production Growth: The Green Revolution contributed to a substantial increase in food production. India's food grain production, which was around 82 million tons in 1960-61, increased to over 300 million tons by the early 2020s.

Dr. Norman Borlaug visiting wheat fields of IARI with Dr. M. S. Swaminathan and others

Photo Credit: IARI Archives

Our Alumni, Our Pride

Founded in 1905, IARI has become a global hub for agricultural education. Initially focusing on training senior officers in provincial Agriculture Departments, it expanded to formal training in 1923, awarding Associateships later recognized as equivalent to Masters degrees. In 1958, the University Grants Commission granted IARI Deemed to be University status, enabling the launch of postgraduate programs in various specialized disciplines. Under the guidance of Dr. R.W. Cummings, the first Dean of the Post Graduate School, the institute adopted the course credit system from US Land Grant Colleges. Today, IARI offers Bachelors', Masters' and Doctoral degrees. IARI alumni, numbering 11186 including 903 associateships, including 487 international students contributing globally to agricultural research, education, and extension programs. IARI alumni have played a pivotal role in elevating agricultural production in the country from 55 million tonnes in 1949-50 to the current 330 million tonnes.

- **More than 90% of our Alumni are scientists**
- **4923 Masters' graduates**
- **5360 doctoral graduates**
- **903 IARI Associateships**
- **Thinktanks in the profession**

We make global leaders in agriculture by practicing science, who transforms the livelihood of millions of peasants around the world.

We also feed the world

A random mosaic of 11000+ IARI Alumni across various academic sessions

Photo Credit: IARI Archives

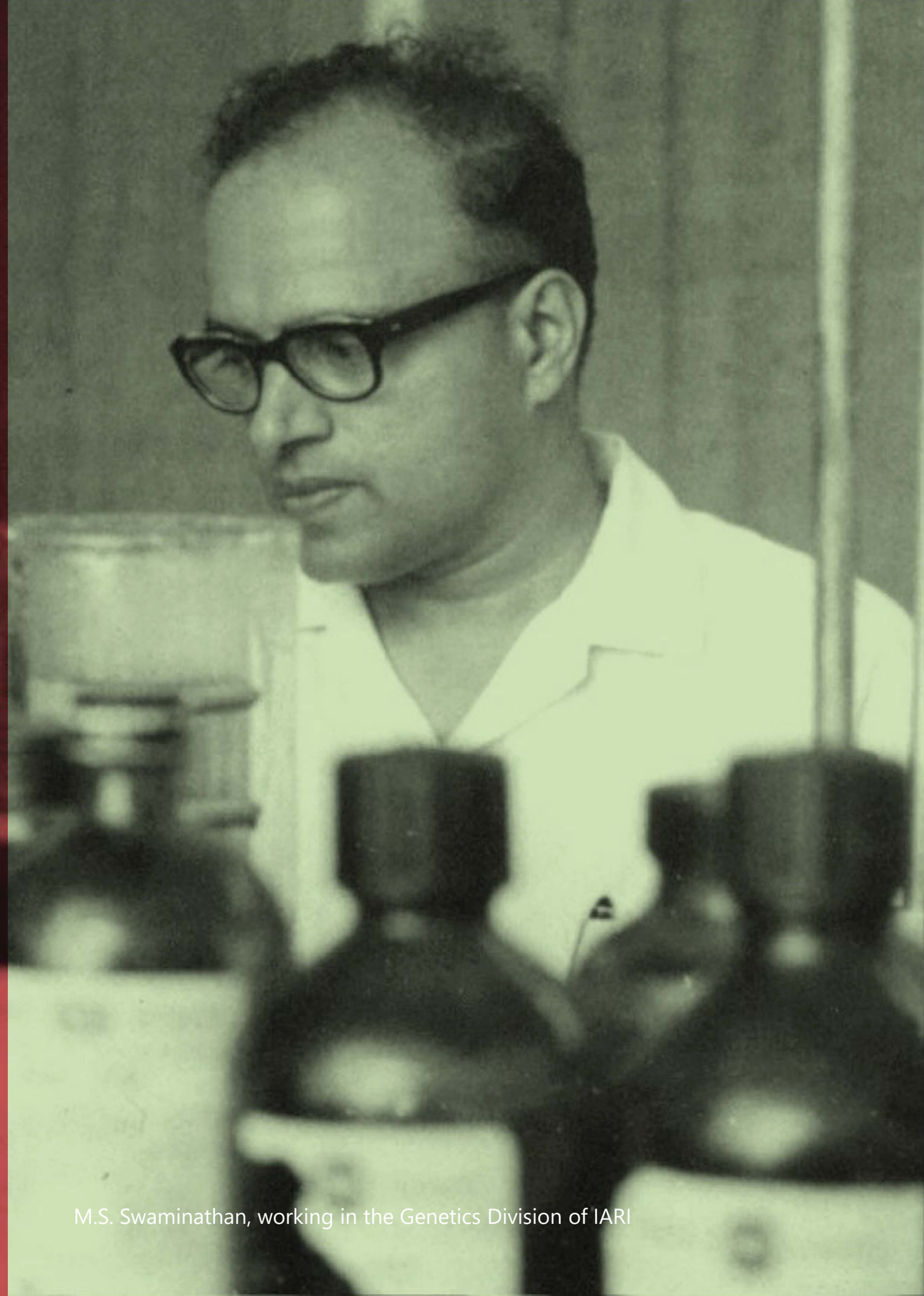
Father of Green Revolution in India

M.S. Swaminathan, a pioneering figure in agricultural research, left an indelible mark on India's agricultural landscape during his tenure at IARI. Joined as a post-graduate student in 1947, he rose through the ranks, becoming the Director from 1961 to 1972. IARI fondly called him ‘Professor”. His visionary collaboration with Norman Borlaug and development of indigenous semi-dwarf varieties of wheat and rice led to the Green Revolution that transformed India into a self-sufficient food grain nation. As Director General of the Indian Council of Agricultural Research, and subsequently of the International Rice Research Institute he played a crucial role in bridging the gap between scientific discoveries and practical implementation world over. Swaminathan's commitment to farmers of India led to initiatives like lab-to-land, introducing minimum support prices and advocating for farmers' welfare policies. Swaminathan's dedication earned him accolades, including the World Food Prize. His legacy lives on through his contributions to agricultural sustainability and hunger eradication. IARI stands as a testament to his monumental contributions to transform agriculture for the betterment of humanity.

- **Padma Shri (1967)**
- **Ramon Magsaysay Award (1971)**
- **Padma Bhushan (1972)**
- **World Food Prize (1987)**
- **Padma Vibhushan (1989)**

The Evergreen Revolution technologies are based on a farming systems approach and will also involve farmer participatory breeding and knowledge management

Photo Credit: IARI Archives



M.S. Swaminathan, working in the Genetics Division of IARI

Eminent Alumni in World Food Laureateship

Awarded in 1987

Dr M S Swaminathan
India
(1925-2023)

Awarded in 2000

Dr Surinder K Vasal
CIMMYT, Mexico

Awarded in 2014

Dr Sanjaya Rajaram
CIMMYT, Mexico
(1943 –2021)

Awarded in 2020

Dr Rattan Lal
Ohio State University
USA

The World Food Prize is an international award recognizing individuals who have made significant contributions to improving the quality, quantity, or availability of food worldwide

Photo Credit: www.worldfoodprize.org

Dr. M. S. Swaminathan receives first ever World Food Prize from James Ferguson, CEO of General Foods, at the Laureate Award Ceremony in 1987

IARIan Padma Awardees

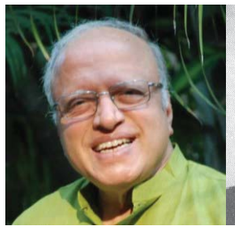
IARI is proud to have received 19 Padma awards by its Alumni/ Staff

Padma Vibhushan – 1
Padma Bhushan – 6
Padmashri – 12

Instituted in 1954 Padma awards are annually given to civilians presenting exemplary services to the Nation

Photo credit: Vijai Pal Singh

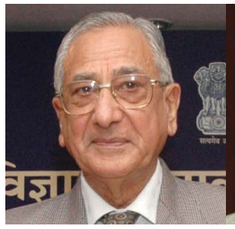
Dr. Vijai Pal Singh, renowned rice breeder of IARI receiving Padmashri from HE Pratibha Patil, President of India in 2012



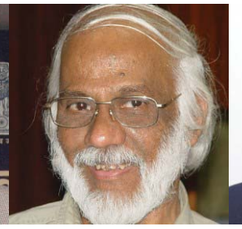
M.S. Swaminathan
1967, 1972, 1989

A.B. Joshi
1976

H.K. Jain
1981



V.L. Chopra
1985



P. Govindarajan
1991, 2003

R.S. Paroda
1998

Sanjay Rajaram
2001, 2021

R. B. Singh
2003

E.A. Siddiq
2011

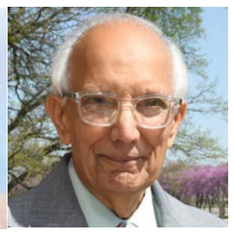
Suman Sahai
2011

V.P. Singh
2012

K. L. Chadha
2012

Brahma Singh
2014

B.S. Dhillon
2019



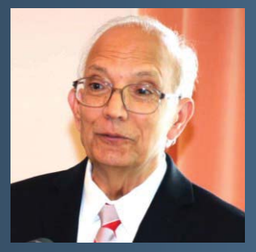
Rattan Lal
2021

Our Alumni Work all Around the World

IARI fosters a global community, working both within in India and abroad. Here is a random pick of those who serves overseas, including foreign nationals.

B M Prasanna
Maize Program Director
CIMMYT
KENYA

Jauhar Ali
Principal Scientist
IRRI
PHILIPPINES



Rattan Lal
Professor
Ohio State University
USA

PV Vara Prasad
Director
Kansas State University
USA

Kadambot Siddique
Director
University of Western Australia
AUSTRALIA

Ritcha Mehra-Chaudhary
Assistant Professor
University of Missouri
USA

Hans R Bharadwaj
Research Director
IRRI
PHILIPPINES

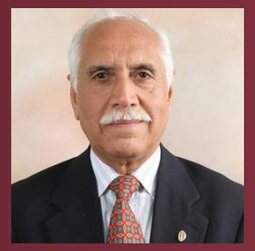
Dilip K. Lakshman
Plant Pathologist
USDA-ARS
University of Maine
USA

Neena Mitter
Research Director
University of Queensland
AUSTRALIA

Gopinath Munisamy
Professor
University of Georgia
USA

Andy Pereira
Professor
University of Arkansas
USA

Duong Van Hay
Researcher
Institute of Agricultural Sciences for Southern Vietnam
VIETNAM



Man Mohan Kohli
Regional Representative
CIMMYT
PARAGUAY

Senthil Muthuswamy
Cancer Biologist
National Cancer Institute
Bethesda
USA

Dharmendra Saraswat
Associate Professor
Purdue University
USA

Omotayo Babatunde Komolafe
Lecturer
Anchor University at Lagos
NIGERIA

Yogesh Dwivedi
Professor
Swansea University
UNITED KINGDOM

Muthukuda Arachchige Chandani
Additional Director
Department of Agriculture
SRILANKA

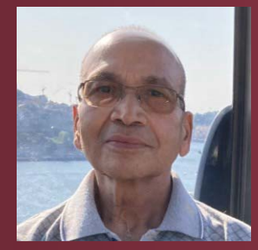
H. C. P. Jayaweera
Director General
Dept. of National Botanic Gardens
SRI LANKA

Tapas Kumar Biswas
Senior scientist
CSIRO
AUSTRALIA

Hanu R. Pappu
Professor
Washington State University
USA

Valarmathi Gurusamy
Research Program Manager
Western Grains Research Foundation
CANADA

Sanjay Swarup
Director
National University of Singapore
SINGAPORE



Pranesh Kumar
Professor
University of Northern British Columbia
CANADA

Dr. Viswanathan Chinnusamy, Joint Director (Research) at Nanaji Deshmukh Plant Phenomics Centre

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Research

“The vision of IARI is to provide sustainable solutions for globally competitive Indian agriculture, addressing global challenges and ensuring food security for future generations”

Photo Credit: IARI Archives

- **Wheat varieties of IARI contribute nearly 60 million tons of grains to the Nation’s granary, worth ₹ 800 billion.**
- **Pusa Basmati rice varieties cover 98% of the Basmati rice area, generating an annual economic surplus of ₹ 147.07 billion.**
- **Pusa mustard varieties cover 48% of the country's mustard area, generating an economic surplus of ₹ 143.23 billion.**
- **Amrapali Mango, is grown in over 0.2 million hectares in India, contributing to forex earning.**
- **Vegetable varieties enhance production and contribute to nutritional security.**
- **STFR and Hydrogel technologies help farmers to economize crop production**
- **IARI monitors GHG emissions in Indian agriculture and advices the nodal agencies**
- **Biofertilizers to boost crop yields**
- **Technology transfer and commercialization to boost startup and entrepreneurship**
- **Incubation to 1900 Startups which generated employments and benefited 4.0 million farmers.**
- **Huge impact of publications with ten scientists ranked top 2% in wor**

Our Schools

Crop Improvement

Develops and releases diverse, well-tested crop varieties, widely adopted by Indian farmers for cultivation

Crop Protection

Excels in crop pest and disease management, monitor new pests, epidemiology, and developing decision support systems for integrated pest management

Natural Resource Management

We develop technologies to manage sustainable crop systems, using advanced technologies, alternative energy, innovate efficient input use and waste management

Horticulture

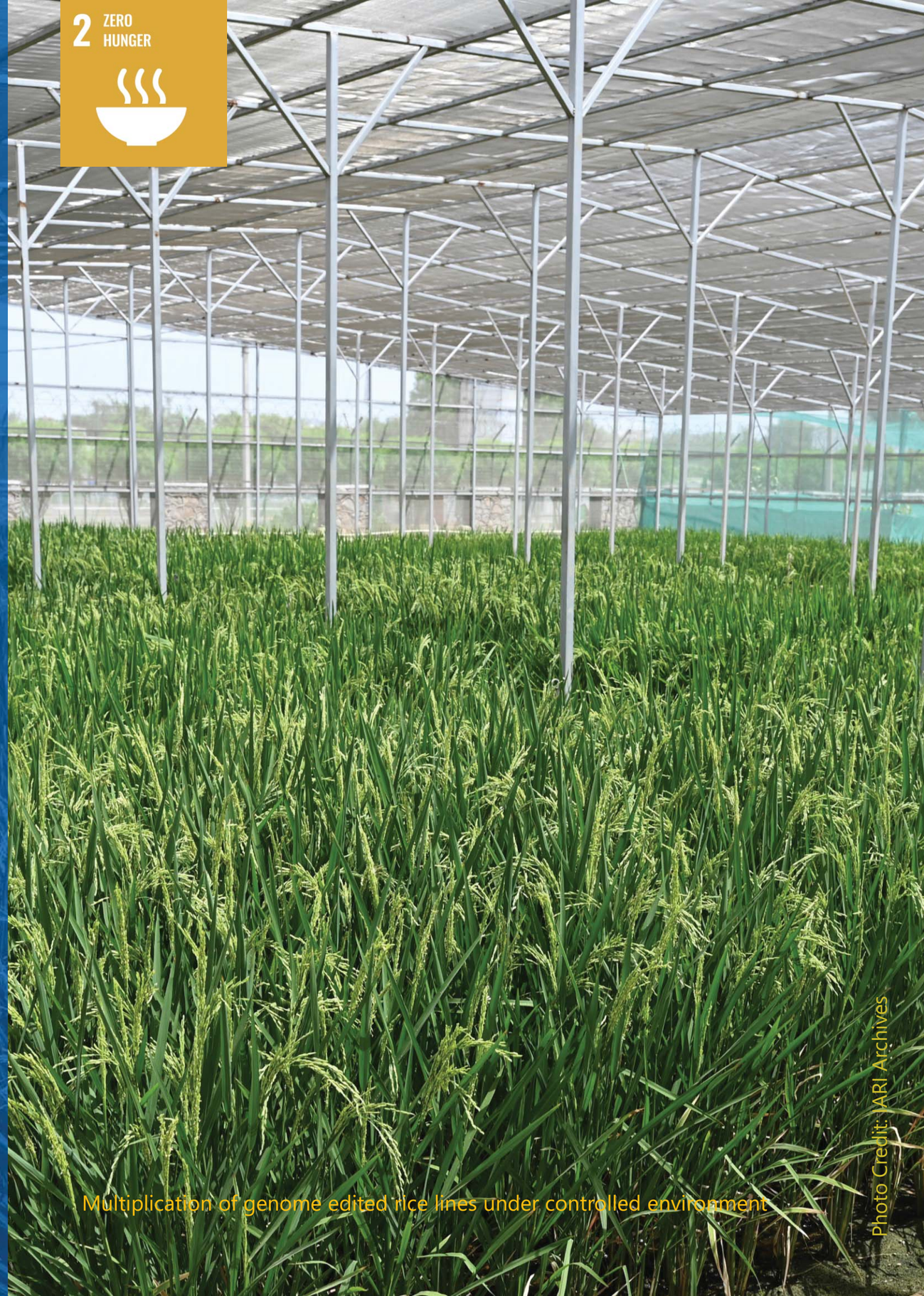
Develop new varieties and technologies for flowers, vegetables, and fruit production, with a specific emphasis on researching protected cultivation methods

Basic Sciences

We do fundamental research on plant response to stresses, climate change impact, gene function discovery and develop technologies for precision phenotyping

Social Science

We excel in Agri-business management, market intelligence and policy interventions, do technology transfer to masses, and do communication research



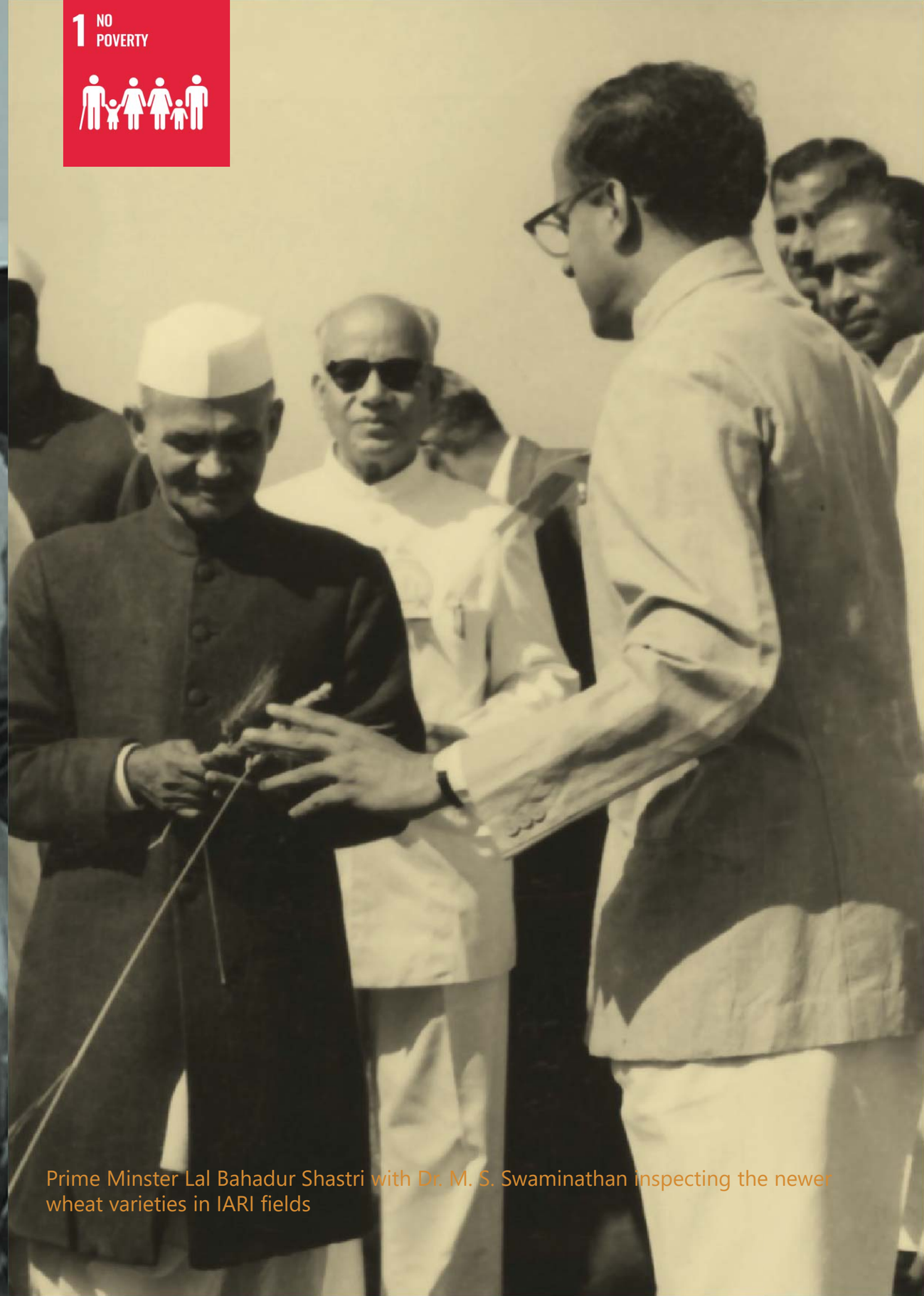
Multiplication of genome edited rice lines under controlled environment

Photo Credit: ARI Archives

Crop Improvement

The School of Crop Improvement comprises the Divisions of Genetics and Seed Science and Technology. Additionally, the school operates through various regional stations and centers, including those in Shimla, Karnal, Indore, Pusa Bihar, Aduthurai, Dharwad, and Wellington. The school played a crucial role in developing and releasing numerous varieties of mandated crops such as cereals, coarse grains, pulses, and oilseeds. The released varieties undergo extensive testing in diverse locations to ensure adaptation before being made available for cultivation with comprehensive package practices. Widely accepted by farmers throughout India, Pusa varieties have made a significant impact in food and livelihood security for millions of farmers. The school ensures that its students receive thorough training in advanced breeding, crop improvement and seed production technologies.

Photo Credit: IARI Archives



Prime Minster Lal Bahadur Shastri with Dr. M. S. Swaminathan inspecting the newer wheat varieties in IARI fields

Basmati Rice: A Multi-billion Forex Earner

Basmati Rice the epitome of premium quality rice is renowned for its unique rice grain and exceptional cooking qualities. It stands apart with its long, slender milled grains that possess an pleasant aroma and unparalleled culinary experience. Apart from its aromatic allure, Basmati Rice is distinct for its fourfold volume expansion upon cooking. This ensures a delightful dining satisfaction, making it the preferred choice for those who appreciate the finer nuances of rice.

- **IARI's Basmati rice variety, Pusa Basmati 1121, has the unique recognition as world's longest cooked grain rice**
- **Pusa Basmati 1 is the world's first semi dwarf aromatic rice**
- **New climate smart Basmati Varieties such as Pusa Basmati 1509, Pusa Basmati 1692, Pusa Basmati 1847, Pusa Basmati 1882 etc. provide resource use efficiency and stress tolerance**
- **Basmati export from India annually earns above ₹ 400 billion, of which share of IARI varieties stands >90%**

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

We make the most exquisite rice varieties of the world

Photo credit: S Gopala Krishnan

Basmati rice is prized for its aromatic, long grains, and fluffy texture, making it an splendid choice of specialized cuisines

Wheat – Leader of Green Revolution

The Green Revolution in India found its origins in the wheat fields of IARI. A crucial turning point occurred in 1965 with the implementation of the All India Coordinated Wheat Improvement Project (AICWIP), which introduced semi-dwarf varieties from Mexico. Within two years, this initiative led to a doubling of wheat production, marking the initiation of the Green Revolution. The pivotal transformation was symbolized by the introduction of semi-dwarf genes, *Rht1* and *Rht2*. IARI maintained its leadership role in pioneering new varieties, and standout cultivars such as HD2189, HD2204, HD2967, and HD3086 played a significant role in contributing to surplus wheat production in India.

- **Mega varieties, Kalyan Sona and Sonalika transformed the wheat landscape of India in 1969**
- **HD2009 emerged as a variety resistant to all rust diseases in 1975**
- **HD2967, the landmark variety with wide adaptation released in 2011, making it most widely cultivated variety in India**
- **HD3086, high yielding variety released in 2014**
- **Pusa Tejas (HI8759), high yielding, biofortified durum variety released in 2017**
- **Modern Pusa wheat varieties resist all major rust pathogens**

Wheat breeding in India was first initiated at the Imperial Agricultural Research Institute in 1905

The high yielding wheat variety HD 3086 demonstrates a potential yield of 7.1 t/ha under timely sown irrigated conditions, outperforming popular cultivars, and exhibits resistance to both yellow and brown rusts

Photo Credit: IARI Archives

Maize – Growing More Nutritive

The launch of the All India Co-ordinated Maize Improvement Project at IARI in 1957, marked the beginning of maize breeding history in India well ahead of the setting up of the International Maize and Wheat Improvement Center (CIMMYT), in Mexico during 1966. Introductory hybrids such as Ganga 1, Ganga 101, Ranjit, and Deccan transformed the landscape of maize cultivation in India. IARI has played a noteworthy role in recent maize improvement in India, releasing several improved quality protein maize hybrids. These hybrids combine high pro-vitamin A content with increased lysine and tryptophan fractions. Recent advancement includes use of maternal haploid inducer lines in development of doubled haploid based maize inbreds.

- **IARI released the world's first provitamin-A rich QPM hybrid 'Pusa Vivek QPM-9 Improved'**
- **The first public sector bred male sterile baby corn hybrid 'Shishu' was released in the year 2022**
- **We pioneer breeding Super Sweet Corn hybrids with high brix and yield**
- **Maize varieties suitable for high density planting and high ethanol recovery are developed to cater industrial use**

IARI leads the way in developing biofortified Maize hybrids to ensure nutritional security

Photo Credit: Firoz Hossain

2 ZERO HUNGER

The maize kernels are major energy feed ingredient in poultry nutrition in the country accounting for 47% of the total production

Indian mustard (*Brassica juncea*) is a traditional source edible oil in India, while seeds are also used as condiment in culinary preparations

Brassica: Foraying Yellow Revolution

Pioneering in double zero mustard (Indola) varieties ensuring nutritional and economic security

Photo Credit: K K Vinod

Traditional Indian mustard varieties suffer from suboptimal oil and seed meal quality owing to elevated levels of erucic acid and glucosinolate. The presence of high erucic acid is associated with health concerns such as myocardial fibrosis in adults and lipidosis in children. Abundance of glucosinolate causes goiter in cattle, especially in non-ruminants, and negatively impacts animal fertility. Novel varieties characterized by less than 2% erucic acid in oil and less than 30 ppm glucosinolate in seed meal are classified as Double Zero. Varieties with low erucic acid are known as Single zero. IARI emphasizes the importance of adopting Double Zero varieties for enhanced agricultural and nutritional outcomes.

- **IARI developed mustard varieties cover ~50% of the total mustard area in India**
- **Annual average income generated by Pusa Mustard 25 now stands ₹ 29.19 billion**
- **IARI has recently released Pusa Double Zero Mustard 33, a double zero variety (Indola)**
- **Pusa Mustard 32 is a recent single zero variety released for cultivation**

Pearl millet, also known as bajra, takes the leading role among millets, contributing to a global production of 20-25 metric tons annually

Pearl Millet, the foremost millet in the country in terms of both cultivation area and production, is predominantly grown in rainfed regions, boasting high nutritional value with high iron, zinc, and calcium content and a low glycemic index.

Photo Credit: Prolay Kumar Bhowmick

Pearl Millet – Fortifying the Nutrition Security

The 'International Year of Millets' in 2023 has brought the nutricereals such as small and minor millets into limelight of the world, a assurance to nutritional security called upon by the World Heath Organization. Pearl millet is one of the staple millets used in India and elsewhere in the world, that can promise excellent nutritive benefits. IARI developed four biofortified pearl millet varieties, PPMI 1280, PPMI 1281, PPMI 1283, and PPMI 1284, each boasting iron levels exceeding 60 ppm and zinc levels surpassing 32 ppm. These lines underscores our commitment to safeguard nutritional security. Pearl millet provides a healthy alternative to staple cereals by presenting inherent low glycemic potential due to the presence of superior crystalline compact starch.

- **Pusa Hybrid Bajra 1801 is a new hybrid with high grain yield and substantial grain iron content of 62 ppm and zinc content of 45 ppm**
- **Pusa Hybrid Bajra 1803 yields 38-42 quintal of grains per hectare that contains 65 ppm of iron and 46 ppm of zinc**

Legumes – A Commitment for Better Health

IARI's spectrum of field legumes include green gram (mung bean), chickpea, red gram (pigeon pea), lentil and soybean. Our major research focus on these crops is to improve the yield, quality, and climate resilience. The breeding programs are aligned to develop new varieties with desirable traits such as disease resistance, high yield, and adaptability to varying environmental conditions. Chickpea emerges as an exceptional climate-resilient crop, well-suited for drought-prone regions. Its extensive root system enhances soil structure, and its nitrogen-fixing properties enrich soil fertility.

- **Chickpea: Climate resilient cultivars are Pusa Chickpea 4005, Pusa Chickpea 10216 and Pusa Chickpea 20211**
- **Green gram: Modern high yielding varieties include Pusa 1641, Pusa 1371 and Pusa 1431**
- **Lentil: Recent early maturing varieties such as L 4727, L 4717 and L 4729 bolster disease resistance, particularly to Fusarium wilt**
- **Pigeon pea: Early maturing varieties such as Pusa Arhar 16 and Pusa Arhar 2017-1 provide significant benefits to farmers through input savings**
- **Soybean: Pusa Soybean 21, a Kunitz trypsin inhibitor free variety is released recently**

Among the grain legumes, pigeon pea and chickpea shares a pivotal role in nutrition security

A Lentil (*Lens culinaris*) germplasm collection showing wide seed diversity

Seeds: Securing the Future Food

IARI is dedicated to optimizing hybrid seed production technologies for both field and vegetable crops. Employing cutting-edge methods such as imaging and molecular techniques, the institute rigorously evaluates seed health, viability, and purity, maintaining a comprehensive database for further analysis. The paramount importance of preserving genetic identity is underscored, with the establishment of distinctness, uniformity, and stability (DUS) criteria tailored for major crops. Acknowledging that seed testing is pivotal, the institute recognizes its crucial role in ensuring the nation's livelihood security.

- **'Grain-Ex' technology: An appearance-based e-Quality detection system which replaces the manual seed sorting**

- **IARI seed production statistics** (2022-23)
  - Total seed production: 22,846.66 quintals
  - Major crops: Wheat, Mustard, Gram, Lentil, Vegetables
  - Breeders Seed: 6466.01 quintals
  - Truthfully labeled seed or TL Seed: 16380.66 quintals
  - Sale receipt: ₹ 157.7 million
  - Profit: ₹ 49.4 million

Horticulture

Horticulture is the canvas where nature and creativity converge, painting our surroundings with the vibrant hues of flowers, fruits, and the essence of life

The School of Horticulture is actively involved in the breeding and development of improved varieties of fruits, vegetables, and flowers. The focus of IARI is directed towards technological innovations suitable for horticultural crops of the country. In vegetables, our significant contribution lies with cole crops, carrots, garden peas, French beans, cowpeas, tomatoes, brinjals, onions, cucumbers, melons, gourds, and leafy vegetables. Our research pioneers work on fruits such as mango, citrus, guava, grapes and papaya. We prioritize the evolution of improved varieties of roses and ornamental plants, such as gladioli and marigold. IARI's focus extends to post-harvest processing and value addition for fruits and vegetables, evolving into a dedicated entity within the broader framework of horticultural technology.

Tomatoes grown under polyhouses under protected cultivation

Photo Credit: IARI Archives

Pusa Arunima, a mango hybrid with attractive red coloured peel, fibreless pulp, mild flavour, medium TSS, excellent sugar: acid blend and very good-shelf-life is popular in international market

Fruits: Elevating Quality and Resilience

Fruits are not just nature's sweet offerings; they are the vibrant jewels of the earth, enriching our lives with flavor, nutrition, and natural goodness

Photo Credit: Manish Srivastava

The Division of Fruits and Horticultural Technology was established in 1970 with focus on enhancing the production, productivity, and quality of various fruit crops. Its mission encompasses genetic improvement, establishment of high-density orchards, and addressing challenges of climate change. Division plays a pivotal role in human resource development and actively involved in transfer of fruit production technologies. Multifaceted approach has a key role in advancing horticultural solutions to challenges in the fruit industry.

- **Mallika: The first mango hybrid of IARI released in 1971**
- **Amrapali: Mango hybrd released in 1978 having highest beta carotne**
- **Pusa Round: Improved clonal selection of sweet orange having high yield potential**
- **Pusa Navrang: Teinturier Grape variety suitable for blending**
- **Pusa Nanha: Dwarfest dioecious papaya mutant suitable for high density planting**
- **Pusa Aarushi: Low seeded pink fleshed guava hybrid**

Vegetable Research

Vegetable research began at IARI in 1940 within the Division of Botany. Transformed into an independent Division of Horticulture in 1956, the research efforts were further reinforced with the establishment of the Division of Vegetable Science. The Division's current focus is on applied and strategic research for vegetable crop improvement. Its mission includes postgraduate education, information dissemination, advisory services, and the preservation of biodiversity material related to various vegetable crops, collaborating with other national institutions.

- **Pusa Vaibhav: Shiny purple round fruited egg plant variety with predominant green calyx, excellent for *bharta* making**
- **Pusa Bhindi 5: Highly resistant okra variety resistant to viral diseases**
- **Pusa Naveen: Green straight bottle guard fruit popularly called gutka type**
- **Pusa Rasdar: Bitter gourd variety good for juice purpose and rich anti-diabetic factors**
- **Pusa Riddhi: Onion variety with dark red bulbs**
- **Pusa Rudhira: Deep red color carrots with self core color**
- **Pusa Purple 1: An anthocyanin rich cauliflower variety produces very attractive heads**

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

As nature's edible wonders, vegetables are the essential building blocks of a nutritious diet, paving the way to a healthier, happier lifestyle

Photo Credit: B S Tomar

Pusa Rudhira, carrot variety with attractive long red roots having self coloured core and obtriangular shape is high beta-carotene and lycopene and is ideal for juicing and making sweets

Pusa Mahak, a floribunda type rose hybrid is popular for fragrant flowers that can be used for floral arrangements

Flowers are the silent poets of nature, expressing the beauty of life with petals that dance in the breeze and colors that sing in the sunlight

Photo Credit: K K Vinod

Flowers: Research for commercial gardening

IARI has been a pioneering force in scientific research on floricultural crops since the late 1950s. The Division of Floriculture and Landscaping was established in 1983. This division focuses on comprehensive research, including crop improvement, production technology, and knowledge dissemination through outreach programs, postgraduate teaching, and human resource development.

- **Dr. B.P. Pal garden of IARI has a unique collection of 40 rose varieties**
- **Pusa Alpana: Fragrant rose producing light pink fragrant flowers**
- **Pusa Shanti : Gladiolus variety having long spikes and higher multiplication rate**
- **Pusa Narangi Gainda : Orange colour variety of marigold attracts a great market potential**
- **Pusa Guldasta : No pinch variety of chrysanthemum suitable for cut flower industry**
- **Pusa Akansha : Bougainvillea variety producing orange flowers and variegated leaves**

11 SUSTAINABLE CITIES AND COMMUNITIES

Urban Agriculture: Taking Farming to Cities

Vertical cultivation of greens, is a profitable urban engagement which promise high returns and profitability

Farming at the edges, where urban and rural meet, holds the promise of sustainable agriculture and a connection to our food sources

Photo Credit: Murtaza Hasan

The Centre for Protected Cultivation Technology (CPCT) of IARI was established in 2000 under an international collaboration between India and Israel. Centre aims at technological advancement in intensive peri-urban cultivation of horticulture crops. The center serves as a nodal hub for research and development, training, and technology transfer in protected cultivation. With climate-controlled greenhouses, net houses, nursery facilities, and drip irrigation systems, the CPCT focuses on evaluating and adapting protected cultivation technologies, demonstrating peri-urban cultivation methods, and conducting training programs for human resource development and technology transfer. The overarching mission is to enhance input use efficiency and achieve sustainability in food production through precision farming.

- **Developed tomato varieties, Pusa Rakshit and Pusa Cherry tomato 1 suitable for protected cultivation**
- **Trained large number of State Department officials and farmers from across India**

Adding Value and Allure to Food

Post harvest technology research began in IARI with a multi- disciplinary approach in 2002 which transformed into the Division of Food Science and Post harvest Technology in 2013. The research efforts envisage enhancing shelf life, minimizing post harvest loss, food spoilage and provide solutions by processing, value addition of agricultural produce and valorization of food waste. We focus on human resource development, training, entrepreneur development, harnessing modern technologies for the upcoming food processing industries by process and product development.

- **Zero energy cool chamber: An FAO recognized technology**
- **UVC irradiation: Novel method to enhance shelf life of perishables**
- **Copigmented Betalains: Thermo and photo- stable plant based pigment**
- **Multimillet pasta: Gluten free and naturally coloured pasta from minor millets**
- **Development of nutraceuticals from agricultural wastes**

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Healthy and functional food design is key to healthier population

Photo Credit: Shalini Gaur Rudra

Naturally coloured pasta containing beet root pigments

Red spider mite infestation on Okra leaves

Plant Protection

The Plant Protection School, comprising Plant Pathology, Entomology, Nematology, and Agricultural Chemicals divisions, plays a vital role in safeguarding plant health within cropping systems. Its primary focus lies in conducting epidemiological studies and developing decision support systems for early forewarning. The school places a strong emphasis on human resource development through academic and training activities, encompassing all aspects of plant health management. The Chemicals Division is at the forefront of chemo-intervention in crop health, significantly contributing to national research and development in agrochemicals, formulation, and safety. Noteworthy accomplishments include pioneering work on the first indigenously prepared and industrially adapted neem-coated urea. Additionally, the school prioritizes fundamental research on host-parasite relations, aiming to provide comprehensive solutions to future challenges in crop protection.

Photo Credit: Shashank P R

Plant Diseases and the Evolution of Resilience

Originally established as the Mycology section of IARI in 1905, this Division boasts a rich history, with an initial emphasis on mycological and plant pathological research in India, particularly on fungal and viral diseases. The research on Bacterial diseases was taken up post 1930. With the establishment of Advanced Centre for plant virology in 1988, advanced studied were undertaken on plant viruses. The division's mission is to conduct both fundamental and applied research on plant pathogens. The research has consistently focused on disease diagnosis, pathogen detection, host pathogen interaction, epidemiology and eco- friendly management. Additionally, the division aims to serve as a hub for academic excellence and advanced training, while also providing national leadership in plant pathological research through the development of innovative concepts and technologies.

- **Herbarium Cryptogamae Indiae Orientalis (HCIO) with over fifty thousand specimens, serves as a national repository for fungal specimens**

- **Indian Type Culture Collection (ITCC) with more than four thousand fungal and bacterial cultures serves as a national repository for microbial cultures**

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Deciphering the intricacies of diseases is key to understanding both host and pathogen, with a promise of bountiful harvests with minimum agro-chemical interventions

Photo Credit: Deeba Kamil

Agroathelia rolfsii is a soil borne pathogen that causes root rot in crops

Menace of cabbage butterfly (*Pieris brassicae*) caterpillars on Ethiopian mustard (*Brassica carinata*)

Learning Resilience from the Pests

Crops are resilient teachers; they thrive despite the persistent whispers of pests, teaching us the art of resilience in the face of adversity

Photo Credit: M K Dhillon

Division of Entomology is one of the first five Divisions of Indian Agricultural Research Institute established in 1905. The Division has pioneered in investigations in insect systematics and economic entomology vis-a-vis important crop pests. National Pusa Collection (NPC) serves as a national repository for insect pests of crops. This Division has been the pioneer in basic and applied research frontiers in agricultural entomology to offer effective pest management solutions and policy guidance to the country with rich haul of expertise in insect biosystematics and physiology. The division of entomology has rich expertise in insect biosystematics, insect physiology, insect-plant interactions, insect toxicology, and development of ecofriendly pest management technologies. In academic front, the division is spearheading development of quality human resource in frontier areas of pest management and technology led solutions to pest management.

- **National Pusa Collections (NPC) with over 500,000 insect specimens, serves as a national repository for insect pests affecting crops**

Worm Woes: Navigating the Intricacies of Nematode Challenge

Nematodes have long been recognized as a challenge to agriculture. IARI established a separate Division of Nematology in 1966, as a leading global department focused on the study of nematodes. The plant-parasitic nematodes (PPNs) are the major cause of substantial loss in agriculture approximating to ₹ 102 Billion annually. PPNs not only directly impact crops but also induce indirect damage by making plants susceptible to co-inhabiting pathogenic bacteria, fungi, and other pathogens. The division is actively engaged in fundamental and applied research on nematodes, specializing in developing innovative and safer technologies for PPN management. Their works on nematode taxonomy, diagnostic tools, formulations of entomopathogenic nematodes, nematode genomics and host-nematode relationships are well documented. Additionally, the Division houses the Project Coordinating Cell of the All India Coordinated Research Project on Nematodes.

- **National Nematode Collection of India (NNCI) is the largest type culture collection of Nematodes containing 2620 type slides, and 3395 wet collections**

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Colossal damage inflicted by these tiny pests underscores the critical need for advanced management strategies

Photo Credit: Pankaj

Root knot nematode induced galls on egg plant roots

Green Solutions to Safeguard and Enhance Crop Health

Enactment of the Insecticide Act, in 1966 by the Govt. of India has witnessed setting up of the Division of Agricultural Chemicals at IARI, to spearhead national research related to agrochemicals. The division's thrust areas include development and formulation of agrochemicals such as pesticides, adjuvants, hydrogels, nitrification inhibitors, hybridizing agents, nutraceuticals, nano-formulations etc. With approximately 30 industrial licenses and several patents, the division's work in developing synthetic molecules for pest management, neem and other botanical pesticides, hydrogels, nano-formulations and nutraceuticals has earned both national and international acclaim. All India Network Project on Pesticide Residues (formerly called AICRP on Pesticide Residues) was created based on the leads generated by the Division.

- **Hydrogels for efficient water use in crops**
- **Innovative formulations of agrinputs and nutraceuticals**
- **Bio-pesticides and phytochemical extraction protocols**
- **Hub of analytical chemistry research**

Biorational guided agro-chemicals based protection is the strategic tool of farmers, to safeguard the crops against the unforeseen visitors such as pests and pathogens

Photo Credit: IARI Archives

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Researchers working in agri-chemical laboratory

3 GOOD HEALTH AND WELL-BEING

Trendsetter in Honey Research: Towards Sweet Revolution

Regional Honey Testing Laboratory at IARI equipped with advanced instruments is a one of kind that does scientific evaluation of natural honey quality. Established under National Bee Keeping and Honey Mission by Government of India, as part of the 'Self-reliant India' package, by National Bee Board, this is one of the few honey quality testing laboratories in the country. The main focus of the laboratory is quality and authenticity testing of honey as fer Food Safety and Standards Authority of India (FSSAI) approved quality testing parameters.

- **Quality testing in honey**
- **Analysis of pesticide residues in food and environment**

Beyond sweetness, quality honey is a symphony of flavor, texture, and purity that adds taste in its every drop

Honey quality testing laboratory tests and certifies 17 quality parameters of honey on commercial basis

Photo Credit: IARI Archives

Polytunnel is an effective system in weed management, water conservation and productivity enhancement in horticultural crops

Photo Credit: Prolay Kumar Bhowmick

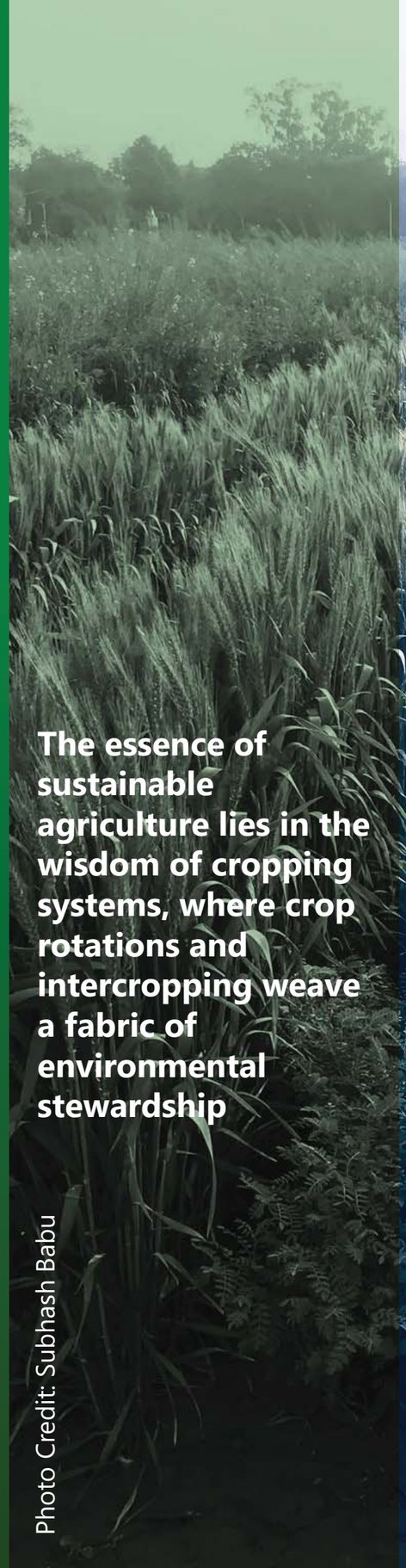
7 AFFORDABLE AND CLEAN ENERGY

Natural Resource Management

The School of Natural Resource Management, with divisions of Agronomy, Agricultural Physics, Soil Science and Agricultural Chemistry, Environment Science, Microbiology, Water Technology Centre and Agricultural Engineering, focus on resource management for enhanced crop productivity, profitability, and sustainability. Academic programs include advanced technologies—remote sensing, GIS, IoT, robotics, drones—for crop monitoring, and use alternative energy sources. Innovative fertilizer formulations are used in integrated nutrient and soil management. School focuses on water and weed management, climate-based crop monitoring, and bio-fertilizers. Use of microorganisms for accelerated agricultural waste degradation, and crop health management are integrated in technologies for land and water resource management, and to reduce environmental impact.

Cropping Systems

Management of cropping systems is a fundamental domain under the Division of Agronomy at IARI. Tracing its roots to the Crop and Animal Breeding Section in the Imperial Agricultural Research Institute at Pusa, that endeavors to lead agronomic research for sustainable crop production, develop production technologies. It uses integrated approach to crop and soil management with particular focus on managing the rationale input of resources in agriculture such as water, fertilizer and other organic amendments. Academic programs include training in all scientific aspects of cropping system design and management.



The essence of sustainable agriculture lies in the wisdom of cropping systems, where crop rotations and intercropping weave a fabric of environmental stewardship

Photo Credit: Subhash Babu

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Wheat – chickpea intercropping is a common practice among several farmers of Northern plain zone of India

6 CLEAN WATER AND SANITATION

Water Science for Sustainable Living

IARI in collaboration with the University of California, Davis and support from the Ford Foundation established Water Technology Centre in 1969, as multi-disciplinary centre focusing on agricultural water management. Offering research, teaching, training, and extension services, addressing water and its resource management at various scales, from farm to large irrigation commands and watersheds, the Centre offers technical solutions to its stakeholders, beginning from the grassroot level to Command Area Development Authorities, Irrigation Departments, and more. Recognized as the "Centre of Excellence in Water Management," it also serves as a hub for All India Coordinated Research Projects. The center's academic activities on Water Science and Technology, contributes to human resource development and knowledge dissemination in agricultural water management.

Nurturing life and sustaining agriculture, water bonds the foundation of our existence

Drip irrigation saves considerable water loss in agriculture and enhances water use efficiency of crops

Photo Credit: IARI Archives

Soil Health

Originating from the Chemical Section under the Imperial Agricultural Chemist in 1905, the Division of Soil Science and Agricultural Chemistry has been in the Phipps Laboratory at Pusa. Initially focusing on physical, chemical, and biological soil properties, the division expanded research on fertilizers, manures, soil-plant interactions, and sustainable soil fertility. The division's achievements include groundbreaking concepts like potassium carbonate for soil phosphorus extraction, India's first soil map, and the establishment of the first soil testing laboratory. With contributions in areas such as fertilizer recommendations, plant nutrition, and cutting-edge technologies like the Pusa digital soil test fertilizer recommendation meter, the division continues to excel in soil research with modern instrumental facilities.

- **Formulation of slow release fertilizer composites by incorporating nano-clay polymers and water soluble fertilizers**
- **Risk assessment of metal and metalloid polluted soils in relation to plant-animal- human health**
- **Development of new soil test methods for nutrients and pollutants**

15 LIFE ON LAND

In the heart of every thriving crop lies the secret of healthy soil, its vitality, nurturing of it keep the essence of sustainable agriculture

Photo Credit: IARI Archives

IARI soils are rich in nutrients and support crops through out the year

Towards Precision Farming and Intelligent Agriculture

Division of Agricultural Physics was established in 1962 with a mission to study Soil-Water-Plant-Environment Energetic for eco-friendly and sustainable exploitation of agricultural resources through multi-disciplinary specializations viz., Soil Physics, Plant-Biophysics, Environmental Physics and Agricultural Meteorology. The Division has made significant progress on research, teaching and training in these core areas. It is ctively involved in transfer of technology to the farming community through medium range weather-based agro-advisory services. The Division has been contributing to human resource development on Remote Sensing Applications in Agriculture through different National/International collaborations. The high end state-of-the-art facilities viz., satellite interactive terminal facility, soil Physics Laboratory, Hyperspectral Remote Sensing Laboratory, drone and data analytic lab etc. to pursue the research and its applications. Today, IARI realizes the precision farming technologies through improved implements, automation, robotics and artificial intelligence, sensor- based crop monitoring and crop assessment and tailor made forecasting. In collaboration with national and international organizations, IARI contributes to world agriculture through indigenous technologies.

Precision agriculture is not just a technology; it's a philosophy of farming that harmonizes the art of cultivation with the science of innovation, enabling us to grow more with less, and cultivate a sustainable future for our planet

Photo Credit: IARI Archives

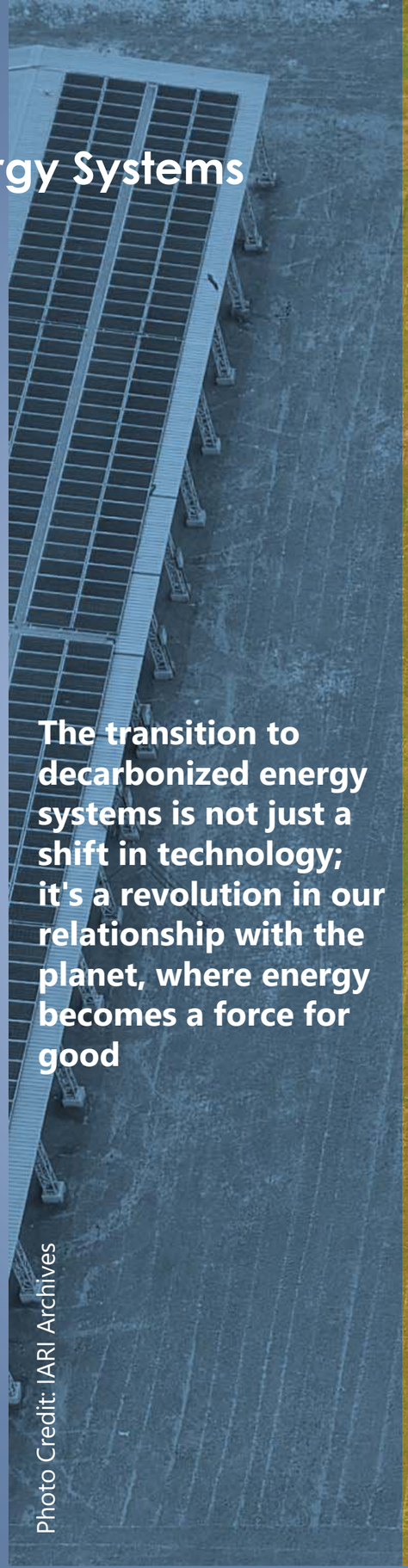
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Drones are widely used in image based monitoring of crop health as well as in target delivery of agricultural inputs

Decarbonized Energy Systems

IARI is dedicated to reducing carbon emissions in agriculture. Aligned with the National Solar Mission initiated in 2010, the Government of India is advancing decarbonization in energy use. Agrivoltaics, integrating solar panels with crops, emerges as a promising solution, enabling rural farmers to contribute to India's growth while preserving farmland. A groundbreaking solar technology, the solar refrigerated evaporatively cooled structure, Pusa SunFridge, operates independently off the grid and using rechargeable batteries, achieves low temperatures through solar refrigeration and evaporative cooling. Featuring innovations like mesh fabric, wetted fabric, split refrigeration, a water battery, and IoT-enabled control, this system ensures efficient refrigeration based on sunlight, overcoming environmental challenges.

- **IARI harvests more than 2.5 MW of solar energy**



The transition to decarbonized energy systems is not just a shift in technology; it's a revolution in our relationship with the planet, where energy becomes a force for good

Photo Credit: IARI Archives

7 AFFORDABLE AND CLEAN ENERGY

Solar panels harvest significant energy contributing to low carbon footprint from IARI

11 SUSTAINABLE CITIES AND COMMUNITIES

Harnessing the power of microbes

Established in 1961, the Division of Microbiology has undertaken pioneering research towards isolation, characterization and selection of promising nutrient-mobilizing and plant- growth promoting microbes. Engaged in academic research, the Division explores the soil and plant microbiomes, metabolite pools and their interactions for plant growth promotion, natural resource management, and valorization of biomass. The Division excels in developing microbial consortia for efficient *in-situ* and e*x-situ* agro-waste decomposition, and standard protocols for mass production of beneficial microbes as bioinoculants for crops, strengthening sustainable crop production systems while maintaining ecosystem services. As the national lead centre, it produces and distributes high-quality microbial inoculants and sets quality standards for testing microbial cultures. The Division strongly supports public–private partnerships by licensing Bioinoculant technologies and strengthening entrepreneurship opportunities for empowering youth.

- **Pusa biofertilizers save more than 25% chemical fertilizer input in various crops**

In agriculture, microbes are significant workhorses, underpinning the invisible multidimensional interactions and networking with plants, animals, and other natural resources for nourishing our crops

Photo Credit: Radha Prasanna

Cyanobacterial colonization in rice roots

17 PARTNERSHIPS FOR THE GOALS

Mr. Bill Gates, in discussions with Dr Himanshu Pathak (extreme right) and Dr. A. K. Singh on climate change research collaboration in IARI fields

Photo Credit: Kiran Gaikwad

Climate Change Research

Commitment to innovate, adapt, produce and consume in harmony with environment and changing climate for a sustainable and resilient tomorrow

The Division of Environmental Sciences earlier known as Centre for Environment Science and Climate Resilient Agriculture (CESCRA), established in 1993, addresses challenges of climate change and environmental pollution that jeopardize agricultural sustainability. The center's noteworthy efforts include assessing climate change impacts on agriculture and potential adaptation gains; assessing greenhouse gas emissions from agriculture to rectify international misconceptions about higher GHG emissions from Indian rice fields; development of indigenous crop simulation model. With a primary focus on researching climate-resilient sustainable agriculture, especially for small-scale farmers, the Division also works on environmental pollution and management, provides education, training, and advisory services as well as policy support. Its global contributions extend to the International Panel for Climate Change and the United Nations Framework Convention on Climate Change, reinforcing its commitment to addressing climate challenges on a broader scale

Strategizing Climate Smart Agriculture

The state of art climate change research facilities established and simulation models developed in the Division of Environmental Sciences led to quantification of climate change effect on crops. The simulation of climate change effects on major crops helped to identify the vulnerable regions and crops for prioritized research and developmental activities for adaptation. Demonstration of low-cost, easy to adapt and low- GHG emitting technologies in Climate Resilient Villages helped to enhance the farm resilience, income and sustainability.

- **Climate change is projected to affect the production of wheat (up to 6%), rice (up to 3%), maize (up to 12%) and mustard (up to 3%) by 2030s**
- **Indian agriculture emits about 14% of GHGs of all India GHG emission**
- **Developed dynamic simulation models for 11 crops; DRAKSHA- grape; CocoSim- coconut; Caulisim- cauliflower; VignaradSim- green gam, spinach model, InfoRCT**
- **InfoCrop 2.1: A decision support system for Tropical Agriculture**

13 CLIMATE ACTION

Multi-dimensional understanding to develop climate resilient agriculture

Photo Credit: Soora Naresh Kumar

Climate research is mantra of modern day agriculture, that requires state-of- the art facilities

Runoff Rainwater Harvesting

Launched in 2022, Mission Amrit Sarovar is a commitment of Indian Government to water conservation. IARI created Pusa Amrit Sarovar, a sprawling 2.5 acre rainwater harvesting pond within its campus to capture the rain water collected from its expansive research farm, which formerly flowed unabated into the drain. This strategically designed reservoir, with a storage capacity of 50,000 cubic meters, stands poised to meet a significant 60% of the 1200 acre research farm's water requirements. Implementation of Pusa Amrit Sarovar marks a transformative shift, because, beyond capturing clean rainwater, the pond preserves essential nutrients from IARI's own farmland, presenting a sustainable solution for subsequent irrigation needs. This endeavour not only addresses water scarcity but also pledges to mitigate water table depletion, reducing the reliance on previously employed borewells. The Pusa Amrit Sarovar stands as a testament to innovative water management practices, aligning with the objective of securing water resources for the future.

Water harvesting is not just about collecting drops; it's about nurturing crops, securing livelihoods, and sustaining communities

Photo Credit: IARI Archives

14 LIFE BELOW WATER

Pusa Amrit Sarovar getting recharged after heavy rains

Basic Sciences

Comprising the Divisions of Biochemistry and Plant Physiology, the school prioritize basic and strategic research on precision phenotyping, quantification of plant processes, stress responses, biostimulant characterization, climate change, genetic transformation, gene function analysis, metabolite purification, nutritional quality characterization, and more. The academic activities of the school aligns with the needs of agro-industry and research institutions involved in crop variety development and crop management technologies. The school is a leading centre for genome editing in India.

Handheld monitoring of crop health has become a common activity in modern agricultural research

Photo Credit: Renu Pandey

Precision Phenotyping

IARI has established two state-of-the-art facilities, the National Phytotron Facility (NPF) in 1997 and the Nanaji Deshmukh Plant Phenomics Centre in 2017. NPF features plant growth chambers with environmental controls, providing insights into complex interactions between physico-chemical environments and living systems. It aids in studying life responses under controlled conditions, addressing climate change and greenhouse gas impacts. The Phenomics facility is India's largest and among the best globally. With advanced climate-controlled greenhouses, RFID-tagged plant carriers, automated weighing and watering stations, and imaging sensors (visual, infrared, near infrared, chlorophyll fluorescence and hyperspectral) it facilitates precise studies on drought stress, water use efficiency, and interactive effects of elevated CO_2 with climatic stress factors. Both facilities contribute significantly to developing crop varieties suitable for diverse agroclimatic zones.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Precise phenotyping helps to unravel the mysteries of genetic code with meticulous perfection

Photo Credit: Viswanathan C

Rice plants in the controlled environment facility in the Nanaji Deshmukh Plant Phenomics Centre

Molecular Nutrition: Towards Functional Foods and Bioactive Products

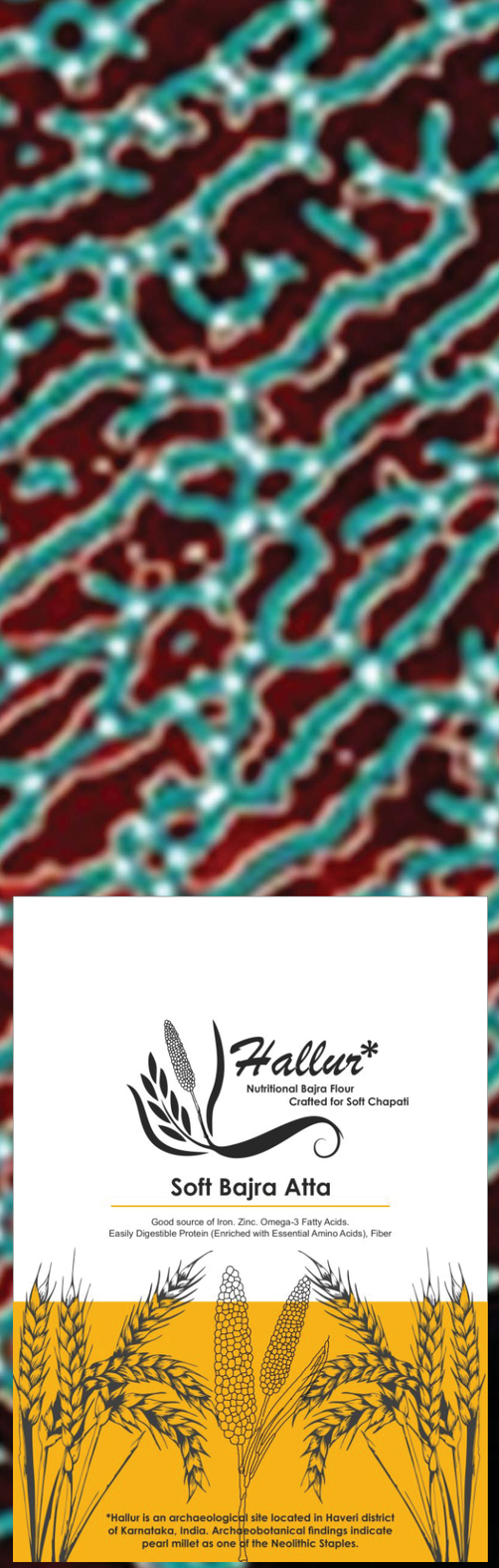
Division of Biochemistry mainly focuses on abiotic stress tolerance, nutritional quality enhancement, food matrix composition and nutritive assessment in cereals, millets and pulses. The mission of the Division is to conduct research in biochemical, and molecular biological aspects relevant to contemporary agricultural challenges. The academic programs of the division administer teaching and training programs for cultivating skilled human resources. It acts as a center for advanced faculty training to national institutions. Additionally, the Division strives to create instructional aids for biochemistry teaching and enhance capabilities in post-harvest, product development, value addition, and utilization research for agricultural commodities.

- **Soft Bajra and Makka Atta: A potential substitute to wheat dough**
- **30% protein enriched high protein atta with excellent dough quality**
- **NutriGrain-Multimillet Atta fortified with natural minerals and vitamins with low glycemic index**
- **Micro Green Kit for natural minerals, vitamins and antioxidants**
- **Shelf life enhancement of pearl millet flour for 6 months by NIR irradiation**

2 ZERO HUNGER

Molecular nutrition is the language our bodies understand and mastering it is the key for crafting diets that not only fulfill tailored nutrition but also promote vibrant well- being

Photo Credit: Sureha Goswami, Vinutha T



Ultra structure of the gluten regenerated pearl millet dough showing gluten junctions (white), skeleton (green) and lacunarity (yellow) areas. (inset) Hallur Atta is a wheat gluten fortified pearl millet flour crafted to make soft chapatis

Stress and Production Physiology

Physiological research at IARI began in 1941, with a focus on environmental stresses and plant nutrition, laid a robust foundation for setting up of the Division of Plant Physiology in 1966. The mission of the Division is centered on enhancing physiological efficiencies to boost crop plant productivity and production. Understanding plant physiological responses to various stress factors helps to refine the management and breeding strategies. This is achieved through fundamental research aimed at understanding processes relevant to solving issues in crop productivity and stress resilience. Academic contributions of the Division with its immense contributions in trained human resources on plant physiology are acclaimed throughout the world.

- **Crop ideotypes of wheat and mustard**
- **Donors for input use efficiency and stress tolerance**
- **Abiotic stress signaling, ABA receptors and stress response genes for climate resilience**
- **Role of nocturnal transportation in water use efficiency in crops**
- **Gene edited mutants of rice for abiotic stress tolerance**

13 CLIMATE ACTION

The significance of stress in agriculture amplified by climate change is a wakeup call for enduring practices to build resilient farming

Photo Credit: K K Vinod

Rice seedlings show variation in Fe deficiency at seedling stage

IARI is consistently working towards expanding academic spectrum beyond the borders through accelerated international collaborations – Dr. Anupama Singh, Dean and Jt. Director (Education) is seen here signing a Letter of Indent with Prof. Barney Glover, Vice-Chancellor of Western Sydney University

"At IARI, we are committed to contribute to Sustainable Development Goals through nurturing future leaders with cutting-edge knowledge and practical skills"

Photo Credit: K K Vinod

Education

IARI, the cradle of agricultural education in India, has been at the forefront of academic excellence, spearheading a science-led revolution for food security

- **Promote excellence, foster high standard and orient the educational programme towards future needs and opportunities.**
- **Strengthen physical, biological and social sciences in the curricula, and frontier areas such as biotechnology, information technology, data science, artificial intelligence, environmental science, post-harvest technology, agricultural biodiversity and genetic resources.**
- **Provide opportunities for research, continuing education, faculty upgradation and development of human resources in new and cutting-edge technology areas, especially through international collaboration.**
- **Strengthen non-formal training to promote entrepreneurial skills and commercialization in agriculture.**

Regional Academic Collaborations: Towards MERU

17 PARTNERSHIPS FOR THE GOALS

IARI has forged partnerships with 16 regional clusters comprising 70 ICAR institutes. This collaboration aims to leverage the human resources and infrastructure assets to provide high-quality education

Sun-planet-satellite model of IARI's regional academic collaboration

Academic Programs

Masters' & PhD degree

Agricultural Chemicals
Agricultural Economics
Agricultural Engineering
Agricultural Extension
Agricultural Physics
Agricultural Statistics
Agronomy
Biochemistry
Bioinformatics
Computer Application
Floriculture Landscaping
Fruit Science
Entomology
Environmental Science
Genetics & Plant Breeding
Microbiology
Molecular Biology and Biotechnology
Nematology
Plant Genetic Resources
Post-Harvest Management
Plant Pathology
Plant Physiology
Seed Science and Technology
Soil Science
Vegetable Science
Water Science and Technology

Bachelors' degree

Agricultural Engineering
Agricultural Sciences
Community Sciences
Agricultural Biotechnology

Spanning 26 disciplines, our academic programs consistently produce skilled human resources which serve as pillars for agricultural development in India and around the globe

Photo Credit: K K Vinod

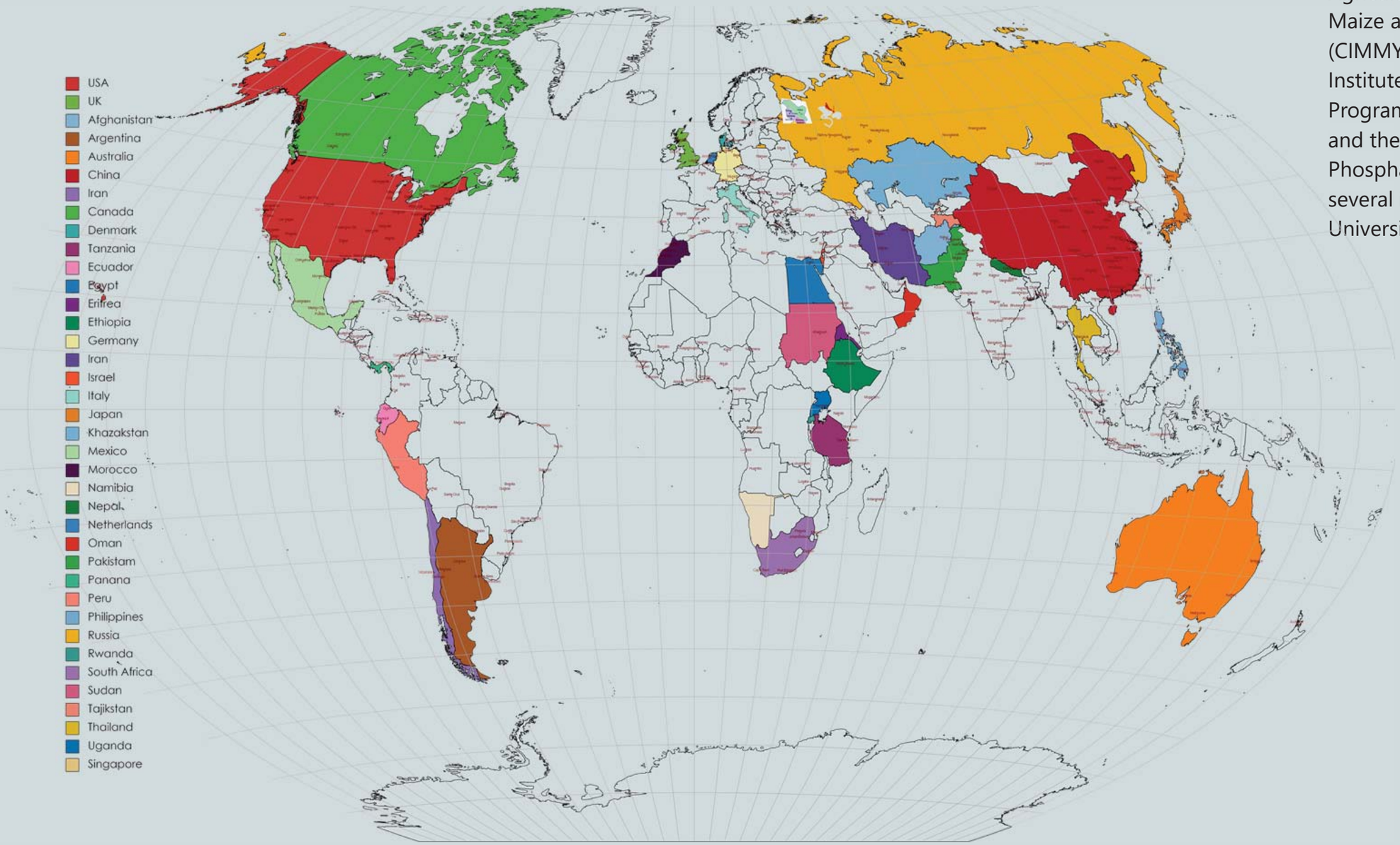
5 GENDER EQUALITY

Student working at the National Phytotron Facility

International Collaborations

17 PARTNERSHIPS FOR THE GOALS

- **487 International Students**
- **23 International Collaborative Projects**
- **₹ 103.15 million International Fundings**

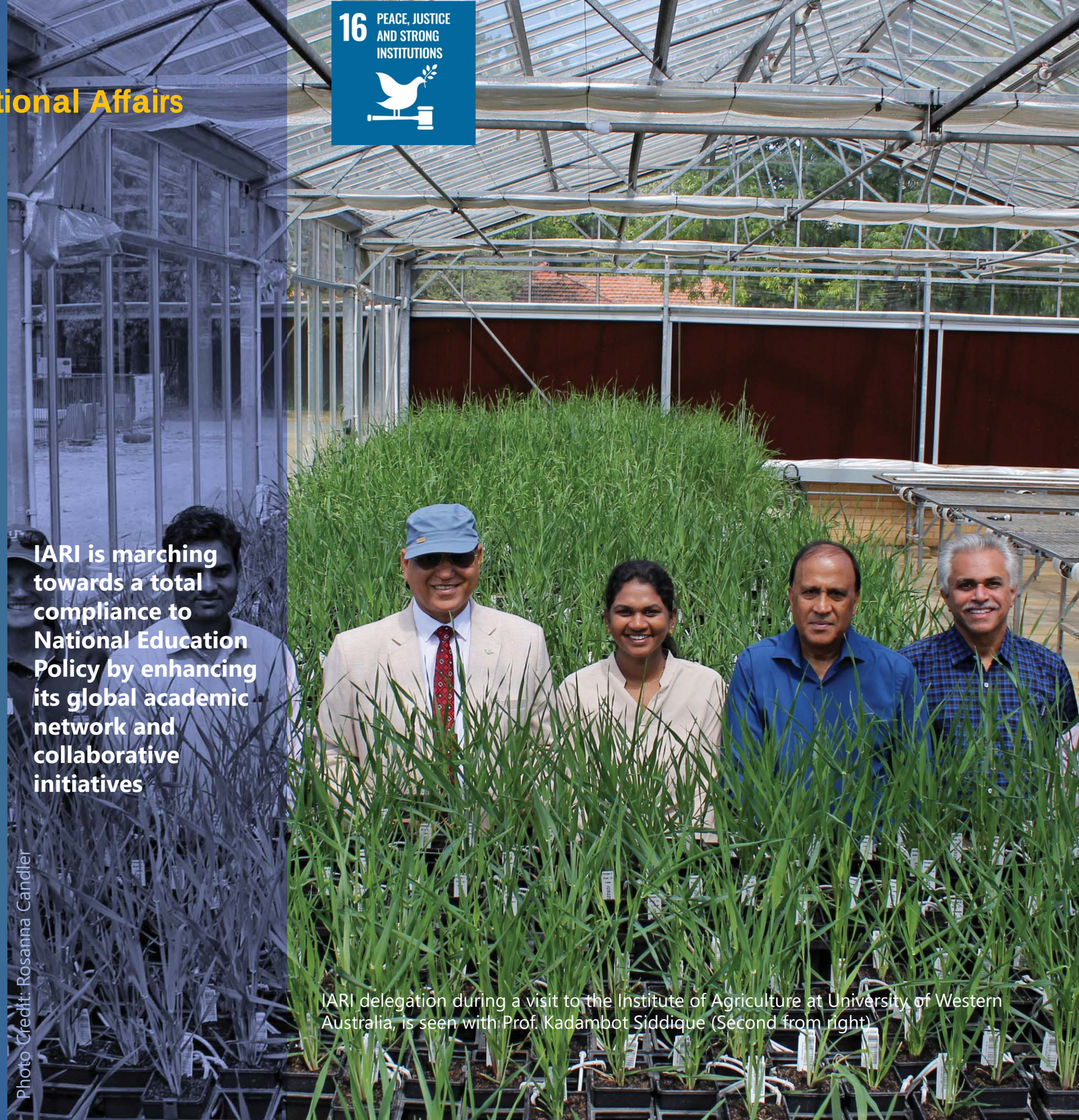


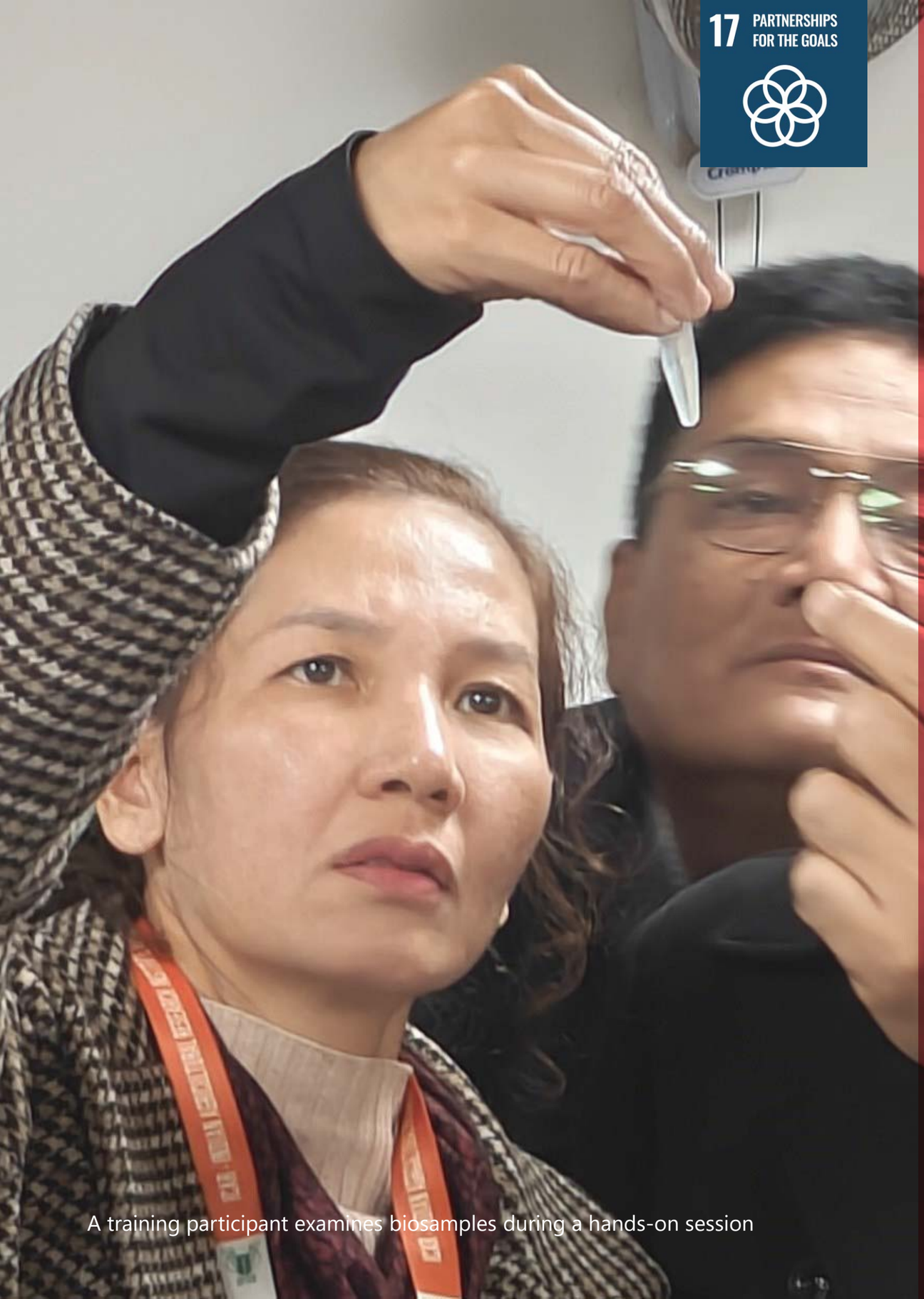
International collaborations are in progress with United States Agency for International Development (USAID), Food and Agricultural Organisation (FAO), International Development Research Centre (IDRC), Consultative Group on International Agricultural Research (CGIAR), International Maize and Wheat Improvement Centre (CIMMYT), International Rice Research Institute (IRRI), United Nations Environment Program Regional Research Centre for Asia and the Pacific (UNEP RRCAP), Potash and Phosphate Institute of Canada (PPIC) and several international institutions and Universities.

Indian Council of Agricultural Research (ICAR) has established Memorandum of Understanding with more than 70 nations across the world for agricultural cooperation. IARI is the prime partner in these international collaborations in research and education

Office of the International Affairs

The Office of International Affairs is responsible for establishing and managing global collaborations in research and education at IARI. Its activities include the development of bilateral programs, formalizing agreements, and facilitating student exchanges between IARI and international institutions. Student intake is actively supported through a direct admission process aligned with the Study in India program endorsed by the Ministry of Education, Government of India, and through other bilateral programs. The office plays a pivotal role in facilitating Memoranda of Understanding (MoUs) with ICAR and international organizations/ universities. IARI annually hosts various visiting delegations, including recent visits from the University of Western Sydney, Murdoch University, University of Western Australia, and the Technical University of Munich. During a recent delegation visit to Australia, IARI signed a Letter of Intent to initiate a dual degree undergraduate program in collaboration with Western Sydney University, further enriching IARI's global academic network and collaborative initiatives.





A training participant examines biosamples during a hands-on session

International Institutional Mentorship

Photo Credit: K. K. Vinod

As a global mentor in agriculture, IARI's initiatives transcend borders, fostering collaborations, and knowledge exchange, empowering nations with the tools and expertise needed for modern and sustainable farming practices

IARI stands as a sought-after hub for training international students and participants in frontier areas of agricultural science. Acknowledging its global competence, IARI was entrusted with establishing the Advanced Centre for Agricultural Research and Education (ACARE) at Yezin Agricultural University in Nay Pyi Taw, Myanmar. The initiative aims to fortify agricultural research, education, and extension in Myanmar, enhancing overall production and productivity. ACARE envisions becoming a 21st-century institution, combining cutting-edge science, traditional knowledge, and ecological conservation. Its core focuses include breeding high-quality, high-yielding crop varieties, promoting advanced technology adoption, fostering awareness of improved farming practices, and conducting capacity-building programs for faculty, technicians, and entrepreneurs. Additionally, IARI played a pivotal role in curriculum development and the establishment of the Afghan National Agricultural Science and Technology University (ANASTU) in Kandahar, Afghanistan, offering successful training programs for ANASTU students at IARI.

Global Education

IARI endeavors to establish academic collaboration and explore research opportunities with institutions of higher education across the world. Significant outcome of this effort was establishing a Dual Degree PhD program with Western Sydney University in Australia. We are upscaling the efforts to cover undergraduate programs and bilateral student exchange programmes. Similar efforts are on to establish collaborative programs with University of Western Australia and Murdoch University. The research and academic collaboration, span areas of genomics, horticulture, plant protection, ecology, physiology, molecular biology, biochemistry, nutrition, artificial intelligence, climate resilience, smart agriculture, biosensor technology, and robotics.

- **IARI students enroll for Dual Degree PhD programme at Western Sydney University**
- **Similar programmes are in discussions with other Australian universities such as University of Western Australia and Murdoch University**

Beyond admitting and training international students, IARI extends its global vision by providing training to its students abroad, fostering international cooperation

Photo Credit: Anamika Chandel

IARI student at work at University of Western Australia

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Prof. M.S. Swaminathan Library

The iconic building of Linlithgow Library was made in a contemporary British architectural style

With a wealth of knowledge spanning two centuries, our library serves as a rich repository, documenting every milestone in the journey of modern agriculture

Photo Credit: IARI Archives

- Started in 1936 as Linlithgow Library
- National Agricultural Library of India
- One of the Top10 agro-biological libraries in the world
- 600,000 publications
- 350,000 journal volumes
- 100,000+ books/monographs
- 45,000 bulletins
- 30,000 news clippings
- 30,000 reports
- 15,000 postgraduate theses
- 10,500 serial Files
- Adds 9000–10,000 documents per year
- 2000+ registered members
- 150-200 visitors per day
- CeRA (Consortium of eResources in Agriculture)
- E-language Lab & e-Granth
- Membership of DELNET & INFLIBNET
- CD-ROM workstation & C-DAC Project

Green Self-contained Campus

Essential amenities on-site include a medical dispensary, two primary schools, and separate government senior secondary schools for boys and girls. Additionally, three Play Schools cater to preschool children, with a Kendriya Bhandar, Mother Dairy, Amul booth, Safal store, and cafeteria ensuring the provision of daily necessities and fresh produce.

- **2 Outdoor playgrounds**
- **Indoor games**
- **Gymnasium**
- **14 Residential hostels**
- **Cafeteria**
- **Dining Halls**
- **Shopping Complex**
- **Health and Wellness Centre**
- **Banks and ATMs**
- **Post Office**
- **Guest houses**
- **Recreation clubs**
- **Amrit Sarovar**
- **Student clubs**
- **Residential Apartments**

The campus of the Institute is a self-contained sylvan complex spread over an area of about 1250 acres

11 SUSTAINABLE CITIES AND COMMUNITIES

Photo Credit: K K Vinod

Phalguni is the new girls' hostel inaugurated on 31 January 2024

In the hostel, every day is a new adventure, where chaos and laughter coexist, creating the perfect symphony of shared dreams and unforgettable moments

Photo Credit: D K Singh

Our Hostels

With 2000+ student accommodations and amenities, IARI hostels provide a secure and supportive environment for a diverse student community hailing from various parts of India and abroad. By offering accommodations for married students and facilities for families, the campus extends educational opportunities to their children as well. The campus, is conveniently accessible from Delhi and New Delhi railway stations and Airport, via city bus or Metro trains.

Our hostels are named after seasons and rivers

Vasant
Hemant
Sharad
Shishir
Madhumas
Rituraj
Varsha
Greeshm
Phalguni
Saraswati
Kaveri
Sindhu

Hostels at Indian Agricultural Statistics Research Institute (IASRI)

Panse
Sukhatme

Ecosystem for Inclusive Growth

Nestled within the heart of New Delhi, the IARI campus is a vibrant oasis, a testament to the institute's unwavering commitment to academic excellence. Lush greenery creates a serene and inspiring environment that seamlessly integrates with the academic pursuits of learning and research. The well-maintained lawns, gardens and tree-lined pathways form a picturesque symphony of green hues, mirrors the dedication to sustainable agricultural practices. Beyond its natural settings, the campus acts as a nurturing space for the exchange of ideas, fostering an atmosphere where innovation and growth flourish. This green haven not only symbolizes the interconnectedness of agriculture and the environment but also acts as a lung for the bustling city, contributing to a pollution-free and oxygenated ambiance. The diverse student population, drawn from across India and the world, brings life and energy to the campus, creating a vibrant community that remains etched in their memories. Amidst a subtropical climate and state-of-the-art infrastructure, the IARI campus stands as a beacon, motivating the young minds who hold the promise for the future of global agricultural development.

Our students create a vibrant community, with dynamic diversity and electrifying atmosphere, energizing the campus and contributing to memories etched for a lifetime

Photo Credit: Vijay Kamal Meena

Our campus provides a healthy environment for nurturing internationally competitive students

Vibrant Campus for Holistic Education

IARI's vibrant campus fosters holistic development through diverse extracurricular activities, with rich cultural diversity drawn from across the country. The academic community comprises highly talented individuals selected through a rigorous process, including National Testing for students and competitive Agricultural Scientists Recruitment Board evaluations for scientists. The campus hosts various competitions, farm fairs, sports activities, and traditional regional festivities. Additionally, students engage in excursions and club activities, while Nehru Experimental Centre (NEC) promotes social responsibility through playschools and a crèche for working women. Established in 1966 by the vision of Late Mrs. Mina Swaminathan, NEC has provided five decades of service, running play schools and a crèche in a family-like environment. Managed mostly on a voluntary basis, the center has produced over 3000 successful students and extends its services to sister institutes in the campus.

Glimpses of vibrant activity in the camapus

Photo Credit: IARI Archives

Our young Ambassadors of Mini India are culturally talented

IARI's rich heritage and central stage attract a confluence of art forms, making our cultural diversity a dynamic showcase of traditions and talent from various regions

Photo Credit: IARI Archives

A Mini India

IARI's students come from every corner of India and represent all the 28 states of India. The campus resonates with a harmonious blend of languages, traditions, and customs, creating a unique environment. The institute serves as a cultural hub, showcasing a confluence of art forms from various regions. The rich heritage of IARI, coupled with its central location, adds vibrancy to the cultural diversity, attracting scores of talent presentations throughout the year. The embrace of students from diverse backgrounds fosters a cross-pollination of ideas, enriching academic discourse and extending to a wide spectrum of disciplines. This multicultural ethos finds expression in various events and festivals, where traditions are shared and celebrated. As students collaborate and learn from one another, the cultural diversity at IARI emerges as a source of strength, preparing future agricultural leaders for a globalized world with understanding, empathy, and a truly international perspective.

A sports-centric atmosphere nurtures dynamic athletic abilities, promoting both physical well-being and personal growth

3 GOOD HEALTH AND WELL-BEING

A Hub of Sports

IARI prioritizes the holistic development of students through an extensive array of extracurricular activities, fostering social and management skills alongside academic excellence. The institute actively encourages cultural, physical, and social enrichment through organized events. Two expansive playgrounds adjacent to student hostels provide spaces for outdoor activities such as cricket, football, hockey, volleyball, tennis, badminton, and various athletic events. Indoors, a dedicated games hall offers recreational options like table tennis, complementing the outdoor facilities. Tennis courts further enhance sporting opportunities. Additionally, each hostel is equipped with facilities for indoor games, ensuring a well-rounded recreational experience for residents. The campus also houses a well-equipped gymnasium and fitness centers, promoting a healthy and balanced lifestyle. This comprehensive approach allows students to explore their talents and potential beyond academic confines, preparing them for multifaceted personal and professional growth.

Convocation

Our convocation, an annual event takes place during the second week of February, week-long celebrations that adorn the campus with vibrant decorations, creating an atmosphere of excitement among the students. The festivities feature various academic competitions, including the coveted Best Student Award. Distinguished personalities, including the Honourable President of India, Vice Presidents, Prime Minister, and other eminent figures, regularly preside over the convocations.

Highlighted events include distinguished lectures, such as the prestigious Lal Bahadur Shastri Memorial Lecture and talks by awardees of the Sukumar Basu Memorial Award and H K Jain Memorial Award, as well as recognitions of outstanding researchers and teachers. The Convocation week culminates with a grand farewell for outgoing students, attended by their parents, relatives, and friends.

- **61 Convocations till 2023**
- **5361 Doctoral Graduates**
- **100 Masters of Technology**
- **4823 Masters of Science**

4 QUALITY EDUCATION

We set the dreams of our students take flight during Convocations

Photo Credit: IARI Archives

A doctoral graduate receiving her degree during 61st Convocation from Shri Jagdeep Dhankhar, Honourable Vice President of India

A Paradise for Birds

The lush green campus of IARI stands as a testament to the harmonious coexistence of nature and agriculture, embodying a metaphor of a green environment. Faunal diversity, particularly the dynamic presence of birds, plays a pivotal role in sustaining the delicate ecological balance. The campus, since its inception, fosters a rich tapestry of flora and fauna. Diverse plant species, including trees, shrubs, and annuals, coexist with a spectrum of crops, both field and horticultural, cultivated throughout the year. However, it's the bird diversity that adds a vibrant and ever-changing dimension to the natural landscape. The IARI campus serves as a sanctuary for both migratory and indigenous birds, contributing to the dynamic ebb and flow of avian life. This diversity is vividly captured in a book *ICAR-IARI: A Paradise of Birds*, showcasing the institute's commitment to a green campus.

- **IARI campus hosts more than 100 bird species throughout the year, of which majority are migratory avians**

15 LIFE ON LAND

The rich fabric of plants, crops, and birdlife reflects the institute's dedication to a sustainable green ecosystem

Photo Credit: Prolay Kumar Bhowmick

Eurasian Hoopoe (*Upupa epops*) is a small migratory bird commonly seen during winter

Extension

- Develop cutting-edge extension models, align them with developmental frameworks, and distribute them through regional stations, universities, and state extension systems
- Encourage on-farm research and technology assessment with a client-centric focus, utilizing participatory methods, and supporting the Institute-Village Linkage Programme
- Foster research in development communication and establish linkages with rural development programs
- Strengthen micro-planning through collaborative efforts involving various departments and engaging in participatory approaches
- Developing and implementing state-of-the-art digital extension technologies and communication systems for faster and effective dissemination of information

"Through our efforts at IARI, we bridge the gap between research and farmers, uplifting livelihoods, promoting sustainable practices, and enriching the landscape of Indian agriculture"

Photo Credit: Akriti Sharma

Dr R N Padaria, Joint Director (Extension)

Social Sciences

The School of Social Sciences excels in policy research for sustainable agriculture, poverty alleviation, and income generation. It prioritizes women's role, environmental accounting, agro-biodiversity valuation, and export advantage. Achievements include gender studies, technology adoption constraints analysis, and rural entrepreneurship development. Impact assessment, priority setting, and resource allocation contribute to strategic policy decisions with a focus on food security. Divisions encompass agricultural economics, extension, and units like ATIC, CATAT, ZTM & BPD Unit, addressing technology adoption and commercialization. The School aims to understand technological needs for small farms around Delhi, introducing pertinent solutions for sustainable development.

Photo Credit: K K Vinod

Pusa Krishi Mela (Farm Fair) is an annual thematic event that is very popular among the farmers across the country

Economic Research

The Division of Agricultural Economics at IARI, established in 1960, is committed to cutting-edge research and human resource development. Recognized globally, the Division has been instrumental in making significant contributions to basic and applied research with far-reaching implications for agricultural policy. Its research focus is continuously reoriented to address contemporary development challenges, and current thrust areas include policy research for sustainable agricultural growth, investments, and poverty challenges, technology evaluation and impact assessment, agricultural markets and trade opportunities, price forecasting and market outlooks, natural resource use and ecosystem services, climate change and food and nutritional security concerns. The Division carries out various capacity building activities to strengthen economic and policy research in the national agricultural research system.

Lab to land: Reaching the Unreached

The transfer of modern technology has revolutionized Indian agriculture, leading to the Green Revolution. Established in 1960, IARI's Division of Agricultural Extension initially focused on intensive cultivation. It played a vital role in shaping research, curricula, teaching methods, and technology dissemination. Notable achievements include initiating the National Demonstration Project in extension education. The Division remains at the forefront, enhancing the capacity of extension professionals across systems. Its mission spans basic and strategic research, postgraduate education, national and international training programs, and expert support, contributing to continual growth in the extension profession.

- **Outreach extension programme: Scheduled Caste Sub-Plan, North Eastern Hill Plant, Tribal Sub-Plan**
- ***Prasar Doot*: A quarterly Hindi farm magazine**

Agricultural transformation begins with the seamless transfer of technology, where every innovation becomes a stepping stone towards a future of sustainable and efficient farming

Photo Credit: IARI Archives

A quality seed production training session in progress with participants from different states

Pusa Samachar is a ICT based weekly online video sharing programme by IARI that serves farmers timely information on farming

Photo credit: Girijesh S. Mahra

Pusa Samachar: Digitally Driven, Socially Inspired

The success of agricultural productivity hinges on the accessibility, efficiency, and affordability of agricultural information

Capitalizing the information and communication technology (ICT) coupled with the expansive reach of social media, IARI has been broadcasting *Pusa Samachar* or Pusa News as an innovative multimedia extension advisory model. Pusa News is designed to deliver location-specific and customized farm information across India and is broadcasted in five Indian languages. Pusa News is made inhouse at IARI by the scientists themselves, and broadcasted in weekly interval through popular YouTube the online video-sharing platform. The reciprocal communication is built through social media applications such as WhatsApp, where the viewer can message directly to the team involved in making the episode. This mass media communication system effectively engage farmers nationwide through social media, advocating for further diversification to enhance audience attraction and retention.

- **With more than 290 episodes in 5 languages, Pusa Samachar has a subscriber base of 41900 with more than 15.68 lakh views**

11 SUSTAINABLE CITIES AND COMMUNITIES

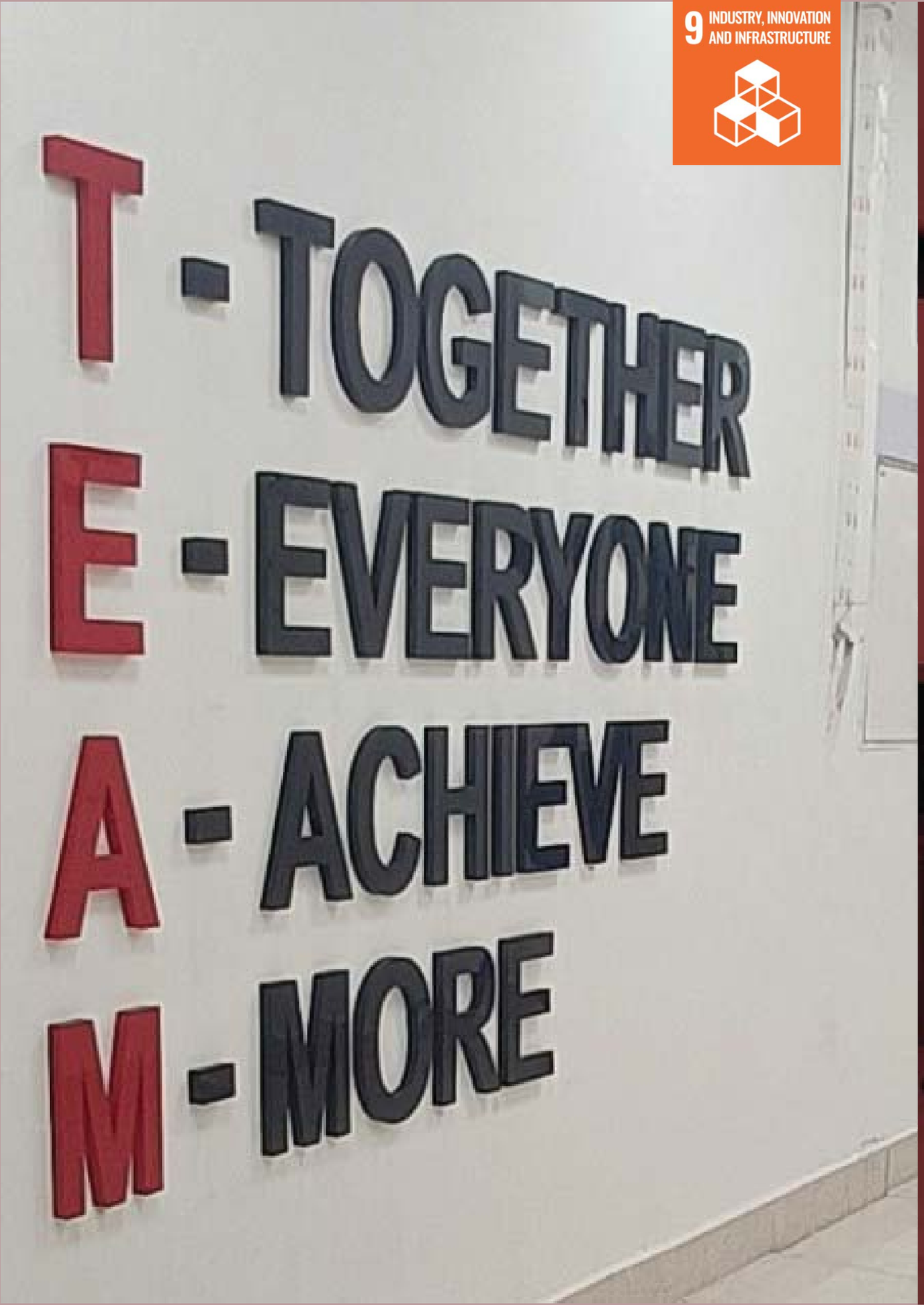
Empowering Farmers with Single Window Technology Delivery

Founded from its strong research tradition, IARI stands at the forefront of agricultural technology development, generating innovations to benefit farmers. A unit of transfer of technology emerged in 1984, evolving into the Centre for Agricultural Technology Assessment and Transfer (CATAT) in 1998. CATAT addresses location-specific challenges, working across districts in states like Delhi, Uttar Pradesh, Madhya Pradesh, Haryana, Punjab, and Rajasthan as part of the Institute's commitment to disseminating agricultural technologies. Acknowledging the need for a broader impact, and to facilitate farmers' direct access to technology, IARI in 1999 has set up Agricultural Technology Information Centers (ATIC) following a nationwide mission. ATIC functions as a 'single window' delivery system for technology, services, and products. Pusa Agri Krishi Haat, has been established with the aim of empowering and supporting agricultural entrepreneurs, farmers, and women in marketing their fresh and value-added agricultural products. This initiative establishes direct connections with urban consumers, facilitating a seamless exchange of produce.

Empowering farmers with access to modern technology is like providing them with a key to unlock a door to sustainable and innovative agriculture

Photo Credit: Prolay Kumar Bhowmick

Pusa Agri Krishi Haat is an unique facility in IARI, that brings farmers, entrepreneurs and customers under one umbrella



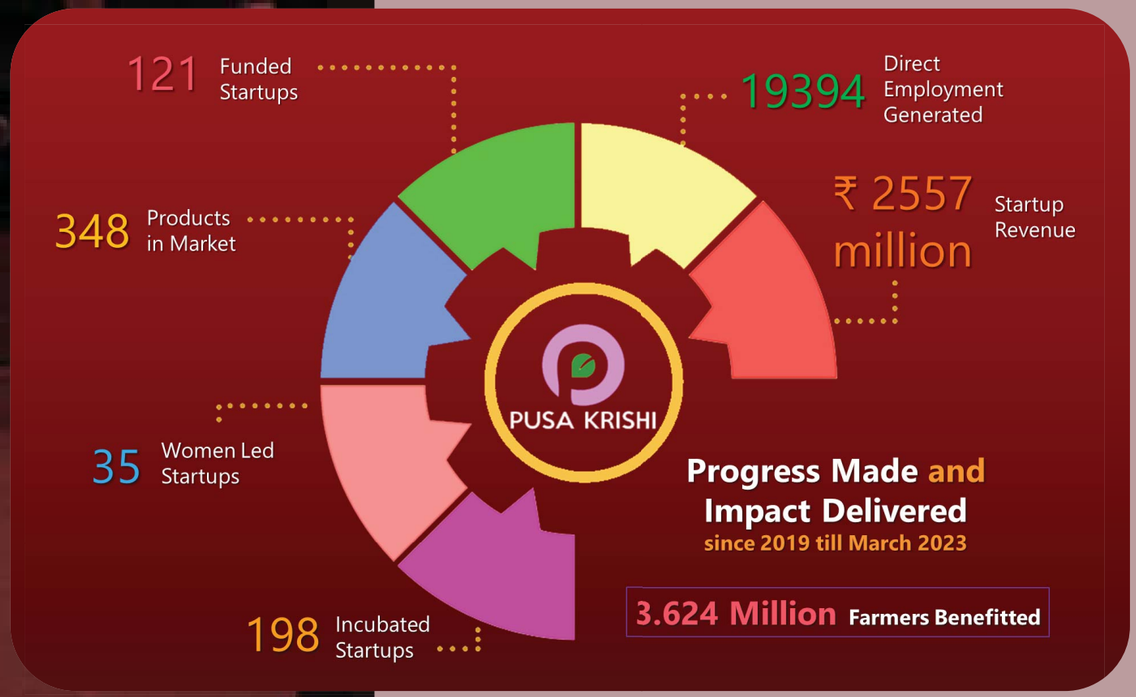
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Pusa Krishi: The Startup Launchpad

Entrepreneurs are the seeds of change, and in the field of agriculture, they cultivate a future of abundance

Photo Credit: Akriti Sharma

The Zonal Technology Management & Business Planning and Development (ZTM-BPD), also known as Pusa Krishi, is dedicated to fostering agri-startups through Incubation & Acceleration, IP Support, and Commercialization. Its mission is to revolutionize the agricultural sector by promoting entrepreneurship and innovation. The initiative conducts diverse pre-incubation and incubation programs, along with training sessions, workshops, field visits, and global collaborations, all aimed at providing comprehensive support to agri-startups.



The Last Page

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Disclaimer
Contents of this book depicts candid representation of activities and achievements of IARI without any prejudice on individual, religion, race, gender and region. While IARI aligns with multiple Sustainable Development Goals (SDGs) across its programs, each page in this book highlights only one of them. This representation is indicative and not exhaustive of IARI's overall SDG compliance.

Photo Credit: IARI Archives